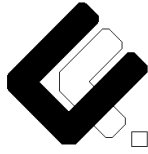


CORE9GPLL_HCMOS9_TEC_4.0

Databook

UNICAD2.4 / June 2, 2003

The logo for Unicad 2 features the word "Unicad" in a blue, stylized, cursive font, followed by the number "2" in a grey, sans-serif font. A red curved line underlines the text.



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CORE9GPLL_HCMOS9_TEC_4.0

Databook

UNICAD2.4/ June 2, 2003

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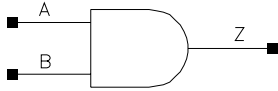
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<p>AN2LL AN2LLP AN2LLX4 AN2LLX6 AN2LLX8</p> <p>Function: Function = 2 Input AND</p> <p>Boolean Expression: $Z = A \bullet B$</p>	
--	---

Physical Dimensions

Property	AN2LL	AN2LLP	AN2LLX4	AN2LLX6	AN2LLX8
Area(um ²)	10.086	10.086	14.120	20.172	24.206

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN2LL	A Input Cap.	0.0020	0.0016	0.0017
AN2LL	Z Max Load	0.160	0.160	0.160
AN2LL	B Input Cap.	0.0018	0.0014	0.0015
AN2LLP	A Input Cap.	0.0034	0.0029	0.0030
AN2LLP	Z Max Load	0.320	0.320	0.320
AN2LLP	B Input Cap.	0.0032	0.0027	0.0028
AN2LLX4	Z Max Load	0.640	0.640	0.640
AN2LLX4	B Input Cap.	0.0057	0.0049	0.0051
AN2LLX4	A Input Cap.	0.0060	0.0052	0.0054
AN2LLX6	Z Max Load	0.960	0.960	0.960
AN2LLX6	B Input Cap.	0.0088	0.0073	0.0077
AN2LLX6	A Input Cap.	0.0092	0.0080	0.0083
AN2LLX8	A Input Cap.	0.0120	0.0103	0.0108
AN2LLX8	Z Max Load	1.280	1.280	1.280
AN2LLX8	B Input Cap.	0.0114	0.0096	0.0100

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN2LL	A-Z	A_Z (fall)	0.067 + 0.285*Tr + 1.212*C	0.150 + 0.301*Tr + 2.639*C	0.100 + 0.290*Tr + 1.693*C
AN2LL	A-Z	A_Z (rise)	0.051 + 0.155*Tr + 1.627*C	0.128 + 0.192*Tr + 3.420*C	0.078 + 0.172*Tr + 2.335*C
AN2LL	B-Z	B_Z (fall)	0.061 + 0.273*Tr + 1.209*C	0.135 + 0.288*Tr + 2.629*C	0.090 + 0.278*Tr + 1.689*C
AN2LL	B-Z	B_Z (rise)	0.050 + 0.173*Tr + 1.622*C	0.123 + 0.213*Tr + 3.406*C	0.076 + 0.189*Tr + 2.327*C
AN2LLP	A-Z	A_Z (fall)	0.058 + 0.267*Tr + 0.615*C	0.128 + 0.283*Tr + 1.288*C	0.086 + 0.272*Tr + 0.843*C
AN2LLP	A-Z	A_Z (rise)	0.045 + 0.163*Tr + 0.796*C	0.112 + 0.196*Tr + 1.649*C	0.069 + 0.178*Tr + 1.132*C
AN2LLP	B-Z	B_Z (fall)	0.053 + 0.254*Tr + 0.614*C	0.116 + 0.269*Tr + 1.284*C	0.078 + 0.259*Tr + 0.841*C
AN2LLP	B-Z	B_Z (rise)	0.045 + 0.179*Tr + 0.794*C	0.109 + 0.215*Tr + 1.643*C	0.068 + 0.193*Tr + 1.129*C
AN2LLX4	A-Z	A_Z (fall)	0.056 + 0.260*Tr + 0.307*C	0.122 + 0.276*Tr + 0.643*C	0.082 + 0.265*Tr + 0.420*C
AN2LLX4	A-Z	A_Z (rise)	0.044 + 0.165*Tr + 0.398*C	0.107 + 0.195*Tr + 0.824*C	0.066 + 0.178*Tr + 0.567*C
AN2LLX4	B-Z	B_Z (fall)	0.050 + 0.246*Tr + 0.307*C	0.110 + 0.261*Tr + 0.641*C	0.074 + 0.251*Tr + 0.420*C
AN2LLX4	B-Z	B_Z (rise)	0.043 + 0.181*Tr + 0.397*C	0.104 + 0.214*Tr + 0.821*C	0.065 + 0.193*Tr + 0.564*C
AN2LLX6	A-Z	A_Z (fall)	0.055 + 0.260*Tr + 0.205*C	0.120 + 0.275*Tr + 0.429*C	0.080 + 0.264*Tr + 0.281*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN2LLX6	A-Z	A_Z (rise)	0.043 + 0.163*Tr + 0.266*C	0.106 + 0.195*Tr + 0.550*C	0.066 + 0.178*Tr + 0.378*C
AN2LLX6	B-Z	B_Z (fall)	0.050 + 0.246*Tr + 0.205*C	0.108 + 0.260*Tr + 0.428*C	0.073 + 0.251*Tr + 0.280*C
AN2LLX6	B-Z	B_Z (rise)	0.043 + 0.180*Tr + 0.265*C	0.103 + 0.213*Tr + 0.548*C	0.065 + 0.193*Tr + 0.377*C
AN2LLX8	A-Z	A_Z (fall)	0.054 + 0.258*Tr + 0.154*C	0.118 + 0.273*Tr + 0.322*C	0.079 + 0.263*Tr + 0.211*C
AN2LLX8	A-Z	A_Z (rise)	0.043 + 0.163*Tr + 0.200*C	0.103 + 0.193*Tr + 0.413*C	0.064 + 0.177*Tr + 0.284*C
AN2LLX8	B-Z	B_Z (fall)	0.049 + 0.245*Tr + 0.154*C	0.106 + 0.258*Tr + 0.321*C	0.072 + 0.249*Tr + 0.211*C
AN2LLX8	B-Z	B_Z (rise)	0.042 + 0.180*Tr + 0.199*C	0.101 + 0.211*Tr + 0.411*C	0.063 + 0.191*Tr + 0.283*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AN2LL	3004.820	60645.200
AN2LLP	5036.700	109054.000
AN2LLX4	9622.800	211622.000
AN2LLX6	14651.800	320638.000
AN2LLX8	19245.000	423252.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AN2LL	Z(max)	0.012 + 0.008*Tr
AN2LLP	Z(max)	0.021 + 0.016*Tr
AN2LLX4	Z(max)	0.040 + 0.034*Tr
AN2LLX6	Z(max)	0.059 + 0.052*Tr

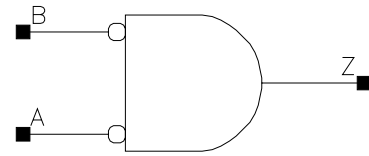
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AN2LLX8	Z(max)	$0.077 + 0.070 * Tr$

AN2ABLLP
AN2ABLLX4
AN2ABLLX6
AN2ABLLX8

Function: Function = 2 Input AND ,A and B Inputs Inverted



Truth Table

A	B	Z
-	1	0
1	-	0
0	0	1

Physical Dimensions

Property	AN2ABLLP	AN2ABLLX4	AN2ABLLX6	AN2ABLLX8
Area(um ²)	10.086	14.120	18.155	20.172

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN2ABLLP	Z Max Load	0.320	0.320	0.320
AN2ABLLP	B Input Cap.	0.0018	0.0014	0.0015
AN2ABLLP	A Input Cap.	0.0018	0.0015	0.0016
AN2ABLLX4	A Input Cap.	0.0030	0.0026	0.0027
AN2ABLLX4	Z Max Load	0.640	0.640	0.640
AN2ABLLX4	B Input Cap.	0.0031	0.0026	0.0027
AN2ABLLX6	A Input Cap.	0.0045	0.0038	0.0040
AN2ABLLX6	Z Max Load	0.960	0.960	0.960
AN2ABLLX6	B Input Cap.	0.0043	0.0036	0.0038
AN2ABLLX8	A Input Cap.	0.0057	0.0050	0.0052
AN2ABLLX8	Z Max Load	1.280	1.280	1.280
AN2ABLLX8	B Input Cap.	0.0056	0.0048	0.0050

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN2ABLLP	A-Z	A_Z (fall)	0.095 + 0.205*Tr + 0.613*C	0.222 + 0.254*Tr + 1.279*C	0.142 + 0.223*Tr + 0.836*C
AN2ABLLP	A-Z	A_Z (rise)	0.093 + 0.213*Tr + 0.784*C	0.221 + 0.213*Tr + 1.623*C	0.141 + 0.213*Tr + 1.114*C
AN2ABLLP	B-Z	B_Z (fall)	0.090 + 0.180*Tr + 0.613*C	0.209 + 0.229*Tr + 1.280*C	0.134 + 0.200*Tr + 0.837*C
AN2ABLLP	B-Z	B_Z (rise)	0.092 + 0.250*Tr + 0.785*C	0.212 + 0.248*Tr + 1.624*C	0.137 + 0.248*Tr + 1.115*C
AN2ABLLX4	A-Z	A_Z (fall)	0.088 + 0.217*Tr + 0.305*C	0.201 + 0.260*Tr + 0.635*C	0.130 + 0.233*Tr + 0.415*C
AN2ABLLX4	A-Z	A_Z (rise)	0.086 + 0.197*Tr + 0.393*C	0.203 + 0.202*Tr + 0.810*C	0.130 + 0.199*Tr + 0.557*C
AN2ABLLX4	B-Z	B_Z (fall)	0.083 + 0.192*Tr + 0.305*C	0.186 + 0.235*Tr + 0.635*C	0.121 + 0.209*Tr + 0.415*C
AN2ABLLX4	B-Z	B_Z (rise)	0.084 + 0.231*Tr + 0.393*C	0.192 + 0.233*Tr + 0.811*C	0.124 + 0.230*Tr + 0.557*C
AN2ABLLX6	A-Z	A_Z (fall)	0.086 + 0.220*Tr + 0.204*C	0.194 + 0.260*Tr + 0.424*C	0.126 + 0.234*Tr + 0.277*C
AN2ABLLX6	A-Z	A_Z (rise)	0.083 + 0.186*Tr + 0.262*C	0.193 + 0.191*Tr + 0.541*C	0.124 + 0.189*Tr + 0.372*C
AN2ABLLX6	B-Z	B_Z (fall)	0.080 + 0.194*Tr + 0.204*C	0.177 + 0.234*Tr + 0.424*C	0.116 + 0.210*Tr + 0.278*C
AN2ABLLX6	B-Z	B_Z (rise)	0.080 + 0.219*Tr + 0.263*C	0.180 + 0.220*Tr + 0.541*C	0.118 + 0.217*Tr + 0.372*C
AN2ABLLX8	A-Z	A_Z (fall)	0.087 + 0.228*Tr + 0.153*C	0.196 + 0.268*Tr + 0.319*C	0.128 + 0.242*Tr + 0.208*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN2ABLLX8	A-Z	A_Z (rise)	0.085 + 0.185*Tr + 0.197*C	0.196 + 0.191*Tr + 0.406*C	0.126 + 0.188*Tr + 0.279*C
AN2ABLLX8	B-Z	B_Z (fall)	0.081 + 0.203*Tr + 0.153*C	0.180 + 0.242*Tr + 0.319*C	0.118 + 0.218*Tr + 0.209*C
AN2ABLLX8	B-Z	B_Z (rise)	0.082 + 0.217*Tr + 0.197*C	0.185 + 0.220*Tr + 0.406*C	0.121 + 0.217*Tr + 0.280*C

Average Leakage Power

picoWatts

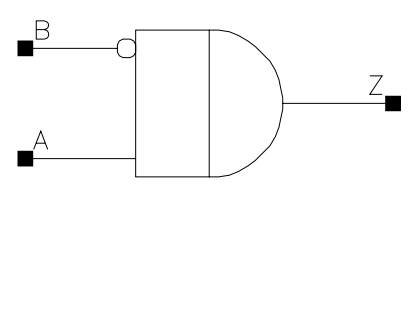
Cell	bc_1.32V_25C	bc_1.32V_125C
AN2ABLLP	6301.600	120270.000
AN2ABLLX4	10330.000	213810.000
AN2ABLLX6	14609.000	308905.000
AN2ABLLX8	19093.800	408398.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AN2ABLLP	Z(max)	0.026 + 0.007*Tr
AN2ABLLX4	Z(max)	0.047 + 0.013*Tr
AN2ABLLX6	Z(max)	0.070 + 0.019*Tr
AN2ABLLX8	Z(max)	0.094 + 0.026*Tr

AN2BLL
AN2BLLP
AN2BLLX4
AN2BLLX6
AN2BLLX8



Function: Function = 2 Input AND ,B inverted input

Truth Table

A	B	Z
0	-	0
-	1	0
1	0	1

Physical Dimensions

Property	AN2BLL	AN2BLLP	AN2BLLX4	AN2BLLX6	AN2BLLX8
Area(um ²)	10.086	12.103	16.138	22.189	24.206

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN2BLL	A Input Cap.	0.0019	0.0015	0.0016
AN2BLL	Z Max Load	0.160	0.160	0.160
AN2BLL	B Input Cap.	0.0014	0.0011	0.0012
AN2BLLP	A Input Cap.	0.0035	0.0030	0.0031
AN2BLLP	Z Max Load	0.320	0.320	0.320
AN2BLLP	B Input Cap.	0.0013	0.0010	0.0011
AN2BLLX4	Z Max Load	0.640	0.640	0.640
AN2BLLX4	B Input Cap.	0.0022	0.0018	0.0019
AN2BLLX4	A Input Cap.	0.0060	0.0050	0.0052
AN2BLLX6	A Input Cap.	0.0089	0.0075	0.0078
AN2BLLX6	Z Max Load	0.960	0.960	0.960
AN2BLLX6	B Input Cap.	0.0027	0.0022	0.0024
AN2BLLX8	A Input Cap.	0.0115	0.0096	0.0101

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN2BLLX8	Z Max Load	1.280	1.280	1.280
AN2BLLX8	B Input Cap.	0.0035	0.0030	0.0031

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN2BLL	A-Z	A_Z (fall)	0.064 + 0.274*Tr + 1.213*C	0.142 + 0.291*Tr + 2.637*C	0.095 + 0.280*Tr + 1.694*C
AN2BLL	A-Z	A_Z (rise)	0.053 + 0.177*Tr + 1.622*C	0.132 + 0.218*Tr + 3.412*C	0.081 + 0.193*Tr + 2.329*C
AN2BLL	B-Z	B_Z (fall)	0.093 + 0.158*Tr + 1.203*C	0.218 + 0.202*Tr + 2.615*C	0.139 + 0.175*Tr + 1.673*C
AN2BLL	B-Z	B_Z (rise)	0.085 + 0.260*Tr + 1.618*C	0.212 + 0.264*Tr + 3.391*C	0.132 + 0.261*Tr + 2.318*C
AN2BLLP	A-Z	A_Z (fall)	0.058 + 0.267*Tr + 0.616*C	0.129 + 0.284*Tr + 1.290*C	0.086 + 0.273*Tr + 0.844*C
AN2BLLP	A-Z	A_Z (rise)	0.048 + 0.161*Tr + 0.796*C	0.118 + 0.194*Tr + 1.650*C	0.073 + 0.176*Tr + 1.134*C
AN2BLLP	B-Z	B_Z (fall)	0.083 + 0.173*Tr + 0.606*C	0.193 + 0.218*Tr + 1.265*C	0.123 + 0.191*Tr + 0.826*C
AN2BLLP	B-Z	B_Z (rise)	0.088 + 0.275*Tr + 0.788*C	0.207 + 0.283*Tr + 1.630*C	0.133 + 0.277*Tr + 1.118*C
AN2BLLX4	A-Z	A_Z (fall)	0.050 + 0.245*Tr + 0.306*C	0.109 + 0.259*Tr + 0.640*C	0.073 + 0.250*Tr + 0.419*C
AN2BLLX4	A-Z	A_Z (rise)	0.043 + 0.181*Tr + 0.397*C	0.103 + 0.212*Tr + 0.821*C	0.064 + 0.192*Tr + 0.564*C
AN2BLLX4	B-Z	B_Z (fall)	0.086 + 0.190*Tr + 0.303*C	0.194 + 0.232*Tr + 0.633*C	0.126 + 0.207*Tr + 0.413*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN2BLLX4	B-Z	B_Z (rise)	0.087 + 0.263*Tr + 0.395*C	0.201 + 0.273*Tr + 0.813*C	0.130 + 0.266*Tr + 0.560*C
AN2BLLX6	A-Z	A_Z (fall)	0.050 + 0.246*Tr + 0.205*C	0.109 + 0.260*Tr + 0.428*C	0.073 + 0.251*Tr + 0.281*C
AN2BLLX6	A-Z	A_Z (rise)	0.043 + 0.181*Tr + 0.265*C	0.104 + 0.214*Tr + 0.549*C	0.065 + 0.193*Tr + 0.377*C
AN2BLLX6	B-Z	B_Z (fall)	0.090 + 0.206*Tr + 0.203*C	0.201 + 0.247*Tr + 0.423*C	0.131 + 0.222*Tr + 0.276*C
AN2BLLX6	B-Z	B_Z (rise)	0.089 + 0.259*Tr + 0.263*C	0.205 + 0.271*Tr + 0.544*C	0.133 + 0.263*Tr + 0.374*C
AN2BLLX8	A-Z	A_Z (fall)	0.049 + 0.245*Tr + 0.154*C	0.107 + 0.258*Tr + 0.321*C	0.072 + 0.249*Tr + 0.211*C
AN2BLLX8	A-Z	A_Z (rise)	0.042 + 0.180*Tr + 0.199*C	0.101 + 0.211*Tr + 0.412*C	0.063 + 0.192*Tr + 0.283*C
AN2BLLX8	B-Z	B_Z (fall)	0.086 + 0.205*Tr + 0.152*C	0.191 + 0.243*Tr + 0.318*C	0.125 + 0.220*Tr + 0.207*C
AN2BLLX8	B-Z	B_Z (rise)	0.085 + 0.251*Tr + 0.198*C	0.194 + 0.262*Tr + 0.408*C	0.126 + 0.255*Tr + 0.280*C

Average Leakage Power

picoWatts

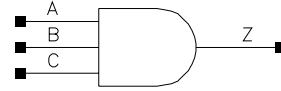
Cell	bc_1.32V_25C	bc_1.32V_125C
AN2BLL	4412.420	81231.000
AN2BLLP	6439.400	129520.000
AN2BLLX4	11138.200	237212.000
AN2BLLX6	16434.000	352772.000
AN2BLLX8	21360.500	462845.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AN2BLL	Z(max)	$0.018 + 0.006 * Tr$
AN2BLLP	Z(max)	$0.021 + 0.016 * Tr$
AN2BLLX4	Z(max)	$0.036 + 0.037 * Tr$
AN2BLLX6	Z(max)	$0.054 + 0.056 * Tr$
AN2BLLX8	Z(max)	$0.071 + 0.075 * Tr$

AN3LL
AN3LLP
AN3LLX4
AN3LLX6
AN3LLX8



Function: Function = 3 Input AND

Boolean Expression: $Z = A \bullet B \bullet C$

Physical Dimensions

Property	AN3LL	AN3LLP	AN3LLX4	AN3LLX6	AN3LLX8
Area(um ²)	12.103	12.103	16.138	22.189	28.241

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3LL	A Input Cap.	0.0018	0.0015	0.0016
AN3LL	B Input Cap.	0.0016	0.0014	0.0015
AN3LL	Z Max Load	0.160	0.160	0.160
AN3LL	C Input Cap.	0.0016	0.0013	0.0014
AN3LLP	B Input Cap.	0.0027	0.0023	0.0025
AN3LLP	Z Max Load	0.320	0.320	0.320
AN3LLP	C Input Cap.	0.0026	0.0022	0.0023
AN3LLP	A Input Cap.	0.0029	0.0025	0.0027
AN3LLX4	Z Max Load	0.640	0.640	0.640
AN3LLX4	C Input Cap.	0.0048	0.0041	0.0043
AN3LLX4	A Input Cap.	0.0051	0.0045	0.0047
AN3LLX4	B Input Cap.	0.0050	0.0044	0.0045
AN3LLX6	B Input Cap.	0.0077	0.0067	0.0070
AN3LLX6	C Input Cap.	0.0073	0.0062	0.0065
AN3LLX6	A Input Cap.	0.0083	0.0073	0.0076
AN3LLX6	Z Max Load	0.960	0.960	0.960
AN3LLX8	A Input Cap.	0.0104	0.0091	0.0095
AN3LLX8	B Input Cap.	0.0100	0.0088	0.0091

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3LLX8	Z Max Load	1.280	1.280	1.280
AN3LLX8	C Input Cap.	0.0095	0.0081	0.0085

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3LL	A-Z	A_Z (fall)	0.086 + 0.314*Tr + 1.240*C	0.193 + 0.336*Tr + 2.716*C	0.128 + 0.322*Tr + 1.741*C
AN3LL	A-Z	A_Z (rise)	0.063 + 0.141*Tr + 1.644*C	0.170 + 0.174*Tr + 3.483*C	0.100 + 0.158*Tr + 2.367*C
AN3LL	B-Z	B_Z (fall)	0.079 + 0.303*Tr + 1.236*C	0.178 + 0.325*Tr + 2.700*C	0.118 + 0.312*Tr + 1.733*C
AN3LL	B-Z	B_Z (rise)	0.061 + 0.164*Tr + 1.641*C	0.162 + 0.200*Tr + 3.479*C	0.096 + 0.180*Tr + 2.363*C
AN3LL	C-Z	C_Z (fall)	0.072 + 0.291*Tr + 1.232*C	0.162 + 0.312*Tr + 2.687*C	0.107 + 0.300*Tr + 1.727*C
AN3LL	C-Z	C_Z (rise)	0.059 + 0.177*Tr + 1.635*C	0.153 + 0.217*Tr + 3.466*C	0.092 + 0.192*Tr + 2.353*C
AN3LLP	A-Z	A_Z (fall)	0.080 + 0.301*Tr + 0.633*C	0.177 + 0.325*Tr + 1.335*C	0.118 + 0.310*Tr + 0.873*C
AN3LLP	A-Z	A_Z (rise)	0.061 + 0.151*Tr + 0.808*C	0.163 + 0.183*Tr + 1.691*C	0.096 + 0.168*Tr + 1.153*C
AN3LLP	B-Z	B_Z (fall)	0.074 + 0.291*Tr + 0.631*C	0.163 + 0.314*Tr + 1.327*C	0.109 + 0.300*Tr + 0.869*C
AN3LLP	B-Z	B_Z (rise)	0.059 + 0.174*Tr + 0.806*C	0.155 + 0.209*Tr + 1.689*C	0.092 + 0.190*Tr + 1.152*C
AN3LLP	C-Z	C_Z (fall)	0.067 + 0.278*Tr + 0.629*C	0.148 + 0.300*Tr + 1.321*C	0.099 + 0.287*Tr + 0.866*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3LLP	C-Z	C_Z (rise)	0.057 + 0.187*Tr + 0.803*C	0.145 + 0.225*Tr + 1.683*C	0.088 + 0.202*Tr + 1.147*C
AN3LLX4	A-Z	A_Z (fall)	0.075 + 0.293*Tr + 0.314*C	0.163 + 0.316*Tr + 0.660*C	0.109 + 0.301*Tr + 0.432*C
AN3LLX4	A-Z	A_Z (rise)	0.057 + 0.151*Tr + 0.403*C	0.149 + 0.179*Tr + 0.841*C	0.089 + 0.166*Tr + 0.575*C
AN3LLX4	B-Z	B_Z (fall)	0.069 + 0.281*Tr + 0.313*C	0.150 + 0.303*Tr + 0.657*C	0.101 + 0.289*Tr + 0.430*C
AN3LLX4	B-Z	B_Z (rise)	0.055 + 0.173*Tr + 0.403*C	0.142 + 0.204*Tr + 0.840*C	0.086 + 0.187*Tr + 0.574*C
AN3LLX4	C-Z	C_Z (fall)	0.062 + 0.268*Tr + 0.312*C	0.135 + 0.289*Tr + 0.654*C	0.091 + 0.276*Tr + 0.429*C
AN3LLX4	C-Z	C_Z (rise)	0.053 + 0.185*Tr + 0.401*C	0.132 + 0.219*Tr + 0.837*C	0.081 + 0.198*Tr + 0.572*C
AN3LLX6	A-Z	A_Z (fall)	0.072 + 0.288*Tr + 0.209*C	0.156 + 0.308*Tr + 0.440*C	0.105 + 0.295*Tr + 0.288*C
AN3LLX6	A-Z	A_Z (rise)	0.056 + 0.151*Tr + 0.269*C	0.148 + 0.181*Tr + 0.562*C	0.087 + 0.167*Tr + 0.384*C
AN3LLX6	B-Z	B_Z (fall)	0.066 + 0.276*Tr + 0.209*C	0.144 + 0.296*Tr + 0.438*C	0.097 + 0.283*Tr + 0.286*C
AN3LLX6	B-Z	B_Z (rise)	0.054 + 0.174*Tr + 0.269*C	0.140 + 0.206*Tr + 0.561*C	0.084 + 0.188*Tr + 0.384*C
AN3LLX6	C-Z	C_Z (fall)	0.060 + 0.264*Tr + 0.208*C	0.130 + 0.281*Tr + 0.436*C	0.087 + 0.270*Tr + 0.286*C
AN3LLX6	C-Z	C_Z (rise)	0.052 + 0.186*Tr + 0.268*C	0.131 + 0.222*Tr + 0.559*C	0.080 + 0.200*Tr + 0.382*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3LLX8	A-Z	A_Z (fall)	0.072 + 0.291*Tr + 0.157*C	0.156 + 0.313*Tr + 0.331*C	0.105 + 0.299*Tr + 0.216*C
AN3LLX8	A-Z	A_Z (rise)	0.055 + 0.149*Tr + 0.202*C	0.143 + 0.177*Tr + 0.421*C	0.085 + 0.163*Tr + 0.288*C
AN3LLX8	B-Z	B_Z (fall)	0.066 + 0.279*Tr + 0.157*C	0.144 + 0.300*Tr + 0.329*C	0.097 + 0.287*Tr + 0.215*C
AN3LLX8	B-Z	B_Z (rise)	0.053 + 0.171*Tr + 0.202*C	0.136 + 0.201*Tr + 0.421*C	0.082 + 0.184*Tr + 0.288*C
AN3LLX8	C-Z	C_Z (fall)	0.060 + 0.266*Tr + 0.156*C	0.129 + 0.285*Tr + 0.327*C	0.087 + 0.273*Tr + 0.215*C
AN3LLX8	C-Z	C_Z (rise)	0.051 + 0.183*Tr + 0.201*C	0.126 + 0.215*Tr + 0.419*C	0.078 + 0.195*Tr + 0.286*C

Average Leakage Power

picoWatts

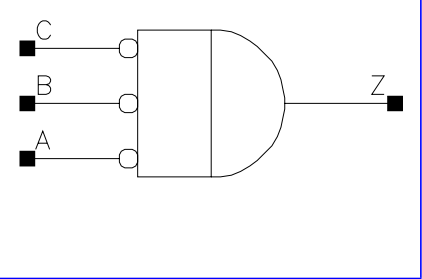
Cell	bc_1.32V_25C	bc_1.32V_125C
AN3LL	3054.150	62505.800
AN3LLP	5092.320	111244.000
AN3LLX4	9734.820	215745.000
AN3LLX6	14788.800	326243.000
AN3LLX8	19469.700	431490.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AN3LL	Z(max)	0.013 + 0.007*Tr
AN3LLP	Z(max)	0.025 + 0.014*Tr
AN3LLX4	Z(max)	0.045 + 0.029*Tr
AN3LLX6	Z(max)	0.068 + 0.044*Tr
AN3LLX8	Z(max)	0.088 + 0.059*Tr

AN3ABCLLP
AN3ABCLLX4
AN3ABCLLX6
AN3ABCLLX8



Function: Function = 3 Input And,A, B and C Inputs Inverted

Truth Table

A	B	C	Z
1	-	-	0
-	-	1	0
-	1	-	0
0	0	0	1

Physical Dimensions

Property	AN3ABCLLP	AN3ABCLLX4	AN3ABCLLX6	AN3ABCLLX8
Area(um2)	14.120	16.138	20.172	22.189

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3ABCLLP	C Input Cap.	0.0015	0.0012	0.0013
AN3ABCLLP	A Input Cap.	0.0017	0.0014	0.0015
AN3ABCLLP	Z Max Load	0.320	0.320	0.320
AN3ABCLLP	B Input Cap.	0.0016	0.0013	0.0014
AN3ABCLLX4	A Input Cap.	0.0029	0.0025	0.0026
AN3ABCLLX4	Z Max Load	0.640	0.640	0.640
AN3ABCLLX4	B Input Cap.	0.0028	0.0024	0.0025
AN3ABCLLX4	C Input Cap.	0.0027	0.0023	0.0024
AN3ABCLLX6	C Input Cap.	0.0039	0.0034	0.0035
AN3ABCLLX6	A Input Cap.	0.0042	0.0036	0.0038
AN3ABCLLX6	B Input Cap.	0.0038	0.0033	0.0035
AN3ABCLLX6	Z Max Load	0.960	0.960	0.960
AN3ABCLLX8	B Input Cap.	0.0049	0.0043	0.0045

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3ABCLLX8	C Input Cap.	0.0048	0.0041	0.0043
AN3ABCLLX8	A Input Cap.	0.0049	0.0044	0.0046
AN3ABCLLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3ABCLLP	A-Z	A_Z (fall)	0.109 + 0.224*Tr + 0.613*C	0.262 + 0.285*Tr + 1.280*C	0.164 + 0.247*Tr + 0.837*C
AN3ABCLLP	A-Z	A_Z (rise)	0.129 + 0.200*Tr + 0.784*C	0.322 + 0.200*Tr + 1.622*C	0.201 + 0.200*Tr + 1.114*C
AN3ABCLLP	B-Z	B_Z (fall)	0.106 + 0.205*Tr + 0.613*C	0.251 + 0.266*Tr + 1.280*C	0.158 + 0.229*Tr + 0.837*C
AN3ABCLLP	B-Z	B_Z (rise)	0.127 + 0.241*Tr + 0.785*C	0.306 + 0.237*Tr + 1.624*C	0.194 + 0.238*Tr + 1.115*C
AN3ABCLLP	C-Z	C_Z (fall)	0.098 + 0.183*Tr + 0.613*C	0.230 + 0.242*Tr + 1.280*C	0.146 + 0.207*Tr + 0.837*C
AN3ABCLLP	C-Z	C_Z (rise)	0.114 + 0.276*Tr + 0.785*C	0.267 + 0.274*Tr + 1.623*C	0.172 + 0.273*Tr + 1.114*C
AN3ABCLLX4	A-Z	A_Z (fall)	0.104 + 0.245*Tr + 0.305*C	0.241 + 0.297*Tr + 0.636*C	0.154 + 0.264*Tr + 0.416*C
AN3ABCLLX4	A-Z	A_Z (rise)	0.114 + 0.179*Tr + 0.392*C	0.277 + 0.184*Tr + 0.810*C	0.174 + 0.182*Tr + 0.557*C
AN3ABCLLX4	B-Z	B_Z (fall)	0.099 + 0.224*Tr + 0.305*C	0.227 + 0.277*Tr + 0.636*C	0.146 + 0.245*Tr + 0.416*C
AN3ABCLLX4	B-Z	B_Z (rise)	0.110 + 0.217*Tr + 0.392*C	0.260 + 0.217*Tr + 0.810*C	0.167 + 0.216*Tr + 0.557*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3ABCLLX4	C-Z	C_Z (fall)	0.091 + 0.201*Tr + 0.305*C	0.206 + 0.252*Tr + 0.636*C	0.134 + 0.222*Tr + 0.416*C
AN3ABCLLX4	C-Z	C_Z (rise)	0.100 + 0.247*Tr + 0.393*C	0.228 + 0.246*Tr + 0.810*C	0.148 + 0.244*Tr + 0.557*C
AN3ABCLLX6	A-Z	A_Z (fall)	0.104 + 0.255*Tr + 0.204*C	0.238 + 0.305*Tr + 0.425*C	0.153 + 0.273*Tr + 0.278*C
AN3ABCLLX6	A-Z	A_Z (rise)	0.110 + 0.168*Tr + 0.262*C	0.265 + 0.174*Tr + 0.541*C	0.168 + 0.171*Tr + 0.372*C
AN3ABCLLX6	B-Z	B_Z (fall)	0.098 + 0.234*Tr + 0.204*C	0.221 + 0.285*Tr + 0.425*C	0.143 + 0.253*Tr + 0.278*C
AN3ABCLLX6	B-Z	B_Z (rise)	0.106 + 0.205*Tr + 0.262*C	0.246 + 0.205*Tr + 0.541*C	0.159 + 0.204*Tr + 0.372*C
AN3ABCLLX6	C-Z	C_Z (fall)	0.089 + 0.210*Tr + 0.204*C	0.199 + 0.258*Tr + 0.425*C	0.130 + 0.229*Tr + 0.278*C
AN3ABCLLX6	C-Z	C_Z (rise)	0.096 + 0.231*Tr + 0.262*C	0.216 + 0.230*Tr + 0.541*C	0.141 + 0.229*Tr + 0.372*C
AN3ABCLLX8	A-Z	A_Z (fall)	0.105 + 0.265*Tr + 0.153*C	0.240 + 0.314*Tr + 0.319*C	0.154 + 0.282*Tr + 0.209*C
AN3ABCLLX8	A-Z	A_Z (rise)	0.110 + 0.164*Tr + 0.197*C	0.264 + 0.172*Tr + 0.406*C	0.167 + 0.168*Tr + 0.279*C
AN3ABCLLX8	B-Z	B_Z (fall)	0.100 + 0.244*Tr + 0.153*C	0.225 + 0.293*Tr + 0.319*C	0.146 + 0.262*Tr + 0.209*C
AN3ABCLLX8	B-Z	B_Z (rise)	0.107 + 0.200*Tr + 0.197*C	0.248 + 0.201*Tr + 0.406*C	0.160 + 0.200*Tr + 0.279*C
AN3ABCLLX8	C-Z	C_Z (fall)	0.091 + 0.220*Tr + 0.153*C	0.202 + 0.267*Tr + 0.319*C	0.132 + 0.238*Tr + 0.209*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3ABCLLX8	C-Z	C_Z (rise)	0.097 + 0.227*Tr + 0.197*C	0.219 + 0.227*Tr + 0.406*C	0.143 + 0.225*Tr + 0.279*C

Average Leakage Power

picoWatts

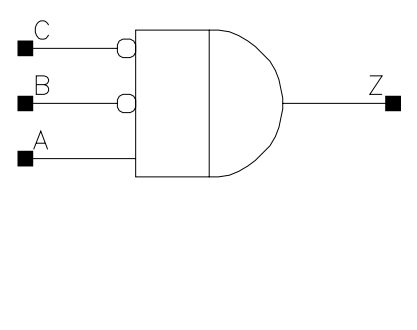
Cell	bc_1.32V_25C	bc_1.32V_125C
AN3ABCLLP	7234.930	131657.000
AN3ABCLLX4	11073.300	223538.000
AN3ABCLLX6	15291.200	318520.000
AN3ABCLLX8	19690.300	416615.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AN3ABCLLP	Z(max)	0.029 + 0.006*Tr
AN3ABCLLX4	Z(max)	0.050 + 0.011*Tr
AN3ABCLLX6	Z(max)	0.076 + 0.015*Tr
AN3ABCLLX8	Z(max)	0.101 + 0.020*Tr

AN3BCLL
AN3BCLLP
AN3BCLLX4
AN3BCLLX6
AN3BCLLX8



Function: Function = 3 Input AND, B and C Inputs Inverted

Truth Table

A	B	C	Z
0	-	-	0
-	-	1	0
-	1	-	0
1	0	0	1

Physical Dimensions

Property	AN3BCLL	AN3BCLLP	AN3BCLLX4	AN3BCLLX6	AN3BCLLX8
Area(um2)	14.120	14.120	18.155	24.206	26.224

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3BCLL	B Input Cap.	0.0016	0.0013	0.0014
AN3BCLL	C Input Cap.	0.0018	0.0014	0.0015
AN3BCLL	A Input Cap.	0.0019	0.0015	0.0016
AN3BCLL	Z Max Load	0.160	0.160	0.160
AN3BCLLP	Z Max Load	0.320	0.320	0.320
AN3BCLLP	B Input Cap.	0.0017	0.0014	0.0015
AN3BCLLP	C Input Cap.	0.0018	0.0015	0.0016
AN3BCLLP	A Input Cap.	0.0032	0.0027	0.0028
AN3BCLLX4	C Input Cap.	0.0030	0.0026	0.0027
AN3BCLLX4	A Input Cap.	0.0060	0.0051	0.0053
AN3BCLLX4	Z Max Load	0.640	0.640	0.640
AN3BCLLX4	B Input Cap.	0.0027	0.0023	0.0024

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3BCLLX6	C Input Cap.	0.0044	0.0039	0.0040
AN3BCLLX6	Z Max Load	0.960	0.960	0.960
AN3BCLLX6	A Input Cap.	0.0088	0.0074	0.0077
AN3BCLLX6	B Input Cap.	0.0041	0.0035	0.0037
AN3BCLLX8	Z Max Load	1.280	1.280	1.280
AN3BCLLX8	B Input Cap.	0.0051	0.0044	0.0046
AN3BCLLX8	C Input Cap.	0.0056	0.0049	0.0051
AN3BCLLX8	A Input Cap.	0.0112	0.0094	0.0098

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3BCLL	A-Z	A_Z (fall)	0.060 + 0.270*Tr + 1.208*C	0.133 + 0.285*Tr + 2.627*C	0.089 + 0.275*Tr + 1.688*C
AN3BCLL	A-Z	A_Z (rise)	0.049 + 0.172*Tr + 1.621*C	0.123 + 0.212*Tr + 3.409*C	0.076 + 0.188*Tr + 2.327*C
AN3BCLL	B-Z	B_Z (fall)	0.095 + 0.180*Tr + 1.197*C	0.226 + 0.234*Tr + 2.600*C	0.143 + 0.201*Tr + 1.666*C
AN3BCLL	B-Z	B_Z (rise)	0.092 + 0.254*Tr + 1.615*C	0.226 + 0.251*Tr + 3.383*C	0.141 + 0.251*Tr + 2.312*C
AN3BCLL	C-Z	C_Z (fall)	0.100 + 0.204*Tr + 1.197*C	0.242 + 0.256*Tr + 2.602*C	0.152 + 0.223*Tr + 1.665*C
AN3BCLL	C-Z	C_Z (rise)	0.094 + 0.214*Tr + 1.611*C	0.239 + 0.212*Tr + 3.384*C	0.147 + 0.214*Tr + 2.311*C
AN3BCLLP	A-Z	A_Z (fall)	0.054 + 0.254*Tr + 0.614*C	0.118 + 0.269*Tr + 1.285*C	0.079 + 0.259*Tr + 0.842*C
AN3BCLLP	A-Z	A_Z (rise)	0.046 + 0.180*Tr + 0.794*C	0.112 + 0.216*Tr + 1.644*C	0.069 + 0.194*Tr + 1.129*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3BCLLP	B-Z	B_Z (fall)	0.094 + 0.194*Tr + 0.608*C	0.221 + 0.248*Tr + 1.271*C	0.141 + 0.215*Tr + 0.830*C
AN3BCLLP	B-Z	B_Z (rise)	0.099 + 0.265*Tr + 0.789*C	0.236 + 0.266*Tr + 1.628*C	0.150 + 0.263*Tr + 1.118*C
AN3BCLLP	C-Z	C_Z (fall)	0.099 + 0.215*Tr + 0.608*C	0.237 + 0.268*Tr + 1.271*C	0.149 + 0.235*Tr + 0.830*C
AN3BCLLP	C-Z	C_Z (rise)	0.101 + 0.221*Tr + 0.788*C	0.249 + 0.222*Tr + 1.631*C	0.156 + 0.222*Tr + 1.119*C
AN3BCLLX4	A-Z	A_Z (fall)	0.050 + 0.245*Tr + 0.306*C	0.108 + 0.259*Tr + 0.640*C	0.073 + 0.250*Tr + 0.419*C
AN3BCLLX4	A-Z	A_Z (rise)	0.043 + 0.180*Tr + 0.397*C	0.102 + 0.212*Tr + 0.820*C	0.064 + 0.192*Tr + 0.564*C
AN3BCLLX4	B-Z	B_Z (fall)	0.087 + 0.207*Tr + 0.303*C	0.196 + 0.252*Tr + 0.633*C	0.127 + 0.225*Tr + 0.413*C
AN3BCLLX4	B-Z	B_Z (rise)	0.087 + 0.240*Tr + 0.394*C	0.205 + 0.241*Tr + 0.813*C	0.132 + 0.239*Tr + 0.558*C
AN3BCLLX4	C-Z	C_Z (fall)	0.093 + 0.229*Tr + 0.303*C	0.213 + 0.274*Tr + 0.632*C	0.137 + 0.245*Tr + 0.413*C
AN3BCLLX4	C-Z	C_Z (rise)	0.090 + 0.200*Tr + 0.394*C	0.219 + 0.204*Tr + 0.813*C	0.138 + 0.202*Tr + 0.559*C
AN3BCLLX6	A-Z	A_Z (fall)	0.050 + 0.246*Tr + 0.205*C	0.108 + 0.260*Tr + 0.428*C	0.073 + 0.251*Tr + 0.281*C
AN3BCLLX6	A-Z	A_Z (rise)	0.043 + 0.180*Tr + 0.265*C	0.103 + 0.214*Tr + 0.548*C	0.065 + 0.193*Tr + 0.377*C
AN3BCLLX6	B-Z	B_Z (fall)	0.089 + 0.217*Tr + 0.203*C	0.198 + 0.259*Tr + 0.423*C	0.129 + 0.233*Tr + 0.276*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3BCLLX6	B-Z	B_Z (rise)	0.089 + 0.235*Tr + 0.263*C	0.208 + 0.237*Tr + 0.543*C	0.134 + 0.234*Tr + 0.373*C
AN3BCLLX6	C-Z	C_Z (fall)	0.095 + 0.238*Tr + 0.203*C	0.215 + 0.281*Tr + 0.423*C	0.139 + 0.254*Tr + 0.276*C
AN3BCLLX6	C-Z	C_Z (rise)	0.091 + 0.196*Tr + 0.263*C	0.221 + 0.200*Tr + 0.543*C	0.139 + 0.198*Tr + 0.373*C
AN3BCLLX8	A-Z	A_Z (fall)	0.049 + 0.245*Tr + 0.154*C	0.107 + 0.259*Tr + 0.322*C	0.072 + 0.250*Tr + 0.211*C
AN3BCLLX8	A-Z	A_Z (rise)	0.042 + 0.180*Tr + 0.199*C	0.101 + 0.212*Tr + 0.412*C	0.063 + 0.192*Tr + 0.283*C
AN3BCLLX8	B-Z	B_Z (fall)	0.086 + 0.218*Tr + 0.152*C	0.193 + 0.258*Tr + 0.318*C	0.126 + 0.233*Tr + 0.207*C
AN3BCLLX8	B-Z	B_Z (rise)	0.086 + 0.228*Tr + 0.198*C	0.201 + 0.231*Tr + 0.408*C	0.129 + 0.228*Tr + 0.280*C
AN3BCLLX8	C-Z	C_Z (fall)	0.093 + 0.240*Tr + 0.152*C	0.209 + 0.281*Tr + 0.318*C	0.136 + 0.254*Tr + 0.208*C
AN3BCLLX8	C-Z	C_Z (rise)	0.088 + 0.190*Tr + 0.197*C	0.213 + 0.195*Tr + 0.408*C	0.135 + 0.193*Tr + 0.280*C

Average Leakage Power

picoWatts

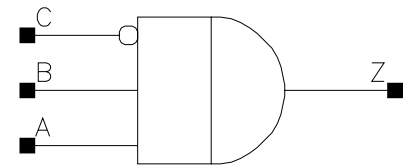
Cell	bc_1.32V_25C	bc_1.32V_125C
AN3BCLL	5533.330	96459.500
AN3BCLLP	7506.870	145443.000
AN3BCLLX4	12389.700	260048.000
AN3BCLLX6	18019.500	383740.000
AN3BCLLX8	23326.700	502603.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AN3BCLL	Z(max)	$0.019 + 0.006 * Tr$
AN3BCLLP	Z(max)	$0.031 + 0.007 * Tr$
AN3BCLLX4	Z(max)	$0.055 + 0.013 * Tr$
AN3BCLLX6	Z(max)	$0.084 + 0.019 * Tr$
AN3BCLLX8	Z(max)	$0.110 + 0.026 * Tr$

AN3CLL
AN3CLLP
AN3CLLX4
AN3CLLX6
AN3CLLX8



Function: Function = 3 input AND ,C inverted input

Truth Table

A	B	C	Z
-	0	-	0
0	-	-	0
-	-	1	0
1	1	0	1

Physical Dimensions

Property	AN3CLL	AN3CLLP	AN3CLLX4	AN3CLLX6	AN3CLLX8
Area(um ²)	14.120	14.120	16.138	24.206	30.258

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3CLL	Z Max Load	0.160	0.160	0.160
AN3CLL	A Input Cap.	0.0017	0.0014	0.0015
AN3CLL	B Input Cap.	0.0016	0.0014	0.0015
AN3CLL	C Input Cap.	0.0018	0.0014	0.0015
AN3CLLP	Z Max Load	0.320	0.320	0.320
AN3CLLP	A Input Cap.	0.0028	0.0024	0.0025
AN3CLLP	B Input Cap.	0.0027	0.0024	0.0025
AN3CLLP	C Input Cap.	0.0017	0.0014	0.0015
AN3CLLX4	C Input Cap.	0.0020	0.0017	0.0018
AN3CLLX4	Z Max Load	0.640	0.640	0.640
AN3CLLX4	A Input Cap.	0.0047	0.0040	0.0042
AN3CLLX4	B Input Cap.	0.0049	0.0043	0.0044
AN3CLLX6	Z Max Load	0.960	0.960	0.960

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3CLLX6	B Input Cap.	0.0077	0.0068	0.0070
AN3CLLX6	C Input Cap.	0.0031	0.0026	0.0027
AN3CLLX6	A Input Cap.	0.0073	0.0062	0.0065
AN3CLLX8	B Input Cap.	0.0101	0.0089	0.0092
AN3CLLX8	C Input Cap.	0.0035	0.0030	0.0031
AN3CLLX8	Z Max Load	1.280	1.280	1.280
AN3CLLX8	A Input Cap.	0.0096	0.0082	0.0085

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3CLL	A-Z	A_Z (fall)	0.086 + 0.314*Tr + 1.239*C	0.194 + 0.336*Tr + 2.713*C	0.128 + 0.322*Tr + 1.739*C
AN3CLL	A-Z	A_Z (rise)	0.063 + 0.137*Tr + 1.643*C	0.171 + 0.169*Tr + 3.479*C	0.100 + 0.154*Tr + 2.365*C
AN3CLL	B-Z	B_Z (fall)	0.077 + 0.303*Tr + 1.235*C	0.175 + 0.325*Tr + 2.696*C	0.116 + 0.312*Tr + 1.731*C
AN3CLL	B-Z	B_Z (rise)	0.060 + 0.160*Tr + 1.640*C	0.159 + 0.196*Tr + 3.474*C	0.095 + 0.176*Tr + 2.360*C
AN3CLL	C-Z	C_Z (fall)	0.098 + 0.158*Tr + 1.214*C	0.235 + 0.205*Tr + 2.644*C	0.149 + 0.177*Tr + 1.692*C
AN3CLL	C-Z	C_Z (rise)	0.092 + 0.264*Tr + 1.629*C	0.232 + 0.268*Tr + 3.438*C	0.143 + 0.265*Tr + 2.336*C
AN3CLLP	A-Z	A_Z (fall)	0.077 + 0.299*Tr + 0.630*C	0.171 + 0.322*Tr + 1.325*C	0.114 + 0.307*Tr + 0.866*C
AN3CLLP	A-Z	A_Z (rise)	0.061 + 0.145*Tr + 0.806*C	0.163 + 0.176*Tr + 1.686*C	0.096 + 0.161*Tr + 1.151*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3CLLP	B-Z	B_Z (fall)	0.070 + 0.288*Tr + 0.628*C	0.156 + 0.310*Tr + 1.318*C	0.104 + 0.296*Tr + 0.863*C
AN3CLLP	B-Z	B_Z (rise)	0.058 + 0.169*Tr + 0.805*C	0.152 + 0.202*Tr + 1.684*C	0.091 + 0.184*Tr + 1.150*C
AN3CLLP	C-Z	C_Z (fall)	0.099 + 0.176*Tr + 0.616*C	0.234 + 0.226*Tr + 1.290*C	0.149 + 0.196*Tr + 0.842*C
AN3CLLP	C-Z	C_Z (rise)	0.102 + 0.280*Tr + 0.797*C	0.248 + 0.288*Tr + 1.663*C	0.156 + 0.283*Tr + 1.134*C
AN3CLLX4	A-Z	A_Z (fall)	0.062 + 0.268*Tr + 0.312*C	0.135 + 0.289*Tr + 0.654*C	0.091 + 0.276*Tr + 0.429*C
AN3CLLX4	A-Z	A_Z (rise)	0.053 + 0.185*Tr + 0.401*C	0.132 + 0.219*Tr + 0.837*C	0.081 + 0.198*Tr + 0.572*C
AN3CLLX4	B-Z	B_Z (fall)	0.069 + 0.281*Tr + 0.313*C	0.150 + 0.303*Tr + 0.657*C	0.101 + 0.289*Tr + 0.430*C
AN3CLLX4	B-Z	B_Z (rise)	0.055 + 0.173*Tr + 0.403*C	0.142 + 0.204*Tr + 0.841*C	0.086 + 0.187*Tr + 0.575*C
AN3CLLX4	C-Z	C_Z (fall)	0.106 + 0.192*Tr + 0.310*C	0.243 + 0.236*Tr + 0.652*C	0.157 + 0.209*Tr + 0.425*C
AN3CLLX4	C-Z	C_Z (rise)	0.097 + 0.257*Tr + 0.399*C	0.241 + 0.266*Tr + 0.830*C	0.149 + 0.260*Tr + 0.567*C
AN3CLLX6	A-Z	A_Z (fall)	0.060 + 0.263*Tr + 0.208*C	0.129 + 0.281*Tr + 0.436*C	0.087 + 0.270*Tr + 0.286*C
AN3CLLX6	A-Z	A_Z (rise)	0.052 + 0.187*Tr + 0.268*C	0.131 + 0.222*Tr + 0.559*C	0.080 + 0.200*Tr + 0.382*C
AN3CLLX6	B-Z	B_Z (fall)	0.066 + 0.276*Tr + 0.209*C	0.143 + 0.295*Tr + 0.438*C	0.096 + 0.283*Tr + 0.286*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN3CLLX6	B-Z	B_Z (rise)	0.054 + 0.175*Tr + 0.269*C	0.140 + 0.207*Tr + 0.562*C	0.084 + 0.189*Tr + 0.384*C
AN3CLLX6	C-Z	C_Z (fall)	0.105 + 0.202*Tr + 0.207*C	0.236 + 0.243*Tr + 0.434*C	0.154 + 0.218*Tr + 0.283*C
AN3CLLX6	C-Z	C_Z (rise)	0.097 + 0.250*Tr + 0.267*C	0.240 + 0.260*Tr + 0.555*C	0.149 + 0.253*Tr + 0.379*C
AN3CLLX8	A-Z	A_Z (fall)	0.060 + 0.266*Tr + 0.156*C	0.130 + 0.285*Tr + 0.328*C	0.087 + 0.274*Tr + 0.215*C
AN3CLLX8	A-Z	A_Z (rise)	0.051 + 0.183*Tr + 0.201*C	0.127 + 0.215*Tr + 0.419*C	0.078 + 0.195*Tr + 0.287*C
AN3CLLX8	B-Z	B_Z (fall)	0.066 + 0.279*Tr + 0.157*C	0.144 + 0.300*Tr + 0.329*C	0.097 + 0.287*Tr + 0.215*C
AN3CLLX8	B-Z	B_Z (rise)	0.053 + 0.171*Tr + 0.202*C	0.136 + 0.201*Tr + 0.421*C	0.082 + 0.184*Tr + 0.288*C
AN3CLLX8	C-Z	C_Z (fall)	0.104 + 0.204*Tr + 0.156*C	0.234 + 0.243*Tr + 0.326*C	0.153 + 0.219*Tr + 0.213*C
AN3CLLX8	C-Z	C_Z (rise)	0.094 + 0.245*Tr + 0.200*C	0.230 + 0.254*Tr + 0.416*C	0.143 + 0.248*Tr + 0.284*C

Average Leakage Power

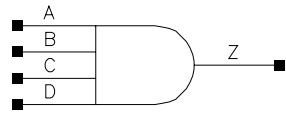
picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AN3CLL	4614.120	84005.700
AN3CLLP	6644.430	132553.000
AN3CLLX4	11360.600	242580.000
AN3CLLX6	16683.300	359582.000
AN3CLLX8	21702.500	472247.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AN3CLL	Z(max)	$0.016 + 0.005 * Tr$
AN3CLLP	Z(max)	$0.024 + 0.014 * Tr$
AN3CLLX4	Z(max)	$0.058 + 0.010 * Tr$
AN3CLLX6	Z(max)	$0.086 + 0.015 * Tr$
AN3CLLX8	Z(max)	$0.081 + 0.062 * Tr$

<p>AN4LL AN4LLP AN4LLX4 AN4LLX6 AN4LLX8</p> <p>Function: Function = 4 Input AND</p> <p>Boolean Expression: $Z = A \bullet B \bullet C \bullet D$</p>	
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Physical Dimensions

Property	AN4LL	AN4LLP	AN4LLX4	AN4LLX6	AN4LLX8
Area(um ²)	14.120	14.120	18.155	24.206	28.241

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4LL	A Input Cap.	0.0018	0.0015	0.0016
AN4LL	D Input Cap.	0.0016	0.0013	0.0014
AN4LL	Z Max Load	0.160	0.160	0.160
AN4LL	B Input Cap.	0.0017	0.0014	0.0015
AN4LL	C Input Cap.	0.0017	0.0015	0.0015
AN4LLP	Z Max Load	0.320	0.320	0.320
AN4LLP	B Input Cap.	0.0025	0.0022	0.0023
AN4LLP	C Input Cap.	0.0024	0.0021	0.0022
AN4LLP	A Input Cap.	0.0026	0.0022	0.0023
AN4LLP	D Input Cap.	0.0023	0.0019	0.0020
AN4LLX4	Z Max Load	0.640	0.640	0.640
AN4LLX4	B Input Cap.	0.0044	0.0040	0.0041
AN4LLX4	C Input Cap.	0.0044	0.0039	0.0040
AN4LLX4	A Input Cap.	0.0046	0.0040	0.0042
AN4LLX4	D Input Cap.	0.0042	0.0037	0.0038
AN4LLX6	A Input Cap.	0.0076	0.0067	0.0070
AN4LLX6	D Input Cap.	0.0063	0.0055	0.0057
AN4LLX6	B Input Cap.	0.0071	0.0064	0.0066

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4LLX6	C Input Cap.	0.0067	0.0060	0.0062
AN4LLX6	Z Max Load	0.960	0.960	0.960
AN4LLX8	C Input Cap.	0.0090	0.0080	0.0083
AN4LLX8	A Input Cap.	0.0094	0.0083	0.0086
AN4LLX8	D Input Cap.	0.0083	0.0072	0.0075
AN4LLX8	Z Max Load	1.280	1.280	1.280
AN4LLX8	B Input Cap.	0.0092	0.0083	0.0086

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4LL	A-Z	A_Z (fall)	0.099 + 0.329*Tr + 1.257*C	0.225 + 0.354*Tr + 2.766*C	0.149 + 0.339*Tr + 1.768*C
AN4LL	A-Z	A_Z (rise)	0.073 + 0.130*Tr + 1.658*C	0.205 + 0.160*Tr + 3.536*C	0.118 + 0.147*Tr + 2.391*C
AN4LL	B-Z	B_Z (fall)	0.092 + 0.319*Tr + 1.250*C	0.208 + 0.344*Tr + 2.742*C	0.138 + 0.330*Tr + 1.757*C
AN4LL	B-Z	B_Z (rise)	0.070 + 0.151*Tr + 1.656*C	0.194 + 0.181*Tr + 3.532*C	0.112 + 0.166*Tr + 2.389*C
AN4LL	C-Z	C_Z (fall)	0.084 + 0.308*Tr + 1.244*C	0.190 + 0.333*Tr + 2.723*C	0.126 + 0.318*Tr + 1.747*C
AN4LL	C-Z	C_Z (rise)	0.067 + 0.168*Tr + 1.653*C	0.181 + 0.202*Tr + 3.527*C	0.106 + 0.183*Tr + 2.385*C
AN4LL	D-Z	D_Z (fall)	0.075 + 0.295*Tr + 1.239*C	0.170 + 0.319*Tr + 2.707*C	0.112 + 0.305*Tr + 1.740*C
AN4LL	D-Z	D_Z (rise)	0.063 + 0.177*Tr + 1.646*C	0.164 + 0.215*Tr + 3.511*C	0.098 + 0.192*Tr + 2.374*C
AN4LLP	A-Z	A_Z (fall)	0.100 + 0.327*Tr + 0.648*C	0.222 + 0.353*Tr + 1.374*C	0.148 + 0.338*Tr + 0.896*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4LLP	A-Z	A_Z (rise)	0.074 + 0.138*Tr + 0.818*C	0.206 + 0.167*Tr + 1.730*C	0.119 + 0.155*Tr + 1.173*C
AN4LLP	B-Z	B_Z (fall)	0.093 + 0.317*Tr + 0.644*C	0.207 + 0.344*Tr + 1.362*C	0.138 + 0.328*Tr + 0.890*C
AN4LLP	B-Z	B_Z (rise)	0.071 + 0.160*Tr + 0.817*C	0.196 + 0.189*Tr + 1.729*C	0.113 + 0.175*Tr + 1.173*C
AN4LLP	C-Z	C_Z (fall)	0.086 + 0.306*Tr + 0.641*C	0.190 + 0.333*Tr + 1.353*C	0.127 + 0.317*Tr + 0.885*C
AN4LLP	C-Z	C_Z (rise)	0.068 + 0.178*Tr + 0.816*C	0.183 + 0.210*Tr + 1.727*C	0.107 + 0.192*Tr + 1.171*C
AN4LLP	D-Z	D_Z (fall)	0.077 + 0.294*Tr + 0.638*C	0.170 + 0.319*Tr + 1.344*C	0.114 + 0.305*Tr + 0.881*C
AN4LLP	D-Z	D_Z (rise)	0.064 + 0.187*Tr + 0.812*C	0.165 + 0.224*Tr + 1.718*C	0.099 + 0.201*Tr + 1.164*C
AN4LLX4	A-Z	A_Z (fall)	0.095 + 0.319*Tr + 0.321*C	0.206 + 0.346*Tr + 0.680*C	0.139 + 0.330*Tr + 0.444*C
AN4LLX4	A-Z	A_Z (rise)	0.071 + 0.140*Tr + 0.409*C	0.194 + 0.167*Tr + 0.861*C	0.113 + 0.155*Tr + 0.585*C
AN4LLX4	B-Z	B_Z (fall)	0.088 + 0.309*Tr + 0.320*C	0.192 + 0.336*Tr + 0.675*C	0.129 + 0.320*Tr + 0.441*C
AN4LLX4	B-Z	B_Z (rise)	0.068 + 0.161*Tr + 0.408*C	0.185 + 0.187*Tr + 0.861*C	0.107 + 0.174*Tr + 0.585*C
AN4LLX4	C-Z	C_Z (fall)	0.081 + 0.298*Tr + 0.319*C	0.177 + 0.324*Tr + 0.671*C	0.119 + 0.308*Tr + 0.439*C
AN4LLX4	C-Z	C_Z (rise)	0.065 + 0.179*Tr + 0.408*C	0.172 + 0.208*Tr + 0.860*C	0.102 + 0.191*Tr + 0.584*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4LLX4	D-Z	D_Z (fall)	0.073 + 0.286*Tr + 0.317*C	0.158 + 0.309*Tr + 0.667*C	0.106 + 0.295*Tr + 0.437*C
AN4LLX4	D-Z	D_Z (rise)	0.061 + 0.188*Tr + 0.406*C	0.155 + 0.221*Tr + 0.855*C	0.094 + 0.200*Tr + 0.581*C
AN4LLX6	A-Z	A_Z (fall)	0.091 + 0.314*Tr + 0.214*C	0.196 + 0.338*Tr + 0.453*C	0.132 + 0.323*Tr + 0.296*C
AN4LLX6	A-Z	A_Z (rise)	0.070 + 0.140*Tr + 0.273*C	0.193 + 0.168*Tr + 0.576*C	0.111 + 0.156*Tr + 0.391*C
AN4LLX6	B-Z	B_Z (fall)	0.085 + 0.304*Tr + 0.213*C	0.183 + 0.328*Tr + 0.449*C	0.123 + 0.314*Tr + 0.294*C
AN4LLX6	B-Z	B_Z (rise)	0.066 + 0.162*Tr + 0.273*C	0.183 + 0.189*Tr + 0.576*C	0.106 + 0.176*Tr + 0.391*C
AN4LLX6	C-Z	C_Z (fall)	0.078 + 0.293*Tr + 0.212*C	0.168 + 0.316*Tr + 0.446*C	0.113 + 0.302*Tr + 0.292*C
AN4LLX6	C-Z	C_Z (rise)	0.064 + 0.180*Tr + 0.272*C	0.170 + 0.211*Tr + 0.575*C	0.101 + 0.193*Tr + 0.390*C
AN4LLX6	D-Z	D_Z (fall)	0.070 + 0.280*Tr + 0.211*C	0.151 + 0.302*Tr + 0.444*C	0.102 + 0.289*Tr + 0.291*C
AN4LLX6	D-Z	D_Z (rise)	0.060 + 0.189*Tr + 0.271*C	0.154 + 0.224*Tr + 0.572*C	0.093 + 0.202*Tr + 0.388*C
AN4LLX8	A-Z	A_Z (fall)	0.091 + 0.313*Tr + 0.161*C	0.194 + 0.338*Tr + 0.340*C	0.132 + 0.323*Tr + 0.222*C
AN4LLX8	A-Z	A_Z (rise)	0.069 + 0.140*Tr + 0.205*C	0.189 + 0.167*Tr + 0.432*C	0.110 + 0.156*Tr + 0.294*C
AN4LLX8	B-Z	B_Z (fall)	0.086 + 0.308*Tr + 0.161*C	0.188 + 0.334*Tr + 0.339*C	0.126 + 0.318*Tr + 0.222*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4LLX8	B-Z	B_Z (rise)	0.066 + 0.160*Tr + 0.205*C	0.180 + 0.186*Tr + 0.432*C	0.105 + 0.173*Tr + 0.294*C
AN4LLX8	C-Z	C_Z (fall)	0.079 + 0.297*Tr + 0.160*C	0.172 + 0.322*Tr + 0.337*C	0.116 + 0.307*Tr + 0.221*C
AN4LLX8	C-Z	C_Z (rise)	0.064 + 0.178*Tr + 0.204*C	0.167 + 0.207*Tr + 0.431*C	0.099 + 0.190*Tr + 0.293*C
AN4LLX8	D-Z	D_Z (fall)	0.070 + 0.280*Tr + 0.159*C	0.149 + 0.301*Tr + 0.334*C	0.101 + 0.288*Tr + 0.219*C
AN4LLX8	D-Z	D_Z (rise)	0.059 + 0.189*Tr + 0.203*C	0.150 + 0.223*Tr + 0.429*C	0.092 + 0.202*Tr + 0.291*C

Average Leakage Power

picoWatts

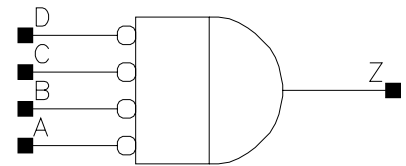
Cell	bc_1.32V_25C	bc_1.32V_125C
AN4LL	3258.110	68152.800
AN4LLP	5122.380	112436.000
AN4LLX4	9801.960	218181.000
AN4LLX6	14847.100	328950.000
AN4LLX8	19562.000	435425.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AN4LL	Z(max)	0.015 + 0.007*Tr
AN4LLP	Z(max)	0.026 + 0.012*Tr
AN4LLX4	Z(max)	0.050 + 0.025*Tr
AN4LLX6	Z(max)	0.075 + 0.038*Tr
AN4LLX8	Z(max)	0.100 + 0.051*Tr

AN4ABCDLLP
AN4ABCDLLX4
AN4ABCDLLX6
AN4ABCDLLX8



Function: Function = 4 Input AND, A, B, C and D Inputs Inverted

Truth Table

A	B	C	D	Z
1	-	-	-	0
-	1	-	-	0
-	-	-	1	0
-	-	1	-	0
0	0	0	0	1

Physical Dimensions

Property	AN4ABCDLLP	AN4ABCDLLX4	AN4ABCDLLX6	AN4ABCDLLX8
Area(um ²)	14.120	18.155	24.206	24.206

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4ABCDLLP	Z Max Load	0.320	0.320	0.320
AN4ABCDLLP	A Input Cap.	0.0015	0.0013	0.0014
AN4ABCDLLP	D Input Cap.	0.0016	0.0013	0.0014
AN4ABCDLLP	B Input Cap.	0.0016	0.0013	0.0014
AN4ABCDLLP	C Input Cap.	0.0016	0.0014	0.0014
AN4ABCDLLX4	C Input Cap.	0.0026	0.0023	0.0024
AN4ABCDLLX4	Z Max Load	0.640	0.640	0.640
AN4ABCDLLX4	A Input Cap.	0.0028	0.0024	0.0026
AN4ABCDLLX4	D Input Cap.	0.0026	0.0022	0.0023
AN4ABCDLLX4	B Input Cap.	0.0027	0.0024	0.0025
AN4ABCDLLX6	Z Max Load	0.960	0.960	0.960
AN4ABCDLLX6	B Input Cap.	0.0037	0.0032	0.0034

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4ABCDLLX6	C Input Cap.	0.0035	0.0031	0.0033
AN4ABCDLLX6	A Input Cap.	0.0037	0.0033	0.0034
AN4ABCDLLX6	D Input Cap.	0.0035	0.0030	0.0032
AN4ABCDLLX8	D Input Cap.	0.0042	0.0037	0.0038
AN4ABCDLLX8	B Input Cap.	0.0046	0.0040	0.0042
AN4ABCDLLX8	C Input Cap.	0.0044	0.0039	0.0041
AN4ABCDLLX8	Z Max Load	1.280	1.280	1.280
AN4ABCDLLX8	A Input Cap.	0.0046	0.0042	0.0043

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4ABCDLL P	A-Z	A_Z (fall)	0.113 + 0.230*Tr + 0.612*C	0.273 + 0.295*Tr + 1.280*C	0.170 + 0.255*Tr + 0.836*C
AN4ABCDLL P	A-Z	A_Z (rise)	0.166 + 0.190*Tr + 0.785*C	0.418 + 0.192*Tr + 1.626*C	0.259 + 0.190*Tr + 1.115*C
AN4ABCDLL P	B-Z	B_Z (fall)	0.112 + 0.214*Tr + 0.613*C	0.268 + 0.280*Tr + 1.280*C	0.168 + 0.241*Tr + 0.836*C
AN4ABCDLL P	B-Z	B_Z (rise)	0.165 + 0.222*Tr + 0.785*C	0.407 + 0.217*Tr + 1.627*C	0.257 + 0.219*Tr + 1.115*C
AN4ABCDLL P	C-Z	C_Z (fall)	0.108 + 0.197*Tr + 0.613*C	0.256 + 0.263*Tr + 1.279*C	0.162 + 0.224*Tr + 0.836*C
AN4ABCDLL P	C-Z	C_Z (rise)	0.151 + 0.262*Tr + 0.785*C	0.369 + 0.254*Tr + 1.627*C	0.233 + 0.257*Tr + 1.115*C
AN4ABCDLL P	D-Z	D_Z (fall)	0.101 + 0.178*Tr + 0.613*C	0.238 + 0.242*Tr + 1.279*C	0.151 + 0.205*Tr + 0.836*C
AN4ABCDLL P	D-Z	D_Z (rise)	0.135 + 0.295*Tr + 0.785*C	0.317 + 0.293*Tr + 1.626*C	0.204 + 0.291*Tr + 1.115*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4ABCDLL X4	A-Z	A_Z (fall)	0.117 + 0.264*Tr + 0.305*C	0.276 + 0.323*Tr + 0.637*C	0.174 + 0.286*Tr + 0.416*C
AN4ABCDLL X4	A-Z	A_Z (rise)	0.145 + 0.165*Tr + 0.392*C	0.360 + 0.175*Tr + 0.811*C	0.225 + 0.170*Tr + 0.557*C
AN4ABCDLL X4	B-Z	B_Z (fall)	0.113 + 0.247*Tr + 0.305*C	0.265 + 0.308*Tr + 0.637*C	0.168 + 0.271*Tr + 0.416*C
AN4ABCDLL X4	B-Z	B_Z (rise)	0.143 + 0.197*Tr + 0.392*C	0.345 + 0.198*Tr + 0.811*C	0.219 + 0.197*Tr + 0.557*C
AN4ABCDLL X4	C-Z	C_Z (fall)	0.107 + 0.228*Tr + 0.305*C	0.246 + 0.288*Tr + 0.636*C	0.157 + 0.252*Tr + 0.416*C
AN4ABCDLL X4	C-Z	C_Z (rise)	0.128 + 0.234*Tr + 0.392*C	0.307 + 0.228*Tr + 0.811*C	0.195 + 0.230*Tr + 0.557*C
AN4ABCDLL X4	D-Z	D_Z (fall)	0.097 + 0.206*Tr + 0.305*C	0.222 + 0.263*Tr + 0.636*C	0.143 + 0.229*Tr + 0.416*C
AN4ABCDLL X4	D-Z	D_Z (rise)	0.113 + 0.261*Tr + 0.392*C	0.258 + 0.259*Tr + 0.811*C	0.168 + 0.257*Tr + 0.557*C
AN4ABCDLL X6	A-Z	A_Z (fall)	0.123 + 0.285*Tr + 0.204*C	0.288 + 0.342*Tr + 0.425*C	0.181 + 0.306*Tr + 0.278*C
AN4ABCDLL X6	A-Z	A_Z (rise)	0.142 + 0.154*Tr + 0.262*C	0.347 + 0.167*Tr + 0.541*C	0.218 + 0.161*Tr + 0.372*C
AN4ABCDLL X6	B-Z	B_Z (fall)	0.118 + 0.268*Tr + 0.204*C	0.274 + 0.326*Tr + 0.424*C	0.174 + 0.290*Tr + 0.278*C
AN4ABCDLL X6	B-Z	B_Z (rise)	0.140 + 0.185*Tr + 0.262*C	0.333 + 0.188*Tr + 0.541*C	0.213 + 0.187*Tr + 0.372*C
AN4ABCDLL X6	C-Z	C_Z (fall)	0.110 + 0.248*Tr + 0.204*C	0.253 + 0.306*Tr + 0.424*C	0.162 + 0.271*Tr + 0.278*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4ABCDLL X6	C-Z	C_Z (rise)	0.126 + 0.219*Tr + 0.262*C	0.298 + 0.215*Tr + 0.541*C	0.191 + 0.216*Tr + 0.372*C
AN4ABCDLL X6	D-Z	D_Z (fall)	0.099 + 0.225*Tr + 0.204*C	0.223 + 0.279*Tr + 0.424*C	0.144 + 0.247*Tr + 0.278*C
AN4ABCDLL X6	D-Z	D_Z (rise)	0.110 + 0.245*Tr + 0.262*C	0.248 + 0.243*Tr + 0.541*C	0.162 + 0.242*Tr + 0.372*C
AN4ABCDLL X8	A-Z	A_Z (fall)	0.127 + 0.296*Tr + 0.153*C	0.296 + 0.352*Tr + 0.320*C	0.187 + 0.317*Tr + 0.209*C
AN4ABCDLL X8	A-Z	A_Z (rise)	0.139 + 0.147*Tr + 0.197*C	0.339 + 0.161*Tr + 0.406*C	0.213 + 0.155*Tr + 0.279*C
AN4ABCDLL X8	B-Z	B_Z (fall)	0.122 + 0.279*Tr + 0.153*C	0.280 + 0.336*Tr + 0.319*C	0.178 + 0.300*Tr + 0.209*C
AN4ABCDLL X8	B-Z	B_Z (rise)	0.137 + 0.177*Tr + 0.197*C	0.325 + 0.182*Tr + 0.406*C	0.208 + 0.180*Tr + 0.279*C
AN4ABCDLL X8	C-Z	C_Z (fall)	0.113 + 0.259*Tr + 0.153*C	0.257 + 0.315*Tr + 0.319*C	0.165 + 0.281*Tr + 0.209*C
AN4ABCDLL X8	C-Z	C_Z (rise)	0.123 + 0.210*Tr + 0.197*C	0.291 + 0.207*Tr + 0.406*C	0.186 + 0.208*Tr + 0.279*C
AN4ABCDLL X8	D-Z	D_Z (fall)	0.100 + 0.235*Tr + 0.153*C	0.224 + 0.288*Tr + 0.319*C	0.146 + 0.256*Tr + 0.209*C
AN4ABCDLL X8	D-Z	D_Z (rise)	0.107 + 0.235*Tr + 0.197*C	0.241 + 0.232*Tr + 0.406*C	0.158 + 0.232*Tr + 0.279*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AN4ABCDLLP	8131.420	143534.000
AN4ABCDLLX4	11882.700	233908.000

Average Leakage Power

picoWatts

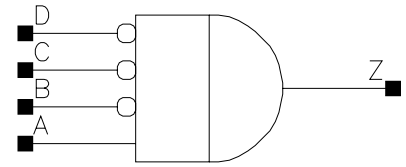
Cell	bc_1.32V_25C	bc_1.32V_125C
AN4ABCDLLX6	15967.200	326984.000
AN4ABCDLLX8	20245.500	423226.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AN4ABCDLLP	Z(max)	$0.031 + 0.005 * Tr$
AN4ABCDLLX4	Z(max)	$0.054 + 0.009 * Tr$
AN4ABCDLLX6	Z(max)	$0.082 + 0.012 * Tr$
AN4ABCDLLX8	Z(max)	$0.109 + 0.016 * Tr$

AN4BCDLL
AN4BCDLLP
AN4BCDLLX4
AN4BCDLLX6
AN4BCDLLX8



Function: Function = 4 Input AND, B,C and D Inputs Inverted

Truth Table

A	B	C	D	Z
-	1	-	-	0
-	-	-	1	0
0	-	-	-	0
-	-	1	-	0
1	0	0	0	1

Physical Dimensions

Property	AN4BCDLL	AN4BCDLLP	AN4BCDLLX 4	AN4BCDLLX 6	AN4BCDLLX 8
Area(um ²)	16.138	18.155	20.172	26.224	28.241

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4BCDLL	C Input Cap.	0.0019	0.0016	0.0017
AN4BCDLL	A Input Cap.	0.0017	0.0014	0.0015
AN4BCDLL	Z Max Load	0.160	0.160	0.160
AN4BCDLL	D Input Cap.	0.0019	0.0016	0.0017
AN4BCDLL	B Input Cap.	0.0018	0.0014	0.0015
AN4BCDLLP	C Input Cap.	0.0019	0.0017	0.0018
AN4BCDLLP	A Input Cap.	0.0033	0.0027	0.0029
AN4BCDLLP	Z Max Load	0.320	0.320	0.320
AN4BCDLLP	D Input Cap.	0.0021	0.0018	0.0019
AN4BCDLLP	B Input Cap.	0.0018	0.0015	0.0016

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4BCDLLX4	C Input Cap.	0.0026	0.0023	0.0024
AN4BCDLLX4	A Input Cap.	0.0060	0.0051	0.0053
AN4BCDLLX4	Z Max Load	0.640	0.640	0.640
AN4BCDLLX4	D Input Cap.	0.0028	0.0024	0.0026
AN4BCDLLX4	B Input Cap.	0.0025	0.0022	0.0023
AN4BCDLLX6	B Input Cap.	0.0035	0.0031	0.0032
AN4BCDLLX6	Z Max Load	0.960	0.960	0.960
AN4BCDLLX6	C Input Cap.	0.0037	0.0033	0.0034
AN4BCDLLX6	A Input Cap.	0.0087	0.0072	0.0076
AN4BCDLLX6	D Input Cap.	0.0039	0.0035	0.0036
AN4BCDLLX8	Z Max Load	1.280	1.280	1.280
AN4BCDLLX8	D Input Cap.	0.0050	0.0044	0.0046
AN4BCDLLX8	B Input Cap.	0.0045	0.0039	0.0041
AN4BCDLLX8	C Input Cap.	0.0047	0.0042	0.0043
AN4BCDLLX8	A Input Cap.	0.0114	0.0096	0.0100

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4BCDLL	A-Z	A_Z (fall)	0.061 + 0.271*Tr + 1.207*C	0.135 + 0.286*Tr + 2.624*C	0.090 + 0.277*Tr + 1.686*C
AN4BCDLL	A-Z	A_Z (rise)	0.050 + 0.173*Tr + 1.621*C	0.124 + 0.213*Tr + 3.406*C	0.077 + 0.189*Tr + 2.325*C
AN4BCDLL	B-Z	B_Z (fall)	0.099 + 0.192*Tr + 1.198*C	0.236 + 0.249*Tr + 2.603*C	0.149 + 0.214*Tr + 1.667*C
AN4BCDLL	B-Z	B_Z (rise)	0.096 + 0.247*Tr + 1.614*C	0.236 + 0.240*Tr + 3.381*C	0.147 + 0.242*Tr + 2.311*C
AN4BCDLL	C-Z	C_Z (fall)	0.107 + 0.216*Tr + 1.198*C	0.257 + 0.276*Tr + 2.604*C	0.161 + 0.239*Tr + 1.666*C
AN4BCDLL	C-Z	C_Z (rise)	0.104 + 0.219*Tr + 1.615*C	0.264 + 0.211*Tr + 3.382*C	0.163 + 0.215*Tr + 2.310*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4BCDLL	D-Z	D_Z (fall)	0.113 + 0.237*Tr + 1.198*C	0.276 + 0.296*Tr + 2.604*C	0.171 + 0.258*Tr + 1.667*C
AN4BCDLL	D-Z	D_Z (rise)	0.110 + 0.178*Tr + 1.613*C	0.285 + 0.178*Tr + 3.386*C	0.174 + 0.179*Tr + 2.308*C
AN4BCDLLP	A-Z	A_Z (fall)	0.053 + 0.253*Tr + 0.613*C	0.115 + 0.268*Tr + 1.283*C	0.077 + 0.258*Tr + 0.840*C
AN4BCDLLP	A-Z	A_Z (rise)	0.045 + 0.179*Tr + 0.793*C	0.109 + 0.215*Tr + 1.642*C	0.068 + 0.193*Tr + 1.128*C
AN4BCDLLP	B-Z	B_Z (fall)	0.102 + 0.211*Tr + 0.607*C	0.241 + 0.272*Tr + 1.270*C	0.152 + 0.235*Tr + 0.829*C
AN4BCDLLP	B-Z	B_Z (rise)	0.108 + 0.265*Tr + 0.788*C	0.258 + 0.263*Tr + 1.627*C	0.165 + 0.262*Tr + 1.118*C
AN4BCDLLP	C-Z	C_Z (fall)	0.109 + 0.232*Tr + 0.608*C	0.264 + 0.294*Tr + 1.271*C	0.164 + 0.256*Tr + 0.829*C
AN4BCDLLP	C-Z	C_Z (rise)	0.117 + 0.231*Tr + 0.787*C	0.289 + 0.227*Tr + 1.628*C	0.182 + 0.229*Tr + 1.118*C
AN4BCDLLP	D-Z	D_Z (fall)	0.116 + 0.250*Tr + 0.607*C	0.283 + 0.311*Tr + 1.270*C	0.175 + 0.273*Tr + 0.829*C
AN4BCDLLP	D-Z	D_Z (rise)	0.124 + 0.187*Tr + 0.787*C	0.312 + 0.189*Tr + 1.629*C	0.194 + 0.189*Tr + 1.117*C
AN4BCDLLX4	A-Z	A_Z (fall)	0.050 + 0.246*Tr + 0.306*C	0.109 + 0.260*Tr + 0.640*C	0.074 + 0.251*Tr + 0.420*C
AN4BCDLLX4	A-Z	A_Z (rise)	0.043 + 0.181*Tr + 0.397*C	0.103 + 0.213*Tr + 0.821*C	0.065 + 0.193*Tr + 0.564*C
AN4BCDLLX4	B-Z	B_Z (fall)	0.100 + 0.224*Tr + 0.303*C	0.229 + 0.278*Tr + 0.634*C	0.147 + 0.245*Tr + 0.414*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4BCDLLX4	B-Z	B_Z (rise)	0.107 + 0.257*Tr + 0.394*C	0.250 + 0.257*Tr + 0.813*C	0.161 + 0.255*Tr + 0.559*C
AN4BCDLLX4	C-Z	C_Z (fall)	0.108 + 0.244*Tr + 0.303*C	0.251 + 0.300*Tr + 0.634*C	0.159 + 0.265*Tr + 0.414*C
AN4BCDLLX4	C-Z	C_Z (rise)	0.116 + 0.224*Tr + 0.394*C	0.280 + 0.223*Tr + 0.814*C	0.178 + 0.223*Tr + 0.559*C
AN4BCDLLX4	D-Z	D_Z (fall)	0.114 + 0.262*Tr + 0.303*C	0.268 + 0.317*Tr + 0.634*C	0.169 + 0.282*Tr + 0.414*C
AN4BCDLLX4	D-Z	D_Z (rise)	0.121 + 0.180*Tr + 0.394*C	0.300 + 0.186*Tr + 0.813*C	0.188 + 0.184*Tr + 0.559*C
AN4BCDLLX6	A-Z	A_Z (fall)	0.050 + 0.246*Tr + 0.205*C	0.108 + 0.260*Tr + 0.428*C	0.073 + 0.251*Tr + 0.280*C
AN4BCDLLX6	A-Z	A_Z (rise)	0.043 + 0.180*Tr + 0.265*C	0.103 + 0.213*Tr + 0.549*C	0.065 + 0.193*Tr + 0.377*C
AN4BCDLLX6	B-Z	B_Z (fall)	0.101 + 0.236*Tr + 0.203*C	0.227 + 0.285*Tr + 0.423*C	0.147 + 0.255*Tr + 0.277*C
AN4BCDLLX6	B-Z	B_Z (rise)	0.104 + 0.245*Tr + 0.263*C	0.243 + 0.245*Tr + 0.543*C	0.157 + 0.243*Tr + 0.373*C
AN4BCDLLX6	C-Z	C_Z (fall)	0.109 + 0.256*Tr + 0.203*C	0.250 + 0.308*Tr + 0.423*C	0.160 + 0.276*Tr + 0.277*C
AN4BCDLLX6	C-Z	C_Z (rise)	0.113 + 0.213*Tr + 0.263*C	0.273 + 0.213*Tr + 0.544*C	0.174 + 0.213*Tr + 0.373*C
AN4BCDLLX6	D-Z	D_Z (fall)	0.116 + 0.274*Tr + 0.203*C	0.267 + 0.326*Tr + 0.424*C	0.170 + 0.293*Tr + 0.277*C
AN4BCDLLX6	D-Z	D_Z (rise)	0.118 + 0.171*Tr + 0.263*C	0.291 + 0.178*Tr + 0.544*C	0.183 + 0.176*Tr + 0.374*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4BCDLLX8	A-Z	A_Z (fall)	0.049 + 0.245*Tr + 0.154*C	0.107 + 0.259*Tr + 0.321*C	0.072 + 0.250*Tr + 0.211*C
AN4BCDLLX8	A-Z	A_Z (rise)	0.042 + 0.180*Tr + 0.199*C	0.101 + 0.211*Tr + 0.412*C	0.063 + 0.192*Tr + 0.283*C
AN4BCDLLX8	B-Z	B_Z (fall)	0.099 + 0.239*Tr + 0.152*C	0.222 + 0.287*Tr + 0.318*C	0.144 + 0.258*Tr + 0.208*C
AN4BCDLLX8	B-Z	B_Z (rise)	0.102 + 0.240*Tr + 0.198*C	0.237 + 0.241*Tr + 0.408*C	0.153 + 0.238*Tr + 0.280*C
AN4BCDLLX8	C-Z	C_Z (fall)	0.108 + 0.260*Tr + 0.152*C	0.245 + 0.310*Tr + 0.318*C	0.158 + 0.279*Tr + 0.208*C
AN4BCDLLX8	C-Z	C_Z (rise)	0.111 + 0.208*Tr + 0.198*C	0.267 + 0.209*Tr + 0.408*C	0.170 + 0.208*Tr + 0.280*C
AN4BCDLLX8	D-Z	D_Z (fall)	0.115 + 0.278*Tr + 0.152*C	0.262 + 0.328*Tr + 0.318*C	0.168 + 0.296*Tr + 0.208*C
AN4BCDLLX8	D-Z	D_Z (rise)	0.116 + 0.167*Tr + 0.198*C	0.285 + 0.174*Tr + 0.408*C	0.179 + 0.172*Tr + 0.280*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AN4BCDLL	6570.540	111371.000
AN4BCDLLP	8577.690	159342.000
AN4BCDLLX4	13157.000	269521.000
AN4BCDLLX6	18651.400	392506.000
AN4BCDLLX8	23833.500	509621.000

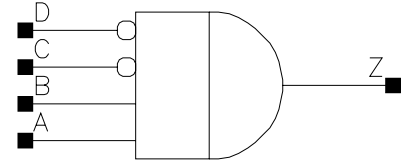
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AN4BCDLL	Z(max)	$0.022 + 0.006 * Tr$
AN4BCDLLP	Z(max)	$0.034 + 0.006 * Tr$
AN4BCDLLX4	Z(max)	$0.060 + 0.011 * Tr$
AN4BCDLLX6	Z(max)	$0.090 + 0.016 * Tr$
AN4BCDLLX8	Z(max)	$0.117 + 0.021 * Tr$

AN4CDLL
AN4CDLLP
AN4CDLLX4
AN4CDLLX6
AN4CDLLX8

Function: Function = 4 Input AND ,C and D Inputs Inverted ,8x Drive



Truth Table

A	B	C	D	Z
-	-	1	-	0
-	0	-	-	0
-	-	-	1	0
0	-	-	-	0
1	1	0	0	1

Physical Dimensions

Property	AN4CDLL	AN4CDLLP	AN4CDLLX4	AN4CDLLX6	AN4CDLLX8
Area(um ²)	18.155	18.155	20.172	26.224	30.258

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4CDLL	B Input Cap.	0.0017	0.0015	0.0016
AN4CDLL	Z Max Load	0.160	0.160	0.160
AN4CDLL	C Input Cap.	0.0015	0.0012	0.0013
AN4CDLL	A Input Cap.	0.0016	0.0013	0.0014
AN4CDLL	D Input Cap.	0.0018	0.0014	0.0015
AN4CDLLP	C Input Cap.	0.0016	0.0013	0.0014
AN4CDLLP	A Input Cap.	0.0026	0.0022	0.0023
AN4CDLLP	D Input Cap.	0.0019	0.0015	0.0016
AN4CDLLP	B Input Cap.	0.0027	0.0024	0.0025
AN4CDLLP	Z Max Load	0.320	0.320	0.320

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4CDLLX4	A Input Cap.	0.0048	0.0041	0.0043
AN4CDLLX4	D Input Cap.	0.0031	0.0027	0.0028
AN4CDLLX4	B Input Cap.	0.0049	0.0043	0.0045
AN4CDLLX4	Z Max Load	0.640	0.640	0.640
AN4CDLLX4	C Input Cap.	0.0028	0.0024	0.0025
AN4CDLLX6	C Input Cap.	0.0041	0.0035	0.0037
AN4CDLLX6	A Input Cap.	0.0072	0.0062	0.0064
AN4CDLLX6	Z Max Load	0.960	0.960	0.960
AN4CDLLX6	D Input Cap.	0.0044	0.0038	0.0040
AN4CDLLX6	B Input Cap.	0.0076	0.0067	0.0070
AN4CDLLX8	B Input Cap.	0.0100	0.0088	0.0091
AN4CDLLX8	Z Max Load	1.280	1.280	1.280
AN4CDLLX8	C Input Cap.	0.0054	0.0047	0.0049
AN4CDLLX8	A Input Cap.	0.0094	0.0080	0.0083
AN4CDLLX8	D Input Cap.	0.0057	0.0050	0.0052

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4CDLL	A-Z	A_Z (fall)	0.070 + 0.289*Tr + 1.226*C	0.158 + 0.310*Tr + 2.674*C	0.105 + 0.297*Tr + 1.718*C
AN4CDLL	A-Z	A_Z (rise)	0.057 + 0.172*Tr + 1.633*C	0.146 + 0.211*Tr + 3.455*C	0.089 + 0.187*Tr + 2.347*C
AN4CDLL	B-Z	B_Z (fall)	0.076 + 0.302*Tr + 1.230*C	0.173 + 0.323*Tr + 2.686*C	0.114 + 0.310*Tr + 1.724*C
AN4CDLL	B-Z	B_Z (rise)	0.058 + 0.160*Tr + 1.637*C	0.153 + 0.196*Tr + 3.464*C	0.091 + 0.176*Tr + 2.356*C
AN4CDLL	C-Z	C_Z (fall)	0.110 + 0.173*Tr + 1.222*C	0.260 + 0.224*Tr + 2.672*C	0.166 + 0.193*Tr + 1.707*C
AN4CDLL	C-Z	C_Z (rise)	0.095 + 0.244*Tr + 1.627*C	0.244 + 0.238*Tr + 3.432*C	0.148 + 0.240*Tr + 2.336*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4CDLL	D-Z	D_Z (fall)	0.116 + 0.198*Tr + 1.222*C	0.278 + 0.248*Tr + 2.673*C	0.176 + 0.216*Tr + 1.708*C
AN4CDLL	D-Z	D_Z (rise)	0.099 + 0.206*Tr + 1.627*C	0.259 + 0.202*Tr + 3.432*C	0.156 + 0.205*Tr + 2.334*C
AN4CDLLP	A-Z	A_Z (fall)	0.064 + 0.275*Tr + 0.624*C	0.141 + 0.295*Tr + 1.310*C	0.095 + 0.283*Tr + 0.858*C
AN4CDLLP	A-Z	A_Z (rise)	0.054 + 0.182*Tr + 0.801*C	0.137 + 0.219*Tr + 1.674*C	0.084 + 0.196*Tr + 1.143*C
AN4CDLLP	B-Z	B_Z (fall)	0.071 + 0.288*Tr + 0.626*C	0.156 + 0.309*Tr + 1.316*C	0.104 + 0.296*Tr + 0.861*C
AN4CDLLP	B-Z	B_Z (rise)	0.056 + 0.170*Tr + 0.804*C	0.145 + 0.204*Tr + 1.680*C	0.087 + 0.185*Tr + 1.148*C
AN4CDLLP	C-Z	C_Z (fall)	0.108 + 0.186*Tr + 0.622*C	0.252 + 0.238*Tr + 1.306*C	0.162 + 0.207*Tr + 0.851*C
AN4CDLLP	C-Z	C_Z (rise)	0.101 + 0.254*Tr + 0.797*C	0.255 + 0.251*Tr + 1.661*C	0.157 + 0.251*Tr + 1.135*C
AN4CDLLP	D-Z	D_Z (fall)	0.114 + 0.209*Tr + 0.621*C	0.269 + 0.260*Tr + 1.306*C	0.171 + 0.227*Tr + 0.852*C
AN4CDLLP	D-Z	D_Z (rise)	0.105 + 0.213*Tr + 0.797*C	0.270 + 0.211*Tr + 1.660*C	0.165 + 0.213*Tr + 1.135*C
AN4CDLLX4	A-Z	A_Z (fall)	0.061 + 0.267*Tr + 0.311*C	0.132 + 0.287*Tr + 0.652*C	0.089 + 0.275*Tr + 0.427*C
AN4CDLLX4	A-Z	A_Z (rise)	0.052 + 0.183*Tr + 0.400*C	0.129 + 0.216*Tr + 0.835*C	0.079 + 0.196*Tr + 0.571*C
AN4CDLLX4	B-Z	B_Z (fall)	0.067 + 0.280*Tr + 0.312*C	0.147 + 0.301*Tr + 0.655*C	0.099 + 0.288*Tr + 0.429*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4CDLLX4	B-Z	B_Z (rise)	0.054 + 0.172*Tr + 0.402*C	0.138 + 0.202*Tr + 0.839*C	0.083 + 0.185*Tr + 0.574*C
AN4CDLLX4	C-Z	C_Z (fall)	0.104 + 0.201*Tr + 0.310*C	0.235 + 0.247*Tr + 0.650*C	0.153 + 0.219*Tr + 0.424*C
AN4CDLLX4	C-Z	C_Z (rise)	0.096 + 0.234*Tr + 0.398*C	0.239 + 0.234*Tr + 0.829*C	0.148 + 0.232*Tr + 0.567*C
AN4CDLLX4	D-Z	D_Z (fall)	0.109 + 0.224*Tr + 0.310*C	0.252 + 0.269*Tr + 0.650*C	0.162 + 0.240*Tr + 0.424*C
AN4CDLLX4	D-Z	D_Z (rise)	0.098 + 0.196*Tr + 0.398*C	0.252 + 0.199*Tr + 0.829*C	0.154 + 0.198*Tr + 0.567*C
AN4CDLLX6	A-Z	A_Z (fall)	0.060 + 0.263*Tr + 0.208*C	0.129 + 0.281*Tr + 0.436*C	0.087 + 0.270*Tr + 0.285*C
AN4CDLLX6	A-Z	A_Z (rise)	0.052 + 0.186*Tr + 0.268*C	0.131 + 0.221*Tr + 0.559*C	0.080 + 0.200*Tr + 0.382*C
AN4CDLLX6	B-Z	B_Z (fall)	0.066 + 0.276*Tr + 0.208*C	0.143 + 0.295*Tr + 0.437*C	0.097 + 0.283*Tr + 0.286*C
AN4CDLLX6	B-Z	B_Z (rise)	0.054 + 0.174*Tr + 0.269*C	0.140 + 0.206*Tr + 0.562*C	0.084 + 0.188*Tr + 0.384*C
AN4CDLLX6	C-Z	C_Z (fall)	0.105 + 0.213*Tr + 0.207*C	0.235 + 0.257*Tr + 0.434*C	0.153 + 0.230*Tr + 0.283*C
AN4CDLLX6	C-Z	C_Z (rise)	0.097 + 0.228*Tr + 0.266*C	0.243 + 0.229*Tr + 0.555*C	0.150 + 0.227*Tr + 0.379*C
AN4CDLLX6	D-Z	D_Z (fall)	0.111 + 0.236*Tr + 0.207*C	0.251 + 0.279*Tr + 0.434*C	0.163 + 0.251*Tr + 0.283*C
AN4CDLLX6	D-Z	D_Z (rise)	0.100 + 0.190*Tr + 0.266*C	0.256 + 0.194*Tr + 0.554*C	0.156 + 0.193*Tr + 0.379*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4CDLLX8	A-Z	A_Z (fall)	0.060 + 0.266*Tr + 0.156*C	0.129 + 0.285*Tr + 0.327*C	0.087 + 0.273*Tr + 0.215*C
AN4CDLLX8	A-Z	A_Z (rise)	0.051 + 0.182*Tr + 0.201*C	0.126 + 0.215*Tr + 0.419*C	0.077 + 0.194*Tr + 0.286*C
AN4CDLLX8	B-Z	B_Z (fall)	0.066 + 0.279*Tr + 0.157*C	0.144 + 0.300*Tr + 0.329*C	0.097 + 0.287*Tr + 0.215*C
AN4CDLLX8	B-Z	B_Z (rise)	0.053 + 0.170*Tr + 0.202*C	0.135 + 0.200*Tr + 0.421*C	0.082 + 0.184*Tr + 0.288*C
AN4CDLLX8	C-Z	C_Z (fall)	0.104 + 0.215*Tr + 0.155*C	0.233 + 0.257*Tr + 0.326*C	0.152 + 0.231*Tr + 0.213*C
AN4CDLLX8	C-Z	C_Z (rise)	0.094 + 0.222*Tr + 0.200*C	0.234 + 0.223*Tr + 0.416*C	0.145 + 0.221*Tr + 0.284*C
AN4CDLLX8	D-Z	D_Z (fall)	0.110 + 0.238*Tr + 0.155*C	0.249 + 0.279*Tr + 0.326*C	0.161 + 0.253*Tr + 0.213*C
AN4CDLLX8	D-Z	D_Z (rise)	0.096 + 0.185*Tr + 0.200*C	0.245 + 0.189*Tr + 0.415*C	0.150 + 0.188*Tr + 0.284*C

Average Leakage Power

picoWatts

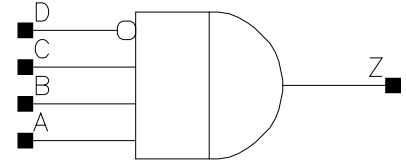
Cell	bc_1.32V_25C	bc_1.32V_125C
AN4CDLL	5859.910	101471.000
AN4CDLLP	7824.110	150555.000
AN4CDLLX4	12785.200	267899.000
AN4CDLLX6	18415.000	392055.000
AN4CDLLX8	23874.400	514532.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AN4CDLL	Z(max)	$0.019 + 0.006 * Tr$
AN4CDLLP	Z(max)	$0.031 + 0.007 * Tr$
AN4CDLLX4	Z(max)	$0.059 + 0.012 * Tr$
AN4CDLLX6	Z(max)	$0.091 + 0.017 * Tr$
AN4CDLLX8	Z(max)	$0.118 + 0.023 * Tr$

AN4DLL
AN4DLLP
AN4DLLX4
AN4DLLX6
AN4DLLX8



Function: Function = 4 Input AND ,D Input Inverted

Truth Table

A	B	C	D	Z
-	0	-	-	0
-	-	0	-	0
-	-	-	1	0
0	-	-	-	0
1	1	1	0	1

Physical Dimensions

Property	AN4DLL	AN4DLLP	AN4DLLX4	AN4DLLX6	AN4DLLX8
Area(um ²)	16.138	16.138	20.172	30.258	32.275

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4DLL	A Input Cap.	0.0015	0.0013	0.0014
AN4DLL	D Input Cap.	0.0017	0.0014	0.0014
AN4DLL	Z Max Load	0.160	0.160	0.160
AN4DLL	B Input Cap.	0.0015	0.0013	0.0014
AN4DLL	C Input Cap.	0.0018	0.0016	0.0017
AN4DLLP	C Input Cap.	0.0026	0.0022	0.0024
AN4DLLP	A Input Cap.	0.0026	0.0023	0.0024
AN4DLLP	D Input Cap.	0.0016	0.0013	0.0014
AN4DLLP	Z Max Load	0.320	0.320	0.320
AN4DLLP	B Input Cap.	0.0025	0.0022	0.0023
AN4DLLX4	Z Max Load	0.640	0.640	0.640

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4DLLX4	B Input Cap.	0.0044	0.0039	0.0040
AN4DLLX4	C Input Cap.	0.0044	0.0039	0.0041
AN4DLLX4	A Input Cap.	0.0046	0.0041	0.0042
AN4DLLX4	D Input Cap.	0.0020	0.0016	0.0017
AN4DLLX6	A Input Cap.	0.0067	0.0060	0.0062
AN4DLLX6	D Input Cap.	0.0028	0.0024	0.0025
AN4DLLX6	B Input Cap.	0.0070	0.0063	0.0065
AN4DLLX6	C Input Cap.	0.0069	0.0062	0.0064
AN4DLLX6	Z Max Load	0.960	0.960	0.960
AN4DLLX8	C Input Cap.	0.0088	0.0078	0.0081
AN4DLLX8	A Input Cap.	0.0086	0.0077	0.0080
AN4DLLX8	D Input Cap.	0.0037	0.0031	0.0033
AN4DLLX8	Z Max Load	1.280	1.280	1.280
AN4DLLX8	B Input Cap.	0.0089	0.0080	0.0083

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4DLL	A-Z	A_Z (fall)	0.111 + 0.343*Tr + 1.287*C	0.259 + 0.370*Tr + 2.847*C	0.169 + 0.355*Tr + 1.819*C
AN4DLL	A-Z	A_Z (rise)	0.080 + 0.129*Tr + 1.668*C	0.227 + 0.159*Tr + 3.579*C	0.130 + 0.146*Tr + 2.411*C
AN4DLL	B-Z	B_Z (fall)	0.103 + 0.334*Tr + 1.280*C	0.242 + 0.361*Tr + 2.825*C	0.157 + 0.346*Tr + 1.808*C
AN4DLL	B-Z	B_Z (rise)	0.077 + 0.151*Tr + 1.666*C	0.217 + 0.182*Tr + 3.580*C	0.125 + 0.167*Tr + 2.411*C
AN4DLL	C-Z	C_Z (fall)	0.096 + 0.324*Tr + 1.275*C	0.225 + 0.351*Tr + 2.807*C	0.146 + 0.336*Tr + 1.800*C
AN4DLL	C-Z	C_Z (rise)	0.075 + 0.170*Tr + 1.665*C	0.204 + 0.205*Tr + 3.576*C	0.119 + 0.186*Tr + 2.408*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4DLL	D-Z	D_Z (fall)	0.121 + 0.171*Tr + 1.250*C	0.296 + 0.219*Tr + 2.747*C	0.186 + 0.190*Tr + 1.754*C
AN4DLL	D-Z	D_Z (rise)	0.107 + 0.259*Tr + 1.653*C	0.277 + 0.263*Tr + 3.541*C	0.168 + 0.260*Tr + 2.382*C
AN4DLLP	A-Z	A_Z (fall)	0.101 + 0.327*Tr + 0.649*C	0.224 + 0.353*Tr + 1.375*C	0.149 + 0.338*Tr + 0.897*C
AN4DLLP	A-Z	A_Z (rise)	0.077 + 0.136*Tr + 0.819*C	0.213 + 0.165*Tr + 1.732*C	0.123 + 0.153*Tr + 1.174*C
AN4DLLP	B-Z	B_Z (fall)	0.093 + 0.317*Tr + 0.646*C	0.208 + 0.344*Tr + 1.364*C	0.138 + 0.329*Tr + 0.892*C
AN4DLLP	B-Z	B_Z (rise)	0.073 + 0.158*Tr + 0.818*C	0.202 + 0.186*Tr + 1.732*C	0.117 + 0.173*Tr + 1.174*C
AN4DLLP	C-Z	C_Z (fall)	0.086 + 0.307*Tr + 0.643*C	0.191 + 0.333*Tr + 1.356*C	0.127 + 0.318*Tr + 0.888*C
AN4DLLP	C-Z	C_Z (rise)	0.070 + 0.177*Tr + 0.817*C	0.187 + 0.209*Tr + 1.729*C	0.110 + 0.191*Tr + 1.172*C
AN4DLLP	D-Z	D_Z (fall)	0.108 + 0.168*Tr + 0.630*C	0.253 + 0.215*Tr + 1.324*C	0.162 + 0.187*Tr + 0.865*C
AN4DLLP	D-Z	D_Z (rise)	0.102 + 0.267*Tr + 0.810*C	0.257 + 0.273*Tr + 1.710*C	0.159 + 0.269*Tr + 1.157*C
AN4DLLX4	A-Z	A_Z (fall)	0.094 + 0.319*Tr + 0.321*C	0.206 + 0.345*Tr + 0.679*C	0.138 + 0.329*Tr + 0.443*C
AN4DLLX4	A-Z	A_Z (rise)	0.073 + 0.136*Tr + 0.409*C	0.199 + 0.163*Tr + 0.861*C	0.117 + 0.152*Tr + 0.585*C
AN4DLLX4	B-Z	B_Z (fall)	0.088 + 0.309*Tr + 0.320*C	0.192 + 0.335*Tr + 0.674*C	0.129 + 0.319*Tr + 0.441*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4DLLX4	B-Z	B_Z (rise)	0.070 + 0.158*Tr + 0.408*C	0.189 + 0.184*Tr + 0.861*C	0.111 + 0.171*Tr + 0.585*C
AN4DLLX4	C-Z	C_Z (fall)	0.080 + 0.298*Tr + 0.319*C	0.175 + 0.323*Tr + 0.670*C	0.118 + 0.308*Tr + 0.439*C
AN4DLLX4	C-Z	C_Z (rise)	0.067 + 0.176*Tr + 0.408*C	0.175 + 0.205*Tr + 0.860*C	0.104 + 0.189*Tr + 0.584*C
AN4DLLX4	D-Z	D_Z (fall)	0.100 + 0.181*Tr + 0.313*C	0.226 + 0.222*Tr + 0.655*C	0.147 + 0.198*Tr + 0.428*C
AN4DLLX4	D-Z	D_Z (rise)	0.093 + 0.249*Tr + 0.404*C	0.228 + 0.255*Tr + 0.850*C	0.143 + 0.250*Tr + 0.577*C
AN4DLLX6	A-Z	A_Z (fall)	0.092 + 0.316*Tr + 0.215*C	0.198 + 0.340*Tr + 0.454*C	0.134 + 0.325*Tr + 0.296*C
AN4DLLX6	A-Z	A_Z (rise)	0.073 + 0.138*Tr + 0.273*C	0.202 + 0.167*Tr + 0.577*C	0.117 + 0.154*Tr + 0.392*C
AN4DLLX6	B-Z	B_Z (fall)	0.086 + 0.305*Tr + 0.214*C	0.187 + 0.330*Tr + 0.450*C	0.126 + 0.315*Tr + 0.295*C
AN4DLLX6	B-Z	B_Z (rise)	0.070 + 0.159*Tr + 0.273*C	0.194 + 0.187*Tr + 0.578*C	0.112 + 0.173*Tr + 0.392*C
AN4DLLX6	C-Z	C_Z (fall)	0.078 + 0.293*Tr + 0.213*C	0.170 + 0.317*Tr + 0.447*C	0.114 + 0.303*Tr + 0.293*C
AN4DLLX6	C-Z	C_Z (rise)	0.066 + 0.178*Tr + 0.273*C	0.176 + 0.209*Tr + 0.577*C	0.104 + 0.191*Tr + 0.391*C
AN4DLLX6	D-Z	D_Z (fall)	0.099 + 0.193*Tr + 0.209*C	0.222 + 0.232*Tr + 0.437*C	0.145 + 0.208*Tr + 0.285*C
AN4DLLX6	D-Z	D_Z (rise)	0.093 + 0.243*Tr + 0.270*C	0.229 + 0.249*Tr + 0.569*C	0.142 + 0.245*Tr + 0.386*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AN4DLLX8	A-Z	A_Z (fall)	0.091 + 0.314*Tr + 0.161*C	0.196 + 0.338*Tr + 0.340*C	0.132 + 0.323*Tr + 0.222*C
AN4DLLX8	A-Z	A_Z (rise)	0.072 + 0.138*Tr + 0.205*C	0.196 + 0.165*Tr + 0.432*C	0.114 + 0.153*Tr + 0.294*C
AN4DLLX8	B-Z	B_Z (fall)	0.085 + 0.303*Tr + 0.160*C	0.184 + 0.328*Tr + 0.338*C	0.124 + 0.313*Tr + 0.221*C
AN4DLLX8	B-Z	B_Z (rise)	0.069 + 0.159*Tr + 0.205*C	0.188 + 0.185*Tr + 0.432*C	0.109 + 0.172*Tr + 0.294*C
AN4DLLX8	C-Z	C_Z (fall)	0.077 + 0.292*Tr + 0.160*C	0.167 + 0.315*Tr + 0.336*C	0.113 + 0.301*Tr + 0.220*C
AN4DLLX8	C-Z	C_Z (rise)	0.065 + 0.177*Tr + 0.205*C	0.171 + 0.207*Tr + 0.432*C	0.102 + 0.190*Tr + 0.293*C
AN4DLLX8	D-Z	D_Z (fall)	0.097 + 0.195*Tr + 0.157*C	0.216 + 0.232*Tr + 0.328*C	0.142 + 0.209*Tr + 0.214*C
AN4DLLX8	D-Z	D_Z (rise)	0.090 + 0.236*Tr + 0.203*C	0.221 + 0.243*Tr + 0.426*C	0.138 + 0.238*Tr + 0.289*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AN4DLL	4664.730	84643.600
AN4DLLP	6704.960	134840.000
AN4DLLX4	11480.300	245550.000
AN4DLLX6	16793.100	362775.000
AN4DLLX8	21811.500	475825.000

Internal Energy at minimum output load

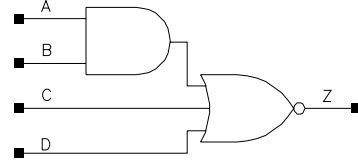
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AN4DLL	Z(max)	$0.017 + 0.005 * Tr$
AN4DLLP	Z(max)	$0.027 + 0.012 * Tr$
AN4DLLX4	Z(max)	$0.050 + 0.025 * Tr$
AN4DLLX6	Z(max)	$0.077 + 0.037 * Tr$
AN4DLLX8	Z(max)	$0.102 + 0.050 * Tr$

AO1LL
AO1LLP
AO1LLX4
AO1LLX6
AO1LLX8

Function: Function = 2 Input AND into 3 Input NOR

Boolean Expression: $Z = \overline{(A \bullet B + C + D)}$



Physical Dimensions

Property	AO1LL	AO1LLP	AO1LLX4	AO1LLX6	AO1LLX8
Area(um2)	10.086	12.103	22.189	32.275	42.361

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1LL	C Input Cap.	0.0023	0.0021	0.0022
AO1LL	Z Max Load	0.160	0.160	0.160
AO1LL	A Input Cap.	0.0026	0.0023	0.0024
AO1LL	D Input Cap.	0.0020	0.0018	0.0019
AO1LL	B Input Cap.	0.0025	0.0023	0.0024
AO1LLP	D Input Cap.	0.0039	0.0036	0.0037
AO1LLP	B Input Cap.	0.0050	0.0046	0.0047
AO1LLP	C Input Cap.	0.0045	0.0041	0.0042
AO1LLP	Z Max Load	0.320	0.320	0.320
AO1LLP	A Input Cap.	0.0051	0.0046	0.0048
AO1LLX4	C Input Cap.	0.0091	0.0083	0.0085
AO1LLX4	Z Max Load	0.640	0.640	0.640
AO1LLX4	A Input Cap.	0.0099	0.0090	0.0093
AO1LLX4	D Input Cap.	0.0077	0.0071	0.0073
AO1LLX4	B Input Cap.	0.0094	0.0086	0.0089
AO1LLX6	D Input Cap.	0.0111	0.0103	0.0106
AO1LLX6	Z Max Load	0.960	0.960	0.960
AO1LLX6	B Input Cap.	0.0141	0.0129	0.0134

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1LLX6	C Input Cap.	0.0127	0.0115	0.0118
AO1LLX6	A Input Cap.	0.0146	0.0133	0.0138
AO1LLX8	A Input Cap.	0.0195	0.0178	0.0184
AO1LLX8	D Input Cap.	0.0149	0.0138	0.0142
AO1LLX8	B Input Cap.	0.0186	0.0170	0.0176
AO1LLX8	C Input Cap.	0.0175	0.0159	0.0163
AO1LLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1LL	A-Z	A_Z (fall)	0.027 + 0.238*Tr + 3.216*C	0.088 + 0.274*Tr + 8.520*C	0.044 + 0.259*Tr + 4.982*C
AO1LL	A-Z	A_Z (rise)	0.043 + 0.190*Tr + 4.884*C	0.111 + 0.207*Tr + 10.950*C	0.067 + 0.201*Tr + 7.304*C
AO1LL	B-Z	B_Z (fall)	0.024 + 0.282*Tr + 3.268*C	0.081 + 0.322*Tr + 8.538*C	0.038 + 0.302*Tr + 5.038*C
AO1LL	B-Z	B_Z (rise)	0.039 + 0.185*Tr + 4.903*C	0.103 + 0.204*Tr + 10.976*C	0.061 + 0.197*Tr + 7.325*C
AO1LL	C-Z	C_Z (fall)	0.012 + 0.284*Tr + 3.044*C	0.039 + 0.334*Tr + 7.052*C	0.016 + 0.307*Tr + 4.453*C
AO1LL	C-Z	C_Z (rise)	0.020 + 0.233*Tr + 4.180*C	0.076 + 0.247*Tr + 11.000*C	0.045 + 0.248*Tr + 7.365*C
AO1LL	D-Z	D_Z (fall)	0.005 + 0.273*Tr + 3.088*C	0.021 + 0.324*Tr + 7.134*C	0.005 + 0.297*Tr + 4.513*C
AO1LL	D-Z	D_Z (rise)	0.010 + 0.287*Tr + 4.231*C	0.042 + 0.295*Tr + 11.018*C	0.025 + 0.295*Tr + 7.403*C
AO1LLP	A-Z	A_Z (fall)	0.027 + 0.246*Tr + 1.622*C	0.084 + 0.278*Tr + 4.077*C	0.041 + 0.265*Tr + 2.455*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1LLP	A-Z	A_Z (rise)	0.037 + 0.181*Tr + 2.202*C	0.097 + 0.196*Tr + 4.855*C	0.057 + 0.191*Tr + 3.266*C
AO1LLP	B-Z	B_Z (fall)	0.022 + 0.289*Tr + 1.648*C	0.075 + 0.324*Tr + 4.090*C	0.035 + 0.307*Tr + 2.485*C
AO1LLP	B-Z	B_Z (rise)	0.033 + 0.175*Tr + 2.212*C	0.087 + 0.192*Tr + 4.871*C	0.051 + 0.187*Tr + 3.281*C
AO1LLP	C-Z	C_Z (fall)	0.010 + 0.294*Tr + 1.552*C	0.032 + 0.339*Tr + 3.344*C	0.012 + 0.314*Tr + 2.200*C
AO1LLP	C-Z	C_Z (rise)	0.014 + 0.216*Tr + 1.892*C	0.063 + 0.231*Tr + 4.896*C	0.035 + 0.232*Tr + 3.310*C
AO1LLP	D-Z	D_Z (fall)	0.001 + 0.282*Tr + 1.581*C	0.010 + 0.326*Tr + 3.399*C	-0.003 + 0.303*Tr + 2.241*C
AO1LLP	D-Z	D_Z (rise)	0.002 + 0.268*Tr + 1.928*C	0.026 + 0.276*Tr + 4.915*C	0.012 + 0.276*Tr + 3.341*C
AO1LLX4	A-Z	A_Z (fall)	0.028 + 0.242*Tr + 0.812*C	0.085 + 0.276*Tr + 2.043*C	0.043 + 0.261*Tr + 1.230*C
AO1LLX4	A-Z	A_Z (rise)	0.037 + 0.179*Tr + 1.102*C	0.098 + 0.194*Tr + 2.430*C	0.059 + 0.189*Tr + 1.635*C
AO1LLX4	B-Z	B_Z (fall)	0.024 + 0.284*Tr + 0.825*C	0.075 + 0.322*Tr + 2.047*C	0.037 + 0.303*Tr + 1.245*C
AO1LLX4	B-Z	B_Z (rise)	0.033 + 0.172*Tr + 1.107*C	0.087 + 0.190*Tr + 2.437*C	0.051 + 0.184*Tr + 1.642*C
AO1LLX4	C-Z	C_Z (fall)	0.012 + 0.287*Tr + 0.777*C	0.035 + 0.333*Tr + 1.675*C	0.016 + 0.306*Tr + 1.102*C
AO1LLX4	C-Z	C_Z (rise)	0.015 + 0.211*Tr + 0.948*C	0.064 + 0.228*Tr + 2.451*C	0.037 + 0.228*Tr + 1.657*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1LLX4	D-Z	D_Z (fall)	0.004 + 0.279*Tr + 0.812*C	0.013 + 0.321*Tr + 1.688*C	0.003 + 0.298*Tr + 1.133*C
AO1LLX4	D-Z	D_Z (rise)	0.004 + 0.258*Tr + 0.968*C	0.027 + 0.271*Tr + 2.463*C	0.014 + 0.270*Tr + 1.675*C
AO1LLX6	A-Z	A_Z (fall)	0.026 + 0.239*Tr + 0.537*C	0.081 + 0.273*Tr + 1.346*C	0.040 + 0.258*Tr + 0.812*C
AO1LLX6	A-Z	A_Z (rise)	0.036 + 0.177*Tr + 0.735*C	0.096 + 0.191*Tr + 1.622*C	0.057 + 0.187*Tr + 1.091*C
AO1LLX6	B-Z	B_Z (fall)	0.022 + 0.280*Tr + 0.545*C	0.072 + 0.317*Tr + 1.350*C	0.034 + 0.298*Tr + 0.823*C
AO1LLX6	B-Z	B_Z (rise)	0.032 + 0.170*Tr + 0.740*C	0.085 + 0.186*Tr + 1.628*C	0.050 + 0.181*Tr + 1.097*C
AO1LLX6	C-Z	C_Z (fall)	0.012 + 0.287*Tr + 0.528*C	0.033 + 0.330*Tr + 1.111*C	0.014 + 0.305*Tr + 0.741*C
AO1LLX6	C-Z	C_Z (rise)	0.014 + 0.206*Tr + 0.635*C	0.064 + 0.222*Tr + 1.638*C	0.036 + 0.223*Tr + 1.109*C
AO1LLX6	D-Z	D_Z (fall)	0.002 + 0.273*Tr + 0.539*C	0.010 + 0.314*Tr + 1.132*C	-0.001 + 0.291*Tr + 0.757*C
AO1LLX6	D-Z	D_Z (rise)	0.002 + 0.254*Tr + 0.648*C	0.025 + 0.265*Tr + 1.646*C	0.012 + 0.264*Tr + 1.120*C
AO1LLX8	A-Z	A_Z (fall)	0.027 + 0.242*Tr + 0.411*C	0.083 + 0.275*Tr + 1.020*C	0.042 + 0.260*Tr + 0.619*C
AO1LLX8	A-Z	A_Z (rise)	0.037 + 0.176*Tr + 0.552*C	0.097 + 0.191*Tr + 1.217*C	0.057 + 0.186*Tr + 0.819*C
AO1LLX8	B-Z	B_Z (fall)	0.023 + 0.283*Tr + 0.417*C	0.073 + 0.319*Tr + 1.023*C	0.036 + 0.300*Tr + 0.626*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1LLX8	B-Z	B_Z (rise)	0.032 + 0.169*Tr + 0.555*C	0.086 + 0.186*Tr + 1.222*C	0.050 + 0.181*Tr + 0.823*C
AO1LLX8	C-Z	C_Z (fall)	0.013 + 0.289*Tr + 0.404*C	0.035 + 0.331*Tr + 0.841*C	0.017 + 0.307*Tr + 0.563*C
AO1LLX8	C-Z	C_Z (rise)	0.014 + 0.204*Tr + 0.477*C	0.064 + 0.222*Tr + 1.230*C	0.036 + 0.222*Tr + 0.832*C
AO1LLX8	D-Z	D_Z (fall)	0.003 + 0.275*Tr + 0.412*C	0.011 + 0.316*Tr + 0.858*C	0.001 + 0.293*Tr + 0.576*C
AO1LLX8	D-Z	D_Z (rise)	0.002 + 0.253*Tr + 0.487*C	0.025 + 0.266*Tr + 1.236*C	0.013 + 0.264*Tr + 0.841*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO1LL	3254.110	57485.000
AO1LLP	4805.290	97659.400
AO1LLX4	9111.090	188846.000
AO1LLX6	13433.300	280750.000
AO1LLX8	16726.400	357751.000

Internal Energy at minimum output load

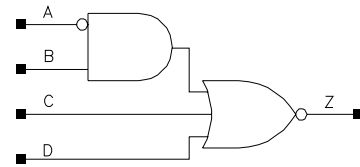
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO1LL	Z(max)	0.011 + 0.007*Tr
AO1LLP	Z(max)	0.021 + 0.014*Tr
AO1LLX4	Z(max)	0.041 + 0.030*Tr
AO1LLX6	Z(max)	0.060 + 0.046*Tr
AO1LLX8	Z(max)	0.080 + 0.060*Tr

AO1ALL
AO1ALLP
AO1ALLX4
AO1ALLX6
AO1ALLX8

Function: Function = 2 Input AND into 3 Input NOR, A Input Inverted

Boolean Expression: $Z = !(A' \bullet B + C + D)$



Physical Dimensions

Property	AO1ALL	AO1ALLP	AO1ALLX4	AO1ALLX6	AO1ALLX8
Area(um ²)	14.120	16.138	24.206	36.310	44.378

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1ALL	Z Max Load	0.160	0.160	0.160
AO1ALL	C Input Cap.	0.0025	0.0022	0.0023
AO1ALL	A Input Cap.	0.0013	0.0010	0.0011
AO1ALL	D Input Cap.	0.0022	0.0020	0.0021
AO1ALL	B Input Cap.	0.0027	0.0024	0.0026
AO1ALLP	A Input Cap.	0.0022	0.0018	0.0019
AO1ALLP	D Input Cap.	0.0039	0.0036	0.0037
AO1ALLP	B Input Cap.	0.0050	0.0046	0.0047
AO1ALLP	Z Max Load	0.320	0.320	0.320
AO1ALLP	C Input Cap.	0.0045	0.0041	0.0042
AO1ALLX4	D Input Cap.	0.0077	0.0071	0.0073
AO1ALLX4	B Input Cap.	0.0098	0.0089	0.0093
AO1ALLX4	Z Max Load	0.640	0.640	0.640
AO1ALLX4	C Input Cap.	0.0092	0.0084	0.0086
AO1ALLX4	A Input Cap.	0.0035	0.0030	0.0032
AO1ALLX6	C Input Cap.	0.0126	0.0114	0.0117
AO1ALLX6	A Input Cap.	0.0052	0.0045	0.0046
AO1ALLX6	Z Max Load	0.960	0.960	0.960
AO1ALLX6	D Input Cap.	0.0112	0.0103	0.0107

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1ALLX6	B Input Cap.	0.0142	0.0129	0.0134
AO1ALLX8	Z Max Load	1.280	1.280	1.280
AO1ALLX8	C Input Cap.	0.0175	0.0159	0.0164
AO1ALLX8	A Input Cap.	0.0066	0.0058	0.0060
AO1ALLX8	D Input Cap.	0.0149	0.0138	0.0142
AO1ALLX8	B Input Cap.	0.0208	0.0191	0.0197

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1ALL	A-Z	A_Z (fall)	0.082 + 0.273*Tr + 2.952*C	0.208 + 0.281*Tr + 7.928*C	0.127 + 0.276*Tr + 4.553*C
AO1ALL	A-Z	A_Z (rise)	0.076 + 0.157*Tr + 4.460*C	0.188 + 0.204*Tr + 9.963*C	0.116 + 0.177*Tr + 6.629*C
AO1ALL	B-Z	B_Z (fall)	0.024 + 0.283*Tr + 3.110*C	0.080 + 0.322*Tr + 8.067*C	0.037 + 0.302*Tr + 4.787*C
AO1ALL	B-Z	B_Z (rise)	0.040 + 0.187*Tr + 4.527*C	0.100 + 0.205*Tr + 10.110*C	0.062 + 0.200*Tr + 6.756*C
AO1ALL	C-Z	C_Z (fall)	0.011 + 0.281*Tr + 2.761*C	0.035 + 0.331*Tr + 6.268*C	0.014 + 0.304*Tr + 4.018*C
AO1ALL	C-Z	C_Z (rise)	0.019 + 0.231*Tr + 3.838*C	0.074 + 0.246*Tr + 10.131*C	0.044 + 0.246*Tr + 6.790*C
AO1ALL	D-Z	D_Z (fall)	0.004 + 0.270*Tr + 2.808*C	0.018 + 0.320*Tr + 6.353*C	0.003 + 0.293*Tr + 4.083*C
AO1ALL	D-Z	D_Z (rise)	0.009 + 0.284*Tr + 3.894*C	0.040 + 0.292*Tr + 10.157*C	0.023 + 0.292*Tr + 6.836*C
AO1ALLP	A-Z	A_Z (fall)	0.081 + 0.260*Tr + 1.565*C	0.199 + 0.269*Tr + 4.004*C	0.124 + 0.264*Tr + 2.359*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1ALLP	A-Z	A_Z (rise)	0.073 + 0.174*Tr + 2.184*C	0.177 + 0.215*Tr + 4.834*C	0.111 + 0.191*Tr + 3.228*C
AO1ALLP	B-Z	B_Z (fall)	0.022 + 0.290*Tr + 1.648*C	0.075 + 0.324*Tr + 4.091*C	0.034 + 0.307*Tr + 2.488*C
AO1ALLP	B-Z	B_Z (rise)	0.035 + 0.174*Tr + 2.215*C	0.087 + 0.192*Tr + 4.872*C	0.053 + 0.187*Tr + 3.280*C
AO1ALLP	C-Z	C_Z (fall)	0.010 + 0.294*Tr + 1.552*C	0.032 + 0.339*Tr + 3.344*C	0.012 + 0.314*Tr + 2.200*C
AO1ALLP	C-Z	C_Z (rise)	0.014 + 0.216*Tr + 1.896*C	0.064 + 0.231*Tr + 4.961*C	0.036 + 0.232*Tr + 3.345*C
AO1ALLP	D-Z	D_Z (fall)	0.001 + 0.282*Tr + 1.581*C	0.010 + 0.326*Tr + 3.398*C	-0.003 + 0.303*Tr + 2.241*C
AO1ALLP	D-Z	D_Z (rise)	0.002 + 0.268*Tr + 1.932*C	0.026 + 0.276*Tr + 4.981*C	0.013 + 0.276*Tr + 3.376*C
AO1ALLX4	A-Z	A_Z (fall)	0.080 + 0.250*Tr + 0.783*C	0.194 + 0.262*Tr + 2.003*C	0.122 + 0.255*Tr + 1.181*C
AO1ALLX4	A-Z	A_Z (rise)	0.073 + 0.192*Tr + 1.084*C	0.174 + 0.230*Tr + 2.384*C	0.110 + 0.208*Tr + 1.595*C
AO1ALLX4	B-Z	B_Z (fall)	0.023 + 0.284*Tr + 0.825*C	0.073 + 0.322*Tr + 2.050*C	0.035 + 0.302*Tr + 1.246*C
AO1ALLX4	B-Z	B_Z (rise)	0.034 + 0.172*Tr + 1.109*C	0.085 + 0.189*Tr + 2.439*C	0.052 + 0.184*Tr + 1.643*C
AO1ALLX4	C-Z	C_Z (fall)	0.012 + 0.286*Tr + 0.778*C	0.033 + 0.332*Tr + 1.677*C	0.015 + 0.306*Tr + 1.103*C
AO1ALLX4	C-Z	C_Z (rise)	0.014 + 0.211*Tr + 0.948*C	0.060 + 0.227*Tr + 2.452*C	0.034 + 0.228*Tr + 1.657*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1ALLX4	D-Z	D_Z (fall)	0.003 + 0.278*Tr + 0.813*C	0.012 + 0.321*Tr + 1.690*C	0.002 + 0.297*Tr + 1.134*C
AO1ALLX4	D-Z	D_Z (rise)	0.003 + 0.258*Tr + 0.969*C	0.025 + 0.270*Tr + 2.465*C	0.012 + 0.269*Tr + 1.677*C
AO1ALLX6	A-Z	A_Z (fall)	0.076 + 0.240*Tr + 0.516*C	0.184 + 0.251*Tr + 1.318*C	0.115 + 0.244*Tr + 0.777*C
AO1ALLX6	A-Z	A_Z (rise)	0.071 + 0.191*Tr + 0.724*C	0.169 + 0.226*Tr + 1.596*C	0.107 + 0.205*Tr + 1.068*C
AO1ALLX6	B-Z	B_Z (fall)	0.021 + 0.280*Tr + 0.546*C	0.071 + 0.317*Tr + 1.351*C	0.033 + 0.298*Tr + 0.823*C
AO1ALLX6	B-Z	B_Z (rise)	0.034 + 0.169*Tr + 0.741*C	0.085 + 0.186*Tr + 1.628*C	0.051 + 0.181*Tr + 1.097*C
AO1ALLX6	C-Z	C_Z (fall)	0.011 + 0.287*Tr + 0.528*C	0.033 + 0.329*Tr + 1.111*C	0.014 + 0.305*Tr + 0.741*C
AO1ALLX6	C-Z	C_Z (rise)	0.013 + 0.206*Tr + 0.635*C	0.063 + 0.222*Tr + 1.645*C	0.035 + 0.223*Tr + 1.113*C
AO1ALLX6	D-Z	D_Z (fall)	0.002 + 0.272*Tr + 0.540*C	0.010 + 0.314*Tr + 1.133*C	-0.001 + 0.291*Tr + 0.757*C
AO1ALLX6	D-Z	D_Z (rise)	0.002 + 0.254*Tr + 0.649*C	0.025 + 0.265*Tr + 1.653*C	0.012 + 0.264*Tr + 1.123*C
AO1ALLX8	A-Z	A_Z (fall)	0.078 + 0.240*Tr + 0.396*C	0.188 + 0.251*Tr + 0.999*C	0.117 + 0.244*Tr + 0.593*C
AO1ALLX8	A-Z	A_Z (rise)	0.072 + 0.193*Tr + 0.542*C	0.170 + 0.227*Tr + 1.192*C	0.108 + 0.207*Tr + 0.798*C
AO1ALLX8	B-Z	B_Z (fall)	0.024 + 0.282*Tr + 0.418*C	0.075 + 0.319*Tr + 1.023*C	0.037 + 0.300*Tr + 0.627*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1ALLX8	B-Z	B_Z (rise)	0.035 + 0.168*Tr + 0.556*C	0.088 + 0.186*Tr + 1.223*C	0.054 + 0.181*Tr + 0.824*C
AO1ALLX8	C-Z	C_Z (fall)	0.013 + 0.288*Tr + 0.401*C	0.034 + 0.331*Tr + 0.834*C	0.016 + 0.306*Tr + 0.559*C
AO1ALLX8	C-Z	C_Z (rise)	0.014 + 0.205*Tr + 0.477*C	0.064 + 0.223*Tr + 1.230*C	0.036 + 0.223*Tr + 0.832*C
AO1ALLX8	D-Z	D_Z (fall)	0.003 + 0.274*Tr + 0.409*C	0.011 + 0.315*Tr + 0.849*C	0.001 + 0.292*Tr + 0.571*C
AO1ALLX8	D-Z	D_Z (rise)	0.002 + 0.253*Tr + 0.487*C	0.025 + 0.266*Tr + 1.236*C	0.013 + 0.265*Tr + 0.841*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO1ALL	4918.700	82602.200
AO1ALLP	6471.880	124654.000
AO1ALLX4	11391.600	229936.000
AO1ALLX6	16429.700	336659.000
AO1ALLX8	20548.600	430774.000

Internal Energy at minimum output load

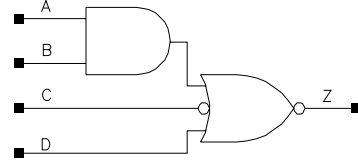
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO1ALL	Z(max)	0.018 + 0.005*Tr
AO1ALLP	Z(max)	0.032 + 0.008*Tr
AO1ALLX4	Z(max)	0.062 + 0.016*Tr
AO1ALLX6	Z(max)	0.092 + 0.023*Tr
AO1ALLX8	Z(max)	0.124 + 0.031*Tr

AO1CLL
AO1CLLP
AO1CLLX4
AO1CLLX6
AO1CLLX8

Function: Function = 2 Input AND into 3 Input NOR, C Input Inverted

Boolean Expression: $Z = \overline{(A \bullet B + C' + D)}$



Physical Dimensions

Property	AO1CLL	AO1CLLP	AO1CLLX4	AO1CLLX6	AO1CLLX8
Area(um2)	14.120	16.138	24.206	36.310	44.378

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1CLL	C Input Cap.	0.0012	0.0009	0.0010
AO1CLL	A Input Cap.	0.0029	0.0026	0.0027
AO1CLL	Z Max Load	0.160	0.160	0.160
AO1CLL	D Input Cap.	0.0023	0.0020	0.0021
AO1CLL	B Input Cap.	0.0028	0.0025	0.0026
AO1CLLP	A Input Cap.	0.0051	0.0047	0.0049
AO1CLLP	Z Max Load	0.320	0.320	0.320
AO1CLLP	D Input Cap.	0.0040	0.0037	0.0038
AO1CLLP	B Input Cap.	0.0049	0.0045	0.0047
AO1CLLP	C Input Cap.	0.0021	0.0017	0.0018
AO1CLLX4	C Input Cap.	0.0036	0.0031	0.0032
AO1CLLX4	A Input Cap.	0.0114	0.0106	0.0109
AO1CLLX4	Z Max Load	0.640	0.640	0.640
AO1CLLX4	D Input Cap.	0.0077	0.0071	0.0073
AO1CLLX4	B Input Cap.	0.0097	0.0089	0.0093
AO1CLLX6	Z Max Load	0.960	0.960	0.960
AO1CLLX6	C Input Cap.	0.0050	0.0043	0.0045
AO1CLLX6	A Input Cap.	0.0146	0.0134	0.0139

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1CLLX6	D Input Cap.	0.0112	0.0103	0.0106
AO1CLLX6	B Input Cap.	0.0141	0.0129	0.0134
AO1CLLX8	B Input Cap.	0.0206	0.0190	0.0196
AO1CLLX8	C Input Cap.	0.0066	0.0057	0.0060
AO1CLLX8	A Input Cap.	0.0195	0.0178	0.0185
AO1CLLX8	Z Max Load	1.280	1.280	1.280
AO1CLLX8	D Input Cap.	0.0150	0.0138	0.0142

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1CLL	A-Z	A_Z (fall)	0.027 + 0.239*Tr + 3.060*C	0.087 + 0.274*Tr + 8.050*C	0.043 + 0.259*Tr + 4.729*C
AO1CLL	A-Z	A_Z (rise)	0.042 + 0.191*Tr + 4.507*C	0.111 + 0.207*Tr + 10.087*C	0.066 + 0.202*Tr + 6.737*C
AO1CLL	B-Z	B_Z (fall)	0.023 + 0.282*Tr + 3.110*C	0.079 + 0.322*Tr + 8.070*C	0.037 + 0.302*Tr + 4.789*C
AO1CLL	B-Z	B_Z (rise)	0.038 + 0.186*Tr + 4.524*C	0.101 + 0.203*Tr + 10.113*C	0.060 + 0.198*Tr + 6.759*C
AO1CLL	C-Z	C_Z (fall)	0.078 + 0.282*Tr + 2.545*C	0.184 + 0.296*Tr + 5.944*C	0.119 + 0.287*Tr + 3.657*C
AO1CLL	C-Z	C_Z (rise)	0.061 + 0.164*Tr + 3.719*C	0.166 + 0.207*Tr + 9.970*C	0.104 + 0.180*Tr + 6.629*C
AO1CLL	D-Z	D_Z (fall)	0.004 + 0.270*Tr + 2.808*C	0.017 + 0.320*Tr + 6.351*C	0.002 + 0.293*Tr + 4.083*C
AO1CLL	D-Z	D_Z (rise)	0.009 + 0.285*Tr + 3.893*C	0.039 + 0.293*Tr + 10.152*C	0.022 + 0.292*Tr + 6.837*C
AO1CLLP	A-Z	A_Z (fall)	0.025 + 0.246*Tr + 1.624*C	0.081 + 0.279*Tr + 4.081*C	0.039 + 0.265*Tr + 2.457*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1CLLP	A-Z	A_Z (rise)	0.037 + 0.179*Tr + 2.203*C	0.099 + 0.194*Tr + 4.856*C	0.058 + 0.190*Tr + 3.267*C
AO1CLLP	B-Z	B_Z (fall)	0.021 + 0.290*Tr + 1.650*C	0.073 + 0.324*Tr + 4.093*C	0.033 + 0.307*Tr + 2.488*C
AO1CLLP	B-Z	B_Z (rise)	0.033 + 0.173*Tr + 2.214*C	0.089 + 0.190*Tr + 4.872*C	0.051 + 0.185*Tr + 3.281*C
AO1CLLP	C-Z	C_Z (fall)	0.074 + 0.264*Tr + 1.446*C	0.169 + 0.279*Tr + 3.171*C	0.111 + 0.270*Tr + 2.016*C
AO1CLLP	C-Z	C_Z (rise)	0.056 + 0.175*Tr + 1.807*C	0.149 + 0.212*Tr + 4.768*C	0.095 + 0.189*Tr + 3.191*C
AO1CLLP	D-Z	D_Z (fall)	0.000 + 0.282*Tr + 1.583*C	0.009 + 0.326*Tr + 3.400*C	-0.003 + 0.302*Tr + 2.245*C
AO1CLLP	D-Z	D_Z (rise)	0.001 + 0.267*Tr + 1.929*C	0.024 + 0.276*Tr + 4.917*C	0.011 + 0.276*Tr + 3.342*C
AO1CLLX4	A-Z	A_Z (fall)	0.026 + 0.242*Tr + 0.813*C	0.081 + 0.276*Tr + 2.042*C	0.041 + 0.261*Tr + 1.229*C
AO1CLLX4	A-Z	A_Z (rise)	0.037 + 0.177*Tr + 1.103*C	0.098 + 0.191*Tr + 2.431*C	0.058 + 0.187*Tr + 1.635*C
AO1CLLX4	B-Z	B_Z (fall)	0.023 + 0.284*Tr + 0.826*C	0.073 + 0.322*Tr + 2.049*C	0.035 + 0.302*Tr + 1.246*C
AO1CLLX4	B-Z	B_Z (rise)	0.033 + 0.171*Tr + 1.108*C	0.088 + 0.187*Tr + 2.440*C	0.052 + 0.182*Tr + 1.643*C
AO1CLLX4	C-Z	C_Z (fall)	0.070 + 0.249*Tr + 0.745*C	0.157 + 0.264*Tr + 1.568*C	0.104 + 0.254*Tr + 1.018*C
AO1CLLX4	C-Z	C_Z (rise)	0.055 + 0.188*Tr + 0.904*C	0.142 + 0.221*Tr + 2.384*C	0.091 + 0.200*Tr + 1.596*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1CLLX4	D-Z	D_Z (fall)	0.004 + 0.278*Tr + 0.813*C	0.012 + 0.321*Tr + 1.689*C	0.002 + 0.297*Tr + 1.134*C
AO1CLLX4	D-Z	D_Z (rise)	0.003 + 0.258*Tr + 0.968*C	0.024 + 0.271*Tr + 2.465*C	0.012 + 0.269*Tr + 1.676*C
AO1CLLX6	A-Z	A_Z (fall)	0.025 + 0.239*Tr + 0.537*C	0.079 + 0.273*Tr + 1.347*C	0.039 + 0.258*Tr + 0.813*C
AO1CLLX6	A-Z	A_Z (rise)	0.037 + 0.176*Tr + 0.736*C	0.099 + 0.189*Tr + 1.622*C	0.058 + 0.185*Tr + 1.092*C
AO1CLLX6	B-Z	B_Z (fall)	0.021 + 0.280*Tr + 0.546*C	0.070 + 0.317*Tr + 1.351*C	0.033 + 0.298*Tr + 0.824*C
AO1CLLX6	B-Z	B_Z (rise)	0.033 + 0.169*Tr + 0.740*C	0.088 + 0.184*Tr + 1.628*C	0.051 + 0.179*Tr + 1.097*C
AO1CLLX6	C-Z	C_Z (fall)	0.068 + 0.242*Tr + 0.490*C	0.151 + 0.256*Tr + 1.047*C	0.100 + 0.247*Tr + 0.675*C
AO1CLLX6	C-Z	C_Z (rise)	0.054 + 0.190*Tr + 0.603*C	0.141 + 0.220*Tr + 1.589*C	0.090 + 0.201*Tr + 1.064*C
AO1CLLX6	D-Z	D_Z (fall)	0.002 + 0.273*Tr + 0.539*C	0.010 + 0.314*Tr + 1.132*C	-0.001 + 0.291*Tr + 0.757*C
AO1CLLX6	D-Z	D_Z (rise)	0.002 + 0.254*Tr + 0.648*C	0.024 + 0.266*Tr + 1.645*C	0.012 + 0.265*Tr + 1.119*C
AO1CLLX8	A-Z	A_Z (fall)	0.027 + 0.242*Tr + 0.411*C	0.081 + 0.275*Tr + 1.020*C	0.041 + 0.260*Tr + 0.619*C
AO1CLLX8	A-Z	A_Z (rise)	0.037 + 0.174*Tr + 0.552*C	0.099 + 0.189*Tr + 1.218*C	0.059 + 0.185*Tr + 0.819*C
AO1CLLX8	B-Z	B_Z (fall)	0.023 + 0.282*Tr + 0.418*C	0.073 + 0.319*Tr + 1.023*C	0.036 + 0.300*Tr + 0.627*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1CLLX8	B-Z	B_Z (rise)	0.034 + 0.167*Tr + 0.556*C	0.090 + 0.184*Tr + 1.223*C	0.053 + 0.179*Tr + 0.824*C
AO1CLLX8	C-Z	C_Z (fall)	0.068 + 0.240*Tr + 0.369*C	0.150 + 0.254*Tr + 0.776*C	0.100 + 0.245*Tr + 0.504*C
AO1CLLX8	C-Z	C_Z (rise)	0.054 + 0.191*Tr + 0.452*C	0.140 + 0.220*Tr + 1.192*C	0.090 + 0.201*Tr + 0.798*C
AO1CLLX8	D-Z	D_Z (fall)	0.003 + 0.273*Tr + 0.405*C	0.010 + 0.315*Tr + 0.842*C	0.000 + 0.291*Tr + 0.566*C
AO1CLLX8	D-Z	D_Z (rise)	0.002 + 0.254*Tr + 0.486*C	0.025 + 0.267*Tr + 1.235*C	0.012 + 0.265*Tr + 0.840*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO1CLL	3838.610	70918.000
AO1CLLP	5511.410	114279.000
AO1CLLX4	9844.110	213025.000
AO1CLLX6	15204.600	325561.000
AO1CLLX8	19233.800	421258.000

Internal Energy at minimum output load

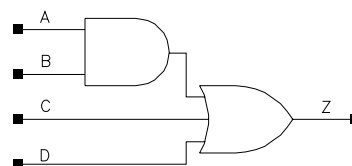
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO1CLL	Z(max)	0.015 + 0.005*Tr
AO1CLLP	Z(max)	0.025 + 0.009*Tr
AO1CLLX4	Z(max)	0.039 + 0.030*Tr
AO1CLLX6	Z(max)	0.059 + 0.046*Tr
AO1CLLX8	Z(max)	0.079 + 0.060*Tr

AO1NLL
AO1NLLP
AO1NLLX4
AO1NLLX6
AO1NLLX8

Function: Function = 2 Input AND into 3 Input OR

Boolean Expression: $Z = (A \bullet B + C + D)$



Physical Dimensions

Property	AO1NLL	AO1NLLP	AO1NLLX4	AO1NLLX6	AO1NLLX8
Area(um2)	14.120	16.138	20.172	28.241	32.275

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1NLL	A Input Cap.	0.0019	0.0017	0.0018
AO1NLL	D Input Cap.	0.0018	0.0014	0.0015
AO1NLL	Z Max Load	0.160	0.160	0.160
AO1NLL	B Input Cap.	0.0020	0.0017	0.0018
AO1NLL	C Input Cap.	0.0018	0.0015	0.0016
AO1NLLP	C Input Cap.	0.0025	0.0022	0.0023
AO1NLLP	A Input Cap.	0.0027	0.0024	0.0025
AO1NLLP	D Input Cap.	0.0024	0.0020	0.0021
AO1NLLP	Z Max Load	0.320	0.320	0.320
AO1NLLP	B Input Cap.	0.0027	0.0024	0.0025
AO1NLLX4	Z Max Load	0.640	0.640	0.640
AO1NLLX4	B Input Cap.	0.0051	0.0046	0.0047
AO1NLLX4	C Input Cap.	0.0047	0.0041	0.0043
AO1NLLX4	A Input Cap.	0.0052	0.0046	0.0048
AO1NLLX4	D Input Cap.	0.0046	0.0039	0.0040
AO1NLLX6	A Input Cap.	0.0084	0.0076	0.0078
AO1NLLX6	D Input Cap.	0.0068	0.0059	0.0061
AO1NLLX6	B Input Cap.	0.0075	0.0067	0.0070
AO1NLLX6	C Input Cap.	0.0074	0.0065	0.0067
AO1NLLX6	Z Max Load	0.960	0.960	0.960

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1NLLX8	C Input Cap.	0.0095	0.0083	0.0086
AO1NLLX8	A Input Cap.	0.0116	0.0104	0.0108
AO1NLLX8	D Input Cap.	0.0087	0.0075	0.0078
AO1NLLX8	Z Max Load	1.280	1.280	1.280
AO1NLLX8	B Input Cap.	0.0099	0.0088	0.0092

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1NLL	A-Z	A_Z (fall)	0.106 + 0.202*Tr + 1.295°C	0.260 + 0.211*Tr + 2.836°C	0.165 + 0.206*Tr + 1.822°C
AO1NLL	A-Z	A_Z (rise)	0.080 + 0.213*Tr + 1.649°C	0.223 + 0.257*Tr + 3.540°C	0.127 + 0.233*Tr + 2.385°C
AO1NLL	B-Z	B_Z (fall)	0.101 + 0.194*Tr + 1.293°C	0.248 + 0.205*Tr + 2.826°C	0.157 + 0.199*Tr + 1.818°C
AO1NLL	B-Z	B_Z (rise)	0.082 + 0.246*Tr + 1.646°C	0.220 + 0.299*Tr + 3.533°C	0.128 + 0.266*Tr + 2.377°C
AO1NLL	C-Z	C_Z (fall)	0.079 + 0.220*Tr + 1.255°C	0.228 + 0.236*Tr + 2.832°C	0.147 + 0.236*Tr + 1.818°C
AO1NLL	C-Z	C_Z (rise)	0.067 + 0.235*Tr + 1.623°C	0.174 + 0.297*Tr + 3.471°C	0.106 + 0.258*Tr + 2.350°C
AO1NLL	D-Z	D_Z (fall)	0.074 + 0.254*Tr + 1.245°C	0.200 + 0.270*Tr + 2.811°C	0.132 + 0.268*Tr + 1.801°C
AO1NLL	D-Z	D_Z (rise)	0.060 + 0.213*Tr + 1.622°C	0.152 + 0.276*Tr + 3.460°C	0.095 + 0.238*Tr + 2.349°C
AO1NLLP	A-Z	A_Z (fall)	0.102 + 0.194*Tr + 0.669°C	0.251 + 0.205*Tr + 1.420°C	0.159 + 0.199*Tr + 0.928°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1NLLP	A-Z	A_Z (rise)	0.080 + 0.226*Tr + 0.813*C	0.218 + 0.266*Tr + 1.727*C	0.126 + 0.244*Tr + 1.167*C
AO1NLLP	B-Z	B_Z (fall)	0.098 + 0.186*Tr + 0.668*C	0.239 + 0.200*Tr + 1.415*C	0.151 + 0.193*Tr + 0.926*C
AO1NLLP	B-Z	B_Z (rise)	0.081 + 0.259*Tr + 0.811*C	0.214 + 0.310*Tr + 1.723*C	0.126 + 0.278*Tr + 1.164*C
AO1NLLP	C-Z	C_Z (fall)	0.076 + 0.212*Tr + 0.649*C	0.221 + 0.231*Tr + 1.418*C	0.142 + 0.229*Tr + 0.926*C
AO1NLLP	C-Z	C_Z (rise)	0.067 + 0.249*Tr + 0.798*C	0.165 + 0.306*Tr + 1.690*C	0.104 + 0.270*Tr + 1.150*C
AO1NLLP	D-Z	D_Z (fall)	0.072 + 0.245*Tr + 0.644*C	0.193 + 0.265*Tr + 1.407*C	0.128 + 0.260*Tr + 0.917*C
AO1NLLP	D-Z	D_Z (rise)	0.059 + 0.228*Tr + 0.797*C	0.144 + 0.285*Tr + 1.685*C	0.091 + 0.251*Tr + 1.150*C
AO1NLLX4	A-Z	A_Z (fall)	0.097 + 0.182*Tr + 0.332*C	0.236 + 0.193*Tr + 0.704*C	0.150 + 0.188*Tr + 0.460*C
AO1NLLX4	A-Z	A_Z (rise)	0.081 + 0.236*Tr + 0.406*C	0.213 + 0.273*Tr + 0.860*C	0.126 + 0.252*Tr + 0.583*C
AO1NLLX4	B-Z	B_Z (fall)	0.093 + 0.174*Tr + 0.332*C	0.224 + 0.188*Tr + 0.702*C	0.143 + 0.182*Tr + 0.459*C
AO1NLLX4	B-Z	B_Z (rise)	0.082 + 0.270*Tr + 0.405*C	0.209 + 0.316*Tr + 0.859*C	0.126 + 0.286*Tr + 0.581*C
AO1NLLX4	C-Z	C_Z (fall)	0.073 + 0.197*Tr + 0.323*C	0.210 + 0.218*Tr + 0.703*C	0.136 + 0.215*Tr + 0.459*C
AO1NLLX4	C-Z	C_Z (rise)	0.067 + 0.262*Tr + 0.399*C	0.159 + 0.314*Tr + 0.843*C	0.102 + 0.281*Tr + 0.575*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1NLLX4	D-Z	D_Z (fall)	0.069 + 0.229*Tr + 0.320*C	0.182 + 0.250*Tr + 0.697*C	0.122 + 0.245*Tr + 0.454*C
AO1NLLX4	D-Z	D_Z (rise)	0.059 + 0.240*Tr + 0.399*C	0.137 + 0.291*Tr + 0.840*C	0.089 + 0.261*Tr + 0.575*C
AO1NLLX6	A-Z	A_Z (fall)	0.097 + 0.183*Tr + 0.223*C	0.235 + 0.195*Tr + 0.472*C	0.150 + 0.189*Tr + 0.308*C
AO1NLLX6	A-Z	A_Z (rise)	0.081 + 0.235*Tr + 0.271*C	0.208 + 0.270*Tr + 0.574*C	0.123 + 0.251*Tr + 0.389*C
AO1NLLX6	B-Z	B_Z (fall)	0.092 + 0.175*Tr + 0.222*C	0.222 + 0.190*Tr + 0.471*C	0.141 + 0.183*Tr + 0.308*C
AO1NLLX6	B-Z	B_Z (rise)	0.081 + 0.269*Tr + 0.271*C	0.202 + 0.313*Tr + 0.573*C	0.123 + 0.284*Tr + 0.388*C
AO1NLLX6	C-Z	C_Z (fall)	0.073 + 0.196*Tr + 0.216*C	0.209 + 0.220*Tr + 0.471*C	0.136 + 0.216*Tr + 0.308*C
AO1NLLX6	C-Z	C_Z (rise)	0.068 + 0.264*Tr + 0.267*C	0.155 + 0.313*Tr + 0.563*C	0.101 + 0.282*Tr + 0.384*C
AO1NLLX6	D-Z	D_Z (fall)	0.069 + 0.228*Tr + 0.214*C	0.181 + 0.251*Tr + 0.467*C	0.121 + 0.245*Tr + 0.305*C
AO1NLLX6	D-Z	D_Z (rise)	0.059 + 0.243*Tr + 0.266*C	0.134 + 0.291*Tr + 0.562*C	0.088 + 0.262*Tr + 0.384*C
AO1NLLX8	A-Z	A_Z (fall)	0.096 + 0.182*Tr + 0.167*C	0.234 + 0.192*Tr + 0.354*C	0.149 + 0.187*Tr + 0.232*C
AO1NLLX8	A-Z	A_Z (rise)	0.081 + 0.235*Tr + 0.204*C	0.212 + 0.272*Tr + 0.432*C	0.125 + 0.251*Tr + 0.293*C
AO1NLLX8	B-Z	B_Z (fall)	0.091 + 0.174*Tr + 0.167*C	0.220 + 0.187*Tr + 0.353*C	0.141 + 0.181*Tr + 0.231*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO1NLLX8	B-Z	B_Z (rise)	0.081 + 0.269*Tr + 0.203*C	0.206 + 0.315*Tr + 0.431*C	0.124 + 0.285*Tr + 0.292*C
AO1NLLX8	C-Z	C_Z (fall)	0.073 + 0.193*Tr + 0.162*C	0.208 + 0.216*Tr + 0.354*C	0.135 + 0.213*Tr + 0.231*C
AO1NLLX8	C-Z	C_Z (rise)	0.068 + 0.268*Tr + 0.200*C	0.155 + 0.315*Tr + 0.423*C	0.101 + 0.285*Tr + 0.289*C
AO1NLLX8	D-Z	D_Z (fall)	0.068 + 0.225*Tr + 0.161*C	0.179 + 0.248*Tr + 0.350*C	0.120 + 0.242*Tr + 0.229*C
AO1NLLX8	D-Z	D_Z (rise)	0.059 + 0.246*Tr + 0.200*C	0.133 + 0.293*Tr + 0.422*C	0.088 + 0.264*Tr + 0.289*C

Average Leakage Power

picoWatts

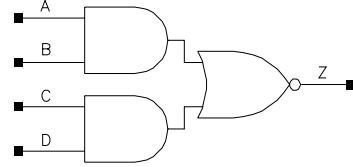
Cell	bc_1.32V_25C	bc_1.32V_125C
AO1NLL	4834.310	84748.200
AO1NLLP	6404.300	126386.000
AO1NLLX4	10976.800	231434.000
AO1NLLX6	15671.800	335694.000
AO1NLLX8	20954.800	449842.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO1NLL	Z(max)	0.018 + 0.007*Tr
AO1NLLP	Z(max)	0.029 + 0.011*Tr
AO1NLLX4	Z(max)	0.054 + 0.026*Tr
AO1NLLX6	Z(max)	0.085 + 0.035*Tr
AO1NLLX8	Z(max)	0.113 + 0.048*Tr

AO2LL
AO2LLP
AO2LLX4
AO2LLX6
AO2LLX8



Function: Function = Double 2 Input AND into 2 Input NOR

Boolean Expression: $Z = \overline{(A \bullet B + C \bullet D)}$

Physical Dimensions

Property	AO2LL	AO2LLP	AO2LLX4	AO2LLX6	AO2LLX8
Area(um ²)	10.086	14.120	24.206	34.292	44.378

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2LL	C Input Cap.	0.0029	0.0026	0.0027
AO2LL	A Input Cap.	0.0027	0.0024	0.0025
AO2LL	D Input Cap.	0.0033	0.0030	0.0031
AO2LL	B Input Cap.	0.0028	0.0024	0.0026
AO2LL	Z Max Load	0.160	0.160	0.160
AO2LLP	D Input Cap.	0.0056	0.0052	0.0053
AO2LLP	B Input Cap.	0.0052	0.0047	0.0049
AO2LLP	Z Max Load	0.320	0.320	0.320
AO2LLP	C Input Cap.	0.0054	0.0050	0.0052
AO2LLP	A Input Cap.	0.0050	0.0046	0.0047
AO2LLX4	B Input Cap.	0.0103	0.0092	0.0096
AO2LLX4	Z Max Load	0.640	0.640	0.640
AO2LLX4	C Input Cap.	0.0107	0.0100	0.0103
AO2LLX4	A Input Cap.	0.0102	0.0092	0.0095
AO2LLX4	D Input Cap.	0.0110	0.0101	0.0105
AO2LLX6	A Input Cap.	0.0143	0.0129	0.0133
AO2LLX6	Z Max Load	0.960	0.960	0.960
AO2LLX6	D Input Cap.	0.0163	0.0151	0.0156

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2LLX6	B Input Cap.	0.0152	0.0137	0.0142
AO2LLX6	C Input Cap.	0.0154	0.0143	0.0148
AO2LLX8	C Input Cap.	0.0208	0.0193	0.0199
AO2LLX8	A Input Cap.	0.0194	0.0174	0.0180
AO2LLX8	D Input Cap.	0.0227	0.0209	0.0217
AO2LLX8	B Input Cap.	0.0213	0.0192	0.0198
AO2LLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2LL	A-Z	A_Z (fall)	0.003 + 0.254*Tr + 2.433*C	0.020 + 0.292*Tr + 6.008*C	0.002 + 0.270*Tr + 3.717*C
AO2LL	A-Z	A_Z (rise)	0.002 + 0.280*Tr + 2.544*C	0.032 + 0.301*Tr + 6.926*C	0.016 + 0.297*Tr + 4.762*C
AO2LL	B-Z	B_Z (fall)	0.008 + 0.218*Tr + 2.351*C	0.031 + 0.252*Tr + 5.929*C	0.011 + 0.235*Tr + 3.607*C
AO2LL	B-Z	B_Z (rise)	0.006 + 0.288*Tr + 2.515*C	0.042 + 0.307*Tr + 6.884*C	0.023 + 0.303*Tr + 4.725*C
AO2LL	C-Z	C_Z (fall)	0.014 + 0.265*Tr + 2.388*C	0.061 + 0.310*Tr + 5.883*C	0.027 + 0.288*Tr + 3.609*C
AO2LL	C-Z	C_Z (rise)	0.016 + 0.246*Tr + 2.545*C	0.073 + 0.244*Tr + 6.864*C	0.042 + 0.238*Tr + 4.677*C
AO2LL	D-Z	D_Z (fall)	0.018 + 0.227*Tr + 2.318*C	0.071 + 0.266*Tr + 5.834*C	0.034 + 0.250*Tr + 3.523*C
AO2LL	D-Z	D_Z (rise)	0.019 + 0.253*Tr + 2.519*C	0.083 + 0.249*Tr + 6.828*C	0.048 + 0.243*Tr + 4.645*C
AO2LLP	A-Z	A_Z (fall)	-0.001 + 0.257*Tr + 1.238*C	0.012 + 0.290*Tr + 2.958*C	-0.004 + 0.271*Tr + 1.867*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2LLP	A-Z	A_Z (rise)	-0.003 + 0.271*Tr + 1.265*C	0.023 + 0.291*Tr + 3.365*C	0.009 + 0.287*Tr + 2.333*C
AO2LLP	B-Z	B_Z (fall)	0.005 + 0.220*Tr + 1.195*C	0.024 + 0.252*Tr + 2.911*C	0.006 + 0.236*Tr + 1.807*C
AO2LLP	B-Z	B_Z (rise)	0.002 + 0.280*Tr + 1.246*C	0.034 + 0.298*Tr + 3.337*C	0.017 + 0.294*Tr + 2.308*C
AO2LLP	C-Z	C_Z (fall)	0.011 + 0.269*Tr + 1.212*C	0.055 + 0.309*Tr + 2.882*C	0.023 + 0.290*Tr + 1.802*C
AO2LLP	C-Z	C_Z (rise)	0.011 + 0.237*Tr + 1.260*C	0.066 + 0.235*Tr + 3.319*C	0.036 + 0.229*Tr + 2.279*C
AO2LLP	D-Z	D_Z (fall)	0.016 + 0.230*Tr + 1.175*C	0.066 + 0.267*Tr + 2.851*C	0.031 + 0.253*Tr + 1.756*C
AO2LLP	D-Z	D_Z (rise)	0.015 + 0.245*Tr + 1.244*C	0.076 + 0.240*Tr + 3.298*C	0.043 + 0.235*Tr + 2.261*C
AO2LLX4	A-Z	A_Z (fall)	0.003 + 0.248*Tr + 0.619*C	0.019 + 0.284*Tr + 1.479*C	0.004 + 0.262*Tr + 0.933*C
AO2LLX4	A-Z	A_Z (rise)	0.002 + 0.262*Tr + 0.632*C	0.030 + 0.286*Tr + 1.682*C	0.015 + 0.281*Tr + 1.166*C
AO2LLX4	B-Z	B_Z (fall)	0.008 + 0.215*Tr + 0.598*C	0.030 + 0.247*Tr + 1.456*C	0.012 + 0.230*Tr + 0.903*C
AO2LLX4	B-Z	B_Z (rise)	0.006 + 0.272*Tr + 0.623*C	0.040 + 0.293*Tr + 1.669*C	0.022 + 0.288*Tr + 1.154*C
AO2LLX4	C-Z	C_Z (fall)	0.014 + 0.261*Tr + 0.606*C	0.059 + 0.304*Tr + 1.441*C	0.027 + 0.283*Tr + 0.901*C
AO2LLX4	C-Z	C_Z (rise)	0.014 + 0.231*Tr + 0.630*C	0.069 + 0.231*Tr + 1.659*C	0.040 + 0.225*Tr + 1.139*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2LLX4	D-Z	D_Z (fall)	0.018 + 0.225*Tr + 0.588°C	0.069 + 0.263*Tr + 1.426°C	0.034 + 0.247*Tr + 0.878°C
AO2LLX4	D-Z	D_Z (rise)	0.018 + 0.239*Tr + 0.622°C	0.079 + 0.237*Tr + 1.649°C	0.046 + 0.231*Tr + 1.130°C
AO2LLX6	A-Z	A_Z (fall)	0.001 + 0.246*Tr + 0.415°C	0.016 + 0.280*Tr + 0.991°C	0.000 + 0.259*Tr + 0.627°C
AO2LLX6	A-Z	A_Z (rise)	0.000 + 0.260*Tr + 0.424°C	0.028 + 0.281*Tr + 1.126°C	0.013 + 0.277*Tr + 0.781°C
AO2LLX6	B-Z	B_Z (fall)	0.007 + 0.212*Tr + 0.401°C	0.028 + 0.244*Tr + 0.975°C	0.010 + 0.227*Tr + 0.606°C
AO2LLX6	B-Z	B_Z (rise)	0.004 + 0.269*Tr + 0.418°C	0.039 + 0.289*Tr + 1.116°C	0.021 + 0.285*Tr + 0.772°C
AO2LLX6	C-Z	C_Z (fall)	0.012 + 0.259*Tr + 0.406°C	0.057 + 0.301*Tr + 0.964°C	0.025 + 0.281*Tr + 0.604°C
AO2LLX6	C-Z	C_Z (rise)	0.013 + 0.228*Tr + 0.422°C	0.067 + 0.227*Tr + 1.109°C	0.038 + 0.222*Tr + 0.762°C
AO2LLX6	D-Z	D_Z (fall)	0.017 + 0.223*Tr + 0.393°C	0.067 + 0.261*Tr + 0.954°C	0.033 + 0.245*Tr + 0.588°C
AO2LLX6	D-Z	D_Z (rise)	0.017 + 0.237*Tr + 0.416°C	0.078 + 0.234*Tr + 1.102°C	0.045 + 0.229*Tr + 0.756°C
AO2LLX8	A-Z	A_Z (fall)	0.002 + 0.243*Tr + 0.306°C	0.017 + 0.278*Tr + 0.730°C	0.002 + 0.256*Tr + 0.462°C
AO2LLX8	A-Z	A_Z (rise)	0.001 + 0.259*Tr + 0.318°C	0.029 + 0.282*Tr + 0.844°C	0.015 + 0.278*Tr + 0.585°C
AO2LLX8	B-Z	B_Z (fall)	0.008 + 0.210*Tr + 0.296°C	0.029 + 0.242*Tr + 0.717°C	0.011 + 0.225*Tr + 0.447°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2LLX8	B-Z	B_Z (rise)	0.006 + 0.269*Tr + 0.313*C	0.041 + 0.290*Tr + 0.837*C	0.023 + 0.286*Tr + 0.579*C
AO2LLX8	C-Z	C_Z (fall)	0.013 + 0.256*Tr + 0.300*C	0.056 + 0.299*Tr + 0.709*C	0.025 + 0.278*Tr + 0.445*C
AO2LLX8	C-Z	C_Z (rise)	0.014 + 0.228*Tr + 0.316*C	0.068 + 0.228*Tr + 0.832*C	0.039 + 0.223*Tr + 0.571*C
AO2LLX8	D-Z	D_Z (fall)	0.017 + 0.221*Tr + 0.290*C	0.067 + 0.259*Tr + 0.701*C	0.033 + 0.243*Tr + 0.433*C
AO2LLX8	D-Z	D_Z (rise)	0.018 + 0.237*Tr + 0.312*C	0.079 + 0.234*Tr + 0.827*C	0.046 + 0.229*Tr + 0.567*C

Average Leakage Power

picoWatts

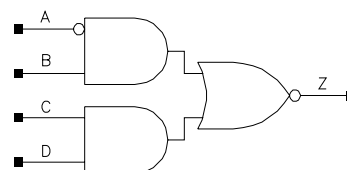
Cell	bc_1.32V_25C	bc_1.32V_125C
AO2LL	3081.200	63142.900
AO2LLP	5327.380	116650.000
AO2LLX4	10654.800	233295.000
AO2LLX6	15982.000	349942.000
AO2LLX8	21510.800	470618.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO2LL	Z(max)	0.013 + 0.009*Tr
AO2LLP	Z(max)	0.024 + 0.019*Tr
AO2LLX4	Z(max)	0.047 + 0.040*Tr
AO2LLX6	Z(max)	0.070 + 0.061*Tr
AO2LLX8	Z(max)	0.093 + 0.083*Tr

AO2ALL
AO2ALLP
AO2ALLX4
AO2ALLX6
AO2ALLX8



Function: Function = Double 2 Input AND into 2 Input NOR, A Input Inverted

Boolean Expression: $Z = !(A' \bullet B + C \bullet D)$

Physical Dimensions

Property	AO2ALL	AO2ALLP	AO2ALLX4	AO2ALLX6	AO2ALLX8
Area(um ²)	12.103	16.138	26.224	36.310	46.396

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2ALL	C Input Cap.	0.0029	0.0026	0.0027
AO2ALL	A Input Cap.	0.0014	0.0011	0.0012
AO2ALL	D Input Cap.	0.0027	0.0024	0.0025
AO2ALL	Z Max Load	0.160	0.160	0.160
AO2ALL	B Input Cap.	0.0029	0.0026	0.0027
AO2ALLP	C Input Cap.	0.0056	0.0052	0.0053
AO2ALLP	A Input Cap.	0.0020	0.0016	0.0017
AO2ALLP	D Input Cap.	0.0057	0.0053	0.0054
AO2ALLP	Z Max Load	0.320	0.320	0.320
AO2ALLP	B Input Cap.	0.0055	0.0050	0.0052
AO2ALLX4	C Input Cap.	0.0105	0.0097	0.0100
AO2ALLX4	A Input Cap.	0.0035	0.0030	0.0031
AO2ALLX4	D Input Cap.	0.0123	0.0115	0.0118
AO2ALLX4	Z Max Load	0.640	0.640	0.640
AO2ALLX4	B Input Cap.	0.0109	0.0099	0.0102
AO2ALLX6	C Input Cap.	0.0157	0.0144	0.0149
AO2ALLX6	Z Max Load	0.960	0.960	0.960
AO2ALLX6	A Input Cap.	0.0051	0.0044	0.0046
AO2ALLX6	D Input Cap.	0.0186	0.0174	0.0179

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2ALLX6	B Input Cap.	0.0155	0.0140	0.0144
AO2ALLX8	Z Max Load	1.280	1.280	1.280
AO2ALLX8	B Input Cap.	0.0214	0.0193	0.0200
AO2ALLX8	C Input Cap.	0.0209	0.0192	0.0199
AO2ALLX8	A Input Cap.	0.0066	0.0057	0.0059
AO2ALLX8	D Input Cap.	0.0242	0.0224	0.0232

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2ALL	A-Z	A_Z (fall)	0.079 + 0.280*Tr + 2.119*C	0.201 + 0.291*Tr + 5.510*C	0.127 + 0.285*Tr + 3.216*C
AO2ALL	A-Z	A_Z (rise)	0.065 + 0.171*Tr + 2.330*C	0.179 + 0.216*Tr + 6.620*C	0.112 + 0.187*Tr + 4.450*C
AO2ALL	B-Z	B_Z (fall)	0.011 + 0.263*Tr + 2.355*C	0.055 + 0.308*Tr + 5.784*C	0.023 + 0.286*Tr + 3.557*C
AO2ALL	B-Z	B_Z (rise)	0.015 + 0.246*Tr + 2.547*C	0.069 + 0.244*Tr + 6.863*C	0.040 + 0.238*Tr + 4.674*C
AO2ALL	C-Z	C_Z (fall)	0.008 + 0.216*Tr + 2.317*C	0.030 + 0.251*Tr + 5.829*C	0.010 + 0.234*Tr + 3.552*C
AO2ALL	C-Z	C_Z (rise)	0.006 + 0.288*Tr + 2.513*C	0.041 + 0.307*Tr + 6.885*C	0.023 + 0.303*Tr + 4.725*C
AO2ALL	D-Z	D_Z (fall)	0.002 + 0.253*Tr + 2.398*C	0.017 + 0.290*Tr + 5.909*C	0.001 + 0.268*Tr + 3.664*C
AO2ALL	D-Z	D_Z (rise)	0.002 + 0.280*Tr + 2.545*C	0.029 + 0.301*Tr + 6.930*C	0.015 + 0.296*Tr + 4.764*C
AO2ALLP	A-Z	A_Z (fall)	0.070 + 0.269*Tr + 1.042*C	0.158 + 0.283*Tr + 2.589*C	0.105 + 0.274*Tr + 1.549*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2ALLP	A-Z	A_Z (rise)	0.053 + 0.188*Tr + 1.109*C	0.138 + 0.229*Tr + 3.167*C	0.089 + 0.204*Tr + 2.143*C
AO2ALLP	B-Z	B_Z (fall)	0.006 + 0.215*Tr + 1.153*C	0.026 + 0.247*Tr + 2.784*C	0.008 + 0.231*Tr + 1.739*C
AO2ALLP	B-Z	B_Z (rise)	0.001 + 0.281*Tr + 1.246*C	0.037 + 0.300*Tr + 3.333*C	0.019 + 0.296*Tr + 2.305*C
AO2ALLP	C-Z	C_Z (fall)	0.008 + 0.265*Tr + 1.165*C	0.047 + 0.305*Tr + 2.751*C	0.018 + 0.286*Tr + 1.731*C
AO2ALLP	C-Z	C_Z (rise)	0.013 + 0.237*Tr + 1.260*C	0.062 + 0.235*Tr + 3.321*C	0.034 + 0.230*Tr + 2.280*C
AO2ALLP	D-Z	D_Z (fall)	0.014 + 0.227*Tr + 1.128*C	0.061 + 0.264*Tr + 2.720*C	0.028 + 0.249*Tr + 1.683*C
AO2ALLP	D-Z	D_Z (rise)	0.016 + 0.246*Tr + 1.242*C	0.075 + 0.241*Tr + 3.298*C	0.043 + 0.237*Tr + 2.259*C
AO2ALLX4	A-Z	A_Z (fall)	0.066 + 0.252*Tr + 0.546*C	0.146 + 0.265*Tr + 1.363*C	0.097 + 0.256*Tr + 0.813*C
AO2ALLX4	A-Z	A_Z (rise)	0.051 + 0.199*Tr + 0.554*C	0.128 + 0.234*Tr + 1.582*C	0.083 + 0.212*Tr + 1.071*C
AO2ALLX4	B-Z	B_Z (fall)	0.010 + 0.213*Tr + 0.600*C	0.033 + 0.245*Tr + 1.460*C	0.014 + 0.228*Tr + 0.907*C
AO2ALLX4	B-Z	B_Z (rise)	0.005 + 0.272*Tr + 0.624*C	0.038 + 0.293*Tr + 1.671*C	0.021 + 0.288*Tr + 1.155*C
AO2ALLX4	C-Z	C_Z (fall)	0.013 + 0.261*Tr + 0.606*C	0.057 + 0.304*Tr + 1.444*C	0.026 + 0.283*Tr + 0.902*C
AO2ALLX4	C-Z	C_Z (rise)	0.016 + 0.229*Tr + 0.631*C	0.065 + 0.230*Tr + 1.662*C	0.037 + 0.225*Tr + 1.141*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2ALLX4	D-Z	D_Z (fall)	0.018 + 0.225*Tr + 0.588*C	0.067 + 0.262*Tr + 1.428*C	0.033 + 0.247*Tr + 0.880*C
AO2ALLX4	D-Z	D_Z (rise)	0.018 + 0.238*Tr + 0.623*C	0.076 + 0.236*Tr + 1.652*C	0.044 + 0.231*Tr + 1.132*C
AO2ALLX6	A-Z	A_Z (fall)	0.064 + 0.246*Tr + 0.357*C	0.141 + 0.259*Tr + 0.889*C	0.094 + 0.251*Tr + 0.531*C
AO2ALLX6	A-Z	A_Z (rise)	0.050 + 0.202*Tr + 0.370*C	0.127 + 0.235*Tr + 1.055*C	0.083 + 0.214*Tr + 0.714*C
AO2ALLX6	B-Z	B_Z (fall)	0.008 + 0.208*Tr + 0.396*C	0.030 + 0.240*Tr + 0.959*C	0.011 + 0.223*Tr + 0.598*C
AO2ALLX6	B-Z	B_Z (rise)	0.003 + 0.270*Tr + 0.418*C	0.039 + 0.290*Tr + 1.116*C	0.020 + 0.286*Tr + 0.773*C
AO2ALLX6	C-Z	C_Z (fall)	0.011 + 0.257*Tr + 0.400*C	0.053 + 0.299*Tr + 0.947*C	0.023 + 0.279*Tr + 0.595*C
AO2ALLX6	C-Z	C_Z (rise)	0.015 + 0.227*Tr + 0.423*C	0.065 + 0.228*Tr + 1.111*C	0.036 + 0.223*Tr + 0.763*C
AO2ALLX6	D-Z	D_Z (fall)	0.017 + 0.221*Tr + 0.388*C	0.066 + 0.259*Tr + 0.937*C	0.032 + 0.244*Tr + 0.579*C
AO2ALLX6	D-Z	D_Z (rise)	0.018 + 0.237*Tr + 0.417*C	0.078 + 0.234*Tr + 1.103*C	0.045 + 0.229*Tr + 0.757*C
AO2ALLX8	A-Z	A_Z (fall)	0.062 + 0.243*Tr + 0.265*C	0.138 + 0.255*Tr + 0.659*C	0.092 + 0.247*Tr + 0.394*C
AO2ALLX8	A-Z	A_Z (rise)	0.050 + 0.201*Tr + 0.277*C	0.123 + 0.232*Tr + 0.791*C	0.081 + 0.212*Tr + 0.536*C
AO2ALLX8	B-Z	B_Z (fall)	0.009 + 0.207*Tr + 0.295*C	0.032 + 0.239*Tr + 0.713*C	0.013 + 0.222*Tr + 0.445*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2ALLX8	B-Z	B_Z (rise)	0.005 + 0.269*Tr + 0.313*C	0.040 + 0.291*Tr + 0.837*C	0.021 + 0.286*Tr + 0.580*C
AO2ALLX8	C-Z	C_Z (fall)	0.012 + 0.255*Tr + 0.297*C	0.054 + 0.298*Tr + 0.704*C	0.024 + 0.277*Tr + 0.442*C
AO2ALLX8	C-Z	C_Z (rise)	0.016 + 0.226*Tr + 0.317*C	0.066 + 0.228*Tr + 0.833*C	0.037 + 0.223*Tr + 0.572*C
AO2ALLX8	D-Z	D_Z (fall)	0.017 + 0.220*Tr + 0.288*C	0.065 + 0.258*Tr + 0.696*C	0.032 + 0.242*Tr + 0.430*C
AO2ALLX8	D-Z	D_Z (rise)	0.018 + 0.236*Tr + 0.312*C	0.078 + 0.234*Tr + 0.828*C	0.045 + 0.229*Tr + 0.567*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO2ALL	4686.240	86006.000
AO2ALLP	6919.110	143015.000
AO2ALLX4	12549.000	269841.000
AO2ALLX6	18672.900	403806.000
AO2ALLX8	24850.400	538948.000

Internal Energy at minimum output load

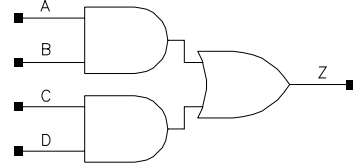
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO2ALL	Z(max)	0.019 + 0.005*Tr
AO2ALLP	Z(max)	0.026 + 0.021*Tr
AO2ALLX4	Z(max)	0.050 + 0.042*Tr
AO2ALLX6	Z(max)	0.077 + 0.063*Tr
AO2ALLX8	Z(max)	0.101 + 0.086*Tr

AO2NLL
AO2NLLP
AO2NLLX4
AO2NLLX6
AO2NLLX8

Function: Function = Double 2 Input AND into 2 Input OR

Boolean Expression: $Z = (A \bullet B + C \bullet D)$



Physical Dimensions

Property	AO2NLL	AO2NLLP	AO2NLLX4	AO2NLLX6	AO2NLLX8
Area(um ²)	14.120	16.138	20.172	32.275	36.310

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2NLL	A Input Cap.	0.0018	0.0015	0.0016
AO2NLL	Z Max Load	0.160	0.160	0.160
AO2NLL	D Input Cap.	0.0018	0.0015	0.0016
AO2NLL	B Input Cap.	0.0020	0.0016	0.0017
AO2NLL	C Input Cap.	0.0018	0.0015	0.0016
AO2NLLP	C Input Cap.	0.0031	0.0027	0.0028
AO2NLLP	A Input Cap.	0.0032	0.0026	0.0027
AO2NLLP	Z Max Load	0.320	0.320	0.320
AO2NLLP	D Input Cap.	0.0031	0.0027	0.0028
AO2NLLP	B Input Cap.	0.0032	0.0027	0.0028
AO2NLLX4	A Input Cap.	0.0059	0.0049	0.0051
AO2NLLX4	Z Max Load	0.640	0.640	0.640
AO2NLLX4	D Input Cap.	0.0059	0.0053	0.0055
AO2NLLX4	B Input Cap.	0.0060	0.0051	0.0053
AO2NLLX4	C Input Cap.	0.0058	0.0051	0.0053
AO2NLLX6	C Input Cap.	0.0089	0.0078	0.0081
AO2NLLX6	A Input Cap.	0.0092	0.0076	0.0079
AO2NLLX6	D Input Cap.	0.0088	0.0078	0.0082

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2NLLX6	B Input Cap.	0.0089	0.0075	0.0078
AO2NLLX6	Z Max Load	0.960	0.960	0.960
AO2NLLX8	B Input Cap.	0.0114	0.0094	0.0098
AO2NLLX8	C Input Cap.	0.0112	0.0099	0.0103
AO2NLLX8	A Input Cap.	0.0121	0.0103	0.0107
AO2NLLX8	Z Max Load	1.280	1.280	1.280
AO2NLLX8	D Input Cap.	0.0119	0.0107	0.0111

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2NLL	A-Z	A_Z (fall)	0.066 + 0.258*Tr + 1.216*C	0.188 + 0.289*Tr + 2.747*C	0.125 + 0.281*Tr + 1.762*C
AO2NLL	A-Z	A_Z (rise)	0.061 + 0.204*Tr + 1.630*C	0.165 + 0.253*Tr + 3.483*C	0.100 + 0.223*Tr + 2.361*C
AO2NLL	B-Z	B_Z (fall)	0.071 + 0.269*Tr + 1.218*C	0.204 + 0.298*Tr + 2.759*C	0.135 + 0.290*Tr + 1.768*C
AO2NLL	B-Z	B_Z (rise)	0.062 + 0.180*Tr + 1.635*C	0.170 + 0.222*Tr + 3.491*C	0.101 + 0.198*Tr + 2.367*C
AO2NLL	C-Z	C_Z (fall)	0.079 + 0.238*Tr + 1.254*C	0.228 + 0.245*Tr + 2.770*C	0.147 + 0.238*Tr + 1.780*C
AO2NLL	C-Z	C_Z (rise)	0.074 + 0.226*Tr + 1.637*C	0.205 + 0.284*Tr + 3.486*C	0.122 + 0.252*Tr + 2.359*C
AO2NLL	D-Z	D_Z (fall)	0.082 + 0.248*Tr + 1.255*C	0.240 + 0.252*Tr + 2.777*C	0.154 + 0.245*Tr + 1.783*C
AO2NLL	D-Z	D_Z (rise)	0.073 + 0.198*Tr + 1.640*C	0.208 + 0.246*Tr + 3.491*C	0.121 + 0.222*Tr + 2.363*C
AO2NLLP	A-Z	A_Z (fall)	0.057 + 0.238*Tr + 0.622*C	0.164 + 0.272*Tr + 1.350*C	0.109 + 0.263*Tr + 0.881*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2NLLP	A-Z	A_Z (rise)	0.054 + 0.211*Tr + 0.798*C	0.142 + 0.256*Tr + 1.687*C	0.088 + 0.228*Tr + 1.151*C
AO2NLLP	B-Z	B_Z (fall)	0.061 + 0.250*Tr + 0.623*C	0.176 + 0.283*Tr + 1.355*C	0.116 + 0.274*Tr + 0.884*C
AO2NLLP	B-Z	B_Z (rise)	0.054 + 0.189*Tr + 0.801*C	0.145 + 0.227*Tr + 1.690*C	0.088 + 0.205*Tr + 1.152*C
AO2NLLP	C-Z	C_Z (fall)	0.067 + 0.221*Tr + 0.640*C	0.194 + 0.232*Tr + 1.362*C	0.125 + 0.224*Tr + 0.890*C
AO2NLLP	C-Z	C_Z (rise)	0.066 + 0.232*Tr + 0.800*C	0.179 + 0.286*Tr + 1.679*C	0.108 + 0.256*Tr + 1.144*C
AO2NLLP	D-Z	D_Z (fall)	0.070 + 0.232*Tr + 0.640*C	0.206 + 0.239*Tr + 1.365*C	0.132 + 0.231*Tr + 0.892*C
AO2NLLP	D-Z	D_Z (rise)	0.065 + 0.206*Tr + 0.803*C	0.181 + 0.251*Tr + 1.682*C	0.107 + 0.229*Tr + 1.147*C
AO2NLLX4	A-Z	A_Z (fall)	0.054 + 0.227*Tr + 0.310*C	0.156 + 0.261*Tr + 0.671*C	0.103 + 0.252*Tr + 0.438*C
AO2NLLX4	A-Z	A_Z (rise)	0.053 + 0.217*Tr + 0.399*C	0.137 + 0.258*Tr + 0.843*C	0.085 + 0.232*Tr + 0.576*C
AO2NLLX4	B-Z	B_Z (fall)	0.058 + 0.240*Tr + 0.310*C	0.167 + 0.272*Tr + 0.674*C	0.111 + 0.263*Tr + 0.439*C
AO2NLLX4	B-Z	B_Z (rise)	0.052 + 0.195*Tr + 0.401*C	0.139 + 0.230*Tr + 0.845*C	0.085 + 0.209*Tr + 0.577*C
AO2NLLX4	C-Z	C_Z (fall)	0.064 + 0.211*Tr + 0.319*C	0.184 + 0.222*Tr + 0.677*C	0.118 + 0.214*Tr + 0.443*C
AO2NLLX4	C-Z	C_Z (rise)	0.064 + 0.237*Tr + 0.400*C	0.173 + 0.289*Tr + 0.839*C	0.105 + 0.260*Tr + 0.572*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2NLLX4	D-Z	D_Z (fall)	0.067 + 0.222*Tr + 0.319*C	0.196 + 0.230*Tr + 0.679*C	0.125 + 0.222*Tr + 0.443*C
AO2NLLX4	D-Z	D_Z (rise)	0.063 + 0.211*Tr + 0.401*C	0.176 + 0.254*Tr + 0.841*C	0.104 + 0.233*Tr + 0.573*C
AO2NLLX6	A-Z	A_Z (fall)	0.055 + 0.230*Tr + 0.208*C	0.157 + 0.264*Tr + 0.450*C	0.104 + 0.255*Tr + 0.294*C
AO2NLLX6	A-Z	A_Z (rise)	0.053 + 0.214*Tr + 0.267*C	0.137 + 0.256*Tr + 0.564*C	0.085 + 0.230*Tr + 0.385*C
AO2NLLX6	B-Z	B_Z (fall)	0.058 + 0.243*Tr + 0.208*C	0.167 + 0.276*Tr + 0.452*C	0.111 + 0.267*Tr + 0.295*C
AO2NLLX6	B-Z	B_Z (rise)	0.052 + 0.193*Tr + 0.268*C	0.139 + 0.228*Tr + 0.566*C	0.085 + 0.208*Tr + 0.386*C
AO2NLLX6	C-Z	C_Z (fall)	0.064 + 0.214*Tr + 0.214*C	0.185 + 0.225*Tr + 0.455*C	0.118 + 0.217*Tr + 0.297*C
AO2NLLX6	C-Z	C_Z (rise)	0.064 + 0.235*Tr + 0.268*C	0.172 + 0.287*Tr + 0.561*C	0.104 + 0.258*Tr + 0.383*C
AO2NLLX6	D-Z	D_Z (fall)	0.067 + 0.224*Tr + 0.214*C	0.196 + 0.232*Tr + 0.456*C	0.126 + 0.225*Tr + 0.298*C
AO2NLLX6	D-Z	D_Z (rise)	0.063 + 0.209*Tr + 0.268*C	0.175 + 0.252*Tr + 0.562*C	0.104 + 0.231*Tr + 0.383*C
AO2NLLX8	A-Z	A_Z (fall)	0.057 + 0.239*Tr + 0.156*C	0.165 + 0.272*Tr + 0.339*C	0.109 + 0.263*Tr + 0.221*C
AO2NLLX8	A-Z	A_Z (rise)	0.052 + 0.187*Tr + 0.201*C	0.137 + 0.229*Tr + 0.425*C	0.083 + 0.209*Tr + 0.290*C
AO2NLLX8	B-Z	B_Z (fall)	0.054 + 0.227*Tr + 0.156*C	0.153 + 0.260*Tr + 0.338*C	0.102 + 0.252*Tr + 0.220*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO2NLLX8	B-Z	B_Z (rise)	0.052 + 0.216*Tr + 0.200*C	0.134 + 0.257*Tr + 0.424*C	0.083 + 0.231*Tr + 0.289*C
AO2NLLX8	C-Z	C_Z (fall)	0.063 + 0.210*Tr + 0.160*C	0.181 + 0.221*Tr + 0.341*C	0.116 + 0.213*Tr + 0.223*C
AO2NLLX8	C-Z	C_Z (rise)	0.064 + 0.237*Tr + 0.201*C	0.170 + 0.288*Tr + 0.421*C	0.103 + 0.259*Tr + 0.287*C
AO2NLLX8	D-Z	D_Z (fall)	0.066 + 0.221*Tr + 0.160*C	0.193 + 0.229*Tr + 0.342*C	0.125 + 0.221*Tr + 0.223*C
AO2NLLX8	D-Z	D_Z (rise)	0.063 + 0.211*Tr + 0.201*C	0.173 + 0.253*Tr + 0.422*C	0.103 + 0.232*Tr + 0.288*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO2NLL	3949.430	75823.000
AO2NLLP	6189.350	130485.000
AO2NLLX4	11498.800	250328.000
AO2NLLX6	17569.000	378032.000
AO2NLLX8	22997.800	500650.000

Internal Energy at minimum output load

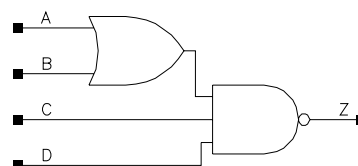
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO2NLL	Z(max)	0.018 + 0.007*Tr
AO2NLLP	Z(max)	0.030 + 0.014*Tr
AO2NLLX4	Z(max)	0.056 + 0.028*Tr
AO2NLLX6	Z(max)	0.086 + 0.042*Tr
AO2NLLX8	Z(max)	0.112 + 0.057*Tr

AO3LL
AO3LLP
AO3LLX4
AO3LLX6
AO3LLX8

Function: Function = 2 Input OR into 3 Input NAND

Boolean Expression: $Z = \overline{((A + B) \bullet C \bullet D)}$



Physical Dimensions

Property	AO3LL	AO3LLP	AO3LLX4	AO3LLX6	AO3LLX8
Area(um2)	10.086	12.103	22.189	32.275	40.344

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3LL	A Input Cap.	0.0027	0.0025	0.0026
AO3LL	D Input Cap.	0.0025	0.0022	0.0023
AO3LL	Z Max Load	0.160	0.160	0.160
AO3LL	B Input Cap.	0.0031	0.0029	0.0030
AO3LL	C Input Cap.	0.0025	0.0023	0.0024
AO3LLP	D Input Cap.	0.0044	0.0041	0.0043
AO3LLP	Z Max Load	0.320	0.320	0.320
AO3LLP	B Input Cap.	0.0058	0.0053	0.0055
AO3LLP	C Input Cap.	0.0044	0.0041	0.0042
AO3LLP	A Input Cap.	0.0051	0.0048	0.0049
AO3LLX4	D Input Cap.	0.0089	0.0082	0.0085
AO3LLX4	Z Max Load	0.640	0.640	0.640
AO3LLX4	B Input Cap.	0.0117	0.0107	0.0111
AO3LLX4	C Input Cap.	0.0087	0.0081	0.0085
AO3LLX4	A Input Cap.	0.0101	0.0093	0.0096
AO3LLX6	A Input Cap.	0.0149	0.0137	0.0142
AO3LLX6	D Input Cap.	0.0132	0.0122	0.0126
AO3LLX6	B Input Cap.	0.0164	0.0150	0.0155
AO3LLX6	C Input Cap.	0.0126	0.0118	0.0122
AO3LLX6	Z Max Load	0.960	0.960	0.960

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3LLX8	C Input Cap.	0.0176	0.0164	0.0170
AO3LLX8	A Input Cap.	0.0208	0.0193	0.0199
AO3LLX8	D Input Cap.	0.0182	0.0167	0.0173
AO3LLX8	Z Max Load	1.280	1.280	1.280
AO3LLX8	B Input Cap.	0.0226	0.0207	0.0214

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3LL	A-Z	A_Z (fall)	0.005 + 0.244*Tr + 2.542*C	0.028 + 0.277*Tr + 6.650*C	0.007 + 0.260*Tr + 3.984*C
AO3LL	A-Z	A_Z (rise)	0.013 + 0.293*Tr + 3.336*C	0.034 + 0.303*Tr + 7.206*C	0.018 + 0.299*Tr + 4.941*C
AO3LL	B-Z	B_Z (fall)	0.011 + 0.255*Tr + 2.501*C	0.046 + 0.287*Tr + 6.581*C	0.018 + 0.270*Tr + 3.922*C
AO3LL	B-Z	B_Z (rise)	0.022 + 0.230*Tr + 3.272*C	0.055 + 0.244*Tr + 7.138*C	0.032 + 0.240*Tr + 4.851*C
AO3LL	C-Z	C_Z (fall)	0.007 + 0.227*Tr + 2.211*C	0.070 + 0.248*Tr + 6.584*C	0.032 + 0.235*Tr + 3.891*C
AO3LL	C-Z	C_Z (rise)	0.020 + 0.324*Tr + 3.156*C	0.057 + 0.348*Tr + 6.644*C	0.033 + 0.338*Tr + 4.602*C
AO3LL	D-Z	D_Z (fall)	0.013 + 0.188*Tr + 2.117*C	0.081 + 0.210*Tr + 6.525*C	0.039 + 0.199*Tr + 3.811*C
AO3LL	D-Z	D_Z (rise)	0.025 + 0.330*Tr + 3.136*C	0.067 + 0.354*Tr + 6.606*C	0.040 + 0.344*Tr + 4.573*C
AO3LLP	A-Z	A_Z (fall)	0.001 + 0.242*Tr + 1.292*C	0.018 + 0.272*Tr + 3.249*C	0.000 + 0.257*Tr + 1.989*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3LLP	A-Z	A_Z (rise)	0.008 + 0.284*Tr + 1.647*C	0.023 + 0.293*Tr + 3.500*C	0.009 + 0.289*Tr + 2.422*C
AO3LLP	B-Z	B_Z (fall)	0.007 + 0.255*Tr + 1.265*C	0.037 + 0.284*Tr + 3.201*C	0.012 + 0.269*Tr + 1.949*C
AO3LLP	B-Z	B_Z (rise)	0.017 + 0.221*Tr + 1.607*C	0.045 + 0.235*Tr + 3.453*C	0.024 + 0.232*Tr + 2.366*C
AO3LLP	C-Z	C_Z (fall)	0.002 + 0.226*Tr + 1.126*C	0.060 + 0.244*Tr + 3.200*C	0.025 + 0.233*Tr + 1.935*C
AO3LLP	C-Z	C_Z (rise)	0.014 + 0.316*Tr + 1.555*C	0.044 + 0.339*Tr + 3.188*C	0.023 + 0.330*Tr + 2.238*C
AO3LLP	D-Z	D_Z (fall)	0.009 + 0.186*Tr + 1.075*C	0.072 + 0.208*Tr + 3.164*C	0.033 + 0.198*Tr + 1.889*C
AO3LLP	D-Z	D_Z (rise)	0.019 + 0.322*Tr + 1.543*C	0.055 + 0.346*Tr + 3.164*C	0.031 + 0.336*Tr + 2.220*C
AO3LLX4	A-Z	A_Z (fall)	0.004 + 0.233*Tr + 0.647*C	0.021 + 0.266*Tr + 1.627*C	0.005 + 0.248*Tr + 0.995*C
AO3LLX4	A-Z	A_Z (rise)	0.010 + 0.278*Tr + 0.824*C	0.026 + 0.287*Tr + 1.753*C	0.013 + 0.283*Tr + 1.213*C
AO3LLX4	B-Z	B_Z (fall)	0.010 + 0.247*Tr + 0.633*C	0.040 + 0.279*Tr + 1.603*C	0.016 + 0.261*Tr + 0.975*C
AO3LLX4	B-Z	B_Z (rise)	0.018 + 0.217*Tr + 0.804*C	0.047 + 0.231*Tr + 1.728*C	0.026 + 0.227*Tr + 1.185*C
AO3LLX4	C-Z	C_Z (fall)	0.006 + 0.216*Tr + 0.564*C	0.063 + 0.239*Tr + 1.602*C	0.029 + 0.226*Tr + 0.969*C
AO3LLX4	C-Z	C_Z (rise)	0.017 + 0.310*Tr + 0.778*C	0.048 + 0.334*Tr + 1.596*C	0.027 + 0.324*Tr + 1.120*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3LLX4	D-Z	D_Z (fall)	0.012 + 0.179*Tr + 0.538*C	0.074 + 0.204*Tr + 1.584*C	0.036 + 0.192*Tr + 0.946*C
AO3LLX4	D-Z	D_Z (rise)	0.022 + 0.317*Tr + 0.772*C	0.059 + 0.341*Tr + 1.584*C	0.035 + 0.330*Tr + 1.111*C
AO3LLX6	A-Z	A_Z (fall)	0.002 + 0.231*Tr + 0.434*C	0.019 + 0.261*Tr + 1.089*C	0.003 + 0.245*Tr + 0.668*C
AO3LLX6	A-Z	A_Z (rise)	0.008 + 0.274*Tr + 0.552*C	0.024 + 0.282*Tr + 1.173*C	0.010 + 0.279*Tr + 0.812*C
AO3LLX6	B-Z	B_Z (fall)	0.009 + 0.246*Tr + 0.424*C	0.039 + 0.275*Tr + 1.072*C	0.014 + 0.259*Tr + 0.653*C
AO3LLX6	B-Z	B_Z (rise)	0.018 + 0.215*Tr + 0.538*C	0.046 + 0.228*Tr + 1.156*C	0.025 + 0.224*Tr + 0.792*C
AO3LLX6	C-Z	C_Z (fall)	0.004 + 0.214*Tr + 0.379*C	0.061 + 0.236*Tr + 1.071*C	0.027 + 0.224*Tr + 0.649*C
AO3LLX6	C-Z	C_Z (rise)	0.015 + 0.306*Tr + 0.522*C	0.045 + 0.329*Tr + 1.068*C	0.025 + 0.319*Tr + 0.751*C
AO3LLX6	D-Z	D_Z (fall)	0.010 + 0.177*Tr + 0.361*C	0.073 + 0.202*Tr + 1.058*C	0.035 + 0.191*Tr + 0.633*C
AO3LLX6	D-Z	D_Z (rise)	0.020 + 0.314*Tr + 0.517*C	0.057 + 0.337*Tr + 1.059*C	0.033 + 0.327*Tr + 0.743*C
AO3LLX8	A-Z	A_Z (fall)	0.003 + 0.230*Tr + 0.325*C	0.021 + 0.262*Tr + 0.816*C	0.005 + 0.244*Tr + 0.500*C
AO3LLX8	A-Z	A_Z (rise)	0.009 + 0.274*Tr + 0.414*C	0.026 + 0.283*Tr + 0.880*C	0.012 + 0.279*Tr + 0.609*C
AO3LLX8	B-Z	B_Z (fall)	0.010 + 0.244*Tr + 0.318*C	0.040 + 0.276*Tr + 0.804*C	0.016 + 0.258*Tr + 0.490*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3LLX8	B-Z	B_Z (rise)	0.018 + 0.215*Tr + 0.403*C	0.047 + 0.228*Tr + 0.867*C	0.026 + 0.224*Tr + 0.594*C
AO3LLX8	C-Z	C_Z (fall)	0.006 + 0.212*Tr + 0.284*C	0.062 + 0.236*Tr + 0.804*C	0.028 + 0.223*Tr + 0.486*C
AO3LLX8	C-Z	C_Z (rise)	0.016 + 0.306*Tr + 0.391*C	0.047 + 0.330*Tr + 0.801*C	0.026 + 0.320*Tr + 0.562*C
AO3LLX8	D-Z	D_Z (fall)	0.012 + 0.176*Tr + 0.271*C	0.074 + 0.201*Tr + 0.794*C	0.036 + 0.190*Tr + 0.475*C
AO3LLX8	D-Z	D_Z (rise)	0.021 + 0.314*Tr + 0.387*C	0.058 + 0.338*Tr + 0.794*C	0.034 + 0.327*Tr + 0.557*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO3LL	2897.570	61840.600
AO3LLP	5129.660	114676.000
AO3LLX4	10259.300	229350.000
AO3LLX6	15389.000	344028.000
AO3LLX8	20518.900	458702.000

Internal Energy at minimum output load

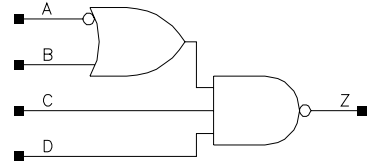
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO3LL	Z(max)	0.013 + 0.008*Tr
AO3LLP	Z(max)	0.023 + 0.017*Tr
AO3LLX4	Z(max)	0.044 + 0.035*Tr
AO3LLX6	Z(max)	0.066 + 0.054*Tr
AO3LLX8	Z(max)	0.088 + 0.072*Tr

AO3ALL
AO3ALLP
AO3ALLX4
AO3ALLX6
AO3ALLX8

Function: Function = 2 Input OR into 3 Input NAND, A Input Inverted

Boolean Expression: $Z = !((A' + B) \bullet C \bullet D)$



Physical Dimensions

Property	AO3ALL	AO3ALLP	AO3ALLX4	AO3ALLX6	AO3ALLX8
Area(um ²)	14.120	14.120	24.206	34.292	44.378

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3ALL	C Input Cap.	0.0024	0.0022	0.0023
AO3ALL	A Input Cap.	0.0013	0.0011	0.0012
AO3ALL	Z Max Load	0.160	0.160	0.160
AO3ALL	D Input Cap.	0.0026	0.0023	0.0024
AO3ALL	B Input Cap.	0.0031	0.0029	0.0030
AO3ALLP	C Input Cap.	0.0044	0.0041	0.0043
AO3ALLP	A Input Cap.	0.0020	0.0017	0.0018
AO3ALLP	Z Max Load	0.320	0.320	0.320
AO3ALLP	D Input Cap.	0.0047	0.0043	0.0045
AO3ALLP	B Input Cap.	0.0058	0.0053	0.0055
AO3ALLX4	C Input Cap.	0.0093	0.0087	0.0090
AO3ALLX4	A Input Cap.	0.0035	0.0029	0.0031
AO3ALLX4	Z Max Load	0.640	0.640	0.640
AO3ALLX4	D Input Cap.	0.0099	0.0091	0.0094
AO3ALLX4	B Input Cap.	0.0117	0.0108	0.0112
AO3ALLX6	B Input Cap.	0.0164	0.0151	0.0157
AO3ALLX6	Z Max Load	0.960	0.960	0.960
AO3ALLX6	C Input Cap.	0.0127	0.0118	0.0122

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3ALLX6	A Input Cap.	0.0050	0.0043	0.0045
AO3ALLX6	D Input Cap.	0.0132	0.0121	0.0126
AO3ALLX8	A Input Cap.	0.0064	0.0055	0.0057
AO3ALLX8	Z Max Load	1.280	1.280	1.280
AO3ALLX8	D Input Cap.	0.0182	0.0168	0.0174
AO3ALLX8	B Input Cap.	0.0226	0.0208	0.0215
AO3ALLX8	C Input Cap.	0.0177	0.0164	0.0170

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3ALL	A-Z	A_Z (fall)	0.080 + 0.287*Tr + 2.290*C	0.185 + 0.299*Tr + 6.328*C	0.121 + 0.291*Tr + 3.598*C
AO3ALL	A-Z	A_Z (rise)	0.065 + 0.177*Tr + 3.161*C	0.155 + 0.228*Tr + 6.908*C	0.098 + 0.197*Tr + 4.646*C
AO3ALL	B-Z	B_Z (fall)	0.010 + 0.255*Tr + 2.503*C	0.042 + 0.288*Tr + 6.583*C	0.016 + 0.270*Tr + 3.922*C
AO3ALL	B-Z	B_Z (rise)	0.022 + 0.229*Tr + 3.273*C	0.057 + 0.242*Tr + 7.150*C	0.033 + 0.239*Tr + 4.858*C
AO3ALL	C-Z	C_Z (fall)	0.008 + 0.227*Tr + 2.216*C	0.068 + 0.248*Tr + 6.589*C	0.030 + 0.235*Tr + 3.895*C
AO3ALL	C-Z	C_Z (rise)	0.019 + 0.324*Tr + 3.161*C	0.054 + 0.348*Tr + 6.646*C	0.031 + 0.338*Tr + 4.607*C
AO3ALL	D-Z	D_Z (fall)	0.013 + 0.187*Tr + 2.122*C	0.079 + 0.211*Tr + 6.532*C	0.038 + 0.199*Tr + 3.815*C
AO3ALL	D-Z	D_Z (rise)	0.024 + 0.331*Tr + 3.137*C	0.065 + 0.354*Tr + 6.610*C	0.038 + 0.344*Tr + 4.572*C
AO3ALLP	A-Z	A_Z (fall)	0.071 + 0.268*Tr + 1.146*C	0.160 + 0.279*Tr + 3.043*C	0.106 + 0.272*Tr + 1.765*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3ALLP	A-Z	A_Z (rise)	0.060 + 0.187*Tr + 1.535*C	0.136 + 0.230*Tr + 3.305*C	0.088 + 0.204*Tr + 2.237*C
AO3ALLP	B-Z	B_Z (fall)	0.007 + 0.256*Tr + 1.266*C	0.035 + 0.285*Tr + 3.204*C	0.010 + 0.269*Tr + 1.951*C
AO3ALLP	B-Z	B_Z (rise)	0.018 + 0.220*Tr + 1.607*C	0.049 + 0.233*Tr + 3.459*C	0.026 + 0.230*Tr + 2.369*C
AO3ALLP	C-Z	C_Z (fall)	0.003 + 0.226*Tr + 1.129*C	0.058 + 0.244*Tr + 3.205*C	0.023 + 0.233*Tr + 1.938*C
AO3ALLP	C-Z	C_Z (rise)	0.013 + 0.316*Tr + 1.558*C	0.043 + 0.339*Tr + 3.192*C	0.022 + 0.330*Tr + 2.242*C
AO3ALLP	D-Z	D_Z (fall)	0.010 + 0.186*Tr + 1.077*C	0.070 + 0.208*Tr + 3.170*C	0.032 + 0.197*Tr + 1.893*C
AO3ALLP	D-Z	D_Z (rise)	0.019 + 0.322*Tr + 1.545*C	0.054 + 0.346*Tr + 3.168*C	0.030 + 0.336*Tr + 2.222*C
AO3ALLX4	A-Z	A_Z (fall)	0.067 + 0.252*Tr + 0.572*C	0.148 + 0.263*Tr + 1.520*C	0.098 + 0.256*Tr + 0.881*C
AO3ALLX4	A-Z	A_Z (rise)	0.058 + 0.200*Tr + 0.767*C	0.130 + 0.238*Tr + 1.652*C	0.085 + 0.215*Tr + 1.118*C
AO3ALLX4	B-Z	B_Z (fall)	0.010 + 0.248*Tr + 0.633*C	0.040 + 0.280*Tr + 1.603*C	0.016 + 0.262*Tr + 0.975*C
AO3ALLX4	B-Z	B_Z (rise)	0.020 + 0.217*Tr + 0.804*C	0.052 + 0.229*Tr + 1.730*C	0.029 + 0.226*Tr + 1.184*C
AO3ALLX4	C-Z	C_Z (fall)	0.008 + 0.216*Tr + 0.565*C	0.062 + 0.239*Tr + 1.604*C	0.028 + 0.226*Tr + 0.970*C
AO3ALLX4	C-Z	C_Z (rise)	0.016 + 0.309*Tr + 0.780*C	0.047 + 0.334*Tr + 1.598*C	0.026 + 0.323*Tr + 1.122*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3ALLX4	D-Z	D_Z (fall)	0.013 + 0.179*Tr + 0.539*C	0.074 + 0.204*Tr + 1.587*C	0.036 + 0.192*Tr + 0.947*C
AO3ALLX4	D-Z	D_Z (rise)	0.022 + 0.317*Tr + 0.773*C	0.059 + 0.341*Tr + 1.585*C	0.034 + 0.330*Tr + 1.112*C
AO3ALLX6	A-Z	A_Z (fall)	0.065 + 0.246*Tr + 0.382*C	0.144 + 0.258*Tr + 1.013*C	0.096 + 0.250*Tr + 0.588*C
AO3ALLX6	A-Z	A_Z (rise)	0.057 + 0.203*Tr + 0.512*C	0.127 + 0.238*Tr + 1.102*C	0.083 + 0.217*Tr + 0.745*C
AO3ALLX6	B-Z	B_Z (fall)	0.008 + 0.246*Tr + 0.425*C	0.038 + 0.276*Tr + 1.073*C	0.014 + 0.259*Tr + 0.654*C
AO3ALLX6	B-Z	B_Z (rise)	0.019 + 0.214*Tr + 0.538*C	0.051 + 0.225*Tr + 1.158*C	0.028 + 0.223*Tr + 0.793*C
AO3ALLX6	C-Z	C_Z (fall)	0.005 + 0.213*Tr + 0.379*C	0.060 + 0.236*Tr + 1.072*C	0.026 + 0.224*Tr + 0.649*C
AO3ALLX6	C-Z	C_Z (rise)	0.015 + 0.306*Tr + 0.522*C	0.045 + 0.330*Tr + 1.068*C	0.024 + 0.320*Tr + 0.751*C
AO3ALLX6	D-Z	D_Z (fall)	0.011 + 0.177*Tr + 0.361*C	0.072 + 0.203*Tr + 1.059*C	0.034 + 0.191*Tr + 0.633*C
AO3ALLX6	D-Z	D_Z (rise)	0.020 + 0.311*Tr + 0.510*C	0.054 + 0.334*Tr + 1.037*C	0.031 + 0.324*Tr + 0.731*C
AO3ALLX8	A-Z	A_Z (fall)	0.066 + 0.246*Tr + 0.287*C	0.145 + 0.258*Tr + 0.761*C	0.097 + 0.250*Tr + 0.441*C
AO3ALLX8	A-Z	A_Z (rise)	0.058 + 0.205*Tr + 0.384*C	0.128 + 0.240*Tr + 0.827*C	0.084 + 0.218*Tr + 0.559*C
AO3ALLX8	B-Z	B_Z (fall)	0.009 + 0.245*Tr + 0.318*C	0.039 + 0.276*Tr + 0.805*C	0.015 + 0.258*Tr + 0.490*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3ALLX8	B-Z	B_Z (rise)	0.019 + 0.214*Tr + 0.404*C	0.051 + 0.226*Tr + 0.868*C	0.028 + 0.223*Tr + 0.595*C
AO3ALLX8	C-Z	C_Z (fall)	0.007 + 0.212*Tr + 0.284*C	0.061 + 0.237*Tr + 0.804*C	0.027 + 0.223*Tr + 0.487*C
AO3ALLX8	C-Z	C_Z (rise)	0.015 + 0.305*Tr + 0.388*C	0.045 + 0.328*Tr + 0.791*C	0.025 + 0.318*Tr + 0.557*C
AO3ALLX8	D-Z	D_Z (fall)	0.012 + 0.176*Tr + 0.271*C	0.072 + 0.201*Tr + 0.795*C	0.035 + 0.190*Tr + 0.475*C
AO3ALLX8	D-Z	D_Z (rise)	0.021 + 0.314*Tr + 0.388*C	0.057 + 0.338*Tr + 0.795*C	0.033 + 0.327*Tr + 0.558*C

Average Leakage Power

picoWatts

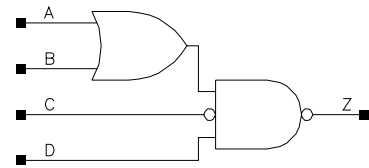
Cell	bc_1.32V_25C	bc_1.32V_125C
AO3ALL	4120.270	80359.500
AO3ALLP	6483.420	138478.000
AO3ALLX4	12190.700	267014.000
AO3ALLX6	17962.000	396051.000
AO3ALLX8	23805.600	526640.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO3ALL	Z(max)	0.014 + 0.009*Tr
AO3ALLP	Z(max)	0.024 + 0.018*Tr
AO3ALLX4	Z(max)	0.047 + 0.037*Tr
AO3ALLX6	Z(max)	0.070 + 0.056*Tr
AO3ALLX8	Z(max)	0.093 + 0.075*Tr

AO3CLL
AO3CLLP
AO3CLLX4
AO3CLLX6
AO3CLLX8



Function: Function = 2 Input OR into 3 Input NAND, C Input Inverted

Boolean Expression: $Z = !((A + B) \bullet C' \bullet D)$

Physical Dimensions

Property	AO3CLL	AO3CLLP	AO3CLLX4	AO3CLLX6	AO3CLLX8
Area(um ²)	14.120	14.120	24.206	34.292	44.378

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3CLL	C Input Cap.	0.0016	0.0012	0.0013
AO3CLL	A Input Cap.	0.0031	0.0029	0.0030
AO3CLL	D Input Cap.	0.0024	0.0022	0.0023
AO3CLL	B Input Cap.	0.0028	0.0026	0.0027
AO3CLL	Z Max Load	0.160	0.160	0.160
AO3CLLP	Z Max Load	0.320	0.320	0.320
AO3CLLP	C Input Cap.	0.0021	0.0017	0.0018
AO3CLLP	A Input Cap.	0.0052	0.0048	0.0050
AO3CLLP	D Input Cap.	0.0046	0.0043	0.0044
AO3CLLP	B Input Cap.	0.0058	0.0053	0.0055
AO3CLLX4	B Input Cap.	0.0118	0.0109	0.0112
AO3CLLX4	Z Max Load	0.640	0.640	0.640
AO3CLLX4	C Input Cap.	0.0035	0.0030	0.0031
AO3CLLX4	A Input Cap.	0.0101	0.0093	0.0096
AO3CLLX4	D Input Cap.	0.0099	0.0091	0.0094
AO3CLLX6	A Input Cap.	0.0148	0.0137	0.0141
AO3CLLX6	Z Max Load	0.960	0.960	0.960
AO3CLLX6	D Input Cap.	0.0132	0.0122	0.0126
AO3CLLX6	B Input Cap.	0.0165	0.0151	0.0157

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3CLLX6	C Input Cap.	0.0052	0.0044	0.0046
AO3CLLX8	C Input Cap.	0.0066	0.0057	0.0059
AO3CLLX8	A Input Cap.	0.0208	0.0192	0.0198
AO3CLLX8	D Input Cap.	0.0181	0.0167	0.0173
AO3CLLX8	B Input Cap.	0.0227	0.0208	0.0215
AO3CLLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3CLL	A-Z	A_Z (fall)	0.011 + 0.255*Tr + 2.502*C	0.044 + 0.287*Tr + 6.584*C	0.017 + 0.270*Tr + 3.922*C
AO3CLL	A-Z	A_Z (rise)	0.021 + 0.230*Tr + 3.271*C	0.054 + 0.244*Tr + 7.142*C	0.031 + 0.240*Tr + 4.853*C
AO3CLL	B-Z	B_Z (fall)	0.005 + 0.243*Tr + 2.545*C	0.027 + 0.277*Tr + 6.654*C	0.007 + 0.259*Tr + 3.987*C
AO3CLL	B-Z	B_Z (rise)	0.013 + 0.293*Tr + 3.339*C	0.034 + 0.303*Tr + 7.213*C	0.018 + 0.298*Tr + 4.947*C
AO3CLL	C-Z	C_Z (fall)	0.073 + 0.273*Tr + 1.911*C	0.201 + 0.280*Tr + 6.317*C	0.123 + 0.274*Tr + 3.583*C
AO3CLL	C-Z	C_Z (rise)	0.070 + 0.171*Tr + 3.006*C	0.175 + 0.220*Tr + 6.420*C	0.110 + 0.191*Tr + 4.356*C
AO3CLL	D-Z	D_Z (fall)	0.007 + 0.227*Tr + 2.213*C	0.068 + 0.248*Tr + 6.582*C	0.030 + 0.235*Tr + 3.891*C
AO3CLL	D-Z	D_Z (rise)	0.020 + 0.324*Tr + 3.155*C	0.055 + 0.348*Tr + 6.639*C	0.032 + 0.338*Tr + 4.604*C
AO3CLLP	A-Z	A_Z (fall)	0.000 + 0.243*Tr + 1.292*C	0.017 + 0.273*Tr + 3.246*C	0.000 + 0.257*Tr + 1.987*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3CLLP	A-Z	A_Z (rise)	0.008 + 0.284*Tr + 1.647*C	0.023 + 0.293*Tr + 3.502*C	0.009 + 0.289*Tr + 2.422*C
AO3CLLP	B-Z	B_Z (fall)	0.007 + 0.256*Tr + 1.265*C	0.035 + 0.285*Tr + 3.200*C	0.011 + 0.269*Tr + 1.948*C
AO3CLLP	B-Z	B_Z (rise)	0.017 + 0.221*Tr + 1.606*C	0.044 + 0.235*Tr + 3.453*C	0.024 + 0.231*Tr + 2.366*C
AO3CLLP	C-Z	C_Z (fall)	0.064 + 0.258*Tr + 0.963*C	0.173 + 0.265*Tr + 3.041*C	0.108 + 0.259*Tr + 1.760*C
AO3CLLP	C-Z	C_Z (rise)	0.061 + 0.183*Tr + 1.459*C	0.147 + 0.225*Tr + 3.035*C	0.094 + 0.200*Tr + 2.083*C
AO3CLLP	D-Z	D_Z (fall)	0.011 + 0.184*Tr + 1.078*C	0.075 + 0.206*Tr + 3.168*C	0.035 + 0.196*Tr + 1.892*C
AO3CLLP	D-Z	D_Z (rise)	0.019 + 0.322*Tr + 1.546*C	0.054 + 0.346*Tr + 3.167*C	0.030 + 0.336*Tr + 2.223*C
AO3CLLX4	A-Z	A_Z (fall)	0.004 + 0.234*Tr + 0.646*C	0.022 + 0.267*Tr + 1.625*C	0.005 + 0.249*Tr + 0.994*C
AO3CLLX4	A-Z	A_Z (rise)	0.010 + 0.278*Tr + 0.824*C	0.027 + 0.288*Tr + 1.752*C	0.013 + 0.283*Tr + 1.212*C
AO3CLLX4	B-Z	B_Z (fall)	0.010 + 0.248*Tr + 0.633*C	0.040 + 0.280*Tr + 1.601*C	0.016 + 0.262*Tr + 0.974*C
AO3CLLX4	B-Z	B_Z (rise)	0.019 + 0.218*Tr + 0.804*C	0.048 + 0.231*Tr + 1.728*C	0.027 + 0.227*Tr + 1.184*C
AO3CLLX4	C-Z	C_Z (fall)	0.063 + 0.246*Tr + 0.481*C	0.169 + 0.254*Tr + 1.521*C	0.106 + 0.248*Tr + 0.880*C
AO3CLLX4	C-Z	C_Z (rise)	0.063 + 0.200*Tr + 0.730*C	0.148 + 0.239*Tr + 1.517*C	0.095 + 0.215*Tr + 1.042*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3CLLX4	D-Z	D_Z (fall)	0.014 + 0.177*Tr + 0.540*C	0.079 + 0.201*Tr + 1.586*C	0.039 + 0.191*Tr + 0.947*C
AO3CLLX4	D-Z	D_Z (rise)	0.021 + 0.317*Tr + 0.774*C	0.058 + 0.341*Tr + 1.585*C	0.034 + 0.330*Tr + 1.113*C
AO3CLLX6	A-Z	A_Z (fall)	0.002 + 0.231*Tr + 0.434*C	0.019 + 0.262*Tr + 1.088*C	0.002 + 0.246*Tr + 0.667*C
AO3CLLX6	A-Z	A_Z (rise)	0.008 + 0.274*Tr + 0.552*C	0.024 + 0.282*Tr + 1.173*C	0.011 + 0.279*Tr + 0.812*C
AO3CLLX6	B-Z	B_Z (fall)	0.009 + 0.246*Tr + 0.424*C	0.039 + 0.276*Tr + 1.071*C	0.014 + 0.259*Tr + 0.653*C
AO3CLLX6	B-Z	B_Z (rise)	0.018 + 0.215*Tr + 0.538*C	0.047 + 0.228*Tr + 1.156*C	0.026 + 0.224*Tr + 0.793*C
AO3CLLX6	C-Z	C_Z (fall)	0.059 + 0.237*Tr + 0.321*C	0.161 + 0.244*Tr + 1.014*C	0.101 + 0.239*Tr + 0.587*C
AO3CLLX6	C-Z	C_Z (rise)	0.060 + 0.200*Tr + 0.487*C	0.140 + 0.235*Tr + 1.012*C	0.091 + 0.214*Tr + 0.694*C
AO3CLLX6	D-Z	D_Z (fall)	0.012 + 0.176*Tr + 0.361*C	0.077 + 0.200*Tr + 1.059*C	0.037 + 0.189*Tr + 0.633*C
AO3CLLX6	D-Z	D_Z (rise)	0.020 + 0.312*Tr + 0.510*C	0.054 + 0.334*Tr + 1.037*C	0.031 + 0.324*Tr + 0.731*C
AO3CLLX8	A-Z	A_Z (fall)	0.003 + 0.230*Tr + 0.325*C	0.021 + 0.262*Tr + 0.816*C	0.004 + 0.245*Tr + 0.500*C
AO3CLLX8	A-Z	A_Z (rise)	0.009 + 0.274*Tr + 0.414*C	0.026 + 0.283*Tr + 0.880*C	0.012 + 0.279*Tr + 0.609*C
AO3CLLX8	B-Z	B_Z (fall)	0.010 + 0.245*Tr + 0.318*C	0.039 + 0.276*Tr + 0.804*C	0.015 + 0.258*Tr + 0.490*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3CLLX8	B-Z	B_Z (rise)	0.018 + 0.215*Tr + 0.403*C	0.047 + 0.228*Tr + 0.867*C	0.027 + 0.224*Tr + 0.594*C
AO3CLLX8	C-Z	C_Z (fall)	0.060 + 0.236*Tr + 0.241*C	0.161 + 0.243*Tr + 0.760*C	0.101 + 0.238*Tr + 0.440*C
AO3CLLX8	C-Z	C_Z (rise)	0.060 + 0.201*Tr + 0.362*C	0.139 + 0.235*Tr + 0.747*C	0.091 + 0.214*Tr + 0.514*C
AO3CLLX8	D-Z	D_Z (fall)	0.013 + 0.174*Tr + 0.271*C	0.077 + 0.199*Tr + 0.795*C	0.038 + 0.188*Tr + 0.475*C
AO3CLLX8	D-Z	D_Z (rise)	0.021 + 0.314*Tr + 0.388*C	0.057 + 0.338*Tr + 0.795*C	0.033 + 0.327*Tr + 0.558*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO3CLL	4480.250	84245.800
AO3CLLP	6807.200	142038.000
AO3CLLX4	12539.900	270471.000
AO3CLLX6	18373.800	399836.000
AO3CLLX8	24261.500	530122.000

Internal Energy at minimum output load

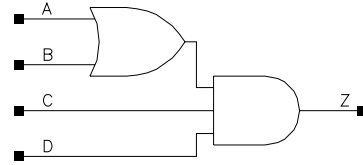
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO3CLL	Z(max)	0.019 + 0.005*Tr
AO3CLLP	Z(max)	0.030 + 0.009*Tr
AO3CLLX4	Z(max)	0.060 + 0.017*Tr
AO3CLLX6	Z(max)	0.087 + 0.026*Tr
AO3CLLX8	Z(max)	0.116 + 0.035*Tr

AO3NLL
AO3NLLP
AO3NLLX4
AO3NLLX6
AO3NLLX8

Function: Function = 2 Input OR into 3 Input AND

Boolean Expression: $Z = (A + B) \bullet C \bullet D$



Physical Dimensions

Property	AO3NLL	AO3NLLP	AO3NLLX4	AO3NLLX6	AO3NLLX8
Area(um2)	14.120	14.120	18.155	28.241	34.292

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3NLL	A Input Cap.	0.0019	0.0016	0.0017
AO3NLL	D Input Cap.	0.0018	0.0015	0.0016
AO3NLL	B Input Cap.	0.0020	0.0018	0.0019
AO3NLL	C Input Cap.	0.0017	0.0015	0.0015
AO3NLL	Z Max Load	0.160	0.160	0.160
AO3NLLP	B Input Cap.	0.0034	0.0029	0.0030
AO3NLLP	C Input Cap.	0.0026	0.0022	0.0023
AO3NLLP	Z Max Load	0.320	0.320	0.320
AO3NLLP	A Input Cap.	0.0031	0.0026	0.0027
AO3NLLP	D Input Cap.	0.0027	0.0023	0.0024
AO3NLLX4	C Input Cap.	0.0048	0.0042	0.0044
AO3NLLX4	Z Max Load	0.640	0.640	0.640
AO3NLLX4	A Input Cap.	0.0059	0.0051	0.0053
AO3NLLX4	D Input Cap.	0.0050	0.0043	0.0045
AO3NLLX4	B Input Cap.	0.0063	0.0055	0.0057
AO3NLLX6	B Input Cap.	0.0093	0.0081	0.0085
AO3NLLX6	C Input Cap.	0.0073	0.0065	0.0068
AO3NLLX6	A Input Cap.	0.0093	0.0080	0.0083

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3NLLX6	D Input Cap.	0.0081	0.0071	0.0074
AO3NLLX6	Z Max Load	0.960	0.960	0.960
AO3NLLX8	D Input Cap.	0.0094	0.0082	0.0086
AO3NLLX8	B Input Cap.	0.0128	0.0112	0.0117
AO3NLLX8	C Input Cap.	0.0095	0.0084	0.0087
AO3NLLX8	Z Max Load	1.280	1.280	1.280
AO3NLLX8	A Input Cap.	0.0116	0.0100	0.0104

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3NLL	A-Z	A_Z (fall)	0.082 + 0.276*Tr + 1.255*C	0.186 + 0.288*Tr + 2.739*C	0.123 + 0.280*Tr + 1.760*C
AO3NLL	A-Z	A_Z (rise)	0.066 + 0.196*Tr + 1.644*C	0.170 + 0.242*Tr + 3.505*C	0.102 + 0.214*Tr + 2.370*C
AO3NLL	B-Z	B_Z (fall)	0.084 + 0.230*Tr + 1.261*C	0.197 + 0.242*Tr + 2.752*C	0.127 + 0.236*Tr + 1.771*C
AO3NLL	B-Z	B_Z (rise)	0.071 + 0.216*Tr + 1.646*C	0.189 + 0.260*Tr + 3.520*C	0.112 + 0.232*Tr + 2.375*C
AO3NLL	C-Z	C_Z (fall)	0.090 + 0.313*Tr + 1.246*C	0.221 + 0.347*Tr + 2.853*C	0.144 + 0.332*Tr + 1.830*C
AO3NLL	C-Z	C_Z (rise)	0.066 + 0.177*Tr + 1.648*C	0.213 + 0.222*Tr + 3.533*C	0.123 + 0.200*Tr + 2.386*C
AO3NLL	D-Z	D_Z (fall)	0.096 + 0.323*Tr + 1.251*C	0.235 + 0.355*Tr + 2.867*C	0.153 + 0.340*Tr + 1.834*C
AO3NLL	D-Z	D_Z (rise)	0.066 + 0.153*Tr + 1.651*C	0.220 + 0.190*Tr + 3.537*C	0.125 + 0.174*Tr + 2.388*C
AO3NLLP	A-Z	A_Z (fall)	0.073 + 0.261*Tr + 0.640*C	0.163 + 0.274*Tr + 1.349*C	0.108 + 0.265*Tr + 0.882*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3NLLP	A-Z	A_Z (rise)	0.059 + 0.200*Tr + 0.805*C	0.149 + 0.242*Tr + 1.692*C	0.090 + 0.216*Tr + 1.152*C
AO3NLLP	B-Z	B_Z (fall)	0.074 + 0.218*Tr + 0.644*C	0.174 + 0.231*Tr + 1.357*C	0.112 + 0.225*Tr + 0.888*C
AO3NLLP	B-Z	B_Z (rise)	0.065 + 0.221*Tr + 0.807*C	0.169 + 0.262*Tr + 1.700*C	0.101 + 0.235*Tr + 1.155*C
AO3NLLP	C-Z	C_Z (fall)	0.079 + 0.296*Tr + 0.634*C	0.187 + 0.331*Tr + 1.403*C	0.124 + 0.315*Tr + 0.916*C
AO3NLLP	C-Z	C_Z (rise)	0.059 + 0.181*Tr + 0.809*C	0.190 + 0.225*Tr + 1.707*C	0.111 + 0.204*Tr + 1.160*C
AO3NLLP	D-Z	D_Z (fall)	0.084 + 0.306*Tr + 0.636*C	0.199 + 0.340*Tr + 1.410*C	0.132 + 0.324*Tr + 0.918*C
AO3NLLP	D-Z	D_Z (rise)	0.059 + 0.158*Tr + 0.809*C	0.197 + 0.196*Tr + 1.709*C	0.113 + 0.179*Tr + 1.161*C
AO3NLLX4	A-Z	A_Z (fall)	0.069 + 0.253*Tr + 0.319*C	0.155 + 0.265*Tr + 0.672*C	0.103 + 0.257*Tr + 0.439*C
AO3NLLX4	A-Z	A_Z (rise)	0.057 + 0.202*Tr + 0.403*C	0.142 + 0.241*Tr + 0.843*C	0.087 + 0.216*Tr + 0.575*C
AO3NLLX4	B-Z	B_Z (fall)	0.071 + 0.211*Tr + 0.321*C	0.165 + 0.224*Tr + 0.676*C	0.107 + 0.218*Tr + 0.442*C
AO3NLLX4	B-Z	B_Z (rise)	0.063 + 0.224*Tr + 0.403*C	0.161 + 0.261*Tr + 0.848*C	0.097 + 0.236*Tr + 0.576*C
AO3NLLX4	C-Z	C_Z (fall)	0.076 + 0.288*Tr + 0.316*C	0.178 + 0.324*Tr + 0.698*C	0.118 + 0.307*Tr + 0.456*C
AO3NLLX4	C-Z	C_Z (rise)	0.057 + 0.182*Tr + 0.404*C	0.181 + 0.223*Tr + 0.851*C	0.107 + 0.204*Tr + 0.579*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3NLLX4	D-Z	D_Z (fall)	0.081 + 0.299*Tr + 0.317*C	0.190 + 0.334*Tr + 0.701*C	0.123 + 0.313*Tr + 0.437*C
AO3NLLX4	D-Z	D_Z (rise)	0.057 + 0.159*Tr + 0.405*C	0.187 + 0.195*Tr + 0.852*C	0.108 + 0.180*Tr + 0.580*C
AO3NLLX6	A-Z	A_Z (fall)	0.069 + 0.253*Tr + 0.213*C	0.154 + 0.265*Tr + 0.449*C	0.102 + 0.257*Tr + 0.294*C
AO3NLLX6	A-Z	A_Z (rise)	0.057 + 0.202*Tr + 0.269*C	0.143 + 0.242*Tr + 0.564*C	0.087 + 0.217*Tr + 0.385*C
AO3NLLX6	B-Z	B_Z (fall)	0.070 + 0.211*Tr + 0.215*C	0.164 + 0.224*Tr + 0.452*C	0.106 + 0.218*Tr + 0.296*C
AO3NLLX6	B-Z	B_Z (rise)	0.063 + 0.223*Tr + 0.269*C	0.163 + 0.262*Tr + 0.568*C	0.098 + 0.237*Tr + 0.386*C
AO3NLLX6	C-Z	C_Z (fall)	0.073 + 0.284*Tr + 0.211*C	0.170 + 0.317*Tr + 0.466*C	0.111 + 0.297*Tr + 0.291*C
AO3NLLX6	C-Z	C_Z (rise)	0.057 + 0.184*Tr + 0.270*C	0.182 + 0.227*Tr + 0.570*C	0.107 + 0.206*Tr + 0.387*C
AO3NLLX6	D-Z	D_Z (fall)	0.079 + 0.294*Tr + 0.212*C	0.182 + 0.327*Tr + 0.468*C	0.119 + 0.307*Tr + 0.292*C
AO3NLLX6	D-Z	D_Z (rise)	0.057 + 0.161*Tr + 0.270*C	0.189 + 0.197*Tr + 0.571*C	0.109 + 0.182*Tr + 0.388*C
AO3NLLX8	A-Z	A_Z (fall)	0.067 + 0.252*Tr + 0.160*C	0.150 + 0.263*Tr + 0.337*C	0.100 + 0.255*Tr + 0.220*C
AO3NLLX8	A-Z	A_Z (rise)	0.055 + 0.200*Tr + 0.202*C	0.137 + 0.238*Tr + 0.423*C	0.084 + 0.215*Tr + 0.289*C
AO3NLLX8	B-Z	B_Z (fall)	0.069 + 0.210*Tr + 0.161*C	0.161 + 0.222*Tr + 0.339*C	0.104 + 0.216*Tr + 0.222*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO3NLLX8	B-Z	B_Z (rise)	0.061 + 0.222*Tr + 0.202*C	0.157 + 0.259*Tr + 0.425*C	0.095 + 0.235*Tr + 0.289*C
AO3NLLX8	C-Z	C_Z (fall)	0.074 + 0.287*Tr + 0.158*C	0.173 + 0.322*Tr + 0.351*C	0.112 + 0.301*Tr + 0.219*C
AO3NLLX8	C-Z	C_Z (rise)	0.056 + 0.180*Tr + 0.203*C	0.176 + 0.222*Tr + 0.427*C	0.105 + 0.202*Tr + 0.291*C
AO3NLLX8	D-Z	D_Z (fall)	0.078 + 0.298*Tr + 0.159*C	0.184 + 0.332*Tr + 0.352*C	0.120 + 0.312*Tr + 0.219*C
AO3NLLX8	D-Z	D_Z (rise)	0.055 + 0.158*Tr + 0.203*C	0.182 + 0.194*Tr + 0.427*C	0.105 + 0.178*Tr + 0.291*C

Average Leakage Power

picoWatts

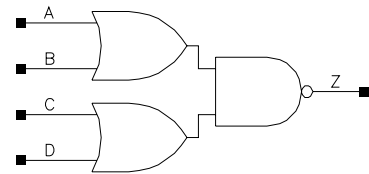
Cell	bc_1.32V_25C	bc_1.32V_125C
AO3NLL	3675.900	73642.100
AO3NLLP	5988.240	128841.000
AO3NLLX4	11300.900	248372.000
AO3NLLX6	17208.500	375466.000
AO3NLLX8	22602.000	496742.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO3NLL	Z(max)	0.017 + 0.007*Tr
AO3NLLP	Z(max)	0.029 + 0.014*Tr
AO3NLLX4	Z(max)	0.056 + 0.028*Tr
AO3NLLX6	Z(max)	0.085 + 0.043*Tr
AO3NLLX8	Z(max)	0.111 + 0.057*Tr

AO4LL
AO4LLP
AO4LLX4
AO4LLX6
AO4LLX8



Function: Function = Double 2 Input OR into 2 Input NAND

Boolean Expression: $Z = \neg((A + B) \bullet (C + D))$

Physical Dimensions

Property	AO4LL	AO4LLP	AO4LLX4	AO4LLX6	AO4LLX8
Area(um2)	12.103	14.120	24.206	34.292	44.378

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4LL	A Input Cap.	0.0027	0.0024	0.0025
AO4LL	Z Max Load	0.160	0.160	0.160
AO4LL	D Input Cap.	0.0027	0.0025	0.0026
AO4LL	B Input Cap.	0.0030	0.0027	0.0028
AO4LL	C Input Cap.	0.0031	0.0028	0.0029
AO4LLP	Z Max Load	0.320	0.320	0.320
AO4LLP	D Input Cap.	0.0052	0.0048	0.0050
AO4LLP	B Input Cap.	0.0056	0.0052	0.0053
AO4LLP	C Input Cap.	0.0059	0.0054	0.0056
AO4LLP	A Input Cap.	0.0049	0.0045	0.0047
AO4LLX4	A Input Cap.	0.0096	0.0087	0.0090
AO4LLX4	Z Max Load	0.640	0.640	0.640
AO4LLX4	D Input Cap.	0.0099	0.0092	0.0095
AO4LLX4	B Input Cap.	0.0112	0.0102	0.0105
AO4LLX4	C Input Cap.	0.0115	0.0106	0.0110
AO4LLX6	C Input Cap.	0.0164	0.0151	0.0157
AO4LLX6	A Input Cap.	0.0141	0.0129	0.0133
AO4LLX6	D Input Cap.	0.0146	0.0135	0.0140
AO4LLX6	B Input Cap.	0.0158	0.0144	0.0149
AO4LLX6	Z Max Load	0.960	0.960	0.960

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4LLX8	C Input Cap.	0.0226	0.0208	0.0216
AO4LLX8	A Input Cap.	0.0190	0.0173	0.0179
AO4LLX8	Z Max Load	1.280	1.280	1.280
AO4LLX8	D Input Cap.	0.0197	0.0182	0.0188
AO4LLX8	B Input Cap.	0.0219	0.0199	0.0206

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4LL	A-Z	A_Z (fall)	0.000 + 0.244*Tr + 2.024*C	0.041 + 0.298*Tr + 5.843*C	0.015 + 0.276*Tr + 3.611*C
AO4LL	A-Z	A_Z (rise)	0.011 + 0.292*Tr + 3.217*C	0.028 + 0.300*Tr + 6.949*C	0.014 + 0.295*Tr + 4.760*C
AO4LL	B-Z	B_Z (fall)	0.005 + 0.255*Tr + 1.978*C	0.057 + 0.307*Tr + 5.778*C	0.025 + 0.285*Tr + 3.557*C
AO4LL	B-Z	B_Z (rise)	0.019 + 0.230*Tr + 3.145*C	0.049 + 0.242*Tr + 6.866*C	0.028 + 0.238*Tr + 4.662*C
AO4LL	C-Z	C_Z (fall)	0.010 + 0.246*Tr + 1.882*C	0.078 + 0.265*Tr + 5.734*C	0.038 + 0.248*Tr + 3.469*C
AO4LL	C-Z	C_Z (rise)	0.027 + 0.235*Tr + 3.122*C	0.075 + 0.250*Tr + 6.809*C	0.045 + 0.245*Tr + 4.627*C
AO4LL	D-Z	D_Z (fall)	0.005 + 0.236*Tr + 1.920*C	0.063 + 0.258*Tr + 5.780*C	0.029 + 0.241*Tr + 3.511*C
AO4LL	D-Z	D_Z (rise)	0.020 + 0.298*Tr + 3.186*C	0.055 + 0.311*Tr + 6.867*C	0.031 + 0.306*Tr + 4.707*C
AO4LLP	A-Z	A_Z (fall)	-0.005 + 0.244*Tr + 1.011*C	0.032 + 0.295*Tr + 2.783*C	0.009 + 0.275*Tr + 1.761*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4LLP	A-Z	A_Z (rise)	0.005 + 0.284*Tr + 1.586*C	0.018 + 0.291*Tr + 3.372*C	0.006 + 0.287*Tr + 2.331*C
AO4LLP	B-Z	B_Z (fall)	0.001 + 0.256*Tr + 0.984*C	0.050 + 0.305*Tr + 2.746*C	0.019 + 0.285*Tr + 1.729*C
AO4LLP	B-Z	B_Z (rise)	0.015 + 0.222*Tr + 1.544*C	0.042 + 0.233*Tr + 3.322*C	0.022 + 0.229*Tr + 2.274*C
AO4LLP	C-Z	C_Z (fall)	0.007 + 0.247*Tr + 0.936*C	0.071 + 0.264*Tr + 2.716*C	0.033 + 0.249*Tr + 1.682*C
AO4LLP	C-Z	C_Z (rise)	0.024 + 0.228*Tr + 1.530*C	0.069 + 0.242*Tr + 3.287*C	0.040 + 0.238*Tr + 2.251*C
AO4LLP	D-Z	D_Z (fall)	0.001 + 0.236*Tr + 0.959*C	0.054 + 0.256*Tr + 2.746*C	0.024 + 0.240*Tr + 1.708*C
AO4LLP	D-Z	D_Z (rise)	0.015 + 0.291*Tr + 1.567*C	0.046 + 0.302*Tr + 3.324*C	0.025 + 0.298*Tr + 2.298*C
AO4LLX4	A-Z	A_Z (fall)	-0.001 + 0.236*Tr + 0.526*C	0.038 + 0.291*Tr + 1.463*C	0.015 + 0.269*Tr + 0.920*C
AO4LLX4	A-Z	A_Z (rise)	0.007 + 0.275*Tr + 0.796*C	0.019 + 0.282*Tr + 1.693*C	0.009 + 0.277*Tr + 1.171*C
AO4LLX4	B-Z	B_Z (fall)	0.005 + 0.250*Tr + 0.512*C	0.056 + 0.302*Tr + 1.443*C	0.025 + 0.281*Tr + 0.903*C
AO4LLX4	B-Z	B_Z (rise)	0.016 + 0.216*Tr + 0.774*C	0.042 + 0.227*Tr + 1.666*C	0.024 + 0.222*Tr + 1.141*C
AO4LLX4	C-Z	C_Z (fall)	0.011 + 0.241*Tr + 0.487*C	0.074 + 0.262*Tr + 1.429*C	0.037 + 0.246*Tr + 0.881*C
AO4LLX4	C-Z	C_Z (rise)	0.024 + 0.222*Tr + 0.767*C	0.066 + 0.236*Tr + 1.648*C	0.039 + 0.232*Tr + 1.129*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4LLX4	D-Z	D_Z (fall)	0.005 + 0.228*Tr + 0.500*C	0.057 + 0.253*Tr + 1.445*C	0.027 + 0.236*Tr + 0.894*C
AO4LLX4	D-Z	D_Z (rise)	0.016 + 0.282*Tr + 0.787*C	0.044 + 0.294*Tr + 1.669*C	0.025 + 0.289*Tr + 1.154*C
AO4LLX6	A-Z	A_Z (fall)	-0.003 + 0.234*Tr + 0.353*C	0.037 + 0.287*Tr + 0.979*C	0.013 + 0.267*Tr + 0.617*C
AO4LLX6	A-Z	A_Z (rise)	0.006 + 0.272*Tr + 0.533*C	0.018 + 0.278*Tr + 1.133*C	0.007 + 0.273*Tr + 0.784*C
AO4LLX6	B-Z	B_Z (fall)	0.004 + 0.249*Tr + 0.343*C	0.055 + 0.299*Tr + 0.965*C	0.024 + 0.279*Tr + 0.605*C
AO4LLX6	B-Z	B_Z (rise)	0.015 + 0.214*Tr + 0.518*C	0.041 + 0.224*Tr + 1.113*C	0.022 + 0.220*Tr + 0.763*C
AO4LLX6	C-Z	C_Z (fall)	0.009 + 0.239*Tr + 0.327*C	0.073 + 0.260*Tr + 0.955*C	0.036 + 0.244*Tr + 0.589*C
AO4LLX6	C-Z	C_Z (rise)	0.023 + 0.220*Tr + 0.513*C	0.065 + 0.233*Tr + 1.101*C	0.038 + 0.230*Tr + 0.754*C
AO4LLX6	D-Z	D_Z (fall)	0.003 + 0.227*Tr + 0.335*C	0.056 + 0.250*Tr + 0.966*C	0.026 + 0.234*Tr + 0.599*C
AO4LLX6	D-Z	D_Z (rise)	0.015 + 0.280*Tr + 0.526*C	0.044 + 0.290*Tr + 1.116*C	0.024 + 0.286*Tr + 0.772*C
AO4LLX8	A-Z	A_Z (fall)	-0.001 + 0.232*Tr + 0.265*C	0.037 + 0.287*Tr + 0.735*C	0.014 + 0.266*Tr + 0.463*C
AO4LLX8	A-Z	A_Z (rise)	0.006 + 0.271*Tr + 0.400*C	0.018 + 0.277*Tr + 0.851*C	0.008 + 0.273*Tr + 0.588*C
AO4LLX8	B-Z	B_Z (fall)	0.005 + 0.247*Tr + 0.257*C	0.055 + 0.299*Tr + 0.724*C	0.025 + 0.278*Tr + 0.454*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4LLX8	B-Z	B_Z (rise)	0.015 + 0.213*Tr + 0.389*C	0.042 + 0.223*Tr + 0.836*C	0.023 + 0.219*Tr + 0.573*C
AO4LLX8	C-Z	C_Z (fall)	0.010 + 0.238*Tr + 0.245*C	0.074 + 0.259*Tr + 0.717*C	0.037 + 0.243*Tr + 0.442*C
AO4LLX8	C-Z	C_Z (rise)	0.023 + 0.220*Tr + 0.385*C	0.065 + 0.233*Tr + 0.826*C	0.039 + 0.229*Tr + 0.566*C
AO4LLX8	D-Z	D_Z (fall)	0.004 + 0.224*Tr + 0.252*C	0.056 + 0.250*Tr + 0.725*C	0.027 + 0.233*Tr + 0.449*C
AO4LLX8	D-Z	D_Z (rise)	0.015 + 0.279*Tr + 0.395*C	0.043 + 0.290*Tr + 0.837*C	0.024 + 0.285*Tr + 0.579*C

Average Leakage Power

picoWatts

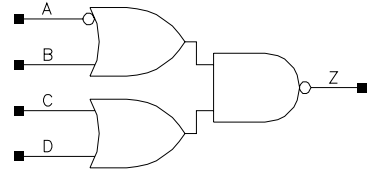
Cell	bc_1.32V_25C	bc_1.32V_125C
AO4LL	3034.980	63064.200
AO4LLP	5361.830	118545.000
AO4LLX4	10486.200	232285.000
AO4LLX6	15729.200	348430.000
AO4LLX8	20972.000	464572.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO4LL	Z(max)	0.014 + 0.009*Tr
AO4LLP	Z(max)	0.026 + 0.020*Tr
AO4LLX4	Z(max)	0.048 + 0.041*Tr
AO4LLX6	Z(max)	0.073 + 0.062*Tr
AO4LLX8	Z(max)	0.096 + 0.083*Tr

AO4ALLP
AO4ALLX4
AO4ALLX6
AO4ALLX8



Function: Function = Double 2 Input OR into 2 Input NAND, A Input Inverted

Boolean Expression: $Z = \overline{((A' + B) \bullet (C + D))}$

Physical Dimensions

Property	AO4ALLP	AO4ALLX4	AO4ALLX6	AO4ALLX8
Area(um ²)	16.138	26.224	36.310	46.396

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4ALLP	C Input Cap.	0.0058	0.0053	0.0056
AO4ALLP	Z Max Load	0.320	0.320	0.320
AO4ALLP	A Input Cap.	0.0019	0.0016	0.0017
AO4ALLP	D Input Cap.	0.0052	0.0048	0.0050
AO4ALLP	B Input Cap.	0.0056	0.0052	0.0053
AO4ALLX4	B Input Cap.	0.0114	0.0104	0.0107
AO4ALLX4	C Input Cap.	0.0125	0.0116	0.0120
AO4ALLX4	Z Max Load	0.640	0.640	0.640
AO4ALLX4	A Input Cap.	0.0034	0.0029	0.0030
AO4ALLX4	D Input Cap.	0.0102	0.0094	0.0097
AO4ALLX6	A Input Cap.	0.0052	0.0045	0.0046
AO4ALLX6	D Input Cap.	0.0149	0.0138	0.0142
AO4ALLX6	Z Max Load	0.960	0.960	0.960
AO4ALLX6	B Input Cap.	0.0159	0.0145	0.0149
AO4ALLX6	C Input Cap.	0.0178	0.0164	0.0170
AO4ALLX8	C Input Cap.	0.0249	0.0231	0.0239
AO4ALLX8	Z Max Load	1.280	1.280	1.280
AO4ALLX8	A Input Cap.	0.0067	0.0058	0.0060
AO4ALLX8	D Input Cap.	0.0201	0.0185	0.0191

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4ALLX8	B Input Cap.	0.0221	0.0201	0.0208

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4ALLP	A-Z	A_Z (fall)	0.067 + 0.268*Tr + 0.838°C	0.172 + 0.281*Tr + 2.588°C	0.113 + 0.273*Tr + 1.545°C
AO4ALLP	A-Z	A_Z (rise)	0.054 + 0.184*Tr + 1.472°C	0.125 + 0.226*Tr + 3.156°C	0.081 + 0.201*Tr + 2.135°C
AO4ALLP	B-Z	B_Z (fall)	-0.001 + 0.256*Tr + 0.988°C	0.047 + 0.305*Tr + 2.751°C	0.018 + 0.285*Tr + 1.732°C
AO4ALLP	B-Z	B_Z (rise)	0.015 + 0.220*Tr + 1.547°C	0.041 + 0.230*Tr + 3.332°C	0.022 + 0.227*Tr + 2.281°C
AO4ALLP	C-Z	C_Z (fall)	0.006 + 0.246*Tr + 0.939°C	0.066 + 0.264*Tr + 2.722°C	0.031 + 0.248*Tr + 1.686°C
AO4ALLP	C-Z	C_Z (rise)	0.023 + 0.227*Tr + 1.534°C	0.065 + 0.241*Tr + 3.295°C	0.037 + 0.237*Tr + 2.256°C
AO4ALLP	D-Z	D_Z (fall)	0.001 + 0.234*Tr + 0.965°C	0.048 + 0.254*Tr + 2.757°C	0.020 + 0.239*Tr + 1.715°C
AO4ALLP	D-Z	D_Z (rise)	0.013 + 0.290*Tr + 1.572°C	0.040 + 0.300*Tr + 3.334°C	0.020 + 0.296*Tr + 2.307°C
AO4ALLX4	A-Z	A_Z (fall)	0.063 + 0.252*Tr + 0.417°C	0.159 + 0.264*Tr + 1.292°C	0.104 + 0.256*Tr + 0.771°C
AO4ALLX4	A-Z	A_Z (rise)	0.053 + 0.196*Tr + 0.736°C	0.121 + 0.234*Tr + 1.577°C	0.079 + 0.211*Tr + 1.067°C
AO4ALLX4	B-Z	B_Z (fall)	0.004 + 0.246*Tr + 0.494°C	0.050 + 0.298*Tr + 1.377°C	0.022 + 0.277*Tr + 0.867°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4ALLX4	B-Z	B_Z (rise)	0.017 + 0.217*Tr + 0.774*C	0.046 + 0.226*Tr + 1.666*C	0.026 + 0.223*Tr + 1.140*C
AO4ALLX4	C-Z	C_Z (fall)	0.010 + 0.236*Tr + 0.470*C	0.069 + 0.258*Tr + 1.362*C	0.035 + 0.242*Tr + 0.844*C
AO4ALLX4	C-Z	C_Z (rise)	0.024 + 0.224*Tr + 0.767*C	0.067 + 0.238*Tr + 1.647*C	0.039 + 0.234*Tr + 1.128*C
AO4ALLX4	D-Z	D_Z (fall)	0.006 + 0.224*Tr + 0.482*C	0.053 + 0.250*Tr + 1.378*C	0.025 + 0.233*Tr + 0.857*C
AO4ALLX4	D-Z	D_Z (rise)	0.016 + 0.284*Tr + 0.786*C	0.046 + 0.296*Tr + 1.667*C	0.026 + 0.291*Tr + 1.153*C
AO4ALLX6	A-Z	A_Z (fall)	0.063 + 0.247*Tr + 0.292*C	0.160 + 0.260*Tr + 0.910*C	0.105 + 0.252*Tr + 0.542*C
AO4ALLX6	A-Z	A_Z (rise)	0.053 + 0.200*Tr + 0.491*C	0.118 + 0.235*Tr + 1.052*C	0.078 + 0.214*Tr + 0.712*C
AO4ALLX6	B-Z	B_Z (fall)	0.003 + 0.249*Tr + 0.344*C	0.053 + 0.299*Tr + 0.966*C	0.022 + 0.279*Tr + 0.606*C
AO4ALLX6	B-Z	B_Z (rise)	0.016 + 0.212*Tr + 0.519*C	0.044 + 0.221*Tr + 1.117*C	0.024 + 0.218*Tr + 0.765*C
AO4ALLX6	C-Z	C_Z (fall)	0.009 + 0.239*Tr + 0.328*C	0.072 + 0.259*Tr + 0.957*C	0.035 + 0.244*Tr + 0.590*C
AO4ALLX6	C-Z	C_Z (rise)	0.022 + 0.220*Tr + 0.514*C	0.064 + 0.233*Tr + 1.103*C	0.037 + 0.230*Tr + 0.756*C
AO4ALLX6	D-Z	D_Z (fall)	0.004 + 0.225*Tr + 0.337*C	0.053 + 0.250*Tr + 0.968*C	0.024 + 0.234*Tr + 0.600*C
AO4ALLX6	D-Z	D_Z (rise)	0.013 + 0.279*Tr + 0.527*C	0.041 + 0.290*Tr + 1.117*C	0.022 + 0.285*Tr + 0.774*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4ALLX8	A-Z	A_Z (fall)	0.060 + 0.244*Tr + 0.211*C	0.153 + 0.255*Tr + 0.653*C	0.100 + 0.247*Tr + 0.390*C
AO4ALLX8	A-Z	A_Z (rise)	0.052 + 0.199*Tr + 0.372*C	0.116 + 0.232*Tr + 0.796*C	0.076 + 0.212*Tr + 0.539*C
AO4ALLX8	B-Z	B_Z (fall)	0.004 + 0.243*Tr + 0.250*C	0.051 + 0.296*Tr + 0.698*C	0.022 + 0.275*Tr + 0.439*C
AO4ALLX8	B-Z	B_Z (rise)	0.017 + 0.213*Tr + 0.392*C	0.046 + 0.222*Tr + 0.844*C	0.026 + 0.218*Tr + 0.577*C
AO4ALLX8	C-Z	C_Z (fall)	0.010 + 0.234*Tr + 0.238*C	0.070 + 0.256*Tr + 0.690*C	0.035 + 0.240*Tr + 0.427*C
AO4ALLX8	C-Z	C_Z (rise)	0.023 + 0.221*Tr + 0.385*C	0.066 + 0.234*Tr + 0.827*C	0.039 + 0.231*Tr + 0.566*C
AO4ALLX8	D-Z	D_Z (fall)	0.005 + 0.220*Tr + 0.245*C	0.052 + 0.247*Tr + 0.698*C	0.024 + 0.231*Tr + 0.434*C
AO4ALLX8	D-Z	D_Z (rise)	0.015 + 0.281*Tr + 0.395*C	0.044 + 0.292*Tr + 0.837*C	0.024 + 0.287*Tr + 0.579*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO4ALLP	6715.590	142348.000
AO4ALLX4	12654.800	274754.000
AO4ALLX6	18324.900	400946.000
AO4ALLX8	24586.000	538616.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

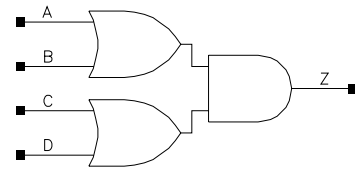
Cell	Cycle on pin	nom_1.20V_25C
AO4ALLP	Z(max)	0.026 + 0.021*Tr
AO4ALLX4	Z(max)	0.049 + 0.044*Tr

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO4ALLX6	Z(max)	$0.073 + 0.066 * Tr$
AO4ALLX8	Z(max)	$0.098 + 0.089 * Tr$

AO4NLL
AO4NLLP
AO4NLLX4
AO4NLLX6
AO4NLLX8



Function: Function = Double 2 Input OR into 2 Input AND

Boolean Expression: $Z = (A + B) \bullet (C + D)$

Physical Dimensions

Property	AO4NLL	AO4NLLP	AO4NLLX4	AO4NLLX6	AO4NLLX8
Area(um2)	14.120	14.120	18.155	30.258	32.275

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4NLL	A Input Cap.	0.0022	0.0019	0.0020
AO4NLL	D Input Cap.	0.0022	0.0019	0.0020
AO4NLL	B Input Cap.	0.0022	0.0019	0.0020
AO4NLL	Z Max Load	0.160	0.160	0.160
AO4NLL	C Input Cap.	0.0023	0.0020	0.0021
AO4NLLP	B Input Cap.	0.0033	0.0028	0.0029
AO4NLLP	Z Max Load	0.320	0.320	0.320
AO4NLLP	C Input Cap.	0.0034	0.0029	0.0031
AO4NLLP	A Input Cap.	0.0032	0.0027	0.0028
AO4NLLP	D Input Cap.	0.0036	0.0031	0.0033
AO4NLLX4	Z Max Load	0.640	0.640	0.640
AO4NLLX4	C Input Cap.	0.0070	0.0062	0.0064
AO4NLLX4	A Input Cap.	0.0060	0.0050	0.0052
AO4NLLX4	D Input Cap.	0.0058	0.0050	0.0052
AO4NLLX4	B Input Cap.	0.0062	0.0053	0.0055
AO4NLLX6	D Input Cap.	0.0085	0.0074	0.0077
AO4NLLX6	B Input Cap.	0.0096	0.0082	0.0085
AO4NLLX6	C Input Cap.	0.0097	0.0086	0.0089
AO4NLLX6	A Input Cap.	0.0087	0.0072	0.0075
AO4NLLX6	Z Max Load	0.960	0.960	0.960

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4NLLX8	A Input Cap.	0.0119	0.0100	0.0104
AO4NLLX8	D Input Cap.	0.0121	0.0105	0.0109
AO4NLLX8	B Input Cap.	0.0118	0.0101	0.0105
AO4NLLX8	Z Max Load	1.280	1.280	1.280
AO4NLLX8	C Input Cap.	0.0115	0.0102	0.0106

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4NLL	A-Z	A_Z (fall)	0.072 + 0.267*Tr + 1.234*C	0.178 + 0.283*Tr + 2.824*C	0.116 + 0.274*Tr + 1.810*C
AO4NLL	A-Z	A_Z (rise)	0.051 + 0.183*Tr + 1.619*C	0.165 + 0.258*Tr + 3.453*C	0.099 + 0.227*Tr + 2.346*C
AO4NLL	B-Z	B_Z (fall)	0.073 + 0.226*Tr + 1.241*C	0.190 + 0.237*Tr + 2.833*C	0.121 + 0.231*Tr + 1.816*C
AO4NLL	B-Z	B_Z (rise)	0.055 + 0.204*Tr + 1.619*C	0.182 + 0.275*Tr + 3.465*C	0.109 + 0.244*Tr + 2.349*C
AO4NLL	C-Z	C_Z (fall)	0.087 + 0.235*Tr + 1.249*C	0.224 + 0.250*Tr + 2.858*C	0.143 + 0.244*Tr + 1.826*C
AO4NLL	C-Z	C_Z (rise)	0.062 + 0.198*Tr + 1.629*C	0.202 + 0.242*Tr + 3.477*C	0.118 + 0.218*Tr + 2.359*C
AO4NLL	D-Z	D_Z (fall)	0.085 + 0.282*Tr + 1.243*C	0.209 + 0.303*Tr + 2.849*C	0.136 + 0.292*Tr + 1.821*C
AO4NLL	D-Z	D_Z (rise)	0.057 + 0.181*Tr + 1.631*C	0.183 + 0.230*Tr + 3.466*C	0.107 + 0.206*Tr + 2.356*C
AO4NLLP	A-Z	A_Z (fall)	0.068 + 0.260*Tr + 0.634*C	0.165 + 0.277*Tr + 1.407*C	0.109 + 0.267*Tr + 0.917*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4NLLP	A-Z	A_Z (rise)	0.047 + 0.187*Tr + 0.793*C	0.150 + 0.258*Tr + 1.668*C	0.092 + 0.229*Tr + 1.140*C
AO4NLLP	B-Z	B_Z (fall)	0.069 + 0.220*Tr + 0.638*C	0.176 + 0.233*Tr + 1.412*C	0.113 + 0.226*Tr + 0.920*C
AO4NLLP	B-Z	B_Z (rise)	0.052 + 0.208*Tr + 0.793*C	0.166 + 0.276*Tr + 1.674*C	0.101 + 0.246*Tr + 1.141*C
AO4NLLP	C-Z	C_Z (fall)	0.080 + 0.227*Tr + 0.641*C	0.203 + 0.243*Tr + 1.422*C	0.130 + 0.236*Tr + 0.925*C
AO4NLLP	C-Z	C_Z (rise)	0.056 + 0.202*Tr + 0.799*C	0.180 + 0.244*Tr + 1.679*C	0.107 + 0.222*Tr + 1.146*C
AO4NLLP	D-Z	D_Z (fall)	0.078 + 0.272*Tr + 0.638*C	0.189 + 0.294*Tr + 1.416*C	0.124 + 0.283*Tr + 0.921*C
AO4NLLP	D-Z	D_Z (rise)	0.051 + 0.184*Tr + 0.800*C	0.161 + 0.231*Tr + 1.674*C	0.096 + 0.209*Tr + 1.145*C
AO4NLLX4	A-Z	A_Z (fall)	0.065 + 0.250*Tr + 0.317*C	0.160 + 0.268*Tr + 0.712*C	0.105 + 0.259*Tr + 0.464*C
AO4NLLX4	A-Z	A_Z (rise)	0.046 + 0.193*Tr + 0.397*C	0.150 + 0.264*Tr + 0.835*C	0.092 + 0.236*Tr + 0.571*C
AO4NLLX4	B-Z	B_Z (fall)	0.066 + 0.211*Tr + 0.319*C	0.172 + 0.224*Tr + 0.715*C	0.110 + 0.218*Tr + 0.465*C
AO4NLLX4	B-Z	B_Z (rise)	0.051 + 0.215*Tr + 0.397*C	0.168 + 0.283*Tr + 0.839*C	0.102 + 0.254*Tr + 0.572*C
AO4NLLX4	C-Z	C_Z (fall)	0.078 + 0.218*Tr + 0.320*C	0.198 + 0.235*Tr + 0.711*C	0.127 + 0.227*Tr + 0.462*C
AO4NLLX4	C-Z	C_Z (rise)	0.056 + 0.210*Tr + 0.400*C	0.180 + 0.249*Tr + 0.841*C	0.107 + 0.228*Tr + 0.574*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4NLLX4	D-Z	D_Z (fall)	0.075 + 0.262*Tr + 0.318*C	0.180 + 0.283*Tr + 0.708*C	0.118 + 0.273*Tr + 0.460*C
AO4NLLX4	D-Z	D_Z (rise)	0.050 + 0.189*Tr + 0.400*C	0.157 + 0.235*Tr + 0.837*C	0.095 + 0.213*Tr + 0.573*C
AO4NLLX6	A-Z	A_Z (fall)	0.065 + 0.249*Tr + 0.212*C	0.156 + 0.266*Tr + 0.471*C	0.103 + 0.257*Tr + 0.307*C
AO4NLLX6	A-Z	A_Z (rise)	0.047 + 0.195*Tr + 0.265*C	0.150 + 0.265*Tr + 0.559*C	0.092 + 0.237*Tr + 0.382*C
AO4NLLX6	B-Z	B_Z (fall)	0.066 + 0.210*Tr + 0.213*C	0.168 + 0.223*Tr + 0.473*C	0.108 + 0.216*Tr + 0.308*C
AO4NLLX6	B-Z	B_Z (rise)	0.052 + 0.217*Tr + 0.265*C	0.169 + 0.283*Tr + 0.561*C	0.102 + 0.254*Tr + 0.383*C
AO4NLLX6	C-Z	C_Z (fall)	0.075 + 0.218*Tr + 0.214*C	0.189 + 0.235*Tr + 0.475*C	0.121 + 0.228*Tr + 0.309*C
AO4NLLX6	C-Z	C_Z (rise)	0.056 + 0.210*Tr + 0.267*C	0.180 + 0.250*Tr + 0.563*C	0.107 + 0.229*Tr + 0.383*C
AO4NLLX6	D-Z	D_Z (fall)	0.074 + 0.262*Tr + 0.213*C	0.177 + 0.283*Tr + 0.473*C	0.117 + 0.272*Tr + 0.308*C
AO4NLLX6	D-Z	D_Z (rise)	0.051 + 0.191*Tr + 0.267*C	0.161 + 0.236*Tr + 0.561*C	0.097 + 0.215*Tr + 0.383*C
AO4NLLX8	A-Z	A_Z (fall)	0.063 + 0.246*Tr + 0.159*C	0.153 + 0.263*Tr + 0.355*C	0.101 + 0.254*Tr + 0.231*C
AO4NLLX8	A-Z	A_Z (rise)	0.046 + 0.196*Tr + 0.199*C	0.148 + 0.266*Tr + 0.419*C	0.091 + 0.238*Tr + 0.287*C
AO4NLLX8	B-Z	B_Z (fall)	0.064 + 0.207*Tr + 0.160*C	0.164 + 0.220*Tr + 0.356*C	0.105 + 0.214*Tr + 0.232*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO4NLLX8	B-Z	B_Z (rise)	0.051 + 0.218*Tr + 0.199*C	0.165 + 0.284*Tr + 0.421*C	0.101 + 0.256*Tr + 0.287*C
AO4NLLX8	C-Z	C_Z (fall)	0.074 + 0.216*Tr + 0.160*C	0.186 + 0.232*Tr + 0.356*C	0.120 + 0.225*Tr + 0.232*C
AO4NLLX8	C-Z	C_Z (rise)	0.055 + 0.211*Tr + 0.201*C	0.176 + 0.249*Tr + 0.422*C	0.105 + 0.229*Tr + 0.288*C
AO4NLLX8	D-Z	D_Z (fall)	0.073 + 0.258*Tr + 0.160*C	0.174 + 0.279*Tr + 0.355*C	0.115 + 0.268*Tr + 0.231*C
AO4NLLX8	D-Z	D_Z (rise)	0.050 + 0.192*Tr + 0.201*C	0.159 + 0.237*Tr + 0.421*C	0.095 + 0.215*Tr + 0.288*C

Average Leakage Power

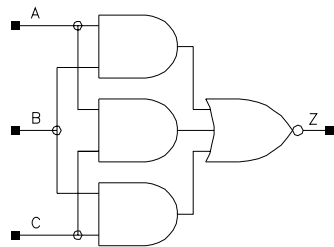
picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO4NLL	4038.230	79748.800
AO4NLLP	6184.950	131300.000
AO4NLLX4	11533.200	252218.000
AO4NLLX6	17421.500	377108.000
AO4NLLX8	22831.800	499658.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO4NLL	Z(max)	0.019 + 0.008*Tr
AO4NLLP	Z(max)	0.030 + 0.014*Tr
AO4NLLX4	Z(max)	0.060 + 0.029*Tr
AO4NLLX6	Z(max)	0.088 + 0.044*Tr
AO4NLLX8	Z(max)	0.114 + 0.060*Tr

<p>AO5LL AO5LLP AO5LLX4 AO5LLX6 AO5LLX8</p> <p>Function: Function = Triple 2 Input AND into 3 Input NOR</p> <p>Boolean Expression: $Z = !((A \bullet B + C) \bullet (A + B))$</p>	
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Physical Dimensions

Property	AO5LL	AO5LLP	AO5LLX4	AO5LLX6	AO5LLX8
Area(um2)	14.120	14.120	26.224	38.327	50.430

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5LL	B Input Cap.	0.0056	0.0052	0.0054
AO5LL	C Input Cap.	0.0026	0.0024	0.0025
AO5LL	Z Max Load	0.160	0.160	0.160
AO5LL	A Input Cap.	0.0058	0.0052	0.0054
AO5LLP	B Input Cap.	0.0103	0.0099	0.0102
AO5LLP	C Input Cap.	0.0050	0.0047	0.0048
AO5LLP	Z Max Load	0.320	0.320	0.320
AO5LLP	A Input Cap.	0.0111	0.0102	0.0106
AO5LLX4	A Input Cap.	0.0222	0.0207	0.0213
AO5LLX4	B Input Cap.	0.0198	0.0190	0.0196
AO5LLX4	C Input Cap.	0.0096	0.0088	0.0091
AO5LLX4	Z Max Load	0.640	0.640	0.640
AO5LLX6	C Input Cap.	0.0143	0.0131	0.0136
AO5LLX6	A Input Cap.	0.0328	0.0302	0.0313
AO5LLX6	Z Max Load	0.960	0.960	0.960
AO5LLX6	B Input Cap.	0.0299	0.0286	0.0294
AO5LLX8	B Input Cap.	0.0393	0.0376	0.0386
AO5LLX8	C Input Cap.	0.0189	0.0174	0.0180

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5LLX8	Z Max Load	1.280	1.280	1.280
AO5LLX8	A Input Cap.	0.0439	0.0405	0.0419

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5LL	A-Z	A_Z (fall)	0.015 + 0.219*Tr + 2.157*C	0.049 + 0.256*Tr + 5.384*C	0.021 + 0.238*Tr + 3.295*C
AO5LL	A-Z	A_Z (rise)	0.025 + 0.234*Tr + 3.135*C	0.063 + 0.247*Tr + 6.833*C	0.038 + 0.242*Tr + 4.655*C
AO5LL	B-Z	B_Z (fall)	0.008 + 0.209*Tr + 2.186*C	0.049 + 0.298*Tr + 5.453*C	0.020 + 0.277*Tr + 3.386*C
AO5LL	B-Z	B_Z (rise)	0.018 + 0.230*Tr + 3.135*C	0.050 + 0.308*Tr + 6.904*C	0.029 + 0.303*Tr + 4.738*C
AO5LL	C-Z	C_Z (fall)	0.001 + 0.245*Tr + 2.273*C	0.032 + 0.291*Tr + 5.479*C	0.010 + 0.269*Tr + 3.417*C
AO5LL	C-Z	C_Z (rise)	0.008 + 0.292*Tr + 3.211*C	0.033 + 0.303*Tr + 6.923*C	0.017 + 0.299*Tr + 4.753*C
AO5LLP	A-Z	A_Z (fall)	0.012 + 0.222*Tr + 1.114*C	0.044 + 0.257*Tr + 2.687*C	0.017 + 0.241*Tr + 1.675*C
AO5LLP	A-Z	A_Z (rise)	0.021 + 0.227*Tr + 1.533*C	0.055 + 0.239*Tr + 3.301*C	0.032 + 0.234*Tr + 2.266*C
AO5LLP	B-Z	B_Z (fall)	0.006 + 0.212*Tr + 1.132*C	0.044 + 0.299*Tr + 2.728*C	0.016 + 0.280*Tr + 1.723*C
AO5LLP	B-Z	B_Z (rise)	0.015 + 0.220*Tr + 1.541*C	0.042 + 0.298*Tr + 3.350*C	0.022 + 0.293*Tr + 2.318*C
AO5LLP	C-Z	C_Z (fall)	-0.003 + 0.248*Tr + 1.177*C	0.027 + 0.291*Tr + 2.743*C	0.006 + 0.272*Tr + 1.740*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5LLP	C-Z	C_Z (rise)	0.004 + 0.282*Tr + 1.586*C	0.026 + 0.293*Tr + 3.360*C	0.011 + 0.289*Tr + 2.328*C
AO5LLX4	A-Z	A_Z (fall)	0.015 + 0.218*Tr + 0.555*C	0.049 + 0.252*Tr + 1.345*C	0.022 + 0.234*Tr + 0.838*C
AO5LLX4	A-Z	A_Z (rise)	0.023 + 0.224*Tr + 0.767*C	0.058 + 0.235*Tr + 1.652*C	0.035 + 0.230*Tr + 1.134*C
AO5LLX4	B-Z	B_Z (fall)	0.008 + 0.205*Tr + 0.567*C	0.049 + 0.293*Tr + 1.364*C	0.021 + 0.271*Tr + 0.862*C
AO5LLX4	B-Z	B_Z (rise)	0.016 + 0.217*Tr + 0.771*C	0.046 + 0.293*Tr + 1.676*C	0.026 + 0.287*Tr + 1.159*C
AO5LLX4	C-Z	C_Z (fall)	0.002 + 0.238*Tr + 0.589*C	0.033 + 0.285*Tr + 1.372*C	0.012 + 0.263*Tr + 0.870*C
AO5LLX4	C-Z	C_Z (rise)	0.007 + 0.275*Tr + 0.794*C	0.031 + 0.287*Tr + 1.681*C	0.016 + 0.283*Tr + 1.165*C
AO5LLX6	A-Z	A_Z (fall)	0.013 + 0.214*Tr + 0.373*C	0.046 + 0.250*Tr + 0.899*C	0.019 + 0.232*Tr + 0.562*C
AO5LLX6	A-Z	A_Z (rise)	0.022 + 0.220*Tr + 0.514*C	0.057 + 0.233*Tr + 1.123*C	0.033 + 0.228*Tr + 0.758*C
AO5LLX6	B-Z	B_Z (fall)	0.007 + 0.202*Tr + 0.380*C	0.046 + 0.289*Tr + 0.914*C	0.019 + 0.269*Tr + 0.578*C
AO5LLX6	B-Z	B_Z (rise)	0.015 + 0.214*Tr + 0.515*C	0.045 + 0.290*Tr + 1.139*C	0.025 + 0.285*Tr + 0.789*C
AO5LLX6	C-Z	C_Z (fall)	0.000 + 0.236*Tr + 0.396*C	0.031 + 0.281*Tr + 0.919*C	0.009 + 0.261*Tr + 0.584*C
AO5LLX6	C-Z	C_Z (rise)	0.005 + 0.272*Tr + 0.531*C	0.029 + 0.283*Tr + 1.125*C	0.014 + 0.279*Tr + 0.780*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5LLX8	A-Z	A_Z (fall)	0.014 + 0.213*Tr + 0.280*C	0.048 + 0.249*Tr + 0.675*C	0.021 + 0.231*Tr + 0.421*C
AO5LLX8	A-Z	A_Z (rise)	0.022 + 0.220*Tr + 0.386*C	0.059 + 0.234*Tr + 0.850*C	0.034 + 0.227*Tr + 0.569*C
AO5LLX8	B-Z	B_Z (fall)	0.008 + 0.201*Tr + 0.285*C	0.047 + 0.289*Tr + 0.685*C	0.021 + 0.268*Tr + 0.433*C
AO5LLX8	B-Z	B_Z (rise)	0.016 + 0.214*Tr + 0.387*C	0.046 + 0.291*Tr + 0.862*C	0.026 + 0.286*Tr + 0.596*C
AO5LLX8	C-Z	C_Z (fall)	0.001 + 0.234*Tr + 0.297*C	0.032 + 0.280*Tr + 0.690*C	0.011 + 0.259*Tr + 0.438*C
AO5LLX8	C-Z	C_Z (rise)	0.006 + 0.272*Tr + 0.399*C	0.030 + 0.283*Tr + 0.844*C	0.015 + 0.279*Tr + 0.585*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO5LL	3300.280	67777.700
AO5LLP	5704.520	124553.000
AO5LLX4	11409.100	249103.000
AO5LLX6	17041.300	372090.000
AO5LLX8	22673.500	495080.000

Internal Energy at minimum output load

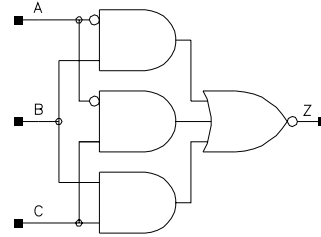
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO5LL	Z(max)	0.011 + 0.011*Tr
AO5LLP	Z(max)	0.020 + 0.022*Tr
AO5LLX4	Z(max)	0.040 + 0.045*Tr
AO5LLX6	Z(max)	0.058 + 0.068*Tr
AO5LLX8	Z(max)	0.077 + 0.091*Tr

AO5ALL
AO5ALLP
AO5ALLX4
AO5ALLX6
AO5ALLX8

Function: Function = Triple 2 Input AND into 3 Input NOR, A Input Inverted

Boolean Expression: $Z = !((A' \bullet B + C) \bullet (A' + B))$



Physical Dimensions

Property	AO5ALL	AO5ALLP	AO5ALLX4	AO5ALLX6	AO5ALLX8
Area(um ²)	16.138	16.138	28.241	40.344	52.447

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5ALL	Z Max Load	0.160	0.160	0.160
AO5ALL	C Input Cap.	0.0027	0.0024	0.0025
AO5ALL	A Input Cap.	0.0011	0.0009	0.0010
AO5ALL	B Input Cap.	0.0056	0.0052	0.0054
AO5ALLP	B Input Cap.	0.0105	0.0101	0.0103
AO5ALLP	Z Max Load	0.320	0.320	0.320
AO5ALLP	C Input Cap.	0.0051	0.0047	0.0049
AO5ALLP	A Input Cap.	0.0017	0.0014	0.0015
AO5ALLX4	A Input Cap.	0.0032	0.0028	0.0029
AO5ALLX4	B Input Cap.	0.0197	0.0187	0.0192
AO5ALLX4	Z Max Load	0.640	0.640	0.640
AO5ALLX4	C Input Cap.	0.0097	0.0089	0.0092
AO5ALLX6	C Input Cap.	0.0143	0.0131	0.0136
AO5ALLX6	A Input Cap.	0.0047	0.0042	0.0044
AO5ALLX6	Z Max Load	0.960	0.960	0.960
AO5ALLX6	B Input Cap.	0.0303	0.0289	0.0296
AO5ALLX8	Z Max Load	1.280	1.280	1.280
AO5ALLX8	C Input Cap.	0.0190	0.0175	0.0181

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5ALLX8	A Input Cap.	0.0060	0.0054	0.0056
AO5ALLX8	B Input Cap.	0.0397	0.0377	0.0388

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5ALL	A-Z	A_Z (fall)	0.106 + 0.313*Tr + 1.986*C	0.248 + 0.331*Tr + 5.143*C	0.161 + 0.321*Tr + 3.017*C
AO5ALL	A-Z	A_Z (rise)	0.083 + 0.196*Tr + 3.032*C	0.201 + 0.251*Tr + 6.630*C	0.126 + 0.219*Tr + 4.455*C
AO5ALL	B-Z	B_Z (fall)	0.008 + 0.209*Tr + 2.186*C	0.047 + 0.299*Tr + 5.451*C	0.019 + 0.277*Tr + 3.386*C
AO5ALL	B-Z	B_Z (rise)	0.020 + 0.228*Tr + 3.140*C	0.048 + 0.308*Tr + 6.904*C	0.027 + 0.303*Tr + 4.739*C
AO5ALL	C-Z	C_Z (fall)	0.001 + 0.244*Tr + 2.274*C	0.032 + 0.291*Tr + 5.484*C	0.010 + 0.269*Tr + 3.419*C
AO5ALL	C-Z	C_Z (rise)	0.008 + 0.292*Tr + 3.211*C	0.033 + 0.303*Tr + 6.923*C	0.017 + 0.298*Tr + 4.755*C
AO5ALLP	A-Z	A_Z (fall)	0.109 + 0.303*Tr + 1.024*C	0.248 + 0.325*Tr + 2.556*C	0.163 + 0.313*Tr + 1.528*C
AO5ALLP	A-Z	A_Z (rise)	0.089 + 0.223*Tr + 1.475*C	0.210 + 0.275*Tr + 3.182*C	0.134 + 0.244*Tr + 2.150*C
AO5ALLP	B-Z	B_Z (fall)	0.006 + 0.212*Tr + 1.131*C	0.045 + 0.300*Tr + 2.725*C	0.017 + 0.280*Tr + 1.722*C
AO5ALLP	B-Z	B_Z (rise)	0.018 + 0.219*Tr + 1.543*C	0.042 + 0.298*Tr + 3.347*C	0.022 + 0.294*Tr + 2.316*C
AO5ALLP	C-Z	C_Z (fall)	-0.002 + 0.248*Tr + 1.176*C	0.029 + 0.292*Tr + 2.743*C	0.007 + 0.272*Tr + 1.740*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5ALLP	C-Z	C_Z (rise)	0.005 + 0.283*Tr + 1.584*C	0.027 + 0.293*Tr + 3.358*C	0.012 + 0.290*Tr + 2.326*C
AO5ALLX4	A-Z	A_Z (fall)	0.101 + 0.287*Tr + 0.511*C	0.224 + 0.308*Tr + 1.274*C	0.149 + 0.296*Tr + 0.762*C
AO5ALLX4	A-Z	A_Z (rise)	0.085 + 0.230*Tr + 0.754*C	0.194 + 0.274*Tr + 1.589*C	0.126 + 0.248*Tr + 1.075*C
AO5ALLX4	B-Z	B_Z (fall)	0.008 + 0.205*Tr + 0.567*C	0.048 + 0.293*Tr + 1.364*C	0.021 + 0.271*Tr + 0.862*C
AO5ALLX4	B-Z	B_Z (rise)	0.019 + 0.217*Tr + 0.780*C	0.046 + 0.295*Tr + 1.710*C	0.026 + 0.289*Tr + 1.182*C
AO5ALLX4	C-Z	C_Z (fall)	0.002 + 0.238*Tr + 0.589*C	0.033 + 0.285*Tr + 1.372*C	0.012 + 0.263*Tr + 0.870*C
AO5ALLX4	C-Z	C_Z (rise)	0.007 + 0.276*Tr + 0.801*C	0.031 + 0.288*Tr + 1.681*C	0.016 + 0.283*Tr + 1.164*C
AO5ALLX6	A-Z	A_Z (fall)	0.097 + 0.280*Tr + 0.341*C	0.215 + 0.300*Tr + 0.850*C	0.142 + 0.289*Tr + 0.508*C
AO5ALLX6	A-Z	A_Z (rise)	0.084 + 0.233*Tr + 0.499*C	0.189 + 0.275*Tr + 1.059*C	0.123 + 0.250*Tr + 0.716*C
AO5ALLX6	B-Z	B_Z (fall)	0.007 + 0.202*Tr + 0.380*C	0.045 + 0.290*Tr + 0.914*C	0.018 + 0.270*Tr + 0.578*C
AO5ALLX6	B-Z	B_Z (rise)	0.017 + 0.212*Tr + 0.516*C	0.044 + 0.290*Tr + 1.136*C	0.024 + 0.285*Tr + 0.786*C
AO5ALLX6	C-Z	C_Z (fall)	0.000 + 0.236*Tr + 0.396*C	0.031 + 0.281*Tr + 0.920*C	0.009 + 0.260*Tr + 0.584*C
AO5ALLX6	C-Z	C_Z (rise)	0.005 + 0.272*Tr + 0.531*C	0.029 + 0.283*Tr + 1.125*C	0.014 + 0.279*Tr + 0.780*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5ALLX8	A-Z	A_Z (fall)	0.097 + 0.278*Tr + 0.256*C	0.215 + 0.298*Tr + 0.637*C	0.142 + 0.287*Tr + 0.381*C
AO5ALLX8	A-Z	A_Z (rise)	0.085 + 0.234*Tr + 0.377*C	0.189 + 0.274*Tr + 0.795*C	0.123 + 0.250*Tr + 0.538*C
AO5ALLX8	B-Z	B_Z (fall)	0.008 + 0.201*Tr + 0.285*C	0.047 + 0.290*Tr + 0.686*C	0.020 + 0.268*Tr + 0.433*C
AO5ALLX8	B-Z	B_Z (rise)	0.018 + 0.212*Tr + 0.387*C	0.045 + 0.291*Tr + 0.858*C	0.026 + 0.286*Tr + 0.594*C
AO5ALLX8	C-Z	C_Z (fall)	0.001 + 0.234*Tr + 0.297*C	0.033 + 0.281*Tr + 0.690*C	0.011 + 0.259*Tr + 0.438*C
AO5ALLX8	C-Z	C_Z (rise)	0.007 + 0.272*Tr + 0.398*C	0.031 + 0.283*Tr + 0.844*C	0.016 + 0.279*Tr + 0.585*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO5ALL	4737.650	88393.000
AO5ALLP	7140.270	147678.000
AO5ALLX4	13279.400	283502.000
AO5ALLX6	19547.500	423122.000
AO5ALLX8	25826.000	562355.000

Internal Energy at minimum output load

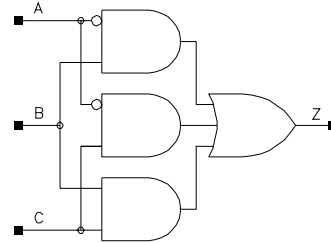
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO5ALL	Z(max)	0.022 + 0.005*Tr
AO5ALLP	Z(max)	0.042 + 0.009*Tr
AO5ALLX4	Z(max)	0.078 + 0.017*Tr
AO5ALLX6	Z(max)	0.115 + 0.026*Tr
AO5ALLX8	Z(max)	0.154 + 0.035*Tr

AO5ANLL
AO5ANLLP
AO5ANLLX4
AO5ANLLX6
AO5ANLLX8

Function: Function = Triple 2 Input AND into 3 Input OR, A Input Inverted

Boolean Expression: $Z = ((B + C) \bullet A' + B \bullet C)$



Physical Dimensions

Property	AO5ANLL	AO5ANLLP	AO5ANLLX4	AO5ANLLX6	AO5ANLLX8
Area(um2)	18.155	20.172	22.189	36.310	38.327

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5ANLL	Z Max Load	0.160	0.160	0.160
AO5ANLL	B Input Cap.	0.0039	0.0033	0.0035
AO5ANLL	C Input Cap.	0.0020	0.0017	0.0018
AO5ANLL	A Input Cap.	0.0017	0.0014	0.0015
AO5ANLLP	B Input Cap.	0.0061	0.0054	0.0056
AO5ANLLP	C Input Cap.	0.0031	0.0026	0.0027
AO5ANLLP	A Input Cap.	0.0023	0.0019	0.0020
AO5ANLLP	Z Max Load	0.320	0.320	0.320
AO5ANLLX4	B Input Cap.	0.0114	0.0103	0.0106
AO5ANLLX4	C Input Cap.	0.0058	0.0050	0.0052
AO5ANLLX4	A Input Cap.	0.0035	0.0030	0.0031
AO5ANLLX4	Z Max Load	0.640	0.640	0.640
AO5ANLLX6	A Input Cap.	0.0050	0.0044	0.0045
AO5ANLLX6	B Input Cap.	0.0170	0.0153	0.0158
AO5ANLLX6	Z Max Load	0.960	0.960	0.960
AO5ANLLX6	C Input Cap.	0.0085	0.0072	0.0075
AO5ANLLX8	C Input Cap.	0.0109	0.0092	0.0096
AO5ANLLX8	A Input Cap.	0.0065	0.0057	0.0059

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5ANLLX8	Z Max Load	1.280	1.280	1.280
AO5ANLLX8	B Input Cap.	0.0220	0.0199	0.0205

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5ANLL	A-Z	A_Z (fall)	0.124 + 0.178*Tr + 1.235*C	0.293 + 0.226*Tr + 2.693*C	0.187 + 0.195*Tr + 1.724*C
AO5ANLL	A-Z	A_Z (rise)	0.122 + 0.286*Tr + 1.626*C	0.301 + 0.298*Tr + 3.425*C	0.188 + 0.292*Tr + 2.330*C
AO5ANLL	B-Z	B_Z (fall)	0.081 + 0.216*Tr + 1.294*C	0.191 + 0.288*Tr + 2.724*C	0.127 + 0.280*Tr + 1.746*C
AO5ANLL	B-Z	B_Z (rise)	0.061 + 0.172*Tr + 1.644*C	0.180 + 0.270*Tr + 3.456*C	0.108 + 0.239*Tr + 2.346*C
AO5ANLL	C-Z	C_Z (fall)	0.076 + 0.269*Tr + 1.288*C	0.172 + 0.278*Tr + 2.723*C	0.114 + 0.270*Tr + 1.746*C
AO5ANLL	C-Z	C_Z (rise)	0.059 + 0.200*Tr + 1.634*C	0.161 + 0.255*Tr + 3.445*C	0.098 + 0.224*Tr + 2.341*C
AO5ANLLP	A-Z	A_Z (fall)	0.115 + 0.184*Tr + 0.632*C	0.272 + 0.229*Tr + 1.331*C	0.174 + 0.203*Tr + 0.868*C
AO5ANLLP	A-Z	A_Z (rise)	0.112 + 0.267*Tr + 0.797*C	0.277 + 0.279*Tr + 1.666*C	0.172 + 0.271*Tr + 1.135*C
AO5ANLLP	B-Z	B_Z (fall)	0.078 + 0.208*Tr + 0.664*C	0.183 + 0.280*Tr + 1.348*C	0.121 + 0.271*Tr + 0.880*C
AO5ANLLP	B-Z	B_Z (rise)	0.059 + 0.182*Tr + 0.809*C	0.176 + 0.277*Tr + 1.679*C	0.106 + 0.247*Tr + 1.145*C
AO5ANLLP	C-Z	C_Z (fall)	0.073 + 0.262*Tr + 0.662*C	0.166 + 0.272*Tr + 1.349*C	0.110 + 0.264*Tr + 0.881*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5ANLLP	C-Z	C_Z (rise)	0.058 + 0.210*Tr + 0.805*C	0.157 + 0.265*Tr + 1.673*C	0.096 + 0.235*Tr + 1.143*C
AO5ANLLX4	A-Z	A_Z (fall)	0.113 + 0.201*Tr + 0.315*C	0.263 + 0.241*Tr + 0.663*C	0.169 + 0.218*Tr + 0.432*C
AO5ANLLX4	A-Z	A_Z (rise)	0.107 + 0.256*Tr + 0.398*C	0.259 + 0.269*Tr + 0.829*C	0.163 + 0.261*Tr + 0.566*C
AO5ANLLX4	B-Z	B_Z (fall)	0.073 + 0.203*Tr + 0.331*C	0.172 + 0.274*Tr + 0.671*C	0.114 + 0.264*Tr + 0.438*C
AO5ANLLX4	B-Z	B_Z (rise)	0.054 + 0.182*Tr + 0.404*C	0.159 + 0.272*Tr + 0.835*C	0.097 + 0.244*Tr + 0.571*C
AO5ANLLX4	C-Z	C_Z (fall)	0.070 + 0.255*Tr + 0.330*C	0.159 + 0.265*Tr + 0.671*C	0.105 + 0.257*Tr + 0.438*C
AO5ANLLX4	C-Z	C_Z (rise)	0.055 + 0.210*Tr + 0.402*C	0.145 + 0.260*Tr + 0.834*C	0.089 + 0.232*Tr + 0.570*C
AO5ANLLX6	A-Z	A_Z (fall)	0.109 + 0.202*Tr + 0.210*C	0.252 + 0.239*Tr + 0.443*C	0.163 + 0.217*Tr + 0.289*C
AO5ANLLX6	A-Z	A_Z (rise)	0.105 + 0.248*Tr + 0.266*C	0.256 + 0.260*Tr + 0.555*C	0.160 + 0.252*Tr + 0.379*C
AO5ANLLX6	B-Z	B_Z (fall)	0.071 + 0.202*Tr + 0.221*C	0.168 + 0.271*Tr + 0.448*C	0.111 + 0.262*Tr + 0.293*C
AO5ANLLX6	B-Z	B_Z (rise)	0.055 + 0.184*Tr + 0.270*C	0.164 + 0.276*Tr + 0.560*C	0.100 + 0.248*Tr + 0.382*C
AO5ANLLX6	C-Z	C_Z (fall)	0.069 + 0.253*Tr + 0.221*C	0.156 + 0.263*Tr + 0.449*C	0.104 + 0.254*Tr + 0.293*C
AO5ANLLX6	C-Z	C_Z (rise)	0.056 + 0.212*Tr + 0.269*C	0.150 + 0.264*Tr + 0.558*C	0.092 + 0.236*Tr + 0.382*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5ANLLX8	A-Z	A_Z (fall)	0.106 + 0.201*Tr + 0.158*C	0.244 + 0.235*Tr + 0.332*C	0.158 + 0.214*Tr + 0.217*C
AO5ANLLX8	A-Z	A_Z (rise)	0.103 + 0.244*Tr + 0.200*C	0.249 + 0.256*Tr + 0.417*C	0.156 + 0.248*Tr + 0.284*C
AO5ANLLX8	B-Z	B_Z (fall)	0.071 + 0.198*Tr + 0.166*C	0.165 + 0.268*Tr + 0.337*C	0.110 + 0.259*Tr + 0.220*C
AO5ANLLX8	B-Z	B_Z (rise)	0.055 + 0.186*Tr + 0.203*C	0.163 + 0.277*Tr + 0.420*C	0.100 + 0.249*Tr + 0.287*C
AO5ANLLX8	C-Z	C_Z (fall)	0.068 + 0.250*Tr + 0.166*C	0.154 + 0.259*Tr + 0.337*C	0.102 + 0.251*Tr + 0.220*C
AO5ANLLX8	C-Z	C_Z (rise)	0.055 + 0.214*Tr + 0.202*C	0.148 + 0.265*Tr + 0.419*C	0.091 + 0.237*Tr + 0.287*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO5ANLL	5644.100	102526.000
AO5ANLLP	7840.770	158080.000
AO5ANLLX4	13938.300	295907.000
AO5ANLLX6	20574.300	435980.000
AO5ANLLX8	26765.800	575992.000

Internal Energy at minimum output load

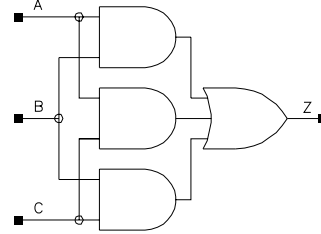
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO5ANLL	Z(max)	0.025 + 0.005*Tr
AO5ANLLP	Z(max)	0.040 + 0.008*Tr
AO5ANLLX4	Z(max)	0.077 + 0.016*Tr
AO5ANLLX6	Z(max)	0.112 + 0.024*Tr
AO5ANLLX8	Z(max)	0.145 + 0.032*Tr

AO5NLL
AO5NLLP
AO5NLLX4
AO5NLLX6
AO5NLLX8

Function: Function = Triple 2 Input AND into 3 Input OR

Boolean Expression: $Z = ((B + C) \bullet A + B \bullet C)$



Physical Dimensions

Property	AO5NLL	AO5NLLP	AO5NLLX4	AO5NLLX6	AO5NLLX8
Area(um2)	14.120	16.138	20.172	34.292	36.310

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5NLL	A Input Cap.	0.0030	0.0025	0.0027
AO5NLL	Z Max Load	0.160	0.160	0.160
AO5NLL	B Input Cap.	0.0037	0.0032	0.0034
AO5NLL	C Input Cap.	0.0018	0.0015	0.0016
AO5NLLP	Z Max Load	0.320	0.320	0.320
AO5NLLP	B Input Cap.	0.0060	0.0053	0.0056
AO5NLLP	C Input Cap.	0.0031	0.0026	0.0027
AO5NLLP	A Input Cap.	0.0058	0.0052	0.0054
AO5NLLX4	Z Max Load	0.640	0.640	0.640
AO5NLLX4	B Input Cap.	0.0109	0.0099	0.0102
AO5NLLX4	C Input Cap.	0.0056	0.0049	0.0050
AO5NLLX4	A Input Cap.	0.0119	0.0108	0.0112
AO5NLLX6	A Input Cap.	0.0176	0.0159	0.0165
AO5NLLX6	B Input Cap.	0.0167	0.0151	0.0157
AO5NLLX6	C Input Cap.	0.0084	0.0071	0.0074
AO5NLLX6	Z Max Load	0.960	0.960	0.960
AO5NLLX8	C Input Cap.	0.0109	0.0093	0.0097
AO5NLLX8	A Input Cap.	0.0228	0.0207	0.0214

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5NLLX8	Z Max Load	1.280	1.280	1.280
AO5NLLX8	B Input Cap.	0.0218	0.0198	0.0205

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5NLL	A-Z	A_Z (fall)	0.109 + 0.289*Tr + 1.405*C	0.263 + 0.303*Tr + 3.017*C	0.172 + 0.293*Tr + 1.931*C
AO5NLL	A-Z	A_Z (rise)	0.084 + 0.220*Tr + 1.665*C	0.234 + 0.279*Tr + 3.576*C	0.139 + 0.245*Tr + 2.402*C
AO5NLL	B-Z	B_Z (fall)	0.110 + 0.235*Tr + 1.415*C	0.260 + 0.314*Tr + 2.886*C	0.170 + 0.304*Tr + 1.846*C
AO5NLL	B-Z	B_Z (rise)	0.079 + 0.190*Tr + 1.667*C	0.251 + 0.292*Tr + 3.545*C	0.147 + 0.259*Tr + 2.385*C
AO5NLL	C-Z	C_Z (fall)	0.115 + 0.248*Tr + 1.351*C	0.283 + 0.261*Tr + 2.894*C	0.180 + 0.253*Tr + 1.853*C
AO5NLL	C-Z	C_Z (rise)	0.086 + 0.206*Tr + 1.659*C	0.250 + 0.254*Tr + 3.551*C	0.143 + 0.229*Tr + 2.390*C
AO5NLLP	A-Z	A_Z (fall)	0.078 + 0.223*Tr + 0.643*C	0.183 + 0.234*Tr + 1.353*C	0.119 + 0.227*Tr + 0.886*C
AO5NLLP	A-Z	A_Z (rise)	0.062 + 0.200*Tr + 0.802*C	0.165 + 0.242*Tr + 1.680*C	0.098 + 0.220*Tr + 1.146*C
AO5NLLP	B-Z	B_Z (fall)	0.076 + 0.210*Tr + 0.664*C	0.182 + 0.280*Tr + 1.347*C	0.121 + 0.270*Tr + 0.880*C
AO5NLLP	B-Z	B_Z (rise)	0.059 + 0.182*Tr + 0.809*C	0.175 + 0.276*Tr + 1.677*C	0.106 + 0.246*Tr + 1.144*C
AO5NLLP	C-Z	C_Z (fall)	0.073 + 0.262*Tr + 0.661*C	0.165 + 0.272*Tr + 1.347*C	0.110 + 0.263*Tr + 0.880*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5NLLP	C-Z	C_Z (rise)	0.058 + 0.210*Tr + 0.805*C	0.156 + 0.264*Tr + 1.673*C	0.095 + 0.234*Tr + 1.142*C
AO5NLLX4	A-Z	A_Z (fall)	0.075 + 0.213*Tr + 0.320*C	0.175 + 0.224*Tr + 0.674*C	0.114 + 0.217*Tr + 0.441*C
AO5NLLX4	A-Z	A_Z (rise)	0.061 + 0.206*Tr + 0.401*C	0.161 + 0.244*Tr + 0.840*C	0.096 + 0.224*Tr + 0.573*C
AO5NLLX4	B-Z	B_Z (fall)	0.070 + 0.201*Tr + 0.330*C	0.169 + 0.269*Tr + 0.670*C	0.112 + 0.260*Tr + 0.437*C
AO5NLLX4	B-Z	B_Z (rise)	0.056 + 0.187*Tr + 0.404*C	0.166 + 0.279*Tr + 0.838*C	0.101 + 0.251*Tr + 0.572*C
AO5NLLX4	C-Z	C_Z (fall)	0.069 + 0.251*Tr + 0.330*C	0.157 + 0.261*Tr + 0.670*C	0.104 + 0.252*Tr + 0.438*C
AO5NLLX4	C-Z	C_Z (rise)	0.056 + 0.216*Tr + 0.403*C	0.151 + 0.267*Tr + 0.835*C	0.093 + 0.239*Tr + 0.571*C
AO5NLLX6	A-Z	A_Z (fall)	0.074 + 0.215*Tr + 0.214*C	0.173 + 0.227*Tr + 0.451*C	0.113 + 0.219*Tr + 0.295*C
AO5NLLX6	A-Z	A_Z (rise)	0.060 + 0.203*Tr + 0.268*C	0.158 + 0.242*Tr + 0.561*C	0.095 + 0.221*Tr + 0.383*C
AO5NLLX6	B-Z	B_Z (fall)	0.070 + 0.204*Tr + 0.221*C	0.168 + 0.271*Tr + 0.448*C	0.111 + 0.262*Tr + 0.293*C
AO5NLLX6	B-Z	B_Z (rise)	0.055 + 0.184*Tr + 0.270*C	0.164 + 0.276*Tr + 0.559*C	0.100 + 0.247*Tr + 0.382*C
AO5NLLX6	C-Z	C_Z (fall)	0.069 + 0.253*Tr + 0.221*C	0.156 + 0.263*Tr + 0.448*C	0.104 + 0.255*Tr + 0.293*C
AO5NLLX6	C-Z	C_Z (rise)	0.056 + 0.212*Tr + 0.269*C	0.150 + 0.264*Tr + 0.558*C	0.092 + 0.236*Tr + 0.381*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO5NLLX8	A-Z	A_Z (fall)	0.073 + 0.213*Tr + 0.161*C	0.171 + 0.224*Tr + 0.339*C	0.111 + 0.217*Tr + 0.222*C
AO5NLLX8	A-Z	A_Z (rise)	0.060 + 0.206*Tr + 0.201*C	0.157 + 0.243*Tr + 0.421*C	0.094 + 0.223*Tr + 0.287*C
AO5NLLX8	B-Z	B_Z (fall)	0.069 + 0.201*Tr + 0.166*C	0.166 + 0.268*Tr + 0.337*C	0.110 + 0.259*Tr + 0.220*C
AO5NLLX8	B-Z	B_Z (rise)	0.055 + 0.187*Tr + 0.203*C	0.163 + 0.277*Tr + 0.420*C	0.100 + 0.249*Tr + 0.287*C
AO5NLLX8	C-Z	C_Z (fall)	0.068 + 0.250*Tr + 0.166*C	0.154 + 0.260*Tr + 0.337*C	0.103 + 0.251*Tr + 0.220*C
AO5NLLX8	C-Z	C_Z (rise)	0.055 + 0.215*Tr + 0.202*C	0.149 + 0.266*Tr + 0.419*C	0.091 + 0.238*Tr + 0.287*C

Average Leakage Power

picoWatts

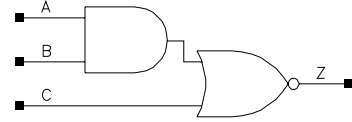
Cell	bc_1.32V_25C	bc_1.32V_125C
AO5NLL	4105.430	79509.800
AO5NLLP	6293.180	132685.000
AO5NLLX4	11696.300	254662.000
AO5NLLX6	17863.300	384412.000
AO5NLLX8	23392.800	509320.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO5NLL	Z(max)	0.022 + 0.006*Tr
AO5NLLP	Z(max)	0.028 + 0.015*Tr
AO5NLLX4	Z(max)	0.052 + 0.032*Tr
AO5NLLX6	Z(max)	0.079 + 0.048*Tr
AO5NLLX8	Z(max)	0.104 + 0.065*Tr

AO6LL
AO6LLP
AO6LLX4
AO6LLX6
AO6LLX8



Function: Function = 2 Input AND into 2 Input NOR

Boolean Expression: $Z = \overline{(A \bullet B + C)}$

Physical Dimensions

Property	AO6LL	AO6LLP	AO6LLX4	AO6LLX6	AO6LLX8
Area(um ²)	10.086	10.086	18.155	26.224	34.292

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6LL	B Input Cap.	0.0029	0.0026	0.0027
AO6LL	Z Max Load	0.160	0.160	0.160
AO6LL	C Input Cap.	0.0026	0.0024	0.0025
AO6LL	A Input Cap.	0.0026	0.0024	0.0025
AO6LLP	B Input Cap.	0.0053	0.0049	0.0050
AO6LLP	Z Max Load	0.320	0.320	0.320
AO6LLP	C Input Cap.	0.0050	0.0046	0.0048
AO6LLP	A Input Cap.	0.0048	0.0045	0.0046
AO6LLX4	C Input Cap.	0.0102	0.0095	0.0098
AO6LLX4	A Input Cap.	0.0100	0.0093	0.0096
AO6LLX4	B Input Cap.	0.0102	0.0094	0.0097
AO6LLX4	Z Max Load	0.640	0.640	0.640
AO6LLX6	C Input Cap.	0.0150	0.0140	0.0144
AO6LLX6	A Input Cap.	0.0146	0.0135	0.0139
AO6LLX6	Z Max Load	0.960	0.960	0.960
AO6LLX6	B Input Cap.	0.0155	0.0143	0.0148
AO6LLX8	B Input Cap.	0.0211	0.0194	0.0201
AO6LLX8	Z Max Load	1.280	1.280	1.280

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6LLX8	C Input Cap.	0.0199	0.0185	0.0190
AO6LLX8	A Input Cap.	0.0191	0.0177	0.0183

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6LL	A-Z	A_Z (fall)	0.003 + 0.249*Tr + 2.408*C	0.021 + 0.288*Tr + 5.915*C	0.003 + 0.268*Tr + 3.666*C
AO6LL	A-Z	A_Z (rise)	0.009 + 0.288*Tr + 3.225*C	0.023 + 0.297*Tr + 6.963*C	0.010 + 0.293*Tr + 4.783*C
AO6LL	B-Z	B_Z (fall)	0.009 + 0.213*Tr + 2.324*C	0.033 + 0.249*Tr + 5.834*C	0.012 + 0.233*Tr + 3.555*C
AO6LL	B-Z	B_Z (rise)	0.013 + 0.296*Tr + 3.198*C	0.034 + 0.304*Tr + 6.913*C	0.018 + 0.300*Tr + 4.743*C
AO6LL	C-Z	C_Z (fall)	0.010 + 0.274*Tr + 2.237*C	0.040 + 0.328*Tr + 4.858*C	0.017 + 0.301*Tr + 3.204*C
AO6LL	C-Z	C_Z (rise)	0.015 + 0.244*Tr + 2.547*C	0.066 + 0.240*Tr + 6.869*C	0.038 + 0.235*Tr + 4.678*C
AO6LLP	A-Z	A_Z (fall)	-0.001 + 0.252*Tr + 1.246*C	0.012 + 0.287*Tr + 2.966*C	-0.003 + 0.269*Tr + 1.871*C
AO6LLP	A-Z	A_Z (rise)	0.003 + 0.278*Tr + 1.595*C	0.013 + 0.285*Tr + 3.389*C	0.002 + 0.283*Tr + 2.350*C
AO6LLP	B-Z	B_Z (fall)	0.006 + 0.216*Tr + 1.202*C	0.025 + 0.249*Tr + 2.919*C	0.007 + 0.235*Tr + 1.811*C
AO6LLP	B-Z	B_Z (rise)	0.009 + 0.286*Tr + 1.577*C	0.025 + 0.293*Tr + 3.356*C	0.010 + 0.290*Tr + 2.323*C
AO6LLP	C-Z	C_Z (fall)	0.006 + 0.279*Tr + 1.134*C	0.031 + 0.328*Tr + 2.344*C	0.011 + 0.304*Tr + 1.589*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6LLP	C-Z	C_Z (rise)	0.010 + 0.234*Tr + 1.262*C	0.057 + 0.230*Tr + 3.325*C	0.031 + 0.226*Tr + 2.282*C
AO6LLX4	A-Z	A_Z (fall)	0.003 + 0.242*Tr + 0.624*C	0.017 + 0.280*Tr + 1.486*C	0.002 + 0.260*Tr + 0.938*C
AO6LLX4	A-Z	A_Z (rise)	0.006 + 0.271*Tr + 0.799*C	0.017 + 0.279*Tr + 1.698*C	0.006 + 0.275*Tr + 1.177*C
AO6LLX4	B-Z	B_Z (fall)	0.008 + 0.209*Tr + 0.602*C	0.028 + 0.243*Tr + 1.461*C	0.010 + 0.228*Tr + 0.907*C
AO6LLX4	B-Z	B_Z (rise)	0.010 + 0.280*Tr + 0.790*C	0.027 + 0.287*Tr + 1.681*C	0.014 + 0.283*Tr + 1.163*C
AO6LLX4	C-Z	C_Z (fall)	0.009 + 0.270*Tr + 0.568*C	0.036 + 0.320*Tr + 1.174*C	0.016 + 0.294*Tr + 0.796*C
AO6LLX4	C-Z	C_Z (rise)	0.012 + 0.226*Tr + 0.632*C	0.057 + 0.225*Tr + 1.665*C	0.032 + 0.220*Tr + 1.143*C
AO6LLX6	A-Z	A_Z (fall)	0.001 + 0.240*Tr + 0.419*C	0.015 + 0.275*Tr + 0.995*C	-0.001 + 0.257*Tr + 0.629*C
AO6LLX6	A-Z	A_Z (rise)	0.004 + 0.268*Tr + 0.535*C	0.014 + 0.274*Tr + 1.136*C	0.004 + 0.271*Tr + 0.789*C
AO6LLX6	B-Z	B_Z (fall)	0.007 + 0.207*Tr + 0.403*C	0.027 + 0.240*Tr + 0.978*C	0.009 + 0.225*Tr + 0.608*C
AO6LLX6	B-Z	B_Z (rise)	0.009 + 0.277*Tr + 0.529*C	0.026 + 0.283*Tr + 1.124*C	0.012 + 0.280*Tr + 0.779*C
AO6LLX6	C-Z	C_Z (fall)	0.008 + 0.272*Tr + 0.394*C	0.036 + 0.320*Tr + 0.803*C	0.015 + 0.296*Tr + 0.548*C
AO6LLX6	C-Z	C_Z (rise)	0.011 + 0.222*Tr + 0.424*C	0.057 + 0.221*Tr + 1.113*C	0.031 + 0.217*Tr + 0.765*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6LLX8	A-Z	A_Z (fall)	0.002 + 0.238*Tr + 0.314*C	0.016 + 0.275*Tr + 0.747*C	0.001 + 0.255*Tr + 0.472*C
AO6LLX8	A-Z	A_Z (rise)	0.005 + 0.267*Tr + 0.402*C	0.015 + 0.274*Tr + 0.853*C	0.005 + 0.271*Tr + 0.592*C
AO6LLX8	B-Z	B_Z (fall)	0.007 + 0.206*Tr + 0.303*C	0.028 + 0.239*Tr + 0.734*C	0.010 + 0.224*Tr + 0.456*C
AO6LLX8	B-Z	B_Z (rise)	0.010 + 0.276*Tr + 0.397*C	0.027 + 0.283*Tr + 0.844*C	0.013 + 0.280*Tr + 0.584*C
AO6LLX8	C-Z	C_Z (fall)	0.009 + 0.270*Tr + 0.292*C	0.037 + 0.319*Tr + 0.598*C	0.017 + 0.294*Tr + 0.407*C
AO6LLX8	C-Z	C_Z (rise)	0.012 + 0.221*Tr + 0.318*C	0.058 + 0.221*Tr + 0.835*C	0.032 + 0.217*Tr + 0.574*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO6LL	2850.280	56822.800
AO6LLP	4763.980	102838.000
AO6LLX4	9527.780	205680.000
AO6LLX6	13736.300	300518.000
AO6LLX8	18509.100	403582.000

Internal Energy at minimum output load

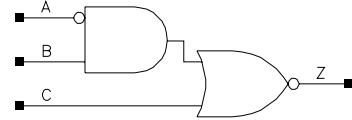
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO6LL	Z(max)	0.010 + 0.009*Tr
AO6LLP	Z(max)	0.019 + 0.020*Tr
AO6LLX4	Z(max)	0.035 + 0.041*Tr
AO6LLX6	Z(max)	0.054 + 0.060*Tr
AO6LLX8	Z(max)	0.072 + 0.081*Tr

AO6ALL
AO6ALLP
AO6ALLX4
AO6ALLX6
AO6ALLX8

Function: Function = 2 Input AND into 2 Input NOR, A Input Inverted

Boolean Expression: $Z = \overline{(A' \bullet B + C)}$



Physical Dimensions

Property	AO6ALL	AO6ALLP	AO6ALLX4	AO6ALLX6	AO6ALLX8
Area(um ²)	12.103	12.103	20.172	28.241	36.310

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6ALL	B Input Cap.	0.0028	0.0025	0.0027
AO6ALL	C Input Cap.	0.0027	0.0024	0.0026
AO6ALL	A Input Cap.	0.0011	0.0009	0.0010
AO6ALL	Z Max Load	0.160	0.160	0.160
AO6ALLP	Z Max Load	0.320	0.320	0.320
AO6ALLP	B Input Cap.	0.0052	0.0048	0.0050
AO6ALLP	C Input Cap.	0.0049	0.0046	0.0047
AO6ALLP	A Input Cap.	0.0020	0.0016	0.0017
AO6ALLX4	C Input Cap.	0.0103	0.0096	0.0099
AO6ALLX4	A Input Cap.	0.0037	0.0031	0.0032
AO6ALLX4	Z Max Load	0.640	0.640	0.640
AO6ALLX4	B Input Cap.	0.0102	0.0094	0.0097
AO6ALLX6	C Input Cap.	0.0151	0.0141	0.0146
AO6ALLX6	Z Max Load	0.960	0.960	0.960
AO6ALLX6	A Input Cap.	0.0051	0.0044	0.0046
AO6ALLX6	B Input Cap.	0.0157	0.0144	0.0149
AO6ALLX8	Z Max Load	1.280	1.280	1.280
AO6ALLX8	B Input Cap.	0.0210	0.0194	0.0201

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6ALLX8	C Input Cap.	0.0200	0.0186	0.0192
AO6ALLX8	A Input Cap.	0.0066	0.0057	0.0059

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6ALL	A-Z	A_Z (fall)	0.081 + 0.292*Tr + 2.139*C	0.189 + 0.307*Tr + 5.543*C	0.123 + 0.298*Tr + 3.249*C
AO6ALL	A-Z	A_Z (rise)	0.061 + 0.176*Tr + 3.031*C	0.146 + 0.229*Tr + 6.622*C	0.091 + 0.197*Tr + 4.453*C
AO6ALL	B-Z	B_Z (fall)	0.010 + 0.210*Tr + 2.339*C	0.036 + 0.246*Tr + 5.863*C	0.014 + 0.230*Tr + 3.576*C
AO6ALL	B-Z	B_Z (rise)	0.012 + 0.295*Tr + 3.204*C	0.031 + 0.303*Tr + 6.921*C	0.016 + 0.300*Tr + 4.750*C
AO6ALL	C-Z	C_Z (fall)	0.008 + 0.274*Tr + 2.242*C	0.036 + 0.327*Tr + 4.863*C	0.014 + 0.300*Tr + 3.207*C
AO6ALL	C-Z	C_Z (rise)	0.013 + 0.244*Tr + 2.548*C	0.061 + 0.240*Tr + 6.876*C	0.035 + 0.236*Tr + 4.683*C
AO6ALLP	A-Z	A_Z (fall)	0.069 + 0.267*Tr + 1.095*C	0.154 + 0.279*Tr + 2.742*C	0.102 + 0.271*Tr + 1.634*C
AO6ALLP	A-Z	A_Z (rise)	0.053 + 0.183*Tr + 1.472*C	0.121 + 0.225*Tr + 3.169*C	0.078 + 0.200*Tr + 2.145*C
AO6ALLP	B-Z	B_Z (fall)	0.007 + 0.213*Tr + 1.209*C	0.028 + 0.246*Tr + 2.932*C	0.009 + 0.232*Tr + 1.821*C
AO6ALLP	B-Z	B_Z (rise)	0.007 + 0.286*Tr + 1.581*C	0.022 + 0.293*Tr + 3.363*C	0.008 + 0.290*Tr + 2.328*C
AO6ALLP	C-Z	C_Z (fall)	0.005 + 0.281*Tr + 1.161*C	0.030 + 0.330*Tr + 2.406*C	0.010 + 0.306*Tr + 1.628*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6ALLP	C-Z	C_Z (rise)	0.008 + 0.233*Tr + 1.265*C	0.053 + 0.229*Tr + 3.331*C	0.028 + 0.225*Tr + 2.288*C
AO6ALLX4	A-Z	A_Z (fall)	0.067 + 0.252*Tr + 0.547*C	0.147 + 0.266*Tr + 1.369*C	0.098 + 0.257*Tr + 0.816*C
AO6ALLX4	A-Z	A_Z (rise)	0.054 + 0.197*Tr + 0.736*C	0.119 + 0.235*Tr + 1.585*C	0.078 + 0.212*Tr + 1.073*C
AO6ALLX4	B-Z	B_Z (fall)	0.009 + 0.207*Tr + 0.604*C	0.032 + 0.241*Tr + 1.466*C	0.013 + 0.226*Tr + 0.910*C
AO6ALLX4	B-Z	B_Z (rise)	0.010 + 0.280*Tr + 0.791*C	0.026 + 0.288*Tr + 1.682*C	0.013 + 0.283*Tr + 1.164*C
AO6ALLX4	C-Z	C_Z (fall)	0.009 + 0.270*Tr + 0.569*C	0.035 + 0.320*Tr + 1.175*C	0.015 + 0.295*Tr + 0.796*C
AO6ALLX4	C-Z	C_Z (rise)	0.011 + 0.226*Tr + 0.633*C	0.056 + 0.225*Tr + 1.667*C	0.031 + 0.220*Tr + 1.145*C
AO6ALLX6	A-Z	A_Z (fall)	0.064 + 0.246*Tr + 0.364*C	0.141 + 0.259*Tr + 0.913*C	0.094 + 0.251*Tr + 0.544*C
AO6ALLX6	A-Z	A_Z (rise)	0.052 + 0.200*Tr + 0.491*C	0.115 + 0.234*Tr + 1.057*C	0.075 + 0.213*Tr + 0.715*C
AO6ALLX6	B-Z	B_Z (fall)	0.008 + 0.205*Tr + 0.405*C	0.030 + 0.238*Tr + 0.981*C	0.011 + 0.223*Tr + 0.610*C
AO6ALLX6	B-Z	B_Z (rise)	0.009 + 0.277*Tr + 0.529*C	0.025 + 0.283*Tr + 1.125*C	0.011 + 0.280*Tr + 0.780*C
AO6ALLX6	C-Z	C_Z (fall)	0.008 + 0.272*Tr + 0.394*C	0.035 + 0.320*Tr + 0.804*C	0.014 + 0.296*Tr + 0.549*C
AO6ALLX6	C-Z	C_Z (rise)	0.010 + 0.222*Tr + 0.425*C	0.056 + 0.221*Tr + 1.115*C	0.030 + 0.217*Tr + 0.766*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6ALLX8	A-Z	A_Z (fall)	0.063 + 0.244*Tr + 0.274*C	0.139 + 0.256*Tr + 0.685*C	0.092 + 0.248*Tr + 0.408*C
AO6ALLX8	A-Z	A_Z (rise)	0.051 + 0.199*Tr + 0.368*C	0.112 + 0.232*Tr + 0.792*C	0.074 + 0.212*Tr + 0.536*C
AO6ALLX8	B-Z	B_Z (fall)	0.009 + 0.204*Tr + 0.304*C	0.031 + 0.237*Tr + 0.736*C	0.012 + 0.223*Tr + 0.458*C
AO6ALLX8	B-Z	B_Z (rise)	0.009 + 0.277*Tr + 0.397*C	0.026 + 0.283*Tr + 0.845*C	0.012 + 0.280*Tr + 0.585*C
AO6ALLX8	C-Z	C_Z (fall)	0.009 + 0.270*Tr + 0.293*C	0.035 + 0.319*Tr + 0.599*C	0.016 + 0.294*Tr + 0.408*C
AO6ALLX8	C-Z	C_Z (rise)	0.011 + 0.222*Tr + 0.318*C	0.056 + 0.221*Tr + 0.836*C	0.031 + 0.217*Tr + 0.575*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO6ALL	4321.220	76926.200
AO6ALLP	6231.830	127015.000
AO6ALLX4	11505.000	243558.000
AO6ALLX6	16382.000	353122.000
AO6ALLX8	21873.800	471983.000

Internal Energy at minimum output load

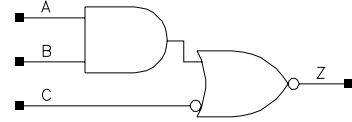
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO6ALL	Z(max)	0.011 + 0.010*Tr
AO6ALLP	Z(max)	0.020 + 0.020*Tr
AO6ALLX4	Z(max)	0.040 + 0.043*Tr
AO6ALLX6	Z(max)	0.061 + 0.062*Tr
AO6ALLX8	Z(max)	0.080 + 0.084*Tr

AO6CLL
AO6CLLP
AO6CLLX4
AO6CLLX6
AO6CLLX8

Function: Function = 2 Input AND into 2 Input NOR, C Input Inverted

Boolean Expression: $Z = \overline{(A \bullet B + C)}$



Physical Dimensions

Property	AO6CLL	AO6CLLP	AO6CLLX4	AO6CLLX6	AO6CLLX8
Area(um ²)	12.103	12.103	20.172	28.241	36.310

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6CLL	C Input Cap.	0.0012	0.0009	0.0010
AO6CLL	Z Max Load	0.160	0.160	0.160
AO6CLL	A Input Cap.	0.0027	0.0025	0.0026
AO6CLL	B Input Cap.	0.0028	0.0025	0.0027
AO6CLLP	B Input Cap.	0.0052	0.0048	0.0050
AO6CLLP	C Input Cap.	0.0021	0.0017	0.0018
AO6CLLP	Z Max Load	0.320	0.320	0.320
AO6CLLP	A Input Cap.	0.0050	0.0046	0.0047
AO6CLLX4	C Input Cap.	0.0037	0.0032	0.0033
AO6CLLX4	Z Max Load	0.640	0.640	0.640
AO6CLLX4	A Input Cap.	0.0101	0.0093	0.0096
AO6CLLX4	B Input Cap.	0.0102	0.0094	0.0097
AO6CLLX6	Z Max Load	0.960	0.960	0.960
AO6CLLX6	B Input Cap.	0.0156	0.0144	0.0149
AO6CLLX6	C Input Cap.	0.0052	0.0044	0.0046
AO6CLLX6	A Input Cap.	0.0146	0.0135	0.0139
AO6CLLX8	A Input Cap.	0.0191	0.0176	0.0182
AO6CLLX8	B Input Cap.	0.0209	0.0193	0.0200

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6CLLX8	C Input Cap.	0.0066	0.0057	0.0060
AO6CLLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6CLL	A-Z	A_Z (fall)	0.002 + 0.248*Tr + 2.411*C	0.019 + 0.287*Tr + 5.922*C	0.002 + 0.267*Tr + 3.673*C
AO6CLL	A-Z	A_Z (rise)	0.008 + 0.288*Tr + 3.229*C	0.020 + 0.297*Tr + 6.966*C	0.009 + 0.293*Tr + 4.789*C
AO6CLL	B-Z	B_Z (fall)	0.008 + 0.213*Tr + 2.327*C	0.031 + 0.248*Tr + 5.840*C	0.011 + 0.233*Tr + 3.560*C
AO6CLL	B-Z	B_Z (rise)	0.013 + 0.295*Tr + 3.200*C	0.032 + 0.303*Tr + 6.918*C	0.017 + 0.300*Tr + 4.748*C
AO6CLL	C-Z	C_Z (fall)	0.081 + 0.287*Tr + 1.998*C	0.197 + 0.302*Tr + 4.526*C	0.127 + 0.293*Tr + 2.831*C
AO6CLL	C-Z	C_Z (rise)	0.062 + 0.170*Tr + 2.332*C	0.166 + 0.216*Tr + 6.620*C	0.103 + 0.186*Tr + 4.452*C
AO6CLLP	A-Z	A_Z (fall)	-0.002 + 0.251*Tr + 1.247*C	0.011 + 0.287*Tr + 2.970*C	-0.004 + 0.269*Tr + 1.875*C
AO6CLLP	A-Z	A_Z (rise)	0.002 + 0.278*Tr + 1.597*C	0.010 + 0.285*Tr + 3.393*C	0.001 + 0.282*Tr + 2.353*C
AO6CLLP	B-Z	B_Z (fall)	0.005 + 0.216*Tr + 1.203*C	0.024 + 0.249*Tr + 2.922*C	0.006 + 0.234*Tr + 1.813*C
AO6CLLP	B-Z	B_Z (rise)	0.008 + 0.286*Tr + 1.579*C	0.023 + 0.293*Tr + 3.360*C	0.009 + 0.290*Tr + 2.325*C
AO6CLLP	C-Z	C_Z (fall)	0.072 + 0.265*Tr + 1.029*C	0.170 + 0.279*Tr + 2.208*C	0.112 + 0.270*Tr + 1.420*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6CLLP	C-Z	C_Z (rise)	0.056 + 0.181*Tr + 1.135*C	0.147 + 0.218*Tr + 3.169*C	0.093 + 0.194*Tr + 2.145*C
AO6CLLX4	A-Z	A_Z (fall)	0.003 + 0.242*Tr + 0.624*C	0.018 + 0.280*Tr + 1.486*C	0.002 + 0.260*Tr + 0.938*C
AO6CLLX4	A-Z	A_Z (rise)	0.006 + 0.271*Tr + 0.799*C	0.016 + 0.279*Tr + 1.698*C	0.006 + 0.275*Tr + 1.177*C
AO6CLLX4	B-Z	B_Z (fall)	0.008 + 0.209*Tr + 0.602*C	0.028 + 0.243*Tr + 1.461*C	0.011 + 0.228*Tr + 0.907*C
AO6CLLX4	B-Z	B_Z (rise)	0.010 + 0.280*Tr + 0.790*C	0.027 + 0.288*Tr + 1.681*C	0.013 + 0.283*Tr + 1.163*C
AO6CLLX4	C-Z	C_Z (fall)	0.071 + 0.252*Tr + 0.501*C	0.164 + 0.267*Tr + 1.072*C	0.109 + 0.258*Tr + 0.690*C
AO6CLLX4	C-Z	C_Z (rise)	0.058 + 0.197*Tr + 0.568*C	0.147 + 0.230*Tr + 1.585*C	0.094 + 0.208*Tr + 1.073*C
AO6CLLX6	A-Z	A_Z (fall)	0.000 + 0.240*Tr + 0.419*C	0.015 + 0.275*Tr + 0.995*C	-0.001 + 0.257*Tr + 0.629*C
AO6CLLX6	A-Z	A_Z (rise)	0.004 + 0.268*Tr + 0.535*C	0.014 + 0.274*Tr + 1.136*C	0.004 + 0.271*Tr + 0.788*C
AO6CLLX6	B-Z	B_Z (fall)	0.007 + 0.207*Tr + 0.403*C	0.027 + 0.240*Tr + 0.978*C	0.009 + 0.225*Tr + 0.608*C
AO6CLLX6	B-Z	B_Z (rise)	0.009 + 0.277*Tr + 0.529*C	0.026 + 0.283*Tr + 1.124*C	0.012 + 0.280*Tr + 0.779*C
AO6CLLX6	C-Z	C_Z (fall)	0.070 + 0.246*Tr + 0.348*C	0.162 + 0.261*Tr + 0.734*C	0.107 + 0.252*Tr + 0.476*C
AO6CLLX6	C-Z	C_Z (rise)	0.057 + 0.201*Tr + 0.379*C	0.146 + 0.233*Tr + 1.057*C	0.093 + 0.211*Tr + 0.715*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6CLLX8	A-Z	A_Z (fall)	0.002 + 0.238*Tr + 0.314*C	0.016 + 0.275*Tr + 0.747*C	0.001 + 0.255*Tr + 0.472*C
AO6CLLX8	A-Z	A_Z (rise)	0.005 + 0.267*Tr + 0.402*C	0.015 + 0.274*Tr + 0.853*C	0.005 + 0.271*Tr + 0.592*C
AO6CLLX8	B-Z	B_Z (fall)	0.007 + 0.206*Tr + 0.303*C	0.028 + 0.239*Tr + 0.734*C	0.010 + 0.224*Tr + 0.456*C
AO6CLLX8	B-Z	B_Z (rise)	0.010 + 0.277*Tr + 0.396*C	0.027 + 0.284*Tr + 0.844*C	0.013 + 0.280*Tr + 0.584*C
AO6CLLX8	C-Z	C_Z (fall)	0.068 + 0.243*Tr + 0.258*C	0.157 + 0.258*Tr + 0.545*C	0.104 + 0.249*Tr + 0.353*C
AO6CLLX8	C-Z	C_Z (rise)	0.056 + 0.199*Tr + 0.284*C	0.142 + 0.229*Tr + 0.793*C	0.091 + 0.209*Tr + 0.537*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO6CLL	3395.020	67450.500
AO6CLLP	5498.570	119540.000
AO6CLLX4	10818.600	236927.000
AO6CLLX6	15572.500	345895.000
AO6CLLX8	20987.000	465600.000

Internal Energy at minimum output load

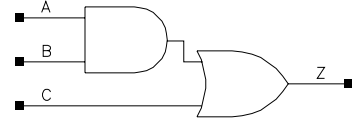
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO6CLL	Z(max)	0.017 + 0.005*Tr
AO6CLLP	Z(max)	0.030 + 0.009*Tr
AO6CLLX4	Z(max)	0.059 + 0.017*Tr
AO6CLLX6	Z(max)	0.089 + 0.025*Tr
AO6CLLX8	Z(max)	0.117 + 0.035*Tr

AO6NLL
AO6NLLP
AO6NLLX4
AO6NLLX6
AO6NLLX8

Function: Function = 2 Input AND into 2 Input OR

Boolean Expression: $Z = (A \bullet B + C)$



Physical Dimensions

Property	AO6NLL	AO6NLLP	AO6NLLX4	AO6NLLX6	AO6NLLX8
Area(um2)	10.086	12.103	16.138	24.206	28.241

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6NLL	A Input Cap.	0.0021	0.0018	0.0019
AO6NLL	Z Max Load	0.160	0.160	0.160
AO6NLL	B Input Cap.	0.0023	0.0020	0.0021
AO6NLL	C Input Cap.	0.0023	0.0019	0.0020
AO6NLLP	A Input Cap.	0.0032	0.0027	0.0028
AO6NLLP	Z Max Load	0.320	0.320	0.320
AO6NLLP	B Input Cap.	0.0032	0.0028	0.0029
AO6NLLP	C Input Cap.	0.0032	0.0027	0.0028
AO6NLLX4	A Input Cap.	0.0058	0.0050	0.0052
AO6NLLX4	Z Max Load	0.640	0.640	0.640
AO6NLLX4	B Input Cap.	0.0057	0.0050	0.0052
AO6NLLX4	C Input Cap.	0.0055	0.0049	0.0051
AO6NLLX6	C Input Cap.	0.0085	0.0075	0.0077
AO6NLLX6	A Input Cap.	0.0089	0.0077	0.0080
AO6NLLX6	B Input Cap.	0.0086	0.0075	0.0078
AO6NLLX6	Z Max Load	0.960	0.960	0.960
AO6NLLX8	B Input Cap.	0.0114	0.0099	0.0103
AO6NLLX8	C Input Cap.	0.0111	0.0098	0.0101

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6NLLX8	A Input Cap.	0.0116	0.0101	0.0105
AO6NLLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6NLL	A-Z	A_Z (fall)	0.071 + 0.262*Tr + 1.376*C	0.162 + 0.271*Tr + 3.024*C	0.107 + 0.264*Tr + 1.932*C
AO6NLL	A-Z	A_Z (rise)	0.056 + 0.192*Tr + 1.643*C	0.141 + 0.240*Tr + 3.470*C	0.086 + 0.211*Tr + 2.363*C
AO6NLL	B-Z	B_Z (fall)	0.076 + 0.275*Tr + 1.379*C	0.174 + 0.284*Tr + 3.035*C	0.114 + 0.276*Tr + 1.938*C
AO6NLL	B-Z	B_Z (rise)	0.055 + 0.172*Tr + 1.648*C	0.143 + 0.214*Tr + 3.479*C	0.085 + 0.191*Tr + 2.369*C
AO6NLL	C-Z	C_Z (fall)	0.069 + 0.238*Tr + 1.376*C	0.203 + 0.242*Tr + 3.055*C	0.129 + 0.237*Tr + 1.953*C
AO6NLL	C-Z	C_Z (rise)	0.050 + 0.192*Tr + 1.630*C	0.122 + 0.250*Tr + 3.423*C	0.077 + 0.220*Tr + 2.338*C
AO6NLLP	A-Z	A_Z (fall)	0.067 + 0.253*Tr + 0.635*C	0.151 + 0.262*Tr + 1.339*C	0.100 + 0.255*Tr + 0.875*C
AO6NLLP	A-Z	A_Z (rise)	0.055 + 0.202*Tr + 0.798*C	0.135 + 0.247*Tr + 1.662*C	0.083 + 0.220*Tr + 1.138*C
AO6NLLP	B-Z	B_Z (fall)	0.072 + 0.265*Tr + 0.637*C	0.161 + 0.275*Tr + 1.343*C	0.107 + 0.267*Tr + 0.877*C
AO6NLLP	B-Z	B_Z (rise)	0.054 + 0.182*Tr + 0.800*C	0.136 + 0.221*Tr + 1.667*C	0.082 + 0.200*Tr + 1.141*C
AO6NLLP	C-Z	C_Z (fall)	0.066 + 0.216*Tr + 0.637*C	0.188 + 0.224*Tr + 1.354*C	0.121 + 0.218*Tr + 0.886*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6NLLP	C-Z	C_Z (rise)	0.061 + 0.236*Tr + 0.794*C	0.151 + 0.296*Tr + 1.655*C	0.095 + 0.263*Tr + 1.133*C
AO6NLLX4	A-Z	A_Z (fall)	0.064 + 0.242*Tr + 0.317*C	0.143 + 0.251*Tr + 0.667*C	0.095 + 0.244*Tr + 0.436*C
AO6NLLX4	A-Z	A_Z (rise)	0.053 + 0.208*Tr + 0.400*C	0.129 + 0.250*Tr + 0.831*C	0.080 + 0.224*Tr + 0.570*C
AO6NLLX4	B-Z	B_Z (fall)	0.069 + 0.255*Tr + 0.318*C	0.154 + 0.264*Tr + 0.669*C	0.102 + 0.257*Tr + 0.437*C
AO6NLLX4	B-Z	B_Z (rise)	0.053 + 0.188*Tr + 0.401*C	0.131 + 0.224*Tr + 0.833*C	0.080 + 0.204*Tr + 0.571*C
AO6NLLX4	C-Z	C_Z (fall)	0.063 + 0.205*Tr + 0.318*C	0.177 + 0.215*Tr + 0.675*C	0.114 + 0.208*Tr + 0.441*C
AO6NLLX4	C-Z	C_Z (rise)	0.058 + 0.243*Tr + 0.397*C	0.140 + 0.297*Tr + 0.826*C	0.090 + 0.267*Tr + 0.566*C
AO6NLLX6	A-Z	A_Z (fall)	0.064 + 0.244*Tr + 0.212*C	0.143 + 0.254*Tr + 0.446*C	0.095 + 0.247*Tr + 0.292*C
AO6NLLX6	A-Z	A_Z (rise)	0.053 + 0.205*Tr + 0.267*C	0.129 + 0.247*Tr + 0.555*C	0.080 + 0.221*Tr + 0.380*C
AO6NLLX6	B-Z	B_Z (fall)	0.069 + 0.257*Tr + 0.212*C	0.153 + 0.267*Tr + 0.448*C	0.102 + 0.259*Tr + 0.293*C
AO6NLLX6	B-Z	B_Z (rise)	0.052 + 0.185*Tr + 0.268*C	0.130 + 0.222*Tr + 0.557*C	0.080 + 0.201*Tr + 0.381*C
AO6NLLX6	C-Z	C_Z (fall)	0.062 + 0.204*Tr + 0.213*C	0.176 + 0.216*Tr + 0.452*C	0.113 + 0.208*Tr + 0.296*C
AO6NLLX6	C-Z	C_Z (rise)	0.059 + 0.245*Tr + 0.265*C	0.141 + 0.297*Tr + 0.552*C	0.091 + 0.268*Tr + 0.378*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO6NLLX8	A-Z	A_Z (fall)	0.063 + 0.241*Tr + 0.159*C	0.140 + 0.250*Tr + 0.335*C	0.093 + 0.243*Tr + 0.219*C
AO6NLLX8	A-Z	A_Z (rise)	0.053 + 0.207*Tr + 0.200*C	0.127 + 0.248*Tr + 0.417*C	0.079 + 0.223*Tr + 0.286*C
AO6NLLX8	B-Z	B_Z (fall)	0.067 + 0.254*Tr + 0.159*C	0.151 + 0.263*Tr + 0.336*C	0.100 + 0.255*Tr + 0.219*C
AO6NLLX8	B-Z	B_Z (rise)	0.052 + 0.186*Tr + 0.201*C	0.128 + 0.223*Tr + 0.418*C	0.079 + 0.203*Tr + 0.287*C
AO6NLLX8	C-Z	C_Z (fall)	0.061 + 0.203*Tr + 0.160*C	0.172 + 0.214*Tr + 0.339*C	0.111 + 0.207*Tr + 0.222*C
AO6NLLX8	C-Z	C_Z (rise)	0.057 + 0.241*Tr + 0.199*C	0.137 + 0.295*Tr + 0.414*C	0.088 + 0.265*Tr + 0.284*C

Average Leakage Power

picoWatts

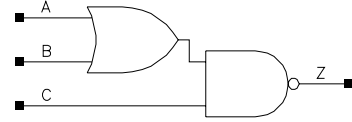
Cell	bc_1.32V_25C	bc_1.32V_125C
AO6NLL	3977.270	76831.300
AO6NLLP	5935.930	123658.000
AO6NLLX4	10935.200	236467.000
AO6NLLX6	16236.200	350630.000
AO6NLLX8	21870.300	472927.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO6NLL	Z(max)	0.016 + 0.009*Tr
AO6NLLP	Z(max)	0.027 + 0.014*Tr
AO6NLLX4	Z(max)	0.051 + 0.029*Tr
AO6NLLX6	Z(max)	0.077 + 0.043*Tr
AO6NLLX8	Z(max)	0.100 + 0.061*Tr

AO7LL
AO7LLP
AO7LLX4
AO7LLX6
AO7LLX8



Function: Function = 2 Input OR into 2 Input NAND

Boolean Expression: $Z = \neg((A + B) \bullet C)$

Physical Dimensions

Property	AO7LL	AO7LLP	AO7LLX4	AO7LLX6	AO7LLX8
Area(um ²)	8.069	10.086	18.155	26.224	34.292

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7LL	Z Max Load	0.160	0.160	0.160
AO7LL	B Input Cap.	0.0027	0.0024	0.0025
AO7LL	C Input Cap.	0.0024	0.0021	0.0022
AO7LL	A Input Cap.	0.0029	0.0026	0.0027
AO7LLP	Z Max Load	0.320	0.320	0.320
AO7LLP	B Input Cap.	0.0050	0.0047	0.0048
AO7LLP	C Input Cap.	0.0043	0.0039	0.0040
AO7LLP	A Input Cap.	0.0054	0.0050	0.0052
AO7LLX4	C Input Cap.	0.0086	0.0079	0.0082
AO7LLX4	A Input Cap.	0.0113	0.0104	0.0108
AO7LLX4	Z Max Load	0.640	0.640	0.640
AO7LLX4	B Input Cap.	0.0097	0.0090	0.0093
AO7LLX6	B Input Cap.	0.0140	0.0129	0.0133
AO7LLX6	C Input Cap.	0.0117	0.0107	0.0111
AO7LLX6	Z Max Load	0.960	0.960	0.960
AO7LLX6	A Input Cap.	0.0157	0.0144	0.0149
AO7LLX8	Z Max Load	1.280	1.280	1.280
AO7LLX8	B Input Cap.	0.0186	0.0171	0.0177

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7LLX8	C Input Cap.	0.0155	0.0142	0.0147
AO7LLX8	A Input Cap.	0.0208	0.0191	0.0197

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7LL	A-Z	A_Z (fall)	0.007 + 0.261*Tr + 2.397*C	0.033 + 0.299*Tr + 5.924*C	0.010 + 0.279*Tr + 3.654*C
AO7LL	A-Z	A_Z (rise)	0.016 + 0.225*Tr + 3.161*C	0.041 + 0.237*Tr + 6.898*C	0.023 + 0.234*Tr + 4.696*C
AO7LL	B-Z	B_Z (fall)	0.001 + 0.249*Tr + 2.445*C	0.016 + 0.288*Tr + 6.007*C	0.000 + 0.268*Tr + 3.723*C
AO7LL	B-Z	B_Z (rise)	0.008 + 0.286*Tr + 3.236*C	0.020 + 0.294*Tr + 6.984*C	0.009 + 0.291*Tr + 4.801*C
AO7LL	C-Z	C_Z (fall)	0.001 + 0.226*Tr + 1.955*C	0.047 + 0.248*Tr + 5.891*C	0.020 + 0.232*Tr + 3.583*C
AO7LL	C-Z	C_Z (rise)	0.012 + 0.317*Tr + 3.050*C	0.035 + 0.339*Tr + 6.411*C	0.018 + 0.330*Tr + 4.456*C
AO7LLP	A-Z	A_Z (fall)	0.005 + 0.264*Tr + 1.219*C	0.027 + 0.299*Tr + 2.920*C	0.006 + 0.281*Tr + 1.834*C
AO7LLP	A-Z	A_Z (rise)	0.012 + 0.216*Tr + 1.554*C	0.035 + 0.228*Tr + 3.340*C	0.017 + 0.225*Tr + 2.292*C
AO7LLP	B-Z	B_Z (fall)	-0.002 + 0.251*Tr + 1.249*C	0.009 + 0.286*Tr + 2.974*C	-0.005 + 0.268*Tr + 1.877*C
AO7LLP	B-Z	B_Z (rise)	0.003 + 0.277*Tr + 1.599*C	0.012 + 0.284*Tr + 3.397*C	0.002 + 0.281*Tr + 2.355*C
AO7LLP	C-Z	C_Z (fall)	-0.003 + 0.230*Tr + 1.011*C	0.043 + 0.250*Tr + 2.905*C	0.016 + 0.235*Tr + 1.801*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7LLP	C-Z	C_Z (rise)	0.008 + 0.308*Tr + 1.509*C	0.028 + 0.329*Tr + 3.090*C	0.012 + 0.320*Tr + 2.175*C
AO7LLX4	A-Z	A_Z (fall)	0.008 + 0.252*Tr + 0.586*C	0.031 + 0.289*Tr + 1.393*C	0.011 + 0.269*Tr + 0.879*C
AO7LLX4	A-Z	A_Z (rise)	0.015 + 0.213*Tr + 0.777*C	0.041 + 0.225*Tr + 1.670*C	0.022 + 0.222*Tr + 1.145*C
AO7LLX4	B-Z	B_Z (fall)	0.001 + 0.238*Tr + 0.601*C	0.014 + 0.275*Tr + 1.420*C	0.000 + 0.255*Tr + 0.901*C
AO7LLX4	B-Z	B_Z (rise)	0.006 + 0.272*Tr + 0.798*C	0.018 + 0.280*Tr + 1.697*C	0.007 + 0.276*Tr + 1.176*C
AO7LLX4	C-Z	C_Z (fall)	0.002 + 0.216*Tr + 0.487*C	0.044 + 0.242*Tr + 1.383*C	0.019 + 0.226*Tr + 0.862*C
AO7LLX4	C-Z	C_Z (rise)	0.011 + 0.303*Tr + 0.752*C	0.034 + 0.325*Tr + 1.543*C	0.018 + 0.316*Tr + 1.086*C
AO7LLX6	A-Z	A_Z (fall)	0.007 + 0.254*Tr + 0.409*C	0.031 + 0.289*Tr + 0.978*C	0.010 + 0.270*Tr + 0.615*C
AO7LLX6	A-Z	A_Z (rise)	0.014 + 0.209*Tr + 0.520*C	0.038 + 0.220*Tr + 1.118*C	0.020 + 0.217*Tr + 0.768*C
AO7LLX6	B-Z	B_Z (fall)	0.000 + 0.239*Tr + 0.419*C	0.012 + 0.274*Tr + 0.997*C	-0.002 + 0.256*Tr + 0.630*C
AO7LLX6	B-Z	B_Z (rise)	0.004 + 0.267*Tr + 0.536*C	0.015 + 0.273*Tr + 1.138*C	0.004 + 0.270*Tr + 0.789*C
AO7LLX6	C-Z	C_Z (fall)	0.000 + 0.218*Tr + 0.339*C	0.045 + 0.243*Tr + 0.971*C	0.019 + 0.227*Tr + 0.603*C
AO7LLX6	C-Z	C_Z (rise)	0.009 + 0.296*Tr + 0.499*C	0.029 + 0.316*Tr + 1.013*C	0.014 + 0.307*Tr + 0.716*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7LLX8	A-Z	A_Z (fall)	0.008 + 0.253*Tr + 0.307*C	0.032 + 0.289*Tr + 0.734*C	0.011 + 0.269*Tr + 0.461*C
AO7LLX8	A-Z	A_Z (rise)	0.014 + 0.208*Tr + 0.390*C	0.039 + 0.219*Tr + 0.840*C	0.021 + 0.217*Tr + 0.576*C
AO7LLX8	B-Z	B_Z (fall)	0.001 + 0.237*Tr + 0.315*C	0.013 + 0.274*Tr + 0.748*C	0.000 + 0.254*Tr + 0.473*C
AO7LLX8	B-Z	B_Z (rise)	0.005 + 0.266*Tr + 0.402*C	0.015 + 0.273*Tr + 0.855*C	0.005 + 0.269*Tr + 0.592*C
AO7LLX8	C-Z	C_Z (fall)	0.001 + 0.216*Tr + 0.255*C	0.046 + 0.242*Tr + 0.729*C	0.020 + 0.226*Tr + 0.452*C
AO7LLX8	C-Z	C_Z (rise)	0.010 + 0.296*Tr + 0.376*C	0.030 + 0.317*Tr + 0.765*C	0.015 + 0.308*Tr + 0.540*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO7LL	2595.070	52840.500
AO7LLP	4461.300	96834.500
AO7LLX4	9135.570	197922.000
AO7LLX6	13360.300	289992.000
AO7LLX8	17822.800	386847.000

Internal Energy at minimum output load

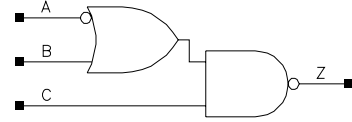
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO7LL	Z(max)	0.009 + 0.009*Tr
AO7LLP	Z(max)	0.017 + 0.018*Tr
AO7LLX4	Z(max)	0.034 + 0.037*Tr
AO7LLX6	Z(max)	0.037 + 0.073*Tr
AO7LLX8	Z(max)	0.049 + 0.097*Tr

AO7ALL
AO7ALLP
AO7ALLX4
AO7ALLX6
AO7ALLX8

Function: Function = 2 Input OR into 2 Input NAND, A Input Inverted

Boolean Expression: $Z = !((A' + B) \bullet C)$



Physical Dimensions

Property	AO7ALL	AO7ALLP	AO7ALLX4	AO7ALLX6	AO7ALLX8
Area(um2)	12.103	12.103	20.172	28.241	36.310

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7ALL	B Input Cap.	0.0027	0.0025	0.0026
AO7ALL	C Input Cap.	0.0023	0.0021	0.0022
AO7ALL	A Input Cap.	0.0014	0.0011	0.0012
AO7ALL	Z Max Load	0.160	0.160	0.160
AO7ALLP	A Input Cap.	0.0020	0.0017	0.0018
AO7ALLP	Z Max Load	0.320	0.320	0.320
AO7ALLP	B Input Cap.	0.0050	0.0046	0.0048
AO7ALLP	C Input Cap.	0.0042	0.0039	0.0040
AO7ALLX4	C Input Cap.	0.0086	0.0079	0.0082
AO7ALLX4	A Input Cap.	0.0037	0.0032	0.0033
AO7ALLX4	Z Max Load	0.640	0.640	0.640
AO7ALLX4	B Input Cap.	0.0095	0.0088	0.0091
AO7ALLX6	B Input Cap.	0.0140	0.0129	0.0133
AO7ALLX6	Z Max Load	0.960	0.960	0.960
AO7ALLX6	C Input Cap.	0.0117	0.0109	0.0113
AO7ALLX6	A Input Cap.	0.0052	0.0045	0.0047
AO7ALLX8	A Input Cap.	0.0065	0.0057	0.0059
AO7ALLX8	Z Max Load	1.280	1.280	1.280

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7ALLX8	B Input Cap.	0.0198	0.0184	0.0190
AO7ALLX8	C Input Cap.	0.0170	0.0158	0.0164

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7ALL	A-Z	A_Z (fall)	0.082 + 0.286*Tr + 2.127*C	0.191 + 0.300*Tr + 5.520*C	0.123 + 0.292*Tr + 3.231*C
AO7ALL	A-Z	A_Z (rise)	0.064 + 0.173*Tr + 3.038*C	0.153 + 0.221*Tr + 6.639*C	0.096 + 0.192*Tr + 4.462*C
AO7ALL	B-Z	B_Z (fall)	0.001 + 0.247*Tr + 2.414*C	0.016 + 0.287*Tr + 5.929*C	0.000 + 0.266*Tr + 3.678*C
AO7ALL	B-Z	B_Z (rise)	0.008 + 0.287*Tr + 3.234*C	0.021 + 0.296*Tr + 6.979*C	0.009 + 0.292*Tr + 4.799*C
AO7ALL	C-Z	C_Z (fall)	0.000 + 0.226*Tr + 1.949*C	0.052 + 0.247*Tr + 5.834*C	0.023 + 0.230*Tr + 3.557*C
AO7ALL	C-Z	C_Z (rise)	0.013 + 0.320*Tr + 3.171*C	0.038 + 0.343*Tr + 6.679*C	0.021 + 0.333*Tr + 4.633*C
AO7ALLP	A-Z	A_Z (fall)	0.076 + 0.270*Tr + 1.091*C	0.174 + 0.284*Tr + 2.733*C	0.114 + 0.276*Tr + 1.629*C
AO7ALLP	A-Z	A_Z (rise)	0.061 + 0.186*Tr + 1.477*C	0.141 + 0.229*Tr + 3.178*C	0.090 + 0.203*Tr + 2.150*C
AO7ALLP	B-Z	B_Z (fall)	-0.003 + 0.251*Tr + 1.249*C	0.008 + 0.286*Tr + 2.975*C	-0.006 + 0.268*Tr + 1.877*C
AO7ALLP	B-Z	B_Z (rise)	0.003 + 0.277*Tr + 1.599*C	0.011 + 0.284*Tr + 3.397*C	0.001 + 0.281*Tr + 2.357*C
AO7ALLP	C-Z	C_Z (fall)	-0.003 + 0.230*Tr + 1.011*C	0.046 + 0.247*Tr + 2.914*C	0.020 + 0.233*Tr + 1.809*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7ALLP	C-Z	C_Z (rise)	0.007 + 0.308*Tr + 1.507*C	0.026 + 0.329*Tr + 3.091*C	0.011 + 0.321*Tr + 2.176*C
AO7ALLX4	A-Z	A_Z (fall)	0.071 + 0.253*Tr + 0.544*C	0.159 + 0.266*Tr + 1.365*C	0.104 + 0.258*Tr + 0.813*C
AO7ALLX4	A-Z	A_Z (rise)	0.059 + 0.198*Tr + 0.739*C	0.135 + 0.235*Tr + 1.588*C	0.087 + 0.213*Tr + 1.075*C
AO7ALLX4	B-Z	B_Z (fall)	0.001 + 0.241*Tr + 0.625*C	0.014 + 0.278*Tr + 1.489*C	0.000 + 0.259*Tr + 0.940*C
AO7ALLX4	B-Z	B_Z (rise)	0.005 + 0.270*Tr + 0.800*C	0.015 + 0.278*Tr + 1.701*C	0.006 + 0.274*Tr + 1.179*C
AO7ALLX4	C-Z	C_Z (fall)	0.001 + 0.219*Tr + 0.506*C	0.050 + 0.242*Tr + 1.458*C	0.024 + 0.226*Tr + 0.905*C
AO7ALLX4	C-Z	C_Z (rise)	0.010 + 0.301*Tr + 0.755*C	0.031 + 0.323*Tr + 1.547*C	0.016 + 0.314*Tr + 1.089*C
AO7ALLX6	A-Z	A_Z (fall)	0.068 + 0.246*Tr + 0.363*C	0.154 + 0.259*Tr + 0.910*C	0.101 + 0.251*Tr + 0.542*C
AO7ALLX6	A-Z	A_Z (rise)	0.058 + 0.200*Tr + 0.492*C	0.132 + 0.235*Tr + 1.059*C	0.085 + 0.213*Tr + 0.717*C
AO7ALLX6	B-Z	B_Z (fall)	0.000 + 0.239*Tr + 0.419*C	0.012 + 0.274*Tr + 0.997*C	-0.002 + 0.256*Tr + 0.631*C
AO7ALLX6	B-Z	B_Z (rise)	0.004 + 0.267*Tr + 0.536*C	0.014 + 0.273*Tr + 1.138*C	0.004 + 0.270*Tr + 0.790*C
AO7ALLX6	C-Z	C_Z (fall)	-0.001 + 0.218*Tr + 0.340*C	0.050 + 0.240*Tr + 0.974*C	0.022 + 0.225*Tr + 0.605*C
AO7ALLX6	C-Z	C_Z (rise)	0.009 + 0.296*Tr + 0.499*C	0.028 + 0.316*Tr + 1.013*C	0.013 + 0.307*Tr + 0.717*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7ALLX8	A-Z	A_Z (fall)	0.067 + 0.244*Tr + 0.267*C	0.151 + 0.257*Tr + 0.667*C	0.099 + 0.249*Tr + 0.398*C
AO7ALLX8	A-Z	A_Z (rise)	0.058 + 0.201*Tr + 0.369*C	0.130 + 0.233*Tr + 0.795*C	0.084 + 0.213*Tr + 0.538*C
AO7ALLX8	B-Z	B_Z (fall)	0.001 + 0.236*Tr + 0.310*C	0.013 + 0.272*Tr + 0.734*C	-0.001 + 0.253*Tr + 0.465*C
AO7ALLX8	B-Z	B_Z (rise)	0.005 + 0.267*Tr + 0.402*C	0.015 + 0.274*Tr + 0.854*C	0.005 + 0.271*Tr + 0.592*C
AO7ALLX8	C-Z	C_Z (fall)	0.001 + 0.215*Tr + 0.251*C	0.050 + 0.238*Tr + 0.717*C	0.024 + 0.222*Tr + 0.446*C
AO7ALLX8	C-Z	C_Z (rise)	0.010 + 0.296*Tr + 0.375*C	0.031 + 0.317*Tr + 0.765*C	0.016 + 0.308*Tr + 0.540*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO7ALL	3616.800	68825.000
AO7ALLP	5585.380	117276.000
AO7ALLX4	10543.600	227233.000
AO7ALLX6	15546.700	338002.000
AO7ALLX8	20807.500	454615.000

Internal Energy at minimum output load

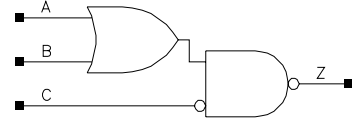
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO7ALL	Z(max)	0.015 + 0.006*Tr
AO7ALLP	Z(max)	0.026 + 0.010*Tr
AO7ALLX4	Z(max)	0.049 + 0.019*Tr
AO7ALLX6	Z(max)	0.073 + 0.028*Tr
AO7ALLX8	Z(max)	0.098 + 0.039*Tr

AO7CLL
AO7CLLP
AO7CLLX4
AO7CLLX6
AO7CLLX8

Function: Function = 2 Input OR into 2 Input NAND, C Input Inverted

Boolean Expression: $Z = !((A + B) \bullet C')$



Physical Dimensions

Property	AO7CLL	AO7CLLP	AO7CLLX4	AO7CLLX6	AO7CLLX8
Area(um ²)	12.103	12.103	20.172	28.241	36.310

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7CLL	C Input Cap.	0.0015	0.0012	0.0013
AO7CLL	A Input Cap.	0.0029	0.0027	0.0028
AO7CLL	B Input Cap.	0.0027	0.0025	0.0026
AO7CLL	Z Max Load	0.160	0.160	0.160
AO7CLLP	A Input Cap.	0.0054	0.0050	0.0052
AO7CLLP	B Input Cap.	0.0049	0.0046	0.0047
AO7CLLP	Z Max Load	0.320	0.320	0.320
AO7CLLP	C Input Cap.	0.0022	0.0018	0.0019
AO7CLLX4	B Input Cap.	0.0095	0.0088	0.0091
AO7CLLX4	Z Max Load	0.640	0.640	0.640
AO7CLLX4	C Input Cap.	0.0040	0.0034	0.0035
AO7CLLX4	A Input Cap.	0.0112	0.0103	0.0107
AO7CLLX6	A Input Cap.	0.0157	0.0144	0.0149
AO7CLLX6	Z Max Load	0.960	0.960	0.960
AO7CLLX6	B Input Cap.	0.0140	0.0129	0.0133
AO7CLLX6	C Input Cap.	0.0054	0.0046	0.0048
AO7CLLX8	C Input Cap.	0.0069	0.0060	0.0062
AO7CLLX8	A Input Cap.	0.0217	0.0199	0.0206

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7CLLX8	B Input Cap.	0.0199	0.0185	0.0191
AO7CLLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7CLL	A-Z	A_Z (fall)	0.007 + 0.259*Tr + 2.367*C	0.032 + 0.298*Tr + 5.848*C	0.010 + 0.277*Tr + 3.610*C
AO7CLL	A-Z	A_Z (rise)	0.016 + 0.225*Tr + 3.160*C	0.042 + 0.238*Tr + 6.895*C	0.023 + 0.234*Tr + 4.693*C
AO7CLL	B-Z	B_Z (fall)	0.001 + 0.248*Tr + 2.414*C	0.015 + 0.287*Tr + 5.927*C	0.000 + 0.267*Tr + 3.677*C
AO7CLL	B-Z	B_Z (rise)	0.008 + 0.287*Tr + 3.233*C	0.021 + 0.295*Tr + 6.980*C	0.009 + 0.292*Tr + 4.797*C
AO7CLL	C-Z	C_Z (fall)	0.064 + 0.272*Tr + 1.614*C	0.169 + 0.277*Tr + 5.504*C	0.106 + 0.272*Tr + 3.213*C
AO7CLL	C-Z	C_Z (rise)	0.057 + 0.166*Tr + 3.001*C	0.142 + 0.212*Tr + 6.415*C	0.089 + 0.185*Tr + 4.357*C
AO7CLLP	A-Z	A_Z (fall)	0.005 + 0.264*Tr + 1.220*C	0.027 + 0.298*Tr + 2.922*C	0.006 + 0.281*Tr + 1.835*C
AO7CLLP	A-Z	A_Z (rise)	0.012 + 0.215*Tr + 1.555*C	0.034 + 0.228*Tr + 3.342*C	0.017 + 0.225*Tr + 2.294*C
AO7CLLP	B-Z	B_Z (fall)	-0.003 + 0.251*Tr + 1.249*C	0.008 + 0.286*Tr + 2.973*C	-0.006 + 0.268*Tr + 1.877*C
AO7CLLP	B-Z	B_Z (rise)	0.003 + 0.277*Tr + 1.599*C	0.011 + 0.284*Tr + 3.397*C	0.001 + 0.281*Tr + 2.355*C
AO7CLLP	C-Z	C_Z (fall)	0.060 + 0.257*Tr + 0.831*C	0.158 + 0.264*Tr + 2.728*C	0.100 + 0.258*Tr + 1.621*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7CLLP	C-Z	C_Z (rise)	0.054 + 0.179*Tr + 1.397*C	0.130 + 0.221*Tr + 2.900*C	0.083 + 0.196*Tr + 1.991*C
AO7CLLX4	A-Z	A_Z (fall)	0.008 + 0.256*Tr + 0.610*C	0.031 + 0.293*Tr + 1.462*C	0.011 + 0.272*Tr + 0.918*C
AO7CLLX4	A-Z	A_Z (rise)	0.014 + 0.211*Tr + 0.778*C	0.038 + 0.223*Tr + 1.672*C	0.020 + 0.220*Tr + 1.148*C
AO7CLLX4	B-Z	B_Z (fall)	0.001 + 0.241*Tr + 0.625*C	0.014 + 0.278*Tr + 1.490*C	0.000 + 0.259*Tr + 0.940*C
AO7CLLX4	B-Z	B_Z (rise)	0.005 + 0.270*Tr + 0.800*C	0.016 + 0.277*Tr + 1.701*C	0.006 + 0.274*Tr + 1.179*C
AO7CLLX4	C-Z	C_Z (fall)	0.058 + 0.243*Tr + 0.416*C	0.151 + 0.251*Tr + 1.364*C	0.097 + 0.245*Tr + 0.811*C
AO7CLLX4	C-Z	C_Z (rise)	0.054 + 0.194*Tr + 0.698*C	0.128 + 0.232*Tr + 1.450*C	0.083 + 0.209*Tr + 0.996*C
AO7CLLX6	A-Z	A_Z (fall)	0.007 + 0.254*Tr + 0.409*C	0.031 + 0.289*Tr + 0.978*C	0.010 + 0.270*Tr + 0.615*C
AO7CLLX6	A-Z	A_Z (rise)	0.014 + 0.209*Tr + 0.520*C	0.038 + 0.220*Tr + 1.118*C	0.020 + 0.217*Tr + 0.768*C
AO7CLLX6	B-Z	B_Z (fall)	0.000 + 0.239*Tr + 0.419*C	0.012 + 0.274*Tr + 0.997*C	-0.002 + 0.256*Tr + 0.631*C
AO7CLLX6	B-Z	B_Z (rise)	0.004 + 0.267*Tr + 0.536*C	0.015 + 0.273*Tr + 1.139*C	0.004 + 0.270*Tr + 0.790*C
AO7CLLX6	C-Z	C_Z (fall)	0.055 + 0.235*Tr + 0.277*C	0.144 + 0.243*Tr + 0.909*C	0.092 + 0.236*Tr + 0.540*C
AO7CLLX6	C-Z	C_Z (rise)	0.052 + 0.194*Tr + 0.458*C	0.121 + 0.229*Tr + 0.943*C	0.078 + 0.208*Tr + 0.650*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7CLLX8	A-Z	A_Z (fall)	0.007 + 0.251*Tr + 0.299*C	0.031 + 0.287*Tr + 0.713*C	0.011 + 0.267*Tr + 0.450*C
AO7CLLX8	A-Z	A_Z (rise)	0.014 + 0.210*Tr + 0.390*C	0.039 + 0.221*Tr + 0.839*C	0.021 + 0.218*Tr + 0.575*C
AO7CLLX8	B-Z	B_Z (fall)	0.000 + 0.235*Tr + 0.307*C	0.012 + 0.272*Tr + 0.728*C	-0.001 + 0.252*Tr + 0.461*C
AO7CLLX8	B-Z	B_Z (rise)	0.005 + 0.267*Tr + 0.402*C	0.016 + 0.274*Tr + 0.853*C	0.006 + 0.271*Tr + 0.592*C
AO7CLLX8	C-Z	C_Z (fall)	0.056 + 0.236*Tr + 0.202*C	0.146 + 0.244*Tr + 0.660*C	0.094 + 0.237*Tr + 0.393*C
AO7CLLX8	C-Z	C_Z (rise)	0.054 + 0.198*Tr + 0.346*C	0.124 + 0.232*Tr + 0.712*C	0.081 + 0.211*Tr + 0.491*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO7CLL	4129.230	74763.300
AO7CLLP	6084.820	123604.000
AO7CLLX4	11144.800	234212.000
AO7CLLX6	16299.200	345660.000
AO7CLLX8	21771.700	463393.000

Internal Energy at minimum output load

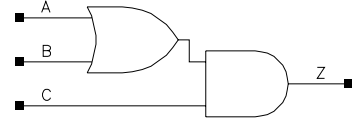
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO7CLL	Z(max)	0.015 + 0.005*Tr
AO7CLLP	Z(max)	0.026 + 0.009*Tr
AO7CLLX4	Z(max)	0.052 + 0.018*Tr
AO7CLLX6	Z(max)	0.076 + 0.027*Tr
AO7CLLX8	Z(max)	0.105 + 0.036*Tr

AO7NLL
AO7NLLP
AO7NLLX4
AO7NLLX6
AO7NLLX8

Function: Function = 2 Input OR into 2 Input AND

Boolean Expression: $Z = (A + B) \bullet C$



Physical Dimensions

Property	AO7NLL	AO7NLLP	AO7NLLX4	AO7NLLX6	AO7NLLX8
Area(um2)	10.086	12.103	16.138	24.206	28.241

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7NLL	Z Max Load	0.160	0.160	0.160
AO7NLL	A Input Cap.	0.0022	0.0019	0.0020
AO7NLL	B Input Cap.	0.0020	0.0017	0.0018
AO7NLL	C Input Cap.	0.0019	0.0015	0.0016
AO7NLLP	Z Max Load	0.320	0.320	0.320
AO7NLLP	A Input Cap.	0.0033	0.0029	0.0030
AO7NLLP	B Input Cap.	0.0032	0.0028	0.0029
AO7NLLP	C Input Cap.	0.0028	0.0023	0.0024
AO7NLLX4	C Input Cap.	0.0048	0.0041	0.0043
AO7NLLX4	Z Max Load	0.640	0.640	0.640
AO7NLLX4	A Input Cap.	0.0058	0.0051	0.0053
AO7NLLX4	B Input Cap.	0.0058	0.0050	0.0052
AO7NLLX6	Z Max Load	0.960	0.960	0.960
AO7NLLX6	B Input Cap.	0.0086	0.0073	0.0077
AO7NLLX6	C Input Cap.	0.0076	0.0066	0.0068
AO7NLLX6	A Input Cap.	0.0092	0.0080	0.0084
AO7NLLX8	B Input Cap.	0.0114	0.0098	0.0102
AO7NLLX8	C Input Cap.	0.0095	0.0082	0.0085

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7NLLX8	Z Max Load	1.280	1.280	1.280
AO7NLLX8	A Input Cap.	0.0125	0.0110	0.0114

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7NLL	A-Z	A_Z (fall)	0.072 + 0.219*Tr + 1.246*C	0.171 + 0.227*Tr + 2.715*C	0.110 + 0.223*Tr + 1.746*C
AO7NLL	A-Z	A_Z (rise)	0.062 + 0.217*Tr + 1.627*C	0.160 + 0.264*Tr + 3.450*C	0.096 + 0.234*Tr + 2.344*C
AO7NLL	B-Z	B_Z (fall)	0.070 + 0.261*Tr + 1.238*C	0.157 + 0.269*Tr + 2.698*C	0.104 + 0.262*Tr + 1.732*C
AO7NLL	B-Z	B_Z (rise)	0.055 + 0.191*Tr + 1.626*C	0.138 + 0.238*Tr + 3.431*C	0.084 + 0.210*Tr + 2.338*C
AO7NLL	C-Z	C_Z (fall)	0.076 + 0.295*Tr + 1.228*C	0.187 + 0.326*Tr + 2.821*C	0.122 + 0.312*Tr + 1.806*C
AO7NLL	C-Z	C_Z (rise)	0.053 + 0.165*Tr + 1.630*C	0.173 + 0.215*Tr + 3.461*C	0.102 + 0.192*Tr + 2.353*C
AO7NLLP	A-Z	A_Z (fall)	0.069 + 0.212*Tr + 0.637*C	0.161 + 0.223*Tr + 1.340*C	0.104 + 0.217*Tr + 0.878*C
AO7NLLP	A-Z	A_Z (rise)	0.060 + 0.224*Tr + 0.799*C	0.150 + 0.267*Tr + 1.670*C	0.092 + 0.239*Tr + 1.141*C
AO7NLLP	B-Z	B_Z (fall)	0.068 + 0.252*Tr + 0.633*C	0.151 + 0.262*Tr + 1.332*C	0.101 + 0.255*Tr + 0.871*C
AO7NLLP	B-Z	B_Z (rise)	0.054 + 0.202*Tr + 0.798*C	0.133 + 0.246*Tr + 1.662*C	0.082 + 0.219*Tr + 1.139*C
AO7NLLP	C-Z	C_Z (fall)	0.073 + 0.287*Tr + 0.628*C	0.174 + 0.319*Tr + 1.386*C	0.115 + 0.304*Tr + 0.905*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7NLLP	C-Z	C_Z (rise)	0.052 + 0.176*Tr + 0.799*C	0.163 + 0.223*Tr + 1.676*C	0.098 + 0.202*Tr + 1.145*C
AO7NLLX4	A-Z	A_Z (fall)	0.065 + 0.202*Tr + 0.318*C	0.153 + 0.212*Tr + 0.668*C	0.099 + 0.207*Tr + 0.438*C
AO7NLLX4	A-Z	A_Z (rise)	0.059 + 0.230*Tr + 0.400*C	0.145 + 0.270*Tr + 0.835*C	0.089 + 0.244*Tr + 0.571*C
AO7NLLX4	B-Z	B_Z (fall)	0.064 + 0.241*Tr + 0.316*C	0.142 + 0.250*Tr + 0.663*C	0.094 + 0.243*Tr + 0.434*C
AO7NLLX4	B-Z	B_Z (rise)	0.052 + 0.207*Tr + 0.399*C	0.126 + 0.248*Tr + 0.831*C	0.078 + 0.223*Tr + 0.569*C
AO7NLLX4	C-Z	C_Z (fall)	0.068 + 0.276*Tr + 0.312*C	0.161 + 0.308*Tr + 0.691*C	0.107 + 0.293*Tr + 0.451*C
AO7NLLX4	C-Z	C_Z (rise)	0.050 + 0.181*Tr + 0.400*C	0.155 + 0.226*Tr + 0.837*C	0.093 + 0.206*Tr + 0.572*C
AO7NLLX6	A-Z	A_Z (fall)	0.065 + 0.205*Tr + 0.213*C	0.152 + 0.215*Tr + 0.447*C	0.099 + 0.210*Tr + 0.293*C
AO7NLLX6	A-Z	A_Z (rise)	0.058 + 0.227*Tr + 0.267*C	0.144 + 0.267*Tr + 0.558*C	0.088 + 0.241*Tr + 0.381*C
AO7NLLX6	B-Z	B_Z (fall)	0.064 + 0.244*Tr + 0.211*C	0.142 + 0.253*Tr + 0.444*C	0.094 + 0.246*Tr + 0.291*C
AO7NLLX6	B-Z	B_Z (rise)	0.052 + 0.205*Tr + 0.267*C	0.126 + 0.245*Tr + 0.555*C	0.078 + 0.220*Tr + 0.380*C
AO7NLLX6	C-Z	C_Z (fall)	0.067 + 0.273*Tr + 0.209*C	0.155 + 0.302*Tr + 0.461*C	0.103 + 0.288*Tr + 0.301*C
AO7NLLX6	C-Z	C_Z (rise)	0.049 + 0.180*Tr + 0.267*C	0.153 + 0.226*Tr + 0.559*C	0.092 + 0.205*Tr + 0.382*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO7NLLX8	A-Z	A_Z (fall)	0.064 + 0.204*Tr + 0.160*C	0.150 + 0.213*Tr + 0.336*C	0.097 + 0.208*Tr + 0.220*C
AO7NLLX8	A-Z	A_Z (rise)	0.056 + 0.224*Tr + 0.200*C	0.138 + 0.263*Tr + 0.417*C	0.085 + 0.237*Tr + 0.285*C
AO7NLLX8	B-Z	B_Z (fall)	0.063 + 0.243*Tr + 0.158*C	0.140 + 0.251*Tr + 0.333*C	0.093 + 0.245*Tr + 0.218*C
AO7NLLX8	B-Z	B_Z (rise)	0.050 + 0.201*Tr + 0.200*C	0.120 + 0.241*Tr + 0.416*C	0.075 + 0.216*Tr + 0.285*C
AO7NLLX8	C-Z	C_Z (fall)	0.067 + 0.277*Tr + 0.157*C	0.157 + 0.309*Tr + 0.347*C	0.104 + 0.294*Tr + 0.226*C
AO7NLLX8	C-Z	C_Z (rise)	0.048 + 0.175*Tr + 0.200*C	0.146 + 0.220*Tr + 0.419*C	0.088 + 0.200*Tr + 0.287*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO7NLL	3726.600	72890.500
AO7NLLP	5704.470	120167.000
AO7NLLX4	10632.600	230442.000
AO7NLLX6	16245.700	348648.000
AO7NLLX8	21478.000	465138.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO7NLL	Z(max)	0.016 + 0.008*Tr
AO7NLLP	Z(max)	0.027 + 0.014*Tr
AO7NLLX4	Z(max)	0.049 + 0.029*Tr
AO7NLLX6	Z(max)	0.075 + 0.045*Tr
AO7NLLX8	Z(max)	0.098 + 0.061*Tr

<p>AO8LL AO8LLP AO8LLX4 AO8LLX6 AO8LLX8</p> <p>Function: Function = 2 wide 3-1 AND-OR-INVERT</p> <p>Boolean Expression: $Z = \overline{(A \bullet B \bullet C + D)}$</p>	
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Physical Dimensions

Property	AO8LL	AO8LLP	AO8LLX4	AO8LLX6	AO8LLX8
Area(um ²)	10.086	14.120	24.206	34.292	44.378

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8LL	B Input Cap.	0.0031	0.0028	0.0029
AO8LL	C Input Cap.	0.0029	0.0027	0.0028
AO8LL	A Input Cap.	0.0031	0.0028	0.0029
AO8LL	Z Max Load	0.160	0.160	0.160
AO8LL	D Input Cap.	0.0028	0.0026	0.0027
AO8LLP	A Input Cap.	0.0057	0.0053	0.0054
AO8LLP	Z Max Load	0.320	0.320	0.320
AO8LLP	D Input Cap.	0.0047	0.0043	0.0045
AO8LLP	B Input Cap.	0.0057	0.0053	0.0054
AO8LLP	C Input Cap.	0.0053	0.0049	0.0050
AO8LLX4	C Input Cap.	0.0101	0.0094	0.0097
AO8LLX4	A Input Cap.	0.0113	0.0104	0.0108
AO8LLX4	Z Max Load	0.640	0.640	0.640
AO8LLX4	D Input Cap.	0.0092	0.0085	0.0088
AO8LLX4	B Input Cap.	0.0112	0.0103	0.0106
AO8LLX6	D Input Cap.	0.0138	0.0127	0.0131
AO8LLX6	B Input Cap.	0.0174	0.0160	0.0166
AO8LLX6	Z Max Load	0.960	0.960	0.960

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8LLX6	C Input Cap.	0.0164	0.0152	0.0157
AO8LLX6	A Input Cap.	0.0174	0.0162	0.0167
AO8LLX8	A Input Cap.	0.0226	0.0209	0.0216
AO8LLX8	Z Max Load	1.280	1.280	1.280
AO8LLX8	D Input Cap.	0.0182	0.0168	0.0173
AO8LLX8	B Input Cap.	0.0227	0.0209	0.0216
AO8LLX8	C Input Cap.	0.0214	0.0199	0.0205

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8LL	A-Z	A_Z (fall)	0.013 + 0.219*Tr + 2.419*C	0.051 + 0.249*Tr + 6.403*C	0.021 + 0.236*Tr + 3.798*C
AO8LL	A-Z	A_Z (rise)	0.019 + 0.300*Tr + 3.183*C	0.046 + 0.310*Tr + 6.872*C	0.026 + 0.305*Tr + 4.715*C
AO8LL	B-Z	B_Z (fall)	0.019 + 0.180*Tr + 2.359*C	0.064 + 0.210*Tr + 6.357*C	0.030 + 0.199*Tr + 3.721*C
AO8LL	B-Z	B_Z (rise)	0.024 + 0.306*Tr + 3.163*C	0.058 + 0.316*Tr + 6.836*C	0.034 + 0.311*Tr + 4.684*C
AO8LL	C-Z	C_Z (fall)	0.007 + 0.244*Tr + 2.477*C	0.035 + 0.278*Tr + 6.454*C	0.011 + 0.260*Tr + 3.873*C
AO8LL	C-Z	C_Z (rise)	0.012 + 0.293*Tr + 3.212*C	0.032 + 0.303*Tr + 6.922*C	0.017 + 0.299*Tr + 4.758*C
AO8LL	D-Z	D_Z (fall)	0.014 + 0.278*Tr + 2.222*C	0.058 + 0.336*Tr + 4.795*C	0.028 + 0.308*Tr + 3.157*C
AO8LL	D-Z	D_Z (rise)	0.019 + 0.253*Tr + 2.354*C	0.096 + 0.249*Tr + 6.824*C	0.057 + 0.242*Tr + 4.643*C
AO8LLP	A-Z	A_Z (fall)	0.010 + 0.220*Tr + 1.256*C	0.043 + 0.247*Tr + 3.206*C	0.016 + 0.235*Tr + 1.939*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8LLP	A-Z	A_Z (rise)	0.013 + 0.291*Tr + 1.569*C	0.037 + 0.300*Tr + 3.334*C	0.018 + 0.296*Tr + 2.306*C
AO8LLP	B-Z	B_Z (fall)	0.016 + 0.181*Tr + 1.223*C	0.057 + 0.209*Tr + 3.174*C	0.025 + 0.199*Tr + 1.896*C
AO8LLP	B-Z	B_Z (rise)	0.019 + 0.298*Tr + 1.555*C	0.048 + 0.307*Tr + 3.312*C	0.026 + 0.303*Tr + 2.287*C
AO8LLP	C-Z	C_Z (fall)	0.003 + 0.245*Tr + 1.286*C	0.026 + 0.276*Tr + 3.234*C	0.005 + 0.260*Tr + 1.979*C
AO8LLP	C-Z	C_Z (rise)	0.007 + 0.283*Tr + 1.586*C	0.022 + 0.292*Tr + 3.366*C	0.008 + 0.289*Tr + 2.333*C
AO8LLP	D-Z	D_Z (fall)	0.011 + 0.287*Tr + 1.177*C	0.053 + 0.340*Tr + 2.429*C	0.025 + 0.315*Tr + 1.637*C
AO8LLP	D-Z	D_Z (rise)	0.013 + 0.241*Tr + 1.171*C	0.084 + 0.238*Tr + 3.300*C	0.048 + 0.231*Tr + 2.265*C
AO8LLX4	A-Z	A_Z (fall)	0.013 + 0.213*Tr + 0.629*C	0.048 + 0.242*Tr + 1.606*C	0.021 + 0.229*Tr + 0.972*C
AO8LLX4	A-Z	A_Z (rise)	0.016 + 0.285*Tr + 0.784*C	0.041 + 0.296*Tr + 1.667*C	0.023 + 0.290*Tr + 1.153*C
AO8LLX4	B-Z	B_Z (fall)	0.018 + 0.177*Tr + 0.612*C	0.060 + 0.205*Tr + 1.589*C	0.028 + 0.194*Tr + 0.949*C
AO8LLX4	B-Z	B_Z (rise)	0.021 + 0.293*Tr + 0.778*C	0.052 + 0.304*Tr + 1.656*C	0.030 + 0.298*Tr + 1.143*C
AO8LLX4	C-Z	C_Z (fall)	0.006 + 0.236*Tr + 0.644*C	0.029 + 0.269*Tr + 1.621*C	0.009 + 0.251*Tr + 0.991*C
AO8LLX4	C-Z	C_Z (rise)	0.009 + 0.277*Tr + 0.794*C	0.025 + 0.287*Tr + 1.685*C	0.012 + 0.282*Tr + 1.167*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8LLX4	D-Z	D_Z (fall)	0.016 + 0.281*Tr + 0.601*C	0.058 + 0.333*Tr + 1.196*C	0.030 + 0.307*Tr + 0.820*C
AO8LLX4	D-Z	D_Z (rise)	0.017 + 0.232*Tr + 0.587*C	0.090 + 0.235*Tr + 1.651*C	0.053 + 0.227*Tr + 1.133*C
AO8LLX6	A-Z	A_Z (fall)	0.012 + 0.211*Tr + 0.421*C	0.046 + 0.239*Tr + 1.073*C	0.019 + 0.226*Tr + 0.650*C
AO8LLX6	A-Z	A_Z (rise)	0.015 + 0.283*Tr + 0.525*C	0.040 + 0.292*Tr + 1.115*C	0.021 + 0.287*Tr + 0.772*C
AO8LLX6	B-Z	B_Z (fall)	0.017 + 0.175*Tr + 0.409*C	0.059 + 0.203*Tr + 1.061*C	0.027 + 0.192*Tr + 0.634*C
AO8LLX6	B-Z	B_Z (rise)	0.020 + 0.291*Tr + 0.520*C	0.051 + 0.300*Tr + 1.107*C	0.029 + 0.295*Tr + 0.765*C
AO8LLX6	C-Z	C_Z (fall)	0.005 + 0.234*Tr + 0.431*C	0.029 + 0.266*Tr + 1.083*C	0.008 + 0.249*Tr + 0.664*C
AO8LLX6	C-Z	C_Z (rise)	0.009 + 0.274*Tr + 0.531*C	0.025 + 0.282*Tr + 1.127*C	0.011 + 0.279*Tr + 0.781*C
AO8LLX6	D-Z	D_Z (fall)	0.014 + 0.280*Tr + 0.404*C	0.058 + 0.333*Tr + 0.819*C	0.029 + 0.308*Tr + 0.557*C
AO8LLX6	D-Z	D_Z (rise)	0.015 + 0.230*Tr + 0.393*C	0.087 + 0.231*Tr + 1.103*C	0.051 + 0.224*Tr + 0.758*C
AO8LLX8	A-Z	A_Z (fall)	0.013 + 0.210*Tr + 0.316*C	0.047 + 0.238*Tr + 0.805*C	0.020 + 0.225*Tr + 0.488*C
AO8LLX8	A-Z	A_Z (rise)	0.016 + 0.282*Tr + 0.394*C	0.040 + 0.292*Tr + 0.836*C	0.022 + 0.287*Tr + 0.579*C
AO8LLX8	B-Z	B_Z (fall)	0.018 + 0.174*Tr + 0.307*C	0.060 + 0.202*Tr + 0.797*C	0.028 + 0.191*Tr + 0.476*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8LLX8	B-Z	B_Z (rise)	0.021 + 0.291*Tr + 0.390*C	0.052 + 0.300*Tr + 0.831*C	0.030 + 0.295*Tr + 0.574*C
AO8LLX8	C-Z	C_Z (fall)	0.006 + 0.233*Tr + 0.324*C	0.030 + 0.265*Tr + 0.814*C	0.009 + 0.248*Tr + 0.498*C
AO8LLX8	C-Z	C_Z (rise)	0.009 + 0.273*Tr + 0.399*C	0.026 + 0.282*Tr + 0.846*C	0.012 + 0.278*Tr + 0.587*C
AO8LLX8	D-Z	D_Z (fall)	0.015 + 0.278*Tr + 0.302*C	0.057 + 0.330*Tr + 0.601*C	0.030 + 0.304*Tr + 0.412*C
AO8LLX8	D-Z	D_Z (rise)	0.016 + 0.229*Tr + 0.295*C	0.088 + 0.232*Tr + 0.827*C	0.052 + 0.225*Tr + 0.568*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO8LL	3427.770	71969.600
AO8LLP	5894.040	132396.000
AO8LLX4	11303.600	258149.000
AO8LLX6	17173.300	390186.000
AO8LLX8	22607.000	516295.000

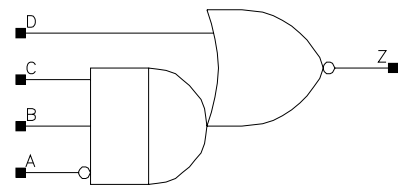
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO8LL	Z(max)	0.015 + 0.009*Tr
AO8LLP	Z(max)	0.027 + 0.017*Tr
AO8LLX4	Z(max)	0.057 + 0.033*Tr
AO8LLX6	Z(max)	0.083 + 0.052*Tr
AO8LLX8	Z(max)	0.111 + 0.069*Tr

AO8ALL
AO8ALLP
AO8ALLX4
AO8ALLX6
AO8ALLX8

Function: Function = BOOLEAN function with 4 inputs and 1 output



Truth Table

A	B	C	D	Z
-	-	-	1	0
0	1	1	-	0
1	-	-	0	1
-	0	-	0	1
-	-	0	0	1

Physical Dimensions

Property	AO8ALL	AO8ALLP	AO8ALLX4	AO8ALLX6	AO8ALLX8
Area(um ²)	14.120	16.138	28.241	38.327	50.430

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8ALL	B Input Cap.	0.0030	0.0027	0.0029
AO8ALL	C Input Cap.	0.0029	0.0026	0.0027
AO8ALL	Z Max Load	0.160	0.160	0.160
AO8ALL	A Input Cap.	0.0013	0.0010	0.0011
AO8ALL	D Input Cap.	0.0027	0.0024	0.0026
AO8ALLP	A Input Cap.	0.0020	0.0016	0.0017
AO8ALLP	D Input Cap.	0.0048	0.0045	0.0046
AO8ALLP	B Input Cap.	0.0057	0.0053	0.0055
AO8ALLP	C Input Cap.	0.0053	0.0049	0.0051
AO8ALLP	Z Max Load	0.320	0.320	0.320
AO8ALLX4	D Input Cap.	0.0091	0.0085	0.0088

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8ALLX4	B Input Cap.	0.0112	0.0103	0.0107
AO8ALLX4	C Input Cap.	0.0101	0.0094	0.0097
AO8ALLX4	Z Max Load	0.640	0.640	0.640
AO8ALLX4	A Input Cap.	0.0032	0.0028	0.0029
AO8ALLX6	A Input Cap.	0.0048	0.0041	0.0043
AO8ALLX6	D Input Cap.	0.0136	0.0127	0.0131
AO8ALLX6	Z Max Load	0.960	0.960	0.960
AO8ALLX6	B Input Cap.	0.0174	0.0160	0.0166
AO8ALLX6	C Input Cap.	0.0164	0.0152	0.0157
AO8ALLX8	C Input Cap.	0.0214	0.0198	0.0204
AO8ALLX8	Z Max Load	1.280	1.280	1.280
AO8ALLX8	A Input Cap.	0.0063	0.0055	0.0057
AO8ALLX8	D Input Cap.	0.0179	0.0167	0.0173
AO8ALLX8	B Input Cap.	0.0227	0.0210	0.0217

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8ALL	A-Z	A_Z (fall)	0.082 + 0.285*Tr + 2.219*C	0.197 + 0.296*Tr + 6.141*C	0.125 + 0.290*Tr + 3.488*C
AO8ALL	A-Z	A_Z (rise)	0.068 + 0.176*Tr + 3.027*C	0.163 + 0.225*Tr + 6.609*C	0.103 + 0.196*Tr + 4.448*C
AO8ALL	B-Z	B_Z (fall)	0.020 + 0.179*Tr + 2.361*C	0.066 + 0.209*Tr + 6.358*C	0.031 + 0.198*Tr + 3.722*C
AO8ALL	B-Z	B_Z (rise)	0.023 + 0.307*Tr + 3.163*C	0.057 + 0.317*Tr + 6.837*C	0.033 + 0.312*Tr + 4.684*C
AO8ALL	C-Z	C_Z (fall)	0.007 + 0.244*Tr + 2.476*C	0.034 + 0.279*Tr + 6.453*C	0.011 + 0.261*Tr + 3.868*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8ALL	C-Z	C_Z (rise)	0.013 + 0.293*Tr + 3.212*C	0.033 + 0.304*Tr + 6.920*C	0.017 + 0.299*Tr + 4.757*C
AO8ALL	D-Z	D_Z (fall)	0.011 + 0.272*Tr + 2.090*C	0.051 + 0.330*Tr + 4.464*C	0.024 + 0.302*Tr + 2.964*C
AO8ALL	D-Z	D_Z (rise)	0.015 + 0.256*Tr + 2.349*C	0.094 + 0.249*Tr + 6.830*C	0.056 + 0.243*Tr + 4.647*C
AO8ALLP	A-Z	A_Z (fall)	0.077 + 0.270*Tr + 1.146*C	0.179 + 0.281*Tr + 3.050*C	0.116 + 0.274*Tr + 1.767*C
AO8ALLP	A-Z	A_Z (rise)	0.064 + 0.189*Tr + 1.470*C	0.148 + 0.232*Tr + 3.163*C	0.095 + 0.206*Tr + 2.141*C
AO8ALLP	B-Z	B_Z (fall)	0.017 + 0.180*Tr + 1.226*C	0.060 + 0.207*Tr + 3.179*C	0.027 + 0.197*Tr + 1.899*C
AO8ALLP	B-Z	B_Z (rise)	0.018 + 0.298*Tr + 1.557*C	0.047 + 0.308*Tr + 3.313*C	0.026 + 0.303*Tr + 2.289*C
AO8ALLP	C-Z	C_Z (fall)	0.003 + 0.246*Tr + 1.285*C	0.025 + 0.276*Tr + 3.235*C	0.004 + 0.261*Tr + 1.977*C
AO8ALLP	C-Z	C_Z (rise)	0.007 + 0.283*Tr + 1.586*C	0.022 + 0.292*Tr + 3.366*C	0.008 + 0.289*Tr + 2.333*C
AO8ALLP	D-Z	D_Z (fall)	0.011 + 0.287*Tr + 1.178*C	0.052 + 0.340*Tr + 2.430*C	0.024 + 0.315*Tr + 1.638*C
AO8ALLP	D-Z	D_Z (rise)	0.010 + 0.242*Tr + 1.171*C	0.082 + 0.238*Tr + 3.304*C	0.047 + 0.231*Tr + 2.268*C
AO8ALLX4	A-Z	A_Z (fall)	0.072 + 0.254*Tr + 0.573*C	0.167 + 0.266*Tr + 1.525*C	0.108 + 0.259*Tr + 0.883*C
AO8ALLX4	A-Z	A_Z (rise)	0.062 + 0.200*Tr + 0.735*C	0.141 + 0.238*Tr + 1.581*C	0.091 + 0.215*Tr + 1.070*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8ALLX4	B-Z	B_Z (fall)	0.019 + 0.175*Tr + 0.613*C	0.063 + 0.203*Tr + 1.590*C	0.030 + 0.192*Tr + 0.950*C
AO8ALLX4	B-Z	B_Z (rise)	0.020 + 0.293*Tr + 0.779*C	0.050 + 0.304*Tr + 1.657*C	0.029 + 0.298*Tr + 1.145*C
AO8ALLX4	C-Z	C_Z (fall)	0.006 + 0.237*Tr + 0.644*C	0.028 + 0.270*Tr + 1.620*C	0.009 + 0.252*Tr + 0.991*C
AO8ALLX4	C-Z	C_Z (rise)	0.009 + 0.276*Tr + 0.794*C	0.025 + 0.286*Tr + 1.685*C	0.012 + 0.282*Tr + 1.168*C
AO8ALLX4	D-Z	D_Z (fall)	0.015 + 0.280*Tr + 0.601*C	0.056 + 0.333*Tr + 1.198*C	0.030 + 0.307*Tr + 0.821*C
AO8ALLX4	D-Z	D_Z (rise)	0.014 + 0.233*Tr + 0.587*C	0.088 + 0.234*Tr + 1.653*C	0.051 + 0.227*Tr + 1.135*C
AO8ALLX6	A-Z	A_Z (fall)	0.073 + 0.251*Tr + 0.382*C	0.168 + 0.263*Tr + 1.017*C	0.109 + 0.256*Tr + 0.589*C
AO8ALLX6	A-Z	A_Z (rise)	0.064 + 0.207*Tr + 0.490*C	0.143 + 0.243*Tr + 1.054*C	0.093 + 0.221*Tr + 0.713*C
AO8ALLX6	B-Z	B_Z (fall)	0.018 + 0.173*Tr + 0.410*C	0.062 + 0.201*Tr + 1.063*C	0.029 + 0.191*Tr + 0.635*C
AO8ALLX6	B-Z	B_Z (rise)	0.019 + 0.291*Tr + 0.521*C	0.050 + 0.300*Tr + 1.107*C	0.028 + 0.295*Tr + 0.766*C
AO8ALLX6	C-Z	C_Z (fall)	0.005 + 0.235*Tr + 0.431*C	0.028 + 0.266*Tr + 1.083*C	0.007 + 0.249*Tr + 0.663*C
AO8ALLX6	C-Z	C_Z (rise)	0.008 + 0.274*Tr + 0.531*C	0.025 + 0.282*Tr + 1.127*C	0.011 + 0.278*Tr + 0.782*C
AO8ALLX6	D-Z	D_Z (fall)	0.014 + 0.280*Tr + 0.404*C	0.056 + 0.333*Tr + 0.820*C	0.028 + 0.308*Tr + 0.557*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8ALLX6	D-Z	D_Z (rise)	0.012 + 0.231*Tr + 0.393*C	0.085 + 0.231*Tr + 1.105*C	0.049 + 0.224*Tr + 0.759*C
AO8ALLX8	A-Z	A_Z (fall)	0.072 + 0.248*Tr + 0.286*C	0.165 + 0.259*Tr + 0.763*C	0.107 + 0.252*Tr + 0.442*C
AO8ALLX8	A-Z	A_Z (rise)	0.063 + 0.206*Tr + 0.367*C	0.140 + 0.240*Tr + 0.791*C	0.091 + 0.219*Tr + 0.535*C
AO8ALLX8	B-Z	B_Z (fall)	0.019 + 0.173*Tr + 0.308*C	0.064 + 0.201*Tr + 0.797*C	0.030 + 0.190*Tr + 0.477*C
AO8ALLX8	B-Z	B_Z (rise)	0.020 + 0.291*Tr + 0.390*C	0.051 + 0.301*Tr + 0.831*C	0.029 + 0.295*Tr + 0.574*C
AO8ALLX8	C-Z	C_Z (fall)	0.006 + 0.233*Tr + 0.323*C	0.029 + 0.266*Tr + 0.812*C	0.009 + 0.248*Tr + 0.498*C
AO8ALLX8	C-Z	C_Z (rise)	0.009 + 0.273*Tr + 0.399*C	0.026 + 0.283*Tr + 0.846*C	0.012 + 0.278*Tr + 0.586*C
AO8ALLX8	D-Z	D_Z (fall)	0.015 + 0.278*Tr + 0.302*C	0.056 + 0.330*Tr + 0.601*C	0.030 + 0.305*Tr + 0.412*C
AO8ALLX8	D-Z	D_Z (rise)	0.013 + 0.230*Tr + 0.295*C	0.087 + 0.232*Tr + 0.828*C	0.051 + 0.225*Tr + 0.569*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO8ALL	5037.980	95043.100
AO8ALLP	7568.850	159690.000
AO8ALLX4	13589.700	299354.000
AO8ALLX6	20172.500	446276.000
AO8ALLX8	26365.200	588038.000

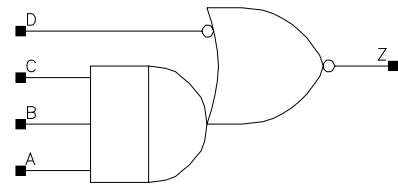
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO8ALL	Z(max)	$0.016 + 0.009 * Tr$
AO8ALLP	Z(max)	$0.029 + 0.018 * Tr$
AO8ALLX4	Z(max)	$0.060 + 0.035 * Tr$
AO8ALLX6	Z(max)	$0.088 + 0.054 * Tr$
AO8ALLX8	Z(max)	$0.119 + 0.071 * Tr$

AO8DLL
AO8DLLP
AO8DLLX4
AO8DLLX6
AO8DLLX8

Function: Function = BOOLEAN function with 4 inputs and 1 output



Truth Table

A	B	C	D	Z
-	-	-	0	0
1	1	1	-	0
-	-	0	1	1
-	0	-	1	1
0	-	-	1	1

Physical Dimensions

Property	AO8DLL	AO8DLLP	AO8DLLX4	AO8DLLX6	AO8DLLX8
Area(um ²)	14.120	16.138	28.241	38.327	50.430

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8DLL	C Input Cap.	0.0029	0.0026	0.0027
AO8DLL	A Input Cap.	0.0031	0.0028	0.0029
AO8DLL	Z Max Load	0.160	0.160	0.160
AO8DLL	D Input Cap.	0.0014	0.0011	0.0012
AO8DLL	B Input Cap.	0.0031	0.0028	0.0029
AO8DLLP	A Input Cap.	0.0057	0.0053	0.0054
AO8DLLP	Z Max Load	0.320	0.320	0.320
AO8DLLP	D Input Cap.	0.0021	0.0017	0.0018
AO8DLLP	B Input Cap.	0.0057	0.0053	0.0054
AO8DLLP	C Input Cap.	0.0053	0.0049	0.0050
AO8DLLX4	C Input Cap.	0.0101	0.0094	0.0097

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8DLLX4	A Input Cap.	0.0113	0.0105	0.0108
AO8DLLX4	Z Max Load	0.640	0.640	0.640
AO8DLLX4	D Input Cap.	0.0033	0.0028	0.0030
AO8DLLX4	B Input Cap.	0.0112	0.0103	0.0106
AO8DLLX6	Z Max Load	0.960	0.960	0.960
AO8DLLX6	C Input Cap.	0.0164	0.0152	0.0157
AO8DLLX6	A Input Cap.	0.0174	0.0162	0.0167
AO8DLLX6	D Input Cap.	0.0049	0.0042	0.0044
AO8DLLX6	B Input Cap.	0.0174	0.0160	0.0166
AO8DLLX8	B Input Cap.	0.0227	0.0209	0.0216
AO8DLLX8	C Input Cap.	0.0214	0.0198	0.0204
AO8DLLX8	A Input Cap.	0.0226	0.0209	0.0216
AO8DLLX8	Z Max Load	1.280	1.280	1.280
AO8DLLX8	D Input Cap.	0.0066	0.0057	0.0059

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8DLL	A-Z	A_Z (fall)	0.014 + 0.219*Tr + 2.419*C	0.053 + 0.249*Tr + 6.405*C	0.023 + 0.236*Tr + 3.797*C
AO8DLL	A-Z	A_Z (rise)	0.019 + 0.300*Tr + 3.183*C	0.048 + 0.311*Tr + 6.867*C	0.027 + 0.306*Tr + 4.713*C
AO8DLL	B-Z	B_Z (fall)	0.019 + 0.180*Tr + 2.358*C	0.065 + 0.210*Tr + 6.351*C	0.031 + 0.199*Tr + 3.719*C
AO8DLL	B-Z	B_Z (rise)	0.025 + 0.306*Tr + 3.161*C	0.060 + 0.317*Tr + 6.832*C	0.035 + 0.312*Tr + 4.682*C
AO8DLL	C-Z	C_Z (fall)	0.007 + 0.244*Tr + 2.475*C	0.035 + 0.278*Tr + 6.450*C	0.011 + 0.260*Tr + 3.871*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8DLL	C-Z	C_Z (rise)	0.013 + 0.293*Tr + 3.210*C	0.033 + 0.304*Tr + 6.916*C	0.017 + 0.299*Tr + 4.755*C
AO8DLL	D-Z	D_Z (fall)	0.076 + 0.277*Tr + 1.842*C	0.190 + 0.289*Tr + 4.132*C	0.122 + 0.282*Tr + 2.593*C
AO8DLL	D-Z	D_Z (rise)	0.060 + 0.165*Tr + 2.115*C	0.184 + 0.206*Tr + 6.625*C	0.115 + 0.179*Tr + 4.454*C
AO8DLLP	A-Z	A_Z (fall)	0.010 + 0.220*Tr + 1.256*C	0.043 + 0.247*Tr + 3.206*C	0.016 + 0.235*Tr + 1.939*C
AO8DLLP	A-Z	A_Z (rise)	0.013 + 0.291*Tr + 1.569*C	0.036 + 0.300*Tr + 3.332*C	0.018 + 0.296*Tr + 2.306*C
AO8DLLP	B-Z	B_Z (fall)	0.016 + 0.181*Tr + 1.223*C	0.057 + 0.209*Tr + 3.174*C	0.025 + 0.199*Tr + 1.895*C
AO8DLLP	B-Z	B_Z (rise)	0.019 + 0.298*Tr + 1.555*C	0.048 + 0.307*Tr + 3.311*C	0.026 + 0.303*Tr + 2.287*C
AO8DLLP	C-Z	C_Z (fall)	0.003 + 0.245*Tr + 1.286*C	0.026 + 0.276*Tr + 3.235*C	0.005 + 0.260*Tr + 1.979*C
AO8DLLP	C-Z	C_Z (rise)	0.007 + 0.283*Tr + 1.586*C	0.021 + 0.293*Tr + 3.364*C	0.008 + 0.289*Tr + 2.332*C
AO8DLLP	D-Z	D_Z (fall)	0.075 + 0.263*Tr + 1.058*C	0.185 + 0.276*Tr + 2.269*C	0.120 + 0.268*Tr + 1.457*C
AO8DLLP	D-Z	D_Z (rise)	0.057 + 0.179*Tr + 1.031*C	0.171 + 0.216*Tr + 3.172*C	0.108 + 0.192*Tr + 2.145*C
AO8DLLX4	A-Z	A_Z (fall)	0.013 + 0.213*Tr + 0.629*C	0.048 + 0.241*Tr + 1.607*C	0.020 + 0.228*Tr + 0.972*C
AO8DLLX4	A-Z	A_Z (rise)	0.016 + 0.285*Tr + 0.785*C	0.040 + 0.296*Tr + 1.666*C	0.022 + 0.290*Tr + 1.153*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8DLLX4	B-Z	B_Z (fall)	0.018 + 0.177*Tr + 0.612*C	0.059 + 0.205*Tr + 1.589*C	0.028 + 0.194*Tr + 0.949*C
AO8DLLX4	B-Z	B_Z (rise)	0.021 + 0.293*Tr + 0.778*C	0.051 + 0.304*Tr + 1.656*C	0.030 + 0.298*Tr + 1.144*C
AO8DLLX4	C-Z	C_Z (fall)	0.006 + 0.236*Tr + 0.644*C	0.029 + 0.269*Tr + 1.621*C	0.009 + 0.251*Tr + 0.991*C
AO8DLLX4	C-Z	C_Z (rise)	0.009 + 0.277*Tr + 0.794*C	0.024 + 0.287*Tr + 1.685*C	0.011 + 0.282*Tr + 1.167*C
AO8DLLX4	D-Z	D_Z (fall)	0.071 + 0.248*Tr + 0.541*C	0.174 + 0.261*Tr + 1.114*C	0.114 + 0.253*Tr + 0.730*C
AO8DLLX4	D-Z	D_Z (rise)	0.056 + 0.192*Tr + 0.515*C	0.168 + 0.225*Tr + 1.586*C	0.106 + 0.203*Tr + 1.073*C
AO8DLLX6	A-Z	A_Z (fall)	0.012 + 0.211*Tr + 0.421*C	0.046 + 0.239*Tr + 1.072*C	0.019 + 0.226*Tr + 0.650*C
AO8DLLX6	A-Z	A_Z (rise)	0.015 + 0.283*Tr + 0.525*C	0.040 + 0.292*Tr + 1.114*C	0.021 + 0.287*Tr + 0.772*C
AO8DLLX6	B-Z	B_Z (fall)	0.017 + 0.175*Tr + 0.409*C	0.059 + 0.203*Tr + 1.061*C	0.027 + 0.192*Tr + 0.634*C
AO8DLLX6	B-Z	B_Z (rise)	0.020 + 0.291*Tr + 0.520*C	0.051 + 0.300*Tr + 1.106*C	0.029 + 0.295*Tr + 0.765*C
AO8DLLX6	C-Z	C_Z (fall)	0.005 + 0.234*Tr + 0.431*C	0.029 + 0.266*Tr + 1.083*C	0.008 + 0.249*Tr + 0.664*C
AO8DLLX6	C-Z	C_Z (rise)	0.009 + 0.274*Tr + 0.531*C	0.025 + 0.283*Tr + 1.126*C	0.011 + 0.279*Tr + 0.781*C
AO8DLLX6	D-Z	D_Z (fall)	0.071 + 0.243*Tr + 0.362*C	0.175 + 0.257*Tr + 0.763*C	0.114 + 0.248*Tr + 0.495*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8DLLX6	D-Z	D_Z (rise)	0.057 + 0.197*Tr + 0.344*C	0.167 + 0.228*Tr + 1.057*C	0.106 + 0.207*Tr + 0.715*C
AO8DLLX8	A-Z	A_Z (fall)	0.013 + 0.210*Tr + 0.316*C	0.047 + 0.238*Tr + 0.805*C	0.020 + 0.225*Tr + 0.488*C
AO8DLLX8	A-Z	A_Z (rise)	0.016 + 0.283*Tr + 0.394*C	0.040 + 0.292*Tr + 0.836*C	0.022 + 0.287*Tr + 0.579*C
AO8DLLX8	B-Z	B_Z (fall)	0.018 + 0.174*Tr + 0.307*C	0.060 + 0.202*Tr + 0.797*C	0.028 + 0.191*Tr + 0.476*C
AO8DLLX8	B-Z	B_Z (rise)	0.021 + 0.291*Tr + 0.390*C	0.052 + 0.300*Tr + 0.830*C	0.030 + 0.295*Tr + 0.574*C
AO8DLLX8	C-Z	C_Z (fall)	0.006 + 0.233*Tr + 0.324*C	0.030 + 0.265*Tr + 0.814*C	0.009 + 0.248*Tr + 0.498*C
AO8DLLX8	C-Z	C_Z (rise)	0.009 + 0.273*Tr + 0.399*C	0.025 + 0.283*Tr + 0.846*C	0.012 + 0.278*Tr + 0.587*C
AO8DLLX8	D-Z	D_Z (fall)	0.070 + 0.240*Tr + 0.271*C	0.170 + 0.254*Tr + 0.557*C	0.111 + 0.245*Tr + 0.365*C
AO8DLLX8	D-Z	D_Z (rise)	0.056 + 0.196*Tr + 0.258*C	0.165 + 0.226*Tr + 0.793*C	0.105 + 0.206*Tr + 0.537*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO8DLL	3959.240	83381.100
AO8DLLP	6600.190	149016.000
AO8DLLX4	12537.400	288836.000
AO8DLLX6	18945.100	435002.000
AO8DLLX8	25008.800	577711.000

Internal Energy at minimum output load

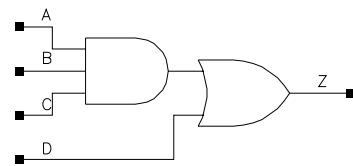
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO8DLL	Z(max)	$0.022 + 0.005 * Tr$
AO8DLLP	Z(max)	$0.039 + 0.009 * Tr$
AO8DLLX4	Z(max)	$0.077 + 0.017 * Tr$
AO8DLLX6	Z(max)	$0.115 + 0.024 * Tr$
AO8DLLX8	Z(max)	$0.153 + 0.033 * Tr$

AO8NLL
AO8NLLP
AO8NLLX4
AO8NLLX6
AO8NLLX8

Function: Function = 2 wide 3-1 AND-OR

Boolean Expression: $Z = (A \bullet B \bullet C + D)$



Physical Dimensions

Property	AO8NLL	AO8NLLP	AO8NLLX4	AO8NLLX6	AO8NLLX8
Area(um2)	14.120	14.120	18.155	30.258	34.292

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8NLL	C Input Cap.	0.0019	0.0016	0.0017
AO8NLL	A Input Cap.	0.0020	0.0017	0.0018
AO8NLL	D Input Cap.	0.0017	0.0014	0.0015
AO8NLL	B Input Cap.	0.0019	0.0016	0.0017
AO8NLL	Z Max Load	0.160	0.160	0.160
AO8NLLP	C Input Cap.	0.0032	0.0027	0.0029
AO8NLLP	A Input Cap.	0.0032	0.0028	0.0029
AO8NLLP	D Input Cap.	0.0028	0.0024	0.0025
AO8NLLP	B Input Cap.	0.0032	0.0028	0.0029
AO8NLLP	Z Max Load	0.320	0.320	0.320
AO8NLLX4	B Input Cap.	0.0061	0.0054	0.0056
AO8NLLX4	Z Max Load	0.640	0.640	0.640
AO8NLLX4	C Input Cap.	0.0061	0.0053	0.0055
AO8NLLX4	A Input Cap.	0.0061	0.0054	0.0056
AO8NLLX4	D Input Cap.	0.0053	0.0046	0.0048
AO8NLLX6	Z Max Load	0.960	0.960	0.960
AO8NLLX6	D Input Cap.	0.0085	0.0075	0.0078
AO8NLLX6	B Input Cap.	0.0094	0.0083	0.0086
AO8NLLX6	C Input Cap.	0.0091	0.0078	0.0082
AO8NLLX6	A Input Cap.	0.0096	0.0085	0.0088

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8NLLX8	C Input Cap.	0.0126	0.0110	0.0114
AO8NLLX8	A Input Cap.	0.0124	0.0110	0.0114
AO8NLLX8	D Input Cap.	0.0114	0.0100	0.0104
AO8NLLX8	B Input Cap.	0.0121	0.0106	0.0111
AO8NLLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8NLL	A-Z	A_Z (fall)	0.088 + 0.286*Tr + 1.268*C	0.201 + 0.299*Tr + 2.782*C	0.132 + 0.290*Tr + 1.783*C
AO8NLL	A-Z	A_Z (rise)	0.070 + 0.184*Tr + 1.649*C	0.188 + 0.225*Tr + 3.513*C	0.110 + 0.202*Tr + 2.378*C
AO8NLL	B-Z	B_Z (fall)	0.094 + 0.297*Tr + 1.273*C	0.215 + 0.309*Tr + 2.799*C	0.142 + 0.300*Tr + 1.792*C
AO8NLL	B-Z	B_Z (rise)	0.070 + 0.157*Tr + 1.651*C	0.195 + 0.193*Tr + 3.519*C	0.112 + 0.176*Tr + 2.383*C
AO8NLL	C-Z	C_Z (fall)	0.082 + 0.275*Tr + 1.264*C	0.186 + 0.288*Tr + 2.769*C	0.122 + 0.279*Tr + 1.776*C
AO8NLL	C-Z	C_Z (rise)	0.068 + 0.199*Tr + 1.643*C	0.179 + 0.246*Tr + 3.503*C	0.107 + 0.218*Tr + 2.369*C
AO8NLL	D-Z	D_Z (fall)	0.078 + 0.239*Tr + 1.261*C	0.250 + 0.248*Tr + 2.814*C	0.159 + 0.241*Tr + 1.805*C
AO8NLL	D-Z	D_Z (rise)	0.071 + 0.234*Tr + 1.626*C	0.193 + 0.310*Tr + 3.494*C	0.117 + 0.269*Tr + 2.344*C
AO8NLLP	A-Z	A_Z (fall)	0.079 + 0.272*Tr + 0.646*C	0.180 + 0.286*Tr + 1.370*C	0.118 + 0.276*Tr + 0.893*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8NLLP	A-Z	A_Z (rise)	0.064 + 0.191*Tr + 0.809*C	0.170 + 0.229*Tr + 1.699*C	0.101 + 0.208*Tr + 1.156*C
AO8NLLP	B-Z	B_Z (fall)	0.085 + 0.283*Tr + 0.649*C	0.192 + 0.297*Tr + 1.378*C	0.127 + 0.287*Tr + 0.897*C
AO8NLLP	B-Z	B_Z (rise)	0.064 + 0.165*Tr + 0.810*C	0.177 + 0.199*Tr + 1.701*C	0.102 + 0.182*Tr + 1.158*C
AO8NLLP	C-Z	C_Z (fall)	0.073 + 0.260*Tr + 0.644*C	0.165 + 0.274*Tr + 1.363*C	0.109 + 0.265*Tr + 0.890*C
AO8NLLP	C-Z	C_Z (rise)	0.062 + 0.206*Tr + 0.806*C	0.161 + 0.249*Tr + 1.693*C	0.097 + 0.222*Tr + 1.152*C
AO8NLLP	D-Z	D_Z (fall)	0.072 + 0.222*Tr + 0.646*C	0.227 + 0.238*Tr + 1.388*C	0.145 + 0.228*Tr + 0.905*C
AO8NLLP	D-Z	D_Z (rise)	0.068 + 0.247*Tr + 0.797*C	0.177 + 0.315*Tr + 1.668*C	0.111 + 0.280*Tr + 1.139*C
AO8NLLX4	A-Z	A_Z (fall)	0.075 + 0.263*Tr + 0.321*C	0.169 + 0.277*Tr + 0.681*C	0.111 + 0.267*Tr + 0.444*C
AO8NLLX4	A-Z	A_Z (rise)	0.061 + 0.192*Tr + 0.404*C	0.159 + 0.227*Tr + 0.847*C	0.095 + 0.207*Tr + 0.578*C
AO8NLLX4	B-Z	B_Z (fall)	0.080 + 0.275*Tr + 0.323*C	0.181 + 0.289*Tr + 0.684*C	0.119 + 0.278*Tr + 0.445*C
AO8NLLX4	B-Z	B_Z (rise)	0.061 + 0.166*Tr + 0.405*C	0.165 + 0.197*Tr + 0.848*C	0.096 + 0.182*Tr + 0.578*C
AO8NLLX4	C-Z	C_Z (fall)	0.068 + 0.251*Tr + 0.320*C	0.154 + 0.264*Tr + 0.677*C	0.101 + 0.255*Tr + 0.442*C
AO8NLLX4	C-Z	C_Z (rise)	0.059 + 0.206*Tr + 0.403*C	0.149 + 0.246*Tr + 0.844*C	0.091 + 0.221*Tr + 0.576*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8NLLX4	D-Z	D_Z (fall)	0.068 + 0.209*Tr + 0.322*C	0.212 + 0.227*Tr + 0.690*C	0.135 + 0.217*Tr + 0.450*C
AO8NLLX4	D-Z	D_Z (rise)	0.065 + 0.255*Tr + 0.399*C	0.166 + 0.318*Tr + 0.833*C	0.106 + 0.285*Tr + 0.570*C
AO8NLLX6	A-Z	A_Z (fall)	0.075 + 0.265*Tr + 0.215*C	0.169 + 0.279*Tr + 0.456*C	0.112 + 0.269*Tr + 0.297*C
AO8NLLX6	A-Z	A_Z (rise)	0.062 + 0.191*Tr + 0.270*C	0.162 + 0.227*Tr + 0.568*C	0.096 + 0.207*Tr + 0.387*C
AO8NLLX6	B-Z	B_Z (fall)	0.080 + 0.276*Tr + 0.216*C	0.181 + 0.290*Tr + 0.459*C	0.120 + 0.280*Tr + 0.299*C
AO8NLLX6	B-Z	B_Z (rise)	0.062 + 0.166*Tr + 0.271*C	0.169 + 0.198*Tr + 0.569*C	0.098 + 0.182*Tr + 0.387*C
AO8NLLX6	C-Z	C_Z (fall)	0.068 + 0.252*Tr + 0.214*C	0.152 + 0.264*Tr + 0.454*C	0.101 + 0.256*Tr + 0.296*C
AO8NLLX6	C-Z	C_Z (rise)	0.059 + 0.206*Tr + 0.269*C	0.150 + 0.247*Tr + 0.566*C	0.091 + 0.222*Tr + 0.385*C
AO8NLLX6	D-Z	D_Z (fall)	0.068 + 0.208*Tr + 0.216*C	0.213 + 0.229*Tr + 0.462*C	0.137 + 0.218*Tr + 0.301*C
AO8NLLX6	D-Z	D_Z (rise)	0.066 + 0.257*Tr + 0.267*C	0.166 + 0.318*Tr + 0.557*C	0.107 + 0.287*Tr + 0.380*C
AO8NLLX8	A-Z	A_Z (fall)	0.074 + 0.263*Tr + 0.162*C	0.166 + 0.277*Tr + 0.342*C	0.110 + 0.267*Tr + 0.223*C
AO8NLLX8	A-Z	A_Z (rise)	0.060 + 0.191*Tr + 0.203*C	0.157 + 0.226*Tr + 0.426*C	0.093 + 0.206*Tr + 0.290*C
AO8NLLX8	B-Z	B_Z (fall)	0.079 + 0.275*Tr + 0.162*C	0.179 + 0.289*Tr + 0.345*C	0.118 + 0.278*Tr + 0.224*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO8NLLX8	B-Z	B_Z (rise)	0.061 + 0.166*Tr + 0.203*C	0.163 + 0.197*Tr + 0.426*C	0.095 + 0.182*Tr + 0.290*C
AO8NLLX8	C-Z	C_Z (fall)	0.068 + 0.251*Tr + 0.161*C	0.152 + 0.263*Tr + 0.341*C	0.100 + 0.255*Tr + 0.223*C
AO8NLLX8	C-Z	C_Z (rise)	0.058 + 0.206*Tr + 0.202*C	0.148 + 0.245*Tr + 0.424*C	0.090 + 0.220*Tr + 0.289*C
AO8NLLX8	D-Z	D_Z (fall)	0.067 + 0.208*Tr + 0.162*C	0.210 + 0.226*Tr + 0.347*C	0.135 + 0.216*Tr + 0.226*C
AO8NLLX8	D-Z	D_Z (rise)	0.066 + 0.256*Tr + 0.200*C	0.167 + 0.319*Tr + 0.419*C	0.106 + 0.286*Tr + 0.286*C

Average Leakage Power

picoWatts

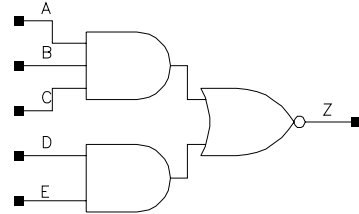
Cell	bc_1.32V_25C	bc_1.32V_125C
AO8NLL	4169.810	80286.900
AO8NLLP	6482.080	138167.000
AO8NLLX4	12065.800	266142.000
AO8NLLX6	17892.500	394220.000
AO8NLLX8	24105.800	531764.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO8NLL	Z(max)	0.018 + 0.007*Tr
AO8NLLP	Z(max)	0.033 + 0.013*Tr
AO8NLLX4	Z(max)	0.060 + 0.027*Tr
AO8NLLX6	Z(max)	0.093 + 0.040*Tr
AO8NLLX8	Z(max)	0.122 + 0.056*Tr

AO9LL
AO9LLP
AO9LLX4
AO9LLX6
AO9LLX8



Function: Function = 2 wide 3-2 AND-OR-INVERT

Boolean Expression: $Z = \overline{(A \bullet B \bullet C + D \bullet E)}$

Physical Dimensions

Property	AO9LL	AO9LLP	AO9LLX4	AO9LLX6	AO9LLX8
Area(um2)	12.103	16.138	28.241	40.344	54.464

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO9LL	E Input Cap.	0.0036	0.0033	0.0034
AO9LL	C Input Cap.	0.0030	0.0027	0.0028
AO9LL	Z Max Load	0.160	0.160	0.160
AO9LL	A Input Cap.	0.0030	0.0027	0.0029
AO9LL	D Input Cap.	0.0031	0.0028	0.0029
AO9LL	B Input Cap.	0.0030	0.0027	0.0028
AO9LLP	A Input Cap.	0.0056	0.0051	0.0053
AO9LLP	D Input Cap.	0.0057	0.0053	0.0055
AO9LLP	B Input Cap.	0.0057	0.0052	0.0054
AO9LLP	E Input Cap.	0.0060	0.0056	0.0057
AO9LLP	C Input Cap.	0.0053	0.0048	0.0049
AO9LLP	Z Max Load	0.320	0.320	0.320
AO9LLX4	B Input Cap.	0.0119	0.0109	0.0112
AO9LLX4	E Input Cap.	0.0125	0.0115	0.0119
AO9LLX4	C Input Cap.	0.0115	0.0104	0.0108
AO9LLX4	Z Max Load	0.640	0.640	0.640
AO9LLX4	A Input Cap.	0.0120	0.0110	0.0114
AO9LLX4	D Input Cap.	0.0111	0.0103	0.0106

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO9LLX6	D Input Cap.	0.0167	0.0154	0.0160
AO9LLX6	Z Max Load	0.960	0.960	0.960
AO9LLX6	B Input Cap.	0.0175	0.0159	0.0164
AO9LLX6	E Input Cap.	0.0181	0.0167	0.0173
AO9LLX6	C Input Cap.	0.0160	0.0146	0.0150
AO9LLX6	A Input Cap.	0.0174	0.0159	0.0164
AO9LLX8	C Input Cap.	0.0211	0.0192	0.0198
AO9LLX8	Z Max Load	1.280	1.280	1.280
AO9LLX8	A Input Cap.	0.0232	0.0212	0.0219
AO9LLX8	D Input Cap.	0.0221	0.0204	0.0212
AO9LLX8	B Input Cap.	0.0236	0.0215	0.0222
AO9LLX8	E Input Cap.	0.0243	0.0224	0.0232

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO9LL	E-Z	E_Z (fall)	0.015 + 0.213*Tr + 1.877*C	0.066 + 0.256*Tr + 4.565*C	0.032 + 0.239*Tr + 2.815*C
AO9LL	E-Z	E_Z (rise)	0.023 + 0.274*Tr + 2.462*C	0.123 + 0.261*Tr + 7.418*C	0.075 + 0.254*Tr + 5.024*C
AO9LL	A-Z	A_Z (fall)	0.013 + 0.221*Tr + 2.475*C	0.051 + 0.250*Tr + 6.581*C	0.022 + 0.236*Tr + 3.893*C
AO9LL	A-Z	A_Z (rise)	0.014 + 0.299*Tr + 2.711*C	0.066 + 0.321*Tr + 7.469*C	0.039 + 0.315*Tr + 5.104*C
AO9LL	B-Z	B_Z (fall)	0.018 + 0.183*Tr + 2.414*C	0.062 + 0.211*Tr + 6.533*C	0.029 + 0.200*Tr + 3.815*C
AO9LL	B-Z	B_Z (rise)	0.018 + 0.306*Tr + 2.686*C	0.077 + 0.327*Tr + 7.437*C	0.047 + 0.321*Tr + 5.074*C
AO9LL	C-Z	C_Z (fall)	0.007 + 0.249*Tr + 2.527*C	0.035 + 0.281*Tr + 6.627*C	0.012 + 0.262*Tr + 3.966*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO9LL	C-Z	C_Z (rise)	0.008 + 0.288*Tr + 2.640*C	0.050 + 0.311*Tr + 7.294*C	0.029 + 0.306*Tr + 4.996*C
AO9LL	D-Z	D_Z (fall)	0.011 + 0.248*Tr + 1.953*C	0.056 + 0.297*Tr + 4.638*C	0.024 + 0.274*Tr + 2.916*C
AO9LL	D-Z	D_Z (rise)	0.019 + 0.265*Tr + 2.454*C	0.109 + 0.254*Tr + 7.374*C	0.066 + 0.248*Tr + 5.000*C
AO9LLP	E-Z	E_Z (fall)	0.013 + 0.215*Tr + 0.950*C	0.062 + 0.257*Tr + 2.219*C	0.030 + 0.241*Tr + 1.396*C
AO9LLP	E-Z	E_Z (rise)	0.019 + 0.265*Tr + 1.181*C	0.113 + 0.255*Tr + 3.401*C	0.067 + 0.249*Tr + 2.324*C
AO9LLP	A-Z	A_Z (fall)	0.010 + 0.223*Tr + 1.249*C	0.044 + 0.249*Tr + 3.197*C	0.017 + 0.236*Tr + 1.934*C
AO9LLP	A-Z	A_Z (rise)	0.008 + 0.288*Tr + 1.279*C	0.055 + 0.309*Tr + 3.439*C	0.031 + 0.304*Tr + 2.376*C
AO9LLP	B-Z	B_Z (fall)	0.016 + 0.184*Tr + 1.217*C	0.058 + 0.211*Tr + 3.166*C	0.026 + 0.200*Tr + 1.891*C
AO9LLP	B-Z	B_Z (rise)	0.013 + 0.295*Tr + 1.265*C	0.068 + 0.315*Tr + 3.421*C	0.039 + 0.310*Tr + 2.359*C
AO9LLP	C-Z	C_Z (fall)	0.003 + 0.250*Tr + 1.279*C	0.026 + 0.278*Tr + 3.227*C	0.005 + 0.261*Tr + 1.974*C
AO9LLP	C-Z	C_Z (rise)	0.003 + 0.280*Tr + 1.296*C	0.040 + 0.302*Tr + 3.464*C	0.021 + 0.297*Tr + 2.398*C
AO9LLP	D-Z	D_Z (fall)	0.008 + 0.250*Tr + 0.990*C	0.051 + 0.296*Tr + 2.260*C	0.021 + 0.275*Tr + 1.449*C
AO9LLP	D-Z	D_Z (rise)	0.015 + 0.257*Tr + 1.197*C	0.100 + 0.250*Tr + 3.420*C	0.059 + 0.244*Tr + 2.340*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO9LLX4	E-Z	E_Z (fall)	0.017 + 0.209*Tr + 0.475°C	0.067 + 0.252*Tr + 1.109°C	0.034 + 0.235*Tr + 0.697°C
AO9LLX4	E-Z	E_Z (rise)	0.022 + 0.259*Tr + 0.590°C	0.116 + 0.253*Tr + 1.700°C	0.070 + 0.246*Tr + 1.162°C
AO9LLX4	A-Z	A_Z (fall)	0.014 + 0.218*Tr + 0.624°C	0.051 + 0.245*Tr + 1.599°C	0.023 + 0.230*Tr + 0.966°C
AO9LLX4	A-Z	A_Z (rise)	0.013 + 0.281*Tr + 0.639°C	0.062 + 0.306*Tr + 1.719°C	0.036 + 0.299*Tr + 1.188°C
AO9LLX4	B-Z	B_Z (fall)	0.019 + 0.181*Tr + 0.608°C	0.062 + 0.208*Tr + 1.583°C	0.030 + 0.196*Tr + 0.944°C
AO9LLX4	B-Z	B_Z (rise)	0.016 + 0.289*Tr + 0.632°C	0.072 + 0.313*Tr + 1.710°C	0.044 + 0.306*Tr + 1.179°C
AO9LLX4	C-Z	C_Z (fall)	0.009 + 0.242*Tr + 0.639°C	0.035 + 0.273*Tr + 1.613°C	0.013 + 0.253*Tr + 0.986°C
AO9LLX4	C-Z	C_Z (rise)	0.008 + 0.272*Tr + 0.648°C	0.049 + 0.298*Tr + 1.732°C	0.028 + 0.292*Tr + 1.199°C
AO9LLX4	D-Z	D_Z (fall)	0.012 + 0.241*Tr + 0.495°C	0.058 + 0.290*Tr + 1.129°C	0.027 + 0.267*Tr + 0.724°C
AO9LLX4	D-Z	D_Z (rise)	0.018 + 0.251*Tr + 0.598°C	0.103 + 0.247*Tr + 1.709°C	0.062 + 0.241*Tr + 1.170°C
AO9LLX6	E-Z	E_Z (fall)	0.015 + 0.207*Tr + 0.318°C	0.065 + 0.250*Tr + 0.743°C	0.032 + 0.233*Tr + 0.468°C
AO9LLX6	E-Z	E_Z (rise)	0.021 + 0.257*Tr + 0.395°C	0.115 + 0.250*Tr + 1.136°C	0.069 + 0.244*Tr + 0.776°C
AO9LLX6	A-Z	A_Z (fall)	0.012 + 0.215*Tr + 0.419°C	0.047 + 0.241*Tr + 1.070°C	0.020 + 0.227*Tr + 0.648°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO9LLX6	A-Z	A_Z (rise)	0.010 + 0.278*Tr + 0.428*C	0.059 + 0.302*Tr + 1.149*C	0.034 + 0.296*Tr + 0.795*C
AO9LLX6	B-Z	B_Z (fall)	0.017 + 0.178*Tr + 0.407*C	0.060 + 0.205*Tr + 1.059*C	0.028 + 0.193*Tr + 0.633*C
AO9LLX6	B-Z	B_Z (rise)	0.015 + 0.286*Tr + 0.424*C	0.071 + 0.309*Tr + 1.143*C	0.042 + 0.303*Tr + 0.789*C
AO9LLX6	C-Z	C_Z (fall)	0.006 + 0.239*Tr + 0.429*C	0.030 + 0.269*Tr + 1.080*C	0.009 + 0.250*Tr + 0.662*C
AO9LLX6	C-Z	C_Z (rise)	0.005 + 0.269*Tr + 0.435*C	0.044 + 0.294*Tr + 1.158*C	0.024 + 0.288*Tr + 0.802*C
AO9LLX6	D-Z	D_Z (fall)	0.010 + 0.240*Tr + 0.332*C	0.055 + 0.287*Tr + 0.757*C	0.024 + 0.266*Tr + 0.486*C
AO9LLX6	D-Z	D_Z (rise)	0.016 + 0.249*Tr + 0.401*C	0.101 + 0.245*Tr + 1.142*C	0.060 + 0.238*Tr + 0.782*C
AO9LLX8	E-Z	E_Z (fall)	0.016 + 0.206*Tr + 0.239*C	0.066 + 0.249*Tr + 0.557*C	0.033 + 0.232*Tr + 0.351*C
AO9LLX8	E-Z	E_Z (rise)	0.022 + 0.256*Tr + 0.297*C	0.115 + 0.250*Tr + 0.852*C	0.069 + 0.244*Tr + 0.583*C
AO9LLX8	A-Z	A_Z (fall)	0.013 + 0.214*Tr + 0.314*C	0.047 + 0.241*Tr + 0.803*C	0.020 + 0.226*Tr + 0.486*C
AO9LLX8	A-Z	A_Z (rise)	0.011 + 0.277*Tr + 0.322*C	0.059 + 0.302*Tr + 0.863*C	0.034 + 0.296*Tr + 0.596*C
AO9LLX8	B-Z	B_Z (fall)	0.018 + 0.177*Tr + 0.306*C	0.059 + 0.204*Tr + 0.795*C	0.029 + 0.192*Tr + 0.475*C
AO9LLX8	B-Z	B_Z (rise)	0.015 + 0.285*Tr + 0.318*C	0.070 + 0.309*Tr + 0.858*C	0.042 + 0.303*Tr + 0.592*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO9LLX8	C-Z	C_Z (fall)	0.006 + 0.238*Tr + 0.322*C	0.030 + 0.268*Tr + 0.811*C	0.010 + 0.248*Tr + 0.497*C
AO9LLX8	C-Z	C_Z (rise)	0.005 + 0.268*Tr + 0.326*C	0.044 + 0.294*Tr + 0.870*C	0.024 + 0.288*Tr + 0.602*C
AO9LLX8	D-Z	D_Z (fall)	0.011 + 0.238*Tr + 0.249*C	0.056 + 0.286*Tr + 0.567*C	0.026 + 0.264*Tr + 0.364*C
AO9LLX8	D-Z	D_Z (rise)	0.017 + 0.247*Tr + 0.301*C	0.101 + 0.245*Tr + 0.857*C	0.060 + 0.238*Tr + 0.587*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO9LL	3638.530	76395.000
AO9LLP	6534.280	144793.000
AO9LLX4	13068.600	289584.000
AO9LLX6	19603.000	434377.000
AO9LLX8	26137.200	579169.000

Internal Energy at minimum output load

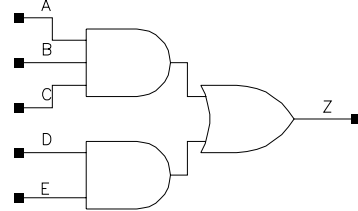
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO9LL	Z(max)	0.017 + 0.010*Tr
AO9LLP	Z(max)	0.033 + 0.020*Tr
AO9LLX4	Z(max)	0.066 + 0.041*Tr
AO9LLX6	Z(max)	0.098 + 0.061*Tr
AO9LLX8	Z(max)	0.129 + 0.082*Tr

AO9NLL
AO9NLLP
AO9NLLX4
AO9NLLX6
AO9NLLX8

Function: Function = 2 wide 3-2 AND-OR

Boolean Expression: $Z = (A \bullet B \bullet C + D \bullet E)$



Physical Dimensions

Property	AO9NLL	AO9NLLP	AO9NLLX4	AO9NLLX6	AO9NLLX8
Area(um2)	14.120	18.155	22.189	36.310	40.344

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO9NLL	C Input Cap.	0.0019	0.0015	0.0016
AO9NLL	A Input Cap.	0.0019	0.0015	0.0016
AO9NLL	D Input Cap.	0.0018	0.0016	0.0017
AO9NLL	Z Max Load	0.160	0.160	0.160
AO9NLL	B Input Cap.	0.0019	0.0015	0.0016
AO9NLL	E Input Cap.	0.0020	0.0018	0.0019
AO9NLLP	E Input Cap.	0.0035	0.0031	0.0032
AO9NLLP	C Input Cap.	0.0032	0.0027	0.0028
AO9NLLP	A Input Cap.	0.0032	0.0028	0.0029
AO9NLLP	D Input Cap.	0.0032	0.0028	0.0029
AO9NLLP	Z Max Load	0.320	0.320	0.320
AO9NLLP	B Input Cap.	0.0033	0.0028	0.0029
AO9NLLX4	D Input Cap.	0.0062	0.0054	0.0056
AO9NLLX4	Z Max Load	0.640	0.640	0.640
AO9NLLX4	B Input Cap.	0.0062	0.0053	0.0055
AO9NLLX4	E Input Cap.	0.0063	0.0056	0.0058
AO9NLLX4	C Input Cap.	0.0061	0.0051	0.0053
AO9NLLX4	A Input Cap.	0.0062	0.0053	0.0055

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO9NLLX6	Z Max Load	0.960	0.960	0.960
AO9NLLX6	A Input Cap.	0.0104	0.0089	0.0093
AO9NLLX6	D Input Cap.	0.0092	0.0080	0.0084
AO9NLLX6	B Input Cap.	0.0100	0.0086	0.0090
AO9NLLX6	E Input Cap.	0.0101	0.0091	0.0094
AO9NLLX6	C Input Cap.	0.0104	0.0087	0.0091
AO9NLLX8	E Input Cap.	0.0130	0.0117	0.0121
AO9NLLX8	C Input Cap.	0.0131	0.0110	0.0114
AO9NLLX8	A Input Cap.	0.0132	0.0114	0.0118
AO9NLLX8	D Input Cap.	0.0120	0.0105	0.0109
AO9NLLX8	Z Max Load	1.280	1.280	1.280
AO9NLLX8	B Input Cap.	0.0129	0.0112	0.0116

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO9NLL	E-Z	E_Z (fall)	0.089 + 0.270*Tr + 1.292*C	0.305 + 0.272*Tr + 2.924*C	0.194 + 0.264*Tr + 1.870*C
AO9NLL	E-Z	E_Z (rise)	0.069 + 0.186*Tr + 1.637*C	0.201 + 0.241*Tr + 3.512*C	0.118 + 0.217*Tr + 2.374*C
AO9NLL	A-Z	A_Z (fall)	0.083 + 0.283*Tr + 1.257*C	0.248 + 0.319*Tr + 2.895*C	0.162 + 0.308*Tr + 1.852*C
AO9NLL	A-Z	A_Z (rise)	0.075 + 0.193*Tr + 1.656*C	0.217 + 0.234*Tr + 3.598*C	0.127 + 0.211*Tr + 2.416*C
AO9NLL	B-Z	B_Z (fall)	0.088 + 0.293*Tr + 1.260*C	0.262 + 0.327*Tr + 2.910*C	0.172 + 0.317*Tr + 1.860*C
AO9NLL	B-Z	B_Z (rise)	0.075 + 0.165*Tr + 1.658*C	0.224 + 0.200*Tr + 3.600*C	0.128 + 0.182*Tr + 2.419*C
AO9NLL	C-Z	C_Z (fall)	0.078 + 0.272*Tr + 1.254*C	0.232 + 0.309*Tr + 2.880*C	0.152 + 0.299*Tr + 1.844*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO9NLL	C-Z	C_Z (rise)	0.074 + 0.210*Tr + 1.651*C	0.208 + 0.259*Tr + 3.593*C	0.123 + 0.230*Tr + 2.412*C
AO9NLL	D-Z	D_Z (fall)	0.085 + 0.261*Tr + 1.291*C	0.288 + 0.266*Tr + 2.910*C	0.183 + 0.258*Tr + 1.864*C
AO9NLL	D-Z	D_Z (rise)	0.070 + 0.211*Tr + 1.633*C	0.198 + 0.277*Tr + 3.507*C	0.118 + 0.244*Tr + 2.371*C
AO9NLLP	E-Z	E_Z (fall)	0.077 + 0.253*Tr + 0.652*C	0.260 + 0.261*Tr + 1.412*C	0.165 + 0.251*Tr + 0.918*C
AO9NLLP	E-Z	E_Z (rise)	0.061 + 0.191*Tr + 0.801*C	0.176 + 0.242*Tr + 1.675*C	0.104 + 0.220*Tr + 1.142*C
AO9NLLP	A-Z	A_Z (fall)	0.069 + 0.263*Tr + 0.632*C	0.206 + 0.302*Tr + 1.396*C	0.135 + 0.290*Tr + 0.908*C
AO9NLLP	A-Z	A_Z (rise)	0.064 + 0.196*Tr + 0.810*C	0.183 + 0.235*Tr + 1.736*C	0.108 + 0.213*Tr + 1.174*C
AO9NLLP	B-Z	B_Z (fall)	0.074 + 0.274*Tr + 0.634*C	0.220 + 0.311*Tr + 1.404*C	0.145 + 0.300*Tr + 0.912*C
AO9NLLP	B-Z	B_Z (rise)	0.064 + 0.170*Tr + 0.811*C	0.191 + 0.203*Tr + 1.738*C	0.110 + 0.186*Tr + 1.175*C
AO9NLLP	C-Z	C_Z (fall)	0.064 + 0.251*Tr + 0.630*C	0.190 + 0.291*Tr + 1.388*C	0.125 + 0.280*Tr + 0.904*C
AO9NLLP	C-Z	C_Z (rise)	0.062 + 0.212*Tr + 0.806*C	0.173 + 0.258*Tr + 1.732*C	0.103 + 0.230*Tr + 1.171*C
AO9NLLP	D-Z	D_Z (fall)	0.072 + 0.242*Tr + 0.652*C	0.244 + 0.254*Tr + 1.406*C	0.155 + 0.244*Tr + 0.916*C
AO9NLLP	D-Z	D_Z (rise)	0.062 + 0.214*Tr + 0.800*C	0.174 + 0.275*Tr + 1.672*C	0.105 + 0.245*Tr + 1.141*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO9NLLX4	E-Z	E_Z (fall)	0.072 + 0.244*Tr + 0.324*C	0.241 + 0.252*Tr + 0.698*C	0.154 + 0.243*Tr + 0.454*C
AO9NLLX4	E-Z	E_Z (rise)	0.059 + 0.192*Tr + 0.401*C	0.165 + 0.240*Tr + 0.835*C	0.099 + 0.219*Tr + 0.571*C
AO9NLLX4	A-Z	A_Z (fall)	0.065 + 0.253*Tr + 0.314*C	0.192 + 0.292*Tr + 0.690*C	0.126 + 0.280*Tr + 0.449*C
AO9NLLX4	A-Z	A_Z (rise)	0.061 + 0.198*Tr + 0.404*C	0.170 + 0.232*Tr + 0.864*C	0.101 + 0.212*Tr + 0.586*C
AO9NLLX4	B-Z	B_Z (fall)	0.069 + 0.265*Tr + 0.315*C	0.205 + 0.302*Tr + 0.694*C	0.135 + 0.290*Tr + 0.451*C
AO9NLLX4	B-Z	B_Z (rise)	0.061 + 0.172*Tr + 0.405*C	0.177 + 0.201*Tr + 0.865*C	0.103 + 0.186*Tr + 0.586*C
AO9NLLX4	C-Z	C_Z (fall)	0.060 + 0.241*Tr + 0.314*C	0.176 + 0.280*Tr + 0.686*C	0.116 + 0.269*Tr + 0.447*C
AO9NLLX4	C-Z	C_Z (rise)	0.059 + 0.213*Tr + 0.403*C	0.160 + 0.254*Tr + 0.862*C	0.097 + 0.228*Tr + 0.584*C
AO9NLLX4	D-Z	D_Z (fall)	0.068 + 0.233*Tr + 0.324*C	0.225 + 0.245*Tr + 0.695*C	0.144 + 0.236*Tr + 0.453*C
AO9NLLX4	D-Z	D_Z (rise)	0.059 + 0.215*Tr + 0.399*C	0.163 + 0.271*Tr + 0.834*C	0.099 + 0.243*Tr + 0.569*C
AO9NLLX6	E-Z	E_Z (fall)	0.073 + 0.246*Tr + 0.218*C	0.245 + 0.255*Tr + 0.471*C	0.156 + 0.245*Tr + 0.306*C
AO9NLLX6	E-Z	E_Z (rise)	0.060 + 0.193*Tr + 0.268*C	0.170 + 0.242*Tr + 0.560*C	0.101 + 0.221*Tr + 0.382*C
AO9NLLX6	A-Z	A_Z (fall)	0.067 + 0.256*Tr + 0.211*C	0.198 + 0.295*Tr + 0.465*C	0.130 + 0.283*Tr + 0.303*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO9NLLX6	A-Z	A_Z (rise)	0.063 + 0.199*Tr + 0.271*C	0.178 + 0.235*Tr + 0.582*C	0.105 + 0.214*Tr + 0.393*C
AO9NLLX6	B-Z	B_Z (fall)	0.070 + 0.268*Tr + 0.212*C	0.209 + 0.305*Tr + 0.468*C	0.138 + 0.294*Tr + 0.304*C
AO9NLLX6	B-Z	B_Z (rise)	0.063 + 0.173*Tr + 0.271*C	0.183 + 0.204*Tr + 0.583*C	0.106 + 0.188*Tr + 0.394*C
AO9NLLX6	C-Z	C_Z (fall)	0.062 + 0.244*Tr + 0.211*C	0.183 + 0.283*Tr + 0.463*C	0.120 + 0.272*Tr + 0.302*C
AO9NLLX6	C-Z	C_Z (rise)	0.061 + 0.214*Tr + 0.270*C	0.168 + 0.257*Tr + 0.581*C	0.101 + 0.231*Tr + 0.393*C
AO9NLLX6	D-Z	D_Z (fall)	0.069 + 0.235*Tr + 0.218*C	0.229 + 0.248*Tr + 0.469*C	0.146 + 0.238*Tr + 0.305*C
AO9NLLX6	D-Z	D_Z (rise)	0.060 + 0.216*Tr + 0.267*C	0.167 + 0.274*Tr + 0.559*C	0.101 + 0.245*Tr + 0.381*C
AO9NLLX8	E-Z	E_Z (fall)	0.072 + 0.244*Tr + 0.163*C	0.241 + 0.252*Tr + 0.353*C	0.153 + 0.243*Tr + 0.229*C
AO9NLLX8	E-Z	E_Z (rise)	0.058 + 0.192*Tr + 0.201*C	0.165 + 0.240*Tr + 0.420*C	0.098 + 0.219*Tr + 0.287*C
AO9NLLX8	A-Z	A_Z (fall)	0.065 + 0.253*Tr + 0.158*C	0.193 + 0.292*Tr + 0.348*C	0.127 + 0.281*Tr + 0.227*C
AO9NLLX8	A-Z	A_Z (rise)	0.061 + 0.198*Tr + 0.203*C	0.171 + 0.233*Tr + 0.436*C	0.102 + 0.212*Tr + 0.295*C
AO9NLLX8	B-Z	B_Z (fall)	0.069 + 0.265*Tr + 0.159*C	0.205 + 0.303*Tr + 0.350*C	0.135 + 0.291*Tr + 0.228*C
AO9NLLX8	B-Z	B_Z (rise)	0.061 + 0.172*Tr + 0.203*C	0.177 + 0.202*Tr + 0.436*C	0.103 + 0.186*Tr + 0.295*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO9NLLX8	C-Z	C_Z (fall)	0.060 + 0.241*Tr + 0.158*C	0.178 + 0.281*Tr + 0.347*C	0.117 + 0.270*Tr + 0.226*C
AO9NLLX8	C-Z	C_Z (rise)	0.059 + 0.213*Tr + 0.202*C	0.161 + 0.255*Tr + 0.435*C	0.098 + 0.229*Tr + 0.294*C
AO9NLLX8	D-Z	D_Z (fall)	0.067 + 0.233*Tr + 0.163*C	0.225 + 0.245*Tr + 0.351*C	0.143 + 0.236*Tr + 0.229*C
AO9NLLX8	D-Z	D_Z (rise)	0.059 + 0.215*Tr + 0.200*C	0.162 + 0.271*Tr + 0.419*C	0.099 + 0.243*Tr + 0.286*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO9NLL	4156.820	82016.600
AO9NLLP	6762.930	144374.000
AO9NLLX4	12705.600	278592.000
AO9NLLX6	19377.200	420809.000
AO9NLLX8	25411.700	557184.000

Internal Energy at minimum output load

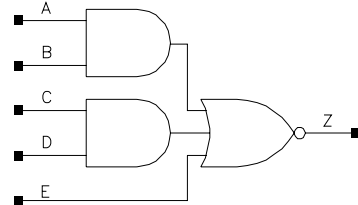
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO9NLL	Z(max)	0.021 + 0.007*Tr
AO9NLLP	Z(max)	0.036 + 0.013*Tr
AO9NLLX4	Z(max)	0.066 + 0.028*Tr
AO9NLLX6	Z(max)	0.103 + 0.042*Tr
AO9NLLX8	Z(max)	0.134 + 0.057*Tr

AO10LL
AO10LLP
AO10LLX4
AO10LLX6
AO10LLX8

Function: Function = 3 wide 2-2-1 AND-OR-INVERT

Boolean Expression: $Z = \overline{(A \bullet B + C \bullet D + E)}$



Physical Dimensions

Property	AO10LL	AO10LLP	AO10LLX4	AO10LLX6	AO10LLX8
Area(um2)	14.120	16.138	28.241	40.344	54.464

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO10LL	C Input Cap.	0.0026	0.0023	0.0024
AO10LL	Z Max Load	0.160	0.160	0.160
AO10LL	A Input Cap.	0.0024	0.0022	0.0022
AO10LL	D Input Cap.	0.0028	0.0025	0.0026
AO10LL	B Input Cap.	0.0024	0.0022	0.0022
AO10LL	E Input Cap.	0.0024	0.0022	0.0022
AO10LLP	D Input Cap.	0.0052	0.0048	0.0050
AO10LLP	B Input Cap.	0.0044	0.0041	0.0042
AO10LLP	E Input Cap.	0.0045	0.0041	0.0042
AO10LLP	C Input Cap.	0.0049	0.0045	0.0047
AO10LLP	Z Max Load	0.320	0.320	0.320
AO10LLP	A Input Cap.	0.0045	0.0042	0.0043
AO10LLX4	E Input Cap.	0.0091	0.0083	0.0086
AO10LLX4	C Input Cap.	0.0097	0.0089	0.0092
AO10LLX4	Z Max Load	0.640	0.640	0.640
AO10LLX4	A Input Cap.	0.0102	0.0094	0.0097
AO10LLX4	D Input Cap.	0.0106	0.0097	0.0101
AO10LLX4	B Input Cap.	0.0095	0.0088	0.0091

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO10LLX6	D Input Cap.	0.0154	0.0141	0.0147
AO10LLX6	Z Max Load	0.960	0.960	0.960
AO10LLX6	B Input Cap.	0.0123	0.0113	0.0117
AO10LLX6	E Input Cap.	0.0134	0.0122	0.0126
AO10LLX6	C Input Cap.	0.0146	0.0134	0.0138
AO10LLX6	A Input Cap.	0.0129	0.0118	0.0123
AO10LLX8	A Input Cap.	0.0172	0.0158	0.0163
AO10LLX8	D Input Cap.	0.0204	0.0187	0.0194
AO10LLX8	B Input Cap.	0.0163	0.0150	0.0155
AO10LLX8	E Input Cap.	0.0176	0.0161	0.0166
AO10LLX8	C Input Cap.	0.0190	0.0174	0.0180
AO10LLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO10LL	E-Z	E_Z (fall)	0.017 + 0.287*Tr + 2.829*C	0.063 + 0.343*Tr + 6.432*C	0.031 + 0.314*Tr + 4.090*C
AO10LL	E-Z	E_Z (rise)	0.021 + 0.251*Tr + 3.216*C	0.107 + 0.249*Tr + 10.116*C	0.063 + 0.248*Tr + 6.781*C
AO10LL	A-Z	A_Z (fall)	0.015 + 0.225*Tr + 3.095*C	0.048 + 0.261*Tr + 8.092*C	0.022 + 0.246*Tr + 4.772*C
AO10LL	A-Z	A_Z (rise)	0.014 + 0.293*Tr + 3.861*C	0.050 + 0.302*Tr + 10.093*C	0.031 + 0.301*Tr + 6.785*C
AO10LL	B-Z	B_Z (fall)	0.010 + 0.266*Tr + 3.163*C	0.039 + 0.305*Tr + 8.145*C	0.014 + 0.285*Tr + 4.860*C
AO10LL	B-Z	B_Z (rise)	0.011 + 0.286*Tr + 3.885*C	0.041 + 0.297*Tr + 10.131*C	0.025 + 0.296*Tr + 6.815*C
AO10LL	C-Z	C_Z (fall)	0.030 + 0.286*Tr + 3.100*C	0.115 + 0.329*Tr + 8.005*C	0.057 + 0.310*Tr + 4.737*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO10LL	C-Z	C_Z (rise)	0.042 + 0.199*Tr + 3.882*C	0.131 + 0.210*Tr + 10.094*C	0.079 + 0.202*Tr + 6.747*C
AO10LL	D-Z	D_Z (fall)	0.033 + 0.241*Tr + 3.055*C	0.123 + 0.280*Tr + 7.996*C	0.063 + 0.265*Tr + 4.685*C
AO10LL	D-Z	D_Z (rise)	0.043 + 0.205*Tr + 3.865*C	0.141 + 0.213*Tr + 10.073*C	0.085 + 0.206*Tr + 6.728*C
AO10LLP	E-Z	E_Z (fall)	0.016 + 0.299*Tr + 1.542*C	0.059 + 0.349*Tr + 3.301*C	0.029 + 0.323*Tr + 2.166*C
AO10LLP	E-Z	E_Z (rise)	0.015 + 0.237*Tr + 1.591*C	0.096 + 0.237*Tr + 4.875*C	0.055 + 0.236*Tr + 3.295*C
AO10LLP	A-Z	A_Z (fall)	0.012 + 0.231*Tr + 1.624*C	0.043 + 0.264*Tr + 4.051*C	0.017 + 0.250*Tr + 2.453*C
AO10LLP	A-Z	A_Z (rise)	0.009 + 0.281*Tr + 1.902*C	0.044 + 0.290*Tr + 4.867*C	0.024 + 0.289*Tr + 3.301*C
AO10LLP	B-Z	B_Z (fall)	0.006 + 0.271*Tr + 1.660*C	0.032 + 0.305*Tr + 4.082*C	0.009 + 0.288*Tr + 2.500*C
AO10LLP	B-Z	B_Z (rise)	0.005 + 0.273*Tr + 1.917*C	0.033 + 0.284*Tr + 4.889*C	0.017 + 0.283*Tr + 3.320*C
AO10LLP	C-Z	C_Z (fall)	0.027 + 0.292*Tr + 1.622*C	0.108 + 0.332*Tr + 3.994*C	0.053 + 0.314*Tr + 2.424*C
AO10LLP	C-Z	C_Z (rise)	0.037 + 0.188*Tr + 1.901*C	0.118 + 0.199*Tr + 4.850*C	0.070 + 0.192*Tr + 3.266*C
AO10LLP	D-Z	D_Z (fall)	0.031 + 0.248*Tr + 1.597*C	0.117 + 0.284*Tr + 3.987*C	0.060 + 0.271*Tr + 2.396*C
AO10LLP	D-Z	D_Z (rise)	0.038 + 0.194*Tr + 1.890*C	0.128 + 0.202*Tr + 4.838*C	0.076 + 0.195*Tr + 3.254*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO10LLX4	E-Z	E_Z (fall)	0.021 + 0.298*Tr + 0.791*C	0.064 + 0.348*Tr + 1.634*C	0.035 + 0.321*Tr + 1.091*C
AO10LLX4	E-Z	E_Z (rise)	0.019 + 0.229*Tr + 0.797*C	0.101 + 0.234*Tr + 2.439*C	0.059 + 0.232*Tr + 1.650*C
AO10LLX4	A-Z	A_Z (fall)	0.015 + 0.226*Tr + 0.813*C	0.047 + 0.260*Tr + 2.027*C	0.022 + 0.245*Tr + 1.227*C
AO10LLX4	A-Z	A_Z (rise)	0.013 + 0.276*Tr + 0.951*C	0.049 + 0.288*Tr + 2.435*C	0.029 + 0.286*Tr + 1.651*C
AO10LLX4	B-Z	B_Z (fall)	0.010 + 0.264*Tr + 0.830*C	0.035 + 0.302*Tr + 2.042*C	0.014 + 0.281*Tr + 1.250*C
AO10LLX4	B-Z	B_Z (rise)	0.008 + 0.268*Tr + 0.959*C	0.036 + 0.282*Tr + 2.446*C	0.020 + 0.280*Tr + 1.661*C
AO10LLX4	C-Z	C_Z (fall)	0.030 + 0.288*Tr + 0.811*C	0.110 + 0.331*Tr + 1.997*C	0.057 + 0.310*Tr + 1.212*C
AO10LLX4	C-Z	C_Z (rise)	0.039 + 0.185*Tr + 0.951*C	0.121 + 0.197*Tr + 2.426*C	0.072 + 0.189*Tr + 1.633*C
AO10LLX4	D-Z	D_Z (fall)	0.034 + 0.245*Tr + 0.799*C	0.120 + 0.283*Tr + 1.994*C	0.063 + 0.268*Tr + 1.199*C
AO10LLX4	D-Z	D_Z (rise)	0.040 + 0.191*Tr + 0.946*C	0.131 + 0.200*Tr + 2.420*C	0.079 + 0.193*Tr + 1.628*C
AO10LLX6	E-Z	E_Z (fall)	0.019 + 0.292*Tr + 0.524*C	0.062 + 0.342*Tr + 1.094*C	0.033 + 0.316*Tr + 0.728*C
AO10LLX6	E-Z	E_Z (rise)	0.017 + 0.226*Tr + 0.534*C	0.099 + 0.230*Tr + 1.629*C	0.058 + 0.228*Tr + 1.102*C
AO10LLX6	A-Z	A_Z (fall)	0.013 + 0.223*Tr + 0.544*C	0.044 + 0.256*Tr + 1.355*C	0.019 + 0.241*Tr + 0.821*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO10LLX6	A-Z	A_Z (rise)	0.011 + 0.272*Tr + 0.636*C	0.047 + 0.283*Tr + 1.625*C	0.027 + 0.281*Tr + 1.103*C
AO10LLX6	B-Z	B_Z (fall)	0.008 + 0.260*Tr + 0.556*C	0.034 + 0.296*Tr + 1.366*C	0.011 + 0.276*Tr + 0.838*C
AO10LLX6	B-Z	B_Z (rise)	0.007 + 0.263*Tr + 0.642*C	0.036 + 0.276*Tr + 1.634*C	0.019 + 0.274*Tr + 1.110*C
AO10LLX6	C-Z	C_Z (fall)	0.028 + 0.285*Tr + 0.543*C	0.108 + 0.327*Tr + 1.334*C	0.054 + 0.307*Tr + 0.811*C
AO10LLX6	C-Z	C_Z (rise)	0.037 + 0.182*Tr + 0.635*C	0.118 + 0.194*Tr + 1.619*C	0.070 + 0.187*Tr + 1.091*C
AO10LLX6	D-Z	D_Z (fall)	0.032 + 0.243*Tr + 0.534*C	0.117 + 0.280*Tr + 1.332*C	0.061 + 0.265*Tr + 0.801*C
AO10LLX6	D-Z	D_Z (rise)	0.038 + 0.189*Tr + 0.632*C	0.128 + 0.197*Tr + 1.615*C	0.077 + 0.191*Tr + 1.087*C
AO10LLX8	E-Z	E_Z (fall)	0.020 + 0.294*Tr + 0.397*C	0.062 + 0.343*Tr + 0.821*C	0.034 + 0.317*Tr + 0.549*C
AO10LLX8	E-Z	E_Z (rise)	0.018 + 0.225*Tr + 0.401*C	0.099 + 0.230*Tr + 1.223*C	0.058 + 0.228*Tr + 0.827*C
AO10LLX8	A-Z	A_Z (fall)	0.014 + 0.224*Tr + 0.411*C	0.044 + 0.257*Tr + 1.011*C	0.020 + 0.242*Tr + 0.617*C
AO10LLX8	A-Z	A_Z (rise)	0.011 + 0.271*Tr + 0.478*C	0.047 + 0.284*Tr + 1.220*C	0.027 + 0.282*Tr + 0.828*C
AO10LLX8	B-Z	B_Z (fall)	0.009 + 0.261*Tr + 0.420*C	0.033 + 0.297*Tr + 1.020*C	0.012 + 0.277*Tr + 0.630*C
AO10LLX8	B-Z	B_Z (rise)	0.007 + 0.263*Tr + 0.482*C	0.036 + 0.277*Tr + 1.227*C	0.020 + 0.275*Tr + 0.834*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO10LLX8	C-Z	C_Z (fall)	0.029 + 0.286*Tr + 0.412*C	0.107 + 0.328*Tr + 1.001*C	0.056 + 0.308*Tr + 0.612*C
AO10LLX8	C-Z	C_Z (rise)	0.037 + 0.182*Tr + 0.477*C	0.118 + 0.194*Tr + 1.215*C	0.070 + 0.187*Tr + 0.819*C
AO10LLX8	D-Z	D_Z (fall)	0.033 + 0.244*Tr + 0.406*C	0.117 + 0.281*Tr + 0.998*C	0.062 + 0.267*Tr + 0.605*C
AO10LLX8	D-Z	D_Z (rise)	0.039 + 0.188*Tr + 0.474*C	0.129 + 0.198*Tr + 1.212*C	0.077 + 0.191*Tr + 0.816*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO10LL	3573.340	66914.500
AO10LLP	5459.380	113820.000
AO10LLX4	10419.600	221161.000
AO10LLX6	15868.700	334970.000
AO10LLX8	19937.700	430246.000

Internal Energy at minimum output load

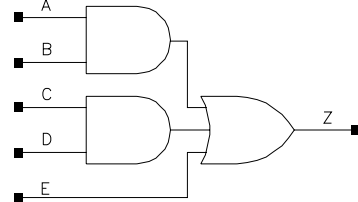
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO10LL	Z(max)	0.016 + 0.006*Tr
AO10LLP	Z(max)	0.028 + 0.013*Tr
AO10LLX4	Z(max)	0.056 + 0.027*Tr
AO10LLX6	Z(max)	0.082 + 0.041*Tr
AO10LLX8	Z(max)	0.110 + 0.054*Tr

AO10NLL
AO10NLLP
AO10NLLX4
AO10NLLX6
AO10NLLX8

Function: Function = 3 wide 2-2-1 AND-OR

Boolean Expression: $Z = (A \bullet B + C \bullet D + E)$



Physical Dimensions

Property	AO10NLL	AO10NLLP	AO10NLLX4	AO10NLLX6	AO10NLLX8
Area(um ²)	14.120	18.155	22.189	36.310	40.344

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO10NLL	A Input Cap.	0.0020	0.0016	0.0017
AO10NLL	D Input Cap.	0.0019	0.0017	0.0018
AO10NLL	Z Max Load	0.160	0.160	0.160
AO10NLL	B Input Cap.	0.0020	0.0016	0.0017
AO10NLL	E Input Cap.	0.0020	0.0016	0.0017
AO10NLL	C Input Cap.	0.0022	0.0019	0.0020
AO10NLLP	C Input Cap.	0.0027	0.0023	0.0024
AO10NLLP	A Input Cap.	0.0027	0.0023	0.0024
AO10NLLP	D Input Cap.	0.0028	0.0025	0.0026
AO10NLLP	Z Max Load	0.320	0.320	0.320
AO10NLLP	B Input Cap.	0.0026	0.0023	0.0024
AO10NLLP	E Input Cap.	0.0025	0.0022	0.0023
AO10NLLX4	Z Max Load	0.640	0.640	0.640
AO10NLLX4	B Input Cap.	0.0049	0.0043	0.0044
AO10NLLX4	E Input Cap.	0.0047	0.0041	0.0043
AO10NLLX4	C Input Cap.	0.0051	0.0046	0.0047
AO10NLLX4	A Input Cap.	0.0050	0.0044	0.0045
AO10NLLX4	D Input Cap.	0.0053	0.0048	0.0050

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO10NLLX6	A Input Cap.	0.0087	0.0077	0.0079
AO10NLLX6	D Input Cap.	0.0082	0.0074	0.0077
AO10NLLX6	B Input Cap.	0.0080	0.0071	0.0073
AO10NLLX6	E Input Cap.	0.0074	0.0066	0.0068
AO10NLLX6	C Input Cap.	0.0075	0.0067	0.0070
AO10NLLX6	Z Max Load	0.960	0.960	0.960
AO10NLLX8	C Input Cap.	0.0100	0.0090	0.0093
AO10NLLX8	A Input Cap.	0.0112	0.0098	0.0102
AO10NLLX8	D Input Cap.	0.0108	0.0097	0.0101
AO10NLLX8	Z Max Load	1.280	1.280	1.280
AO10NLLX8	B Input Cap.	0.0106	0.0093	0.0096
AO10NLLX8	E Input Cap.	0.0095	0.0084	0.0087

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO10NLL	E-Z	E_Z (fall)	0.085 + 0.245*Tr + 1.290*C	0.289 + 0.256*Tr + 2.976*C	0.183 + 0.253*Tr + 1.906*C
AO10NLL	E-Z	E_Z (rise)	0.063 + 0.217*Tr + 1.620*C	0.163 + 0.284*Tr + 3.439*C	0.102 + 0.247*Tr + 2.340*C
AO10NLL	A-Z	A_Z (fall)	0.088 + 0.275*Tr + 1.290*C	0.237 + 0.295*Tr + 2.952*C	0.156 + 0.290*Tr + 1.886*C
AO10NLL	A-Z	A_Z (rise)	0.071 + 0.192*Tr + 1.645*C	0.199 + 0.239*Tr + 3.548*C	0.117 + 0.213*Tr + 2.392*C
AO10NLL	B-Z	B_Z (fall)	0.083 + 0.264*Tr + 1.287*C	0.225 + 0.286*Tr + 2.941*C	0.148 + 0.281*Tr + 1.880*C
AO10NLL	B-Z	B_Z (rise)	0.072 + 0.219*Tr + 1.642*C	0.196 + 0.275*Tr + 3.546*C	0.117 + 0.241*Tr + 2.390*C
AO10NLL	C-Z	C_Z (fall)	0.109 + 0.201*Tr + 1.340*C	0.303 + 0.213*Tr + 2.967*C	0.190 + 0.205*Tr + 1.903*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO10NLL	C-Z	C_Z (rise)	0.093 + 0.257*Tr + 1.657*C	0.274 + 0.319*Tr + 3.583*C	0.157 + 0.285*Tr + 2.397*C
AO10NLL	D-Z	D_Z (fall)	0.110 + 0.210*Tr + 1.343*C	0.315 + 0.217*Tr + 2.977*C	0.198 + 0.210*Tr + 1.907*C
AO10NLL	D-Z	D_Z (rise)	0.091 + 0.221*Tr + 1.660*C	0.279 + 0.271*Tr + 3.588*C	0.157 + 0.246*Tr + 2.402*C
AO10NLLP	E-Z	E_Z (fall)	0.080 + 0.225*Tr + 0.658*C	0.266 + 0.242*Tr + 1.464*C	0.170 + 0.238*Tr + 0.954*C
AO10NLLP	E-Z	E_Z (rise)	0.074 + 0.256*Tr + 0.800*C	0.194 + 0.324*Tr + 1.699*C	0.120 + 0.286*Tr + 1.154*C
AO10NLLP	A-Z	A_Z (fall)	0.082 + 0.264*Tr + 0.656*C	0.218 + 0.286*Tr + 1.451*C	0.144 + 0.280*Tr + 0.943*C
AO10NLLP	A-Z	A_Z (rise)	0.067 + 0.201*Tr + 0.808*C	0.182 + 0.245*Tr + 1.724*C	0.109 + 0.220*Tr + 1.169*C
AO10NLLP	B-Z	B_Z (fall)	0.077 + 0.254*Tr + 0.654*C	0.205 + 0.277*Tr + 1.444*C	0.136 + 0.271*Tr + 0.939*C
AO10NLLP	B-Z	B_Z (rise)	0.069 + 0.222*Tr + 0.806*C	0.178 + 0.280*Tr + 1.721*C	0.108 + 0.248*Tr + 1.167*C
AO10NLLP	C-Z	C_Z (fall)	0.100 + 0.194*Tr + 0.683*C	0.283 + 0.208*Tr + 1.459*C	0.179 + 0.199*Tr + 0.952*C
AO10NLLP	C-Z	C_Z (rise)	0.090 + 0.266*Tr + 0.815*C	0.259 + 0.325*Tr + 1.738*C	0.151 + 0.293*Tr + 1.170*C
AO10NLLP	D-Z	D_Z (fall)	0.104 + 0.202*Tr + 0.684*C	0.295 + 0.212*Tr + 1.465*C	0.186 + 0.204*Tr + 0.954*C
AO10NLLP	D-Z	D_Z (rise)	0.089 + 0.231*Tr + 0.818*C	0.264 + 0.278*Tr + 1.743*C	0.151 + 0.255*Tr + 1.173*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO10NLLX4	E-Z	E_Z (fall)	0.077 + 0.209*Tr + 0.328*C	0.253 + 0.229*Tr + 0.726*C	0.162 + 0.224*Tr + 0.473*C
AO10NLLX4	E-Z	E_Z (rise)	0.075 + 0.272*Tr + 0.401*C	0.191 + 0.335*Tr + 0.851*C	0.121 + 0.300*Tr + 0.579*C
AO10NLLX4	A-Z	A_Z (fall)	0.078 + 0.251*Tr + 0.326*C	0.207 + 0.275*Tr + 0.719*C	0.137 + 0.267*Tr + 0.467*C
AO10NLLX4	A-Z	A_Z (rise)	0.066 + 0.211*Tr + 0.405*C	0.176 + 0.251*Tr + 0.862*C	0.106 + 0.228*Tr + 0.585*C
AO10NLLX4	B-Z	B_Z (fall)	0.074 + 0.240*Tr + 0.325*C	0.195 + 0.265*Tr + 0.715*C	0.129 + 0.258*Tr + 0.465*C
AO10NLLX4	B-Z	B_Z (rise)	0.067 + 0.237*Tr + 0.403*C	0.172 + 0.285*Tr + 0.861*C	0.106 + 0.256*Tr + 0.584*C
AO10NLLX4	C-Z	C_Z (fall)	0.097 + 0.182*Tr + 0.339*C	0.266 + 0.197*Tr + 0.724*C	0.168 + 0.188*Tr + 0.472*C
AO10NLLX4	C-Z	C_Z (rise)	0.089 + 0.276*Tr + 0.408*C	0.250 + 0.330*Tr + 0.867*C	0.148 + 0.300*Tr + 0.585*C
AO10NLLX4	D-Z	D_Z (fall)	0.098 + 0.191*Tr + 0.340*C	0.278 + 0.201*Tr + 0.726*C	0.175 + 0.193*Tr + 0.473*C
AO10NLLX4	D-Z	D_Z (rise)	0.089 + 0.240*Tr + 0.409*C	0.255 + 0.284*Tr + 0.869*C	0.149 + 0.262*Tr + 0.586*C
AO10NLLX6	E-Z	E_Z (fall)	0.079 + 0.209*Tr + 0.220*C	0.260 + 0.232*Tr + 0.490*C	0.166 + 0.226*Tr + 0.319*C
AO10NLLX6	E-Z	E_Z (rise)	0.078 + 0.276*Tr + 0.268*C	0.192 + 0.336*Tr + 0.570*C	0.123 + 0.302*Tr + 0.387*C
AO10NLLX6	A-Z	A_Z (fall)	0.079 + 0.253*Tr + 0.219*C	0.211 + 0.279*Tr + 0.485*C	0.139 + 0.270*Tr + 0.315*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO10NLLX6	A-Z	A_Z (rise)	0.068 + 0.211*Tr + 0.271*C	0.176 + 0.250*Tr + 0.577*C	0.107 + 0.228*Tr + 0.391*C
AO10NLLX6	B-Z	B_Z (fall)	0.074 + 0.242*Tr + 0.219*C	0.197 + 0.270*Tr + 0.482*C	0.130 + 0.261*Tr + 0.314*C
AO10NLLX6	B-Z	B_Z (rise)	0.068 + 0.238*Tr + 0.270*C	0.171 + 0.284*Tr + 0.576*C	0.106 + 0.256*Tr + 0.391*C
AO10NLLX6	C-Z	C_Z (fall)	0.099 + 0.183*Tr + 0.228*C	0.270 + 0.200*Tr + 0.488*C	0.170 + 0.191*Tr + 0.318*C
AO10NLLX6	C-Z	C_Z (rise)	0.091 + 0.276*Tr + 0.273*C	0.247 + 0.329*Tr + 0.580*C	0.148 + 0.300*Tr + 0.391*C
AO10NLLX6	D-Z	D_Z (fall)	0.099 + 0.192*Tr + 0.229*C	0.282 + 0.204*Tr + 0.490*C	0.178 + 0.196*Tr + 0.319*C
AO10NLLX6	D-Z	D_Z (rise)	0.090 + 0.241*Tr + 0.273*C	0.253 + 0.283*Tr + 0.581*C	0.149 + 0.262*Tr + 0.392*C
AO10NLLX8	E-Z	E_Z (fall)	0.077 + 0.205*Tr + 0.165*C	0.253 + 0.228*Tr + 0.366*C	0.162 + 0.222*Tr + 0.238*C
AO10NLLX8	E-Z	E_Z (rise)	0.077 + 0.278*Tr + 0.201*C	0.189 + 0.337*Tr + 0.428*C	0.121 + 0.304*Tr + 0.291*C
AO10NLLX8	A-Z	A_Z (fall)	0.077 + 0.251*Tr + 0.164*C	0.205 + 0.274*Tr + 0.362*C	0.136 + 0.267*Tr + 0.235*C
AO10NLLX8	A-Z	A_Z (rise)	0.066 + 0.210*Tr + 0.203*C	0.174 + 0.250*Tr + 0.434*C	0.105 + 0.228*Tr + 0.294*C
AO10NLLX8	B-Z	B_Z (fall)	0.072 + 0.240*Tr + 0.164*C	0.192 + 0.265*Tr + 0.361*C	0.127 + 0.258*Tr + 0.235*C
AO10NLLX8	B-Z	B_Z (rise)	0.066 + 0.236*Tr + 0.203*C	0.169 + 0.285*Tr + 0.433*C	0.104 + 0.255*Tr + 0.294*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO10NLLX8	C-Z	C_Z (fall)	0.097 + 0.181*Tr + 0.171*C	0.263 + 0.196*Tr + 0.365*C	0.166 + 0.188*Tr + 0.238*C
AO10NLLX8	C-Z	C_Z (rise)	0.089 + 0.275*Tr + 0.205*C	0.247 + 0.330*Tr + 0.436*C	0.147 + 0.300*Tr + 0.294*C
AO10NLLX8	D-Z	D_Z (fall)	0.098 + 0.190*Tr + 0.171*C	0.277 + 0.200*Tr + 0.366*C	0.175 + 0.193*Tr + 0.238*C
AO10NLLX8	D-Z	D_Z (rise)	0.088 + 0.240*Tr + 0.205*C	0.254 + 0.283*Tr + 0.437*C	0.148 + 0.262*Tr + 0.294*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO10NLL	4868.620	89540.000
AO10NLLP	6659.420	133905.000
AO10NLLX4	11631.000	247673.000
AO10NLLX6	16649.500	359363.000
AO10NLLX8	22763.100	488835.000

Internal Energy at minimum output load

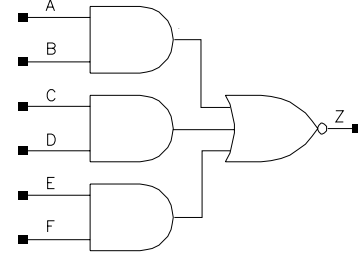
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO10NLL	Z(max)	0.022 + 0.006*Tr
AO10NLLP	Z(max)	0.035 + 0.010*Tr
AO10NLLX4	Z(max)	0.065 + 0.022*Tr
AO10NLLX6	Z(max)	0.101 + 0.031*Tr
AO10NLLX8	Z(max)	0.132 + 0.044*Tr

AO11LL
AO11LLP
AO11LLX4
AO11LLX6
AO11LLX8

Function: Function = 3 wide 2-2-2 AND-OR-INVERT

Boolean Expression: $Z = \overline{(A \bullet B + C \bullet D + E \bullet F)}$



Physical Dimensions

Property	AO11LL	AO11LLP	AO11LLX4	AO11LLX6	AO11LLX8
Area(um2)	14.120	18.155	34.292	48.413	64.550

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO11LL	C Input Cap.	0.0026	0.0024	0.0025
AO11LL	F Input Cap.	0.0028	0.0025	0.0026
AO11LL	A Input Cap.	0.0027	0.0024	0.0025
AO11LL	D Input Cap.	0.0028	0.0025	0.0026
AO11LL	B Input Cap.	0.0023	0.0021	0.0022
AO11LL	E Input Cap.	0.0027	0.0024	0.0025
AO11LL	Z Max Load	0.160	0.160	0.160
AO11LLP	D Input Cap.	0.0052	0.0048	0.0050
AO11LLP	B Input Cap.	0.0043	0.0039	0.0040
AO11LLP	E Input Cap.	0.0046	0.0042	0.0043
AO11LLP	Z Max Load	0.320	0.320	0.320
AO11LLP	C Input Cap.	0.0049	0.0046	0.0047
AO11LLP	F Input Cap.	0.0050	0.0045	0.0047
AO11LLP	A Input Cap.	0.0046	0.0042	0.0043
AO11LLX4	B Input Cap.	0.0086	0.0078	0.0080
AO11LLX4	E Input Cap.	0.0097	0.0089	0.0092
AO11LLX4	Z Max Load	0.640	0.640	0.640
AO11LLX4	C Input Cap.	0.0095	0.0088	0.0091

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO11LLX4	F Input Cap.	0.0099	0.0089	0.0093
AO11LLX4	A Input Cap.	0.0093	0.0084	0.0087
AO11LLX4	D Input Cap.	0.0102	0.0094	0.0098
AO11LLX6	A Input Cap.	0.0136	0.0123	0.0127
AO11LLX6	Z Max Load	0.960	0.960	0.960
AO11LLX6	D Input Cap.	0.0152	0.0140	0.0145
AO11LLX6	B Input Cap.	0.0130	0.0118	0.0122
AO11LLX6	E Input Cap.	0.0147	0.0135	0.0139
AO11LLX6	C Input Cap.	0.0146	0.0135	0.0140
AO11LLX6	F Input Cap.	0.0148	0.0134	0.0139
AO11LLX8	C Input Cap.	0.0192	0.0177	0.0184
AO11LLX8	F Input Cap.	0.0207	0.0188	0.0195
AO11LLX8	A Input Cap.	0.0185	0.0168	0.0173
AO11LLX8	D Input Cap.	0.0203	0.0187	0.0195
AO11LLX8	B Input Cap.	0.0172	0.0156	0.0161
AO11LLX8	E Input Cap.	0.0185	0.0168	0.0174
AO11LLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO11LL	E-Z	E_Z (fall)	0.029 + 0.288*Tr + 3.560°C	0.112 + 0.330*Tr + 9.427°C	0.056 + 0.310*Tr + 5.485°C
AO11LL	E-Z	E_Z (rise)	0.022 + 0.249*Tr + 3.221°C	0.117 + 0.250*Tr + 10.113°C	0.069 + 0.248*Tr + 6.788°C
AO11LL	A-Z	A_Z (fall)	0.014 + 0.229*Tr + 3.086°C	0.048 + 0.263*Tr + 8.086°C	0.022 + 0.246*Tr + 4.775°C
AO11LL	A-Z	A_Z (rise)	0.008 + 0.289*Tr + 3.158°C	0.057 + 0.306*Tr + 10.067°C	0.035 + 0.304*Tr + 6.764°C
AO11LL	F-Z	F_Z (fall)	0.034 + 0.242*Tr + 3.516°C	0.124 + 0.279*Tr + 9.429°C	0.064 + 0.264*Tr + 5.442°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO11LL	F-Z	F_Z (rise)	0.025 + 0.255*Tr + 3.202*C	0.128 + 0.253*Tr + 10.096*C	0.077 + 0.251*Tr + 6.770*C
AO11LL	B-Z	B_Z (fall)	0.009 + 0.269*Tr + 3.152*C	0.038 + 0.307*Tr + 8.132*C	0.014 + 0.285*Tr + 4.862*C
AO11LL	B-Z	B_Z (rise)	0.005 + 0.282*Tr + 3.184*C	0.047 + 0.301*Tr + 10.100*C	0.028 + 0.299*Tr + 6.795*C
AO11LL	C-Z	C_Z (fall)	0.032 + 0.288*Tr + 3.100*C	0.134 + 0.335*Tr + 7.995*C	0.067 + 0.315*Tr + 4.720*C
AO11LL	C-Z	C_Z (rise)	0.036 + 0.220*Tr + 3.172*C	0.155 + 0.215*Tr + 10.079*C	0.093 + 0.206*Tr + 6.740*C
AO11LL	D-Z	D_Z (fall)	0.036 + 0.242*Tr + 3.057*C	0.143 + 0.283*Tr + 7.993*C	0.073 + 0.269*Tr + 4.675*C
AO11LL	D-Z	D_Z (rise)	0.039 + 0.224*Tr + 3.156*C	0.166 + 0.219*Tr + 10.061*C	0.104 + 0.210*Tr + 6.725*C
AO11LLP	E-Z	E_Z (fall)	0.022 + 0.287*Tr + 1.624*C	0.091 + 0.326*Tr + 4.000*C	0.044 + 0.308*Tr + 2.431*C
AO11LLP	E-Z	E_Z (rise)	0.018 + 0.241*Tr + 1.586*C	0.110 + 0.242*Tr + 4.867*C	0.064 + 0.240*Tr + 3.291*C
AO11LLP	A-Z	A_Z (fall)	0.013 + 0.235*Tr + 1.617*C	0.043 + 0.266*Tr + 4.041*C	0.019 + 0.251*Tr + 2.450*C
AO11LLP	A-Z	A_Z (rise)	0.004 + 0.278*Tr + 1.561*C	0.053 + 0.295*Tr + 4.849*C	0.031 + 0.293*Tr + 3.287*C
AO11LLP	F-Z	F_Z (fall)	0.028 + 0.244*Tr + 1.598*C	0.104 + 0.280*Tr + 3.993*C	0.053 + 0.266*Tr + 2.402*C
AO11LLP	F-Z	F_Z (rise)	0.022 + 0.247*Tr + 1.573*C	0.123 + 0.245*Tr + 4.854*C	0.072 + 0.244*Tr + 3.279*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO11LLP	B-Z	B_Z (fall)	0.007 + 0.276*Tr + 1.651*C	0.033 + 0.308*Tr + 4.070*C	0.010 + 0.289*Tr + 2.497*C
AO11LLP	B-Z	B_Z (rise)	0.000 + 0.270*Tr + 1.576*C	0.043 + 0.289*Tr + 4.867*C	0.024 + 0.287*Tr + 3.303*C
AO11LLP	C-Z	C_Z (fall)	0.032 + 0.295*Tr + 1.621*C	0.134 + 0.338*Tr + 3.987*C	0.068 + 0.321*Tr + 2.413*C
AO11LLP	C-Z	C_Z (rise)	0.033 + 0.209*Tr + 1.560*C	0.149 + 0.207*Tr + 4.839*C	0.089 + 0.197*Tr + 3.259*C
AO11LLP	D-Z	D_Z (fall)	0.036 + 0.250*Tr + 1.600*C	0.143 + 0.288*Tr + 3.988*C	0.074 + 0.276*Tr + 2.390*C
AO11LLP	D-Z	D_Z (rise)	0.036 + 0.214*Tr + 1.550*C	0.161 + 0.210*Tr + 4.830*C	0.100 + 0.201*Tr + 3.252*C
AO11LLX4	E-Z	E_Z (fall)	0.025 + 0.281*Tr + 0.813*C	0.091 + 0.324*Tr + 2.002*C	0.047 + 0.302*Tr + 1.217*C
AO11LLX4	E-Z	E_Z (rise)	0.020 + 0.235*Tr + 0.794*C	0.110 + 0.239*Tr + 2.436*C	0.065 + 0.237*Tr + 1.647*C
AO11LLX4	A-Z	A_Z (fall)	0.015 + 0.230*Tr + 0.810*C	0.046 + 0.263*Tr + 2.023*C	0.022 + 0.245*Tr + 1.227*C
AO11LLX4	A-Z	A_Z (rise)	0.007 + 0.270*Tr + 0.781*C	0.056 + 0.292*Tr + 2.427*C	0.033 + 0.290*Tr + 1.645*C
AO11LLX4	F-Z	F_Z (fall)	0.029 + 0.240*Tr + 0.799*C	0.101 + 0.278*Tr + 1.995*C	0.053 + 0.262*Tr + 1.201*C
AO11LLX4	F-Z	F_Z (rise)	0.023 + 0.242*Tr + 0.788*C	0.120 + 0.243*Tr + 2.428*C	0.072 + 0.241*Tr + 1.640*C
AO11LLX4	B-Z	B_Z (fall)	0.010 + 0.269*Tr + 0.826*C	0.036 + 0.305*Tr + 2.038*C	0.015 + 0.282*Tr + 1.250*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO11LLX4	B-Z	B_Z (rise)	0.004 + 0.262*Tr + 0.789*C	0.045 + 0.287*Tr + 2.437*C	0.026 + 0.284*Tr + 1.654*C
AO11LLX4	C-Z	C_Z (fall)	0.034 + 0.291*Tr + 0.811*C	0.133 + 0.337*Tr + 1.995*C	0.070 + 0.317*Tr + 1.207*C
AO11LLX4	C-Z	C_Z (rise)	0.035 + 0.204*Tr + 0.781*C	0.147 + 0.205*Tr + 2.421*C	0.088 + 0.195*Tr + 1.631*C
AO11LLX4	D-Z	D_Z (fall)	0.037 + 0.247*Tr + 0.800*C	0.142 + 0.288*Tr + 1.994*C	0.075 + 0.273*Tr + 1.196*C
AO11LLX4	D-Z	D_Z (rise)	0.037 + 0.210*Tr + 0.775*C	0.159 + 0.209*Tr + 2.415*C	0.099 + 0.200*Tr + 1.626*C
AO11LLX6	E-Z	E_Z (fall)	0.024 + 0.279*Tr + 0.544*C	0.092 + 0.320*Tr + 1.336*C	0.046 + 0.299*Tr + 0.814*C
AO11LLX6	E-Z	E_Z (rise)	0.020 + 0.232*Tr + 0.531*C	0.111 + 0.235*Tr + 1.625*C	0.065 + 0.233*Tr + 1.099*C
AO11LLX6	A-Z	A_Z (fall)	0.014 + 0.228*Tr + 0.541*C	0.046 + 0.260*Tr + 1.351*C	0.021 + 0.243*Tr + 0.820*C
AO11LLX6	A-Z	A_Z (rise)	0.006 + 0.268*Tr + 0.523*C	0.057 + 0.288*Tr + 1.619*C	0.034 + 0.286*Tr + 1.098*C
AO11LLX6	F-Z	F_Z (fall)	0.028 + 0.238*Tr + 0.534*C	0.101 + 0.275*Tr + 1.332*C	0.053 + 0.259*Tr + 0.802*C
AO11LLX6	F-Z	F_Z (rise)	0.023 + 0.239*Tr + 0.527*C	0.121 + 0.240*Tr + 1.620*C	0.072 + 0.239*Tr + 1.094*C
AO11LLX6	B-Z	B_Z (fall)	0.009 + 0.266*Tr + 0.553*C	0.036 + 0.300*Tr + 1.361*C	0.013 + 0.278*Tr + 0.836*C
AO11LLX6	B-Z	B_Z (rise)	0.003 + 0.259*Tr + 0.528*C	0.046 + 0.282*Tr + 1.626*C	0.027 + 0.279*Tr + 1.104*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO11LLX6	C-Z	C_Z (fall)	0.033 + 0.288*Tr + 0.542*C	0.133 + 0.334*Tr + 1.332*C	0.069 + 0.314*Tr + 0.807*C
AO11LLX6	C-Z	C_Z (rise)	0.034 + 0.201*Tr + 0.522*C	0.147 + 0.202*Tr + 1.615*C	0.088 + 0.192*Tr + 1.088*C
AO11LLX6	D-Z	D_Z (fall)	0.036 + 0.245*Tr + 0.535*C	0.141 + 0.285*Tr + 1.330*C	0.074 + 0.271*Tr + 0.799*C
AO11LLX6	D-Z	D_Z (rise)	0.037 + 0.208*Tr + 0.518*C	0.158 + 0.206*Tr + 1.611*C	0.098 + 0.198*Tr + 1.085*C
AO11LLX8	E-Z	E_Z (fall)	0.025 + 0.278*Tr + 0.408*C	0.092 + 0.321*Tr + 1.003*C	0.047 + 0.299*Tr + 0.610*C
AO11LLX8	E-Z	E_Z (rise)	0.020 + 0.231*Tr + 0.399*C	0.111 + 0.236*Tr + 1.220*C	0.066 + 0.234*Tr + 0.825*C
AO11LLX8	A-Z	A_Z (fall)	0.015 + 0.228*Tr + 0.406*C	0.047 + 0.260*Tr + 1.014*C	0.023 + 0.242*Tr + 0.616*C
AO11LLX8	A-Z	A_Z (rise)	0.007 + 0.267*Tr + 0.392*C	0.057 + 0.289*Tr + 1.215*C	0.034 + 0.287*Tr + 0.824*C
AO11LLX8	F-Z	F_Z (fall)	0.029 + 0.238*Tr + 0.400*C	0.102 + 0.276*Tr + 0.999*C	0.054 + 0.259*Tr + 0.602*C
AO11LLX8	F-Z	F_Z (rise)	0.024 + 0.239*Tr + 0.395*C	0.122 + 0.241*Tr + 1.216*C	0.073 + 0.239*Tr + 0.821*C
AO11LLX8	B-Z	B_Z (fall)	0.010 + 0.265*Tr + 0.415*C	0.036 + 0.301*Tr + 1.022*C	0.015 + 0.278*Tr + 0.628*C
AO11LLX8	B-Z	B_Z (rise)	0.004 + 0.259*Tr + 0.396*C	0.046 + 0.283*Tr + 1.221*C	0.027 + 0.280*Tr + 0.829*C
AO11LLX8	C-Z	C_Z (fall)	0.034 + 0.288*Tr + 0.407*C	0.133 + 0.335*Tr + 0.999*C	0.070 + 0.315*Tr + 0.605*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO11LLX8	C-Z	C_Z (rise)	0.035 + 0.201*Tr + 0.392*C	0.147 + 0.203*Tr + 1.212*C	0.089 + 0.193*Tr + 0.817*C
AO11LLX8	D-Z	D_Z (fall)	0.037 + 0.245*Tr + 0.401*C	0.142 + 0.286*Tr + 0.998*C	0.075 + 0.271*Tr + 0.599*C
AO11LLX8	D-Z	D_Z (rise)	0.037 + 0.207*Tr + 0.389*C	0.159 + 0.207*Tr + 1.209*C	0.099 + 0.198*Tr + 0.814*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO11LL	3668.610	70094.600
AO11LLP	5879.580	124058.000
AO11LLX4	11759.200	248112.000
AO11LLX6	17638.700	372171.000
AO11LLX8	23518.300	496229.000

Internal Energy at minimum output load

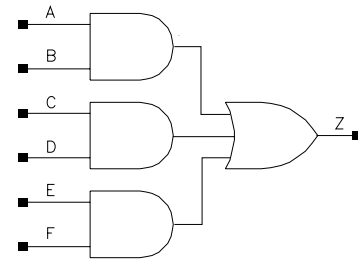
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO11LL	Z(max)	0.019 + 0.006*Tr
AO11LLP	Z(max)	0.036 + 0.011*Tr
AO11LLX4	Z(max)	0.069 + 0.024*Tr
AO11LLX6	Z(max)	0.102 + 0.037*Tr
AO11LLX8	Z(max)	0.139 + 0.048*Tr

AO11NLL
AO11NLLP
AO11NLLX4
AO11NLLX6
AO11NLLX8

Function: Function = 3 wide 2-2-2 AND-OR

Boolean Expression: $Z = (A \bullet B + C \bullet D + E \bullet F)$



Physical Dimensions

Property	AO11NLL	AO11NLLP	AO11NLLX4	AO11NLLX6	AO11NLLX8
Area(um2)	18.155	20.172	24.206	40.344	46.396

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO11NLL	F Input Cap.	0.0019	0.0017	0.0018
AO11NLL	A Input Cap.	0.0017	0.0014	0.0015
AO11NLL	Z Max Load	0.160	0.160	0.160
AO11NLL	D Input Cap.	0.0017	0.0014	0.0015
AO11NLL	B Input Cap.	0.0015	0.0013	0.0014
AO11NLL	E Input Cap.	0.0015	0.0013	0.0014
AO11NLL	C Input Cap.	0.0017	0.0015	0.0015
AO11NLLP	E Input Cap.	0.0031	0.0027	0.0028
AO11NLLP	C Input Cap.	0.0028	0.0025	0.0026
AO11NLLP	F Input Cap.	0.0028	0.0024	0.0026
AO11NLLP	A Input Cap.	0.0029	0.0024	0.0026
AO11NLLP	Z Max Load	0.320	0.320	0.320
AO11NLLP	D Input Cap.	0.0029	0.0026	0.0027
AO11NLLP	B Input Cap.	0.0028	0.0023	0.0024
AO11NLLX4	F Input Cap.	0.0052	0.0046	0.0048
AO11NLLX4	A Input Cap.	0.0052	0.0044	0.0046
AO11NLLX4	Z Max Load	0.640	0.640	0.640
AO11NLLX4	D Input Cap.	0.0052	0.0047	0.0049
AO11NLLX4	B Input Cap.	0.0050	0.0043	0.0044
AO11NLLX4	E Input Cap.	0.0054	0.0049	0.0050

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO11NLLX4	C Input Cap.	0.0050	0.0045	0.0047
AO11NLLX6	C Input Cap.	0.0072	0.0065	0.0067
AO11NLLX6	F Input Cap.	0.0073	0.0065	0.0067
AO11NLLX6	A Input Cap.	0.0074	0.0063	0.0066
AO11NLLX6	D Input Cap.	0.0083	0.0076	0.0078
AO11NLLX6	B Input Cap.	0.0073	0.0061	0.0063
AO11NLLX6	E Input Cap.	0.0079	0.0070	0.0072
AO11NLLX6	Z Max Load	0.960	0.960	0.960
AO11NLLX8	B Input Cap.	0.0097	0.0082	0.0085
AO11NLLX8	E Input Cap.	0.0102	0.0089	0.0093
AO11NLLX8	C Input Cap.	0.0098	0.0088	0.0091
AO11NLLX8	F Input Cap.	0.0102	0.0090	0.0094
AO11NLLX8	A Input Cap.	0.0103	0.0088	0.0091
AO11NLLX8	Z Max Load	1.280	1.280	1.280
AO11NLLX8	D Input Cap.	0.0104	0.0094	0.0098

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO11NLL	E-Z	E_Z (fall)	0.099 + 0.249*Tr + 1.318*C	0.343 + 0.262*Tr + 3.079*C	0.217 + 0.257*Tr + 1.970*C
AO11NLL	E-Z	E_Z (rise)	0.094 + 0.248*Tr + 1.660*C	0.288 + 0.314*Tr + 3.637*C	0.164 + 0.277*Tr + 2.423*C
AO11NLL	A-Z	A_Z (fall)	0.084 + 0.278*Tr + 1.272*C	0.270 + 0.312*Tr + 3.063*C	0.179 + 0.307*Tr + 1.954*C
AO11NLL	A-Z	A_Z (rise)	0.076 + 0.196*Tr + 1.653*C	0.225 + 0.242*Tr + 3.620*C	0.131 + 0.215*Tr + 2.424*C
AO11NLL	F-Z	F_Z (fall)	0.102 + 0.258*Tr + 1.320*C	0.355 + 0.266*Tr + 3.090*C	0.225 + 0.263*Tr + 1.977*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO11NLL	F-Z	F_Z (rise)	0.093 + 0.213*Tr + 1.663*C	0.292 + 0.265*Tr + 3.645*C	0.164 + 0.239*Tr + 2.427*C
AO11NLL	B-Z	B_Z (fall)	0.079 + 0.268*Tr + 1.268*C	0.254 + 0.306*Tr + 3.047*C	0.168 + 0.301*Tr + 1.945*C
AO11NLL	B-Z	B_Z (rise)	0.077 + 0.225*Tr + 1.649*C	0.219 + 0.283*Tr + 3.611*C	0.130 + 0.247*Tr + 2.420*C
AO11NLL	C-Z	C_Z (fall)	0.113 + 0.224*Tr + 1.339*C	0.382 + 0.228*Tr + 3.079*C	0.240 + 0.217*Tr + 1.971*C
AO11NLL	C-Z	C_Z (rise)	0.105 + 0.261*Tr + 1.675*C	0.332 + 0.329*Tr + 3.662*C	0.186 + 0.295*Tr + 2.431*C
AO11NLL	D-Z	D_Z (fall)	0.115 + 0.231*Tr + 1.341*C	0.395 + 0.232*Tr + 3.090*C	0.253 + 0.222*Tr + 1.976*C
AO11NLL	D-Z	D_Z (rise)	0.103 + 0.222*Tr + 1.679*C	0.336 + 0.277*Tr + 3.667*C	0.185 + 0.252*Tr + 2.436*C
AO11NLLP	E-Z	E_Z (fall)	0.083 + 0.228*Tr + 0.666*C	0.284 + 0.247*Tr + 1.488*C	0.181 + 0.241*Tr + 0.968*C
AO11NLLP	E-Z	E_Z (rise)	0.085 + 0.257*Tr + 0.813*C	0.248 + 0.318*Tr + 1.751*C	0.146 + 0.284*Tr + 1.177*C
AO11NLLP	A-Z	A_Z (fall)	0.071 + 0.253*Tr + 0.643*C	0.228 + 0.293*Tr + 1.478*C	0.151 + 0.286*Tr + 0.959*C
AO11NLLP	A-Z	A_Z (rise)	0.068 + 0.202*Tr + 0.810*C	0.191 + 0.249*Tr + 1.748*C	0.114 + 0.225*Tr + 1.180*C
AO11NLLP	F-Z	F_Z (fall)	0.086 + 0.237*Tr + 0.667*C	0.296 + 0.252*Tr + 1.494*C	0.188 + 0.247*Tr + 0.971*C
AO11NLLP	F-Z	F_Z (rise)	0.084 + 0.224*Tr + 0.814*C	0.252 + 0.272*Tr + 1.754*C	0.146 + 0.248*Tr + 1.179*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO11NLLP	B-Z	B_Z (fall)	0.067 + 0.243*Tr + 0.642*C	0.214 + 0.285*Tr + 1.470*C	0.142 + 0.278*Tr + 0.954*C
AO11NLLP	B-Z	B_Z (rise)	0.068 + 0.234*Tr + 0.807*C	0.186 + 0.286*Tr + 1.745*C	0.113 + 0.254*Tr + 1.179*C
AO11NLLP	C-Z	C_Z (fall)	0.095 + 0.206*Tr + 0.678*C	0.317 + 0.215*Tr + 1.488*C	0.200 + 0.204*Tr + 0.969*C
AO11NLLP	C-Z	C_Z (rise)	0.096 + 0.272*Tr + 0.820*C	0.290 + 0.336*Tr + 1.759*C	0.167 + 0.304*Tr + 1.180*C
AO11NLLP	D-Z	D_Z (fall)	0.098 + 0.213*Tr + 0.678*C	0.332 + 0.219*Tr + 1.493*C	0.213 + 0.208*Tr + 0.971*C
AO11NLLP	D-Z	D_Z (rise)	0.095 + 0.235*Tr + 0.823*C	0.296 + 0.285*Tr + 1.763*C	0.168 + 0.263*Tr + 1.182*C
AO11NLLX4	E-Z	E_Z (fall)	0.080 + 0.216*Tr + 0.331*C	0.273 + 0.238*Tr + 0.737*C	0.174 + 0.231*Tr + 0.480*C
AO11NLLX4	E-Z	E_Z (rise)	0.085 + 0.266*Tr + 0.407*C	0.242 + 0.323*Tr + 0.879*C	0.145 + 0.292*Tr + 0.591*C
AO11NLLX4	A-Z	A_Z (fall)	0.068 + 0.242*Tr + 0.321*C	0.224 + 0.284*Tr + 0.732*C	0.148 + 0.276*Tr + 0.475*C
AO11NLLX4	A-Z	A_Z (rise)	0.067 + 0.218*Tr + 0.405*C	0.188 + 0.257*Tr + 0.880*C	0.113 + 0.235*Tr + 0.593*C
AO11NLLX4	F-Z	F_Z (fall)	0.083 + 0.226*Tr + 0.332*C	0.284 + 0.243*Tr + 0.740*C	0.181 + 0.238*Tr + 0.481*C
AO11NLLX4	F-Z	F_Z (rise)	0.084 + 0.234*Tr + 0.407*C	0.247 + 0.278*Tr + 0.880*C	0.145 + 0.256*Tr + 0.592*C
AO11NLLX4	B-Z	B_Z (fall)	0.066 + 0.230*Tr + 0.320*C	0.213 + 0.276*Tr + 0.729*C	0.141 + 0.267*Tr + 0.473*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO11NLLX4	B-Z	B_Z (rise)	0.069 + 0.245*Tr + 0.404*C	0.185 + 0.294*Tr + 0.879*C	0.114 + 0.264*Tr + 0.594*C
AO11NLLX4	C-Z	C_Z (fall)	0.091 + 0.195*Tr + 0.337*C	0.301 + 0.205*Tr + 0.737*C	0.190 + 0.194*Tr + 0.480*C
AO11NLLX4	C-Z	C_Z (rise)	0.096 + 0.281*Tr + 0.410*C	0.282 + 0.342*Tr + 0.877*C	0.165 + 0.312*Tr + 0.590*C
AO11NLLX4	D-Z	D_Z (fall)	0.095 + 0.203*Tr + 0.337*C	0.318 + 0.209*Tr + 0.740*C	0.204 + 0.199*Tr + 0.481*C
AO11NLLX4	D-Z	D_Z (rise)	0.096 + 0.244*Tr + 0.411*C	0.292 + 0.291*Tr + 0.879*C	0.168 + 0.270*Tr + 0.591*C
AO11NLLX6	E-Z	E_Z (fall)	0.079 + 0.217*Tr + 0.222*C	0.268 + 0.239*Tr + 0.494*C	0.171 + 0.232*Tr + 0.321*C
AO11NLLX6	E-Z	E_Z (rise)	0.084 + 0.265*Tr + 0.272*C	0.234 + 0.319*Tr + 0.584*C	0.141 + 0.289*Tr + 0.394*C
AO11NLLX6	A-Z	A_Z (fall)	0.067 + 0.242*Tr + 0.214*C	0.219 + 0.286*Tr + 0.490*C	0.144 + 0.276*Tr + 0.318*C
AO11NLLX6	A-Z	A_Z (rise)	0.067 + 0.212*Tr + 0.270*C	0.180 + 0.254*Tr + 0.585*C	0.109 + 0.232*Tr + 0.395*C
AO11NLLX6	F-Z	F_Z (fall)	0.081 + 0.226*Tr + 0.222*C	0.279 + 0.245*Tr + 0.496*C	0.177 + 0.238*Tr + 0.322*C
AO11NLLX6	F-Z	F_Z (rise)	0.083 + 0.233*Tr + 0.272*C	0.237 + 0.276*Tr + 0.584*C	0.141 + 0.254*Tr + 0.394*C
AO11NLLX6	B-Z	B_Z (fall)	0.064 + 0.230*Tr + 0.214*C	0.208 + 0.277*Tr + 0.488*C	0.137 + 0.267*Tr + 0.317*C
AO11NLLX6	B-Z	B_Z (rise)	0.067 + 0.244*Tr + 0.270*C	0.177 + 0.290*Tr + 0.584*C	0.110 + 0.261*Tr + 0.395*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO11NLLX6	C-Z	C_Z (fall)	0.089 + 0.196*Tr + 0.226*C	0.298 + 0.208*Tr + 0.494*C	0.188 + 0.196*Tr + 0.322*C
AO11NLLX6	C-Z	C_Z (rise)	0.094 + 0.281*Tr + 0.274*C	0.272 + 0.339*Tr + 0.585*C	0.161 + 0.310*Tr + 0.394*C
AO11NLLX6	D-Z	D_Z (fall)	0.092 + 0.203*Tr + 0.226*C	0.314 + 0.212*Tr + 0.496*C	0.200 + 0.200*Tr + 0.322*C
AO11NLLX6	D-Z	D_Z (rise)	0.094 + 0.244*Tr + 0.275*C	0.279 + 0.290*Tr + 0.587*C	0.163 + 0.269*Tr + 0.394*C
AO11NLLX8	E-Z	E_Z (fall)	0.077 + 0.214*Tr + 0.166*C	0.260 + 0.235*Tr + 0.369*C	0.166 + 0.229*Tr + 0.240*C
AO11NLLX8	E-Z	E_Z (rise)	0.082 + 0.264*Tr + 0.204*C	0.232 + 0.320*Tr + 0.439*C	0.139 + 0.288*Tr + 0.296*C
AO11NLLX8	A-Z	A_Z (fall)	0.066 + 0.239*Tr + 0.161*C	0.214 + 0.281*Tr + 0.367*C	0.141 + 0.273*Tr + 0.238*C
AO11NLLX8	A-Z	A_Z (rise)	0.065 + 0.210*Tr + 0.203*C	0.179 + 0.254*Tr + 0.439*C	0.108 + 0.232*Tr + 0.297*C
AO11NLLX8	F-Z	F_Z (fall)	0.080 + 0.224*Tr + 0.166*C	0.273 + 0.241*Tr + 0.370*C	0.174 + 0.235*Tr + 0.241*C
AO11NLLX8	F-Z	F_Z (rise)	0.081 + 0.232*Tr + 0.204*C	0.238 + 0.276*Tr + 0.439*C	0.140 + 0.254*Tr + 0.296*C
AO11NLLX8	B-Z	B_Z (fall)	0.063 + 0.228*Tr + 0.160*C	0.201 + 0.272*Tr + 0.365*C	0.134 + 0.264*Tr + 0.237*C
AO11NLLX8	B-Z	B_Z (rise)	0.065 + 0.242*Tr + 0.202*C	0.175 + 0.290*Tr + 0.439*C	0.108 + 0.260*Tr + 0.297*C
AO11NLLX8	C-Z	C_Z (fall)	0.088 + 0.193*Tr + 0.169*C	0.292 + 0.204*Tr + 0.369*C	0.184 + 0.193*Tr + 0.241*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO11NLLX8	C-Z	C_Z (rise)	0.093 + 0.280*Tr + 0.206*C	0.274 + 0.340*Tr + 0.440*C	0.161 + 0.310*Tr + 0.296*C
AO11NLLX8	D-Z	D_Z (fall)	0.091 + 0.201*Tr + 0.169*C	0.306 + 0.209*Tr + 0.371*C	0.196 + 0.198*Tr + 0.241*C
AO11NLLX8	D-Z	D_Z (rise)	0.092 + 0.243*Tr + 0.206*C	0.281 + 0.291*Tr + 0.441*C	0.162 + 0.270*Tr + 0.296*C

Average Leakage Power

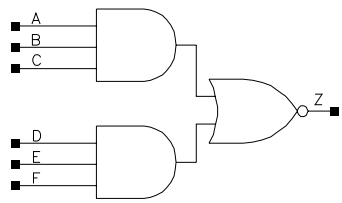
picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO11NLL	4788.690	85394.300
AO11NLLP	6802.040	138321.000
AO11NLLX4	12051.300	257968.000
AO11NLLX6	17300.300	374759.000
AO11NLLX8	24103.000	515938.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO11NLL	Z(max)	0.023 + 0.005*Tr
AO11NLLP	Z(max)	0.039 + 0.009*Tr
AO11NLLX4	Z(max)	0.075 + 0.019*Tr
AO11NLLX6	Z(max)	0.112 + 0.029*Tr
AO11NLLX8	Z(max)	0.146 + 0.040*Tr

<p>AO14LL AO14LLP AO14LLX4 AO14LLX6 AO14LLX8</p> <p>Function: Function = Double 3 Input AND into 2 Input NOR</p> <p>Boolean Expression: $Z = \overline{(A \bullet B \bullet C + D \bullet E \bullet F)}$</p>	
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Physical Dimensions

Property	AO14LL	AO14LLP	AO14LLX4	AO14LLX6	AO14LLX8
Area(um ²)	14.120	18.155	34.292	48.413	64.550

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO14LL	D Input Cap.	0.0033	0.0030	0.0031
AO14LL	B Input Cap.	0.0032	0.0029	0.0030
AO14LL	E Input Cap.	0.0033	0.0030	0.0031
AO14LL	C Input Cap.	0.0032	0.0029	0.0030
AO14LL	Z Max Load	0.160	0.160	0.160
AO14LL	F Input Cap.	0.0033	0.0030	0.0032
AO14LL	A Input Cap.	0.0029	0.0026	0.0027
AO14LLP	D Input Cap.	0.0055	0.0051	0.0053
AO14LLP	B Input Cap.	0.0056	0.0051	0.0053
AO14LLP	E Input Cap.	0.0059	0.0055	0.0057
AO14LLP	C Input Cap.	0.0058	0.0053	0.0054
AO14LLP	Z Max Load	0.320	0.320	0.320
AO14LLP	F Input Cap.	0.0061	0.0056	0.0059
AO14LLP	A Input Cap.	0.0052	0.0047	0.0049
AO14LLX4	F Input Cap.	0.0127	0.0119	0.0123
AO14LLX4	A Input Cap.	0.0103	0.0092	0.0095
AO14LLX4	D Input Cap.	0.0108	0.0100	0.0103
AO14LLX4	B Input Cap.	0.0116	0.0105	0.0108

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO14LLX4	E Input Cap.	0.0122	0.0113	0.0117
AO14LLX4	C Input Cap.	0.0121	0.0110	0.0113
AO14LLX4	Z Max Load	0.640	0.640	0.640
AO14LLX6	C Input Cap.	0.0176	0.0159	0.0164
AO14LLX6	F Input Cap.	0.0184	0.0170	0.0176
AO14LLX6	A Input Cap.	0.0164	0.0149	0.0153
AO14LLX6	D Input Cap.	0.0170	0.0158	0.0164
AO14LLX6	Z Max Load	0.960	0.960	0.960
AO14LLX6	B Input Cap.	0.0176	0.0160	0.0165
AO14LLX6	E Input Cap.	0.0185	0.0171	0.0177
AO14LLX8	B Input Cap.	0.0234	0.0212	0.0218
AO14LLX8	E Input Cap.	0.0247	0.0229	0.0237
AO14LLX8	C Input Cap.	0.0239	0.0216	0.0223
AO14LLX8	Z Max Load	1.280	1.280	1.280
AO14LLX8	F Input Cap.	0.0248	0.0230	0.0238
AO14LLX8	A Input Cap.	0.0213	0.0193	0.0199
AO14LLX8	D Input Cap.	0.0224	0.0208	0.0215

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO14LL	E-Z	E_Z (fall)	0.028 + 0.234*Tr + 2.434°C	0.118 + 0.269*Tr + 6.463°C	0.059 + 0.257*Tr + 3.782°C
AO14LL	E-Z	E_Z (rise)	0.029 + 0.267*Tr + 2.421°C	0.132 + 0.262*Tr + 7.125°C	0.081 + 0.254*Tr + 4.838°C
AO14LL	A-Z	A_Z (fall)	0.010 + 0.252*Tr + 2.515°C	0.042 + 0.285*Tr + 6.588°C	0.015 + 0.264*Tr + 3.953°C
AO14LL	A-Z	A_Z (rise)	0.008 + 0.286*Tr + 2.404°C	0.067 + 0.317*Tr + 7.182°C	0.040 + 0.311*Tr + 4.917°C
AO14LL	F-Z	F_Z (fall)	0.032 + 0.193*Tr + 2.387°C	0.129 + 0.226*Tr + 6.444°C	0.065 + 0.216*Tr + 3.733°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO14LL	F-Z	F_Z (rise)	0.031 + 0.274*Tr + 2.402*C	0.144 + 0.265*Tr + 7.113*C	0.088 + 0.257*Tr + 4.821*C
AO14LL	B-Z	B_Z (fall)	0.015 + 0.226*Tr + 2.460*C	0.057 + 0.255*Tr + 6.540*C	0.025 + 0.239*Tr + 3.877*C
AO14LL	B-Z	B_Z (rise)	0.012 + 0.293*Tr + 2.377*C	0.080 + 0.322*Tr + 7.144*C	0.048 + 0.316*Tr + 4.884*C
AO14LL	C-Z	C_Z (fall)	0.020 + 0.187*Tr + 2.403*C	0.068 + 0.216*Tr + 6.496*C	0.032 + 0.202*Tr + 3.803*C
AO14LL	C-Z	C_Z (rise)	0.015 + 0.300*Tr + 2.352*C	0.090 + 0.328*Tr + 7.120*C	0.056 + 0.322*Tr + 4.858*C
AO14LL	D-Z	D_Z (fall)	0.023 + 0.262*Tr + 2.478*C	0.103 + 0.303*Tr + 6.487*C	0.050 + 0.285*Tr + 3.835*C
AO14LL	D-Z	D_Z (rise)	0.023 + 0.262*Tr + 2.444*C	0.120 + 0.258*Tr + 7.155*C	0.073 + 0.250*Tr + 4.862*C
AO14LLP	E-Z	E_Z (fall)	0.024 + 0.235*Tr + 1.228*C	0.107 + 0.267*Tr + 3.129*C	0.053 + 0.256*Tr + 1.872*C
AO14LLP	E-Z	E_Z (rise)	0.023 + 0.259*Tr + 1.189*C	0.121 + 0.254*Tr + 3.406*C	0.072 + 0.246*Tr + 2.329*C
AO14LLP	A-Z	A_Z (fall)	0.004 + 0.252*Tr + 1.274*C	0.029 + 0.280*Tr + 3.219*C	0.007 + 0.261*Tr + 1.970*C
AO14LLP	A-Z	A_Z (rise)	0.002 + 0.277*Tr + 1.188*C	0.056 + 0.308*Tr + 3.446*C	0.032 + 0.303*Tr + 2.381*C
AO14LLP	F-Z	F_Z (fall)	0.029 + 0.193*Tr + 1.204*C	0.120 + 0.225*Tr + 3.117*C	0.060 + 0.216*Tr + 1.844*C
AO14LLP	F-Z	F_Z (rise)	0.026 + 0.266*Tr + 1.177*C	0.134 + 0.257*Tr + 3.398*C	0.081 + 0.250*Tr + 2.320*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO14LLP	B-Z	B_Z (fall)	0.011 + 0.226*Tr + 1.244*C	0.047 + 0.252*Tr + 3.181*C	0.018 + 0.237*Tr + 1.931*C
AO14LLP	B-Z	B_Z (rise)	0.007 + 0.285*Tr + 1.170*C	0.071 + 0.315*Tr + 3.422*C	0.041 + 0.309*Tr + 2.361*C
AO14LLP	C-Z	C_Z (fall)	0.017 + 0.187*Tr + 1.214*C	0.060 + 0.213*Tr + 3.153*C	0.027 + 0.200*Tr + 1.888*C
AO14LLP	C-Z	C_Z (rise)	0.011 + 0.292*Tr + 1.156*C	0.083 + 0.320*Tr + 3.409*C	0.050 + 0.314*Tr + 2.347*C
AO14LLP	D-Z	D_Z (fall)	0.018 + 0.263*Tr + 1.252*C	0.091 + 0.300*Tr + 3.144*C	0.043 + 0.284*Tr + 1.900*C
AO14LLP	D-Z	D_Z (rise)	0.017 + 0.253*Tr + 1.202*C	0.107 + 0.249*Tr + 3.423*C	0.063 + 0.242*Tr + 2.344*C
AO14LLX4	E-Z	E_Z (fall)	0.026 + 0.229*Tr + 0.615*C	0.109 + 0.265*Tr + 1.566*C	0.055 + 0.251*Tr + 0.937*C
AO14LLX4	E-Z	E_Z (rise)	0.026 + 0.251*Tr + 0.595*C	0.122 + 0.251*Tr + 1.705*C	0.074 + 0.243*Tr + 1.166*C
AO14LLX4	A-Z	A_Z (fall)	0.007 + 0.244*Tr + 0.638*C	0.031 + 0.274*Tr + 1.613*C	0.011 + 0.252*Tr + 0.987*C
AO14LLX4	A-Z	A_Z (rise)	0.004 + 0.267*Tr + 0.596*C	0.056 + 0.304*Tr + 1.726*C	0.033 + 0.297*Tr + 1.192*C
AO14LLX4	F-Z	F_Z (fall)	0.030 + 0.190*Tr + 0.603*C	0.121 + 0.223*Tr + 1.559*C	0.062 + 0.212*Tr + 0.922*C
AO14LLX4	F-Z	F_Z (rise)	0.028 + 0.259*Tr + 0.589*C	0.134 + 0.255*Tr + 1.700*C	0.082 + 0.247*Tr + 1.161*C
AO14LLX4	B-Z	B_Z (fall)	0.013 + 0.219*Tr + 0.624*C	0.048 + 0.246*Tr + 1.598*C	0.021 + 0.229*Tr + 0.968*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO14LLX4	B-Z	B_Z (rise)	0.009 + 0.276*Tr + 0.586*C	0.071 + 0.311*Tr + 1.714*C	0.043 + 0.304*Tr + 1.182*C
AO14LLX4	C-Z	C_Z (fall)	0.018 + 0.182*Tr + 0.608*C	0.061 + 0.209*Tr + 1.580*C	0.029 + 0.195*Tr + 0.946*C
AO14LLX4	C-Z	C_Z (rise)	0.013 + 0.284*Tr + 0.579*C	0.083 + 0.316*Tr + 1.707*C	0.051 + 0.310*Tr + 1.175*C
AO14LLX4	D-Z	D_Z (fall)	0.021 + 0.256*Tr + 0.627*C	0.093 + 0.297*Tr + 1.573*C	0.046 + 0.278*Tr + 0.951*C
AO14LLX4	D-Z	D_Z (rise)	0.019 + 0.245*Tr + 0.602*C	0.108 + 0.246*Tr + 1.713*C	0.065 + 0.238*Tr + 1.173*C
AO14LLX6	E-Z	E_Z (fall)	0.025 + 0.228*Tr + 0.411*C	0.108 + 0.262*Tr + 1.046*C	0.054 + 0.250*Tr + 0.626*C
AO14LLX6	E-Z	E_Z (rise)	0.025 + 0.250*Tr + 0.398*C	0.122 + 0.249*Tr + 1.138*C	0.073 + 0.241*Tr + 0.779*C
AO14LLX6	A-Z	A_Z (fall)	0.006 + 0.242*Tr + 0.427*C	0.031 + 0.270*Tr + 1.078*C	0.009 + 0.250*Tr + 0.662*C
AO14LLX6	A-Z	A_Z (rise)	0.003 + 0.265*Tr + 0.399*C	0.057 + 0.300*Tr + 1.153*C	0.033 + 0.294*Tr + 0.797*C
AO14LLX6	F-Z	F_Z (fall)	0.030 + 0.188*Tr + 0.403*C	0.120 + 0.221*Tr + 1.041*C	0.061 + 0.211*Tr + 0.616*C
AO14LLX6	F-Z	F_Z (rise)	0.027 + 0.258*Tr + 0.394*C	0.134 + 0.253*Tr + 1.135*C	0.081 + 0.246*Tr + 0.775*C
AO14LLX6	B-Z	B_Z (fall)	0.012 + 0.217*Tr + 0.417*C	0.047 + 0.243*Tr + 1.068*C	0.020 + 0.227*Tr + 0.648*C
AO14LLX6	B-Z	B_Z (rise)	0.008 + 0.274*Tr + 0.393*C	0.072 + 0.307*Tr + 1.144*C	0.042 + 0.301*Tr + 0.790*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO14LLX6	C-Z	C_Z (fall)	0.017 + 0.180*Tr + 0.406*C	0.060 + 0.207*Tr + 1.055*C	0.028 + 0.193*Tr + 0.632*C
AO14LLX6	C-Z	C_Z (rise)	0.012 + 0.283*Tr + 0.388*C	0.083 + 0.313*Tr + 1.139*C	0.051 + 0.307*Tr + 0.785*C
AO14LLX6	D-Z	D_Z (fall)	0.019 + 0.254*Tr + 0.420*C	0.092 + 0.294*Tr + 1.051*C	0.045 + 0.276*Tr + 0.636*C
AO14LLX6	D-Z	D_Z (rise)	0.018 + 0.243*Tr + 0.403*C	0.107 + 0.243*Tr + 1.144*C	0.064 + 0.236*Tr + 0.784*C
AO14LLX8	E-Z	E_Z (fall)	0.026 + 0.227*Tr + 0.309*C	0.109 + 0.262*Tr + 0.784*C	0.055 + 0.249*Tr + 0.470*C
AO14LLX8	E-Z	E_Z (rise)	0.026 + 0.249*Tr + 0.299*C	0.122 + 0.249*Tr + 0.854*C	0.074 + 0.241*Tr + 0.584*C
AO14LLX8	A-Z	A_Z (fall)	0.007 + 0.240*Tr + 0.321*C	0.030 + 0.270*Tr + 0.809*C	0.010 + 0.248*Tr + 0.496*C
AO14LLX8	A-Z	A_Z (rise)	0.004 + 0.264*Tr + 0.299*C	0.056 + 0.300*Tr + 0.866*C	0.033 + 0.294*Tr + 0.598*C
AO14LLX8	F-Z	F_Z (fall)	0.030 + 0.188*Tr + 0.302*C	0.120 + 0.221*Tr + 0.781*C	0.062 + 0.211*Tr + 0.462*C
AO14LLX8	F-Z	F_Z (rise)	0.028 + 0.257*Tr + 0.296*C	0.134 + 0.253*Tr + 0.852*C	0.082 + 0.245*Tr + 0.582*C
AO14LLX8	B-Z	B_Z (fall)	0.013 + 0.216*Tr + 0.313*C	0.047 + 0.242*Tr + 0.802*C	0.021 + 0.226*Tr + 0.486*C
AO14LLX8	B-Z	B_Z (rise)	0.009 + 0.273*Tr + 0.295*C	0.071 + 0.307*Tr + 0.859*C	0.043 + 0.301*Tr + 0.593*C
AO14LLX8	C-Z	C_Z (fall)	0.018 + 0.179*Tr + 0.305*C	0.061 + 0.206*Tr + 0.792*C	0.029 + 0.192*Tr + 0.475*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO14LLX8	C-Z	C_Z (rise)	0.013 + 0.281*Tr + 0.291*C	0.083 + 0.314*Tr + 0.855*C	0.051 + 0.307*Tr + 0.589*C
AO14LLX8	D-Z	D_Z (fall)	0.020 + 0.253*Tr + 0.315*C	0.092 + 0.294*Tr + 0.789*C	0.046 + 0.276*Tr + 0.477*C
AO14LLX8	D-Z	D_Z (rise)	0.019 + 0.242*Tr + 0.303*C	0.108 + 0.244*Tr + 0.859*C	0.065 + 0.236*Tr + 0.588*C

Average Leakage Power

picoWatts

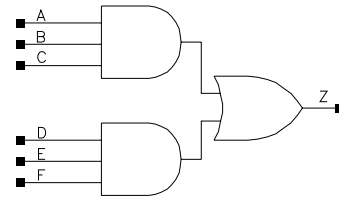
Cell	bc_1.32V_25C	bc_1.32V_125C
AO14LL	3786.390	80983.000
AO14LLP	6763.670	152094.000
AO14LLX4	13527.100	304184.000
AO14LLX6	20291.200	456278.000
AO14LLX8	27055.000	608367.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO14LL	Z(max)	0.021 + 0.008*Tr
AO14LLP	Z(max)	0.039 + 0.017*Tr
AO14LLX4	Z(max)	0.076 + 0.035*Tr
AO14LLX6	Z(max)	0.114 + 0.054*Tr
AO14LLX8	Z(max)	0.152 + 0.072*Tr

AO14NLL
AO14NLLP
AO14NLLX4
AO14NLLX6
AO14NLLX8



Function: Function = Double 3 Input AND into 2 Input OR

Boolean Expression: $Z = (A \bullet B \bullet C + D \bullet E \bullet F)$

Physical Dimensions

Property	AO14NLL	AO14NLLP	AO14NLLX4	AO14NLLX6	AO14NLLX8
Area(um2)	16.138	18.155	24.206	42.361	46.396

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO14NLL	F Input Cap.	0.0019	0.0016	0.0017
AO14NLL	A Input Cap.	0.0019	0.0016	0.0017
AO14NLL	D Input Cap.	0.0018	0.0015	0.0016
AO14NLL	Z Max Load	0.160	0.160	0.160
AO14NLL	B Input Cap.	0.0019	0.0016	0.0017
AO14NLL	E Input Cap.	0.0018	0.0016	0.0017
AO14NLL	C Input Cap.	0.0021	0.0018	0.0019
AO14NLLP	D Input Cap.	0.0032	0.0028	0.0029
AO14NLLP	Z Max Load	0.320	0.320	0.320
AO14NLLP	B Input Cap.	0.0033	0.0028	0.0029
AO14NLLP	E Input Cap.	0.0033	0.0029	0.0031
AO14NLLP	C Input Cap.	0.0034	0.0029	0.0031
AO14NLLP	F Input Cap.	0.0035	0.0031	0.0032
AO14NLLP	A Input Cap.	0.0032	0.0027	0.0028
AO14NLLX4	D Input Cap.	0.0060	0.0053	0.0055
AO14NLLX4	Z Max Load	0.640	0.640	0.640
AO14NLLX4	B Input Cap.	0.0062	0.0053	0.0055
AO14NLLX4	E Input Cap.	0.0062	0.0056	0.0058
AO14NLLX4	C Input Cap.	0.0063	0.0054	0.0056
AO14NLLX4	F Input Cap.	0.0064	0.0057	0.0060

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO14NLLX4	A Input Cap.	0.0060	0.0050	0.0052
AO14NLLX6	F Input Cap.	0.0100	0.0091	0.0094
AO14NLLX6	A Input Cap.	0.0091	0.0074	0.0077
AO14NLLX6	D Input Cap.	0.0088	0.0077	0.0081
AO14NLLX6	B Input Cap.	0.0098	0.0083	0.0086
AO14NLLX6	E Input Cap.	0.0096	0.0086	0.0090
AO14NLLX6	C Input Cap.	0.0102	0.0086	0.0090
AO14NLLX6	Z Max Load	0.960	0.960	0.960
AO14NLLX8	C Input Cap.	0.0132	0.0113	0.0117
AO14NLLX8	F Input Cap.	0.0131	0.0119	0.0123
AO14NLLX8	A Input Cap.	0.0119	0.0098	0.0102
AO14NLLX8	D Input Cap.	0.0115	0.0101	0.0105
AO14NLLX8	Z Max Load	1.280	1.280	1.280
AO14NLLX8	B Input Cap.	0.0128	0.0108	0.0112
AO14NLLX8	E Input Cap.	0.0126	0.0114	0.0118

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO14NLL	E-Z	E_Z (fall)	0.096 + 0.261*Tr + 1.302*C	0.317 + 0.271*Tr + 2.938*C	0.202 + 0.260*Tr + 1.879*C
AO14NLL	E-Z	E_Z (rise)	0.090 + 0.211*Tr + 1.666*C	0.285 + 0.261*Tr + 3.649*C	0.159 + 0.238*Tr + 2.409*C
AO14NLL	A-Z	A_Z (fall)	0.073 + 0.267*Tr + 1.241*C	0.245 + 0.318*Tr + 2.909*C	0.161 + 0.306*Tr + 1.859*C
AO14NLL	A-Z	A_Z (rise)	0.073 + 0.214*Tr + 1.652*C	0.215 + 0.265*Tr + 3.679*C	0.127 + 0.236*Tr + 2.451*C
AO14NLL	F-Z	F_Z (fall)	0.098 + 0.271*Tr + 1.304*C	0.333 + 0.275*Tr + 2.953*C	0.212 + 0.265*Tr + 1.887*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO14NLL	F-Z	F_Z (rise)	0.091 + 0.178*Tr + 1.669*C	0.293 + 0.220*Tr + 3.603*C	0.162 + 0.203*Tr + 2.412*C
AO14NLL	B-Z	B_Z (fall)	0.077 + 0.278*Tr + 1.243*C	0.259 + 0.326*Tr + 2.923*C	0.170 + 0.315*Tr + 1.867*C
AO14NLL	B-Z	B_Z (rise)	0.074 + 0.194*Tr + 1.656*C	0.223 + 0.239*Tr + 3.682*C	0.130 + 0.216*Tr + 2.453*C
AO14NLL	C-Z	C_Z (fall)	0.081 + 0.288*Tr + 1.246*C	0.275 + 0.333*Tr + 2.939*C	0.180 + 0.323*Tr + 1.876*C
AO14NLL	C-Z	C_Z (rise)	0.075 + 0.168*Tr + 1.658*C	0.231 + 0.203*Tr + 3.683*C	0.132 + 0.186*Tr + 2.455*C
AO14NLL	D-Z	D_Z (fall)	0.089 + 0.254*Tr + 1.300*C	0.299 + 0.266*Tr + 2.924*C	0.190 + 0.254*Tr + 1.873*C
AO14NLL	D-Z	D_Z (rise)	0.089 + 0.233*Tr + 1.663*C	0.273 + 0.295*Tr + 3.643*C	0.155 + 0.262*Tr + 2.405*C
AO14NLLP	E-Z	E_Z (fall)	0.082 + 0.244*Tr + 0.656*C	0.269 + 0.258*Tr + 1.415*C	0.172 + 0.247*Tr + 0.921*C
AO14NLLP	E-Z	E_Z (rise)	0.080 + 0.215*Tr + 0.815*C	0.249 + 0.263*Tr + 1.730*C	0.142 + 0.241*Tr + 1.167*C
AO14NLLP	A-Z	A_Z (fall)	0.060 + 0.245*Tr + 0.625*C	0.203 + 0.299*Tr + 1.398*C	0.134 + 0.287*Tr + 0.909*C
AO14NLLP	A-Z	A_Z (rise)	0.062 + 0.215*Tr + 0.807*C	0.171 + 0.262*Tr + 1.731*C	0.105 + 0.235*Tr + 1.196*C
AO14NLLP	F-Z	F_Z (fall)	0.085 + 0.254*Tr + 0.657*C	0.286 + 0.263*Tr + 1.423*C	0.182 + 0.252*Tr + 0.925*C
AO14NLLP	F-Z	F_Z (rise)	0.081 + 0.183*Tr + 0.816*C	0.259 + 0.223*Tr + 1.732*C	0.145 + 0.207*Tr + 1.169*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO14NLLP	B-Z	B_Z (fall)	0.065 + 0.257*Tr + 0.626*C	0.219 + 0.309*Tr + 1.405*C	0.144 + 0.297*Tr + 0.913*C
AO14NLLP	B-Z	B_Z (rise)	0.064 + 0.199*Tr + 0.810*C	0.181 + 0.239*Tr + 1.735*C	0.110 + 0.217*Tr + 1.197*C
AO14NLLP	C-Z	C_Z (fall)	0.068 + 0.268*Tr + 0.627*C	0.232 + 0.318*Tr + 1.414*C	0.153 + 0.306*Tr + 0.918*C
AO14NLLP	C-Z	C_Z (rise)	0.064 + 0.173*Tr + 0.811*C	0.188 + 0.207*Tr + 1.737*C	0.111 + 0.189*Tr + 1.197*C
AO14NLLP	D-Z	D_Z (fall)	0.075 + 0.236*Tr + 0.656*C	0.252 + 0.253*Tr + 1.409*C	0.161 + 0.241*Tr + 0.919*C
AO14NLLP	D-Z	D_Z (rise)	0.078 + 0.235*Tr + 0.813*C	0.237 + 0.293*Tr + 1.727*C	0.137 + 0.264*Tr + 1.165*C
AO14NLLX4	E-Z	E_Z (fall)	0.078 + 0.236*Tr + 0.326*C	0.254 + 0.251*Tr + 0.703*C	0.162 + 0.240*Tr + 0.458*C
AO14NLLX4	E-Z	E_Z (rise)	0.077 + 0.218*Tr + 0.407*C	0.235 + 0.262*Tr + 0.862*C	0.135 + 0.242*Tr + 0.583*C
AO14NLLX4	A-Z	A_Z (fall)	0.058 + 0.236*Tr + 0.312*C	0.194 + 0.291*Tr + 0.695*C	0.128 + 0.279*Tr + 0.452*C
AO14NLLX4	A-Z	A_Z (rise)	0.060 + 0.218*Tr + 0.403*C	0.163 + 0.262*Tr + 0.866*C	0.102 + 0.235*Tr + 0.599*C
AO14NLLX4	F-Z	F_Z (fall)	0.080 + 0.247*Tr + 0.327*C	0.268 + 0.256*Tr + 0.707*C	0.171 + 0.246*Tr + 0.459*C
AO14NLLX4	F-Z	F_Z (rise)	0.077 + 0.186*Tr + 0.408*C	0.243 + 0.224*Tr + 0.863*C	0.137 + 0.209*Tr + 0.584*C
AO14NLLX4	B-Z	B_Z (fall)	0.062 + 0.248*Tr + 0.312*C	0.211 + 0.301*Tr + 0.698*C	0.138 + 0.289*Tr + 0.454*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO14NLLX4	B-Z	B_Z (rise)	0.062 + 0.202*Tr + 0.405*C	0.174 + 0.239*Tr + 0.867*C	0.106 + 0.217*Tr + 0.599*C
AO14NLLX4	C-Z	C_Z (fall)	0.066 + 0.260*Tr + 0.313*C	0.224 + 0.311*Tr + 0.702*C	0.147 + 0.298*Tr + 0.456*C
AO14NLLX4	C-Z	C_Z (rise)	0.062 + 0.175*Tr + 0.406*C	0.181 + 0.207*Tr + 0.868*C	0.108 + 0.190*Tr + 0.599*C
AO14NLLX4	D-Z	D_Z (fall)	0.072 + 0.227*Tr + 0.326*C	0.238 + 0.244*Tr + 0.700*C	0.152 + 0.233*Tr + 0.456*C
AO14NLLX4	D-Z	D_Z (rise)	0.075 + 0.237*Tr + 0.406*C	0.224 + 0.291*Tr + 0.861*C	0.131 + 0.263*Tr + 0.582*C
AO14NLLX6	E-Z	E_Z (fall)	0.077 + 0.236*Tr + 0.219*C	0.251 + 0.252*Tr + 0.471*C	0.161 + 0.241*Tr + 0.306*C
AO14NLLX6	E-Z	E_Z (rise)	0.076 + 0.217*Tr + 0.272*C	0.236 + 0.263*Tr + 0.577*C	0.136 + 0.242*Tr + 0.390*C
AO14NLLX6	A-Z	A_Z (fall)	0.057 + 0.236*Tr + 0.208*C	0.191 + 0.291*Tr + 0.465*C	0.126 + 0.279*Tr + 0.302*C
AO14NLLX6	A-Z	A_Z (rise)	0.059 + 0.216*Tr + 0.269*C	0.162 + 0.262*Tr + 0.579*C	0.100 + 0.235*Tr + 0.401*C
AO14NLLX6	F-Z	F_Z (fall)	0.079 + 0.248*Tr + 0.219*C	0.266 + 0.257*Tr + 0.473*C	0.170 + 0.247*Tr + 0.308*C
AO14NLLX6	F-Z	F_Z (rise)	0.077 + 0.186*Tr + 0.273*C	0.245 + 0.224*Tr + 0.578*C	0.138 + 0.209*Tr + 0.390*C
AO14NLLX6	B-Z	B_Z (fall)	0.061 + 0.249*Tr + 0.209*C	0.207 + 0.301*Tr + 0.467*C	0.137 + 0.289*Tr + 0.304*C
AO14NLLX6	B-Z	B_Z (rise)	0.061 + 0.200*Tr + 0.271*C	0.173 + 0.238*Tr + 0.580*C	0.105 + 0.217*Tr + 0.401*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO14NLLX6	C-Z	C_Z (fall)	0.065 + 0.260*Tr + 0.209*C	0.221 + 0.311*Tr + 0.470*C	0.146 + 0.298*Tr + 0.305*C
AO14NLLX6	C-Z	C_Z (rise)	0.062 + 0.174*Tr + 0.271*C	0.180 + 0.206*Tr + 0.582*C	0.108 + 0.189*Tr + 0.401*C
AO14NLLX6	D-Z	D_Z (fall)	0.071 + 0.228*Tr + 0.219*C	0.235 + 0.245*Tr + 0.469*C	0.150 + 0.234*Tr + 0.306*C
AO14NLLX6	D-Z	D_Z (rise)	0.075 + 0.237*Tr + 0.271*C	0.224 + 0.292*Tr + 0.576*C	0.131 + 0.264*Tr + 0.389*C
AO14NLLX8	E-Z	E_Z (fall)	0.076 + 0.234*Tr + 0.164*C	0.248 + 0.249*Tr + 0.353*C	0.158 + 0.239*Tr + 0.230*C
AO14NLLX8	E-Z	E_Z (rise)	0.075 + 0.217*Tr + 0.204*C	0.229 + 0.261*Tr + 0.432*C	0.132 + 0.241*Tr + 0.292*C
AO14NLLX8	A-Z	A_Z (fall)	0.055 + 0.234*Tr + 0.156*C	0.188 + 0.289*Tr + 0.348*C	0.124 + 0.277*Tr + 0.227*C
AO14NLLX8	A-Z	A_Z (rise)	0.058 + 0.216*Tr + 0.202*C	0.156 + 0.259*Tr + 0.434*C	0.098 + 0.233*Tr + 0.301*C
AO14NLLX8	F-Z	F_Z (fall)	0.078 + 0.246*Tr + 0.164*C	0.263 + 0.255*Tr + 0.355*C	0.168 + 0.245*Tr + 0.231*C
AO14NLLX8	F-Z	F_Z (rise)	0.075 + 0.185*Tr + 0.205*C	0.238 + 0.223*Tr + 0.433*C	0.135 + 0.208*Tr + 0.293*C
AO14NLLX8	B-Z	B_Z (fall)	0.060 + 0.246*Tr + 0.157*C	0.205 + 0.300*Tr + 0.350*C	0.135 + 0.287*Tr + 0.228*C
AO14NLLX8	B-Z	B_Z (rise)	0.060 + 0.200*Tr + 0.203*C	0.167 + 0.237*Tr + 0.435*C	0.102 + 0.215*Tr + 0.301*C
AO14NLLX8	C-Z	C_Z (fall)	0.064 + 0.258*Tr + 0.157*C	0.218 + 0.309*Tr + 0.352*C	0.144 + 0.297*Tr + 0.229*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO14NLLX8	C-Z	C_Z (rise)	0.060 + 0.174*Tr + 0.203*C	0.175 + 0.205*Tr + 0.436*C	0.105 + 0.188*Tr + 0.301*C
AO14NLLX8	D-Z	D_Z (fall)	0.070 + 0.226*Tr + 0.164*C	0.231 + 0.243*Tr + 0.351*C	0.148 + 0.232*Tr + 0.229*C
AO14NLLX8	D-Z	D_Z (rise)	0.073 + 0.236*Tr + 0.204*C	0.218 + 0.290*Tr + 0.432*C	0.128 + 0.262*Tr + 0.292*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO14NLL	4209.120	83792.800
AO14NLLP	6872.320	147927.000
AO14NLLX4	12935.200	285935.000
AO14NLLX6	19709.000	431480.000
AO14NLLX8	25870.900	571872.000

Internal Energy at minimum output load

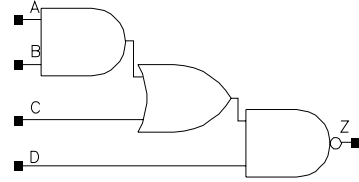
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO14NLL	Z(max)	0.023 + 0.006*Tr
AO14NLLP	Z(max)	0.039 + 0.012*Tr
AO14NLLX4	Z(max)	0.074 + 0.025*Tr
AO14NLLX6	Z(max)	0.112 + 0.038*Tr
AO14NLLX8	Z(max)	0.148 + 0.052*Tr

AO17LL
AO17LLP
AO17LLX4
AO17LLX6
AO17LLX8

Function: Function = 2 wide 2-3 AND-OR-INVERT

Boolean Expression: $Z = \overline{((A \bullet B) + C) \bullet D}$



Physical Dimensions

Property	AO17LL	AO17LLP	AO17LLX4	AO17LLX6	AO17LLX8
Area(um2)	12.103	12.103	22.189	30.258	40.344

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17LL	B Input Cap.	0.0032	0.0028	0.0030
AO17LL	C Input Cap.	0.0027	0.0024	0.0025
AO17LL	A Input Cap.	0.0033	0.0030	0.0031
AO17LL	Z Max Load	0.160	0.160	0.160
AO17LL	D Input Cap.	0.0023	0.0021	0.0021
AO17LLP	A Input Cap.	0.0062	0.0057	0.0059
AO17LLP	Z Max Load	0.320	0.320	0.320
AO17LLP	D Input Cap.	0.0042	0.0037	0.0038
AO17LLP	B Input Cap.	0.0059	0.0054	0.0056
AO17LLP	C Input Cap.	0.0051	0.0046	0.0048
AO17LLX4	C Input Cap.	0.0103	0.0093	0.0096
AO17LLX4	A Input Cap.	0.0124	0.0114	0.0118
AO17LLX4	Z Max Load	0.640	0.640	0.640
AO17LLX4	D Input Cap.	0.0081	0.0072	0.0075
AO17LLX4	B Input Cap.	0.0116	0.0106	0.0110
AO17LLX6	D Input Cap.	0.0119	0.0107	0.0110
AO17LLX6	B Input Cap.	0.0176	0.0161	0.0167
AO17LLX6	Z Max Load	0.960	0.960	0.960

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17LLX6	C Input Cap.	0.0145	0.0130	0.0135
AO17LLX6	A Input Cap.	0.0182	0.0168	0.0173
AO17LLX8	A Input Cap.	0.0238	0.0219	0.0226
AO17LLX8	Z Max Load	1.280	1.280	1.280
AO17LLX8	D Input Cap.	0.0163	0.0145	0.0150
AO17LLX8	B Input Cap.	0.0238	0.0218	0.0226
AO17LLX8	C Input Cap.	0.0191	0.0171	0.0177

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17LL	A-Z	A_Z (fall)	0.023 + 0.187*Tr + 2.406*C	0.078 + 0.216*Tr + 6.523*C	0.037 + 0.205*Tr + 3.801*C
AO17LL	A-Z	A_Z (rise)	0.033 + 0.241*Tr + 3.240*C	0.083 + 0.254*Tr + 7.095*C	0.050 + 0.250*Tr + 4.812*C
AO17LL	B-Z	B_Z (fall)	0.019 + 0.227*Tr + 2.463*C	0.067 + 0.255*Tr + 6.568*C	0.030 + 0.243*Tr + 3.873*C
AO17LL	B-Z	B_Z (rise)	0.028 + 0.235*Tr + 3.259*C	0.072 + 0.249*Tr + 7.117*C	0.042 + 0.244*Tr + 4.836*C
AO17LL	C-Z	C_Z (fall)	0.005 + 0.223*Tr + 2.144*C	0.036 + 0.258*Tr + 5.344*C	0.013 + 0.240*Tr + 3.293*C
AO17LL	C-Z	C_Z (rise)	0.009 + 0.293*Tr + 2.592*C	0.050 + 0.312*Tr + 7.153*C	0.029 + 0.308*Tr + 4.890*C
AO17LL	D-Z	D_Z (fall)	-0.007 + 0.218*Tr + 1.893*C	0.039 + 0.276*Tr + 6.653*C	0.013 + 0.258*Tr + 3.977*C
AO17LL	D-Z	D_Z (rise)	0.006 + 0.315*Tr + 3.198*C	0.016 + 0.336*Tr + 6.751*C	0.006 + 0.325*Tr + 4.685*C
AO17LLP	A-Z	A_Z (fall)	0.020 + 0.188*Tr + 1.214*C	0.069 + 0.214*Tr + 3.162*C	0.032 + 0.205*Tr + 1.883*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17LLP	A-Z	A_Z (rise)	0.029 + 0.234*Tr + 1.593*C	0.074 + 0.247*Tr + 3.439*C	0.043 + 0.243*Tr + 2.348*C
AO17LLP	B-Z	B_Z (fall)	0.015 + 0.227*Tr + 1.244*C	0.057 + 0.253*Tr + 3.190*C	0.024 + 0.242*Tr + 1.922*C
AO17LLP	B-Z	B_Z (rise)	0.024 + 0.227*Tr + 1.603*C	0.063 + 0.241*Tr + 3.454*C	0.036 + 0.237*Tr + 2.362*C
AO17LLP	C-Z	C_Z (fall)	0.002 + 0.232*Tr + 1.126*C	0.030 + 0.262*Tr + 2.714*C	0.008 + 0.246*Tr + 1.705*C
AO17LLP	C-Z	C_Z (rise)	0.004 + 0.283*Tr + 1.293*C	0.042 + 0.302*Tr + 3.483*C	0.023 + 0.298*Tr + 2.403*C
AO17LLP	D-Z	D_Z (fall)	-0.011 + 0.219*Tr + 0.978*C	0.031 + 0.272*Tr + 3.241*C	0.007 + 0.256*Tr + 1.981*C
AO17LLP	D-Z	D_Z (rise)	0.001 + 0.309*Tr + 1.580*C	0.007 + 0.326*Tr + 3.254*C	-0.001 + 0.316*Tr + 2.289*C
AO17LLX4	A-Z	A_Z (fall)	0.022 + 0.184*Tr + 0.607*C	0.071 + 0.211*Tr + 1.582*C	0.035 + 0.200*Tr + 0.942*C
AO17LLX4	A-Z	A_Z (rise)	0.030 + 0.231*Tr + 0.797*C	0.075 + 0.244*Tr + 1.720*C	0.045 + 0.239*Tr + 1.175*C
AO17LLX4	B-Z	B_Z (fall)	0.017 + 0.221*Tr + 0.623*C	0.060 + 0.249*Tr + 1.596*C	0.028 + 0.236*Tr + 0.962*C
AO17LLX4	B-Z	B_Z (rise)	0.025 + 0.224*Tr + 0.803*C	0.065 + 0.237*Tr + 1.728*C	0.038 + 0.233*Tr + 1.182*C
AO17LLX4	C-Z	C_Z (fall)	0.005 + 0.223*Tr + 0.564*C	0.035 + 0.254*Tr + 1.360*C	0.013 + 0.238*Tr + 0.854*C
AO17LLX4	C-Z	C_Z (rise)	0.007 + 0.274*Tr + 0.647*C	0.045 + 0.297*Tr + 1.743*C	0.026 + 0.292*Tr + 1.203*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17LLX4	D-Z	D_Z (fall)	-0.006 + 0.207*Tr + 0.489°C	0.036 + 0.266*Tr + 1.622°C	0.013 + 0.248*Tr + 0.991°C
AO17LLX4	D-Z	D_Z (rise)	0.004 + 0.302*Tr + 0.790°C	0.011 + 0.320*Tr + 1.630°C	0.003 + 0.308*Tr + 1.146°C
AO17LLX6	A-Z	A_Z (fall)	0.021 + 0.184*Tr + 0.414°C	0.071 + 0.211*Tr + 1.082°C	0.034 + 0.201*Tr + 0.643°C
AO17LLX6	A-Z	A_Z (rise)	0.028 + 0.228*Tr + 0.533°C	0.073 + 0.240*Tr + 1.150°C	0.043 + 0.236*Tr + 0.786°C
AO17LLX6	B-Z	B_Z (fall)	0.017 + 0.222*Tr + 0.425°C	0.060 + 0.248*Tr + 1.092°C	0.027 + 0.236*Tr + 0.657°C
AO17LLX6	B-Z	B_Z (rise)	0.024 + 0.221*Tr + 0.537°C	0.063 + 0.233*Tr + 1.156°C	0.036 + 0.230*Tr + 0.791°C
AO17LLX6	C-Z	C_Z (fall)	0.003 + 0.221*Tr + 0.378°C	0.031 + 0.251*Tr + 0.911°C	0.010 + 0.235*Tr + 0.573°C
AO17LLX6	C-Z	C_Z (rise)	0.005 + 0.272*Tr + 0.434°C	0.043 + 0.292*Tr + 1.166°C	0.024 + 0.288*Tr + 0.805°C
AO17LLX6	D-Z	D_Z (fall)	-0.008 + 0.206*Tr + 0.330°C	0.035 + 0.263*Tr + 1.108°C	0.011 + 0.246*Tr + 0.676°C
AO17LLX6	D-Z	D_Z (rise)	0.002 + 0.296*Tr + 0.524°C	0.008 + 0.311*Tr + 1.072°C	0.000 + 0.300*Tr + 0.758°C
AO17LLX8	A-Z	A_Z (fall)	0.022 + 0.184*Tr + 0.311°C	0.072 + 0.211*Tr + 0.812°C	0.035 + 0.200*Tr + 0.483°C
AO17LLX8	A-Z	A_Z (rise)	0.029 + 0.228*Tr + 0.400°C	0.073 + 0.240*Tr + 0.863°C	0.044 + 0.236*Tr + 0.589°C
AO17LLX8	B-Z	B_Z (fall)	0.017 + 0.221*Tr + 0.319°C	0.061 + 0.248*Tr + 0.819°C	0.028 + 0.236*Tr + 0.493°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17LLX8	B-Z	B_Z (rise)	0.024 + 0.221*Tr + 0.403*C	0.063 + 0.233*Tr + 0.867*C	0.037 + 0.229*Tr + 0.593*C
AO17LLX8	C-Z	C_Z (fall)	0.004 + 0.219*Tr + 0.282*C	0.032 + 0.247*Tr + 0.672*C	0.012 + 0.232*Tr + 0.425*C
AO17LLX8	C-Z	C_Z (rise)	0.007 + 0.272*Tr + 0.325*C	0.044 + 0.294*Tr + 0.874*C	0.025 + 0.289*Tr + 0.604*C
AO17LLX8	D-Z	D_Z (fall)	-0.007 + 0.205*Tr + 0.246*C	0.036 + 0.264*Tr + 0.831*C	0.013 + 0.246*Tr + 0.506*C
AO17LLX8	D-Z	D_Z (rise)	0.002 + 0.294*Tr + 0.379*C	0.008 + 0.310*Tr + 0.776*C	0.001 + 0.298*Tr + 0.549*C

Average Leakage Power

picoWatts

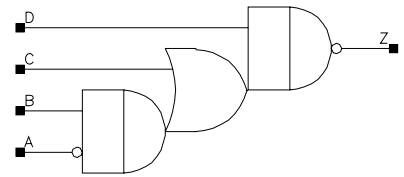
Cell	bc_1.32V_25C	bc_1.32V_125C
AO17LL	2763.810	59907.600
AO17LLP	4819.560	110036.000
AO17LLX4	9638.940	220066.000
AO17LLX6	14342.000	327641.000
AO17LLX8	18989.600	436424.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO17LL	Z(max)	0.011 + 0.010*Tr
AO17LLP	Z(max)	0.021 + 0.021*Tr
AO17LLX4	Z(max)	0.041 + 0.043*Tr
AO17LLX6	Z(max)	0.059 + 0.064*Tr
AO17LLX8	Z(max)	0.079 + 0.086*Tr

AO17ALL
AO17ALLP
AO17ALLX4
AO17ALLX6
AO17ALLX8



Function: Function = BOOLEAN function with 4 inputs and 1 output

Truth Table

A	B	C	D	Z
-	-	1	1	0
0	1	-	1	0
1	-	0	-	1
-	-	-	0	1
-	0	0	-	1

Physical Dimensions

Property	AO17ALL	AO17ALLP	AO17ALLX4	AO17ALLX6	AO17ALLX8
Area(um ²)	14.120	16.138	26.224	34.292	44.378

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17ALL	B Input Cap.	0.0032	0.0029	0.0030
AO17ALL	C Input Cap.	0.0027	0.0024	0.0025
AO17ALL	Z Max Load	0.160	0.160	0.160
AO17ALL	A Input Cap.	0.0016	0.0014	0.0015
AO17ALL	D Input Cap.	0.0023	0.0021	0.0022
AO17ALLP	A Input Cap.	0.0020	0.0017	0.0018
AO17ALLP	D Input Cap.	0.0042	0.0038	0.0039
AO17ALLP	B Input Cap.	0.0059	0.0055	0.0057
AO17ALLP	C Input Cap.	0.0050	0.0045	0.0047
AO17ALLP	Z Max Load	0.320	0.320	0.320
AO17ALLX4	D Input Cap.	0.0085	0.0076	0.0079

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17ALLX4	B Input Cap.	0.0116	0.0107	0.0111
AO17ALLX4	C Input Cap.	0.0098	0.0088	0.0092
AO17ALLX4	Z Max Load	0.640	0.640	0.640
AO17ALLX4	A Input Cap.	0.0035	0.0030	0.0031
AO17ALLX6	A Input Cap.	0.0048	0.0042	0.0043
AO17ALLX6	D Input Cap.	0.0119	0.0107	0.0110
AO17ALLX6	Z Max Load	0.960	0.960	0.960
AO17ALLX6	B Input Cap.	0.0176	0.0162	0.0168
AO17ALLX6	C Input Cap.	0.0145	0.0130	0.0135
AO17ALLX8	C Input Cap.	0.0191	0.0171	0.0177
AO17ALLX8	Z Max Load	1.280	1.280	1.280
AO17ALLX8	A Input Cap.	0.0064	0.0056	0.0058
AO17ALLX8	D Input Cap.	0.0163	0.0145	0.0150
AO17ALLX8	B Input Cap.	0.0238	0.0219	0.0227

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17ALL	A-Z	A_Z (fall)	0.089 + 0.288*Tr + 2.284*C	0.223 + 0.301*Tr + 6.344*C	0.139 + 0.293*Tr + 3.598*C
AO17ALL	A-Z	A_Z (rise)	0.081 + 0.176*Tr + 3.160*C	0.197 + 0.229*Tr + 6.919*C	0.123 + 0.197*Tr + 4.646*C
AO17ALL	B-Z	B_Z (fall)	0.018 + 0.227*Tr + 2.461*C	0.065 + 0.256*Tr + 6.570*C	0.029 + 0.243*Tr + 3.872*C
AO17ALL	B-Z	B_Z (rise)	0.028 + 0.235*Tr + 3.257*C	0.071 + 0.249*Tr + 7.117*C	0.042 + 0.245*Tr + 4.834*C
AO17ALL	C-Z	C_Z (fall)	0.005 + 0.223*Tr + 2.144*C	0.036 + 0.258*Tr + 5.344*C	0.013 + 0.240*Tr + 3.294*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17ALL	C-Z	C_Z (rise)	0.008 + 0.293*Tr + 2.592*C	0.049 + 0.313*Tr + 7.148*C	0.029 + 0.308*Tr + 4.891*C
AO17ALL	D-Z	D_Z (fall)	-0.007 + 0.218*Tr + 1.893*C	0.038 + 0.276*Tr + 6.655*C	0.013 + 0.258*Tr + 3.978*C
AO17ALL	D-Z	D_Z (rise)	0.006 + 0.315*Tr + 3.202*C	0.016 + 0.335*Tr + 6.752*C	0.006 + 0.325*Tr + 4.682*C
AO17ALLP	A-Z	A_Z (fall)	0.077 + 0.260*Tr + 1.144*C	0.188 + 0.271*Tr + 3.051*C	0.118 + 0.265*Tr + 1.766*C
AO17ALLP	A-Z	A_Z (rise)	0.073 + 0.185*Tr + 1.543*C	0.172 + 0.227*Tr + 3.327*C	0.109 + 0.202*Tr + 2.249*C
AO17ALLP	B-Z	B_Z (fall)	0.015 + 0.228*Tr + 1.243*C	0.058 + 0.253*Tr + 3.190*C	0.024 + 0.243*Tr + 1.922*C
AO17ALLP	B-Z	B_Z (rise)	0.024 + 0.228*Tr + 1.603*C	0.063 + 0.241*Tr + 3.452*C	0.036 + 0.237*Tr + 2.362*C
AO17ALLP	C-Z	C_Z (fall)	0.002 + 0.232*Tr + 1.126*C	0.030 + 0.262*Tr + 2.714*C	0.008 + 0.247*Tr + 1.705*C
AO17ALLP	C-Z	C_Z (rise)	0.004 + 0.283*Tr + 1.292*C	0.042 + 0.302*Tr + 3.483*C	0.023 + 0.298*Tr + 2.405*C
AO17ALLP	D-Z	D_Z (fall)	-0.011 + 0.219*Tr + 0.977*C	0.032 + 0.272*Tr + 3.240*C	0.008 + 0.257*Tr + 1.981*C
AO17ALLP	D-Z	D_Z (rise)	0.001 + 0.310*Tr + 1.577*C	0.007 + 0.326*Tr + 3.253*C	-0.001 + 0.316*Tr + 2.288*C
AO17ALLX4	A-Z	A_Z (fall)	0.076 + 0.251*Tr + 0.572*C	0.184 + 0.263*Tr + 1.526*C	0.116 + 0.255*Tr + 0.883*C
AO17ALLX4	A-Z	A_Z (rise)	0.073 + 0.199*Tr + 0.772*C	0.169 + 0.238*Tr + 1.664*C	0.109 + 0.215*Tr + 1.124*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17ALLX4	B-Z	B_Z (fall)	0.017 + 0.222*Tr + 0.622*C	0.060 + 0.249*Tr + 1.596*C	0.027 + 0.236*Tr + 0.962*C
AO17ALLX4	B-Z	B_Z (rise)	0.025 + 0.224*Tr + 0.802*C	0.065 + 0.238*Tr + 1.727*C	0.038 + 0.233*Tr + 1.182*C
AO17ALLX4	C-Z	C_Z (fall)	0.005 + 0.224*Tr + 0.563*C	0.035 + 0.255*Tr + 1.358*C	0.013 + 0.238*Tr + 0.853*C
AO17ALLX4	C-Z	C_Z (rise)	0.007 + 0.275*Tr + 0.647*C	0.046 + 0.297*Tr + 1.743*C	0.026 + 0.292*Tr + 1.203*C
AO17ALLX4	D-Z	D_Z (fall)	-0.006 + 0.207*Tr + 0.489*C	0.037 + 0.266*Tr + 1.622*C	0.013 + 0.248*Tr + 0.991*C
AO17ALLX4	D-Z	D_Z (rise)	0.004 + 0.303*Tr + 0.790*C	0.013 + 0.320*Tr + 1.629*C	0.004 + 0.308*Tr + 1.145*C
AO17ALLX6	A-Z	A_Z (fall)	0.074 + 0.245*Tr + 0.390*C	0.180 + 0.257*Tr + 1.043*C	0.113 + 0.250*Tr + 0.603*C
AO17ALLX6	A-Z	A_Z (rise)	0.071 + 0.202*Tr + 0.515*C	0.164 + 0.238*Tr + 1.109*C	0.106 + 0.217*Tr + 0.750*C
AO17ALLX6	B-Z	B_Z (fall)	0.016 + 0.222*Tr + 0.425*C	0.059 + 0.249*Tr + 1.092*C	0.026 + 0.237*Tr + 0.657*C
AO17ALLX6	B-Z	B_Z (rise)	0.024 + 0.221*Tr + 0.536*C	0.062 + 0.233*Tr + 1.156*C	0.036 + 0.230*Tr + 0.791*C
AO17ALLX6	C-Z	C_Z (fall)	0.003 + 0.221*Tr + 0.378*C	0.031 + 0.251*Tr + 0.911*C	0.010 + 0.235*Tr + 0.573*C
AO17ALLX6	C-Z	C_Z (rise)	0.005 + 0.272*Tr + 0.434*C	0.042 + 0.293*Tr + 1.166*C	0.023 + 0.288*Tr + 0.805*C
AO17ALLX6	D-Z	D_Z (fall)	-0.008 + 0.206*Tr + 0.330*C	0.035 + 0.263*Tr + 1.108*C	0.011 + 0.246*Tr + 0.676*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17ALLX6	D-Z	D_Z (rise)	0.002 + 0.296*Tr + 0.524*C	0.008 + 0.311*Tr + 1.072*C	0.000 + 0.301*Tr + 0.758*C
AO17ALLX8	A-Z	A_Z (fall)	0.074 + 0.242*Tr + 0.292*C	0.178 + 0.254*Tr + 0.782*C	0.112 + 0.247*Tr + 0.452*C
AO17ALLX8	A-Z	A_Z (rise)	0.071 + 0.202*Tr + 0.386*C	0.163 + 0.237*Tr + 0.832*C	0.105 + 0.216*Tr + 0.563*C
AO17ALLX8	B-Z	B_Z (fall)	0.017 + 0.222*Tr + 0.319*C	0.060 + 0.249*Tr + 0.819*C	0.028 + 0.236*Tr + 0.493*C
AO17ALLX8	B-Z	B_Z (rise)	0.024 + 0.221*Tr + 0.402*C	0.064 + 0.233*Tr + 0.867*C	0.037 + 0.229*Tr + 0.593*C
AO17ALLX8	C-Z	C_Z (fall)	0.004 + 0.219*Tr + 0.282*C	0.032 + 0.247*Tr + 0.671*C	0.012 + 0.232*Tr + 0.425*C
AO17ALLX8	C-Z	C_Z (rise)	0.006 + 0.272*Tr + 0.325*C	0.044 + 0.294*Tr + 0.874*C	0.025 + 0.289*Tr + 0.604*C
AO17ALLX8	D-Z	D_Z (fall)	-0.007 + 0.205*Tr + 0.246*C	0.036 + 0.264*Tr + 0.831*C	0.013 + 0.246*Tr + 0.507*C
AO17ALLX8	D-Z	D_Z (rise)	0.002 + 0.294*Tr + 0.379*C	0.008 + 0.310*Tr + 0.776*C	0.001 + 0.298*Tr + 0.549*C

Average Leakage Power

picoWatts

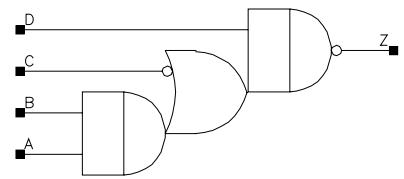
Cell	bc_1.32V_25C	bc_1.32V_125C
AO17ALL	4378.910	81883.500
AO17ALLP	6498.890	137445.000
AO17ALLX4	11930.400	261410.000
AO17ALLX6	17360.800	384170.000
AO17ALLX8	22759.000	508438.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO17ALL	Z(max)	$0.019 + 0.005 * Tr$
AO17ALLP	Z(max)	$0.034 + 0.009 * Tr$
AO17ALLX4	Z(max)	$0.067 + 0.016 * Tr$
AO17ALLX6	Z(max)	$0.098 + 0.024 * Tr$
AO17ALLX8	Z(max)	$0.130 + 0.033 * Tr$

AO17CLL
AO17CLLP
AO17CLLX4
AO17CLLX6
AO17CLLX8



Function: Function = BOOLEAN function with 4 inputs and 1 output

Truth Table

A	B	C	D	Z
-	-	0	1	0
1	1	-	1	0
-	0	1	-	1
-	-	-	0	1
0	-	1	-	1

Physical Dimensions

Property	AO17CLL	AO17CLLP	AO17CLLX4	AO17CLLX6	AO17CLLX8
Area(um ²)	14.120	16.138	26.224	34.292	44.378

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17CLL	C Input Cap.	0.0017	0.0014	0.0015
AO17CLL	A Input Cap.	0.0033	0.0030	0.0031
AO17CLL	D Input Cap.	0.0024	0.0021	0.0022
AO17CLL	Z Max Load	0.160	0.160	0.160
AO17CLL	B Input Cap.	0.0032	0.0029	0.0031
AO17CLLP	A Input Cap.	0.0062	0.0057	0.0059
AO17CLLP	D Input Cap.	0.0042	0.0038	0.0039
AO17CLLP	Z Max Load	0.320	0.320	0.320
AO17CLLP	B Input Cap.	0.0060	0.0055	0.0057
AO17CLLP	C Input Cap.	0.0021	0.0017	0.0018
AO17CLLX4	A Input Cap.	0.0124	0.0114	0.0118

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17CLLX4	D Input Cap.	0.0085	0.0076	0.0078
AO17CLLX4	Z Max Load	0.640	0.640	0.640
AO17CLLX4	B Input Cap.	0.0117	0.0107	0.0111
AO17CLLX4	C Input Cap.	0.0035	0.0030	0.0031
AO17CLLX6	C Input Cap.	0.0049	0.0042	0.0044
AO17CLLX6	Z Max Load	0.960	0.960	0.960
AO17CLLX6	A Input Cap.	0.0182	0.0167	0.0173
AO17CLLX6	D Input Cap.	0.0119	0.0107	0.0110
AO17CLLX6	B Input Cap.	0.0177	0.0163	0.0169
AO17CLLX8	Z Max Load	1.280	1.280	1.280
AO17CLLX8	B Input Cap.	0.0238	0.0219	0.0227
AO17CLLX8	C Input Cap.	0.0065	0.0056	0.0058
AO17CLLX8	A Input Cap.	0.0238	0.0218	0.0226
AO17CLLX8	D Input Cap.	0.0163	0.0145	0.0150

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17CLL	A-Z	A_Z (fall)	0.022 + 0.187*Tr + 2.406*C	0.076 + 0.216*Tr + 6.526*C	0.037 + 0.205*Tr + 3.803*C
AO17CLL	A-Z	A_Z (rise)	0.034 + 0.239*Tr + 3.243*C	0.086 + 0.252*Tr + 7.105*C	0.052 + 0.248*Tr + 4.815*C
AO17CLL	B-Z	B_Z (fall)	0.018 + 0.227*Tr + 2.462*C	0.065 + 0.255*Tr + 6.571*C	0.030 + 0.243*Tr + 3.874*C
AO17CLL	B-Z	B_Z (rise)	0.029 + 0.233*Tr + 3.260*C	0.076 + 0.247*Tr + 7.129*C	0.045 + 0.243*Tr + 4.841*C
AO17CLL	C-Z	C_Z (fall)	0.079 + 0.290*Tr + 1.904*C	0.195 + 0.304*Tr + 4.976*C	0.126 + 0.296*Tr + 2.910*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17CLL	C-Z	C_Z (rise)	0.062 + 0.177*Tr + 2.366*C	0.167 + 0.225*Tr + 6.908*C	0.106 + 0.194*Tr + 4.639*C
AO17CLL	D-Z	D_Z (fall)	-0.007 + 0.219*Tr + 1.892*C	0.038 + 0.276*Tr + 6.655*C	0.013 + 0.258*Tr + 3.979*C
AO17CLL	D-Z	D_Z (rise)	0.006 + 0.315*Tr + 3.198*C	0.016 + 0.336*Tr + 6.746*C	0.006 + 0.325*Tr + 4.683*C
AO17CLLP	A-Z	A_Z (fall)	0.020 + 0.188*Tr + 1.214*C	0.069 + 0.215*Tr + 3.163*C	0.032 + 0.205*Tr + 1.883*C
AO17CLLP	A-Z	A_Z (rise)	0.031 + 0.233*Tr + 1.594*C	0.079 + 0.245*Tr + 3.442*C	0.046 + 0.241*Tr + 2.351*C
AO17CLLP	B-Z	B_Z (fall)	0.015 + 0.228*Tr + 1.244*C	0.057 + 0.254*Tr + 3.190*C	0.024 + 0.242*Tr + 1.922*C
AO17CLLP	B-Z	B_Z (rise)	0.026 + 0.226*Tr + 1.605*C	0.069 + 0.239*Tr + 3.456*C	0.039 + 0.236*Tr + 2.365*C
AO17CLLP	C-Z	C_Z (fall)	0.069 + 0.264*Tr + 0.990*C	0.166 + 0.277*Tr + 2.497*C	0.108 + 0.269*Tr + 1.488*C
AO17CLLP	C-Z	C_Z (rise)	0.056 + 0.187*Tr + 1.156*C	0.146 + 0.226*Tr + 3.323*C	0.094 + 0.201*Tr + 2.245*C
AO17CLLP	D-Z	D_Z (fall)	-0.011 + 0.219*Tr + 0.977*C	0.032 + 0.273*Tr + 3.240*C	0.008 + 0.257*Tr + 1.981*C
AO17CLLP	D-Z	D_Z (rise)	0.001 + 0.310*Tr + 1.578*C	0.007 + 0.326*Tr + 3.252*C	-0.001 + 0.316*Tr + 2.288*C
AO17CLLX4	A-Z	A_Z (fall)	0.021 + 0.184*Tr + 0.608*C	0.070 + 0.211*Tr + 1.582*C	0.034 + 0.200*Tr + 0.942*C
AO17CLLX4	A-Z	A_Z (rise)	0.031 + 0.230*Tr + 0.798*C	0.080 + 0.241*Tr + 1.722*C	0.048 + 0.238*Tr + 1.176*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17CLLX4	B-Z	B_Z (fall)	0.017 + 0.222*Tr + 0.623*C	0.059 + 0.249*Tr + 1.596*C	0.027 + 0.236*Tr + 0.962*C
AO17CLLX4	B-Z	B_Z (rise)	0.026 + 0.223*Tr + 0.803*C	0.069 + 0.235*Tr + 1.730*C	0.040 + 0.231*Tr + 1.183*C
AO17CLLX4	C-Z	C_Z (fall)	0.066 + 0.252*Tr + 0.495*C	0.158 + 0.265*Tr + 1.247*C	0.103 + 0.257*Tr + 0.744*C
AO17CLLX4	C-Z	C_Z (rise)	0.055 + 0.198*Tr + 0.578*C	0.141 + 0.233*Tr + 1.661*C	0.092 + 0.210*Tr + 1.122*C
AO17CLLX4	D-Z	D_Z (fall)	-0.006 + 0.207*Tr + 0.489*C	0.035 + 0.266*Tr + 1.622*C	0.012 + 0.248*Tr + 0.992*C
AO17CLLX4	D-Z	D_Z (rise)	0.004 + 0.303*Tr + 0.790*C	0.012 + 0.320*Tr + 1.629*C	0.004 + 0.308*Tr + 1.146*C
AO17CLLX6	A-Z	A_Z (fall)	0.021 + 0.185*Tr + 0.414*C	0.070 + 0.211*Tr + 1.082*C	0.033 + 0.201*Tr + 0.644*C
AO17CLLX6	A-Z	A_Z (rise)	0.030 + 0.227*Tr + 0.533*C	0.077 + 0.238*Tr + 1.152*C	0.045 + 0.235*Tr + 0.787*C
AO17CLLX6	B-Z	B_Z (fall)	0.016 + 0.223*Tr + 0.425*C	0.059 + 0.249*Tr + 1.092*C	0.026 + 0.236*Tr + 0.658*C
AO17CLLX6	B-Z	B_Z (rise)	0.025 + 0.220*Tr + 0.537*C	0.067 + 0.231*Tr + 1.157*C	0.039 + 0.228*Tr + 0.792*C
AO17CLLX6	C-Z	C_Z (fall)	0.063 + 0.245*Tr + 0.330*C	0.150 + 0.258*Tr + 0.832*C	0.098 + 0.250*Tr + 0.495*C
AO17CLLX6	C-Z	C_Z (rise)	0.053 + 0.200*Tr + 0.386*C	0.134 + 0.231*Tr + 1.108*C	0.088 + 0.211*Tr + 0.748*C
AO17CLLX6	D-Z	D_Z (fall)	-0.008 + 0.206*Tr + 0.330*C	0.034 + 0.263*Tr + 1.108*C	0.010 + 0.246*Tr + 0.677*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17CLLX6	D-Z	D_Z (rise)	0.002 + 0.296*Tr + 0.524*C	0.008 + 0.311*Tr + 1.072*C	0.000 + 0.300*Tr + 0.758*C
AO17CLLX8	A-Z	A_Z (fall)	0.021 + 0.184*Tr + 0.311*C	0.071 + 0.211*Tr + 0.812*C	0.034 + 0.200*Tr + 0.483*C
AO17CLLX8	A-Z	A_Z (rise)	0.031 + 0.227*Tr + 0.400*C	0.078 + 0.238*Tr + 0.864*C	0.047 + 0.235*Tr + 0.590*C
AO17CLLX8	B-Z	B_Z (fall)	0.017 + 0.222*Tr + 0.319*C	0.060 + 0.249*Tr + 0.820*C	0.028 + 0.236*Tr + 0.493*C
AO17CLLX8	B-Z	B_Z (rise)	0.026 + 0.219*Tr + 0.403*C	0.069 + 0.231*Tr + 0.868*C	0.040 + 0.228*Tr + 0.594*C
AO17CLLX8	C-Z	C_Z (fall)	0.063 + 0.243*Tr + 0.246*C	0.149 + 0.256*Tr + 0.612*C	0.098 + 0.248*Tr + 0.367*C
AO17CLLX8	C-Z	C_Z (rise)	0.053 + 0.201*Tr + 0.289*C	0.135 + 0.232*Tr + 0.831*C	0.089 + 0.211*Tr + 0.561*C
AO17CLLX8	D-Z	D_Z (fall)	-0.007 + 0.205*Tr + 0.246*C	0.035 + 0.264*Tr + 0.831*C	0.012 + 0.246*Tr + 0.507*C
AO17CLLX8	D-Z	D_Z (rise)	0.002 + 0.294*Tr + 0.379*C	0.008 + 0.309*Tr + 0.777*C	0.001 + 0.298*Tr + 0.550*C

Average Leakage Power

picoWatts

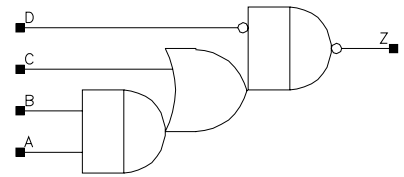
Cell	bc_1.32V_25C	bc_1.32V_125C
AO17CLL	3547.560	71866.000
AO17CLLP	5707.550	128746.000
AO17CLLX4	11049.200	252531.000
AO17CLLX6	16322.600	374434.000
AO17CLLX8	21619.400	499598.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO17CLL	Z(max)	$0.015 + 0.005 * Tr$
AO17CLLP	Z(max)	$0.021 + 0.021 * Tr$
AO17CLLX4	Z(max)	$0.041 + 0.043 * Tr$
AO17CLLX6	Z(max)	$0.059 + 0.064 * Tr$
AO17CLLX8	Z(max)	$0.080 + 0.086 * Tr$

AO17DLL
AO17DLLP
AO17DLLX4
AO17DLLX6
AO17DLLX8



Function: Function = BOOLEAN function with 4 inputs and 1 output

Truth Table

A	B	C	D	Z
-	-	1	0	0
1	1	-	0	0
-	0	0	-	1
0	-	0	-	1
-	-	-	1	1

Physical Dimensions

Property	AO17DLL	AO17DLLP	AO17DLLX4	AO17DLLX6	AO17DLLX8
Area(um ²)	14.120	16.138	26.224	34.292	44.378

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17DLL	C Input Cap.	0.0027	0.0024	0.0025
AO17DLL	A Input Cap.	0.0034	0.0031	0.0032
AO17DLL	Z Max Load	0.160	0.160	0.160
AO17DLL	D Input Cap.	0.0017	0.0014	0.0015
AO17DLL	B Input Cap.	0.0032	0.0029	0.0030
AO17DLLP	A Input Cap.	0.0062	0.0057	0.0059
AO17DLLP	Z Max Load	0.320	0.320	0.320
AO17DLLP	D Input Cap.	0.0021	0.0017	0.0018
AO17DLLP	B Input Cap.	0.0060	0.0055	0.0057
AO17DLLP	C Input Cap.	0.0050	0.0045	0.0047
AO17DLLX4	C Input Cap.	0.0099	0.0089	0.0092

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17DLLX4	A Input Cap.	0.0124	0.0114	0.0118
AO17DLLX4	Z Max Load	0.640	0.640	0.640
AO17DLLX4	D Input Cap.	0.0036	0.0030	0.0032
AO17DLLX4	B Input Cap.	0.0117	0.0107	0.0111
AO17DLLX6	Z Max Load	0.960	0.960	0.960
AO17DLLX6	C Input Cap.	0.0145	0.0130	0.0135
AO17DLLX6	A Input Cap.	0.0183	0.0168	0.0174
AO17DLLX6	D Input Cap.	0.0050	0.0043	0.0044
AO17DLLX6	B Input Cap.	0.0176	0.0162	0.0168
AO17DLLX8	B Input Cap.	0.0239	0.0219	0.0227
AO17DLLX8	C Input Cap.	0.0191	0.0171	0.0177
AO17DLLX8	A Input Cap.	0.0238	0.0218	0.0226
AO17DLLX8	Z Max Load	1.280	1.280	1.280
AO17DLLX8	D Input Cap.	0.0066	0.0057	0.0059

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17DLL	A-Z	A_Z (fall)	0.025 + 0.185*Tr + 2.413*C	0.083 + 0.214*Tr + 6.533*C	0.041 + 0.203*Tr + 3.810*C
AO17DLL	A-Z	A_Z (rise)	0.032 + 0.241*Tr + 3.243*C	0.081 + 0.254*Tr + 7.095*C	0.049 + 0.250*Tr + 4.814*C
AO17DLL	B-Z	B_Z (fall)	0.021 + 0.224*Tr + 2.470*C	0.072 + 0.252*Tr + 6.580*C	0.034 + 0.240*Tr + 3.883*C
AO17DLL	B-Z	B_Z (rise)	0.027 + 0.235*Tr + 3.262*C	0.070 + 0.249*Tr + 7.121*C	0.041 + 0.245*Tr + 4.840*C
AO17DLL	C-Z	C_Z (fall)	0.007 + 0.221*Tr + 2.151*C	0.041 + 0.256*Tr + 5.355*C	0.016 + 0.238*Tr + 3.301*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17DLL	C-Z	C_Z (rise)	0.008 + 0.293*Tr + 2.595*C	0.049 + 0.313*Tr + 7.153*C	0.028 + 0.308*Tr + 4.894*C
AO17DLL	D-Z	D_Z (fall)	0.069 + 0.284*Tr + 1.538*C	0.190 + 0.295*Tr + 6.330*C	0.121 + 0.288*Tr + 3.597*C
AO17DLL	D-Z	D_Z (rise)	0.059 + 0.178*Tr + 3.011*C	0.145 + 0.232*Tr + 6.408*C	0.090 + 0.199*Tr + 4.353*C
AO17DLLP	A-Z	A_Z (fall)	0.023 + 0.186*Tr + 1.216*C	0.075 + 0.212*Tr + 3.166*C	0.036 + 0.203*Tr + 1.885*C
AO17DLLP	A-Z	A_Z (rise)	0.028 + 0.234*Tr + 1.594*C	0.074 + 0.247*Tr + 3.439*C	0.043 + 0.243*Tr + 2.349*C
AO17DLLP	B-Z	B_Z (fall)	0.017 + 0.225*Tr + 1.247*C	0.062 + 0.251*Tr + 3.194*C	0.028 + 0.240*Tr + 1.926*C
AO17DLLP	B-Z	B_Z (rise)	0.023 + 0.228*Tr + 1.606*C	0.062 + 0.241*Tr + 3.455*C	0.035 + 0.237*Tr + 2.365*C
AO17DLLP	C-Z	C_Z (fall)	0.004 + 0.230*Tr + 1.129*C	0.036 + 0.260*Tr + 2.718*C	0.012 + 0.244*Tr + 1.708*C
AO17DLLP	C-Z	C_Z (rise)	0.003 + 0.283*Tr + 1.294*C	0.042 + 0.302*Tr + 3.484*C	0.022 + 0.298*Tr + 2.406*C
AO17DLLP	D-Z	D_Z (fall)	0.055 + 0.254*Tr + 0.776*C	0.151 + 0.261*Tr + 3.043*C	0.097 + 0.256*Tr + 1.761*C
AO17DLLP	D-Z	D_Z (rise)	0.051 + 0.185*Tr + 1.463*C	0.119 + 0.228*Tr + 3.028*C	0.076 + 0.202*Tr + 2.082*C
AO17DLLX4	A-Z	A_Z (fall)	0.024 + 0.181*Tr + 0.609*C	0.077 + 0.208*Tr + 1.584*C	0.039 + 0.198*Tr + 0.943*C
AO17DLLX4	A-Z	A_Z (rise)	0.029 + 0.232*Tr + 0.797*C	0.075 + 0.244*Tr + 1.721*C	0.045 + 0.240*Tr + 1.175*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17DLLX4	B-Z	B_Z (fall)	0.020 + 0.219*Tr + 0.624*C	0.065 + 0.246*Tr + 1.598*C	0.031 + 0.234*Tr + 0.964*C
AO17DLLX4	B-Z	B_Z (rise)	0.024 + 0.224*Tr + 0.804*C	0.064 + 0.238*Tr + 1.730*C	0.037 + 0.233*Tr + 1.183*C
AO17DLLX4	C-Z	C_Z (fall)	0.007 + 0.222*Tr + 0.565*C	0.040 + 0.253*Tr + 1.360*C	0.017 + 0.236*Tr + 0.855*C
AO17DLLX4	C-Z	C_Z (rise)	0.007 + 0.275*Tr + 0.648*C	0.045 + 0.297*Tr + 1.743*C	0.026 + 0.292*Tr + 1.203*C
AO17DLLX4	D-Z	D_Z (fall)	0.054 + 0.243*Tr + 0.388*C	0.146 + 0.251*Tr + 1.521*C	0.095 + 0.245*Tr + 0.880*C
AO17DLLX4	D-Z	D_Z (rise)	0.051 + 0.197*Tr + 0.732*C	0.117 + 0.236*Tr + 1.515*C	0.076 + 0.213*Tr + 1.041*C
AO17DLLX6	A-Z	A_Z (fall)	0.023 + 0.182*Tr + 0.415*C	0.076 + 0.208*Tr + 1.083*C	0.037 + 0.198*Tr + 0.645*C
AO17DLLX6	A-Z	A_Z (rise)	0.028 + 0.229*Tr + 0.533*C	0.072 + 0.240*Tr + 1.151*C	0.043 + 0.236*Tr + 0.786*C
AO17DLLX6	B-Z	B_Z (fall)	0.019 + 0.220*Tr + 0.426*C	0.064 + 0.246*Tr + 1.093*C	0.029 + 0.234*Tr + 0.659*C
AO17DLLX6	B-Z	B_Z (rise)	0.023 + 0.221*Tr + 0.538*C	0.061 + 0.234*Tr + 1.157*C	0.035 + 0.230*Tr + 0.792*C
AO17DLLX6	C-Z	C_Z (fall)	0.005 + 0.219*Tr + 0.379*C	0.036 + 0.249*Tr + 0.912*C	0.013 + 0.233*Tr + 0.575*C
AO17DLLX6	C-Z	C_Z (rise)	0.005 + 0.272*Tr + 0.434*C	0.042 + 0.292*Tr + 1.166*C	0.023 + 0.288*Tr + 0.806*C
AO17DLLX6	D-Z	D_Z (fall)	0.050 + 0.235*Tr + 0.260*C	0.140 + 0.244*Tr + 1.039*C	0.090 + 0.238*Tr + 0.600*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17DLLX6	D-Z	D_Z (rise)	0.049 + 0.199*Tr + 0.483°C	0.110 + 0.235*Tr + 0.989°C	0.072 + 0.213*Tr + 0.682°C
AO17DLLX8	A-Z	A_Z (fall)	0.024 + 0.182*Tr + 0.311°C	0.077 + 0.208*Tr + 0.812°C	0.038 + 0.198*Tr + 0.483°C
AO17DLLX8	A-Z	A_Z (rise)	0.028 + 0.229*Tr + 0.400°C	0.073 + 0.240*Tr + 0.863°C	0.043 + 0.236*Tr + 0.590°C
AO17DLLX8	B-Z	B_Z (fall)	0.020 + 0.219*Tr + 0.319°C	0.065 + 0.246*Tr + 0.820°C	0.031 + 0.234*Tr + 0.494°C
AO17DLLX8	B-Z	B_Z (rise)	0.024 + 0.221*Tr + 0.403°C	0.063 + 0.234*Tr + 0.868°C	0.036 + 0.230*Tr + 0.594°C
AO17DLLX8	C-Z	C_Z (fall)	0.006 + 0.216*Tr + 0.283°C	0.038 + 0.245*Tr + 0.672°C	0.015 + 0.229*Tr + 0.426°C
AO17DLLX8	C-Z	C_Z (rise)	0.006 + 0.272*Tr + 0.326°C	0.044 + 0.294*Tr + 0.874°C	0.024 + 0.289*Tr + 0.604°C
AO17DLLX8	D-Z	D_Z (fall)	0.050 + 0.233*Tr + 0.194°C	0.137 + 0.240*Tr + 0.779°C	0.089 + 0.235*Tr + 0.450°C
AO17DLLX8	D-Z	D_Z (rise)	0.048 + 0.199*Tr + 0.347°C	0.107 + 0.234*Tr + 0.712°C	0.070 + 0.212*Tr + 0.491°C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO17DLL	4378.900	81883.000
AO17DLLP	6498.860	137444.000
AO17DLLX4	11930.500	261412.000
AO17DLLX6	17360.500	384172.000
AO17DLLX8	22759.000	508450.000

Internal Energy at minimum output load

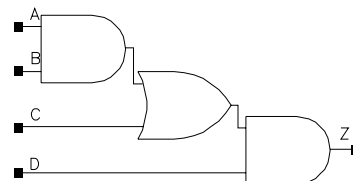
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO17DLL	Z(max)	$0.015 + 0.005 * Tr$
AO17DLLP	Z(max)	$0.021 + 0.021 * Tr$
AO17DLLX4	Z(max)	$0.041 + 0.043 * Tr$
AO17DLLX6	Z(max)	$0.059 + 0.064 * Tr$
AO17DLLX8	Z(max)	$0.080 + 0.086 * Tr$

AO17NLL
AO17NLLP
AO17NLLX4
AO17NLLX6
AO17NLLX8

Function: Function = 2 wide 2-3 AND-OR

Boolean Expression: $Z = (A \bullet B + C) \bullet D$



Physical Dimensions

Property	AO17NLL	AO17NLLP	AO17NLLX4	AO17NLLX6	AO17NLLX8
Area(um2)	14.120	16.138	20.172	32.275	34.292

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17NLL	C Input Cap.	0.0018	0.0015	0.0016
AO17NLL	A Input Cap.	0.0020	0.0017	0.0018
AO17NLL	D Input Cap.	0.0018	0.0014	0.0014
AO17NLL	B Input Cap.	0.0019	0.0016	0.0017
AO17NLL	Z Max Load	0.160	0.160	0.160
AO17NLLP	C Input Cap.	0.0030	0.0025	0.0026
AO17NLLP	A Input Cap.	0.0035	0.0031	0.0032
AO17NLLP	D Input Cap.	0.0029	0.0022	0.0023
AO17NLLP	B Input Cap.	0.0033	0.0029	0.0030
AO17NLLP	Z Max Load	0.320	0.320	0.320
AO17NLLX4	B Input Cap.	0.0062	0.0055	0.0057
AO17NLLX4	Z Max Load	0.640	0.640	0.640
AO17NLLX4	C Input Cap.	0.0057	0.0048	0.0050
AO17NLLX4	A Input Cap.	0.0064	0.0057	0.0060
AO17NLLX4	D Input Cap.	0.0051	0.0040	0.0042
AO17NLLX6	Z Max Load	0.960	0.960	0.960
AO17NLLX6	D Input Cap.	0.0076	0.0060	0.0063
AO17NLLX6	B Input Cap.	0.0094	0.0083	0.0086
AO17NLLX6	C Input Cap.	0.0090	0.0075	0.0078
AO17NLLX6	A Input Cap.	0.0099	0.0088	0.0092

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17NLLX8	C Input Cap.	0.0115	0.0097	0.0100
AO17NLLX8	A Input Cap.	0.0130	0.0116	0.0121
AO17NLLX8	D Input Cap.	0.0098	0.0078	0.0081
AO17NLLX8	B Input Cap.	0.0122	0.0108	0.0112
AO17NLLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17NLL	A-Z	A_Z (fall)	0.101 + 0.250*Tr + 1.262°C	0.240 + 0.259*Tr + 2.767°C	0.155 + 0.253*Tr + 1.774°C
AO17NLL	A-Z	A_Z (rise)	0.075 + 0.166*Tr + 1.649°C	0.212 + 0.200*Tr + 3.519°C	0.121 + 0.183*Tr + 2.379°C
AO17NLL	B-Z	B_Z (fall)	0.095 + 0.241*Tr + 1.258°C	0.227 + 0.252*Tr + 2.752°C	0.146 + 0.246*Tr + 1.766°C
AO17NLL	B-Z	B_Z (rise)	0.075 + 0.195*Tr + 1.648°C	0.206 + 0.233*Tr + 3.514°C	0.120 + 0.212*Tr + 2.376°C
AO17NLL	C-Z	C_Z (fall)	0.073 + 0.276*Tr + 1.215°C	0.213 + 0.307*Tr + 2.753°C	0.142 + 0.299*Tr + 1.762°C
AO17NLL	C-Z	C_Z (rise)	0.058 + 0.180*Tr + 1.632°C	0.160 + 0.222*Tr + 3.458°C	0.097 + 0.197*Tr + 2.354°C
AO17NLL	D-Z	D_Z (fall)	0.073 + 0.297*Tr + 1.218°C	0.183 + 0.325*Tr + 2.872°C	0.119 + 0.310*Tr + 1.836°C
AO17NLL	D-Z	D_Z (rise)	0.050 + 0.157*Tr + 1.619°C	0.192 + 0.241*Tr + 3.502°C	0.114 + 0.213*Tr + 2.366°C
AO17NLLP	A-Z	A_Z (fall)	0.087 + 0.235*Tr + 0.642°C	0.205 + 0.246*Tr + 1.358°C	0.133 + 0.239*Tr + 0.886°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17NLLP	A-Z	A_Z (rise)	0.068 + 0.174*Tr + 0.809*C	0.189 + 0.205*Tr + 1.699*C	0.108 + 0.190*Tr + 1.156*C
AO17NLLP	B-Z	B_Z (fall)	0.081 + 0.226*Tr + 0.640*C	0.193 + 0.238*Tr + 1.350*C	0.124 + 0.231*Tr + 0.882*C
AO17NLLP	B-Z	B_Z (rise)	0.068 + 0.202*Tr + 0.807*C	0.183 + 0.237*Tr + 1.697*C	0.107 + 0.217*Tr + 1.155*C
AO17NLLP	C-Z	C_Z (fall)	0.063 + 0.254*Tr + 0.620*C	0.182 + 0.288*Tr + 1.349*C	0.121 + 0.278*Tr + 0.879*C
AO17NLLP	C-Z	C_Z (rise)	0.051 + 0.189*Tr + 0.800*C	0.140 + 0.227*Tr + 1.670*C	0.085 + 0.203*Tr + 1.145*C
AO17NLLP	D-Z	D_Z (fall)	0.063 + 0.280*Tr + 0.622*C	0.152 + 0.309*Tr + 1.421*C	0.101 + 0.294*Tr + 0.925*C
AO17NLLP	D-Z	D_Z (rise)	0.043 + 0.160*Tr + 0.793*C	0.167 + 0.242*Tr + 1.689*C	0.100 + 0.216*Tr + 1.149*C
AO17NLLX4	A-Z	A_Z (fall)	0.083 + 0.229*Tr + 0.320*C	0.196 + 0.240*Tr + 0.677*C	0.126 + 0.234*Tr + 0.441*C
AO17NLLX4	A-Z	A_Z (rise)	0.065 + 0.177*Tr + 0.404*C	0.180 + 0.205*Tr + 0.848*C	0.104 + 0.191*Tr + 0.578*C
AO17NLLX4	B-Z	B_Z (fall)	0.078 + 0.219*Tr + 0.319*C	0.183 + 0.231*Tr + 0.673*C	0.118 + 0.225*Tr + 0.440*C
AO17NLLX4	B-Z	B_Z (rise)	0.066 + 0.204*Tr + 0.403*C	0.174 + 0.237*Tr + 0.846*C	0.103 + 0.218*Tr + 0.577*C
AO17NLLX4	C-Z	C_Z (fall)	0.060 + 0.244*Tr + 0.310*C	0.175 + 0.279*Tr + 0.673*C	0.117 + 0.269*Tr + 0.438*C
AO17NLLX4	C-Z	C_Z (rise)	0.050 + 0.196*Tr + 0.400*C	0.136 + 0.230*Tr + 0.835*C	0.083 + 0.208*Tr + 0.573*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17NLLX4	D-Z	D_Z (fall)	0.060 + 0.274*Tr + 0.311*C	0.145 + 0.302*Tr + 0.705*C	0.097 + 0.288*Tr + 0.460*C
AO17NLLX4	D-Z	D_Z (rise)	0.042 + 0.162*Tr + 0.396*C	0.159 + 0.240*Tr + 0.843*C	0.096 + 0.215*Tr + 0.574*C
AO17NLLX6	A-Z	A_Z (fall)	0.082 + 0.230*Tr + 0.214*C	0.194 + 0.240*Tr + 0.454*C	0.125 + 0.234*Tr + 0.296*C
AO17NLLX6	A-Z	A_Z (rise)	0.065 + 0.176*Tr + 0.270*C	0.181 + 0.205*Tr + 0.568*C	0.104 + 0.191*Tr + 0.386*C
AO17NLLX6	B-Z	B_Z (fall)	0.077 + 0.220*Tr + 0.214*C	0.182 + 0.232*Tr + 0.451*C	0.117 + 0.225*Tr + 0.294*C
AO17NLLX6	B-Z	B_Z (rise)	0.065 + 0.204*Tr + 0.270*C	0.174 + 0.237*Tr + 0.567*C	0.103 + 0.218*Tr + 0.386*C
AO17NLLX6	C-Z	C_Z (fall)	0.060 + 0.246*Tr + 0.207*C	0.174 + 0.280*Tr + 0.450*C	0.116 + 0.271*Tr + 0.293*C
AO17NLLX6	C-Z	C_Z (rise)	0.050 + 0.192*Tr + 0.267*C	0.135 + 0.227*Tr + 0.558*C	0.083 + 0.205*Tr + 0.383*C
AO17NLLX6	D-Z	D_Z (fall)	0.059 + 0.274*Tr + 0.208*C	0.142 + 0.301*Tr + 0.473*C	0.095 + 0.287*Tr + 0.309*C
AO17NLLX6	D-Z	D_Z (rise)	0.041 + 0.162*Tr + 0.265*C	0.159 + 0.242*Tr + 0.564*C	0.096 + 0.217*Tr + 0.384*C
AO17NLLX8	A-Z	A_Z (fall)	0.081 + 0.228*Tr + 0.161*C	0.191 + 0.238*Tr + 0.340*C	0.123 + 0.232*Tr + 0.222*C
AO17NLLX8	A-Z	A_Z (rise)	0.064 + 0.176*Tr + 0.203*C	0.175 + 0.204*Tr + 0.426*C	0.101 + 0.190*Tr + 0.290*C
AO17NLLX8	B-Z	B_Z (fall)	0.075 + 0.218*Tr + 0.160*C	0.178 + 0.230*Tr + 0.338*C	0.115 + 0.224*Tr + 0.221*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO17NLLX8	B-Z	B_Z (rise)	0.064 + 0.203*Tr + 0.202*C	0.168 + 0.235*Tr + 0.424*C	0.100 + 0.216*Tr + 0.289*C
AO17NLLX8	C-Z	C_Z (fall)	0.059 + 0.243*Tr + 0.155*C	0.171 + 0.277*Tr + 0.338*C	0.114 + 0.267*Tr + 0.220*C
AO17NLLX8	C-Z	C_Z (rise)	0.049 + 0.194*Tr + 0.201*C	0.132 + 0.228*Tr + 0.419*C	0.081 + 0.207*Tr + 0.287*C
AO17NLLX8	D-Z	D_Z (fall)	0.058 + 0.273*Tr + 0.156*C	0.140 + 0.300*Tr + 0.355*C	0.094 + 0.286*Tr + 0.232*C
AO17NLLX8	D-Z	D_Z (rise)	0.041 + 0.161*Tr + 0.199*C	0.154 + 0.239*Tr + 0.423*C	0.094 + 0.214*Tr + 0.288*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO17NLL	3593.380	71922.500
AO17NLLP	5838.690	126536.000
AO17NLLX4	10991.000	243709.000
AO17NLLX6	16773.600	368992.000
AO17NLLX8	21981.500	487415.000

Internal Energy at minimum output load

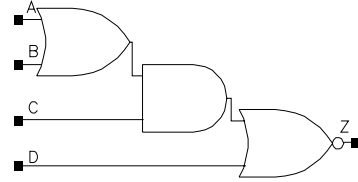
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO17NLL	Z(max)	0.017 + 0.007*Tr
AO17NLLP	Z(max)	0.028 + 0.014*Tr
AO17NLLX4	Z(max)	0.054 + 0.028*Tr
AO17NLLX6	Z(max)	0.082 + 0.043*Tr
AO17NLLX8	Z(max)	0.107 + 0.058*Tr

AO20LL
AO20LLP
AO20LLX4
AO20LLX6
AO20LLX8

Function: Function = 2 wide 2-3 OR-AND-INVERT

Boolean Expression: $Z = \overline{(A + B) \bullet C + D}$



Physical Dimensions

Property	AO20LL	AO20LLP	AO20LLX4	AO20LLX6	AO20LLX8
Area(um2)	12.103	12.103	22.189	28.241	38.327

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20LL	C Input Cap.	0.0021	0.0019	0.0020
AO20LL	A Input Cap.	0.0024	0.0022	0.0023
AO20LL	D Input Cap.	0.0024	0.0022	0.0023
AO20LL	B Input Cap.	0.0026	0.0023	0.0024
AO20LL	Z Max Load	0.160	0.160	0.160
AO20LLP	A Input Cap.	0.0044	0.0041	0.0042
AO20LLP	D Input Cap.	0.0045	0.0041	0.0043
AO20LLP	B Input Cap.	0.0047	0.0043	0.0045
AO20LLP	Z Max Load	0.320	0.320	0.320
AO20LLP	C Input Cap.	0.0037	0.0034	0.0036
AO20LLX4	D Input Cap.	0.0087	0.0080	0.0083
AO20LLX4	B Input Cap.	0.0095	0.0088	0.0091
AO20LLX4	Z Max Load	0.640	0.640	0.640
AO20LLX4	C Input Cap.	0.0071	0.0066	0.0068
AO20LLX4	A Input Cap.	0.0083	0.0077	0.0080
AO20LLX6	A Input Cap.	0.0125	0.0116	0.0120
AO20LLX6	Z Max Load	0.960	0.960	0.960
AO20LLX6	D Input Cap.	0.0129	0.0119	0.0124

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20LLX6	B Input Cap.	0.0141	0.0132	0.0136
AO20LLX6	C Input Cap.	0.0102	0.0095	0.0098
AO20LLX8	C Input Cap.	0.0140	0.0129	0.0134
AO20LLX8	A Input Cap.	0.0184	0.0170	0.0176
AO20LLX8	D Input Cap.	0.0171	0.0157	0.0164
AO20LLX8	B Input Cap.	0.0173	0.0162	0.0167
AO20LLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20LL	A-Z	A_Z (fall)	0.010 + 0.262*Tr + 3.172*C	0.038 + 0.303*Tr + 8.154*C	0.014 + 0.283*Tr + 4.881*C
AO20LL	A-Z	A_Z (rise)	0.016 + 0.289*Tr + 4.585*C	0.037 + 0.293*Tr + 10.155*C	0.021 + 0.292*Tr + 6.844*C
AO20LL	B-Z	B_Z (fall)	0.018 + 0.272*Tr + 3.131*C	0.061 + 0.312*Tr + 8.078*C	0.027 + 0.292*Tr + 4.817*C
AO20LL	B-Z	B_Z (rise)	0.028 + 0.241*Tr + 4.556*C	0.073 + 0.245*Tr + 10.146*C	0.043 + 0.246*Tr + 6.805*C
AO20LL	C-Z	C_Z (fall)	0.007 + 0.249*Tr + 2.501*C	0.075 + 0.264*Tr + 8.063*C	0.036 + 0.248*Tr + 4.756*C
AO20LL	C-Z	C_Z (rise)	0.016 + 0.309*Tr + 3.799*C	0.048 + 0.321*Tr + 8.235*C	0.027 + 0.316*Tr + 5.621*C
AO20LL	D-Z	D_Z (fall)	0.014 + 0.288*Tr + 2.740*C	0.069 + 0.347*Tr + 6.177*C	0.034 + 0.319*Tr + 3.942*C
AO20LL	D-Z	D_Z (rise)	0.025 + 0.226*Tr + 2.955*C	0.094 + 0.229*Tr + 8.185*C	0.060 + 0.199*Tr + 6.747*C
AO20LLP	A-Z	A_Z (fall)	0.005 + 0.267*Tr + 1.667*C	0.028 + 0.302*Tr + 4.093*C	0.007 + 0.285*Tr + 2.514*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20LLP	A-Z	A_Z (rise)	0.009 + 0.276*Tr + 2.256*C	0.024 + 0.278*Tr + 4.915*C	0.011 + 0.278*Tr + 3.341*C
AO20LLP	B-Z	B_Z (fall)	0.014 + 0.278*Tr + 1.640*C	0.054 + 0.313*Tr + 4.041*C	0.022 + 0.296*Tr + 2.473*C
AO20LLP	B-Z	B_Z (rise)	0.022 + 0.228*Tr + 2.234*C	0.060 + 0.233*Tr + 4.895*C	0.033 + 0.234*Tr + 3.310*C
AO20LLP	C-Z	C_Z (fall)	0.002 + 0.254*Tr + 1.316*C	0.066 + 0.267*Tr + 4.031*C	0.031 + 0.253*Tr + 2.442*C
AO20LLP	C-Z	C_Z (rise)	0.010 + 0.297*Tr + 1.896*C	0.036 + 0.309*Tr + 4.033*C	0.017 + 0.305*Tr + 2.782*C
AO20LLP	D-Z	D_Z (fall)	0.013 + 0.300*Tr + 1.526*C	0.068 + 0.354*Tr + 3.259*C	0.035 + 0.330*Tr + 2.137*C
AO20LLP	D-Z	D_Z (rise)	0.020 + 0.211*Tr + 1.469*C	0.082 + 0.215*Tr + 3.994*C	0.052 + 0.186*Tr + 3.275*C
AO20LLX4	A-Z	A_Z (fall)	0.008 + 0.260*Tr + 0.834*C	0.031 + 0.298*Tr + 2.049*C	0.011 + 0.278*Tr + 1.258*C
AO20LLX4	A-Z	A_Z (rise)	0.010 + 0.272*Tr + 1.129*C	0.026 + 0.275*Tr + 2.459*C	0.014 + 0.274*Tr + 1.671*C
AO20LLX4	B-Z	B_Z (fall)	0.017 + 0.272*Tr + 0.821*C	0.057 + 0.311*Tr + 2.022*C	0.026 + 0.291*Tr + 1.237*C
AO20LLX4	B-Z	B_Z (rise)	0.023 + 0.226*Tr + 1.117*C	0.062 + 0.230*Tr + 2.450*C	0.036 + 0.230*Tr + 1.656*C
AO20LLX4	C-Z	C_Z (fall)	0.006 + 0.244*Tr + 0.660*C	0.069 + 0.263*Tr + 2.018*C	0.034 + 0.248*Tr + 1.222*C
AO20LLX4	C-Z	C_Z (rise)	0.012 + 0.292*Tr + 0.949*C	0.039 + 0.305*Tr + 2.019*C	0.021 + 0.300*Tr + 1.393*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20LLX4	D-Z	D_Z (fall)	0.017 + 0.298*Tr + 0.783*C	0.071 + 0.353*Tr + 1.615*C	0.039 + 0.328*Tr + 1.078*C
AO20LLX4	D-Z	D_Z (rise)	0.023 + 0.204*Tr + 0.736*C	0.085 + 0.212*Tr + 1.999*C	0.054 + 0.182*Tr + 1.640*C
AO20LLX6	A-Z	A_Z (fall)	0.007 + 0.257*Tr + 0.562*C	0.030 + 0.292*Tr + 1.354*C	0.009 + 0.274*Tr + 0.840*C
AO20LLX6	A-Z	A_Z (rise)	0.010 + 0.266*Tr + 0.755*C	0.026 + 0.269*Tr + 1.644*C	0.013 + 0.268*Tr + 1.118*C
AO20LLX6	B-Z	B_Z (fall)	0.016 + 0.270*Tr + 0.552*C	0.055 + 0.305*Tr + 1.336*C	0.024 + 0.287*Tr + 0.826*C
AO20LLX6	B-Z	B_Z (rise)	0.022 + 0.221*Tr + 0.747*C	0.061 + 0.225*Tr + 1.636*C	0.034 + 0.226*Tr + 1.107*C
AO20LLX6	C-Z	C_Z (fall)	0.004 + 0.242*Tr + 0.445*C	0.066 + 0.260*Tr + 1.331*C	0.032 + 0.245*Tr + 0.814*C
AO20LLX6	C-Z	C_Z (rise)	0.011 + 0.287*Tr + 0.646*C	0.038 + 0.299*Tr + 1.367*C	0.020 + 0.294*Tr + 0.945*C
AO20LLX6	D-Z	D_Z (fall)	0.014 + 0.294*Tr + 0.524*C	0.069 + 0.348*Tr + 1.091*C	0.037 + 0.324*Tr + 0.725*C
AO20LLX6	D-Z	D_Z (rise)	0.021 + 0.200*Tr + 0.496*C	0.082 + 0.207*Tr + 1.353*C	0.051 + 0.179*Tr + 1.095*C
AO20LLX8	A-Z	A_Z (fall)	0.017 + 0.270*Tr + 0.417*C	0.055 + 0.307*Tr + 1.014*C	0.025 + 0.288*Tr + 0.625*C
AO20LLX8	A-Z	A_Z (rise)	0.022 + 0.221*Tr + 0.561*C	0.060 + 0.226*Tr + 1.229*C	0.034 + 0.226*Tr + 0.831*C
AO20LLX8	B-Z	B_Z (fall)	0.008 + 0.257*Tr + 0.424*C	0.030 + 0.293*Tr + 1.029*C	0.010 + 0.275*Tr + 0.636*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20LLX8	B-Z	B_Z (rise)	0.009 + 0.266*Tr + 0.567*C	0.025 + 0.269*Tr + 1.235*C	0.012 + 0.269*Tr + 0.840*C
AO20LLX8	C-Z	C_Z (fall)	0.005 + 0.242*Tr + 0.335*C	0.068 + 0.262*Tr + 1.011*C	0.033 + 0.246*Tr + 0.617*C
AO20LLX8	C-Z	C_Z (rise)	0.011 + 0.285*Tr + 0.473*C	0.037 + 0.297*Tr + 1.003*C	0.019 + 0.293*Tr + 0.694*C
AO20LLX8	D-Z	D_Z (fall)	0.015 + 0.295*Tr + 0.393*C	0.069 + 0.349*Tr + 0.810*C	0.038 + 0.324*Tr + 0.541*C
AO20LLX8	D-Z	D_Z (rise)	0.021 + 0.200*Tr + 0.369*C	0.081 + 0.209*Tr + 0.992*C	0.052 + 0.179*Tr + 0.822*C

Average Leakage Power

picoWatts

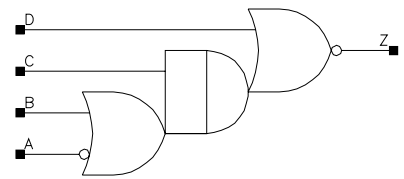
Cell	bc_1.32V_25C	bc_1.32V_125C
AO20LL	3297.290	61429.600
AO20LLP	4978.810	102880.000
AO20LLX4	9459.670	199301.000
AO20LLX6	13605.400	290878.000
AO20LLX8	18129.200	388424.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO20LL	Z(max)	0.013 + 0.008*Tr
AO20LLP	Z(max)	0.024 + 0.015*Tr
AO20LLX4	Z(max)	0.046 + 0.029*Tr
AO20LLX6	Z(max)	0.066 + 0.046*Tr
AO20LLX8	Z(max)	0.089 + 0.061*Tr

AO20ALL
AO20ALLP
AO20ALLX4
AO20ALLX6
AO20ALLX8



Function: Function = BOOLEAN function with 4 inputs and 1 output

Truth Table

A	B	C	D	Z
-	1	1	-	0
-	-	-	1	0
0	-	1	-	0
-	-	0	0	1
1	0	-	0	1

Physical Dimensions

Property	AO20ALL	AO20ALLP	AO20ALLX4	AO20ALLX6	AO20ALLX8
Area(um ²)	12.103	16.138	28.241	30.258	42.361

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20ALL	Z Max Load	0.160	0.160	0.160
AO20ALL	B Input Cap.	0.0028	0.0026	0.0027
AO20ALL	C Input Cap.	0.0022	0.0019	0.0020
AO20ALL	A Input Cap.	0.0015	0.0012	0.0013
AO20ALL	D Input Cap.	0.0025	0.0023	0.0024
AO20ALLP	C Input Cap.	0.0038	0.0035	0.0036
AO20ALLP	A Input Cap.	0.0021	0.0017	0.0018
AO20ALLP	D Input Cap.	0.0046	0.0043	0.0044
AO20ALLP	Z Max Load	0.320	0.320	0.320
AO20ALLP	B Input Cap.	0.0047	0.0043	0.0045
AO20ALLX4	C Input Cap.	0.0072	0.0066	0.0069

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20ALLX4	A Input Cap.	0.0037	0.0031	0.0033
AO20ALLX4	D Input Cap.	0.0088	0.0080	0.0084
AO20ALLX4	Z Max Load	0.640	0.640	0.640
AO20ALLX4	B Input Cap.	0.0083	0.0077	0.0080
AO20ALLX6	B Input Cap.	0.0128	0.0119	0.0123
AO20ALLX6	C Input Cap.	0.0103	0.0095	0.0099
AO20ALLX6	Z Max Load	0.960	0.960	0.960
AO20ALLX6	A Input Cap.	0.0051	0.0044	0.0046
AO20ALLX6	D Input Cap.	0.0132	0.0120	0.0126
AO20ALLX8	D Input Cap.	0.0170	0.0158	0.0164
AO20ALLX8	Z Max Load	1.280	1.280	1.280
AO20ALLX8	B Input Cap.	0.0185	0.0171	0.0177
AO20ALLX8	C Input Cap.	0.0141	0.0130	0.0134
AO20ALLX8	A Input Cap.	0.0065	0.0056	0.0058

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20ALL	A-Z	A_Z (fall)	0.090 + 0.292*Tr + 2.953*C	0.213 + 0.306*Tr + 7.898*C	0.137 + 0.298*Tr + 4.548*C
AO20ALL	A-Z	A_Z (rise)	0.068 + 0.171*Tr + 4.509*C	0.161 + 0.223*Tr + 10.070*C	0.102 + 0.192*Tr + 6.695*C
AO20ALL	B-Z	B_Z (fall)	0.019 + 0.273*Tr + 3.131*C	0.065 + 0.313*Tr + 8.080*C	0.030 + 0.293*Tr + 4.817*C
AO20ALL	B-Z	B_Z (rise)	0.033 + 0.240*Tr + 4.605*C	0.084 + 0.244*Tr + 10.253*C	0.050 + 0.245*Tr + 6.871*C
AO20ALL	C-Z	C_Z (fall)	0.008 + 0.249*Tr + 2.501*C	0.075 + 0.265*Tr + 8.059*C	0.037 + 0.249*Tr + 4.754*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20ALL	C-Z	C_Z (rise)	0.017 + 0.309*Tr + 3.843*C	0.049 + 0.321*Tr + 8.329*C	0.028 + 0.317*Tr + 5.685*C
AO20ALL	D-Z	D_Z (fall)	0.011 + 0.279*Tr + 2.399*C	0.057 + 0.338*Tr + 5.250*C	0.027 + 0.310*Tr + 3.423*C
AO20ALL	D-Z	D_Z (rise)	0.026 + 0.233*Tr + 2.995*C	0.100 + 0.235*Tr + 8.289*C	0.068 + 0.203*Tr + 6.811*C
AO20ALLP	A-Z	A_Z (fall)	0.073 + 0.266*Tr + 1.542*C	0.166 + 0.278*Tr + 3.924*C	0.109 + 0.270*Tr + 2.319*C
AO20ALLP	A-Z	A_Z (rise)	0.055 + 0.177*Tr + 2.165*C	0.124 + 0.218*Tr + 4.761*C	0.080 + 0.194*Tr + 3.186*C
AO20ALLP	B-Z	B_Z (fall)	0.014 + 0.278*Tr + 1.642*C	0.052 + 0.314*Tr + 4.045*C	0.021 + 0.296*Tr + 2.476*C
AO20ALLP	B-Z	B_Z (rise)	0.023 + 0.227*Tr + 2.237*C	0.063 + 0.231*Tr + 4.901*C	0.035 + 0.232*Tr + 3.313*C
AO20ALLP	C-Z	C_Z (fall)	0.003 + 0.253*Tr + 1.319*C	0.065 + 0.267*Tr + 4.036*C	0.030 + 0.253*Tr + 2.445*C
AO20ALLP	C-Z	C_Z (rise)	0.009 + 0.297*Tr + 1.897*C	0.035 + 0.309*Tr + 4.034*C	0.017 + 0.305*Tr + 2.783*C
AO20ALLP	D-Z	D_Z (fall)	0.012 + 0.300*Tr + 1.527*C	0.068 + 0.354*Tr + 3.261*C	0.034 + 0.330*Tr + 2.138*C
AO20ALLP	D-Z	D_Z (rise)	0.018 + 0.212*Tr + 1.470*C	0.083 + 0.217*Tr + 3.994*C	0.054 + 0.185*Tr + 3.276*C
AO20ALLX4	A-Z	A_Z (fall)	0.075 + 0.249*Tr + 0.768*C	0.174 + 0.261*Tr + 1.957*C	0.112 + 0.254*Tr + 1.155*C
AO20ALLX4	A-Z	A_Z (rise)	0.064 + 0.189*Tr + 1.085*C	0.147 + 0.224*Tr + 2.385*C	0.094 + 0.203*Tr + 1.597*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20ALLX4	B-Z	B_Z (fall)	0.008 + 0.260*Tr + 0.834*C	0.031 + 0.298*Tr + 2.049*C	0.011 + 0.278*Tr + 1.258*C
AO20ALLX4	B-Z	B_Z (rise)	0.010 + 0.272*Tr + 1.128*C	0.025 + 0.275*Tr + 2.460*C	0.013 + 0.274*Tr + 1.671*C
AO20ALLX4	C-Z	C_Z (fall)	0.006 + 0.244*Tr + 0.660*C	0.074 + 0.261*Tr + 2.020*C	0.038 + 0.246*Tr + 1.225*C
AO20ALLX4	C-Z	C_Z (rise)	0.012 + 0.292*Tr + 0.949*C	0.039 + 0.305*Tr + 2.020*C	0.021 + 0.300*Tr + 1.393*C
AO20ALLX4	D-Z	D_Z (fall)	0.016 + 0.298*Tr + 0.784*C	0.070 + 0.353*Tr + 1.616*C	0.039 + 0.328*Tr + 1.079*C
AO20ALLX4	D-Z	D_Z (rise)	0.025 + 0.204*Tr + 0.735*C	0.084 + 0.213*Tr + 2.000*C	0.056 + 0.181*Tr + 1.641*C
AO20ALLX6	A-Z	A_Z (fall)	0.074 + 0.244*Tr + 0.515*C	0.170 + 0.256*Tr + 1.288*C	0.110 + 0.248*Tr + 0.767*C
AO20ALLX6	A-Z	A_Z (rise)	0.063 + 0.194*Tr + 0.723*C	0.145 + 0.226*Tr + 1.591*C	0.093 + 0.206*Tr + 1.065*C
AO20ALLX6	B-Z	B_Z (fall)	0.006 + 0.256*Tr + 0.562*C	0.029 + 0.291*Tr + 1.354*C	0.009 + 0.274*Tr + 0.841*C
AO20ALLX6	B-Z	B_Z (rise)	0.009 + 0.266*Tr + 0.755*C	0.024 + 0.269*Tr + 1.643*C	0.012 + 0.268*Tr + 1.118*C
AO20ALLX6	C-Z	C_Z (fall)	0.004 + 0.242*Tr + 0.445*C	0.069 + 0.258*Tr + 1.333*C	0.034 + 0.243*Tr + 0.817*C
AO20ALLX6	C-Z	C_Z (rise)	0.011 + 0.287*Tr + 0.646*C	0.037 + 0.299*Tr + 1.368*C	0.019 + 0.294*Tr + 0.946*C
AO20ALLX6	D-Z	D_Z (fall)	0.014 + 0.294*Tr + 0.524*C	0.067 + 0.348*Tr + 1.092*C	0.036 + 0.324*Tr + 0.725*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20ALLX6	D-Z	D_Z (rise)	0.023 + 0.201*Tr + 0.495*C	0.080 + 0.207*Tr + 1.354*C	0.053 + 0.177*Tr + 1.096*C
AO20ALLX8	A-Z	A_Z (fall)	0.065 + 0.241*Tr + 0.386*C	0.145 + 0.252*Tr + 0.970*C	0.096 + 0.245*Tr + 0.577*C
AO20ALLX8	A-Z	A_Z (rise)	0.051 + 0.191*Tr + 0.541*C	0.112 + 0.223*Tr + 1.189*C	0.074 + 0.204*Tr + 0.797*C
AO20ALLX8	B-Z	B_Z (fall)	0.016 + 0.269*Tr + 0.414*C	0.053 + 0.307*Tr + 1.005*C	0.024 + 0.287*Tr + 0.620*C
AO20ALLX8	B-Z	B_Z (rise)	0.024 + 0.220*Tr + 0.561*C	0.064 + 0.224*Tr + 1.230*C	0.036 + 0.225*Tr + 0.832*C
AO20ALLX8	C-Z	C_Z (fall)	0.006 + 0.241*Tr + 0.333*C	0.066 + 0.261*Tr + 1.002*C	0.032 + 0.246*Tr + 0.612*C
AO20ALLX8	C-Z	C_Z (rise)	0.010 + 0.286*Tr + 0.474*C	0.037 + 0.298*Tr + 1.004*C	0.019 + 0.293*Tr + 0.694*C
AO20ALLX8	D-Z	D_Z (fall)	0.015 + 0.295*Tr + 0.394*C	0.068 + 0.349*Tr + 0.811*C	0.037 + 0.324*Tr + 0.542*C
AO20ALLX8	D-Z	D_Z (rise)	0.020 + 0.200*Tr + 0.369*C	0.082 + 0.210*Tr + 0.992*C	0.054 + 0.177*Tr + 0.823*C

Average Leakage Power

picoWatts

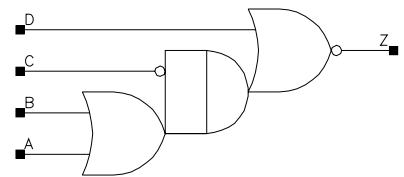
Cell	bc_1.32V_25C	bc_1.32V_125C
AO20ALL	4375.810	78335.900
AO20ALLP	6167.610	124782.000
AO20ALLX4	11114.800	233341.000
AO20ALLX6	15832.500	339210.000
AO20ALLX8	21269.600	456129.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO20ALL	Z(max)	$0.015 + 0.008 * Tr$
AO20ALLP	Z(max)	$0.026 + 0.015 * Tr$
AO20ALLX4	Z(max)	$0.052 + 0.028 * Tr$
AO20ALLX6	Z(max)	$0.073 + 0.044 * Tr$
AO20ALLX8	Z(max)	$0.101 + 0.061 * Tr$

AO20CLL
AO20CLLP
AO20CLLX4
AO20CLLX6
AO20CLLX8



Function: Function = BOOLEAN function with 4 inputs and 1 output

Truth Table

A	B	C	D	Z
1	-	0	-	0
-	-	-	1	0
-	1	0	-	0
-	-	1	0	1
0	0	-	0	1

Physical Dimensions

Property	AO20CLL	AO20CLLP	AO20CLLX4	AO20CLLX6	AO20CLLX8
Area(um ²)	12.103	16.138	28.241	30.258	42.361

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20CLL	C Input Cap.	0.0015	0.0012	0.0013
AO20CLL	Z Max Load	0.160	0.160	0.160
AO20CLL	A Input Cap.	0.0024	0.0022	0.0023
AO20CLL	D Input Cap.	0.0025	0.0023	0.0024
AO20CLL	B Input Cap.	0.0028	0.0026	0.0027
AO20CLLP	C Input Cap.	0.0021	0.0018	0.0019
AO20CLLP	Z Max Load	0.320	0.320	0.320
AO20CLLP	A Input Cap.	0.0043	0.0040	0.0042
AO20CLLP	D Input Cap.	0.0046	0.0043	0.0044
AO20CLLP	B Input Cap.	0.0047	0.0043	0.0045
AO20CLLX4	B Input Cap.	0.0095	0.0088	0.0091

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20CLLX4	C Input Cap.	0.0035	0.0029	0.0031
AO20CLLX4	Z Max Load	0.640	0.640	0.640
AO20CLLX4	A Input Cap.	0.0083	0.0077	0.0080
AO20CLLX4	D Input Cap.	0.0087	0.0081	0.0084
AO20CLLX6	D Input Cap.	0.0130	0.0120	0.0124
AO20CLLX6	Z Max Load	0.960	0.960	0.960
AO20CLLX6	B Input Cap.	0.0128	0.0119	0.0123
AO20CLLX6	C Input Cap.	0.0053	0.0046	0.0047
AO20CLLX6	A Input Cap.	0.0138	0.0128	0.0132
AO20CLLX8	Z Max Load	1.280	1.280	1.280
AO20CLLX8	A Input Cap.	0.0174	0.0163	0.0167
AO20CLLX8	D Input Cap.	0.0171	0.0158	0.0163
AO20CLLX8	B Input Cap.	0.0184	0.0171	0.0176
AO20CLLX8	C Input Cap.	0.0066	0.0057	0.0059

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20CLL	A-Z	A_Z (fall)	0.011 + 0.263*Tr + 3.169*C	0.042 + 0.304*Tr + 8.147*C	0.016 + 0.284*Tr + 4.875*C
AO20CLL	A-Z	A_Z (rise)	0.018 + 0.290*Tr + 4.625*C	0.043 + 0.293*Tr + 10.259*C	0.025 + 0.293*Tr + 6.905*C
AO20CLL	B-Z	B_Z (fall)	0.020 + 0.272*Tr + 3.129*C	0.067 + 0.313*Tr + 8.078*C	0.031 + 0.293*Tr + 4.813*C
AO20CLL	B-Z	B_Z (rise)	0.031 + 0.241*Tr + 4.600*C	0.080 + 0.246*Tr + 10.252*C	0.048 + 0.246*Tr + 6.867*C
AO20CLL	C-Z	C_Z (fall)	0.079 + 0.285*Tr + 2.229*C	0.216 + 0.291*Tr + 7.876*C	0.134 + 0.285*Tr + 4.525*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20CLL	C-Z	C_Z (rise)	0.064 + 0.168*Tr + 3.695*C	0.162 + 0.219*Tr + 8.107*C	0.102 + 0.188*Tr + 5.447*C
AO20CLL	D-Z	D_Z (fall)	0.011 + 0.279*Tr + 2.400*C	0.057 + 0.338*Tr + 5.248*C	0.027 + 0.310*Tr + 3.419*C
AO20CLL	D-Z	D_Z (rise)	0.025 + 0.232*Tr + 2.994*C	0.104 + 0.232*Tr + 8.286*C	0.065 + 0.204*Tr + 6.811*C
AO20CLLP	A-Z	A_Z (fall)	0.005 + 0.267*Tr + 1.667*C	0.028 + 0.302*Tr + 4.094*C	0.007 + 0.285*Tr + 2.515*C
AO20CLLP	A-Z	A_Z (rise)	0.009 + 0.276*Tr + 2.256*C	0.024 + 0.278*Tr + 4.915*C	0.011 + 0.278*Tr + 3.340*C
AO20CLLP	B-Z	B_Z (fall)	0.015 + 0.278*Tr + 1.641*C	0.054 + 0.313*Tr + 4.044*C	0.022 + 0.296*Tr + 2.474*C
AO20CLLP	B-Z	B_Z (rise)	0.022 + 0.228*Tr + 2.234*C	0.060 + 0.233*Tr + 4.895*C	0.033 + 0.233*Tr + 3.310*C
AO20CLLP	C-Z	C_Z (fall)	0.064 + 0.258*Tr + 1.165*C	0.177 + 0.263*Tr + 3.916*C	0.111 + 0.257*Tr + 2.309*C
AO20CLLP	C-Z	C_Z (rise)	0.053 + 0.173*Tr + 1.795*C	0.129 + 0.212*Tr + 3.868*C	0.083 + 0.189*Tr + 2.617*C
AO20CLLP	D-Z	D_Z (fall)	0.013 + 0.300*Tr + 1.526*C	0.068 + 0.354*Tr + 3.259*C	0.034 + 0.330*Tr + 2.137*C
AO20CLLP	D-Z	D_Z (rise)	0.018 + 0.211*Tr + 1.470*C	0.086 + 0.214*Tr + 3.996*C	0.052 + 0.186*Tr + 3.276*C
AO20CLLX4	A-Z	A_Z (fall)	0.008 + 0.260*Tr + 0.835*C	0.031 + 0.298*Tr + 2.050*C	0.011 + 0.278*Tr + 1.259*C
AO20CLLX4	A-Z	A_Z (rise)	0.010 + 0.272*Tr + 1.129*C	0.026 + 0.275*Tr + 2.460*C	0.013 + 0.274*Tr + 1.672*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20CLLX4	B-Z	B_Z (fall)	0.017 + 0.272*Tr + 0.821*C	0.057 + 0.310*Tr + 2.024*C	0.026 + 0.290*Tr + 1.238*C
AO20CLLX4	B-Z	B_Z (rise)	0.023 + 0.225*Tr + 1.118*C	0.062 + 0.230*Tr + 2.450*C	0.035 + 0.230*Tr + 1.656*C
AO20CLLX4	C-Z	C_Z (fall)	0.060 + 0.242*Tr + 0.582*C	0.167 + 0.247*Tr + 1.958*C	0.105 + 0.241*Tr + 1.154*C
AO20CLLX4	C-Z	C_Z (rise)	0.051 + 0.185*Tr + 0.897*C	0.123 + 0.219*Tr + 1.934*C	0.080 + 0.198*Tr + 1.308*C
AO20CLLX4	D-Z	D_Z (fall)	0.016 + 0.299*Tr + 0.783*C	0.071 + 0.353*Tr + 1.615*C	0.039 + 0.328*Tr + 1.078*C
AO20CLLX4	D-Z	D_Z (rise)	0.021 + 0.203*Tr + 0.737*C	0.089 + 0.210*Tr + 2.000*C	0.054 + 0.182*Tr + 1.640*C
AO20CLLX6	A-Z	A_Z (fall)	0.016 + 0.269*Tr + 0.553*C	0.054 + 0.305*Tr + 1.336*C	0.024 + 0.287*Tr + 0.826*C
AO20CLLX6	A-Z	A_Z (rise)	0.022 + 0.221*Tr + 0.747*C	0.060 + 0.225*Tr + 1.637*C	0.034 + 0.226*Tr + 1.108*C
AO20CLLX6	B-Z	B_Z (fall)	0.006 + 0.256*Tr + 0.562*C	0.029 + 0.292*Tr + 1.354*C	0.009 + 0.274*Tr + 0.841*C
AO20CLLX6	B-Z	B_Z (rise)	0.009 + 0.266*Tr + 0.755*C	0.025 + 0.269*Tr + 1.644*C	0.012 + 0.268*Tr + 1.118*C
AO20CLLX6	C-Z	C_Z (fall)	0.057 + 0.234*Tr + 0.391*C	0.160 + 0.240*Tr + 1.288*C	0.100 + 0.234*Tr + 0.767*C
AO20CLLX6	C-Z	C_Z (rise)	0.050 + 0.187*Tr + 0.610*C	0.120 + 0.220*Tr + 1.308*C	0.078 + 0.200*Tr + 0.887*C
AO20CLLX6	D-Z	D_Z (fall)	0.014 + 0.294*Tr + 0.524*C	0.068 + 0.348*Tr + 1.092*C	0.036 + 0.324*Tr + 0.725*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20CLLX6	D-Z	D_Z (rise)	0.019 + 0.200*Tr + 0.496*C	0.085 + 0.205*Tr + 1.354*C	0.050 + 0.197*Tr + 0.927*C
AO20CLLX8	A-Z	A_Z (fall)	0.007 + 0.256*Tr + 0.421*C	0.030 + 0.293*Tr + 1.019*C	0.010 + 0.274*Tr + 0.631*C
AO20CLLX8	A-Z	A_Z (rise)	0.010 + 0.267*Tr + 0.567*C	0.025 + 0.270*Tr + 1.235*C	0.013 + 0.269*Tr + 0.840*C
AO20CLLX8	B-Z	B_Z (fall)	0.017 + 0.269*Tr + 0.413*C	0.055 + 0.306*Tr + 1.005*C	0.025 + 0.287*Tr + 0.619*C
AO20CLLX8	B-Z	B_Z (rise)	0.022 + 0.221*Tr + 0.561*C	0.061 + 0.226*Tr + 1.228*C	0.034 + 0.226*Tr + 0.831*C
AO20CLLX8	C-Z	C_Z (fall)	0.057 + 0.233*Tr + 0.292*C	0.160 + 0.238*Tr + 0.968*C	0.101 + 0.232*Tr + 0.575*C
AO20CLLX8	C-Z	C_Z (rise)	0.049 + 0.188*Tr + 0.445*C	0.118 + 0.219*Tr + 0.956*C	0.077 + 0.200*Tr + 0.648*C
AO20CLLX8	D-Z	D_Z (fall)	0.015 + 0.295*Tr + 0.394*C	0.069 + 0.349*Tr + 0.810*C	0.038 + 0.324*Tr + 0.541*C
AO20CLLX8	D-Z	D_Z (rise)	0.019 + 0.199*Tr + 0.369*C	0.085 + 0.207*Tr + 0.992*C	0.050 + 0.199*Tr + 0.680*C

Average Leakage Power

picoWatts

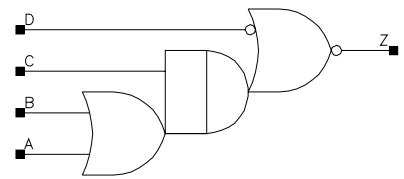
Cell	bc_1.32V_25C	bc_1.32V_125C
AO20CLL	4940.460	84289.500
AO20CLLP	6649.390	130048.000
AO20CLLX4	11737.400	240252.000
AO20CLLX6	16592.300	346602.000
AO20CLLX8	21938.500	461016.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO20CLL	Z(max)	$0.017 + 0.005 \cdot Tr$
AO20CLLP	Z(max)	$0.024 + 0.015 \cdot Tr$
AO20CLLX4	Z(max)	$0.049 + 0.029 \cdot Tr$
AO20CLLX6	Z(max)	$0.068 + 0.045 \cdot Tr$
AO20CLLX8	Z(max)	$0.093 + 0.060 \cdot Tr$

AO20DLL
AO20DLLP
AO20DLLX4
AO20DLLX6
AO20DLLX8



Function: Function = BOOLEAN function with 4 inputs and 1 output

Truth Table

A	B	C	D	Z
-	-	-	0	0
1	-	1	-	0
-	1	1	-	0
0	0	-	1	1
-	-	0	1	1

Physical Dimensions

Property	AO20DLL	AO20DLLP	AO20DLLX4	AO20DLLX6	AO20DLLX8
Area(um ²)	12.103	16.138	28.241	30.258	42.361

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20DLL	C Input Cap.	0.0022	0.0019	0.0020
AO20DLL	A Input Cap.	0.0024	0.0022	0.0023
AO20DLL	D Input Cap.	0.0015	0.0012	0.0013
AO20DLL	B Input Cap.	0.0026	0.0023	0.0024
AO20DLL	Z Max Load	0.160	0.160	0.160
AO20DLLP	Z Max Load	0.320	0.320	0.320
AO20DLLP	C Input Cap.	0.0038	0.0034	0.0036
AO20DLLP	A Input Cap.	0.0044	0.0041	0.0042
AO20DLLP	D Input Cap.	0.0022	0.0018	0.0019
AO20DLLP	B Input Cap.	0.0047	0.0043	0.0045
AO20DLLX4	B Input Cap.	0.0095	0.0088	0.0091

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20DLLX4	Z Max Load	0.640	0.640	0.640
AO20DLLX4	C Input Cap.	0.0072	0.0066	0.0069
AO20DLLX4	A Input Cap.	0.0083	0.0077	0.0080
AO20DLLX4	D Input Cap.	0.0034	0.0029	0.0031
AO20DLLX6	A Input Cap.	0.0138	0.0128	0.0132
AO20DLLX6	Z Max Load	0.960	0.960	0.960
AO20DLLX6	D Input Cap.	0.0053	0.0046	0.0047
AO20DLLX6	B Input Cap.	0.0128	0.0119	0.0123
AO20DLLX6	C Input Cap.	0.0103	0.0095	0.0098
AO20DLLX8	C Input Cap.	0.0141	0.0129	0.0134
AO20DLLX8	A Input Cap.	0.0174	0.0163	0.0167
AO20DLLX8	D Input Cap.	0.0065	0.0056	0.0059
AO20DLLX8	B Input Cap.	0.0184	0.0171	0.0176
AO20DLLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20DLL	A-Z	A_Z (fall)	0.010 + 0.262*Tr + 3.169°C	0.039 + 0.303*Tr + 8.149°C	0.014 + 0.283*Tr + 4.876°C
AO20DLL	A-Z	A_Z (rise)	0.017 + 0.292*Tr + 4.710°C	0.041 + 0.295*Tr + 10.455°C	0.024 + 0.295*Tr + 7.034°C
AO20DLL	B-Z	B_Z (fall)	0.018 + 0.272*Tr + 3.130°C	0.061 + 0.312*Tr + 8.075°C	0.027 + 0.292*Tr + 4.814°C
AO20DLL	B-Z	B_Z (rise)	0.029 + 0.243*Tr + 4.683°C	0.075 + 0.248*Tr + 10.443°C	0.045 + 0.248*Tr + 6.990°C
AO20DLL	C-Z	C_Z (fall)	0.008 + 0.249*Tr + 2.498°C	0.076 + 0.264*Tr + 8.059°C	0.037 + 0.248*Tr + 4.757°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20DLL	C-Z	C_Z (rise)	0.017 + 0.309*Tr + 3.843°C	0.050 + 0.321*Tr + 8.335°C	0.029 + 0.316*Tr + 5.690°C
AO20DLL	D-Z	D_Z (fall)	0.086 + 0.288*Tr + 2.173°C	0.221 + 0.303*Tr + 4.991°C	0.141 + 0.294*Tr + 3.102°C
AO20DLL	D-Z	D_Z (rise)	0.073 + 0.169*Tr + 2.856°C	0.207 + 0.213*Tr + 10.298°C	0.128 + 0.182*Tr + 6.847°C
AO20DLLP	A-Z	A_Z (fall)	0.005 + 0.267*Tr + 1.667°C	0.028 + 0.302*Tr + 4.093°C	0.007 + 0.285*Tr + 2.514°C
AO20DLLP	A-Z	A_Z (rise)	0.009 + 0.276*Tr + 2.256°C	0.024 + 0.278*Tr + 4.916°C	0.011 + 0.278*Tr + 3.340°C
AO20DLLP	B-Z	B_Z (fall)	0.014 + 0.278*Tr + 1.640°C	0.054 + 0.313*Tr + 4.042°C	0.022 + 0.296*Tr + 2.473°C
AO20DLLP	B-Z	B_Z (rise)	0.022 + 0.228*Tr + 2.234°C	0.060 + 0.233*Tr + 4.897°C	0.033 + 0.233*Tr + 3.310°C
AO20DLLP	C-Z	C_Z (fall)	0.003 + 0.253*Tr + 1.318°C	0.066 + 0.266*Tr + 4.032°C	0.031 + 0.253*Tr + 2.442°C
AO20DLLP	C-Z	C_Z (rise)	0.009 + 0.297*Tr + 1.896°C	0.035 + 0.309*Tr + 4.033°C	0.017 + 0.305*Tr + 2.781°C
AO20DLLP	D-Z	D_Z (fall)	0.075 + 0.262*Tr + 1.429°C	0.196 + 0.275*Tr + 3.157°C	0.126 + 0.266*Tr + 2.003°C
AO20DLLP	D-Z	D_Z (rise)	0.061 + 0.177*Tr + 1.363°C	0.166 + 0.211*Tr + 4.765°C	0.104 + 0.187*Tr + 3.189°C
AO20DLLX4	A-Z	A_Z (fall)	0.008 + 0.260*Tr + 0.834°C	0.031 + 0.298*Tr + 2.049°C	0.011 + 0.278*Tr + 1.258°C
AO20DLLX4	A-Z	A_Z (rise)	0.010 + 0.272*Tr + 1.129°C	0.026 + 0.275*Tr + 2.459°C	0.014 + 0.274*Tr + 1.671°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20DLLX4	B-Z	B_Z (fall)	0.017 + 0.272*Tr + 0.821*C	0.057 + 0.311*Tr + 2.023*C	0.026 + 0.291*Tr + 1.237*C
AO20DLLX4	B-Z	B_Z (rise)	0.023 + 0.226*Tr + 1.118*C	0.062 + 0.230*Tr + 2.450*C	0.036 + 0.230*Tr + 1.656*C
AO20DLLX4	C-Z	C_Z (fall)	0.007 + 0.244*Tr + 0.660*C	0.070 + 0.264*Tr + 2.018*C	0.034 + 0.248*Tr + 1.222*C
AO20DLLX4	C-Z	C_Z (rise)	0.012 + 0.292*Tr + 0.949*C	0.039 + 0.305*Tr + 2.019*C	0.021 + 0.300*Tr + 1.392*C
AO20DLLX4	D-Z	D_Z (fall)	0.071 + 0.246*Tr + 0.736*C	0.185 + 0.259*Tr + 1.562*C	0.120 + 0.251*Tr + 1.011*C
AO20DLLX4	D-Z	D_Z (rise)	0.060 + 0.189*Tr + 0.682*C	0.162 + 0.220*Tr + 2.383*C	0.101 + 0.198*Tr + 1.595*C
AO20DLLX6	A-Z	A_Z (fall)	0.016 + 0.269*Tr + 0.552*C	0.054 + 0.305*Tr + 1.336*C	0.024 + 0.287*Tr + 0.826*C
AO20DLLX6	A-Z	A_Z (rise)	0.022 + 0.221*Tr + 0.747*C	0.060 + 0.225*Tr + 1.637*C	0.034 + 0.226*Tr + 1.107*C
AO20DLLX6	B-Z	B_Z (fall)	0.006 + 0.256*Tr + 0.562*C	0.029 + 0.291*Tr + 1.354*C	0.009 + 0.274*Tr + 0.841*C
AO20DLLX6	B-Z	B_Z (rise)	0.009 + 0.266*Tr + 0.755*C	0.025 + 0.269*Tr + 1.644*C	0.012 + 0.268*Tr + 1.118*C
AO20DLLX6	C-Z	C_Z (fall)	0.004 + 0.242*Tr + 0.445*C	0.065 + 0.260*Tr + 1.332*C	0.031 + 0.245*Tr + 0.815*C
AO20DLLX6	C-Z	C_Z (rise)	0.011 + 0.287*Tr + 0.646*C	0.037 + 0.299*Tr + 1.367*C	0.019 + 0.294*Tr + 0.946*C
AO20DLLX6	D-Z	D_Z (fall)	0.069 + 0.241*Tr + 0.489*C	0.180 + 0.254*Tr + 1.054*C	0.117 + 0.246*Tr + 0.677*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20DLLX6	D-Z	D_Z (rise)	0.059 + 0.193*Tr + 0.458*C	0.157 + 0.222*Tr + 1.589*C	0.099 + 0.201*Tr + 1.063*C
AO20DLLX8	A-Z	A_Z (fall)	0.007 + 0.256*Tr + 0.421*C	0.030 + 0.293*Tr + 1.019*C	0.010 + 0.274*Tr + 0.631*C
AO20DLLX8	A-Z	A_Z (rise)	0.010 + 0.267*Tr + 0.567*C	0.025 + 0.270*Tr + 1.234*C	0.013 + 0.269*Tr + 0.840*C
AO20DLLX8	B-Z	B_Z (fall)	0.017 + 0.269*Tr + 0.413*C	0.054 + 0.306*Tr + 1.004*C	0.025 + 0.287*Tr + 0.619*C
AO20DLLX8	B-Z	B_Z (rise)	0.022 + 0.222*Tr + 0.561*C	0.060 + 0.226*Tr + 1.229*C	0.034 + 0.226*Tr + 0.831*C
AO20DLLX8	C-Z	C_Z (fall)	0.006 + 0.241*Tr + 0.333*C	0.067 + 0.261*Tr + 1.001*C	0.033 + 0.246*Tr + 0.611*C
AO20DLLX8	C-Z	C_Z (rise)	0.011 + 0.286*Tr + 0.473*C	0.037 + 0.298*Tr + 1.003*C	0.019 + 0.293*Tr + 0.693*C
AO20DLLX8	D-Z	D_Z (fall)	0.068 + 0.238*Tr + 0.368*C	0.177 + 0.251*Tr + 0.781*C	0.115 + 0.243*Tr + 0.506*C
AO20DLLX8	D-Z	D_Z (rise)	0.058 + 0.193*Tr + 0.340*C	0.155 + 0.220*Tr + 1.191*C	0.098 + 0.200*Tr + 0.798*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO20DLL	3800.260	72079.800
AO20DLLP	5684.950	119499.000
AO20DLLX4	10693.700	229982.000
AO20DLLX6	15376.400	335689.000
AO20DLLX8	20598.400	451179.000

Internal Energy at minimum output load

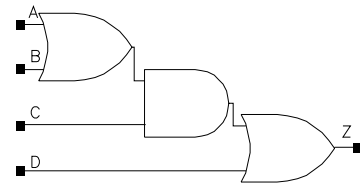
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO20DLL	Z(max)	$0.021 + 0.005 * Tr$
AO20DLLP	Z(max)	$0.034 + 0.009 * Tr$
AO20DLLX4	Z(max)	$0.067 + 0.017 * Tr$
AO20DLLX6	Z(max)	$0.095 + 0.024 * Tr$
AO20DLLX8	Z(max)	$0.127 + 0.033 * Tr$

AO20NLL
AO20NLLP
AO20NLLX4
AO20NLLX6
AO20NLLX8

Function: Function = 2 wide 2-3 OR-AND

Boolean Expression: $Z = ((A + B) \bullet C + D)$



Physical Dimensions

Property	AO20NLL	AO20NLLP	AO20NLLX4	AO20NLLX6	AO20NLLX8
Area(um2)	14.120	16.138	18.155	28.241	32.275

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20NLL	C Input Cap.	0.0016	0.0014	0.0014
AO20NLL	A Input Cap.	0.0019	0.0016	0.0017
AO20NLL	Z Max Load	0.160	0.160	0.160
AO20NLL	D Input Cap.	0.0019	0.0016	0.0017
AO20NLL	B Input Cap.	0.0019	0.0016	0.0017
AO20NLLP	B Input Cap.	0.0026	0.0023	0.0024
AO20NLLP	C Input Cap.	0.0023	0.0020	0.0021
AO20NLLP	A Input Cap.	0.0026	0.0023	0.0024
AO20NLLP	Z Max Load	0.320	0.320	0.320
AO20NLLP	D Input Cap.	0.0027	0.0023	0.0024
AO20NLLX4	A Input Cap.	0.0049	0.0043	0.0045
AO20NLLX4	Z Max Load	0.640	0.640	0.640
AO20NLLX4	D Input Cap.	0.0049	0.0043	0.0045
AO20NLLX4	B Input Cap.	0.0049	0.0043	0.0045
AO20NLLX4	C Input Cap.	0.0042	0.0036	0.0038
AO20NLLX6	Z Max Load	0.960	0.960	0.960
AO20NLLX6	C Input Cap.	0.0055	0.0049	0.0050
AO20NLLX6	A Input Cap.	0.0072	0.0063	0.0066
AO20NLLX6	D Input Cap.	0.0078	0.0069	0.0072
AO20NLLX6	B Input Cap.	0.0078	0.0070	0.0073

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20NLLX8	B Input Cap.	0.0101	0.0090	0.0093
AO20NLLX8	C Input Cap.	0.0078	0.0068	0.0071
AO20NLLX8	A Input Cap.	0.0093	0.0081	0.0085
AO20NLLX8	Z Max Load	1.280	1.280	1.280
AO20NLLX8	D Input Cap.	0.0103	0.0092	0.0095

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20NLL	A-Z	A_Z (fall)	0.085 + 0.269*Tr + 1.289°C	0.195 + 0.274*Tr + 2.828°C	0.128 + 0.269*Tr + 1.813°C
AO20NLL	A-Z	A_Z (rise)	0.066 + 0.205*Tr + 1.636°C	0.168 + 0.259*Tr + 3.480°C	0.101 + 0.227*Tr + 2.357°C
AO20NLL	B-Z	B_Z (fall)	0.093 + 0.237*Tr + 1.299°C	0.223 + 0.239*Tr + 2.851°C	0.143 + 0.237*Tr + 1.830°C
AO20NLL	B-Z	B_Z (rise)	0.074 + 0.225*Tr + 1.638°C	0.194 + 0.280*Tr + 3.497°C	0.115 + 0.246*Tr + 2.364°C
AO20NLL	C-Z	C_Z (fall)	0.082 + 0.287*Tr + 1.255°C	0.207 + 0.309*Tr + 2.884°C	0.135 + 0.299*Tr + 1.847°C
AO20NLL	C-Z	C_Z (rise)	0.059 + 0.187*Tr + 1.634°C	0.204 + 0.237*Tr + 3.506°C	0.119 + 0.212*Tr + 2.372°C
AO20NLL	D-Z	D_Z (fall)	0.080 + 0.209*Tr + 1.262°C	0.234 + 0.223*Tr + 2.768°C	0.160 + 0.198*Tr + 1.836°C
AO20NLL	D-Z	D_Z (rise)	0.076 + 0.255*Tr + 1.639°C	0.212 + 0.329*Tr + 3.531°C	0.127 + 0.288*Tr + 2.375°C
AO20NLLP	A-Z	A_Z (fall)	0.086 + 0.263*Tr + 0.668°C	0.193 + 0.269*Tr + 1.420°C	0.128 + 0.263*Tr + 0.925°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20NLLP	A-Z	A_Z (rise)	0.067 + 0.220*Tr + 0.807*C	0.167 + 0.272*Tr + 1.698*C	0.102 + 0.240*Tr + 1.156*C
AO20NLLP	B-Z	B_Z (fall)	0.093 + 0.230*Tr + 0.673*C	0.221 + 0.235*Tr + 1.431*C	0.142 + 0.232*Tr + 0.934*C
AO20NLLP	B-Z	B_Z (rise)	0.076 + 0.240*Tr + 0.808*C	0.194 + 0.292*Tr + 1.708*C	0.116 + 0.260*Tr + 1.159*C
AO20NLLP	C-Z	C_Z (fall)	0.081 + 0.280*Tr + 0.649*C	0.200 + 0.305*Tr + 1.452*C	0.131 + 0.294*Tr + 0.945*C
AO20NLLP	C-Z	C_Z (rise)	0.060 + 0.201*Tr + 0.805*C	0.204 + 0.248*Tr + 1.712*C	0.120 + 0.225*Tr + 1.162*C
AO20NLLP	D-Z	D_Z (fall)	0.079 + 0.203*Tr + 0.653*C	0.228 + 0.219*Tr + 1.385*C	0.158 + 0.192*Tr + 0.937*C
AO20NLLP	D-Z	D_Z (rise)	0.075 + 0.265*Tr + 0.808*C	0.198 + 0.332*Tr + 1.689*C	0.122 + 0.295*Tr + 1.148*C
AO20NLLX4	A-Z	A_Z (fall)	0.081 + 0.249*Tr + 0.331*C	0.181 + 0.255*Tr + 0.703*C	0.120 + 0.250*Tr + 0.458*C
AO20NLLX4	A-Z	A_Z (rise)	0.066 + 0.230*Tr + 0.403*C	0.160 + 0.276*Tr + 0.846*C	0.099 + 0.247*Tr + 0.577*C
AO20NLLX4	B-Z	B_Z (fall)	0.089 + 0.217*Tr + 0.334*C	0.208 + 0.223*Tr + 0.709*C	0.135 + 0.220*Tr + 0.463*C
AO20NLLX4	B-Z	B_Z (rise)	0.075 + 0.250*Tr + 0.404*C	0.187 + 0.297*Tr + 0.851*C	0.114 + 0.267*Tr + 0.579*C
AO20NLLX4	C-Z	C_Z (fall)	0.077 + 0.267*Tr + 0.322*C	0.189 + 0.293*Tr + 0.720*C	0.124 + 0.281*Tr + 0.469*C
AO20NLLX4	C-Z	C_Z (rise)	0.058 + 0.209*Tr + 0.403*C	0.196 + 0.254*Tr + 0.854*C	0.116 + 0.232*Tr + 0.580*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20NLLX4	D-Z	D_Z (fall)	0.076 + 0.188*Tr + 0.325*C	0.214 + 0.206*Tr + 0.687*C	0.149 + 0.179*Tr + 0.464*C
AO20NLLX4	D-Z	D_Z (rise)	0.075 + 0.279*Tr + 0.404*C	0.194 + 0.342*Tr + 0.843*C	0.122 + 0.308*Tr + 0.574*C
AO20NLLX6	A-Z	A_Z (fall)	0.081 + 0.249*Tr + 0.222*C	0.181 + 0.258*Tr + 0.472*C	0.120 + 0.251*Tr + 0.308*C
AO20NLLX6	A-Z	A_Z (rise)	0.066 + 0.230*Tr + 0.269*C	0.157 + 0.274*Tr + 0.565*C	0.098 + 0.246*Tr + 0.386*C
AO20NLLX6	B-Z	B_Z (fall)	0.088 + 0.218*Tr + 0.224*C	0.209 + 0.225*Tr + 0.476*C	0.135 + 0.221*Tr + 0.311*C
AO20NLLX6	B-Z	B_Z (rise)	0.075 + 0.249*Tr + 0.270*C	0.184 + 0.295*Tr + 0.569*C	0.113 + 0.266*Tr + 0.387*C
AO20NLLX6	C-Z	C_Z (fall)	0.077 + 0.268*Tr + 0.216*C	0.188 + 0.294*Tr + 0.484*C	0.124 + 0.282*Tr + 0.315*C
AO20NLLX6	C-Z	C_Z (rise)	0.058 + 0.210*Tr + 0.269*C	0.191 + 0.253*Tr + 0.570*C	0.115 + 0.232*Tr + 0.388*C
AO20NLLX6	D-Z	D_Z (fall)	0.076 + 0.188*Tr + 0.218*C	0.215 + 0.208*Tr + 0.461*C	0.148 + 0.180*Tr + 0.312*C
AO20NLLX6	D-Z	D_Z (rise)	0.075 + 0.280*Tr + 0.270*C	0.190 + 0.340*Tr + 0.563*C	0.121 + 0.308*Tr + 0.384*C
AO20NLLX8	A-Z	A_Z (fall)	0.079 + 0.248*Tr + 0.166*C	0.177 + 0.254*Tr + 0.353*C	0.118 + 0.249*Tr + 0.230*C
AO20NLLX8	A-Z	A_Z (rise)	0.065 + 0.228*Tr + 0.202*C	0.157 + 0.275*Tr + 0.425*C	0.097 + 0.246*Tr + 0.290*C
AO20NLLX8	B-Z	B_Z (fall)	0.087 + 0.216*Tr + 0.168*C	0.205 + 0.222*Tr + 0.357*C	0.132 + 0.219*Tr + 0.233*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO20NLLX8	B-Z	B_Z (rise)	0.074 + 0.249*Tr + 0.203*C	0.184 + 0.296*Tr + 0.428*C	0.112 + 0.266*Tr + 0.291*C
AO20NLLX8	C-Z	C_Z (fall)	0.075 + 0.266*Tr + 0.162*C	0.184 + 0.292*Tr + 0.363*C	0.121 + 0.280*Tr + 0.236*C
AO20NLLX8	C-Z	C_Z (rise)	0.057 + 0.208*Tr + 0.202*C	0.192 + 0.253*Tr + 0.429*C	0.114 + 0.231*Tr + 0.291*C
AO20NLLX8	D-Z	D_Z (fall)	0.075 + 0.185*Tr + 0.163*C	0.209 + 0.204*Tr + 0.345*C	0.146 + 0.177*Tr + 0.234*C
AO20NLLX8	D-Z	D_Z (rise)	0.075 + 0.283*Tr + 0.203*C	0.188 + 0.342*Tr + 0.423*C	0.121 + 0.310*Tr + 0.288*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO20NLL	4670.250	84496.100
AO20NLLP	6374.710	128083.000
AO20NLLX4	11150.500	236672.000
AO20NLLX6	16019.600	344798.000
AO20NLLX8	21803.100	466841.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO20NLL	Z(max)	0.019 + 0.007*Tr
AO20NLLP	Z(max)	0.031 + 0.013*Tr
AO20NLLX4	Z(max)	0.059 + 0.026*Tr
AO20NLLX6	Z(max)	0.090 + 0.039*Tr
AO20NLLX8	Z(max)	0.117 + 0.053*Tr

<p>AO21LL AO21LLP AO21LLX4 AO21LLX6 AO21LLX8</p> <p>Function: Function = 2 wide 1-3 OR-AND-INVERT</p> <p>Boolean Expression: $Z = \overline{((A+B+C) \bullet D)}$</p>	
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Physical Dimensions

Property	AO21LL	AO21LLP	AO21LLX4	AO21LLX6	AO21LLX8
Area(um2)	10.086	12.103	22.189	26.224	34.292

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21LL	C Input Cap.	0.0025	0.0023	0.0024
AO21LL	A Input Cap.	0.0027	0.0024	0.0025
AO21LL	D Input Cap.	0.0019	0.0017	0.0018
AO21LL	Z Max Load	0.160	0.160	0.160
AO21LL	B Input Cap.	0.0027	0.0025	0.0026
AO21LLP	A Input Cap.	0.0050	0.0046	0.0047
AO21LLP	D Input Cap.	0.0029	0.0026	0.0027
AO21LLP	Z Max Load	0.320	0.320	0.320
AO21LLP	B Input Cap.	0.0048	0.0044	0.0046
AO21LLP	C Input Cap.	0.0043	0.0040	0.0041
AO21LLX4	D Input Cap.	0.0055	0.0051	0.0053
AO21LLX4	Z Max Load	0.640	0.640	0.640
AO21LLX4	B Input Cap.	0.0096	0.0089	0.0092
AO21LLX4	C Input Cap.	0.0084	0.0078	0.0080
AO21LLX4	A Input Cap.	0.0105	0.0097	0.0100
AO21LLX6	C Input Cap.	0.0125	0.0117	0.0120
AO21LLX6	Z Max Load	0.960	0.960	0.960
AO21LLX6	A Input Cap.	0.0142	0.0131	0.0135

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21LLX6	D Input Cap.	0.0080	0.0074	0.0077
AO21LLX6	B Input Cap.	0.0138	0.0129	0.0133
AO21LLX8	C Input Cap.	0.0177	0.0165	0.0170
AO21LLX8	A Input Cap.	0.0197	0.0181	0.0187
AO21LLX8	D Input Cap.	0.0109	0.0101	0.0104
AO21LLX8	Z Max Load	1.280	1.280	1.280
AO21LLX8	B Input Cap.	0.0192	0.0179	0.0184

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21LL	A-Z	A_Z (fall)	0.023 + 0.281*Tr + 3.107*C	0.076 + 0.320*Tr + 8.047*C	0.035 + 0.300*Tr + 4.784*C
AO21LL	A-Z	A_Z (rise)	0.037 + 0.185*Tr + 4.524*C	0.094 + 0.200*Tr + 10.109*C	0.056 + 0.196*Tr + 6.755*C
AO21LL	B-Z	B_Z (fall)	0.017 + 0.272*Tr + 3.132*C	0.058 + 0.312*Tr + 8.081*C	0.025 + 0.292*Tr + 4.820*C
AO21LL	B-Z	B_Z (rise)	0.028 + 0.241*Tr + 4.556*C	0.072 + 0.245*Tr + 10.143*C	0.042 + 0.246*Tr + 6.804*C
AO21LL	C-Z	C_Z (fall)	0.008 + 0.262*Tr + 3.173*C	0.033 + 0.302*Tr + 8.158*C	0.011 + 0.282*Tr + 4.884*C
AO21LL	C-Z	C_Z (rise)	0.015 + 0.289*Tr + 4.585*C	0.036 + 0.292*Tr + 10.161*C	0.020 + 0.292*Tr + 6.847*C
AO21LL	D-Z	D_Z (fall)	0.003 + 0.247*Tr + 2.396*C	0.090 + 0.265*Tr + 8.074*C	0.044 + 0.248*Tr + 4.761*C
AO21LL	D-Z	D_Z (rise)	0.022 + 0.334*Tr + 4.279*C	0.062 + 0.356*Tr + 9.231*C	0.037 + 0.348*Tr + 6.298*C
AO21LLP	A-Z	A_Z (fall)	0.021 + 0.288*Tr + 1.626*C	0.070 + 0.322*Tr + 4.027*C	0.032 + 0.305*Tr + 2.453*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21LLP	A-Z	A_Z (rise)	0.032 + 0.174*Tr + 2.210*C	0.084 + 0.189*Tr + 4.865*C	0.049 + 0.185*Tr + 3.277*C
AO21LLP	B-Z	B_Z (fall)	0.014 + 0.278*Tr + 1.641*C	0.052 + 0.313*Tr + 4.045*C	0.021 + 0.296*Tr + 2.474*C
AO21LLP	B-Z	B_Z (rise)	0.022 + 0.228*Tr + 2.234*C	0.061 + 0.232*Tr + 4.899*C	0.034 + 0.233*Tr + 3.313*C
AO21LLP	C-Z	C_Z (fall)	0.004 + 0.267*Tr + 1.668*C	0.025 + 0.302*Tr + 4.095*C	0.005 + 0.285*Tr + 2.516*C
AO21LLP	C-Z	C_Z (rise)	0.008 + 0.275*Tr + 2.256*C	0.023 + 0.278*Tr + 4.917*C	0.010 + 0.278*Tr + 3.342*C
AO21LLP	D-Z	D_Z (fall)	-0.001 + 0.252*Tr + 1.262*C	0.084 + 0.268*Tr + 4.037*C	0.040 + 0.253*Tr + 2.443*C
AO21LLP	D-Z	D_Z (rise)	0.015 + 0.320*Tr + 2.103*C	0.047 + 0.344*Tr + 4.359*C	0.026 + 0.335*Tr + 3.033*C
AO21LLX4	A-Z	A_Z (fall)	0.023 + 0.282*Tr + 0.813*C	0.073 + 0.320*Tr + 2.015*C	0.036 + 0.300*Tr + 1.228*C
AO21LLX4	A-Z	A_Z (rise)	0.033 + 0.172*Tr + 1.106*C	0.086 + 0.187*Tr + 2.436*C	0.051 + 0.183*Tr + 1.640*C
AO21LLX4	B-Z	B_Z (fall)	0.017 + 0.272*Tr + 0.821*C	0.054 + 0.310*Tr + 2.023*C	0.025 + 0.290*Tr + 1.238*C
AO21LLX4	B-Z	B_Z (rise)	0.023 + 0.225*Tr + 1.118*C	0.062 + 0.230*Tr + 2.451*C	0.035 + 0.230*Tr + 1.657*C
AO21LLX4	C-Z	C_Z (fall)	0.007 + 0.259*Tr + 0.835*C	0.029 + 0.298*Tr + 2.050*C	0.010 + 0.278*Tr + 1.259*C
AO21LLX4	C-Z	C_Z (rise)	0.010 + 0.271*Tr + 1.130*C	0.025 + 0.275*Tr + 2.461*C	0.013 + 0.273*Tr + 1.673*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21LLX4	D-Z	D_Z (fall)	0.004 + 0.243*Tr + 0.631*C	0.087 + 0.267*Tr + 2.019*C	0.044 + 0.250*Tr + 1.221*C
AO21LLX4	D-Z	D_Z (rise)	0.017 + 0.312*Tr + 1.027*C	0.048 + 0.336*Tr + 2.092*C	0.028 + 0.327*Tr + 1.466*C
AO21LLX6	A-Z	A_Z (fall)	0.023 + 0.284*Tr + 0.572*C	0.073 + 0.319*Tr + 1.399*C	0.035 + 0.301*Tr + 0.857*C
AO21LLX6	A-Z	A_Z (rise)	0.031 + 0.168*Tr + 0.739*C	0.083 + 0.183*Tr + 1.626*C	0.048 + 0.179*Tr + 1.096*C
AO21LLX6	B-Z	B_Z (fall)	0.016 + 0.272*Tr + 0.577*C	0.055 + 0.308*Tr + 1.406*C	0.024 + 0.290*Tr + 0.865*C
AO21LLX6	B-Z	B_Z (rise)	0.021 + 0.219*Tr + 0.748*C	0.058 + 0.223*Tr + 1.639*C	0.033 + 0.224*Tr + 1.109*C
AO21LLX6	C-Z	C_Z (fall)	0.007 + 0.259*Tr + 0.587*C	0.028 + 0.294*Tr + 1.425*C	0.009 + 0.277*Tr + 0.880*C
AO21LLX6	C-Z	C_Z (rise)	0.009 + 0.263*Tr + 0.757*C	0.023 + 0.266*Tr + 1.647*C	0.011 + 0.266*Tr + 1.121*C
AO21LLX6	D-Z	D_Z (fall)	0.002 + 0.243*Tr + 0.444*C	0.088 + 0.265*Tr + 1.403*C	0.044 + 0.250*Tr + 0.854*C
AO21LLX6	D-Z	D_Z (rise)	0.015 + 0.306*Tr + 0.695*C	0.046 + 0.331*Tr + 1.422*C	0.026 + 0.321*Tr + 0.996*C
AO21LLX8	A-Z	A_Z (fall)	0.022 + 0.280*Tr + 0.409*C	0.070 + 0.317*Tr + 0.999*C	0.034 + 0.298*Tr + 0.614*C
AO21LLX8	A-Z	A_Z (rise)	0.032 + 0.170*Tr + 0.554*C	0.084 + 0.184*Tr + 1.220*C	0.049 + 0.180*Tr + 0.821*C
AO21LLX8	B-Z	B_Z (fall)	0.016 + 0.269*Tr + 0.413*C	0.053 + 0.306*Tr + 1.004*C	0.024 + 0.287*Tr + 0.619*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21LLX8	B-Z	B_Z (rise)	0.022 + 0.222*Tr + 0.561*C	0.061 + 0.226*Tr + 1.229*C	0.035 + 0.226*Tr + 0.831*C
AO21LLX8	C-Z	C_Z (fall)	0.007 + 0.256*Tr + 0.421*C	0.028 + 0.292*Tr + 1.019*C	0.009 + 0.274*Tr + 0.631*C
AO21LLX8	C-Z	C_Z (rise)	0.010 + 0.266*Tr + 0.567*C	0.026 + 0.270*Tr + 1.235*C	0.013 + 0.268*Tr + 0.840*C
AO21LLX8	D-Z	D_Z (fall)	0.003 + 0.239*Tr + 0.319*C	0.084 + 0.264*Tr + 1.001*C	0.043 + 0.247*Tr + 0.611*C
AO21LLX8	D-Z	D_Z (rise)	0.016 + 0.307*Tr + 0.516*C	0.048 + 0.331*Tr + 1.050*C	0.027 + 0.322*Tr + 0.736*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO21LL	3068.380	57806.200
AO21LLP	4792.390	99100.600
AO21LLX4	9565.040	197761.000
AO21LLX6	12899.400	275304.000
AO21LLX8	18048.700	381600.000

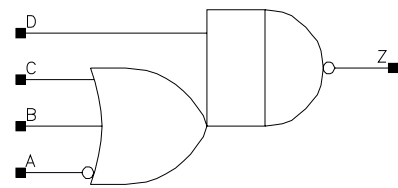
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO21LL	Z(max)	0.012 + 0.005*Tr
AO21LLP	Z(max)	0.022 + 0.011*Tr
AO21LLX4	Z(max)	0.043 + 0.023*Tr
AO21LLX6	Z(max)	0.052 + 0.048*Tr
AO21LLX8	Z(max)	0.085 + 0.046*Tr

AO21ALL
AO21ALLP
AO21ALLX4
AO21ALLX6
AO21ALLX8

Function: Function = BOOLEAN function with 4 inputs and 1 output



Truth Table

A	B	C	D	Z
-	1	-	D	!D
0	-	-	D	!D
-	-	1	D	!D
1	0	0	-	1

Physical Dimensions

Property	AO21ALL	AO21ALLP	AO21ALLX4	AO21ALLX6	AO21ALLX8
Area(um ²)	14.120	16.138	24.206	28.241	36.310

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21ALL	B Input Cap.	0.0026	0.0024	0.0025
AO21ALL	C Input Cap.	0.0027	0.0025	0.0026
AO21ALL	A Input Cap.	0.0015	0.0012	0.0013
AO21ALL	Z Max Load	0.160	0.160	0.160
AO21ALL	D Input Cap.	0.0017	0.0016	0.0016
AO21ALLP	C Input Cap.	0.0043	0.0040	0.0042
AO21ALLP	A Input Cap.	0.0021	0.0018	0.0019
AO21ALLP	Z Max Load	0.320	0.320	0.320
AO21ALLP	D Input Cap.	0.0029	0.0027	0.0028
AO21ALLP	B Input Cap.	0.0048	0.0044	0.0046
AO21ALLX4	B Input Cap.	0.0096	0.0089	0.0092
AO21ALLX4	C Input Cap.	0.0084	0.0078	0.0081

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21ALLX4	A Input Cap.	0.0036	0.0031	0.0032
AO21ALLX4	Z Max Load	0.640	0.640	0.640
AO21ALLX4	D Input Cap.	0.0066	0.0062	0.0064
AO21ALLX6	D Input Cap.	0.0081	0.0076	0.0078
AO21ALLX6	B Input Cap.	0.0138	0.0128	0.0132
AO21ALLX6	Z Max Load	0.960	0.960	0.960
AO21ALLX6	C Input Cap.	0.0127	0.0118	0.0122
AO21ALLX6	A Input Cap.	0.0051	0.0044	0.0045
AO21ALLX8	A Input Cap.	0.0065	0.0056	0.0058
AO21ALLX8	Z Max Load	1.280	1.280	1.280
AO21ALLX8	D Input Cap.	0.0107	0.0100	0.0103
AO21ALLX8	B Input Cap.	0.0192	0.0179	0.0185
AO21ALLX8	C Input Cap.	0.0177	0.0166	0.0171

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21ALL	A-Z	A_Z (fall)	0.075 + 0.279*Tr + 2.946°C	0.174 + 0.290*Tr + 7.883°C	0.113 + 0.283*Tr + 4.534°C
AO21ALL	A-Z	A_Z (rise)	0.057 + 0.162*Tr + 4.460°C	0.133 + 0.208*Tr + 9.950°C	0.085 + 0.181*Tr + 6.626°C
AO21ALL	B-Z	B_Z (fall)	0.016 + 0.272*Tr + 3.133°C	0.057 + 0.313*Tr + 8.080°C	0.025 + 0.292*Tr + 4.821°C
AO21ALL	B-Z	B_Z (rise)	0.029 + 0.240*Tr + 4.556°C	0.075 + 0.244*Tr + 10.143°C	0.044 + 0.245*Tr + 6.806°C
AO21ALL	C-Z	C_Z (fall)	0.023 + 0.281*Tr + 3.108°C	0.077 + 0.320*Tr + 8.054°C	0.036 + 0.300*Tr + 4.786°C
AO21ALL	C-Z	C_Z (rise)	0.038 + 0.184*Tr + 4.526°C	0.100 + 0.199*Tr + 10.112°C	0.059 + 0.195*Tr + 6.758°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21ALL	D-Z	D_Z (fall)	0.003 + 0.247*Tr + 2.397*C	0.089 + 0.265*Tr + 8.075*C	0.044 + 0.248*Tr + 4.761*C
AO21ALL	D-Z	D_Z (rise)	0.021 + 0.334*Tr + 4.278*C	0.061 + 0.356*Tr + 9.234*C	0.036 + 0.349*Tr + 6.295*C
AO21ALLP	A-Z	A_Z (fall)	0.087 + 0.268*Tr + 1.540*C	0.206 + 0.280*Tr + 3.932*C	0.130 + 0.272*Tr + 2.319*C
AO21ALLP	A-Z	A_Z (rise)	0.072 + 0.177*Tr + 2.171*C	0.174 + 0.220*Tr + 4.773*C	0.109 + 0.195*Tr + 3.197*C
AO21ALLP	B-Z	B_Z (fall)	0.014 + 0.278*Tr + 1.641*C	0.053 + 0.313*Tr + 4.043*C	0.021 + 0.296*Tr + 2.474*C
AO21ALLP	B-Z	B_Z (rise)	0.023 + 0.228*Tr + 2.235*C	0.061 + 0.232*Tr + 4.899*C	0.034 + 0.233*Tr + 3.311*C
AO21ALLP	C-Z	C_Z (fall)	0.004 + 0.267*Tr + 1.668*C	0.026 + 0.302*Tr + 4.093*C	0.006 + 0.285*Tr + 2.515*C
AO21ALLP	C-Z	C_Z (rise)	0.009 + 0.276*Tr + 2.256*C	0.024 + 0.278*Tr + 4.915*C	0.011 + 0.278*Tr + 3.342*C
AO21ALLP	D-Z	D_Z (fall)	-0.002 + 0.252*Tr + 1.263*C	0.090 + 0.266*Tr + 4.043*C	0.044 + 0.251*Tr + 2.448*C
AO21ALLP	D-Z	D_Z (rise)	0.015 + 0.320*Tr + 2.102*C	0.048 + 0.344*Tr + 4.358*C	0.026 + 0.335*Tr + 3.032*C
AO21ALLX4	A-Z	A_Z (fall)	0.081 + 0.251*Tr + 0.770*C	0.190 + 0.264*Tr + 1.965*C	0.121 + 0.256*Tr + 1.159*C
AO21ALLX4	A-Z	A_Z (rise)	0.070 + 0.190*Tr + 1.085*C	0.166 + 0.229*Tr + 2.386*C	0.105 + 0.206*Tr + 1.597*C
AO21ALLX4	B-Z	B_Z (fall)	0.016 + 0.271*Tr + 0.821*C	0.054 + 0.310*Tr + 2.024*C	0.025 + 0.290*Tr + 1.238*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21ALLX4	B-Z	B_Z (rise)	0.023 + 0.225*Tr + 1.118*C	0.061 + 0.230*Tr + 2.451*C	0.035 + 0.230*Tr + 1.657*C
AO21ALLX4	C-Z	C_Z (fall)	0.007 + 0.259*Tr + 0.835*C	0.029 + 0.297*Tr + 2.050*C	0.010 + 0.278*Tr + 1.259*C
AO21ALLX4	C-Z	C_Z (rise)	0.010 + 0.271*Tr + 1.130*C	0.025 + 0.275*Tr + 2.461*C	0.013 + 0.273*Tr + 1.674*C
AO21ALLX4	D-Z	D_Z (fall)	0.003 + 0.243*Tr + 0.632*C	0.091 + 0.265*Tr + 2.022*C	0.046 + 0.248*Tr + 1.224*C
AO21ALLX4	D-Z	D_Z (rise)	0.016 + 0.311*Tr + 1.022*C	0.047 + 0.335*Tr + 2.081*C	0.027 + 0.326*Tr + 1.458*C
AO21ALLX6	A-Z	A_Z (fall)	0.076 + 0.242*Tr + 0.517*C	0.178 + 0.253*Tr + 1.294*C	0.113 + 0.246*Tr + 0.770*C
AO21ALLX6	A-Z	A_Z (rise)	0.067 + 0.190*Tr + 0.728*C	0.159 + 0.225*Tr + 1.601*C	0.100 + 0.204*Tr + 1.072*C
AO21ALLX6	B-Z	B_Z (fall)	0.015 + 0.269*Tr + 0.553*C	0.050 + 0.304*Tr + 1.337*C	0.022 + 0.286*Tr + 0.827*C
AO21ALLX6	B-Z	B_Z (rise)	0.022 + 0.221*Tr + 0.752*C	0.059 + 0.225*Tr + 1.648*C	0.033 + 0.226*Tr + 1.115*C
AO21ALLX6	C-Z	C_Z (fall)	0.005 + 0.255*Tr + 0.563*C	0.026 + 0.290*Tr + 1.356*C	0.007 + 0.273*Tr + 0.842*C
AO21ALLX6	C-Z	C_Z (rise)	0.009 + 0.266*Tr + 0.760*C	0.024 + 0.269*Tr + 1.655*C	0.011 + 0.268*Tr + 1.126*C
AO21ALLX6	D-Z	D_Z (fall)	0.001 + 0.240*Tr + 0.427*C	0.087 + 0.261*Tr + 1.335*C	0.044 + 0.245*Tr + 0.817*C
AO21ALLX6	D-Z	D_Z (rise)	0.015 + 0.308*Tr + 0.694*C	0.047 + 0.333*Tr + 1.420*C	0.026 + 0.323*Tr + 0.994*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21ALLX8	A-Z	A_Z (fall)	0.077 + 0.242*Tr + 0.386*C	0.180 + 0.253*Tr + 0.972*C	0.114 + 0.246*Tr + 0.577*C
AO21ALLX8	A-Z	A_Z (rise)	0.067 + 0.192*Tr + 0.545*C	0.159 + 0.226*Tr + 1.199*C	0.101 + 0.206*Tr + 0.803*C
AO21ALLX8	B-Z	B_Z (fall)	0.016 + 0.269*Tr + 0.413*C	0.052 + 0.306*Tr + 1.005*C	0.023 + 0.286*Tr + 0.620*C
AO21ALLX8	B-Z	B_Z (rise)	0.022 + 0.221*Tr + 0.564*C	0.060 + 0.226*Tr + 1.235*C	0.034 + 0.226*Tr + 0.835*C
AO21ALLX8	C-Z	C_Z (fall)	0.007 + 0.255*Tr + 0.421*C	0.028 + 0.292*Tr + 1.019*C	0.009 + 0.273*Tr + 0.631*C
AO21ALLX8	C-Z	C_Z (rise)	0.010 + 0.266*Tr + 0.570*C	0.026 + 0.270*Tr + 1.241*C	0.013 + 0.268*Tr + 0.844*C
AO21ALLX8	D-Z	D_Z (fall)	0.002 + 0.239*Tr + 0.319*C	0.087 + 0.261*Tr + 1.003*C	0.045 + 0.246*Tr + 0.612*C
AO21ALLX8	D-Z	D_Z (rise)	0.015 + 0.307*Tr + 0.512*C	0.046 + 0.331*Tr + 1.043*C	0.026 + 0.321*Tr + 0.731*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO21ALL	3930.960	72421.400
AO21ALLP	5765.640	117974.000
AO21ALLX4	11038.400	230288.000
AO21ALLX6	15219.800	327686.000
AO21ALLX8	20716.500	445732.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO21ALL	Z(max)	0.012 + 0.005*Tr

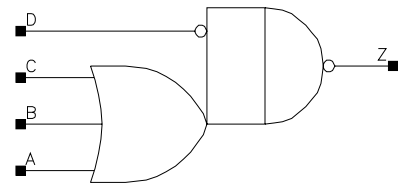
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO21ALLP	Z(max)	$0.031 + 0.008 * Tr$
AO21ALLX4	Z(max)	$0.059 + 0.016 * Tr$
AO21ALLX6	Z(max)	$0.084 + 0.024 * Tr$
AO21ALLX8	Z(max)	$0.113 + 0.032 * Tr$

AO21DLL
AO21DLLP
AO21DLLX4
AO21DLLX6
AO21DLLX8

Function: Function = BOOLEAN function with 4 inputs and 1 output



Truth Table

A	B	C	D	Z
-	-	1	0	0
-	1	-	0	0
1	-	-	0	0
0	0	0	-	1
-	-	-	1	1

Physical Dimensions

Property	AO21DLL	AO21DLLP	AO21DLLX4	AO21DLLX6	AO21DLLX8
Area(um ²)	14.120	16.138	24.206	28.241	36.310

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21DLL	C Input Cap.	0.0027	0.0025	0.0026
AO21DLL	A Input Cap.	0.0024	0.0022	0.0023
AO21DLL	D Input Cap.	0.0016	0.0012	0.0013
AO21DLL	Z Max Load	0.160	0.160	0.160
AO21DLL	B Input Cap.	0.0027	0.0024	0.0025
AO21DLLP	B Input Cap.	0.0048	0.0044	0.0046
AO21DLLP	C Input Cap.	0.0043	0.0040	0.0041
AO21DLLP	A Input Cap.	0.0050	0.0046	0.0047
AO21DLLP	D Input Cap.	0.0023	0.0019	0.0020
AO21DLLP	Z Max Load	0.320	0.320	0.320
AO21DLLX4	A Input Cap.	0.0105	0.0097	0.0100

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21DLLX4	D Input Cap.	0.0038	0.0032	0.0034
AO21DLLX4	Z Max Load	0.640	0.640	0.640
AO21DLLX4	B Input Cap.	0.0097	0.0089	0.0092
AO21DLLX4	C Input Cap.	0.0084	0.0078	0.0081
AO21DLLX6	C Input Cap.	0.0127	0.0118	0.0122
AO21DLLX6	Z Max Load	0.960	0.960	0.960
AO21DLLX6	A Input Cap.	0.0144	0.0133	0.0137
AO21DLLX6	D Input Cap.	0.0053	0.0045	0.0047
AO21DLLX6	B Input Cap.	0.0139	0.0128	0.0132
AO21DLLX8	B Input Cap.	0.0194	0.0179	0.0184
AO21DLLX8	C Input Cap.	0.0178	0.0166	0.0171
AO21DLLX8	A Input Cap.	0.0197	0.0181	0.0187
AO21DLLX8	D Input Cap.	0.0070	0.0060	0.0063
AO21DLLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21DLL	A-Z	A_Z (fall)	0.008 + 0.262*Tr + 3.173*C	0.034 + 0.303*Tr + 8.157*C	0.012 + 0.283*Tr + 4.882*C
AO21DLL	A-Z	A_Z (rise)	0.015 + 0.289*Tr + 4.584*C	0.036 + 0.292*Tr + 10.161*C	0.020 + 0.292*Tr + 6.843*C
AO21DLL	B-Z	B_Z (fall)	0.017 + 0.272*Tr + 3.130*C	0.058 + 0.312*Tr + 8.078*C	0.026 + 0.292*Tr + 4.817*C
AO21DLL	B-Z	B_Z (rise)	0.028 + 0.241*Tr + 4.553*C	0.073 + 0.246*Tr + 10.139*C	0.043 + 0.246*Tr + 6.801*C
AO21DLL	C-Z	C_Z (fall)	0.023 + 0.281*Tr + 3.105*C	0.078 + 0.320*Tr + 8.052*C	0.037 + 0.300*Tr + 4.782*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21DLL	C-Z	C_Z (rise)	0.037 + 0.185*Tr + 4.524*C	0.097 + 0.200*Tr + 10.113*C	0.058 + 0.196*Tr + 6.757*C
AO21DLL	D-Z	D_Z (fall)	0.063 + 0.267*Tr + 2.063*C	0.197 + 0.269*Tr + 7.891*C	0.120 + 0.264*Tr + 4.534*C
AO21DLL	D-Z	D_Z (rise)	0.060 + 0.157*Tr + 4.175*C	0.153 + 0.203*Tr + 9.111*C	0.097 + 0.176*Tr + 6.125*C
AO21DLLP	A-Z	A_Z (fall)	0.021 + 0.288*Tr + 1.626*C	0.071 + 0.323*Tr + 4.026*C	0.032 + 0.305*Tr + 2.452*C
AO21DLLP	A-Z	A_Z (rise)	0.032 + 0.174*Tr + 2.211*C	0.085 + 0.189*Tr + 4.867*C	0.049 + 0.185*Tr + 3.277*C
AO21DLLP	B-Z	B_Z (fall)	0.014 + 0.278*Tr + 1.641*C	0.052 + 0.313*Tr + 4.044*C	0.021 + 0.296*Tr + 2.474*C
AO21DLLP	B-Z	B_Z (rise)	0.023 + 0.228*Tr + 2.236*C	0.061 + 0.232*Tr + 4.898*C	0.034 + 0.233*Tr + 3.312*C
AO21DLLP	C-Z	C_Z (fall)	0.004 + 0.267*Tr + 1.668*C	0.025 + 0.302*Tr + 4.095*C	0.005 + 0.285*Tr + 2.516*C
AO21DLLP	C-Z	C_Z (rise)	0.008 + 0.275*Tr + 2.256*C	0.023 + 0.278*Tr + 4.915*C	0.010 + 0.278*Tr + 3.342*C
AO21DLLP	D-Z	D_Z (fall)	0.056 + 0.249*Tr + 1.080*C	0.180 + 0.251*Tr + 3.931*C	0.110 + 0.246*Tr + 2.317*C
AO21DLLP	D-Z	D_Z (rise)	0.054 + 0.168*Tr + 2.021*C	0.135 + 0.208*Tr + 4.243*C	0.086 + 0.184*Tr + 2.904*C
AO21DLLX4	A-Z	A_Z (fall)	0.022 + 0.283*Tr + 0.813*C	0.071 + 0.321*Tr + 2.014*C	0.034 + 0.301*Tr + 1.227*C
AO21DLLX4	A-Z	A_Z (rise)	0.032 + 0.172*Tr + 1.106*C	0.084 + 0.187*Tr + 2.434*C	0.049 + 0.183*Tr + 1.639*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21DLLX4	B-Z	B_Z (fall)	0.017 + 0.272*Tr + 0.821*C	0.054 + 0.310*Tr + 2.024*C	0.025 + 0.290*Tr + 1.238*C
AO21DLLX4	B-Z	B_Z (rise)	0.024 + 0.225*Tr + 1.119*C	0.062 + 0.230*Tr + 2.451*C	0.035 + 0.230*Tr + 1.657*C
AO21DLLX4	C-Z	C_Z (fall)	0.007 + 0.259*Tr + 0.835*C	0.029 + 0.297*Tr + 2.051*C	0.010 + 0.278*Tr + 1.260*C
AO21DLLX4	C-Z	C_Z (rise)	0.010 + 0.271*Tr + 1.130*C	0.025 + 0.275*Tr + 2.461*C	0.013 + 0.273*Tr + 1.674*C
AO21DLLX4	D-Z	D_Z (fall)	0.055 + 0.235*Tr + 0.540*C	0.176 + 0.240*Tr + 1.966*C	0.108 + 0.234*Tr + 1.159*C
AO21DLLX4	D-Z	D_Z (rise)	0.054 + 0.184*Tr + 0.984*C	0.131 + 0.220*Tr + 2.026*C	0.085 + 0.198*Tr + 1.396*C
AO21DLLX6	A-Z	A_Z (fall)	0.021 + 0.281*Tr + 0.547*C	0.068 + 0.316*Tr + 1.330*C	0.032 + 0.297*Tr + 0.819*C
AO21DLLX6	A-Z	A_Z (rise)	0.031 + 0.169*Tr + 0.743*C	0.083 + 0.184*Tr + 1.635*C	0.048 + 0.180*Tr + 1.102*C
AO21DLLX6	B-Z	B_Z (fall)	0.015 + 0.269*Tr + 0.553*C	0.050 + 0.304*Tr + 1.337*C	0.022 + 0.286*Tr + 0.827*C
AO21DLLX6	B-Z	B_Z (rise)	0.023 + 0.221*Tr + 0.753*C	0.059 + 0.225*Tr + 1.648*C	0.033 + 0.226*Tr + 1.115*C
AO21DLLX6	C-Z	C_Z (fall)	0.005 + 0.256*Tr + 0.563*C	0.026 + 0.290*Tr + 1.356*C	0.007 + 0.273*Tr + 0.842*C
AO21DLLX6	C-Z	C_Z (rise)	0.009 + 0.266*Tr + 0.760*C	0.024 + 0.269*Tr + 1.656*C	0.011 + 0.268*Tr + 1.126*C
AO21DLLX6	D-Z	D_Z (fall)	0.050 + 0.226*Tr + 0.362*C	0.163 + 0.230*Tr + 1.294*C	0.100 + 0.224*Tr + 0.770*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21DLLX6	D-Z	D_Z (rise)	0.051 + 0.183*Tr + 0.663*C	0.124 + 0.216*Tr + 1.374*C	0.080 + 0.196*Tr + 0.945*C
AO21DLLX8	A-Z	A_Z (fall)	0.022 + 0.280*Tr + 0.409*C	0.069 + 0.317*Tr + 1.000*C	0.033 + 0.297*Tr + 0.614*C
AO21DLLX8	A-Z	A_Z (rise)	0.031 + 0.170*Tr + 0.557*C	0.083 + 0.184*Tr + 1.226*C	0.049 + 0.180*Tr + 0.826*C
AO21DLLX8	B-Z	B_Z (fall)	0.016 + 0.269*Tr + 0.413*C	0.052 + 0.306*Tr + 1.005*C	0.023 + 0.287*Tr + 0.620*C
AO21DLLX8	B-Z	B_Z (rise)	0.023 + 0.221*Tr + 0.564*C	0.060 + 0.226*Tr + 1.234*C	0.034 + 0.226*Tr + 0.835*C
AO21DLLX8	C-Z	C_Z (fall)	0.007 + 0.255*Tr + 0.421*C	0.027 + 0.292*Tr + 1.020*C	0.009 + 0.273*Tr + 0.632*C
AO21DLLX8	C-Z	C_Z (rise)	0.010 + 0.266*Tr + 0.570*C	0.026 + 0.270*Tr + 1.241*C	0.013 + 0.268*Tr + 0.844*C
AO21DLLX8	D-Z	D_Z (fall)	0.049 + 0.223*Tr + 0.271*C	0.161 + 0.226*Tr + 0.972*C	0.098 + 0.221*Tr + 0.577*C
AO21DLLX8	D-Z	D_Z (rise)	0.049 + 0.182*Tr + 0.491*C	0.120 + 0.213*Tr + 1.011*C	0.078 + 0.194*Tr + 0.697*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO21DLL	4651.010	80206.000
AO21DLLP	6469.740	126455.000
AO21DLLX4	11845.500	238869.000
AO21DLLX6	16203.200	337248.000
AO21DLLX8	21843.600	454294.000

Internal Energy at minimum output load

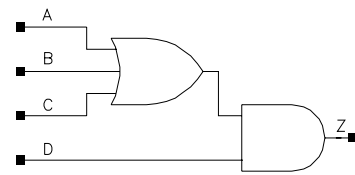
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO21DLL	Z(max)	$0.017 + 0.005 \cdot Tr$
AO21DLLP	Z(max)	$0.030 + 0.009 \cdot Tr$
AO21DLLX4	Z(max)	$0.059 + 0.017 \cdot Tr$
AO21DLLX6	Z(max)	$0.084 + 0.025 \cdot Tr$
AO21DLLX8	Z(max)	$0.110 + 0.035 \cdot Tr$

AO21NLL
AO21NLLP
AO21NLLX4
AO21NLLX6
AO21NLLX8

Function: Function = 2 wide 1-3 OR-AND

Boolean Expression: $Z = (A + B + C) \bullet D$



Physical Dimensions

Property	AO21NLL	AO21NLLP	AO21NLLX4	AO21NLLX6	AO21NLLX8
Area(um2)	14.120	14.120	18.155	32.275	24.206

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21NLL	C Input Cap.	0.0017	0.0014	0.0015
AO21NLL	Z Max Load	0.160	0.160	0.160
AO21NLL	A Input Cap.	0.0017	0.0015	0.0016
AO21NLL	D Input Cap.	0.0013	0.0011	0.0012
AO21NLL	B Input Cap.	0.0017	0.0015	0.0016
AO21NLLP	B Input Cap.	0.0029	0.0025	0.0026
AO21NLLP	C Input Cap.	0.0028	0.0024	0.0025
AO21NLLP	Z Max Load	0.320	0.320	0.320
AO21NLLP	A Input Cap.	0.0028	0.0025	0.0026
AO21NLLP	D Input Cap.	0.0020	0.0017	0.0018
AO21NLLX4	C Input Cap.	0.0049	0.0043	0.0044
AO21NLLX4	Z Max Load	0.640	0.640	0.640
AO21NLLX4	A Input Cap.	0.0052	0.0046	0.0048
AO21NLLX4	D Input Cap.	0.0033	0.0029	0.0030
AO21NLLX4	B Input Cap.	0.0051	0.0045	0.0047
AO21NLLX6	Z Max Load	0.960	0.960	0.960
AO21NLLX6	B Input Cap.	0.0101	0.0090	0.0094
AO21NLLX6	C Input Cap.	0.0093	0.0081	0.0084
AO21NLLX6	A Input Cap.	0.0109	0.0098	0.0102
AO21NLLX6	D Input Cap.	0.0075	0.0066	0.0068

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21NLLX8	A Input Cap.	0.0084	0.0075	0.0078
AO21NLLX8	D Input Cap.	0.0044	0.0039	0.0040
AO21NLLX8	B Input Cap.	0.0077	0.0069	0.0072
AO21NLLX8	C Input Cap.	0.0072	0.0063	0.0065
AO21NLLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21NLL	A-Z	A_Z (fall)	0.116 + 0.204*Tr + 1.338*C	0.285 + 0.212*Tr + 2.943*C	0.180 + 0.209*Tr + 1.891*C
AO21NLL	A-Z	A_Z (rise)	0.088 + 0.246*Tr + 1.657*C	0.242 + 0.302*Tr + 3.589*C	0.140 + 0.267*Tr + 2.401*C
AO21NLL	B-Z	B_Z (fall)	0.112 + 0.251*Tr + 1.336*C	0.268 + 0.253*Tr + 2.939*C	0.172 + 0.252*Tr + 1.888*C
AO21NLL	B-Z	B_Z (rise)	0.083 + 0.229*Tr + 1.651*C	0.223 + 0.288*Tr + 3.563*C	0.131 + 0.252*Tr + 2.391*C
AO21NLL	C-Z	C_Z (fall)	0.104 + 0.287*Tr + 1.328*C	0.240 + 0.293*Tr + 2.922*C	0.157 + 0.288*Tr + 1.874*C
AO21NLL	C-Z	C_Z (rise)	0.076 + 0.212*Tr + 1.648*C	0.199 + 0.270*Tr + 3.544*C	0.118 + 0.235*Tr + 2.386*C
AO21NLL	D-Z	D_Z (fall)	0.115 + 0.339*Tr + 1.299*C	0.304 + 0.377*Tr + 3.076*C	0.193 + 0.362*Tr + 1.959*C
AO21NLL	D-Z	D_Z (rise)	0.069 + 0.182*Tr + 1.643*C	0.268 + 0.240*Tr + 3.603*C	0.152 + 0.214*Tr + 2.411*C
AO21NLLP	A-Z	A_Z (fall)	0.096 + 0.186*Tr + 0.671*C	0.233 + 0.196*Tr + 1.423*C	0.148 + 0.192*Tr + 0.931*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21NLLP	A-Z	A_Z (rise)	0.080 + 0.256*Tr + 0.811*C	0.208 + 0.306*Tr + 1.721*C	0.124 + 0.274*Tr + 1.163*C
AO21NLLP	B-Z	B_Z (fall)	0.092 + 0.229*Tr + 0.670*C	0.217 + 0.233*Tr + 1.421*C	0.140 + 0.231*Tr + 0.929*C
AO21NLLP	B-Z	B_Z (rise)	0.074 + 0.238*Tr + 0.807*C	0.189 + 0.290*Tr + 1.705*C	0.114 + 0.258*Tr + 1.157*C
AO21NLLP	C-Z	C_Z (fall)	0.085 + 0.261*Tr + 0.664*C	0.190 + 0.267*Tr + 1.409*C	0.126 + 0.262*Tr + 0.920*C
AO21NLLP	C-Z	C_Z (rise)	0.066 + 0.219*Tr + 0.806*C	0.163 + 0.269*Tr + 1.695*C	0.100 + 0.238*Tr + 1.154*C
AO21NLLP	D-Z	D_Z (fall)	0.090 + 0.310*Tr + 0.647*C	0.224 + 0.349*Tr + 1.467*C	0.148 + 0.333*Tr + 0.956*C
AO21NLLP	D-Z	D_Z (rise)	0.059 + 0.189*Tr + 0.805*C	0.225 + 0.248*Tr + 1.725*C	0.131 + 0.224*Tr + 1.167*C
AO21NLLX4	A-Z	A_Z (fall)	0.094 + 0.175*Tr + 0.335*C	0.228 + 0.187*Tr + 0.709*C	0.145 + 0.182*Tr + 0.464*C
AO21NLLX4	A-Z	A_Z (rise)	0.082 + 0.268*Tr + 0.406*C	0.209 + 0.314*Tr + 0.860*C	0.126 + 0.284*Tr + 0.582*C
AO21NLLX4	B-Z	B_Z (fall)	0.090 + 0.217*Tr + 0.334*C	0.211 + 0.222*Tr + 0.708*C	0.137 + 0.219*Tr + 0.463*C
AO21NLLX4	B-Z	B_Z (rise)	0.076 + 0.250*Tr + 0.404*C	0.188 + 0.297*Tr + 0.853*C	0.115 + 0.267*Tr + 0.579*C
AO21NLLX4	C-Z	C_Z (fall)	0.081 + 0.249*Tr + 0.331*C	0.181 + 0.255*Tr + 0.702*C	0.121 + 0.250*Tr + 0.458*C
AO21NLLX4	C-Z	C_Z (rise)	0.066 + 0.230*Tr + 0.403*C	0.159 + 0.276*Tr + 0.847*C	0.098 + 0.247*Tr + 0.577*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21NLLX4	D-Z	D_Z (fall)	0.086 + 0.297*Tr + 0.322*C	0.210 + 0.339*Tr + 0.728*C	0.140 + 0.322*Tr + 0.475*C
AO21NLLX4	D-Z	D_Z (rise)	0.059 + 0.198*Tr + 0.403*C	0.222 + 0.256*Tr + 0.862*C	0.131 + 0.234*Tr + 0.584*C
AO21NLLX6	A-Z	A_Z (fall)	0.092 + 0.174*Tr + 0.177*C	0.222 + 0.186*Tr + 0.378*C	0.141 + 0.181*Tr + 0.247*C
AO21NLLX6	A-Z	A_Z (rise)	0.080 + 0.268*Tr + 0.208*C	0.203 + 0.314*Tr + 0.446*C	0.123 + 0.284*Tr + 0.300*C
AO21NLLX6	B-Z	B_Z (fall)	0.087 + 0.217*Tr + 0.176*C	0.205 + 0.222*Tr + 0.377*C	0.132 + 0.219*Tr + 0.246*C
AO21NLLX6	B-Z	B_Z (rise)	0.074 + 0.250*Tr + 0.207*C	0.184 + 0.297*Tr + 0.441*C	0.112 + 0.267*Tr + 0.297*C
AO21NLLX6	C-Z	C_Z (fall)	0.079 + 0.249*Tr + 0.174*C	0.176 + 0.255*Tr + 0.372*C	0.117 + 0.249*Tr + 0.243*C
AO21NLLX6	C-Z	C_Z (rise)	0.065 + 0.229*Tr + 0.206*C	0.155 + 0.275*Tr + 0.437*C	0.097 + 0.247*Tr + 0.296*C
AO21NLLX6	D-Z	D_Z (fall)	0.083 + 0.291*Tr + 0.168*C	0.197 + 0.330*Tr + 0.388*C	0.132 + 0.315*Tr + 0.254*C
AO21NLLX6	D-Z	D_Z (rise)	0.058 + 0.199*Tr + 0.205*C	0.219 + 0.257*Tr + 0.447*C	0.129 + 0.234*Tr + 0.301*C
AO21NLLX8	A-Z	A_Z (fall)	0.094 + 0.176*Tr + 0.216*C	0.228 + 0.189*Tr + 0.455*C	0.145 + 0.183*Tr + 0.298*C
AO21NLLX8	A-Z	A_Z (rise)	0.082 + 0.266*Tr + 0.268*C	0.204 + 0.310*Tr + 0.561*C	0.124 + 0.282*Tr + 0.382*C
AO21NLLX8	B-Z	B_Z (fall)	0.089 + 0.218*Tr + 0.215*C	0.210 + 0.225*Tr + 0.455*C	0.136 + 0.221*Tr + 0.297*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO21NLLX8	B-Z	B_Z (rise)	0.075 + 0.249*Tr + 0.267*C	0.183 + 0.294*Tr + 0.558*C	0.112 + 0.265*Tr + 0.381*C
AO21NLLX8	C-Z	C_Z (fall)	0.082 + 0.249*Tr + 0.214*C	0.183 + 0.257*Tr + 0.452*C	0.121 + 0.251*Tr + 0.295*C
AO21NLLX8	C-Z	C_Z (rise)	0.065 + 0.229*Tr + 0.266*C	0.156 + 0.273*Tr + 0.555*C	0.097 + 0.245*Tr + 0.380*C
AO21NLLX8	D-Z	D_Z (fall)	0.084 + 0.293*Tr + 0.209*C	0.205 + 0.334*Tr + 0.461*C	0.137 + 0.318*Tr + 0.301*C
AO21NLLX8	D-Z	D_Z (rise)	0.058 + 0.200*Tr + 0.266*C	0.216 + 0.256*Tr + 0.562*C	0.128 + 0.234*Tr + 0.383*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO21NLL	4287.490	76504.000
AO21NLLP	6154.350	124747.000
AO21NLLX4	10964.000	232889.000
AO21NLLX6	21908.400	465332.000
AO21NLLX8	15817.400	340000.000

Internal Energy at minimum output load

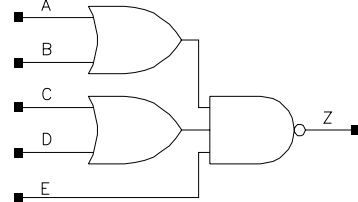
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO21NLL	Z(max)	0.019 + 0.006*Tr
AO21NLLP	Z(max)	0.030 + 0.012*Tr
AO21NLLX4	Z(max)	0.058 + 0.026*Tr
AO21NLLX6	Z(max)	0.119 + 0.052*Tr
AO21NLLX8	Z(max)	0.087 + 0.039*Tr

AO23LL
AO23LLP
AO23LLX4
AO23LLX6
AO23LLX8

Function: Function = 3 wide 1-2-2 OR-AND-INVERT

Boolean Expression: $Z = \overline{((A + B) \bullet (C + D) \bullet E)}$



Physical Dimensions

Property	AO23LL	AO23LLP	AO23LLX4	AO23LLX6	AO23LLX8
Area(um2)	14.120	18.155	32.275	42.361	56.482

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO23LL	A Input Cap.	0.0031	0.0028	0.0029
AO23LL	D Input Cap.	0.0031	0.0028	0.0029
AO23LL	B Input Cap.	0.0028	0.0026	0.0027
AO23LL	E Input Cap.	0.0027	0.0024	0.0025
AO23LL	C Input Cap.	0.0029	0.0027	0.0028
AO23LL	Z Max Load	0.160	0.160	0.160
AO23LLP	A Input Cap.	0.0056	0.0051	0.0053
AO23LLP	D Input Cap.	0.0059	0.0055	0.0057
AO23LLP	B Input Cap.	0.0052	0.0048	0.0049
AO23LLP	E Input Cap.	0.0045	0.0042	0.0043
AO23LLP	C Input Cap.	0.0054	0.0050	0.0052
AO23LLP	Z Max Load	0.320	0.320	0.320
AO23LLX4	C Input Cap.	0.0111	0.0103	0.0107
AO23LLX4	Z Max Load	0.640	0.640	0.640
AO23LLX4	A Input Cap.	0.0132	0.0122	0.0125
AO23LLX4	D Input Cap.	0.0120	0.0112	0.0116
AO23LLX4	B Input Cap.	0.0110	0.0102	0.0105
AO23LLX4	E Input Cap.	0.0090	0.0083	0.0086

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO23LLX6	E Input Cap.	0.0129	0.0119	0.0123
AO23LLX6	C Input Cap.	0.0155	0.0143	0.0149
AO23LLX6	A Input Cap.	0.0165	0.0151	0.0156
AO23LLX6	D Input Cap.	0.0170	0.0158	0.0163
AO23LLX6	Z Max Load	0.960	0.960	0.960
AO23LLX6	B Input Cap.	0.0148	0.0135	0.0140
AO23LLX8	D Input Cap.	0.0225	0.0209	0.0216
AO23LLX8	B Input Cap.	0.0196	0.0179	0.0185
AO23LLX8	E Input Cap.	0.0174	0.0160	0.0165
AO23LLX8	C Input Cap.	0.0204	0.0188	0.0195
AO23LLX8	Z Max Load	1.280	1.280	1.280
AO23LLX8	A Input Cap.	0.0219	0.0199	0.0206

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO23LL	E-Z	E_Z (fall)	0.014 + 0.206*Tr + 1.810*C	0.120 + 0.220*Tr + 6.495*C	0.060 + 0.206*Tr + 3.780*C
AO23LL	E-Z	E_Z (rise)	0.032 + 0.333*Tr + 3.125*C	0.087 + 0.360*Tr + 6.575*C	0.053 + 0.349*Tr + 4.546*C
AO23LL	A-Z	A_Z (fall)	0.008 + 0.252*Tr + 2.199*C	0.071 + 0.296*Tr + 6.525*C	0.032 + 0.278*Tr + 3.873*C
AO23LL	A-Z	A_Z (rise)	0.023 + 0.234*Tr + 3.290*C	0.058 + 0.248*Tr + 7.195*C	0.034 + 0.243*Tr + 4.873*C
AO23LL	B-Z	B_Z (fall)	0.003 + 0.241*Tr + 2.241*C	0.053 + 0.288*Tr + 6.583*C	0.022 + 0.269*Tr + 3.923*C
AO23LL	B-Z	B_Z (rise)	0.015 + 0.297*Tr + 3.355*C	0.038 + 0.307*Tr + 7.256*C	0.021 + 0.303*Tr + 4.956*C
AO23LL	C-Z	C_Z (fall)	0.013 + 0.234*Tr + 2.193*C	0.081 + 0.255*Tr + 6.558*C	0.038 + 0.242*Tr + 3.870*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO23LL	C-Z	C_Z (rise)	0.026 + 0.304*Tr + 3.326*C	0.070 + 0.317*Tr + 7.181*C	0.042 + 0.312*Tr + 4.911*C
AO23LL	D-Z	D_Z (fall)	0.017 + 0.245*Tr + 2.153*C	0.100 + 0.263*Tr + 6.509*C	0.049 + 0.250*Tr + 3.823*C
AO23LL	D-Z	D_Z (rise)	0.035 + 0.238*Tr + 3.272*C	0.094 + 0.255*Tr + 7.146*C	0.057 + 0.250*Tr + 4.844*C
AO23LLP	E-Z	E_Z (fall)	0.010 + 0.205*Tr + 0.922*C	0.108 + 0.217*Tr + 3.142*C	0.053 + 0.205*Tr + 1.870*C
AO23LLP	E-Z	E_Z (rise)	0.025 + 0.326*Tr + 1.535*C	0.074 + 0.352*Tr + 3.144*C	0.044 + 0.342*Tr + 2.202*C
AO23LLP	A-Z	A_Z (fall)	0.004 + 0.253*Tr + 1.114*C	0.060 + 0.293*Tr + 3.168*C	0.025 + 0.276*Tr + 1.922*C
AO23LLP	A-Z	A_Z (rise)	0.018 + 0.225*Tr + 1.603*C	0.049 + 0.238*Tr + 3.450*C	0.027 + 0.235*Tr + 2.357*C
AO23LLP	B-Z	B_Z (fall)	-0.002 + 0.240*Tr + 1.141*C	0.043 + 0.283*Tr + 3.205*C	0.015 + 0.266*Tr + 1.954*C
AO23LLP	B-Z	B_Z (rise)	0.009 + 0.288*Tr + 1.643*C	0.027 + 0.297*Tr + 3.495*C	0.012 + 0.293*Tr + 2.411*C
AO23LLP	C-Z	C_Z (fall)	0.008 + 0.234*Tr + 1.115*C	0.074 + 0.253*Tr + 3.184*C	0.033 + 0.241*Tr + 1.920*C
AO23LLP	C-Z	C_Z (rise)	0.021 + 0.296*Tr + 1.623*C	0.061 + 0.309*Tr + 3.444*C	0.035 + 0.304*Tr + 2.376*C
AO23LLP	D-Z	D_Z (fall)	0.013 + 0.246*Tr + 1.092*C	0.092 + 0.261*Tr + 3.155*C	0.043 + 0.249*Tr + 1.894*C
AO23LLP	D-Z	D_Z (rise)	0.030 + 0.231*Tr + 1.589*C	0.083 + 0.247*Tr + 3.414*C	0.049 + 0.243*Tr + 2.333*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO23LLX4	E-Z	E_Z (fall)	0.014 + 0.196*Tr + 0.461*C	0.110 + 0.214*Tr + 1.572*C	0.056 + 0.201*Tr + 0.935*C
AO23LLX4	E-Z	E_Z (rise)	0.028 + 0.321*Tr + 0.768*C	0.078 + 0.349*Tr + 1.573*C	0.048 + 0.338*Tr + 1.101*C
AO23LLX4	A-Z	A_Z (fall)	0.009 + 0.244*Tr + 0.558*C	0.066 + 0.288*Tr + 1.586*C	0.031 + 0.269*Tr + 0.962*C
AO23LLX4	A-Z	A_Z (rise)	0.021 + 0.221*Tr + 0.803*C	0.055 + 0.234*Tr + 1.728*C	0.032 + 0.229*Tr + 1.180*C
AO23LLX4	B-Z	B_Z (fall)	0.003 + 0.230*Tr + 0.571*C	0.047 + 0.278*Tr + 1.603*C	0.020 + 0.259*Tr + 0.977*C
AO23LLX4	B-Z	B_Z (rise)	0.012 + 0.282*Tr + 0.822*C	0.032 + 0.292*Tr + 1.749*C	0.017 + 0.286*Tr + 1.206*C
AO23LLX4	C-Z	C_Z (fall)	0.012 + 0.225*Tr + 0.557*C	0.078 + 0.249*Tr + 1.593*C	0.038 + 0.235*Tr + 0.960*C
AO23LLX4	C-Z	C_Z (rise)	0.024 + 0.291*Tr + 0.811*C	0.066 + 0.305*Tr + 1.722*C	0.039 + 0.299*Tr + 1.188*C
AO23LLX4	D-Z	D_Z (fall)	0.017 + 0.237*Tr + 0.546*C	0.095 + 0.257*Tr + 1.578*C	0.047 + 0.244*Tr + 0.947*C
AO23LLX4	D-Z	D_Z (rise)	0.031 + 0.229*Tr + 0.794*C	0.086 + 0.245*Tr + 1.707*C	0.052 + 0.240*Tr + 1.167*C
AO23LLX6	E-Z	E_Z (fall)	0.012 + 0.194*Tr + 0.310*C	0.106 + 0.212*Tr + 1.050*C	0.053 + 0.200*Tr + 0.625*C
AO23LLX6	E-Z	E_Z (rise)	0.025 + 0.315*Tr + 0.505*C	0.071 + 0.341*Tr + 1.023*C	0.043 + 0.330*Tr + 0.721*C
AO23LLX6	A-Z	A_Z (fall)	0.006 + 0.242*Tr + 0.374*C	0.062 + 0.285*Tr + 1.060*C	0.028 + 0.267*Tr + 0.644*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO23LLX6	A-Z	A_Z (rise)	0.019 + 0.220*Tr + 0.536*C	0.050 + 0.231*Tr + 1.155*C	0.028 + 0.227*Tr + 0.789*C
AO23LLX6	B-Z	B_Z (fall)	0.000 + 0.228*Tr + 0.383*C	0.044 + 0.274*Tr + 1.073*C	0.017 + 0.256*Tr + 0.656*C
AO23LLX6	B-Z	B_Z (rise)	0.010 + 0.279*Tr + 0.551*C	0.028 + 0.287*Tr + 1.171*C	0.014 + 0.282*Tr + 0.808*C
AO23LLX6	C-Z	C_Z (fall)	0.010 + 0.222*Tr + 0.375*C	0.074 + 0.245*Tr + 1.065*C	0.034 + 0.232*Tr + 0.643*C
AO23LLX6	C-Z	C_Z (rise)	0.021 + 0.288*Tr + 0.543*C	0.061 + 0.300*Tr + 1.152*C	0.035 + 0.295*Tr + 0.796*C
AO23LLX6	D-Z	D_Z (fall)	0.014 + 0.235*Tr + 0.366*C	0.092 + 0.254*Tr + 1.055*C	0.044 + 0.242*Tr + 0.634*C
AO23LLX6	D-Z	D_Z (rise)	0.029 + 0.226*Tr + 0.531*C	0.082 + 0.241*Tr + 1.141*C	0.049 + 0.237*Tr + 0.780*C
AO23LLX8	E-Z	E_Z (fall)	0.013 + 0.192*Tr + 0.232*C	0.108 + 0.212*Tr + 0.788*C	0.055 + 0.199*Tr + 0.469*C
AO23LLX8	E-Z	E_Z (rise)	0.026 + 0.316*Tr + 0.381*C	0.074 + 0.343*Tr + 0.776*C	0.045 + 0.332*Tr + 0.545*C
AO23LLX8	A-Z	A_Z (fall)	0.008 + 0.241*Tr + 0.280*C	0.063 + 0.285*Tr + 0.795*C	0.029 + 0.267*Tr + 0.483*C
AO23LLX8	A-Z	A_Z (rise)	0.019 + 0.219*Tr + 0.403*C	0.051 + 0.231*Tr + 0.866*C	0.029 + 0.227*Tr + 0.592*C
AO23LLX8	B-Z	B_Z (fall)	0.002 + 0.226*Tr + 0.287*C	0.045 + 0.274*Tr + 0.805*C	0.019 + 0.255*Tr + 0.491*C
AO23LLX8	B-Z	B_Z (rise)	0.011 + 0.279*Tr + 0.413*C	0.029 + 0.287*Tr + 0.878*C	0.015 + 0.282*Tr + 0.606*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO23LLX8	C-Z	C_Z (fall)	0.011 + 0.221*Tr + 0.281*C	0.075 + 0.245*Tr + 0.799*C	0.036 + 0.231*Tr + 0.483*C
AO23LLX8	C-Z	C_Z (rise)	0.022 + 0.288*Tr + 0.407*C	0.063 + 0.301*Tr + 0.864*C	0.037 + 0.295*Tr + 0.597*C
AO23LLX8	D-Z	D_Z (fall)	0.016 + 0.234*Tr + 0.275*C	0.093 + 0.254*Tr + 0.792*C	0.046 + 0.241*Tr + 0.476*C
AO23LLX8	D-Z	D_Z (rise)	0.030 + 0.226*Tr + 0.399*C	0.084 + 0.242*Tr + 0.856*C	0.050 + 0.237*Tr + 0.585*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO23LL	3340.090	71914.900
AO23LLP	5962.500	134631.000
AO23LLX4	11925.000	269262.000
AO23LLX6	17874.800	403667.000
AO23LLX8	23831.100	538117.000

Internal Energy at minimum output load

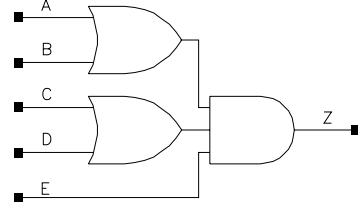
uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO23LL	Z(max)	0.019 + 0.007*Tr
AO23LLP	Z(max)	0.034 + 0.015*Tr
AO23LLX4	Z(max)	0.067 + 0.031*Tr
AO23LLX6	Z(max)	0.096 + 0.048*Tr
AO23LLX8	Z(max)	0.129 + 0.064*Tr

AO23NLL
AO23NLLP
AO23NLLX4
AO23NLLX6
AO23NLLX8

Function: Function = 3 wide 1-2-2 OR-AND

Boolean Expression: $Z = ((A + B) \bullet (C + D) \bullet E)$



Physical Dimensions

Property	AO23NLL	AO23NLLP	AO23NLLX4	AO23NLLX6	AO23NLLX8
Area(um2)	16.138	18.155	22.189	38.327	40.344

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO23NLL	C Input Cap.	0.0019	0.0016	0.0017
AO23NLL	A Input Cap.	0.0020	0.0016	0.0017
AO23NLL	D Input Cap.	0.0019	0.0017	0.0018
AO23NLL	Z Max Load	0.160	0.160	0.160
AO23NLL	B Input Cap.	0.0018	0.0015	0.0016
AO23NLL	E Input Cap.	0.0017	0.0015	0.0015
AO23NLLP	A Input Cap.	0.0034	0.0030	0.0031
AO23NLLP	D Input Cap.	0.0036	0.0032	0.0033
AO23NLLP	Z Max Load	0.320	0.320	0.320
AO23NLLP	B Input Cap.	0.0034	0.0028	0.0030
AO23NLLP	E Input Cap.	0.0036	0.0031	0.0032
AO23NLLP	C Input Cap.	0.0036	0.0032	0.0033
AO23NLLX4	D Input Cap.	0.0062	0.0056	0.0058
AO23NLLX4	Z Max Load	0.640	0.640	0.640
AO23NLLX4	B Input Cap.	0.0061	0.0052	0.0053
AO23NLLX4	E Input Cap.	0.0048	0.0042	0.0044
AO23NLLX4	C Input Cap.	0.0060	0.0053	0.0055
AO23NLLX4	A Input Cap.	0.0063	0.0054	0.0056

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO23NLLX6	C Input Cap.	0.0086	0.0075	0.0078
AO23NLLX6	Z Max Load	0.960	0.960	0.960
AO23NLLX6	A Input Cap.	0.0095	0.0082	0.0085
AO23NLLX6	D Input Cap.	0.0095	0.0085	0.0088
AO23NLLX6	B Input Cap.	0.0089	0.0074	0.0077
AO23NLLX6	E Input Cap.	0.0070	0.0062	0.0064
AO23NLLX8	E Input Cap.	0.0092	0.0080	0.0084
AO23NLLX8	C Input Cap.	0.0115	0.0101	0.0105
AO23NLLX8	A Input Cap.	0.0129	0.0111	0.0115
AO23NLLX8	D Input Cap.	0.0126	0.0113	0.0118
AO23NLLX8	Z Max Load	1.280	1.280	1.280
AO23NLLX8	B Input Cap.	0.0118	0.0099	0.0103

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO23NLL	E-Z	E_Z (fall)	0.104 + 0.330*Tr + 1.270*C	0.269 + 0.368*Tr + 3.025*C	0.173 + 0.352*Tr + 1.928*C
AO23NLL	E-Z	E_Z (rise)	0.065 + 0.162*Tr + 1.646*C	0.257 + 0.202*Tr + 3.571*C	0.144 + 0.183*Tr + 2.402*C
AO23NLL	A-Z	A_Z (fall)	0.086 + 0.237*Tr + 1.278*C	0.221 + 0.251*Tr + 2.921*C	0.141 + 0.244*Tr + 1.872*C
AO23NLL	A-Z	A_Z (rise)	0.065 + 0.206*Tr + 1.638*C	0.212 + 0.270*Tr + 3.556*C	0.124 + 0.241*Tr + 2.390*C
AO23NLL	B-Z	B_Z (fall)	0.085 + 0.283*Tr + 1.272*C	0.208 + 0.302*Tr + 2.910*C	0.136 + 0.292*Tr + 1.867*C
AO23NLL	B-Z	B_Z (rise)	0.060 + 0.187*Tr + 1.638*C	0.193 + 0.255*Tr + 3.539*C	0.115 + 0.225*Tr + 2.385*C
AO23NLL	C-Z	C_Z (fall)	0.101 + 0.297*Tr + 1.283*C	0.248 + 0.320*Tr + 2.942*C	0.161 + 0.309*Tr + 1.883*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO23NLL	C-Z	C_Z (rise)	0.071 + 0.186*Tr + 1.653*C	0.224 + 0.233*Tr + 3.556*C	0.129 + 0.210*Tr + 2.397*C
AO23NLL	D-Z	D_Z (fall)	0.102 + 0.246*Tr + 1.287*C	0.259 + 0.262*Tr + 2.950*C	0.165 + 0.256*Tr + 1.886*C
AO23NLL	D-Z	D_Z (rise)	0.073 + 0.204*Tr + 1.654*C	0.241 + 0.244*Tr + 3.568*C	0.138 + 0.222*Tr + 2.399*C
AO23NLLP	E-Z	E_Z (fall)	0.095 + 0.314*Tr + 0.645*C	0.237 + 0.356*Tr + 1.491*C	0.155 + 0.338*Tr + 0.967*C
AO23NLLP	E-Z	E_Z (rise)	0.062 + 0.169*Tr + 0.809*C	0.245 + 0.209*Tr + 1.731*C	0.138 + 0.191*Tr + 1.170*C
AO23NLLP	A-Z	A_Z (fall)	0.078 + 0.226*Tr + 0.649*C	0.197 + 0.242*Tr + 1.442*C	0.126 + 0.234*Tr + 0.939*C
AO23NLLP	A-Z	A_Z (rise)	0.061 + 0.216*Tr + 0.804*C	0.199 + 0.278*Tr + 1.721*C	0.118 + 0.249*Tr + 1.164*C
AO23NLLP	B-Z	B_Z (fall)	0.077 + 0.269*Tr + 0.646*C	0.186 + 0.290*Tr + 1.438*C	0.122 + 0.279*Tr + 0.937*C
AO23NLLP	B-Z	B_Z (rise)	0.057 + 0.196*Tr + 0.804*C	0.181 + 0.262*Tr + 1.713*C	0.108 + 0.233*Tr + 1.161*C
AO23NLLP	C-Z	C_Z (fall)	0.089 + 0.282*Tr + 0.650*C	0.215 + 0.307*Tr + 1.450*C	0.141 + 0.295*Tr + 0.942*C
AO23NLLP	C-Z	C_Z (rise)	0.065 + 0.194*Tr + 0.812*C	0.204 + 0.239*Tr + 1.720*C	0.119 + 0.217*Tr + 1.167*C
AO23NLLP	D-Z	D_Z (fall)	0.091 + 0.233*Tr + 0.653*C	0.229 + 0.252*Tr + 1.454*C	0.147 + 0.244*Tr + 0.944*C
AO23NLLP	D-Z	D_Z (rise)	0.069 + 0.212*Tr + 0.812*C	0.225 + 0.251*Tr + 1.728*C	0.130 + 0.230*Tr + 1.169*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO23NLLX4	E-Z	E_Z (fall)	0.087 + 0.305*Tr + 0.319*C	0.215 + 0.348*Tr + 0.736*C	0.140 + 0.327*Tr + 0.460*C
AO23NLLX4	E-Z	E_Z (rise)	0.058 + 0.168*Tr + 0.404*C	0.225 + 0.207*Tr + 0.859*C	0.128 + 0.191*Tr + 0.583*C
AO23NLLX4	A-Z	A_Z (fall)	0.071 + 0.216*Tr + 0.322*C	0.182 + 0.232*Tr + 0.714*C	0.116 + 0.224*Tr + 0.465*C
AO23NLLX4	A-Z	A_Z (rise)	0.058 + 0.216*Tr + 0.401*C	0.186 + 0.275*Tr + 0.855*C	0.111 + 0.248*Tr + 0.580*C
AO23NLLX4	B-Z	B_Z (fall)	0.070 + 0.258*Tr + 0.320*C	0.171 + 0.278*Tr + 0.711*C	0.112 + 0.267*Tr + 0.463*C
AO23NLLX4	B-Z	B_Z (rise)	0.053 + 0.195*Tr + 0.401*C	0.167 + 0.258*Tr + 0.851*C	0.101 + 0.231*Tr + 0.578*C
AO23NLLX4	C-Z	C_Z (fall)	0.083 + 0.272*Tr + 0.322*C	0.201 + 0.297*Tr + 0.717*C	0.129 + 0.281*Tr + 0.445*C
AO23NLLX4	C-Z	C_Z (rise)	0.062 + 0.193*Tr + 0.406*C	0.191 + 0.237*Tr + 0.856*C	0.112 + 0.216*Tr + 0.582*C
AO23NLLX4	D-Z	D_Z (fall)	0.084 + 0.225*Tr + 0.323*C	0.213 + 0.244*Tr + 0.720*C	0.134 + 0.234*Tr + 0.447*C
AO23NLLX4	D-Z	D_Z (rise)	0.065 + 0.213*Tr + 0.406*C	0.212 + 0.250*Tr + 0.859*C	0.123 + 0.230*Tr + 0.582*C
AO23NLLX6	E-Z	E_Z (fall)	0.084 + 0.301*Tr + 0.213*C	0.206 + 0.342*Tr + 0.491*C	0.135 + 0.322*Tr + 0.307*C
AO23NLLX6	E-Z	E_Z (rise)	0.058 + 0.169*Tr + 0.270*C	0.227 + 0.210*Tr + 0.576*C	0.129 + 0.193*Tr + 0.390*C
AO23NLLX6	A-Z	A_Z (fall)	0.071 + 0.217*Tr + 0.215*C	0.180 + 0.233*Tr + 0.479*C	0.115 + 0.225*Tr + 0.312*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO23NLLX6	A-Z	A_Z (rise)	0.058 + 0.216*Tr + 0.268*C	0.187 + 0.276*Tr + 0.573*C	0.111 + 0.249*Tr + 0.388*C
AO23NLLX6	B-Z	B_Z (fall)	0.070 + 0.259*Tr + 0.214*C	0.169 + 0.279*Tr + 0.477*C	0.111 + 0.268*Tr + 0.311*C
AO23NLLX6	B-Z	B_Z (rise)	0.053 + 0.195*Tr + 0.268*C	0.168 + 0.259*Tr + 0.570*C	0.101 + 0.231*Tr + 0.387*C
AO23NLLX6	C-Z	C_Z (fall)	0.083 + 0.273*Tr + 0.216*C	0.199 + 0.297*Tr + 0.481*C	0.128 + 0.282*Tr + 0.298*C
AO23NLLX6	C-Z	C_Z (rise)	0.062 + 0.193*Tr + 0.271*C	0.193 + 0.237*Tr + 0.573*C	0.113 + 0.216*Tr + 0.389*C
AO23NLLX6	D-Z	D_Z (fall)	0.084 + 0.226*Tr + 0.216*C	0.207 + 0.243*Tr + 0.459*C	0.133 + 0.235*Tr + 0.299*C
AO23NLLX6	D-Z	D_Z (rise)	0.065 + 0.212*Tr + 0.271*C	0.214 + 0.250*Tr + 0.576*C	0.123 + 0.230*Tr + 0.390*C
AO23NLLX8	E-Z	E_Z (fall)	0.085 + 0.304*Tr + 0.160*C	0.209 + 0.346*Tr + 0.370*C	0.136 + 0.325*Tr + 0.231*C
AO23NLLX8	E-Z	E_Z (rise)	0.057 + 0.166*Tr + 0.203*C	0.219 + 0.206*Tr + 0.432*C	0.125 + 0.190*Tr + 0.293*C
AO23NLLX8	A-Z	A_Z (fall)	0.070 + 0.215*Tr + 0.162*C	0.177 + 0.231*Tr + 0.359*C	0.114 + 0.223*Tr + 0.234*C
AO23NLLX8	A-Z	A_Z (rise)	0.057 + 0.215*Tr + 0.201*C	0.182 + 0.273*Tr + 0.429*C	0.109 + 0.247*Tr + 0.291*C
AO23NLLX8	B-Z	B_Z (fall)	0.069 + 0.257*Tr + 0.161*C	0.166 + 0.277*Tr + 0.357*C	0.109 + 0.266*Tr + 0.233*C
AO23NLLX8	B-Z	B_Z (rise)	0.052 + 0.194*Tr + 0.201*C	0.163 + 0.256*Tr + 0.427*C	0.099 + 0.230*Tr + 0.290*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO23NLLX8	C-Z	C_Z (fall)	0.081 + 0.271*Tr + 0.162*C	0.195 + 0.295*Tr + 0.360*C	0.126 + 0.280*Tr + 0.223*C
AO23NLLX8	C-Z	C_Z (rise)	0.060 + 0.192*Tr + 0.203*C	0.186 + 0.235*Tr + 0.429*C	0.110 + 0.215*Tr + 0.292*C
AO23NLLX8	D-Z	D_Z (fall)	0.082 + 0.224*Tr + 0.162*C	0.203 + 0.241*Tr + 0.344*C	0.131 + 0.233*Tr + 0.224*C
AO23NLLX8	D-Z	D_Z (rise)	0.064 + 0.212*Tr + 0.203*C	0.206 + 0.248*Tr + 0.431*C	0.120 + 0.229*Tr + 0.292*C

Average Leakage Power

picoWatts

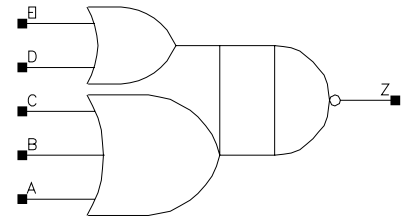
Cell	bc_1.32V_25C	bc_1.32V_125C
AO23NLL	3913.430	78409.900
AO23NLLP	6425.890	138819.000
AO23NLLX4	12134.100	268404.000
AO23NLLX6	18467.400	405083.000
AO23NLLX8	24267.900	536810.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO23NLL	Z(max)	0.020 + 0.006*Tr
AO23NLLP	Z(max)	0.037 + 0.013*Tr
AO23NLLX4	Z(max)	0.068 + 0.027*Tr
AO23NLLX6	Z(max)	0.102 + 0.041*Tr
AO23NLLX8	Z(max)	0.134 + 0.055*Tr

AO35LL
AO35LLP
AO35LLX4
AO35LLX6
AO35LLX8



Function: Function = 2 wide 2-3 OR-AND-INVERT

Truth Table

A	B	C	D	E	Z
-	1	-	-	1	0
-	1	-	1	-	0
-	-	1	1	-	0
-	-	1	-	1	0
1	-	-	1	-	0
1	-	-	-	1	0
0	0	0	-	-	1
-	-	-	0	0	1

Physical Dimensions

Property	AO35LL	AO35LLP	AO35LLX4	AO35LLX6	AO35LLX8
Area(um ²)	12.103	16.138	28.241	36.310	46.396

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO35LL	D Input Cap.	0.0023	0.0021	0.0022
AO35LL	B Input Cap.	0.0027	0.0025	0.0026
AO35LL	E Input Cap.	0.0022	0.0020	0.0021
AO35LL	C Input Cap.	0.0024	0.0022	0.0023
AO35LL	A Input Cap.	0.0028	0.0026	0.0027
AO35LL	Z Max Load	0.160	0.160	0.160
AO35LLP	C Input Cap.	0.0043	0.0040	0.0042

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO35LLP	A Input Cap.	0.0052	0.0048	0.0049
AO35LLP	Z Max Load	0.320	0.320	0.320
AO35LLP	D Input Cap.	0.0040	0.0036	0.0038
AO35LLP	B Input Cap.	0.0049	0.0045	0.0046
AO35LLP	E Input Cap.	0.0035	0.0032	0.0033
AO35LLX4	B Input Cap.	0.0099	0.0092	0.0095
AO35LLX4	E Input Cap.	0.0069	0.0063	0.0065
AO35LLX4	C Input Cap.	0.0086	0.0079	0.0082
AO35LLX4	A Input Cap.	0.0106	0.0098	0.0101
AO35LLX4	Z Max Load	0.640	0.640	0.640
AO35LLX4	D Input Cap.	0.0080	0.0073	0.0075
AO35LLX6	A Input Cap.	0.0154	0.0143	0.0147
AO35LLX6	D Input Cap.	0.0118	0.0107	0.0111
AO35LLX6	B Input Cap.	0.0150	0.0140	0.0144
AO35LLX6	E Input Cap.	0.0105	0.0095	0.0099
AO35LLX6	Z Max Load	0.960	0.960	0.960
AO35LLX6	C Input Cap.	0.0134	0.0125	0.0129
AO35LLX8	C Input Cap.	0.0179	0.0167	0.0172
AO35LLX8	A Input Cap.	0.0208	0.0192	0.0199
AO35LLX8	Z Max Load	1.280	1.280	1.280
AO35LLX8	D Input Cap.	0.0152	0.0138	0.0143
AO35LLX8	B Input Cap.	0.0202	0.0188	0.0194
AO35LLX8	E Input Cap.	0.0137	0.0125	0.0129

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO35LL	E-Z	E_Z (fall)	0.002 + 0.256*Tr + 2.606*C	0.081 + 0.318*Tr + 8.359*C	0.038 + 0.297*Tr + 4.971*C
AO35LL	E-Z	E_Z (rise)	0.016 + 0.304*Tr + 4.498*C	0.041 + 0.314*Tr + 9.807*C	0.023 + 0.308*Tr + 6.661*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO35LL	A-Z	A_Z (fall)	0.020 + 0.266*Tr + 2.459*C	0.114 + 0.277*Tr + 8.016*C	0.058 + 0.261*Tr + 4.707*C
AO35LL	A-Z	A_Z (rise)	0.044 + 0.192*Tr + 4.497*C	0.119 + 0.207*Tr + 10.060*C	0.072 + 0.203*Tr + 6.715*C
AO35LL	B-Z	B_Z (fall)	0.016 + 0.258*Tr + 2.481*C	0.097 + 0.271*Tr + 8.027*C	0.049 + 0.255*Tr + 4.727*C
AO35LL	B-Z	B_Z (rise)	0.037 + 0.248*Tr + 4.531*C	0.098 + 0.253*Tr + 10.089*C	0.059 + 0.254*Tr + 6.757*C
AO35LL	C-Z	C_Z (fall)	0.010 + 0.249*Tr + 2.516*C	0.074 + 0.265*Tr + 8.077*C	0.036 + 0.248*Tr + 4.769*C
AO35LL	C-Z	C_Z (rise)	0.024 + 0.297*Tr + 4.555*C	0.063 + 0.303*Tr + 10.093*C	0.038 + 0.301*Tr + 6.789*C
AO35LL	D-Z	D_Z (fall)	0.005 + 0.262*Tr + 2.453*C	0.091 + 0.320*Tr + 8.038*C	0.044 + 0.300*Tr + 4.778*C
AO35LL	D-Z	D_Z (rise)	0.023 + 0.240*Tr + 4.441*C	0.060 + 0.254*Tr + 9.763*C	0.035 + 0.248*Tr + 6.588*C
AO35LLP	E-Z	E_Z (fall)	-0.004 + 0.258*Tr + 1.308*C	0.072 + 0.317*Tr + 4.041*C	0.033 + 0.298*Tr + 2.470*C
AO35LLP	E-Z	E_Z (rise)	0.009 + 0.294*Tr + 2.224*C	0.028 + 0.303*Tr + 4.753*C	0.013 + 0.298*Tr + 3.264*C
AO35LLP	A-Z	A_Z (fall)	0.019 + 0.274*Tr + 1.280*C	0.115 + 0.281*Tr + 4.004*C	0.059 + 0.268*Tr + 2.410*C
AO35LLP	A-Z	A_Z (rise)	0.042 + 0.181*Tr + 2.197*C	0.114 + 0.197*Tr + 4.842*C	0.068 + 0.193*Tr + 3.255*C
AO35LLP	B-Z	B_Z (fall)	0.014 + 0.265*Tr + 1.293*C	0.096 + 0.275*Tr + 4.009*C	0.049 + 0.261*Tr + 2.422*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO35LLP	B-Z	B_Z (rise)	0.033 + 0.237*Tr + 2.217*C	0.091 + 0.242*Tr + 4.860*C	0.054 + 0.243*Tr + 3.280*C
AO35LLP	C-Z	C_Z (fall)	0.006 + 0.255*Tr + 1.316*C	0.070 + 0.268*Tr + 4.040*C	0.033 + 0.253*Tr + 2.448*C
AO35LLP	C-Z	C_Z (rise)	0.019 + 0.285*Tr + 2.235*C	0.053 + 0.291*Tr + 4.867*C	0.030 + 0.290*Tr + 3.302*C
AO35LLP	D-Z	D_Z (fall)	0.002 + 0.269*Tr + 1.285*C	0.090 + 0.323*Tr + 4.014*C	0.043 + 0.305*Tr + 2.446*C
AO35LLP	D-Z	D_Z (rise)	0.019 + 0.229*Tr + 2.189*C	0.051 + 0.244*Tr + 4.720*C	0.028 + 0.238*Tr + 3.218*C
AO35LLX4	E-Z	E_Z (fall)	-0.001 + 0.247*Tr + 0.657*C	0.071 + 0.313*Tr + 2.025*C	0.034 + 0.292*Tr + 1.238*C
AO35LLX4	E-Z	E_Z (rise)	0.010 + 0.289*Tr + 1.115*C	0.027 + 0.298*Tr + 2.383*C	0.013 + 0.292*Tr + 1.637*C
AO35LLX4	A-Z	A_Z (fall)	0.020 + 0.267*Tr + 0.641*C	0.112 + 0.279*Tr + 2.004*C	0.059 + 0.264*Tr + 1.207*C
AO35LLX4	A-Z	A_Z (rise)	0.040 + 0.180*Tr + 1.099*C	0.111 + 0.195*Tr + 2.422*C	0.066 + 0.192*Tr + 1.627*C
AO35LLX4	B-Z	B_Z (fall)	0.016 + 0.257*Tr + 0.648*C	0.094 + 0.273*Tr + 2.007*C	0.049 + 0.257*Tr + 1.213*C
AO35LLX4	B-Z	B_Z (rise)	0.032 + 0.234*Tr + 1.110*C	0.088 + 0.240*Tr + 2.432*C	0.052 + 0.240*Tr + 1.642*C
AO35LLX4	C-Z	C_Z (fall)	0.009 + 0.245*Tr + 0.660*C	0.069 + 0.264*Tr + 2.024*C	0.035 + 0.248*Tr + 1.227*C
AO35LLX4	C-Z	C_Z (rise)	0.019 + 0.282*Tr + 1.119*C	0.051 + 0.288*Tr + 2.437*C	0.030 + 0.286*Tr + 1.654*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO35LLX4	D-Z	D_Z (fall)	0.005 + 0.259*Tr + 0.644*C	0.088 + 0.320*Tr + 2.011*C	0.044 + 0.300*Tr + 1.226*C
AO35LLX4	D-Z	D_Z (rise)	0.018 + 0.226*Tr + 1.097*C	0.049 + 0.240*Tr + 2.364*C	0.028 + 0.236*Tr + 1.610*C
AO35LLX6	E-Z	E_Z (fall)	-0.002 + 0.245*Tr + 0.443*C	0.069 + 0.308*Tr + 1.336*C	0.033 + 0.288*Tr + 0.825*C
AO35LLX6	E-Z	E_Z (rise)	0.009 + 0.283*Tr + 0.745*C	0.027 + 0.293*Tr + 1.592*C	0.013 + 0.286*Tr + 1.095*C
AO35LLX6	A-Z	A_Z (fall)	0.019 + 0.266*Tr + 0.432*C	0.108 + 0.277*Tr + 1.321*C	0.057 + 0.262*Tr + 0.803*C
AO35LLX6	A-Z	A_Z (rise)	0.040 + 0.178*Tr + 0.734*C	0.110 + 0.193*Tr + 1.616*C	0.065 + 0.189*Tr + 1.086*C
AO35LLX6	B-Z	B_Z (fall)	0.014 + 0.256*Tr + 0.436*C	0.091 + 0.270*Tr + 1.324*C	0.047 + 0.255*Tr + 0.808*C
AO35LLX6	B-Z	B_Z (rise)	0.031 + 0.231*Tr + 0.741*C	0.088 + 0.236*Tr + 1.624*C	0.051 + 0.237*Tr + 1.097*C
AO35LLX6	C-Z	C_Z (fall)	0.008 + 0.244*Tr + 0.445*C	0.067 + 0.261*Tr + 1.336*C	0.033 + 0.245*Tr + 0.817*C
AO35LLX6	C-Z	C_Z (rise)	0.019 + 0.276*Tr + 0.748*C	0.052 + 0.283*Tr + 1.627*C	0.030 + 0.281*Tr + 1.105*C
AO35LLX6	D-Z	D_Z (fall)	0.003 + 0.257*Tr + 0.434*C	0.085 + 0.316*Tr + 1.326*C	0.042 + 0.296*Tr + 0.817*C
AO35LLX6	D-Z	D_Z (rise)	0.017 + 0.223*Tr + 0.732*C	0.048 + 0.236*Tr + 1.579*C	0.027 + 0.230*Tr + 1.077*C
AO35LLX8	E-Z	E_Z (fall)	-0.001 + 0.244*Tr + 0.333*C	0.070 + 0.310*Tr + 1.010*C	0.034 + 0.289*Tr + 0.622*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO35LLX8	E-Z	E_Z (rise)	0.009 + 0.282*Tr + 0.554*C	0.026 + 0.291*Tr + 1.177*C	0.012 + 0.284*Tr + 0.811*C
AO35LLX8	A-Z	A_Z (fall)	0.020 + 0.265*Tr + 0.324*C	0.110 + 0.278*Tr + 0.998*C	0.057 + 0.263*Tr + 0.605*C
AO35LLX8	A-Z	A_Z (rise)	0.039 + 0.178*Tr + 0.551*C	0.109 + 0.193*Tr + 1.213*C	0.065 + 0.189*Tr + 0.815*C
AO35LLX8	B-Z	B_Z (fall)	0.015 + 0.255*Tr + 0.328*C	0.092 + 0.270*Tr + 1.000*C	0.048 + 0.255*Tr + 0.609*C
AO35LLX8	B-Z	B_Z (rise)	0.031 + 0.231*Tr + 0.556*C	0.086 + 0.237*Tr + 1.219*C	0.051 + 0.237*Tr + 0.823*C
AO35LLX8	C-Z	C_Z (fall)	0.008 + 0.242*Tr + 0.334*C	0.068 + 0.261*Tr + 1.009*C	0.034 + 0.246*Tr + 0.616*C
AO35LLX8	C-Z	C_Z (rise)	0.018 + 0.277*Tr + 0.562*C	0.051 + 0.283*Tr + 1.222*C	0.030 + 0.281*Tr + 0.830*C
AO35LLX8	D-Z	D_Z (fall)	0.004 + 0.257*Tr + 0.326*C	0.086 + 0.318*Tr + 1.002*C	0.043 + 0.298*Tr + 0.615*C
AO35LLX8	D-Z	D_Z (rise)	0.017 + 0.221*Tr + 0.544*C	0.047 + 0.234*Tr + 1.166*C	0.026 + 0.230*Tr + 0.796*C

Average Leakage Power

picoWatts

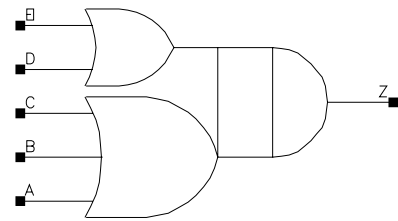
Cell	bc_1.32V_25C	bc_1.32V_125C
AO35LL	2972.200	58711.100
AO35LLP	4743.190	102461.000
AO35LLX4	9486.550	204917.000
AO35LLX6	13207.500	293395.000
AO35LLX8	17988.000	397147.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO35LL	Z(max)	$0.014 + 0.007 * Tr$
AO35LLP	Z(max)	$0.027 + 0.013 * Tr$
AO35LLX4	Z(max)	$0.052 + 0.028 * Tr$
AO35LLX6	Z(max)	$0.076 + 0.042 * Tr$
AO35LLX8	Z(max)	$0.101 + 0.057 * Tr$

AO35NLL
AO35NLLP
AO35NLLX4
AO35NLLX6
AO35NLLX8



Function: Function = 2 wide 2-3 OR-AND

Truth Table

A	B	C	D	E	Z
0	0	0	-	-	0
-	-	-	0	0	0
-	1	-	-	1	1
-	1	-	1	-	1
1	-	-	1	-	1
1	-	-	-	1	1
-	-	1	1	-	1
-	-	1	-	1	1

Physical Dimensions

Property	AO35NLL	AO35NLLP	AO35NLLX4	AO35NLLX6	AO35NLLX8
Area(um ²)	16.138	16.138	20.172	28.241	36.310

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO35NLL	E Input Cap.	0.0013	0.0011	0.0012
AO35NLL	Z Max Load	0.160	0.160	0.160
AO35NLL	C Input Cap.	0.0016	0.0014	0.0014
AO35NLL	A Input Cap.	0.0016	0.0014	0.0015
AO35NLL	D Input Cap.	0.0014	0.0011	0.0012
AO35NLL	B Input Cap.	0.0015	0.0013	0.0014
AO35NLLP	E Input Cap.	0.0022	0.0018	0.0019
AO35NLLP	Z Max Load	0.320	0.320	0.320

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO35NLLP	C Input Cap.	0.0027	0.0023	0.0024
AO35NLLP	A Input Cap.	0.0029	0.0026	0.0027
AO35NLLP	D Input Cap.	0.0024	0.0021	0.0022
AO35NLLP	B Input Cap.	0.0028	0.0025	0.0026
AO35NLLX4	D Input Cap.	0.0043	0.0037	0.0038
AO35NLLX4	B Input Cap.	0.0053	0.0048	0.0049
AO35NLLX4	E Input Cap.	0.0042	0.0035	0.0036
AO35NLLX4	Z Max Load	0.640	0.640	0.640
AO35NLLX4	C Input Cap.	0.0051	0.0044	0.0046
AO35NLLX4	A Input Cap.	0.0054	0.0049	0.0050
AO35NLLX6	A Input Cap.	0.0086	0.0077	0.0080
AO35NLLX6	Z Max Load	0.960	0.960	0.960
AO35NLLX6	D Input Cap.	0.0065	0.0056	0.0058
AO35NLLX6	B Input Cap.	0.0079	0.0071	0.0074
AO35NLLX6	E Input Cap.	0.0060	0.0050	0.0052
AO35NLLX6	C Input Cap.	0.0072	0.0063	0.0066
AO35NLLX8	E Input Cap.	0.0080	0.0066	0.0069
AO35NLLX8	Z Max Load	1.280	1.280	1.280
AO35NLLX8	C Input Cap.	0.0094	0.0083	0.0086
AO35NLLX8	A Input Cap.	0.0116	0.0105	0.0108
AO35NLLX8	D Input Cap.	0.0088	0.0076	0.0079
AO35NLLX8	B Input Cap.	0.0105	0.0094	0.0098

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO35NLL	E-Z	E_Z (fall)	0.092 + 0.299*Tr + 1.290°C	0.231 + 0.318*Tr + 3.017°C	0.154 + 0.310*Tr + 2.093°C
AO35NLL	E-Z	E_Z (rise)	0.057 + 0.182*Tr + 1.624°C	0.228 + 0.284*Tr + 3.562°C	0.133 + 0.247*Tr + 2.389°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO35NLL	A-Z	A_Z (fall)	0.124 + 0.211*Tr + 1.339*C	0.319 + 0.217*Tr + 3.071*C	0.201 + 0.215*Tr + 1.965*C
AO35NLL	A-Z	A_Z (rise)	0.077 + 0.220*Tr + 1.645*C	0.272 + 0.259*Tr + 3.586*C	0.153 + 0.234*Tr + 2.403*C
AO35NLL	B-Z	B_Z (fall)	0.119 + 0.258*Tr + 1.337*C	0.299 + 0.262*Tr + 3.068*C	0.191 + 0.262*Tr + 1.962*C
AO35NLL	B-Z	B_Z (rise)	0.073 + 0.205*Tr + 1.642*C	0.250 + 0.249*Tr + 3.559*C	0.142 + 0.223*Tr + 2.393*C
AO35NLL	C-Z	C_Z (fall)	0.110 + 0.298*Tr + 1.329*C	0.265 + 0.308*Tr + 3.055*C	0.173 + 0.303*Tr + 1.952*C
AO35NLL	C-Z	C_Z (rise)	0.067 + 0.188*Tr + 1.642*C	0.221 + 0.238*Tr + 3.540*C	0.127 + 0.211*Tr + 2.387*C
AO35NLL	D-Z	D_Z (fall)	0.094 + 0.251*Tr + 1.296*C	0.245 + 0.262*Tr + 3.025*C	0.159 + 0.256*Tr + 2.080*C
AO35NLL	D-Z	D_Z (rise)	0.061 + 0.201*Tr + 1.624*C	0.245 + 0.296*Tr + 3.573*C	0.141 + 0.260*Tr + 2.394*C
AO35NLLP	E-Z	E_Z (fall)	0.083 + 0.279*Tr + 0.652*C	0.204 + 0.302*Tr + 1.480*C	0.136 + 0.294*Tr + 1.048*C
AO35NLLP	E-Z	E_Z (rise)	0.054 + 0.196*Tr + 0.796*C	0.212 + 0.295*Tr + 1.720*C	0.127 + 0.261*Tr + 1.163*C
AO35NLLP	A-Z	A_Z (fall)	0.109 + 0.195*Tr + 0.675*C	0.280 + 0.207*Tr + 1.504*C	0.177 + 0.202*Tr + 0.977*C
AO35NLLP	A-Z	A_Z (rise)	0.073 + 0.235*Tr + 0.807*C	0.251 + 0.270*Tr + 1.732*C	0.144 + 0.247*Tr + 1.169*C
AO35NLLP	B-Z	B_Z (fall)	0.105 + 0.241*Tr + 0.674*C	0.262 + 0.249*Tr + 1.502*C	0.168 + 0.246*Tr + 0.975*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO35NLLP	B-Z	B_Z (rise)	0.069 + 0.219*Tr + 0.805*C	0.228 + 0.261*Tr + 1.716*C	0.133 + 0.236*Tr + 1.163*C
AO35NLLP	C-Z	C_Z (fall)	0.096 + 0.277*Tr + 0.670*C	0.230 + 0.291*Tr + 1.495*C	0.150 + 0.284*Tr + 0.970*C
AO35NLLP	C-Z	C_Z (rise)	0.062 + 0.202*Tr + 0.806*C	0.199 + 0.248*Tr + 1.707*C	0.118 + 0.224*Tr + 1.160*C
AO35NLLP	D-Z	D_Z (fall)	0.084 + 0.233*Tr + 0.655*C	0.217 + 0.250*Tr + 1.484*C	0.142 + 0.242*Tr + 1.040*C
AO35NLLP	D-Z	D_Z (rise)	0.058 + 0.215*Tr + 0.796*C	0.230 + 0.306*Tr + 1.727*C	0.136 + 0.274*Tr + 1.165*C
AO35NLLX4	E-Z	E_Z (fall)	0.080 + 0.267*Tr + 0.325*C	0.195 + 0.291*Tr + 0.736*C	0.129 + 0.277*Tr + 0.479*C
AO35NLLX4	E-Z	E_Z (rise)	0.054 + 0.207*Tr + 0.398*C	0.208 + 0.301*Tr + 0.859*C	0.126 + 0.270*Tr + 0.582*C
AO35NLLX4	A-Z	A_Z (fall)	0.104 + 0.185*Tr + 0.336*C	0.266 + 0.198*Tr + 0.748*C	0.168 + 0.193*Tr + 0.486*C
AO35NLLX4	A-Z	A_Z (rise)	0.073 + 0.246*Tr + 0.404*C	0.246 + 0.278*Tr + 0.865*C	0.144 + 0.256*Tr + 0.585*C
AO35NLLX4	B-Z	B_Z (fall)	0.100 + 0.229*Tr + 0.335*C	0.249 + 0.239*Tr + 0.748*C	0.160 + 0.235*Tr + 0.485*C
AO35NLLX4	B-Z	B_Z (rise)	0.068 + 0.230*Tr + 0.403*C	0.224 + 0.267*Tr + 0.858*C	0.132 + 0.245*Tr + 0.582*C
AO35NLLX4	C-Z	C_Z (fall)	0.092 + 0.264*Tr + 0.333*C	0.219 + 0.279*Tr + 0.743*C	0.144 + 0.272*Tr + 0.482*C
AO35NLLX4	C-Z	C_Z (rise)	0.062 + 0.212*Tr + 0.403*C	0.195 + 0.254*Tr + 0.853*C	0.117 + 0.232*Tr + 0.581*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO35NLLX4	D-Z	D_Z (fall)	0.081 + 0.223*Tr + 0.326*C	0.206 + 0.241*Tr + 0.738*C	0.134 + 0.230*Tr + 0.480*C
AO35NLLX4	D-Z	D_Z (rise)	0.058 + 0.226*Tr + 0.399*C	0.226 + 0.314*Tr + 0.862*C	0.136 + 0.283*Tr + 0.583*C
AO35NLLX6	E-Z	E_Z (fall)	0.079 + 0.267*Tr + 0.217*C	0.192 + 0.293*Tr + 0.494*C	0.127 + 0.277*Tr + 0.321*C
AO35NLLX6	E-Z	E_Z (rise)	0.054 + 0.206*Tr + 0.266*C	0.202 + 0.298*Tr + 0.573*C	0.124 + 0.268*Tr + 0.388*C
AO35NLLX6	A-Z	A_Z (fall)	0.103 + 0.185*Tr + 0.225*C	0.262 + 0.200*Tr + 0.501*C	0.166 + 0.194*Tr + 0.326*C
AO35NLLX6	A-Z	A_Z (rise)	0.072 + 0.245*Tr + 0.270*C	0.237 + 0.275*Tr + 0.577*C	0.140 + 0.255*Tr + 0.390*C
AO35NLLX6	B-Z	B_Z (fall)	0.098 + 0.230*Tr + 0.224*C	0.244 + 0.242*Tr + 0.501*C	0.157 + 0.237*Tr + 0.325*C
AO35NLLX6	B-Z	B_Z (rise)	0.067 + 0.229*Tr + 0.269*C	0.216 + 0.265*Tr + 0.572*C	0.129 + 0.244*Tr + 0.388*C
AO35NLLX6	C-Z	C_Z (fall)	0.090 + 0.264*Tr + 0.223*C	0.215 + 0.282*Tr + 0.498*C	0.141 + 0.273*Tr + 0.323*C
AO35NLLX6	C-Z	C_Z (rise)	0.061 + 0.211*Tr + 0.269*C	0.188 + 0.252*Tr + 0.569*C	0.114 + 0.230*Tr + 0.387*C
AO35NLLX6	D-Z	D_Z (fall)	0.080 + 0.223*Tr + 0.219*C	0.204 + 0.242*Tr + 0.495*C	0.132 + 0.231*Tr + 0.322*C
AO35NLLX6	D-Z	D_Z (rise)	0.057 + 0.224*Tr + 0.266*C	0.219 + 0.310*Tr + 0.575*C	0.133 + 0.281*Tr + 0.389*C
AO35NLLX8	E-Z	E_Z (fall)	0.078 + 0.265*Tr + 0.163*C	0.188 + 0.289*Tr + 0.371*C	0.125 + 0.275*Tr + 0.241*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO35NLLX8	E-Z	E_Z (rise)	0.052 + 0.205*Tr + 0.200*C	0.204 + 0.300*Tr + 0.431*C	0.124 + 0.269*Tr + 0.292*C
AO35NLLX8	A-Z	A_Z (fall)	0.101 + 0.184*Tr + 0.169*C	0.259 + 0.197*Tr + 0.376*C	0.164 + 0.192*Tr + 0.244*C
AO35NLLX8	A-Z	A_Z (rise)	0.071 + 0.244*Tr + 0.203*C	0.241 + 0.277*Tr + 0.434*C	0.141 + 0.255*Tr + 0.294*C
AO35NLLX8	B-Z	B_Z (fall)	0.097 + 0.228*Tr + 0.168*C	0.240 + 0.238*Tr + 0.376*C	0.154 + 0.234*Tr + 0.244*C
AO35NLLX8	B-Z	B_Z (rise)	0.066 + 0.228*Tr + 0.202*C	0.218 + 0.266*Tr + 0.430*C	0.129 + 0.244*Tr + 0.292*C
AO35NLLX8	C-Z	C_Z (fall)	0.088 + 0.263*Tr + 0.167*C	0.210 + 0.278*Tr + 0.374*C	0.138 + 0.270*Tr + 0.242*C
AO35NLLX8	C-Z	C_Z (rise)	0.060 + 0.210*Tr + 0.202*C	0.188 + 0.253*Tr + 0.428*C	0.113 + 0.230*Tr + 0.291*C
AO35NLLX8	D-Z	D_Z (fall)	0.079 + 0.221*Tr + 0.164*C	0.200 + 0.239*Tr + 0.372*C	0.130 + 0.229*Tr + 0.242*C
AO35NLLX8	D-Z	D_Z (rise)	0.057 + 0.224*Tr + 0.200*C	0.223 + 0.313*Tr + 0.433*C	0.133 + 0.282*Tr + 0.293*C

Average Leakage Power

picoWatts

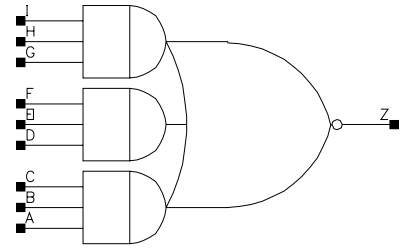
Cell	bc_1.32V_25C	bc_1.32V_125C
AO35NLL	4150.910	75997.100
AO35NLLP	6065.430	125827.000
AO35NLLX4	10914.900	236248.000
AO35NLLX6	15810.100	345816.000
AO35NLLX8	21829.400	472501.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO35NLL	Z(max)	$0.018 + 0.005 * Tr$
AO35NLLP	Z(max)	$0.033 + 0.011 * Tr$
AO35NLLX4	Z(max)	$0.064 + 0.023 * Tr$
AO35NLLX6	Z(max)	$0.096 + 0.034 * Tr$
AO35NLLX8	Z(max)	$0.127 + 0.047 * Tr$

AO51LL
AO51LLP
AO51LLX4
AO51LLX6
AO51LLX8



Function: Function = 3 wide 3-3-3 AND-OR-INVERT

Truth Table

A	B	C	D	E	F	G	H	I	Z
-	-	-	1	1	1	-	-	0	0
1	1	-	-	-	-	1	1	1	0
0	-	-	1	1	1	-	-	-	0
-	-	-	-	-	0	1	1	1	0
-	-	-	0	-	-	1	1	1	0
-	0	-	1	1	1	-	-	-	0
-	-	-	-	0	-	1	1	1	0
1	1	1	-	-	-	-	-	-	0
-	-	-	1	1	1	-	0	-	0
-	-	-	1	1	1	0	-	-	0
0	-	-	0	-	-	-	-	0	1
-	0	-	-	-	0	-	-	0	1
0	-	-	0	-	-	0	-	-	1
0	-	-	0	-	-	-	0	-	1
-	-	0	0	-	-	-	-	0	1
0	-	-	-	0	-	0	-	-	1
0	-	-	-	0	-	-	0	-	1
-	-	0	0	-	-	-	0	-	1
-	-	0	-	0	-	-	0	-	1
0	-	-	-	-	0	0	-	-	1

Truth Table

A	B	C	D	E	F	G	H	I	Z
-	0	-	-	0	-	-	0	-	1
-	0	-	-	0	-	-	-	0	1
0	-	-	-	-	0	-	-	0	1
-	-	0	0	-	-	0	-	-	1
-	0	-	-	-	0	0	-	-	1
0	-	-	-	-	0	-	0	-	1
-	-	0	-	0	-	-	-	0	1
-	-	0	-	-	0	-	-	0	1
-	-	0	-	0	-	0	-	-	1
-	0	-	0	-	-	0	-	-	1
-	0	-	-	0	-	0	-	-	1
0	-	-	-	0	-	-	-	0	1
-	0	-	-	-	0	-	0	-	1
-	0	-	0	-	-	-	0	-	1
-	0	-	0	-	-	-	-	0	1
-	-	0	-	-	0	0	-	-	1
-	-	0	-	-	0	-	0	-	1

Physical Dimensions

Property	AO51LL	AO51LLP	AO51LLX4	AO51LLX6	AO51LLX8
Area(um2)	22.189	26.224	48.413	72.619	96.826

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51LL	H Input Cap.	0.0027	0.0024	0.0026
AO51LL	C Input Cap.	0.0030	0.0027	0.0028
AO51LL	F Input Cap.	0.0029	0.0025	0.0026
AO51LL	A Input Cap.	0.0027	0.0024	0.0026
AO51LL	I Input Cap.	0.0027	0.0024	0.0025
AO51LL	D Input Cap.	0.0027	0.0024	0.0025

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51LL	G Input Cap.	0.0026	0.0023	0.0024
AO51LL	B Input Cap.	0.0028	0.0026	0.0027
AO51LL	E Input Cap.	0.0029	0.0026	0.0027
AO51LL	Z Max Load	0.160	0.160	0.160
AO51LLP	E Input Cap.	0.0053	0.0048	0.0050
AO51LLP	Z Max Load	0.320	0.320	0.320
AO51LLP	H Input Cap.	0.0051	0.0046	0.0047
AO51LLP	C Input Cap.	0.0056	0.0052	0.0054
AO51LLP	F Input Cap.	0.0055	0.0050	0.0051
AO51LLP	A Input Cap.	0.0051	0.0047	0.0049
AO51LLP	I Input Cap.	0.0051	0.0046	0.0047
AO51LLP	D Input Cap.	0.0051	0.0046	0.0048
AO51LLP	G Input Cap.	0.0049	0.0044	0.0045
AO51LLP	B Input Cap.	0.0054	0.0050	0.0052
AO51LLX4	G Input Cap.	0.0102	0.0093	0.0095
AO51LLX4	B Input Cap.	0.0111	0.0103	0.0106
AO51LLX4	E Input Cap.	0.0110	0.0100	0.0103
AO51LLX4	Z Max Load	0.640	0.640	0.640
AO51LLX4	H Input Cap.	0.0105	0.0095	0.0098
AO51LLX4	C Input Cap.	0.0107	0.0099	0.0103
AO51LLX4	F Input Cap.	0.0106	0.0095	0.0099
AO51LLX4	A Input Cap.	0.0107	0.0099	0.0103
AO51LLX4	I Input Cap.	0.0101	0.0091	0.0094
AO51LLX4	D Input Cap.	0.0116	0.0106	0.0109
AO51LLX6	F Input Cap.	0.0155	0.0139	0.0144
AO51LLX6	A Input Cap.	0.0146	0.0135	0.0140
AO51LLX6	Z Max Load	0.960	0.960	0.960
AO51LLX6	I Input Cap.	0.0146	0.0130	0.0135
AO51LLX6	D Input Cap.	0.0144	0.0130	0.0134
AO51LLX6	G Input Cap.	0.0137	0.0122	0.0126
AO51LLX6	B Input Cap.	0.0155	0.0143	0.0148
AO51LLX6	E Input Cap.	0.0151	0.0136	0.0141
AO51LLX6	H Input Cap.	0.0143	0.0128	0.0132

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51LLX6	C Input Cap.	0.0159	0.0146	0.0152
AO51LLX8	H Input Cap.	0.0189	0.0170	0.0176
AO51LLX8	C Input Cap.	0.0210	0.0194	0.0202
AO51LLX8	F Input Cap.	0.0206	0.0186	0.0192
AO51LLX8	A Input Cap.	0.0195	0.0181	0.0188
AO51LLX8	I Input Cap.	0.0194	0.0174	0.0180
AO51LLX8	D Input Cap.	0.0191	0.0172	0.0178
AO51LLX8	G Input Cap.	0.0180	0.0162	0.0167
AO51LLX8	B Input Cap.	0.0205	0.0190	0.0196
AO51LLX8	E Input Cap.	0.0201	0.0181	0.0188
AO51LLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51LL	I-Z	I_Z (fall)	0.028 + 0.197*Tr + 3.132*C	0.093 + 0.225*Tr + 8.725*C	0.047 + 0.211*Tr + 4.998*C
AO51LL	I-Z	I_Z (rise)	0.016 + 0.295*Tr + 2.679*C	0.124 + 0.324*Tr + 9.986*C	0.079 + 0.320*Tr + 6.689*C
AO51LL	E-Z	E_Z (fall)	0.042 + 0.248*Tr + 3.147*C	0.170 + 0.281*Tr + 8.638*C	0.087 + 0.268*Tr + 4.948*C
AO51LL	E-Z	E_Z (rise)	0.031 + 0.267*Tr + 2.758*C	0.208 + 0.266*Tr + 10.049*C	0.127 + 0.263*Tr + 6.722*C
AO51LL	A-Z	A_Z (fall)	0.048 + 0.287*Tr + 3.192*C	0.228 + 0.327*Tr + 8.683*C	0.116 + 0.314*Tr + 4.955*C
AO51LL	A-Z	A_Z (rise)	0.046 + 0.240*Tr + 2.741*C	0.245 + 0.233*Tr + 10.054*C	0.150 + 0.219*Tr + 6.715*C
AO51LL	F-Z	F_Z (fall)	0.045 + 0.203*Tr + 3.114*C	0.180 + 0.236*Tr + 8.642*C	0.092 + 0.224*Tr + 4.921*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51LL	F-Z	F_Z (rise)	0.034 + 0.272*Tr + 2.741*C	0.219 + 0.269*Tr + 10.038*C	0.135 + 0.266*Tr + 6.709*C
AO51LL	B-Z	B_Z (fall)	0.053 + 0.253*Tr + 3.170*C	0.244 + 0.287*Tr + 8.696*C	0.125 + 0.279*Tr + 4.939*C
AO51LL	B-Z	B_Z (rise)	0.049 + 0.244*Tr + 2.726*C	0.258 + 0.234*Tr + 10.038*C	0.158 + 0.221*Tr + 6.700*C
AO51LL	G-Z	G_Z (fall)	0.018 + 0.269*Tr + 3.214*C	0.065 + 0.302*Tr + 8.759*C	0.029 + 0.280*Tr + 5.100*C
AO51LL	G-Z	G_Z (rise)	0.008 + 0.283*Tr + 2.721*C	0.096 + 0.317*Tr + 10.016*C	0.062 + 0.313*Tr + 6.724*C
AO51LL	C-Z	C_Z (fall)	0.057 + 0.206*Tr + 3.148*C	0.255 + 0.240*Tr + 8.706*C	0.131 + 0.231*Tr + 4.929*C
AO51LL	C-Z	C_Z (rise)	0.052 + 0.247*Tr + 2.714*C	0.272 + 0.236*Tr + 10.035*C	0.167 + 0.222*Tr + 6.694*C
AO51LL	H-Z	H_Z (fall)	0.024 + 0.239*Tr + 3.176*C	0.082 + 0.267*Tr + 8.740*C	0.040 + 0.252*Tr + 5.049*C
AO51LL	H-Z	H_Z (rise)	0.013 + 0.289*Tr + 2.700*C	0.111 + 0.320*Tr + 9.999*C	0.071 + 0.317*Tr + 6.705*C
AO51LL	D-Z	D_Z (fall)	0.036 + 0.280*Tr + 3.178*C	0.154 + 0.319*Tr + 8.636*C	0.077 + 0.300*Tr + 4.979*C
AO51LL	D-Z	D_Z (rise)	0.028 + 0.262*Tr + 2.776*C	0.193 + 0.264*Tr + 10.068*C	0.118 + 0.260*Tr + 6.738*C
AO51LLP	I-Z	I_Z (fall)	0.024 + 0.200*Tr + 1.624*C	0.083 + 0.226*Tr + 4.349*C	0.040 + 0.213*Tr + 2.546*C
AO51LLP	I-Z	I_Z (rise)	0.010 + 0.285*Tr + 1.326*C	0.114 + 0.315*Tr + 4.796*C	0.071 + 0.311*Tr + 3.239*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51LLP	E-Z	E_Z (fall)	0.038 + 0.252*Tr + 1.630*C	0.160 + 0.283*Tr + 4.301*C	0.081 + 0.271*Tr + 2.517*C
AO51LLP	E-Z	E_Z (rise)	0.025 + 0.257*Tr + 1.363*C	0.192 + 0.258*Tr + 4.825*C	0.116 + 0.255*Tr + 3.253*C
AO51LLP	A-Z	A_Z (fall)	0.045 + 0.291*Tr + 1.651*C	0.216 + 0.329*Tr + 4.318*C	0.111 + 0.316*Tr + 2.516*C
AO51LLP	A-Z	A_Z (rise)	0.039 + 0.229*Tr + 1.353*C	0.226 + 0.223*Tr + 4.824*C	0.143 + 0.212*Tr + 3.244*C
AO51LLP	F-Z	F_Z (fall)	0.042 + 0.207*Tr + 1.612*C	0.171 + 0.238*Tr + 4.300*C	0.088 + 0.227*Tr + 2.500*C
AO51LLP	F-Z	F_Z (rise)	0.029 + 0.262*Tr + 1.353*C	0.204 + 0.261*Tr + 4.818*C	0.124 + 0.258*Tr + 3.246*C
AO51LLP	B-Z	B_Z (fall)	0.050 + 0.257*Tr + 1.641*C	0.233 + 0.290*Tr + 4.326*C	0.120 + 0.282*Tr + 2.508*C
AO51LLP	B-Z	B_Z (rise)	0.043 + 0.234*Tr + 1.343*C	0.240 + 0.225*Tr + 4.814*C	0.146 + 0.212*Tr + 3.236*C
AO51LLP	G-Z	G_Z (fall)	0.013 + 0.272*Tr + 1.668*C	0.055 + 0.300*Tr + 4.377*C	0.022 + 0.280*Tr + 2.608*C
AO51LLP	G-Z	G_Z (rise)	0.002 + 0.271*Tr + 1.354*C	0.088 + 0.306*Tr + 4.820*C	0.054 + 0.302*Tr + 3.263*C
AO51LLP	C-Z	C_Z (fall)	0.054 + 0.211*Tr + 1.627*C	0.244 + 0.243*Tr + 4.329*C	0.126 + 0.235*Tr + 2.501*C
AO51LLP	C-Z	C_Z (rise)	0.046 + 0.238*Tr + 1.336*C	0.252 + 0.227*Tr + 4.810*C	0.154 + 0.214*Tr + 3.231*C
AO51LLP	H-Z	H_Z (fall)	0.019 + 0.242*Tr + 1.647*C	0.071 + 0.267*Tr + 4.363*C	0.032 + 0.253*Tr + 2.577*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51LLP	H-Z	H_Z (rise)	0.006 + 0.278*Tr + 1.339*C	0.101 + 0.311*Tr + 4.805*C	0.063 + 0.307*Tr + 3.249*C
AO51LLP	D-Z	D_Z (fall)	0.033 + 0.283*Tr + 1.646*C	0.145 + 0.319*Tr + 4.302*C	0.073 + 0.301*Tr + 2.534*C
AO51LLP	D-Z	D_Z (rise)	0.022 + 0.251*Tr + 1.375*C	0.178 + 0.255*Tr + 4.838*C	0.107 + 0.251*Tr + 3.265*C
AO51LLX4	I-Z	I_Z (fall)	0.026 + 0.198*Tr + 0.812*C	0.085 + 0.225*Tr + 2.175*C	0.044 + 0.210*Tr + 1.273*C
AO51LLX4	I-Z	I_Z (rise)	0.014 + 0.278*Tr + 0.663*C	0.114 + 0.315*Tr + 2.398*C	0.072 + 0.310*Tr + 1.620*C
AO51LLX4	E-Z	E_Z (fall)	0.041 + 0.249*Tr + 0.815*C	0.162 + 0.282*Tr + 2.151*C	0.084 + 0.268*Tr + 1.259*C
AO51LLX4	E-Z	E_Z (rise)	0.029 + 0.250*Tr + 0.681*C	0.194 + 0.257*Tr + 2.413*C	0.118 + 0.253*Tr + 1.627*C
AO51LLX4	A-Z	A_Z (fall)	0.047 + 0.288*Tr + 0.826*C	0.218 + 0.330*Tr + 2.160*C	0.114 + 0.315*Tr + 1.259*C
AO51LLX4	A-Z	A_Z (rise)	0.042 + 0.223*Tr + 0.676*C	0.227 + 0.223*Tr + 2.413*C	0.145 + 0.212*Tr + 1.622*C
AO51LLX4	F-Z	F_Z (fall)	0.044 + 0.205*Tr + 0.806*C	0.172 + 0.238*Tr + 2.150*C	0.090 + 0.225*Tr + 1.251*C
AO51LLX4	F-Z	F_Z (rise)	0.032 + 0.256*Tr + 0.676*C	0.205 + 0.260*Tr + 2.410*C	0.125 + 0.256*Tr + 1.623*C
AO51LLX4	B-Z	B_Z (fall)	0.052 + 0.255*Tr + 0.820*C	0.235 + 0.290*Tr + 2.164*C	0.122 + 0.281*Tr + 1.255*C
AO51LLX4	B-Z	B_Z (rise)	0.046 + 0.228*Tr + 0.672*C	0.241 + 0.225*Tr + 2.408*C	0.147 + 0.211*Tr + 1.618*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51LLX4	G-Z	G_Z (fall)	0.016 + 0.267*Tr + 0.834*C	0.058 + 0.298*Tr + 2.190*C	0.027 + 0.274*Tr + 1.303*C
AO51LLX4	G-Z	G_Z (rise)	0.007 + 0.263*Tr + 0.677*C	0.089 + 0.306*Tr + 2.410*C	0.056 + 0.301*Tr + 1.632*C
AO51LLX4	C-Z	C_Z (fall)	0.055 + 0.209*Tr + 0.814*C	0.245 + 0.244*Tr + 2.166*C	0.128 + 0.235*Tr + 1.251*C
AO51LLX4	C-Z	C_Z (rise)	0.049 + 0.233*Tr + 0.668*C	0.253 + 0.227*Tr + 2.405*C	0.155 + 0.214*Tr + 1.616*C
AO51LLX4	H-Z	H_Z (fall)	0.022 + 0.238*Tr + 0.824*C	0.074 + 0.265*Tr + 2.183*C	0.037 + 0.248*Tr + 1.289*C
AO51LLX4	H-Z	H_Z (rise)	0.010 + 0.271*Tr + 0.669*C	0.103 + 0.310*Tr + 2.403*C	0.065 + 0.306*Tr + 1.625*C
AO51LLX4	D-Z	D_Z (fall)	0.036 + 0.279*Tr + 0.823*C	0.149 + 0.318*Tr + 2.152*C	0.077 + 0.298*Tr + 1.268*C
AO51LLX4	D-Z	D_Z (rise)	0.026 + 0.244*Tr + 0.688*C	0.182 + 0.254*Tr + 2.420*C	0.111 + 0.249*Tr + 1.633*C
AO51LLX6	I-Z	I_Z (fall)	0.025 + 0.195*Tr + 0.543*C	0.083 + 0.221*Tr + 1.453*C	0.042 + 0.207*Tr + 0.852*C
AO51LLX6	I-Z	I_Z (rise)	0.012 + 0.275*Tr + 0.444*C	0.114 + 0.312*Tr + 1.601*C	0.072 + 0.307*Tr + 1.081*C
AO51LLX6	E-Z	E_Z (fall)	0.039 + 0.246*Tr + 0.545*C	0.159 + 0.279*Tr + 1.436*C	0.082 + 0.265*Tr + 0.841*C
AO51LLX6	E-Z	E_Z (rise)	0.027 + 0.247*Tr + 0.457*C	0.192 + 0.255*Tr + 1.611*C	0.117 + 0.251*Tr + 1.086*C
AO51LLX6	A-Z	A_Z (fall)	0.045 + 0.285*Tr + 0.552*C	0.214 + 0.327*Tr + 1.442*C	0.111 + 0.312*Tr + 0.841*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51LLX6	A-Z	A_Z (rise)	0.040 + 0.220*Tr + 0.453*C	0.225 + 0.220*Tr + 1.610*C	0.143 + 0.209*Tr + 1.083*C
AO51LLX6	F-Z	F_Z (fall)	0.043 + 0.203*Tr + 0.539*C	0.170 + 0.236*Tr + 1.435*C	0.088 + 0.223*Tr + 0.835*C
AO51LLX6	F-Z	F_Z (rise)	0.030 + 0.253*Tr + 0.453*C	0.204 + 0.258*Tr + 1.608*C	0.125 + 0.254*Tr + 1.084*C
AO51LLX6	B-Z	B_Z (fall)	0.050 + 0.253*Tr + 0.548*C	0.231 + 0.288*Tr + 1.444*C	0.120 + 0.279*Tr + 0.838*C
AO51LLX6	B-Z	B_Z (rise)	0.044 + 0.225*Tr + 0.450*C	0.240 + 0.223*Tr + 1.607*C	0.146 + 0.209*Tr + 1.080*C
AO51LLX6	G-Z	G_Z (fall)	0.014 + 0.263*Tr + 0.559*C	0.055 + 0.292*Tr + 1.463*C	0.024 + 0.269*Tr + 0.874*C
AO51LLX6	G-Z	G_Z (rise)	0.004 + 0.260*Tr + 0.454*C	0.088 + 0.302*Tr + 1.609*C	0.055 + 0.297*Tr + 1.090*C
AO51LLX6	C-Z	C_Z (fall)	0.053 + 0.208*Tr + 0.544*C	0.242 + 0.242*Tr + 1.445*C	0.126 + 0.233*Tr + 0.835*C
AO51LLX6	C-Z	C_Z (rise)	0.047 + 0.231*Tr + 0.447*C	0.252 + 0.224*Tr + 1.606*C	0.154 + 0.212*Tr + 1.078*C
AO51LLX6	H-Z	H_Z (fall)	0.020 + 0.235*Tr + 0.551*C	0.072 + 0.261*Tr + 1.458*C	0.034 + 0.244*Tr + 0.863*C
AO51LLX6	H-Z	H_Z (rise)	0.008 + 0.268*Tr + 0.449*C	0.102 + 0.307*Tr + 1.604*C	0.064 + 0.302*Tr + 1.085*C
AO51LLX6	D-Z	D_Z (fall)	0.033 + 0.276*Tr + 0.550*C	0.143 + 0.315*Tr + 1.437*C	0.073 + 0.295*Tr + 0.847*C
AO51LLX6	D-Z	D_Z (rise)	0.023 + 0.240*Tr + 0.461*C	0.177 + 0.251*Tr + 1.615*C	0.108 + 0.247*Tr + 1.090*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51LLX8	I-Z	I_Z (fall)	0.025 + 0.194*Tr + 0.403*C	0.082 + 0.220*Tr + 1.056*C	0.042 + 0.206*Tr + 0.625*C
AO51LLX8	I-Z	I_Z (rise)	0.013 + 0.275*Tr + 0.333*C	0.118 + 0.314*Tr + 1.200*C	0.074 + 0.309*Tr + 0.811*C
AO51LLX8	E-Z	E_Z (fall)	0.039 + 0.245*Tr + 0.404*C	0.154 + 0.278*Tr + 1.044*C	0.081 + 0.264*Tr + 0.617*C
AO51LLX8	E-Z	E_Z (rise)	0.028 + 0.247*Tr + 0.342*C	0.196 + 0.256*Tr + 1.208*C	0.119 + 0.252*Tr + 0.815*C
AO51LLX8	A-Z	A_Z (fall)	0.045 + 0.284*Tr + 0.410*C	0.207 + 0.327*Tr + 1.048*C	0.108 + 0.311*Tr + 0.617*C
AO51LLX8	A-Z	A_Z (rise)	0.041 + 0.220*Tr + 0.340*C	0.229 + 0.221*Tr + 1.208*C	0.145 + 0.210*Tr + 0.812*C
AO51LLX8	F-Z	F_Z (fall)	0.042 + 0.202*Tr + 0.399*C	0.166 + 0.235*Tr + 1.043*C	0.087 + 0.222*Tr + 0.613*C
AO51LLX8	F-Z	F_Z (rise)	0.031 + 0.253*Tr + 0.340*C	0.209 + 0.259*Tr + 1.206*C	0.127 + 0.256*Tr + 0.813*C
AO51LLX8	B-Z	B_Z (fall)	0.050 + 0.252*Tr + 0.407*C	0.224 + 0.288*Tr + 1.049*C	0.117 + 0.278*Tr + 0.615*C
AO51LLX8	B-Z	B_Z (rise)	0.045 + 0.225*Tr + 0.337*C	0.244 + 0.224*Tr + 1.205*C	0.149 + 0.210*Tr + 0.810*C
AO51LLX8	G-Z	G_Z (fall)	0.014 + 0.261*Tr + 0.414*C	0.053 + 0.291*Tr + 1.065*C	0.023 + 0.268*Tr + 0.642*C
AO51LLX8	G-Z	G_Z (rise)	0.005 + 0.259*Tr + 0.341*C	0.090 + 0.304*Tr + 1.207*C	0.056 + 0.299*Tr + 0.817*C
AO51LLX8	C-Z	C_Z (fall)	0.053 + 0.207*Tr + 0.403*C	0.235 + 0.242*Tr + 1.050*C	0.123 + 0.232*Tr + 0.612*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51LLX8	C-Z	C_Z (rise)	0.048 + 0.231*Tr + 0.335*C	0.257 + 0.226*Tr + 1.204*C	0.157 + 0.213*Tr + 0.809*C
AO51LLX8	H-Z	H_Z (fall)	0.020 + 0.234*Tr + 0.409*C	0.070 + 0.260*Tr + 1.061*C	0.034 + 0.243*Tr + 0.634*C
AO51LLX8	H-Z	H_Z (rise)	0.009 + 0.268*Tr + 0.336*C	0.105 + 0.310*Tr + 1.203*C	0.066 + 0.304*Tr + 0.814*C
AO51LLX8	D-Z	D_Z (fall)	0.033 + 0.275*Tr + 0.408*C	0.138 + 0.314*Tr + 1.044*C	0.072 + 0.294*Tr + 0.622*C
AO51LLX8	D-Z	D_Z (rise)	0.024 + 0.240*Tr + 0.346*C	0.181 + 0.253*Tr + 1.211*C	0.109 + 0.248*Tr + 0.818*C

Average Leakage Power

picoWatts

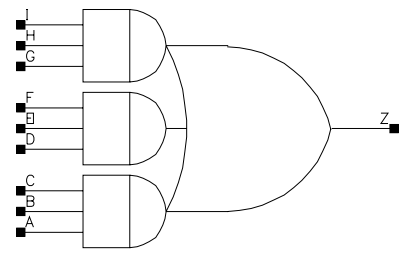
Cell	bc_1.32V_25C	bc_1.32V_125C
AO51LL	4504.620	91838.700
AO51LLP	7653.620	167443.000
AO51LLX4	15307.200	334890.000
AO51LLX6	22961.000	502335.000
AO51LLX8	29381.200	653092.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO51LL	Z(max)	0.031 + 0.005*Tr
AO51LLP	Z(max)	0.056 + 0.010*Tr
AO51LLX4	Z(max)	0.112 + 0.020*Tr
AO51LLX6	Z(max)	0.166 + 0.031*Tr
AO51LLX8	Z(max)	0.225 + 0.040*Tr

AO51NLL
AO51NLLP
AO51NLLX4
AO51NLLX6
AO51NLLX8



Function: Function = 3 wide 3-3-3 AND-OR

Truth Table

A	B	C	D	E	F	G	H	I	Z
-	-	0	0	-	-	-	-	0	0
0	-	-	0	-	-	0	-	-	0
-	-	0	-	0	-	-	-	0	0
0	-	-	-	-	0	0	-	-	0
0	-	-	0	-	-	-	0	-	0
0	-	-	-	-	0	-	0	-	0
-	0	-	-	0	-	0	-	-	0
-	-	0	0	-	-	0	-	-	0
-	-	0	0	-	-	-	0	-	0
-	0	-	-	-	0	-	-	0	0
0	-	-	-	0	-	-	0	-	0
-	-	0	-	-	0	-	-	0	0
-	-	0	-	0	-	0	-	-	0
0	-	-	-	0	-	0	-	-	0
-	0	-	-	0	-	-	0	-	0
0	-	-	-	0	-	-	-	0	0
-	0	-	-	-	0	-	0	-	0
-	-	0	-	-	0	-	0	-	0
-	0	-	-	-	0	0	-	-	0
0	-	-	0	-	-	-	-	0	0
-	-	0	-	0	-	-	0	-	0

Truth Table

A	B	C	D	E	F	G	H	I	Z
-	0	-	0	-	-	-	-	0	0
-	0	-	-	0	-	-	-	0	0
-	-	0	-	-	0	0	-	-	0
0	-	-	-	-	0	-	-	0	0
-	0	-	0	-	-	0	-	-	0
-	0	-	0	-	-	-	0	-	0
0	-	-	1	1	1	-	-	-	1
-	-	-	1	1	1	-	-	0	1
1	1	-	-	-	-	1	1	1	1
-	-	-	-	-	0	1	1	1	1
-	-	-	1	1	1	-	0	-	1
-	-	-	0	-	-	1	1	1	1
-	0	-	1	1	1	-	-	-	1
1	1	1	-	-	-	-	-	-	1
-	-	-	1	1	1	0	-	-	1
-	-	-	-	0	-	1	1	1	1

Physical Dimensions

Property	AO51NLL	AO51NLLP	AO51NLLX4	AO51NLLX6	AO51NLLX8
Area(um ²)	22.189	28.241	30.258	56.482	60.516

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51NLL	G Input Cap.	0.0017	0.0014	0.0015
AO51NLL	B Input Cap.	0.0017	0.0015	0.0016
AO51NLL	E Input Cap.	0.0019	0.0016	0.0017
AO51NLL	H Input Cap.	0.0016	0.0014	0.0015
AO51NLL	C Input Cap.	0.0018	0.0015	0.0016
AO51NLL	F Input Cap.	0.0017	0.0015	0.0015

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51NLL	A Input Cap.	0.0019	0.0017	0.0018
AO51NLL	Z Max Load	0.160	0.160	0.160
AO51NLL	I Input Cap.	0.0017	0.0014	0.0015
AO51NLL	D Input Cap.	0.0018	0.0015	0.0016
AO51NLLP	E Input Cap.	0.0029	0.0026	0.0027
AO51NLLP	H Input Cap.	0.0030	0.0025	0.0026
AO51NLLP	C Input Cap.	0.0030	0.0027	0.0029
AO51NLLP	F Input Cap.	0.0030	0.0026	0.0027
AO51NLLP	A Input Cap.	0.0029	0.0026	0.0028
AO51NLLP	Z Max Load	0.320	0.320	0.320
AO51NLLP	I Input Cap.	0.0029	0.0024	0.0026
AO51NLLP	D Input Cap.	0.0029	0.0025	0.0026
AO51NLLP	G Input Cap.	0.0029	0.0024	0.0026
AO51NLLP	B Input Cap.	0.0030	0.0027	0.0028
AO51NLLX4	B Input Cap.	0.0056	0.0051	0.0053
AO51NLLX4	E Input Cap.	0.0055	0.0049	0.0051
AO51NLLX4	H Input Cap.	0.0056	0.0047	0.0049
AO51NLLX4	C Input Cap.	0.0057	0.0052	0.0054
AO51NLLX4	F Input Cap.	0.0057	0.0050	0.0052
AO51NLLX4	A Input Cap.	0.0054	0.0049	0.0051
AO51NLLX4	Z Max Load	0.640	0.640	0.640
AO51NLLX4	I Input Cap.	0.0056	0.0047	0.0049
AO51NLLX4	D Input Cap.	0.0053	0.0047	0.0049
AO51NLLX4	G Input Cap.	0.0054	0.0046	0.0047
AO51NLLX6	I Input Cap.	0.0084	0.0071	0.0074
AO51NLLX6	D Input Cap.	0.0096	0.0084	0.0087
AO51NLLX6	G Input Cap.	0.0088	0.0075	0.0077
AO51NLLX6	B Input Cap.	0.0086	0.0079	0.0082
AO51NLLX6	E Input Cap.	0.0087	0.0076	0.0079
AO51NLLX6	Z Max Load	0.960	0.960	0.960
AO51NLLX6	H Input Cap.	0.0088	0.0075	0.0078
AO51NLLX6	C Input Cap.	0.0083	0.0075	0.0078
AO51NLLX6	F Input Cap.	0.0083	0.0073	0.0076
AO51NLLX6	A Input Cap.	0.0084	0.0076	0.0080

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51NLLX8	F Input Cap.	0.0108	0.0095	0.0099
AO51NLLX8	A Input Cap.	0.0109	0.0099	0.0103
AO51NLLX8	Z Max Load	1.280	1.280	1.280
AO51NLLX8	I Input Cap.	0.0109	0.0092	0.0096
AO51NLLX8	D Input Cap.	0.0121	0.0107	0.0110
AO51NLLX8	G Input Cap.	0.0112	0.0095	0.0098
AO51NLLX8	B Input Cap.	0.0112	0.0103	0.0107
AO51NLLX8	E Input Cap.	0.0113	0.0100	0.0103
AO51NLLX8	H Input Cap.	0.0114	0.0097	0.0100
AO51NLLX8	C Input Cap.	0.0109	0.0099	0.0103

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51NLL	I-Z	I_Z (fall)	0.089 + 0.288*Tr + 1.285°C	0.369 + 0.340*Tr + 3.318°C	0.240 + 0.334*Tr + 2.103°C
AO51NLL	I-Z	I_Z (rise)	0.094 + 0.183*Tr + 1.688°C	0.313 + 0.219*Tr + 3.930°C	0.176 + 0.200*Tr + 2.570°C
AO51NLL	E-Z	E_Z (fall)	0.108 + 0.264*Tr + 1.351°C	0.465 + 0.278*Tr + 3.322°C	0.294 + 0.273*Tr + 2.112°C
AO51NLL	E-Z	E_Z (rise)	0.117 + 0.230*Tr + 1.702°C	0.405 + 0.277*Tr + 3.886°C	0.222 + 0.256*Tr + 2.538°C
AO51NLL	A-Z	A_Z (fall)	0.121 + 0.242*Tr + 1.391°C	0.503 + 0.249*Tr + 3.302°C	0.321 + 0.235*Tr + 2.101°C
AO51NLL	A-Z	A_Z (rise)	0.129 + 0.271*Tr + 1.727°C	0.466 + 0.332*Tr + 3.900°C	0.252 + 0.308*Tr + 2.518°C
AO51NLL	F-Z	F_Z (fall)	0.111 + 0.272*Tr + 1.353°C	0.479 + 0.282*Tr + 3.337°C	0.303 + 0.277*Tr + 2.121°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51NLL	F-Z	F_Z (rise)	0.117 + 0.191*Tr + 1.704*C	0.412 + 0.231*Tr + 3.891*C	0.224 + 0.214*Tr + 2.540*C
AO51NLL	B-Z	B_Z (fall)	0.125 + 0.247*Tr + 1.393*C	0.517 + 0.249*Tr + 3.321*C	0.325 + 0.235*Tr + 2.112*C
AO51NLL	B-Z	B_Z (rise)	0.131 + 0.240*Tr + 1.731*C	0.481 + 0.287*Tr + 3.862*C	0.258 + 0.271*Tr + 2.523*C
AO51NLL	G-Z	G_Z (fall)	0.082 + 0.269*Tr + 1.280*C	0.336 + 0.330*Tr + 3.280*C	0.219 + 0.322*Tr + 2.082*C
AO51NLL	G-Z	G_Z (rise)	0.092 + 0.239*Tr + 1.682*C	0.293 + 0.296*Tr + 3.924*C	0.169 + 0.265*Tr + 2.567*C
AO51NLL	C-Z	C_Z (fall)	0.130 + 0.252*Tr + 1.395*C	0.537 + 0.250*Tr + 3.337*C	0.338 + 0.236*Tr + 2.122*C
AO51NLL	C-Z	C_Z (rise)	0.133 + 0.195*Tr + 1.734*C	0.494 + 0.238*Tr + 3.867*C	0.263 + 0.224*Tr + 2.525*C
AO51NLL	H-Z	H_Z (fall)	0.086 + 0.279*Tr + 1.283*C	0.352 + 0.336*Tr + 3.301*C	0.229 + 0.329*Tr + 2.093*C
AO51NLL	H-Z	H_Z (rise)	0.093 + 0.215*Tr + 1.687*C	0.303 + 0.261*Tr + 3.927*C	0.173 + 0.238*Tr + 2.567*C
AO51NLL	D-Z	D_Z (fall)	0.104 + 0.257*Tr + 1.349*C	0.443 + 0.276*Tr + 3.303*C	0.280 + 0.270*Tr + 2.102*C
AO51NLL	D-Z	D_Z (rise)	0.114 + 0.257*Tr + 1.697*C	0.389 + 0.318*Tr + 3.884*C	0.215 + 0.289*Tr + 2.535*C
AO51NLLP	I-Z	I_Z (fall)	0.073 + 0.263*Tr + 0.641*C	0.306 + 0.324*Tr + 1.564*C	0.200 + 0.315*Tr + 1.007*C
AO51NLLP	I-Z	I_Z (rise)	0.078 + 0.189*Tr + 0.822*C	0.242 + 0.226*Tr + 1.817*C	0.144 + 0.206*Tr + 1.255*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51NLLP	E-Z	E_Z (fall)	0.089 + 0.244*Tr + 0.675*C	0.381 + 0.268*Tr + 1.568*C	0.241 + 0.261*Tr + 1.013*C
AO51NLLP	E-Z	E_Z (rise)	0.099 + 0.236*Tr + 0.828*C	0.332 + 0.284*Tr + 1.821*C	0.189 + 0.262*Tr + 1.230*C
AO51NLLP	A-Z	A_Z (fall)	0.100 + 0.222*Tr + 0.695*C	0.413 + 0.233*Tr + 1.560*C	0.266 + 0.220*Tr + 1.009*C
AO51NLLP	A-Z	A_Z (rise)	0.112 + 0.275*Tr + 0.841*C	0.397 + 0.336*Tr + 1.832*C	0.220 + 0.311*Tr + 1.213*C
AO51NLLP	F-Z	F_Z (fall)	0.092 + 0.252*Tr + 0.675*C	0.397 + 0.272*Tr + 1.575*C	0.251 + 0.266*Tr + 1.017*C
AO51NLLP	F-Z	F_Z (rise)	0.100 + 0.199*Tr + 0.829*C	0.347 + 0.239*Tr + 1.866*C	0.192 + 0.222*Tr + 1.231*C
AO51NLLP	B-Z	B_Z (fall)	0.104 + 0.229*Tr + 0.696*C	0.430 + 0.236*Tr + 1.568*C	0.270 + 0.221*Tr + 1.014*C
AO51NLLP	B-Z	B_Z (rise)	0.114 + 0.247*Tr + 0.842*C	0.411 + 0.294*Tr + 1.834*C	0.226 + 0.278*Tr + 1.214*C
AO51NLLP	G-Z	G_Z (fall)	0.066 + 0.242*Tr + 0.639*C	0.275 + 0.311*Tr + 1.545*C	0.180 + 0.301*Tr + 0.997*C
AO51NLLP	G-Z	G_Z (rise)	0.076 + 0.240*Tr + 0.819*C	0.224 + 0.294*Tr + 1.812*C	0.138 + 0.264*Tr + 1.254*C
AO51NLLP	C-Z	C_Z (fall)	0.107 + 0.235*Tr + 0.696*C	0.445 + 0.238*Tr + 1.575*C	0.280 + 0.224*Tr + 1.018*C
AO51NLLP	C-Z	C_Z (rise)	0.115 + 0.205*Tr + 0.844*C	0.421 + 0.248*Tr + 1.836*C	0.229 + 0.234*Tr + 1.215*C
AO51NLLP	H-Z	H_Z (fall)	0.070 + 0.252*Tr + 0.640*C	0.291 + 0.318*Tr + 1.554*C	0.190 + 0.308*Tr + 1.003*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51NLLP	H-Z	H_Z (rise)	0.077 + 0.220*Tr + 0.821*C	0.234 + 0.264*Tr + 1.814*C	0.142 + 0.240*Tr + 1.254*C
AO51NLLP	D-Z	D_Z (fall)	0.085 + 0.235*Tr + 0.674*C	0.365 + 0.264*Tr + 1.559*C	0.231 + 0.256*Tr + 1.009*C
AO51NLLP	D-Z	D_Z (rise)	0.098 + 0.261*Tr + 0.826*C	0.319 + 0.321*Tr + 1.819*C	0.185 + 0.291*Tr + 1.229*C
AO51NLLX4	I-Z	I_Z (fall)	0.071 + 0.253*Tr + 0.320*C	0.296 + 0.316*Tr + 0.776*C	0.193 + 0.306*Tr + 0.500*C
AO51NLLX4	I-Z	I_Z (rise)	0.078 + 0.196*Tr + 0.412*C	0.240 + 0.230*Tr + 0.910*C	0.144 + 0.211*Tr + 0.630*C
AO51NLLX4	E-Z	E_Z (fall)	0.086 + 0.234*Tr + 0.336*C	0.368 + 0.261*Tr + 0.779*C	0.232 + 0.253*Tr + 0.503*C
AO51NLLX4	E-Z	E_Z (rise)	0.100 + 0.244*Tr + 0.415*C	0.329 + 0.289*Tr + 0.912*C	0.189 + 0.268*Tr + 0.617*C
AO51NLLX4	A-Z	A_Z (fall)	0.097 + 0.213*Tr + 0.347*C	0.396 + 0.225*Tr + 0.775*C	0.254 + 0.212*Tr + 0.501*C
AO51NLLX4	A-Z	A_Z (rise)	0.113 + 0.283*Tr + 0.421*C	0.394 + 0.341*Tr + 0.916*C	0.221 + 0.318*Tr + 0.607*C
AO51NLLX4	F-Z	F_Z (fall)	0.089 + 0.242*Tr + 0.337*C	0.382 + 0.265*Tr + 0.782*C	0.242 + 0.258*Tr + 0.505*C
AO51NLLX4	F-Z	F_Z (rise)	0.100 + 0.207*Tr + 0.415*C	0.338 + 0.245*Tr + 0.913*C	0.193 + 0.228*Tr + 0.617*C
AO51NLLX4	B-Z	B_Z (fall)	0.101 + 0.219*Tr + 0.347*C	0.413 + 0.228*Tr + 0.779*C	0.259 + 0.213*Tr + 0.503*C
AO51NLLX4	B-Z	B_Z (rise)	0.115 + 0.254*Tr + 0.421*C	0.409 + 0.299*Tr + 0.917*C	0.227 + 0.284*Tr + 0.608*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51NLLX4	G-Z	G_Z (fall)	0.064 + 0.232*Tr + 0.319*C	0.264 + 0.303*Tr + 0.767*C	0.173 + 0.292*Tr + 0.495*C
AO51NLLX4	G-Z	G_Z (rise)	0.076 + 0.248*Tr + 0.410*C	0.219 + 0.299*Tr + 0.908*C	0.136 + 0.270*Tr + 0.630*C
AO51NLLX4	C-Z	C_Z (fall)	0.104 + 0.226*Tr + 0.347*C	0.428 + 0.231*Tr + 0.783*C	0.268 + 0.216*Tr + 0.505*C
AO51NLLX4	C-Z	C_Z (rise)	0.116 + 0.213*Tr + 0.422*C	0.419 + 0.253*Tr + 0.918*C	0.231 + 0.239*Tr + 0.609*C
AO51NLLX4	H-Z	H_Z (fall)	0.068 + 0.242*Tr + 0.319*C	0.282 + 0.310*Tr + 0.772*C	0.184 + 0.299*Tr + 0.498*C
AO51NLLX4	H-Z	H_Z (rise)	0.079 + 0.220*Tr + 0.411*C	0.231 + 0.268*Tr + 0.909*C	0.142 + 0.245*Tr + 0.630*C
AO51NLLX4	D-Z	D_Z (fall)	0.083 + 0.225*Tr + 0.336*C	0.350 + 0.257*Tr + 0.775*C	0.222 + 0.249*Tr + 0.501*C
AO51NLLX4	D-Z	D_Z (rise)	0.098 + 0.269*Tr + 0.414*C	0.315 + 0.326*Tr + 0.911*C	0.184 + 0.298*Tr + 0.617*C
AO51NLLX6	I-Z	I_Z (fall)	0.071 + 0.256*Tr + 0.214*C	0.294 + 0.319*Tr + 0.523*C	0.192 + 0.310*Tr + 0.337*C
AO51NLLX6	I-Z	I_Z (rise)	0.077 + 0.194*Tr + 0.275*C	0.237 + 0.229*Tr + 0.611*C	0.142 + 0.210*Tr + 0.423*C
AO51NLLX6	E-Z	E_Z (fall)	0.087 + 0.237*Tr + 0.226*C	0.371 + 0.264*Tr + 0.525*C	0.235 + 0.256*Tr + 0.339*C
AO51NLLX6	E-Z	E_Z (rise)	0.101 + 0.242*Tr + 0.278*C	0.332 + 0.287*Tr + 0.612*C	0.190 + 0.266*Tr + 0.414*C
AO51NLLX6	A-Z	A_Z (fall)	0.098 + 0.216*Tr + 0.233*C	0.398 + 0.229*Tr + 0.522*C	0.256 + 0.216*Tr + 0.338*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51NLLX6	A-Z	A_Z (rise)	0.113 + 0.282*Tr + 0.282*C	0.396 + 0.340*Tr + 0.615*C	0.221 + 0.317*Tr + 0.407*C
AO51NLLX6	F-Z	F_Z (fall)	0.090 + 0.245*Tr + 0.226*C	0.385 + 0.268*Tr + 0.527*C	0.243 + 0.261*Tr + 0.341*C
AO51NLLX6	F-Z	F_Z (rise)	0.101 + 0.205*Tr + 0.278*C	0.340 + 0.243*Tr + 0.613*C	0.193 + 0.226*Tr + 0.414*C
AO51NLLX6	B-Z	B_Z (fall)	0.102 + 0.222*Tr + 0.233*C	0.417 + 0.232*Tr + 0.525*C	0.261 + 0.217*Tr + 0.339*C
AO51NLLX6	B-Z	B_Z (rise)	0.116 + 0.252*Tr + 0.282*C	0.412 + 0.298*Tr + 0.616*C	0.228 + 0.282*Tr + 0.408*C
AO51NLLX6	G-Z	G_Z (fall)	0.064 + 0.235*Tr + 0.214*C	0.264 + 0.306*Tr + 0.517*C	0.173 + 0.295*Tr + 0.334*C
AO51NLLX6	G-Z	G_Z (rise)	0.076 + 0.246*Tr + 0.274*C	0.218 + 0.298*Tr + 0.609*C	0.135 + 0.268*Tr + 0.423*C
AO51NLLX6	C-Z	C_Z (fall)	0.105 + 0.229*Tr + 0.233*C	0.431 + 0.235*Tr + 0.528*C	0.271 + 0.220*Tr + 0.341*C
AO51NLLX6	C-Z	C_Z (rise)	0.116 + 0.211*Tr + 0.283*C	0.422 + 0.252*Tr + 0.617*C	0.231 + 0.238*Tr + 0.408*C
AO51NLLX6	H-Z	H_Z (fall)	0.068 + 0.245*Tr + 0.214*C	0.281 + 0.313*Tr + 0.520*C	0.184 + 0.303*Tr + 0.335*C
AO51NLLX6	H-Z	H_Z (rise)	0.077 + 0.225*Tr + 0.275*C	0.229 + 0.267*Tr + 0.610*C	0.140 + 0.244*Tr + 0.423*C
AO51NLLX6	D-Z	D_Z (fall)	0.084 + 0.228*Tr + 0.226*C	0.356 + 0.259*Tr + 0.522*C	0.225 + 0.251*Tr + 0.338*C
AO51NLLX6	D-Z	D_Z (rise)	0.100 + 0.267*Tr + 0.277*C	0.320 + 0.325*Tr + 0.612*C	0.186 + 0.296*Tr + 0.414*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51NLLX8	I-Z	I_Z (fall)	0.069 + 0.251*Tr + 0.161*C	0.289 + 0.316*Tr + 0.391*C	0.188 + 0.306*Tr + 0.252*C
AO51NLLX8	I-Z	I_Z (rise)	0.076 + 0.196*Tr + 0.206*C	0.231 + 0.229*Tr + 0.458*C	0.139 + 0.211*Tr + 0.317*C
AO51NLLX8	E-Z	E_Z (fall)	0.085 + 0.233*Tr + 0.169*C	0.363 + 0.261*Tr + 0.392*C	0.229 + 0.253*Tr + 0.253*C
AO51NLLX8	E-Z	E_Z (rise)	0.098 + 0.243*Tr + 0.208*C	0.324 + 0.288*Tr + 0.459*C	0.187 + 0.267*Tr + 0.311*C
AO51NLLX8	A-Z	A_Z (fall)	0.096 + 0.212*Tr + 0.175*C	0.390 + 0.226*Tr + 0.390*C	0.251 + 0.212*Tr + 0.252*C
AO51NLLX8	A-Z	A_Z (rise)	0.111 + 0.283*Tr + 0.211*C	0.389 + 0.341*Tr + 0.461*C	0.218 + 0.317*Tr + 0.305*C
AO51NLLX8	F-Z	F_Z (fall)	0.088 + 0.241*Tr + 0.169*C	0.377 + 0.265*Tr + 0.394*C	0.238 + 0.258*Tr + 0.254*C
AO51NLLX8	F-Z	F_Z (rise)	0.099 + 0.206*Tr + 0.209*C	0.333 + 0.244*Tr + 0.460*C	0.190 + 0.227*Tr + 0.311*C
AO51NLLX8	B-Z	B_Z (fall)	0.100 + 0.218*Tr + 0.175*C	0.409 + 0.228*Tr + 0.392*C	0.256 + 0.213*Tr + 0.253*C
AO51NLLX8	B-Z	B_Z (rise)	0.114 + 0.254*Tr + 0.212*C	0.406 + 0.299*Tr + 0.462*C	0.225 + 0.283*Tr + 0.306*C
AO51NLLX8	G-Z	G_Z (fall)	0.063 + 0.230*Tr + 0.160*C	0.258 + 0.302*Tr + 0.386*C	0.169 + 0.291*Tr + 0.249*C
AO51NLLX8	G-Z	G_Z (rise)	0.074 + 0.247*Tr + 0.206*C	0.212 + 0.298*Tr + 0.457*C	0.132 + 0.268*Tr + 0.318*C
AO51NLLX8	C-Z	C_Z (fall)	0.103 + 0.225*Tr + 0.175*C	0.424 + 0.231*Tr + 0.394*C	0.265 + 0.217*Tr + 0.254*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO51NLLX8	C-Z	C_Z (rise)	0.114 + 0.212*Tr + 0.212*C	0.416 + 0.253*Tr + 0.462*C	0.228 + 0.239*Tr + 0.306*C
AO51NLLX8	H-Z	H_Z (fall)	0.066 + 0.241*Tr + 0.160*C	0.275 + 0.309*Tr + 0.388*C	0.180 + 0.299*Tr + 0.250*C
AO51NLLX8	H-Z	H_Z (rise)	0.075 + 0.227*Tr + 0.206*C	0.224 + 0.267*Tr + 0.457*C	0.137 + 0.244*Tr + 0.318*C
AO51NLLX8	D-Z	D_Z (fall)	0.082 + 0.224*Tr + 0.169*C	0.348 + 0.256*Tr + 0.390*C	0.220 + 0.247*Tr + 0.252*C
AO51NLLX8	D-Z	D_Z (rise)	0.097 + 0.268*Tr + 0.208*C	0.312 + 0.325*Tr + 0.459*C	0.182 + 0.297*Tr + 0.311*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO51NLL	4984.720	93888.000
AO51NLLP	7590.980	158965.000
AO51NLLX4	13826.000	301598.000
AO51NLLX6	21204.700	455780.000
AO51NLLX8	27652.300	603195.000

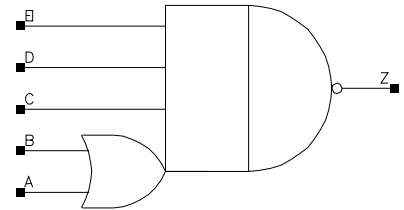
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO51NLL	Z(max)	0.031 + 0.004*Tr
AO51NLLP	Z(max)	0.051 + 0.008*Tr
AO51NLLX4	Z(max)	0.099 + 0.017*Tr
AO51NLLX6	Z(max)	0.154 + 0.026*Tr
AO51NLLX8	Z(max)	0.200 + 0.035*Tr

AO52LL
AO52LLP
AO52LLX4
AO52LLX6
AO52LLX8

Function: AO52LLX8



Physical Dimensions

Property	AO52LL	AO52LLP	AO52LLX4	AO52LLX6	AO52LLX8
Area(um2)	12.103	14.120	24.206	34.292	46.396

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO52LL	C Input Cap.	0.0024	0.0022	0.0023
AO52LL	A Input Cap.	0.0031	0.0028	0.0029
AO52LL	D Input Cap.	0.0024	0.0022	0.0022
AO52LL	Z Max Load	0.160	0.160	0.160
AO52LL	B Input Cap.	0.0027	0.0024	0.0026
AO52LL	E Input Cap.	0.0023	0.0021	0.0022
AO52LLP	E Input Cap.	0.0038	0.0034	0.0036
AO52LLP	C Input Cap.	0.0043	0.0039	0.0040
AO52LLP	A Input Cap.	0.0056	0.0052	0.0053
AO52LLP	D Input Cap.	0.0042	0.0038	0.0039
AO52LLP	Z Max Load	0.320	0.320	0.320
AO52LLP	B Input Cap.	0.0051	0.0047	0.0049
AO52LLX4	D Input Cap.	0.0082	0.0076	0.0078
AO52LLX4	Z Max Load	0.640	0.640	0.640
AO52LLX4	B Input Cap.	0.0099	0.0091	0.0094
AO52LLX4	E Input Cap.	0.0073	0.0067	0.0069
AO52LLX4	C Input Cap.	0.0088	0.0080	0.0083
AO52LLX4	A Input Cap.	0.0111	0.0101	0.0105
AO52LLX6	Z Max Load	0.960	0.960	0.960
AO52LLX6	A Input Cap.	0.0165	0.0152	0.0157

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO52LLX6	D Input Cap.	0.0126	0.0116	0.0120
AO52LLX6	B Input Cap.	0.0152	0.0140	0.0145
AO52LLX6	E Input Cap.	0.0115	0.0106	0.0109
AO52LLX6	C Input Cap.	0.0128	0.0116	0.0120
AO52LLX8	E Input Cap.	0.0148	0.0136	0.0140
AO52LLX8	C Input Cap.	0.0170	0.0155	0.0161
AO52LLX8	A Input Cap.	0.0220	0.0202	0.0209
AO52LLX8	D Input Cap.	0.0165	0.0152	0.0157
AO52LLX8	Z Max Load	1.280	1.280	1.280
AO52LLX8	B Input Cap.	0.0199	0.0183	0.0190

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO52LL	E-Z	E_Z (fall)	0.005 + 0.233*Tr + 2.834*C	0.056 + 0.270*Tr + 8.597*C	0.023 + 0.256*Tr + 4.965*C
AO52LL	E-Z	E_Z (rise)	0.017 + 0.326*Tr + 3.938*C	0.043 + 0.350*Tr + 8.373*C	0.024 + 0.340*Tr + 5.756*C
AO52LL	A-Z	A_Z (fall)	0.034 + 0.166*Tr + 2.961*C	0.113 + 0.194*Tr + 8.484*C	0.057 + 0.184*Tr + 4.785*C
AO52LL	A-Z	A_Z (rise)	0.048 + 0.253*Tr + 4.067*C	0.117 + 0.267*Tr + 8.989*C	0.073 + 0.263*Tr + 6.043*C
AO52LL	B-Z	B_Z (fall)	0.029 + 0.160*Tr + 2.981*C	0.097 + 0.189*Tr + 8.522*C	0.048 + 0.179*Tr + 4.817*C
AO52LL	B-Z	B_Z (rise)	0.041 + 0.322*Tr + 4.101*C	0.099 + 0.333*Tr + 8.995*C	0.062 + 0.329*Tr + 6.083*C
AO52LL	C-Z	C_Z (fall)	0.017 + 0.179*Tr + 2.717*C	0.094 + 0.214*Tr + 8.522*C	0.045 + 0.206*Tr + 4.850*C
AO52LL	C-Z	C_Z (rise)	0.029 + 0.340*Tr + 3.889*C	0.072 + 0.362*Tr + 8.292*C	0.043 + 0.352*Tr + 5.682*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO52LL	D-Z	D_Z (fall)	0.012 + 0.213*Tr + 2.777*C	0.077 + 0.246*Tr + 8.563*C	0.035 + 0.237*Tr + 4.913*C
AO52LL	D-Z	D_Z (rise)	0.023 + 0.332*Tr + 3.911*C	0.059 + 0.356*Tr + 8.324*C	0.034 + 0.346*Tr + 5.713*C
AO52LLP	E-Z	E_Z (fall)	-0.002 + 0.231*Tr + 1.439*C	0.041 + 0.264*Tr + 4.174*C	0.014 + 0.252*Tr + 2.466*C
AO52LLP	E-Z	E_Z (rise)	0.009 + 0.317*Tr + 1.938*C	0.026 + 0.338*Tr + 3.986*C	0.012 + 0.329*Tr + 2.786*C
AO52LLP	A-Z	A_Z (fall)	0.031 + 0.166*Tr + 1.490*C	0.102 + 0.192*Tr + 4.102*C	0.051 + 0.183*Tr + 2.363*C
AO52LLP	A-Z	A_Z (rise)	0.043 + 0.246*Tr + 1.968*C	0.103 + 0.260*Tr + 4.272*C	0.064 + 0.256*Tr + 2.897*C
AO52LLP	B-Z	B_Z (fall)	0.025 + 0.158*Tr + 1.504*C	0.085 + 0.186*Tr + 4.119*C	0.042 + 0.177*Tr + 2.382*C
AO52LLP	B-Z	B_Z (rise)	0.035 + 0.314*Tr + 1.991*C	0.085 + 0.324*Tr + 4.282*C	0.052 + 0.320*Tr + 2.925*C
AO52LLP	C-Z	C_Z (fall)	0.013 + 0.177*Tr + 1.375*C	0.083 + 0.210*Tr + 4.131*C	0.038 + 0.204*Tr + 2.402*C
AO52LLP	C-Z	C_Z (rise)	0.023 + 0.330*Tr + 1.907*C	0.058 + 0.352*Tr + 3.932*C	0.034 + 0.343*Tr + 2.741*C
AO52LLP	D-Z	D_Z (fall)	0.006 + 0.210*Tr + 1.410*C	0.064 + 0.242*Tr + 4.155*C	0.027 + 0.234*Tr + 2.438*C
AO52LLP	D-Z	D_Z (rise)	0.017 + 0.324*Tr + 1.920*C	0.044 + 0.346*Tr + 3.952*C	0.023 + 0.337*Tr + 2.759*C
AO52LLX4	E-Z	E_Z (fall)	0.002 + 0.223*Tr + 0.721*C	0.044 + 0.261*Tr + 2.088*C	0.017 + 0.247*Tr + 1.233*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO52LLX4	E-Z	E_Z (rise)	0.010 + 0.307*Tr + 0.948*C	0.025 + 0.328*Tr + 1.921*C	0.012 + 0.319*Tr + 1.352*C
AO52LLX4	A-Z	A_Z (fall)	0.031 + 0.163*Tr + 0.746*C	0.102 + 0.189*Tr + 2.052*C	0.052 + 0.180*Tr + 1.183*C
AO52LLX4	A-Z	A_Z (rise)	0.042 + 0.244*Tr + 0.985*C	0.102 + 0.258*Tr + 2.138*C	0.064 + 0.254*Tr + 1.451*C
AO52LLX4	B-Z	B_Z (fall)	0.026 + 0.155*Tr + 0.753*C	0.084 + 0.183*Tr + 2.062*C	0.042 + 0.173*Tr + 1.192*C
AO52LLX4	B-Z	B_Z (rise)	0.035 + 0.311*Tr + 0.996*C	0.083 + 0.323*Tr + 2.144*C	0.052 + 0.317*Tr + 1.464*C
AO52LLX4	C-Z	C_Z (fall)	0.015 + 0.172*Tr + 0.688*C	0.084 + 0.208*Tr + 2.067*C	0.040 + 0.200*Tr + 1.202*C
AO52LLX4	C-Z	C_Z (rise)	0.024 + 0.322*Tr + 0.932*C	0.056 + 0.344*Tr + 1.892*C	0.034 + 0.333*Tr + 1.328*C
AO52LLX4	D-Z	D_Z (fall)	0.008 + 0.204*Tr + 0.706*C	0.065 + 0.239*Tr + 2.078*C	0.030 + 0.229*Tr + 1.219*C
AO52LLX4	D-Z	D_Z (rise)	0.017 + 0.315*Tr + 0.939*C	0.042 + 0.337*Tr + 1.902*C	0.023 + 0.327*Tr + 1.338*C
AO52LLX6	E-Z	E_Z (fall)	0.000 + 0.219*Tr + 0.483*C	0.043 + 0.255*Tr + 1.396*C	0.016 + 0.242*Tr + 0.826*C
AO52LLX6	E-Z	E_Z (rise)	0.009 + 0.305*Tr + 0.640*C	0.026 + 0.325*Tr + 1.304*C	0.012 + 0.316*Tr + 0.917*C
AO52LLX6	A-Z	A_Z (fall)	0.030 + 0.161*Tr + 0.498*C	0.099 + 0.187*Tr + 1.370*C	0.050 + 0.178*Tr + 0.790*C
AO52LLX6	A-Z	A_Z (rise)	0.041 + 0.243*Tr + 0.657*C	0.100 + 0.255*Tr + 1.427*C	0.062 + 0.252*Tr + 0.968*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO52LLX6	B-Z	B_Z (fall)	0.025 + 0.152*Tr + 0.503*C	0.083 + 0.180*Tr + 1.377*C	0.041 + 0.170*Tr + 0.797*C
AO52LLX6	B-Z	B_Z (rise)	0.035 + 0.308*Tr + 0.665*C	0.082 + 0.318*Tr + 1.431*C	0.051 + 0.313*Tr + 0.978*C
AO52LLX6	C-Z	C_Z (fall)	0.014 + 0.169*Tr + 0.461*C	0.082 + 0.204*Tr + 1.379*C	0.039 + 0.197*Tr + 0.804*C
AO52LLX6	C-Z	C_Z (rise)	0.023 + 0.320*Tr + 0.629*C	0.056 + 0.341*Tr + 1.283*C	0.033 + 0.331*Tr + 0.899*C
AO52LLX6	D-Z	D_Z (fall)	0.007 + 0.200*Tr + 0.473*C	0.064 + 0.234*Tr + 1.389*C	0.028 + 0.225*Tr + 0.816*C
AO52LLX6	D-Z	D_Z (rise)	0.017 + 0.313*Tr + 0.634*C	0.042 + 0.334*Tr + 1.291*C	0.023 + 0.324*Tr + 0.906*C
AO52LLX8	E-Z	E_Z (fall)	0.001 + 0.218*Tr + 0.363*C	0.042 + 0.257*Tr + 1.048*C	0.016 + 0.242*Tr + 0.620*C
AO52LLX8	E-Z	E_Z (rise)	0.009 + 0.303*Tr + 0.476*C	0.024 + 0.323*Tr + 0.965*C	0.011 + 0.314*Tr + 0.680*C
AO52LLX8	A-Z	A_Z (fall)	0.031 + 0.160*Tr + 0.374*C	0.100 + 0.187*Tr + 1.028*C	0.051 + 0.178*Tr + 0.593*C
AO52LLX8	A-Z	A_Z (rise)	0.041 + 0.243*Tr + 0.493*C	0.100 + 0.256*Tr + 1.071*C	0.062 + 0.252*Tr + 0.726*C
AO52LLX8	B-Z	B_Z (fall)	0.025 + 0.152*Tr + 0.378*C	0.083 + 0.181*Tr + 1.033*C	0.042 + 0.170*Tr + 0.598*C
AO52LLX8	B-Z	B_Z (rise)	0.035 + 0.309*Tr + 0.499*C	0.081 + 0.320*Tr + 1.074*C	0.051 + 0.314*Tr + 0.734*C
AO52LLX8	C-Z	C_Z (fall)	0.014 + 0.168*Tr + 0.346*C	0.082 + 0.204*Tr + 1.036*C	0.039 + 0.196*Tr + 0.603*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO52LLX8	C-Z	C_Z (rise)	0.023 + 0.321*Tr + 0.473*C	0.056 + 0.342*Tr + 0.968*C	0.033 + 0.332*Tr + 0.678*C
AO52LLX8	D-Z	D_Z (fall)	0.008 + 0.199*Tr + 0.355*C	0.064 + 0.235*Tr + 1.042*C	0.029 + 0.225*Tr + 0.613*C
AO52LLX8	D-Z	D_Z (rise)	0.016 + 0.312*Tr + 0.471*C	0.041 + 0.332*Tr + 0.955*C	0.023 + 0.322*Tr + 0.672*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO52LL	2536.360	56223.200
AO52LLP	4509.280	104160.000
AO52LLX4	8955.440	206915.000
AO52LLX6	13470.800	311187.000
AO52LLX8	17931.800	414302.000

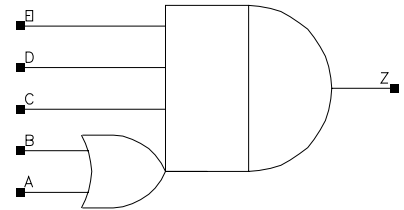
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO52LL	Z(max)	0.013 + 0.008*Tr
AO52LLP	Z(max)	0.024 + 0.016*Tr
AO52LLX4	Z(max)	0.045 + 0.034*Tr
AO52LLX6	Z(max)	0.066 + 0.052*Tr
AO52LLX8	Z(max)	0.088 + 0.069*Tr

AO52NLL
AO52NLLP
AO52NLLX4
AO52NLLX6
AO52NLLX8

Function: AO52NLLX8



Physical Dimensions

Property	AO52NLL	AO52NLLP	AO52NLLX4	AO52NLLX6	AO52NLLX8
Area(um ²)	14.120	18.155	20.172	32.275	36.310

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO52NLL	B Input Cap.	0.0020	0.0018	0.0019
AO52NLL	E Input Cap.	0.0014	0.0012	0.0013
AO52NLL	C Input Cap.	0.0014	0.0012	0.0013
AO52NLL	Z Max Load	0.160	0.160	0.160
AO52NLL	A Input Cap.	0.0020	0.0017	0.0018
AO52NLL	D Input Cap.	0.0014	0.0012	0.0013
AO52NLLP	B Input Cap.	0.0028	0.0024	0.0026
AO52NLLP	E Input Cap.	0.0023	0.0019	0.0020
AO52NLLP	C Input Cap.	0.0024	0.0021	0.0022
AO52NLLP	Z Max Load	0.320	0.320	0.320
AO52NLLP	A Input Cap.	0.0031	0.0027	0.0028
AO52NLLP	D Input Cap.	0.0024	0.0021	0.0022
AO52NLLX4	D Input Cap.	0.0045	0.0039	0.0041
AO52NLLX4	B Input Cap.	0.0054	0.0048	0.0050
AO52NLLX4	E Input Cap.	0.0043	0.0036	0.0038
AO52NLLX4	C Input Cap.	0.0045	0.0039	0.0041
AO52NLLX4	Z Max Load	0.640	0.640	0.640
AO52NLLX4	A Input Cap.	0.0058	0.0052	0.0054
AO52NLLX6	A Input Cap.	0.0090	0.0080	0.0083
AO52NLLX6	D Input Cap.	0.0069	0.0061	0.0063

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO52NLLX6	Z Max Load	0.960	0.960	0.960
AO52NLLX6	B Input Cap.	0.0081	0.0071	0.0075
AO52NLLX6	E Input Cap.	0.0065	0.0055	0.0057
AO52NLLX6	C Input Cap.	0.0073	0.0064	0.0067
AO52NLLX8	E Input Cap.	0.0083	0.0070	0.0073
AO52NLLX8	C Input Cap.	0.0093	0.0082	0.0085
AO52NLLX8	Z Max Load	1.280	1.280	1.280
AO52NLLX8	A Input Cap.	0.0115	0.0102	0.0106
AO52NLLX8	D Input Cap.	0.0088	0.0078	0.0080
AO52NLLX8	B Input Cap.	0.0104	0.0092	0.0096

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO52NLL	E-Z	E_Z (fall)	0.097 + 0.322*Tr + 1.291*C	0.244 + 0.358*Tr + 2.988*C	0.157 + 0.340*Tr + 1.908*C
AO52NLL	E-Z	E_Z (rise)	0.074 + 0.184*Tr + 1.653*C	0.237 + 0.244*Tr + 3.618*C	0.138 + 0.217*Tr + 2.420*C
AO52NLL	A-Z	A_Z (fall)	0.134 + 0.269*Tr + 1.342*C	0.323 + 0.280*Tr + 2.989*C	0.207 + 0.275*Tr + 1.904*C
AO52NLL	A-Z	A_Z (rise)	0.094 + 0.154*Tr + 1.679*C	0.282 + 0.186*Tr + 3.636*C	0.156 + 0.171*Tr + 2.434*C
AO52NLL	B-Z	B_Z (fall)	0.132 + 0.329*Tr + 1.339*C	0.308 + 0.345*Tr + 2.980*C	0.200 + 0.335*Tr + 1.898*C
AO52NLL	B-Z	B_Z (rise)	0.089 + 0.144*Tr + 1.677*C	0.262 + 0.179*Tr + 3.621*C	0.147 + 0.163*Tr + 2.430*C
AO52NLL	C-Z	C_Z (fall)	0.113 + 0.342*Tr + 1.303*C	0.283 + 0.375*Tr + 3.021*C	0.181 + 0.359*Tr + 1.925*C
AO52NLL	C-Z	C_Z (rise)	0.077 + 0.151*Tr + 1.661*C	0.266 + 0.199*Tr + 3.635*C	0.149 + 0.183*Tr + 2.432*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO52NLL	D-Z	D_Z (fall)	0.106 + 0.333*Tr + 1.298*C	0.266 + 0.367*Tr + 3.005*C	0.170 + 0.350*Tr + 1.917*C
AO52NLL	D-Z	D_Z (rise)	0.076 + 0.172*Tr + 1.659*C	0.254 + 0.225*Tr + 3.630*C	0.145 + 0.205*Tr + 2.429*C
AO52NLLP	E-Z	E_Z (fall)	0.082 + 0.301*Tr + 0.648*C	0.195 + 0.336*Tr + 1.443*C	0.128 + 0.319*Tr + 0.941*C
AO52NLLP	E-Z	E_Z (rise)	0.064 + 0.187*Tr + 0.810*C	0.205 + 0.246*Tr + 1.746*C	0.120 + 0.220*Tr + 1.177*C
AO52NLLP	A-Z	A_Z (fall)	0.116 + 0.255*Tr + 0.672*C	0.276 + 0.269*Tr + 1.443*C	0.177 + 0.262*Tr + 0.935*C
AO52NLLP	A-Z	A_Z (rise)	0.085 + 0.160*Tr + 0.823*C	0.253 + 0.190*Tr + 1.756*C	0.141 + 0.176*Tr + 1.183*C
AO52NLLP	B-Z	B_Z (fall)	0.114 + 0.312*Tr + 0.670*C	0.261 + 0.330*Tr + 1.438*C	0.171 + 0.318*Tr + 0.932*C
AO52NLLP	B-Z	B_Z (rise)	0.079 + 0.150*Tr + 0.822*C	0.230 + 0.182*Tr + 1.747*C	0.130 + 0.167*Tr + 1.181*C
AO52NLLP	C-Z	C_Z (fall)	0.097 + 0.324*Tr + 0.653*C	0.232 + 0.357*Tr + 1.457*C	0.152 + 0.340*Tr + 0.947*C
AO52NLLP	C-Z	C_Z (rise)	0.068 + 0.156*Tr + 0.814*C	0.236 + 0.204*Tr + 1.755*C	0.133 + 0.189*Tr + 1.182*C
AO52NLLP	D-Z	D_Z (fall)	0.090 + 0.313*Tr + 0.651*C	0.215 + 0.348*Tr + 1.449*C	0.141 + 0.330*Tr + 0.944*C
AO52NLLP	D-Z	D_Z (rise)	0.067 + 0.176*Tr + 0.813*C	0.223 + 0.229*Tr + 1.752*C	0.128 + 0.209*Tr + 1.181*C
AO52NLLX4	E-Z	E_Z (fall)	0.074 + 0.287*Tr + 0.319*C	0.173 + 0.322*Tr + 0.704*C	0.115 + 0.305*Tr + 0.460*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO52NLLX4	E-Z	E_Z (rise)	0.059 + 0.183*Tr + 0.404*C	0.184 + 0.238*Tr + 0.862*C	0.110 + 0.215*Tr + 0.584*C
AO52NLLX4	A-Z	A_Z (fall)	0.104 + 0.247*Tr + 0.330*C	0.243 + 0.261*Tr + 0.704*C	0.158 + 0.253*Tr + 0.457*C
AO52NLLX4	A-Z	A_Z (rise)	0.078 + 0.161*Tr + 0.410*C	0.225 + 0.187*Tr + 0.867*C	0.127 + 0.175*Tr + 0.587*C
AO52NLLX4	B-Z	B_Z (fall)	0.103 + 0.302*Tr + 0.329*C	0.230 + 0.319*Tr + 0.701*C	0.153 + 0.307*Tr + 0.455*C
AO52NLLX4	B-Z	B_Z (rise)	0.073 + 0.149*Tr + 0.409*C	0.203 + 0.179*Tr + 0.863*C	0.117 + 0.165*Tr + 0.586*C
AO52NLLX4	C-Z	C_Z (fall)	0.088 + 0.312*Tr + 0.321*C	0.206 + 0.345*Tr + 0.710*C	0.137 + 0.328*Tr + 0.463*C
AO52NLLX4	C-Z	C_Z (rise)	0.062 + 0.154*Tr + 0.406*C	0.212 + 0.199*Tr + 0.866*C	0.122 + 0.185*Tr + 0.587*C
AO52NLLX4	D-Z	D_Z (fall)	0.082 + 0.301*Tr + 0.320*C	0.191 + 0.334*Tr + 0.707*C	0.127 + 0.317*Tr + 0.461*C
AO52NLLX4	D-Z	D_Z (rise)	0.061 + 0.173*Tr + 0.405*C	0.199 + 0.223*Tr + 0.865*C	0.117 + 0.204*Tr + 0.586*C
AO52NLLX6	E-Z	E_Z (fall)	0.073 + 0.286*Tr + 0.213*C	0.167 + 0.316*Tr + 0.470*C	0.112 + 0.301*Tr + 0.308*C
AO52NLLX6	E-Z	E_Z (rise)	0.059 + 0.186*Tr + 0.270*C	0.185 + 0.243*Tr + 0.578*C	0.110 + 0.219*Tr + 0.391*C
AO52NLLX6	A-Z	A_Z (fall)	0.105 + 0.248*Tr + 0.221*C	0.245 + 0.261*Tr + 0.472*C	0.159 + 0.254*Tr + 0.307*C
AO52NLLX6	A-Z	A_Z (rise)	0.080 + 0.160*Tr + 0.274*C	0.230 + 0.188*Tr + 0.582*C	0.130 + 0.175*Tr + 0.393*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO52NLLX6	B-Z	B_Z (fall)	0.103 + 0.303*Tr + 0.220*C	0.231 + 0.320*Tr + 0.470*C	0.153 + 0.308*Tr + 0.305*C
AO52NLLX6	B-Z	B_Z (rise)	0.073 + 0.149*Tr + 0.274*C	0.207 + 0.180*Tr + 0.579*C	0.118 + 0.166*Tr + 0.393*C
AO52NLLX6	C-Z	C_Z (fall)	0.087 + 0.309*Tr + 0.215*C	0.201 + 0.339*Tr + 0.474*C	0.134 + 0.323*Tr + 0.309*C
AO52NLLX6	C-Z	C_Z (rise)	0.063 + 0.156*Tr + 0.271*C	0.217 + 0.201*Tr + 0.582*C	0.124 + 0.187*Tr + 0.393*C
AO52NLLX6	D-Z	D_Z (fall)	0.080 + 0.298*Tr + 0.214*C	0.185 + 0.329*Tr + 0.472*C	0.124 + 0.313*Tr + 0.308*C
AO52NLLX6	D-Z	D_Z (rise)	0.062 + 0.176*Tr + 0.271*C	0.202 + 0.226*Tr + 0.581*C	0.118 + 0.207*Tr + 0.392*C
AO52NLLX8	E-Z	E_Z (fall)	0.071 + 0.283*Tr + 0.160*C	0.164 + 0.314*Tr + 0.353*C	0.110 + 0.299*Tr + 0.231*C
AO52NLLX8	E-Z	E_Z (rise)	0.057 + 0.185*Tr + 0.202*C	0.180 + 0.240*Tr + 0.433*C	0.108 + 0.217*Tr + 0.293*C
AO52NLLX8	A-Z	A_Z (fall)	0.103 + 0.247*Tr + 0.166*C	0.241 + 0.260*Tr + 0.354*C	0.156 + 0.253*Tr + 0.230*C
AO52NLLX8	A-Z	A_Z (rise)	0.078 + 0.160*Tr + 0.206*C	0.223 + 0.187*Tr + 0.436*C	0.126 + 0.174*Tr + 0.295*C
AO52NLLX8	B-Z	B_Z (fall)	0.101 + 0.301*Tr + 0.165*C	0.226 + 0.318*Tr + 0.352*C	0.150 + 0.306*Tr + 0.229*C
AO52NLLX8	B-Z	B_Z (rise)	0.072 + 0.148*Tr + 0.205*C	0.200 + 0.178*Tr + 0.433*C	0.115 + 0.164*Tr + 0.294*C
AO52NLLX8	C-Z	C_Z (fall)	0.086 + 0.307*Tr + 0.161*C	0.197 + 0.337*Tr + 0.356*C	0.132 + 0.321*Tr + 0.232*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
AO52NLLX8	C-Z	C_Z (rise)	0.062 + 0.155*Tr + 0.204*C	0.210 + 0.200*Tr + 0.435*C	0.121 + 0.186*Tr + 0.295*C
AO52NLLX8	D-Z	D_Z (fall)	0.079 + 0.296*Tr + 0.160*C	0.182 + 0.327*Tr + 0.355*C	0.122 + 0.311*Tr + 0.232*C
AO52NLLX8	D-Z	D_Z (rise)	0.060 + 0.174*Tr + 0.203*C	0.196 + 0.224*Tr + 0.435*C	0.115 + 0.206*Tr + 0.294*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
AO52NLL	3373.540	68930.900
AO52NLLP	5622.160	123117.000
AO52NLLX4	10680.500	237920.000
AO52NLLX6	16243.400	359825.000
AO52NLLX8	21298.100	474433.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
AO52NLL	Z(max)	0.019 + 0.006*Tr
AO52NLLP	Z(max)	0.033 + 0.011*Tr
AO52NLLX4	Z(max)	0.059 + 0.024*Tr
AO52NLLX6	Z(max)	0.090 + 0.037*Tr
AO52NLLX8	Z(max)	0.118 + 0.049*Tr

<p>BFLL BFLLP BFLLX05 BFLLX10 BFLLX12 BFLLX4 BFLLX6 BFLLX8</p> <p>Function: Function = Internal Non-Inverting Buffer</p> <p>Boolean Expression: $Z = A$</p>	
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Physical Dimensions

Property	BFLL	BFLLP	BFLLX05	BFLLX10	BFLLX12
Area(um2)	8.069	8.069	6.052	20.172	24.206

Property	BFLLX4	BFLLX6	BFLLX8
Area(um2)	10.086	14.120	18.155

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
BFLL	A Input Cap.	0.0015	0.0012	0.0013
BFLL	Z Max Load	0.160	0.160	0.160
BFLLP	A Input Cap.	0.0026	0.0021	0.0022
BFLLP	Z Max Load	0.320	0.320	0.320
BFLLX05	A Input Cap.	0.0019	0.0016	0.0017
BFLLX05	Z Max Load	0.080	0.080	0.080
BFLLX10	Z Max Load	1.600	1.600	1.600
BFLLX10	A Input Cap.	0.0111	0.0095	0.0098
BFLLX12	Z Max Load	1.920	1.920	1.920
BFLLX12	A Input Cap.	0.0131	0.0112	0.0116
BFLLX4	A Input Cap.	0.0047	0.0040	0.0041
BFLLX4	Z Max Load	0.640	0.640	0.640

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
BFLLX6	Z Max Load	0.960	0.960	0.960
BFLLX6	A Input Cap.	0.0068	0.0058	0.0060
BFLLX8	A Input Cap.	0.0091	0.0077	0.0081
BFLLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
BFLL	A-Z	A_Z (fall)	0.058 + 0.269*Tr + 1.222*C	0.129 + 0.279*Tr + 2.657*C	0.086 + 0.272*Tr + 1.705*C
BFLL	A-Z	A_Z (rise)	0.045 + 0.171*Tr + 1.614*C	0.105 + 0.215*Tr + 3.383*C	0.067 + 0.188*Tr + 2.315*C
BFLLP	A-Z	A_Z (fall)	0.052 + 0.249*Tr + 0.612*C	0.114 + 0.260*Tr + 1.278*C	0.076 + 0.252*Tr + 0.838*C
BFLLP	A-Z	A_Z (rise)	0.042 + 0.184*Tr + 0.790*C	0.095 + 0.223*Tr + 1.630*C	0.062 + 0.199*Tr + 1.122*C
BFLLX05	A-Z	A_Z (fall)	0.053 + 0.265*Tr + 2.212*C	0.122 + 0.274*Tr + 5.081*C	0.080 + 0.268*Tr + 3.168*C
BFLLX05	A-Z	A_Z (rise)	0.043 + 0.160*Tr + 3.220*C	0.104 + 0.206*Tr + 6.923*C	0.065 + 0.178*Tr + 4.684*C
BFLLX10	A-Z	A_Z (fall)	0.048 + 0.234*Tr + 0.122*C	0.102 + 0.244*Tr + 0.255*C	0.069 + 0.237*Tr + 0.167*C
BFLLX10	A-Z	A_Z (rise)	0.040 + 0.193*Tr + 0.158*C	0.087 + 0.226*Tr + 0.326*C	0.057 + 0.205*Tr + 0.225*C
BFLLX12	A-Z	A_Z (fall)	0.047 + 0.233*Tr + 0.102*C	0.101 + 0.243*Tr + 0.212*C	0.069 + 0.236*Tr + 0.139*C
BFLLX12	A-Z	A_Z (rise)	0.039 + 0.193*Tr + 0.132*C	0.086 + 0.225*Tr + 0.272*C	0.056 + 0.205*Tr + 0.187*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
BFLLX4	A-Z	A_Z (fall)	0.049 + 0.237*Tr + 0.306*C	0.107 + 0.249*Tr + 0.638*C	0.072 + 0.241*Tr + 0.418*C
BFLLX4	A-Z	A_Z (rise)	0.041 + 0.192*Tr + 0.395*C	0.091 + 0.227*Tr + 0.816*C	0.059 + 0.206*Tr + 0.562*C
BFLLX6	A-Z	A_Z (fall)	0.049 + 0.234*Tr + 0.204*C	0.105 + 0.245*Tr + 0.426*C	0.071 + 0.237*Tr + 0.279*C
BFLLX6	A-Z	A_Z (rise)	0.041 + 0.194*Tr + 0.263*C	0.089 + 0.226*Tr + 0.544*C	0.059 + 0.206*Tr + 0.375*C
BFLLX8	A-Z	A_Z (fall)	0.048 + 0.236*Tr + 0.153*C	0.103 + 0.246*Tr + 0.320*C	0.070 + 0.239*Tr + 0.210*C
BFLLX8	A-Z	A_Z (rise)	0.040 + 0.191*Tr + 0.198*C	0.088 + 0.224*Tr + 0.408*C	0.058 + 0.204*Tr + 0.281*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
BFLL	2807.800	53314.000
BFLLP	4448.950	93117.000
BFLLX05	2245.600	38676.000
BFLLX10	20637.500	444370.000
BFLLX12	24682.500	533450.000
BFLLX4	8351.350	179080.000
BFLLX6	12341.000	266730.000
BFLLX8	16702.500	358165.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
BFLL	Z(max)	0.010 + 0.008*Tr
BFLLP	Z(max)	0.018 + 0.016*Tr

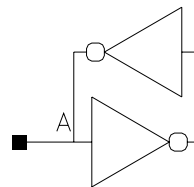
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
BFLLX05	Z(max)	$0.007 + 0.006 * Tr$
BFLLX10	Z(max)	$0.082 + 0.086 * Tr$
BFLLX12	Z(max)	$0.097 + 0.105 * Tr$
BFLLX4	Z(max)	$0.033 + 0.033 * Tr$
BFLLX6	Z(max)	$0.051 + 0.050 * Tr$
BFLLX8	Z(max)	$0.065 + 0.069 * Tr$

BK1LLX05

Function: Function = Buskeeper Cell



Truth Table

A	A
1	1

Physical Dimensions

Property	BK1LLX05
Area(um2)	8.069

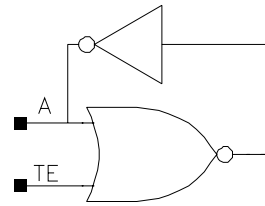
Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
BK1LLX05	A Input Cap.	0.0156	0.0142	0.0144
BK1LLX05	A Max Load	2.000	2.000	2.000

BK1SLLX05

Function: Function = Buskeeper Cell with Enable

**Truth Table**

A	TE	A
0	0	0
1	0	1
-	1	1

Physical Dimensions

Property	BK1SLLX05
Area(um ²)	10.086

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
BK1SLLX05	TE Input Cap.	0.0059	0.0051	0.0054
BK1SLLX05	A Input Cap.	0.0191	0.0164	0.0165
BK1SLLX05	A Max Load	2.000	2.000	2.000

BK1SLLX05 Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
TE-A	TE_A (fall)	$-0.006 + 0.196 \cdot Tr + 2.879 \cdot C$	$0.009 + 0.235 \cdot Tr + 6.135 \cdot C$	$0.003 + 0.210 \cdot Tr + 4.170 \cdot C$
TE-A	TE_A (rise)	$-0.006 + 0.196 \cdot Tr + 2.880 \cdot C$	$0.009 + 0.235 \cdot Tr + 6.136 \cdot C$	$0.003 + 0.210 \cdot Tr + 4.171 \cdot C$

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
BK1SLLX05	5283.200	97391.000

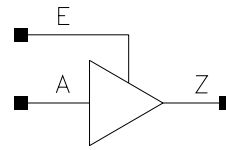
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
BK1SLLX05	A(max)	$0.008 + 0.019 \cdot Tr$

BTSLL
BTSLLP
BTSLLX10
BTSLLX12
BTSLLX4
BTSLLX8

**Function: Function = Internal Tristate Non-Inverting Buffer,
 Positive Enable**



Truth Table

E	A	Z
1	A	A
0	-	Z

Physical Dimensions

Property	BTSLL	BTSLLP	BTSLLX10	BTSLLX12	BTSLLX4
Area(um2)	10.086	14.120	36.310	42.361	18.155

Property	BTSLLX8
Area(um2)	30.258

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
BTSLL	E Input Cap.	0.0030	0.0026	0.0028
BTSLL	Z Input Cap.	0.0018	0.0022	0.0020
BTSLL	Z Max Load	0.160	0.160	0.160
BTSLL	A Input Cap.	0.0015	0.0012	0.0013
BTSLLP	Z Input Cap.	0.0033	0.0039	0.0036
BTSLLP	Z Max Load	0.320	0.320	0.320
BTSLLP	A Input Cap.	0.0025	0.0021	0.0022
BTSLLP	E Input Cap.	0.0045	0.0040	0.0042
BTSLLX10	Z Input Cap.	0.0142	0.0171	0.0154
BTSLLX10	A Input Cap.	0.0108	0.0093	0.0097
BTSLLX10	E Input Cap.	0.0218	0.0193	0.0202

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
BTSLLX10	Z Max Load	1.600	1.600	1.600
BTSLLX12	E Input Cap.	0.0257	0.0229	0.0239
BTSLLX12	Z Input Cap.	0.0173	0.0207	0.0187
BTSLLX12	A Input Cap.	0.0128	0.0111	0.0115
BTSLLX12	Z Max Load	1.920	1.920	1.920
BTSLLX4	A Input Cap.	0.0046	0.0040	0.0041
BTSLLX4	E Input Cap.	0.0087	0.0077	0.0081
BTSLLX4	Z Input Cap.	0.0054	0.0065	0.0059
BTSLLX4	Z Max Load	0.640	0.640	0.640
BTSLLX8	E Input Cap.	0.0174	0.0154	0.0161
BTSLLX8	Z Input Cap.	0.0112	0.0134	0.0121
BTSLLX8	Z Max Load	1.280	1.280	1.280
BTSLLX8	A Input Cap.	0.0086	0.0074	0.0077

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
BTSLL	E-Z	E_Z_3s_disable (fall)	0.074 + 0.272*Tr	0.159 + 0.278*Tr	0.104 + 0.276*Tr
BTSLL	E-Z	E_Z_3s_disable (rise)	-0.005 + 0.326*Tr	-0.019 + 0.368*Tr	-0.002 + 0.304*Tr
BTSLL	E-Z	E_Z_3s_enable (fall)	-0.018 + 0.187*Tr + 2.315*C	-0.027 + 0.231*Tr + 5.498*C	-0.029 + 0.211*Tr + 3.514*C
BTSLL	E-Z	E_Z_3s_enable (rise)	0.033 + 0.152*Tr + 3.023*C	0.079 + 0.195*Tr + 6.612*C	0.049 + 0.170*Tr + 4.444*C
BTSLL	A-Z	A_Z (fall)	0.061 + 0.269*Tr + 1.811*C	0.141 + 0.278*Tr + 4.671*C	0.093 + 0.272*Tr + 2.743*C
BTSLL	A-Z	A_Z (rise)	0.053 + 0.165*Tr + 3.032*C	0.127 + 0.207*Tr + 6.622*C	0.080 + 0.182*Tr + 4.451*C
BTSLLP	E-Z	E_Z_3s_disable (fall)	0.051 + 0.245*Tr	0.113 + 0.247*Tr	0.078 + 0.242*Tr

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
BTSLLP	E-Z	E_Z_3s_disable (rise)	-0.011 + 0.351*Tr	-0.024 + 0.402*Tr	-0.014 + 0.358*Tr
BTSLLP	E-Z	E_Z_3s_enable (fall)	-0.023 + 0.187*Tr + 1.203*C	-0.037 + 0.223*Tr + 2.777*C	-0.037 + 0.207*Tr + 1.806*C
BTSLLP	E-Z	E_Z_3s_enable (rise)	0.027 + 0.157*Tr + 1.471*C	0.061 + 0.191*Tr + 3.168*C	0.039 + 0.171*Tr + 2.143*C
BTSLLP	A-Z	A_Z (fall)	0.057 + 0.248*Tr + 0.925*C	0.129 + 0.258*Tr + 2.294*C	0.085 + 0.252*Tr + 1.374*C
BTSLLP	A-Z	A_Z (rise)	0.052 + 0.179*Tr + 1.474*C	0.121 + 0.216*Tr + 3.173*C	0.078 + 0.195*Tr + 2.146*C
BTSLX10	E-Z	E_Z_3s_disable (fall)	0.048 + 0.230*Tr	0.104 + 0.232*Tr	0.072 + 0.227*Tr
BTSLX10	E-Z	E_Z_3s_disable (rise)	-0.008 + 0.360*Tr	-0.025 + 0.405*Tr	-0.014 + 0.361*Tr
BTSLX10	E-Z	E_Z_3s_enable (fall)	-0.023 + 0.182*Tr + 0.244*C	-0.039 + 0.218*Tr + 0.563*C	-0.037 + 0.202*Tr + 0.367*C
BTSLX10	E-Z	E_Z_3s_enable (rise)	0.025 + 0.165*Tr + 0.295*C	0.056 + 0.194*Tr + 0.635*C	0.035 + 0.176*Tr + 0.430*C
BTSLX10	A-Z	A_Z (fall)	0.053 + 0.234*Tr + 0.185*C	0.120 + 0.243*Tr + 0.459*C	0.079 + 0.237*Tr + 0.275*C
BTSLX10	A-Z	A_Z (rise)	0.050 + 0.187*Tr + 0.295*C	0.115 + 0.219*Tr + 0.635*C	0.074 + 0.200*Tr + 0.430*C
BTSLX12	E-Z	E_Z_3s_disable (fall)	0.047 + 0.228*Tr	0.102 + 0.230*Tr	0.071 + 0.225*Tr
BTSLX12	E-Z	E_Z_3s_disable (rise)	-0.008 + 0.360*Tr	-0.024 + 0.404*Tr	-0.015 + 0.361*Tr
BTSLX12	E-Z	E_Z_3s_enable (fall)	-0.026 + 0.190*Tr + 0.201*C	-0.043 + 0.225*Tr + 0.464*C	-0.041 + 0.209*Tr + 0.302*C
BTSLX12	E-Z	E_Z_3s_enable (rise)	0.024 + 0.166*Tr + 0.246*C	0.055 + 0.194*Tr + 0.529*C	0.035 + 0.177*Tr + 0.358*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
BTSLLX12	A-Z	A_Z (fall)	0.054 + 0.233*Tr + 0.154*C	0.121 + 0.243*Tr + 0.382*C	0.080 + 0.237*Tr + 0.229*C
BTSLLX12	A-Z	A_Z (rise)	0.051 + 0.190*Tr + 0.246*C	0.116 + 0.221*Tr + 0.529*C	0.075 + 0.202*Tr + 0.358*C
BTSLLX4	E-Z	E_Z_3s_disable (fall)	0.049 + 0.233*Tr	0.106 + 0.235*Tr	0.074 + 0.230*Tr
BTSLLX4	E-Z	E_Z_3s_disable (rise)	-0.008 + 0.358*Tr	-0.024 + 0.404*Tr	-0.014 + 0.360*Tr
BTSLLX4	E-Z	E_Z_3s_enable (fall)	-0.016 + 0.171*Tr + 0.604*C	-0.026 + 0.209*Tr + 1.396*C	-0.027 + 0.191*Tr + 0.907*C
BTSLLX4	E-Z	E_Z_3s_enable (rise)	0.025 + 0.165*Tr + 0.737*C	0.058 + 0.196*Tr + 1.586*C	0.037 + 0.177*Tr + 1.074*C
BTSLLX4	A-Z	A_Z (fall)	0.056 + 0.238*Tr + 0.463*C	0.126 + 0.248*Tr + 1.148*C	0.083 + 0.242*Tr + 0.688*C
BTSLLX4	A-Z	A_Z (rise)	0.052 + 0.189*Tr + 0.737*C	0.121 + 0.223*Tr + 1.587*C	0.078 + 0.203*Tr + 1.074*C
BTSLLX8	E-Z	E_Z_3s_disable (fall)	0.049 + 0.232*Tr	0.105 + 0.234*Tr	0.073 + 0.229*Tr
BTSLLX8	E-Z	E_Z_3s_disable (rise)	-0.008 + 0.359*Tr	-0.025 + 0.405*Tr	-0.014 + 0.361*Tr
BTSLLX8	E-Z	E_Z_3s_enable (fall)	-0.017 + 0.165*Tr + 0.305*C	-0.028 + 0.201*Tr + 0.705*C	-0.029 + 0.184*Tr + 0.459*C
BTSLLX8	E-Z	E_Z_3s_enable (rise)	0.025 + 0.164*Tr + 0.369*C	0.057 + 0.194*Tr + 0.794*C	0.036 + 0.176*Tr + 0.538*C
BTSLLX8	A-Z	A_Z (fall)	0.055 + 0.238*Tr + 0.232*C	0.124 + 0.248*Tr + 0.574*C	0.082 + 0.241*Tr + 0.344*C
BTSLLX8	A-Z	A_Z (rise)	0.052 + 0.189*Tr + 0.369*C	0.119 + 0.222*Tr + 0.794*C	0.077 + 0.202*Tr + 0.537*C

Average Leakage Power

picoWatts

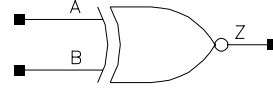
Cell	bc_1.32V_25C	bc_1.32V_125C
BTSSL	2935.350	53898.500
BTSLLP	4163.620	87249.800
BTSLX10	17726.000	396880.000
BTSLX12	20959.500	473105.000
BTSLX4	7234.250	160225.000
BTSLX8	14468.500	320445.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
BTSSL	Z(max)	$0.014 + 0.006 * Tr$
BTSLLP	Z(max)	$0.026 + 0.012 * Tr$
BTSLX10	Z(max)	$0.123 + 0.060 * Tr$
BTSLX12	Z(max)	$0.150 + 0.073 * Tr$
BTSLX4	Z(max)	$0.051 + 0.024 * Tr$
BTSLX8	Z(max)	$0.100 + 0.048 * Tr$

ENLL
ENLLP
ENLLX4
ENLLX6
ENLLX8



Function: Function = 2 Input Exclusive NOR

Truth Table

A	B	Z
A	0	!A
A	1	A

Physical Dimensions

Property	ENLL	ENLLP	ENLLX4	ENLLX6	ENLLX8
Area(um ²)	20.172	20.172	22.189	36.310	40.344

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ENLL	A Input Cap.	0.0020	0.0017	0.0018
ENLL	Z Max Load	0.160	0.160	0.160
ENLL	B Input Cap.	0.0040	0.0034	0.0036
ENLLP	A Input Cap.	0.0033	0.0029	0.0030
ENLLP	Z Max Load	0.320	0.320	0.320
ENLLP	B Input Cap.	0.0063	0.0056	0.0059
ENLLX4	Z Max Load	0.640	0.640	0.640
ENLLX4	B Input Cap.	0.0113	0.0103	0.0107
ENLLX4	A Input Cap.	0.0062	0.0054	0.0056
ENLLX6	A Input Cap.	0.0091	0.0078	0.0082
ENLLX6	Z Max Load	0.960	0.960	0.960
ENLLX6	B Input Cap.	0.0162	0.0146	0.0153
ENLLX8	A Input Cap.	0.0121	0.0105	0.0110
ENLLX8	Z Max Load	1.280	1.280	1.280

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ENLLX8	B Input Cap.	0.0213	0.0193	0.0202

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ENLL	A-Z	A_Z (fall)	0.109 + 0.174*Tr + 1.289°C	0.254 + 0.300*Tr + 2.862°C	0.161 + 0.295*Tr + 1.849°C
ENLL	A-Z	A_Z (rise)	0.076 + 0.219*Tr + 1.650°C	0.252 + 0.258*Tr + 3.446°C	0.156 + 0.252*Tr + 2.341°C
ENLL	A-Z	A_Z_state_1 (fall) (!B)	0.112 + 0.170*Tr + 1.286°C	0.273 + 0.210*Tr + 2.805°C	0.172 + 0.186*Tr + 1.799°C
ENLL	A-Z	A_Z_state_1 (rise) (!B)	0.101 + 0.250*Tr + 1.630°C	0.252 + 0.258*Tr + 3.446°C	0.156 + 0.252*Tr + 2.341°C
ENLL	A-Z	A_Z_state_2 (fall) (B)	0.101 + 0.293*Tr + 1.321°C	0.236 + 0.312*Tr + 2.875°C	0.154 + 0.301*Tr + 1.855°C
ENLL	A-Z	A_Z_state_2 (rise) (B)	0.076 + 0.219*Tr + 1.650°C	0.188 + 0.269*Tr + 3.502°C	0.115 + 0.239*Tr + 2.377°C
ENLL	B-Z	B_Z (fall)	0.086 + 0.182*Tr + 1.281°C	0.194 + 0.276*Tr + 2.853°C	0.122 + 0.272*Tr + 1.838°C
ENLL	B-Z	B_Z (rise)	0.056 + 0.180*Tr + 1.644°C	0.193 + 0.256*Tr + 3.443°C	0.120 + 0.250*Tr + 2.338°C
ENLL	B-Z	B_Z_state_3 (fall) (!A)	0.089 + 0.177*Tr + 1.285°C	0.211 + 0.215*Tr + 2.807°C	0.135 + 0.191*Tr + 1.799°C
ENLL	B-Z	B_Z_state_3 (rise) (!A)	0.078 + 0.248*Tr + 1.628°C	0.193 + 0.256*Tr + 3.443°C	0.120 + 0.250*Tr + 2.338°C
ENLL	B-Z	B_Z_state_4 (fall) (A)	0.076 + 0.273*Tr + 1.305°C	0.179 + 0.286*Tr + 2.846°C	0.116 + 0.277*Tr + 1.833°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ENLL	B-Z	B_Z_state_4 (rise) (A)	0.056 + 0.180*Tr + 1.644*C	0.141 + 0.230*Tr + 3.491*C	0.086 + 0.201*Tr + 2.369*C
ENLLP	A-Z	A_Z (fall)	0.091 + 0.179*Tr + 0.642*C	0.209 + 0.281*Tr + 1.378*C	0.134 + 0.274*Tr + 0.905*C
ENLLP	A-Z	A_Z (rise)	0.067 + 0.221*Tr + 0.807*C	0.207 + 0.241*Tr + 1.665*C	0.131 + 0.230*Tr + 1.131*C
ENLLP	A-Z	A_Z_state_1 (fall) (!B)	0.093 + 0.176*Tr + 0.641*C	0.224 + 0.211*Tr + 1.346*C	0.142 + 0.189*Tr + 0.879*C
ENLLP	A-Z	A_Z_state_1 (rise) (!B)	0.086 + 0.228*Tr + 0.795*C	0.210 + 0.236*Tr + 1.652*C	0.131 + 0.230*Tr + 1.131*C
ENLLP	A-Z	A_Z_state_2 (fall) (B)	0.085 + 0.270*Tr + 0.659*C	0.196 + 0.290*Tr + 1.384*C	0.128 + 0.278*Tr + 0.908*C
ENLLP	A-Z	A_Z_state_2 (rise) (B)	0.067 + 0.221*Tr + 0.807*C	0.160 + 0.267*Tr + 1.683*C	0.100 + 0.240*Tr + 1.151*C
ENLLP	B-Z	B_Z (fall)	0.071 + 0.181*Tr + 0.640*C	0.159 + 0.258*Tr + 1.374*C	0.101 + 0.253*Tr + 0.901*C
ENLLP	B-Z	B_Z (rise)	0.048 + 0.186*Tr + 0.805*C	0.158 + 0.232*Tr + 1.650*C	0.099 + 0.226*Tr + 1.129*C
ENLLP	B-Z	B_Z_state_3 (fall) (!A)	0.074 + 0.177*Tr + 0.641*C	0.172 + 0.210*Tr + 1.348*C	0.111 + 0.189*Tr + 0.880*C
ENLLP	B-Z	B_Z_state_3 (rise) (!A)	0.064 + 0.225*Tr + 0.795*C	0.158 + 0.232*Tr + 1.650*C	0.099 + 0.226*Tr + 1.129*C
ENLLP	B-Z	B_Z_state_4 (fall) (A)	0.064 + 0.252*Tr + 0.652*C	0.149 + 0.265*Tr + 1.371*C	0.097 + 0.256*Tr + 0.899*C
ENLLP	B-Z	B_Z_state_4 (rise) (A)	0.048 + 0.186*Tr + 0.805*C	0.120 + 0.230*Tr + 1.678*C	0.074 + 0.204*Tr + 1.148*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ENLLX4	A-Z	A_Z (fall)	0.083 + 0.180*Tr + 0.318*C	0.193 + 0.269*Tr + 0.682*C	0.124 + 0.261*Tr + 0.447*C
ENLLX4	A-Z	A_Z (rise)	0.063 + 0.223*Tr + 0.403*C	0.186 + 0.242*Tr + 0.835*C	0.118 + 0.222*Tr + 0.569*C
ENLLX4	A-Z	A_Z_state_1 (fall) (!B)	0.085 + 0.177*Tr + 0.317*C	0.205 + 0.210*Tr + 0.666*C	0.130 + 0.190*Tr + 0.435*C
ENLLX4	A-Z	A_Z_state_1 (rise) (!B)	0.079 + 0.216*Tr + 0.398*C	0.193 + 0.224*Tr + 0.824*C	0.120 + 0.218*Tr + 0.564*C
ENLLX4	A-Z	A_Z_state_2 (fall) (B)	0.079 + 0.257*Tr + 0.326*C	0.181 + 0.277*Tr + 0.684*C	0.119 + 0.265*Tr + 0.449*C
ENLLX4	A-Z	A_Z_state_2 (rise) (B)	0.063 + 0.223*Tr + 0.403*C	0.150 + 0.265*Tr + 0.838*C	0.094 + 0.239*Tr + 0.574*C
ENLLX4	B-Z	B_Z (fall)	0.066 + 0.180*Tr + 0.317*C	0.147 + 0.248*Tr + 0.680*C	0.094 + 0.242*Tr + 0.445*C
ENLLX4	B-Z	B_Z (rise)	0.046 + 0.190*Tr + 0.402*C	0.143 + 0.219*Tr + 0.824*C	0.090 + 0.213*Tr + 0.564*C
ENLLX4	B-Z	B_Z_state_3 (fall) (!A)	0.068 + 0.177*Tr + 0.318*C	0.157 + 0.206*Tr + 0.667*C	0.102 + 0.188*Tr + 0.435*C
ENLLX4	B-Z	B_Z_state_3 (rise) (!A)	0.059 + 0.213*Tr + 0.397*C	0.144 + 0.219*Tr + 0.823*C	0.090 + 0.213*Tr + 0.564*C
ENLLX4	B-Z	B_Z_state_4 (fall) (A)	0.060 + 0.241*Tr + 0.323*C	0.139 + 0.253*Tr + 0.678*C	0.091 + 0.245*Tr + 0.445*C
ENLLX4	B-Z	B_Z_state_4 (rise) (A)	0.046 + 0.190*Tr + 0.402*C	0.114 + 0.230*Tr + 0.837*C	0.070 + 0.206*Tr + 0.573*C
ENLLX6	A-Z	A_Z (fall)	0.086 + 0.181*Tr + 0.214*C	0.200 + 0.271*Tr + 0.459*C	0.127 + 0.263*Tr + 0.302*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ENLLX6	A-Z	A_Z (rise)	0.065 + 0.222*Tr + 0.269*C	0.195 + 0.240*Tr + 0.559*C	0.124 + 0.223*Tr + 0.378*C
ENLLX6	A-Z	A_Z_state_1 (fall) (!B)	0.088 + 0.177*Tr + 0.214*C	0.212 + 0.210*Tr + 0.449*C	0.135 + 0.190*Tr + 0.293*C
ENLLX6	A-Z	A_Z_state_1 (rise) (!B)	0.082 + 0.220*Tr + 0.266*C	0.200 + 0.228*Tr + 0.552*C	0.125 + 0.222*Tr + 0.377*C
ENLLX6	A-Z	A_Z_state_2 (fall) (B)	0.081 + 0.260*Tr + 0.219*C	0.185 + 0.281*Tr + 0.461*C	0.121 + 0.268*Tr + 0.302*C
ENLLX6	A-Z	A_Z_state_2 (rise) (B)	0.065 + 0.222*Tr + 0.269*C	0.154 + 0.265*Tr + 0.562*C	0.096 + 0.239*Tr + 0.384*C
ENLLX6	B-Z	B_Z (fall)	0.067 + 0.174*Tr + 0.213*C	0.146 + 0.253*Tr + 0.459*C	0.094 + 0.245*Tr + 0.301*C
ENLLX6	B-Z	B_Z (rise)	0.047 + 0.191*Tr + 0.269*C	0.142 + 0.220*Tr + 0.555*C	0.090 + 0.212*Tr + 0.377*C
ENLLX6	B-Z	B_Z_state_3 (fall) (!A)	0.068 + 0.173*Tr + 0.213*C	0.157 + 0.201*Tr + 0.449*C	0.101 + 0.183*Tr + 0.293*C
ENLLX6	B-Z	B_Z_state_3 (rise) (!A)	0.059 + 0.212*Tr + 0.265*C	0.144 + 0.217*Tr + 0.551*C	0.090 + 0.212*Tr + 0.377*C
ENLLX6	B-Z	B_Z_state_4 (fall) (A)	0.060 + 0.242*Tr + 0.218*C	0.143 + 0.255*Tr + 0.458*C	0.092 + 0.246*Tr + 0.300*C
ENLLX6	B-Z	B_Z_state_4 (rise) (A)	0.047 + 0.191*Tr + 0.269*C	0.117 + 0.231*Tr + 0.561*C	0.072 + 0.207*Tr + 0.384*C
ENLLX8	A-Z	A_Z (fall)	0.083 + 0.181*Tr + 0.160*C	0.193 + 0.268*Tr + 0.344*C	0.124 + 0.260*Tr + 0.226*C
ENLLX8	A-Z	A_Z (rise)	0.063 + 0.222*Tr + 0.202*C	0.187 + 0.240*Tr + 0.419*C	0.119 + 0.222*Tr + 0.285*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ENLLX8	A-Z	A_Z_state_1 (fall) (!B)	0.085 + 0.177*Tr + 0.160*C	0.205 + 0.210*Tr + 0.336*C	0.130 + 0.190*Tr + 0.219*C
ENLLX8	A-Z	A_Z_state_1 (rise) (!B)	0.079 + 0.216*Tr + 0.199*C	0.193 + 0.225*Tr + 0.414*C	0.121 + 0.218*Tr + 0.283*C
ENLLX8	A-Z	A_Z_state_2 (fall) (B)	0.079 + 0.256*Tr + 0.164*C	0.180 + 0.276*Tr + 0.345*C	0.118 + 0.264*Tr + 0.226*C
ENLLX8	A-Z	A_Z_state_2 (rise) (B)	0.063 + 0.222*Tr + 0.202*C	0.149 + 0.264*Tr + 0.421*C	0.094 + 0.238*Tr + 0.289*C
ENLLX8	B-Z	B_Z (fall)	0.065 + 0.175*Tr + 0.160*C	0.142 + 0.249*Tr + 0.343*C	0.091 + 0.241*Tr + 0.225*C
ENLLX8	B-Z	B_Z (rise)	0.046 + 0.191*Tr + 0.202*C	0.137 + 0.219*Tr + 0.416*C	0.087 + 0.209*Tr + 0.283*C
ENLLX8	B-Z	B_Z_state_3 (fall) (!A)	0.066 + 0.174*Tr + 0.160*C	0.153 + 0.201*Tr + 0.336*C	0.099 + 0.183*Tr + 0.219*C
ENLLX8	B-Z	B_Z_state_3 (rise) (!A)	0.057 + 0.209*Tr + 0.199*C	0.139 + 0.214*Tr + 0.413*C	0.087 + 0.209*Tr + 0.283*C
ENLLX8	B-Z	B_Z_state_4 (fall) (A)	0.059 + 0.239*Tr + 0.163*C	0.138 + 0.252*Tr + 0.343*C	0.090 + 0.243*Tr + 0.225*C
ENLLX8	B-Z	B_Z_state_4 (rise) (A)	0.046 + 0.191*Tr + 0.202*C	0.113 + 0.230*Tr + 0.420*C	0.070 + 0.206*Tr + 0.288*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
ENLL	7474.020	138722.000
ENLLP	11278.600	231980.000
ENLLX4	20062.000	430652.000
ENLLX6	31208.000	660478.000
ENLLX8	40362.200	866832.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
ENLL	Z(max)	$0.023 + 0.011 * Tr$
ENLLP	Z(max)	$0.038 + 0.022 * Tr$
ENLLX4	Z(max)	$0.069 + 0.044 * Tr$
ENLLX6	Z(max)	$0.108 + 0.066 * Tr$
ENLLX8	Z(max)	$0.141 + 0.089 * Tr$

EN3LL
 EN3LLP
 EN3LLX4
 EN3LLX6
 EN3LLX8



Function: Function = 3 Input Exclusive NOR

Truth Table

A	B	C	Z
A	B	B	!A
A	B	!B	A

Physical Dimensions

Property	EN3LL	EN3LLP	EN3LLX4	EN3LLX6	EN3LLX8
Area(um ²)	28.241	28.241	32.275	54.464	58.499

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
EN3LL	B Input Cap.	0.0041	0.0036	0.0037
EN3LL	Z Max Load	0.160	0.160	0.160
EN3LL	C Input Cap.	0.0038	0.0033	0.0034
EN3LL	A Input Cap.	0.0019	0.0017	0.0018
EN3LLP	B Input Cap.	0.0066	0.0060	0.0060
EN3LLP	Z Max Load	0.320	0.320	0.320
EN3LLP	C Input Cap.	0.0061	0.0056	0.0057
EN3LLP	A Input Cap.	0.0032	0.0028	0.0032
EN3LLX4	A Input Cap.	0.0059	0.0052	0.0058
EN3LLX4	B Input Cap.	0.0116	0.0111	0.0108
EN3LLX4	Z Max Load	0.640	0.640	0.640
EN3LLX4	C Input Cap.	0.0111	0.0104	0.0105
EN3LLX6	C Input Cap.	0.0163	0.0152	0.0155
EN3LLX6	A Input Cap.	0.0088	0.0073	0.0081
EN3LLX6	Z Max Load	0.960	0.960	0.960

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
EN3LLX6	B Input Cap.	0.0167	0.0158	0.0155
EN3LLX8	B Input Cap.	0.0221	0.0211	0.0206
EN3LLX8	Z Max Load	1.280	1.280	1.280
EN3LLX8	C Input Cap.	0.0214	0.0201	0.0204
EN3LLX8	A Input Cap.	0.0117	0.0098	0.0109

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
EN3LL	A-Z	A_Z (fall)	0.151 + 0.200*Tr + 1.276°C	0.460 + 0.258*Tr + 3.222°C	0.302 + 0.220*Tr + 1.946°C
EN3LL	A-Z	A_Z (rise)	0.111 + 0.233*Tr + 1.685°C	0.421 + 0.247*Tr + 3.447°C	0.255 + 0.227*Tr + 2.380°C
EN3LL	A-Z	A_Z_state_1 (fall) (B && C !B && !C)	0.152 + 0.199*Tr + 1.271°C	0.478 + 0.199*Tr + 3.197°C	0.304 + 0.176*Tr + 2.051°C
EN3LL	A-Z	A_Z_state_1 (rise) (B && C !B && !C)	0.137 + 0.276*Tr + 1.627°C	0.348 + 0.293*Tr + 3.448°C	0.229 + 0.247*Tr + 2.423°C
EN3LL	A-Z	A_Z_state_2 (fall) (!B && C B && !C)	0.145 + 0.300*Tr + 1.469°C	0.360 + 0.321*Tr + 3.220°C	0.279 + 0.246*Tr + 1.779°C
EN3LL	A-Z	A_Z_state_2 (rise) (!B && C B && !C)	0.111 + 0.233*Tr + 1.685°C	0.434 + 0.199*Tr + 3.447°C	0.267 + 0.176*Tr + 2.338°C
EN3LL	B-Z	B_Z (fall)	0.137 + 0.182*Tr + 1.448°C	0.364 + 0.334*Tr + 3.220°C	0.258 + 0.242*Tr + 1.779°C
EN3LL	B-Z	B_Z (rise)	0.098 + 0.218*Tr + 1.690°C	0.327 + 0.287*Tr + 3.448°C	0.210 + 0.242*Tr + 2.423°C
EN3LL	B-Z	B_Z_state_3 (fall) (A && C !A && !C)	0.137 + 0.182*Tr + 1.448°C	0.339 + 0.223*Tr + 2.781°C	0.213 + 0.194*Tr + 1.780°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EN3LL	B-Z	B_Z_state_3 (rise) (A && C !A && !C)	0.130 + 0.278*Tr + 1.628*C	0.327 + 0.287*Tr + 3.448*C	0.210 + 0.242*Tr + 2.423*C
EN3LL	B-Z	B_Z_state_4 (fall) (!A && C A && !C)	0.146 + 0.315*Tr + 1.467*C	0.364 + 0.334*Tr + 3.220*C	0.258 + 0.242*Tr + 1.779*C
EN3LL	B-Z	B_Z_state_4 (rise) (!A && C A && !C)	0.098 + 0.218*Tr + 1.690*C	0.263 + 0.269*Tr + 3.662*C	0.200 + 0.188*Tr + 2.337*C
EN3LL	C-Z	C_Z (fall)	0.097 + 0.169*Tr + 1.321*C	0.228 + 0.282*Tr + 3.012*C	0.145 + 0.275*Tr + 1.944*C
EN3LL	C-Z	C_Z (rise)	0.059 + 0.168*Tr + 1.640*C	0.210 + 0.249*Tr + 3.601*C	0.129 + 0.244*Tr + 2.408*C
EN3LL	C-Z	C_Z_state_5 (fall) (A && B !A && !B)	0.109 + 0.157*Tr + 1.268*C	0.255 + 0.194*Tr + 2.774*C	0.165 + 0.171*Tr + 1.775*C
EN3LL	C-Z	C_Z_state_5 (rise) (A && B !A && !B)	0.082 + 0.244*Tr + 1.668*C	0.210 + 0.249*Tr + 3.601*C	0.129 + 0.244*Tr + 2.408*C
EN3LL	C-Z	C_Z_state_6 (fall) (!A && B A && !B)	0.082 + 0.281*Tr + 1.429*C	0.200 + 0.295*Tr + 3.145*C	0.129 + 0.285*Tr + 2.019*C
EN3LL	C-Z	C_Z_state_6 (rise) (!A && B A && !B)	0.059 + 0.168*Tr + 1.640*C	0.150 + 0.221*Tr + 3.477*C	0.091 + 0.191*Tr + 2.359*C
EN3LLP	A-Z	A_Z (fall)	0.130 + 0.206*Tr + 0.641*C	0.308 + 0.302*Tr + 1.530*C	0.252 + 0.205*Tr + 0.944*C
EN3LLP	A-Z	A_Z (rise)	0.098 + 0.238*Tr + 0.823*C	0.302 + 0.274*Tr + 1.658*C	0.215 + 0.211*Tr + 1.149*C
EN3LLP	A-Z	A_Z_state_1 (fall) (B && C !B && !C)	0.131 + 0.205*Tr + 0.638*C	0.316 + 0.250*Tr + 1.343*C	0.251 + 0.181*Tr + 0.988*C
EN3LLP	A-Z	A_Z_state_1 (rise) (B && C !B && !C)	0.120 + 0.256*Tr + 0.795*C	0.302 + 0.274*Tr + 1.657*C	0.196 + 0.226*Tr + 1.171*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EN3LLP	A-Z	A_Z_state_2 (fall) (!B && C B && !C)	0.125 + 0.280*Tr + 0.723*C	0.306 + 0.303*Tr + 1.536*C	0.235 + 0.225*Tr + 0.875*C
EN3LLP	A-Z	A_Z_state_2 (rise) (!B && C B && !C)	0.098 + 0.238*Tr + 0.823*C	0.252 + 0.284*Tr + 1.753*C	0.223 + 0.181*Tr + 1.132*C
EN3LLP	B-Z	B_Z (fall)	0.117 + 0.181*Tr + 0.712*C	0.298 + 0.315*Tr + 1.535*C	0.214 + 0.221*Tr + 0.875*C
EN3LLP	B-Z	B_Z (rise)	0.085 + 0.220*Tr + 0.827*C	0.274 + 0.262*Tr + 1.656*C	0.178 + 0.220*Tr + 1.171*C
EN3LLP	B-Z	B_Z_state_3 (fall) (A && C !A && !C)	0.117 + 0.181*Tr + 0.712*C	0.285 + 0.222*Tr + 1.343*C	0.179 + 0.195*Tr + 0.876*C
EN3LLP	B-Z	B_Z_state_3 (rise) (A && C !A && !C)	0.111 + 0.256*Tr + 0.795*C	0.274 + 0.262*Tr + 1.656*C	0.178 + 0.220*Tr + 1.171*C
EN3LLP	B-Z	B_Z_state_4 (fall) (!A && C A && !C)	0.122 + 0.294*Tr + 0.722*C	0.298 + 0.315*Tr + 1.535*C	0.214 + 0.221*Tr + 0.875*C
EN3LLP	B-Z	B_Z_state_4 (rise) (!A && C A && !C)	0.085 + 0.220*Tr + 0.827*C	0.223 + 0.267*Tr + 1.759*C	0.171 + 0.186*Tr + 1.131*C
EN3LLP	C-Z	C_Z (fall)	0.082 + 0.173*Tr + 0.659*C	0.190 + 0.267*Tr + 1.451*C	0.121 + 0.259*Tr + 0.951*C
EN3LLP	C-Z	C_Z (rise)	0.051 + 0.175*Tr + 0.803*C	0.178 + 0.228*Tr + 1.723*C	0.109 + 0.223*Tr + 1.162*C
EN3LLP	C-Z	C_Z_state_5 (fall) (A && B !A && !B)	0.091 + 0.164*Tr + 0.637*C	0.211 + 0.195*Tr + 1.341*C	0.137 + 0.176*Tr + 0.874*C
EN3LLP	C-Z	C_Z_state_5 (rise) (A && B !A && !B)	0.070 + 0.223*Tr + 0.813*C	0.178 + 0.228*Tr + 1.723*C	0.109 + 0.223*Tr + 1.162*C
EN3LLP	C-Z	C_Z_state_6 (fall) (!A && B A && !B)	0.070 + 0.263*Tr + 0.708*C	0.169 + 0.276*Tr + 1.504*C	0.109 + 0.266*Tr + 0.982*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EN3LLP	C-Z	C_Z_state_6 (rise) (!A && B A && !B)	0.051 + 0.175*Tr + 0.803*C	0.126 + 0.223*Tr + 1.675*C	0.077 + 0.196*Tr + 1.145*C
EN3LLX4	A-Z	A_Z (fall)	0.122 + 0.209*Tr + 0.318*C	0.291 + 0.291*Tr + 0.752*C	0.231 + 0.198*Tr + 0.468*C
EN3LLX4	A-Z	A_Z (rise)	0.095 + 0.241*Tr + 0.411*C	0.282 + 0.269*Tr + 0.836*C	0.200 + 0.203*Tr + 0.573*C
EN3LLX4	A-Z	A_Z_state_1 (fall) (B && C !B && !C)	0.123 + 0.207*Tr + 0.317*C	0.296 + 0.250*Tr + 0.666*C	0.230 + 0.183*Tr + 0.484*C
EN3LLX4	A-Z	A_Z_state_1 (rise) (B && C !B && !C)	0.114 + 0.245*Tr + 0.398*C	0.285 + 0.264*Tr + 0.827*C	0.184 + 0.215*Tr + 0.583*C
EN3LLX4	A-Z	A_Z_state_2 (fall) (!B && C B && !C)	0.119 + 0.268*Tr + 0.355*C	0.288 + 0.292*Tr + 0.755*C	0.217 + 0.214*Tr + 0.434*C
EN3LLX4	A-Z	A_Z_state_2 (rise) (!B && C B && !C)	0.095 + 0.241*Tr + 0.411*C	0.240 + 0.284*Tr + 0.872*C	0.205 + 0.183*Tr + 0.565*C
EN3LLX4	B-Z	B_Z (fall)	0.110 + 0.180*Tr + 0.350*C	0.276 + 0.303*Tr + 0.754*C	0.196 + 0.209*Tr + 0.434*C
EN3LLX4	B-Z	B_Z (rise)	0.081 + 0.221*Tr + 0.413*C	0.251 + 0.252*Tr + 0.832*C	0.165 + 0.208*Tr + 0.584*C
EN3LLX4	B-Z	B_Z_state_3 (fall) (A && C !A && !C)	0.110 + 0.180*Tr + 0.350*C	0.264 + 0.220*Tr + 0.666*C	0.166 + 0.195*Tr + 0.434*C
EN3LLX4	B-Z	B_Z_state_3 (rise) (A && C !A && !C)	0.103 + 0.244*Tr + 0.398*C	0.253 + 0.250*Tr + 0.827*C	0.165 + 0.208*Tr + 0.584*C
EN3LLX4	B-Z	B_Z_state_4 (fall) (!A && C A && !C)	0.114 + 0.283*Tr + 0.355*C	0.276 + 0.303*Tr + 0.754*C	0.196 + 0.209*Tr + 0.434*C
EN3LLX4	B-Z	B_Z_state_4 (rise) (!A && C A && !C)	0.081 + 0.221*Tr + 0.413*C	0.210 + 0.264*Tr + 0.875*C	0.160 + 0.185*Tr + 0.565*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EN3LLX4	C-Z	C_Z (fall)	0.076 + 0.175*Tr + 0.326*C	0.178 + 0.257*Tr + 0.718*C	0.114 + 0.249*Tr + 0.470*C
EN3LLX4	C-Z	C_Z (rise)	0.049 + 0.180*Tr + 0.402*C	0.167 + 0.217*Tr + 0.857*C	0.103 + 0.212*Tr + 0.579*C
EN3LLX4	C-Z	C_Z_state_5 (fall) (A && B !A && !B)	0.085 + 0.167*Tr + 0.317*C	0.195 + 0.195*Tr + 0.665*C	0.127 + 0.177*Tr + 0.434*C
EN3LLX4	C-Z	C_Z_state_5 (rise) (A && B !A && !B)	0.066 + 0.212*Tr + 0.406*C	0.167 + 0.217*Tr + 0.857*C	0.103 + 0.212*Tr + 0.579*C
EN3LLX4	C-Z	C_Z_state_6 (fall) (!A && B A && !B)	0.067 + 0.253*Tr + 0.349*C	0.160 + 0.266*Tr + 0.740*C	0.103 + 0.256*Tr + 0.483*C
EN3LLX4	C-Z	C_Z_state_6 (rise) (!A && B A && !B)	0.049 + 0.180*Tr + 0.402*C	0.119 + 0.224*Tr + 0.837*C	0.073 + 0.199*Tr + 0.572*C
EN3LLX6	A-Z	A_Z (fall)	0.125 + 0.211*Tr + 0.214*C	0.295 + 0.293*Tr + 0.504*C	0.233 + 0.205*Tr + 0.312*C
EN3LLX6	A-Z	A_Z (rise)	0.096 + 0.239*Tr + 0.274*C	0.294 + 0.270*Tr + 0.555*C	0.204 + 0.240*Tr + 0.378*C
EN3LLX6	A-Z	A_Z_state_1 (fall) (B && C !B && !C)	0.127 + 0.209*Tr + 0.212*C	0.306 + 0.252*Tr + 0.447*C	0.231 + 0.183*Tr + 0.326*C
EN3LLX6	A-Z	A_Z_state_1 (rise) (B && C !B && !C)	0.118 + 0.216*Tr + 0.273*C	0.295 + 0.269*Tr + 0.554*C	0.183 + 0.258*Tr + 0.378*C
EN3LLX6	A-Z	A_Z_state_2 (fall) (!B && C B && !C)	0.119 + 0.272*Tr + 0.239*C	0.290 + 0.296*Tr + 0.509*C	0.223 + 0.217*Tr + 0.291*C
EN3LLX6	A-Z	A_Z_state_2 (rise) (!B && C B && !C)	0.096 + 0.240*Tr + 0.275*C	0.242 + 0.284*Tr + 0.585*C	0.211 + 0.183*Tr + 0.378*C
EN3LLX6	B-Z	B_Z (fall)	0.110 + 0.179*Tr + 0.236*C	0.275 + 0.306*Tr + 0.508*C	0.205 + 0.208*Tr + 0.291*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EN3LLX6	B-Z	B_Z (rise)	0.081 + 0.219*Tr + 0.276*C	0.262 + 0.254*Tr + 0.553*C	0.165 + 0.210*Tr + 0.390*C
EN3LLX6	B-Z	B_Z_state_3 (fall) (A && C !A && !C)	0.110 + 0.179*Tr + 0.236*C	0.271 + 0.221*Tr + 0.447*C	0.170 + 0.196*Tr + 0.292*C
EN3LLX6	B-Z	B_Z_state_3 (rise) (A && C !A && !C)	0.107 + 0.248*Tr + 0.266*C	0.262 + 0.254*Tr + 0.553*C	0.165 + 0.210*Tr + 0.390*C
EN3LLX6	B-Z	B_Z_state_4 (fall) (!A && C A && !C)	0.113 + 0.285*Tr + 0.239*C	0.275 + 0.306*Tr + 0.508*C	0.205 + 0.208*Tr + 0.291*C
EN3LLX6	B-Z	B_Z_state_4 (rise) (!A && C A && !C)	0.081 + 0.219*Tr + 0.276*C	0.209 + 0.263*Tr + 0.587*C	0.165 + 0.184*Tr + 0.378*C
EN3LLX6	C-Z	C_Z (fall)	0.075 + 0.174*Tr + 0.219*C	0.178 + 0.256*Tr + 0.481*C	0.114 + 0.249*Tr + 0.315*C
EN3LLX6	C-Z	C_Z (rise)	0.048 + 0.177*Tr + 0.268*C	0.166 + 0.218*Tr + 0.574*C	0.102 + 0.213*Tr + 0.387*C
EN3LLX6	C-Z	C_Z_state_5 (fall) (A && B !A && !B)	0.085 + 0.164*Tr + 0.212*C	0.197 + 0.192*Tr + 0.447*C	0.128 + 0.175*Tr + 0.291*C
EN3LLX6	C-Z	C_Z_state_5 (rise) (A && B !A && !B)	0.066 + 0.214*Tr + 0.271*C	0.166 + 0.218*Tr + 0.574*C	0.102 + 0.213*Tr + 0.387*C
EN3LLX6	C-Z	C_Z_state_6 (fall) (!A && B A && !B)	0.065 + 0.254*Tr + 0.235*C	0.156 + 0.267*Tr + 0.498*C	0.101 + 0.257*Tr + 0.325*C
EN3LLX6	C-Z	C_Z_state_6 (rise) (!A && B A && !B)	0.048 + 0.177*Tr + 0.268*C	0.118 + 0.222*Tr + 0.560*C	0.073 + 0.197*Tr + 0.383*C
EN3LLX8	A-Z	A_Z (fall)	0.121 + 0.210*Tr + 0.160*C	0.288 + 0.290*Tr + 0.377*C	0.226 + 0.201*Tr + 0.234*C
EN3LLX8	A-Z	A_Z (rise)	0.095 + 0.236*Tr + 0.205*C	0.284 + 0.268*Tr + 0.417*C	0.196 + 0.237*Tr + 0.283*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EN3LLX8	A-Z	A_Z_state_1 (fall) (B && C !B && !C)	0.123 + 0.208*Tr + 0.159*C	0.295 + 0.251*Tr + 0.335*C	0.225 + 0.183*Tr + 0.243*C
EN3LLX8	A-Z	A_Z_state_1 (rise) (B && C !B && !C)	0.115 + 0.213*Tr + 0.204*C	0.285 + 0.265*Tr + 0.415*C	0.177 + 0.254*Tr + 0.283*C
EN3LLX8	A-Z	A_Z_state_2 (fall) (!B && C B && !C)	0.117 + 0.268*Tr + 0.179*C	0.284 + 0.292*Tr + 0.380*C	0.215 + 0.214*Tr + 0.218*C
EN3LLX8	A-Z	A_Z_state_2 (rise) (!B && C B && !C)	0.094 + 0.240*Tr + 0.206*C	0.236 + 0.283*Tr + 0.438*C	0.204 + 0.183*Tr + 0.283*C
EN3LLX8	B-Z	B_Z (fall)	0.108 + 0.178*Tr + 0.176*C	0.269 + 0.302*Tr + 0.379*C	0.198 + 0.205*Tr + 0.218*C
EN3LLX8	B-Z	B_Z (rise)	0.079 + 0.219*Tr + 0.207*C	0.252 + 0.251*Tr + 0.415*C	0.160 + 0.207*Tr + 0.293*C
EN3LLX8	B-Z	B_Z_state_3 (fall) (A && C !A && !C)	0.108 + 0.178*Tr + 0.176*C	0.261 + 0.219*Tr + 0.335*C	0.164 + 0.195*Tr + 0.218*C
EN3LLX8	B-Z	B_Z_state_3 (rise) (A && C !A && !C)	0.103 + 0.244*Tr + 0.199*C	0.252 + 0.250*Tr + 0.415*C	0.160 + 0.207*Tr + 0.293*C
EN3LLX8	B-Z	B_Z_state_4 (fall) (!A && C A && !C)	0.111 + 0.281*Tr + 0.178*C	0.269 + 0.302*Tr + 0.379*C	0.198 + 0.205*Tr + 0.218*C
EN3LLX8	B-Z	B_Z_state_4 (rise) (!A && C A && !C)	0.079 + 0.219*Tr + 0.207*C	0.203 + 0.261*Tr + 0.439*C	0.159 + 0.183*Tr + 0.283*C
EN3LLX8	C-Z	C_Z (fall)	0.073 + 0.174*Tr + 0.164*C	0.172 + 0.254*Tr + 0.360*C	0.110 + 0.246*Tr + 0.236*C
EN3LLX8	C-Z	C_Z (rise)	0.047 + 0.178*Tr + 0.202*C	0.161 + 0.215*Tr + 0.429*C	0.099 + 0.210*Tr + 0.290*C
EN3LLX8	C-Z	C_Z_state_5 (fall) (A && B !A && !B)	0.082 + 0.165*Tr + 0.159*C	0.190 + 0.191*Tr + 0.334*C	0.123 + 0.175*Tr + 0.218*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EN3LLX8	C-Z	C_Z_state_5 (rise) (A && B !A && !B)	0.064 + 0.210*Tr + 0.203*C	0.161 + 0.215*Tr + 0.429*C	0.099 + 0.210*Tr + 0.290*C
EN3LLX8	C-Z	C_Z_state_6 (fall) (!A && B A && !B)	0.063 + 0.251*Tr + 0.176*C	0.153 + 0.264*Tr + 0.372*C	0.099 + 0.254*Tr + 0.243*C
EN3LLX8	C-Z	C_Z_state_6 (rise) (!A && B A && !B)	0.047 + 0.178*Tr + 0.202*C	0.115 + 0.221*Tr + 0.420*C	0.071 + 0.196*Tr + 0.287*C

Average Leakage Power

picoWatts

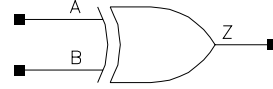
Cell	bc_1.32V_25C	bc_1.32V_125C
EN3LL	10936.300	197962.000
EN3LLP	16033.900	324930.000
EN3LLX4	27900.700	596234.000
EN3LLX6	43721.300	917819.000
EN3LLX8	56118.700	1199590.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
EN3LL	Z(max)	0.033 + 0.008*Tr
EN3LLP	Z(max)	0.049 + 0.021*Tr
EN3LLX4	Z(max)	0.091 + 0.040*Tr
EN3LLX6	Z(max)	0.152 + 0.045*Tr
EN3LLX8	Z(max)	0.182 + 0.081*Tr

EOLL
EOLLP
EOLLX4
EOLLX6
EOLLX8



Function: Function = 2 Input Exclusive OR

Truth Table

A	B	Z
A	1	!A
A	0	A

Physical Dimensions

Property	EOLL	EOLLP	EOLLX4	EOLLX6	EOLLX8
Area(um ²)	20.172	20.172	22.189	36.310	40.344

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
EOLL	Z Max Load	0.160	0.160	0.160
EOLL	B Input Cap.	0.0040	0.0034	0.0036
EOLL	A Input Cap.	0.0019	0.0016	0.0018
EOLLP	A Input Cap.	0.0033	0.0028	0.0030
EOLLP	Z Max Load	0.320	0.320	0.320
EOLLP	B Input Cap.	0.0063	0.0056	0.0058
EOLLX4	B Input Cap.	0.0112	0.0102	0.0106
EOLLX4	A Input Cap.	0.0061	0.0054	0.0056
EOLLX4	Z Max Load	0.640	0.640	0.640
EOLLX6	B Input Cap.	0.0158	0.0142	0.0149
EOLLX6	A Input Cap.	0.0091	0.0078	0.0082
EOLLX6	Z Max Load	0.960	0.960	0.960
EOLLX8	Z Max Load	1.280	1.280	1.280
EOLLX8	B Input Cap.	0.0211	0.0191	0.0200

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
EOLLX8	A Input Cap.	0.0121	0.0105	0.0109

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
EOLL	A-Z	A_Z (fall)	0.109 + 0.176*Tr + 1.292*C	0.257 + 0.298*Tr + 2.863*C	0.162 + 0.294*Tr + 1.850*C
EOLL	A-Z	A_Z (rise)	0.078 + 0.218*Tr + 1.649*C	0.250 + 0.258*Tr + 3.447*C	0.154 + 0.252*Tr + 2.339*C
EOLL	A-Z	A_Z_state_1 (fall) (B)	0.113 + 0.170*Tr + 1.286*C	0.277 + 0.210*Tr + 2.806*C	0.175 + 0.186*Tr + 1.799*C
EOLL	A-Z	A_Z_state_1 (rise) (B)	0.100 + 0.250*Tr + 1.631*C	0.250 + 0.258*Tr + 3.447*C	0.154 + 0.252*Tr + 2.339*C
EOLL	A-Z	A_Z_state_2 (fall) (!B)	0.100 + 0.294*Tr + 1.323*C	0.233 + 0.313*Tr + 2.878*C	0.152 + 0.302*Tr + 1.857*C
EOLL	A-Z	A_Z_state_2 (rise) (!B)	0.078 + 0.218*Tr + 1.649*C	0.192 + 0.268*Tr + 3.503*C	0.118 + 0.238*Tr + 2.378*C
EOLL	B-Z	B_Z (fall)	0.084 + 0.191*Tr + 1.280*C	0.201 + 0.269*Tr + 2.844*C	0.125 + 0.268*Tr + 1.834*C
EOLL	B-Z	B_Z (rise)	0.057 + 0.179*Tr + 1.643*C	0.199 + 0.260*Tr + 3.451*C	0.124 + 0.253*Tr + 2.342*C
EOLL	B-Z	B_Z_state_3 (fall) (A)	0.091 + 0.182*Tr + 1.279*C	0.216 + 0.222*Tr + 2.798*C	0.138 + 0.197*Tr + 1.792*C
EOLL	B-Z	B_Z_state_3 (rise) (A)	0.081 + 0.251*Tr + 1.630*C	0.199 + 0.260*Tr + 3.451*C	0.124 + 0.253*Tr + 2.342*C
EOLL	B-Z	B_Z_state_4 (fall) (!A)	0.073 + 0.275*Tr + 1.307*C	0.172 + 0.287*Tr + 2.854*C	0.112 + 0.279*Tr + 1.836*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EOLL	B-Z	B_Z_state_4 (rise) (!A)	0.057 + 0.179*Tr + 1.643*C	0.144 + 0.229*Tr + 3.485*C	0.087 + 0.200*Tr + 2.367*C
EOLLP	A-Z	A_Z (fall)	0.091 + 0.179*Tr + 0.643*C	0.211 + 0.280*Tr + 1.377*C	0.134 + 0.273*Tr + 0.905*C
EOLLP	A-Z	A_Z (rise)	0.068 + 0.221*Tr + 0.806*C	0.204 + 0.243*Tr + 1.667*C	0.129 + 0.230*Tr + 1.130*C
EOLLP	A-Z	A_Z_state_1 (fall) (B)	0.094 + 0.175*Tr + 0.641*C	0.226 + 0.210*Tr + 1.346*C	0.144 + 0.189*Tr + 0.879*C
EOLLP	A-Z	A_Z_state_1 (rise) (B)	0.085 + 0.228*Tr + 0.795*C	0.208 + 0.237*Tr + 1.652*C	0.129 + 0.230*Tr + 1.130*C
EOLLP	A-Z	A_Z_state_2 (fall) (!B)	0.085 + 0.271*Tr + 0.659*C	0.194 + 0.291*Tr + 1.384*C	0.127 + 0.279*Tr + 0.908*C
EOLLP	A-Z	A_Z_state_2 (rise) (!B)	0.068 + 0.221*Tr + 0.806*C	0.162 + 0.266*Tr + 1.682*C	0.101 + 0.239*Tr + 1.151*C
EOLLP	B-Z	B_Z (fall)	0.071 + 0.186*Tr + 0.639*C	0.162 + 0.255*Tr + 1.371*C	0.102 + 0.251*Tr + 0.899*C
EOLLP	B-Z	B_Z (rise)	0.049 + 0.186*Tr + 0.804*C	0.160 + 0.234*Tr + 1.653*C	0.101 + 0.228*Tr + 1.131*C
EOLLP	B-Z	B_Z_state_3 (fall) (A)	0.075 + 0.180*Tr + 0.638*C	0.175 + 0.213*Tr + 1.343*C	0.113 + 0.192*Tr + 0.876*C
EOLLP	B-Z	B_Z_state_3 (rise) (A)	0.066 + 0.227*Tr + 0.796*C	0.160 + 0.234*Tr + 1.653*C	0.101 + 0.228*Tr + 1.131*C
EOLLP	B-Z	B_Z_state_4 (fall) (!A)	0.062 + 0.253*Tr + 0.654*C	0.145 + 0.266*Tr + 1.375*C	0.095 + 0.257*Tr + 0.902*C
EOLLP	B-Z	B_Z_state_4 (rise) (!A)	0.049 + 0.186*Tr + 0.804*C	0.122 + 0.231*Tr + 1.676*C	0.075 + 0.204*Tr + 1.147*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EOLLX4	A-Z	A_Z (fall)	0.084 + 0.181*Tr + 0.318*C	0.195 + 0.268*Tr + 0.681*C	0.125 + 0.260*Tr + 0.447*C
EOLLX4	A-Z	A_Z (rise)	0.064 + 0.223*Tr + 0.403*C	0.184 + 0.244*Tr + 0.835*C	0.117 + 0.223*Tr + 0.569*C
EOLLX4	A-Z	A_Z_state_1 (fall) (B)	0.087 + 0.177*Tr + 0.317*C	0.207 + 0.209*Tr + 0.666*C	0.131 + 0.190*Tr + 0.435*C
EOLLX4	A-Z	A_Z_state_1 (rise) (B)	0.078 + 0.216*Tr + 0.398*C	0.190 + 0.225*Tr + 0.824*C	0.119 + 0.218*Tr + 0.564*C
EOLLX4	A-Z	A_Z_state_2 (fall) (!B)	0.079 + 0.258*Tr + 0.326*C	0.180 + 0.278*Tr + 0.684*C	0.118 + 0.266*Tr + 0.449*C
EOLLX4	A-Z	A_Z_state_2 (rise) (!B)	0.064 + 0.223*Tr + 0.403*C	0.152 + 0.264*Tr + 0.838*C	0.095 + 0.239*Tr + 0.574*C
EOLLX4	B-Z	B_Z (fall)	0.066 + 0.183*Tr + 0.317*C	0.148 + 0.246*Tr + 0.679*C	0.094 + 0.241*Tr + 0.445*C
EOLLX4	B-Z	B_Z (rise)	0.047 + 0.191*Tr + 0.401*C	0.145 + 0.220*Tr + 0.825*C	0.091 + 0.214*Tr + 0.565*C
EOLLX4	B-Z	B_Z_state_3 (fall) (A)	0.069 + 0.179*Tr + 0.316*C	0.159 + 0.208*Tr + 0.664*C	0.103 + 0.189*Tr + 0.433*C
EOLLX4	B-Z	B_Z_state_3 (rise) (A)	0.060 + 0.213*Tr + 0.398*C	0.145 + 0.219*Tr + 0.825*C	0.091 + 0.214*Tr + 0.565*C
EOLLX4	B-Z	B_Z_state_4 (fall) (!A)	0.059 + 0.242*Tr + 0.324*C	0.137 + 0.253*Tr + 0.681*C	0.089 + 0.245*Tr + 0.446*C
EOLLX4	B-Z	B_Z_state_4 (rise) (!A)	0.047 + 0.191*Tr + 0.401*C	0.115 + 0.231*Tr + 0.835*C	0.071 + 0.207*Tr + 0.573*C
EOLLX6	A-Z	A_Z (fall)	0.086 + 0.181*Tr + 0.214*C	0.201 + 0.270*Tr + 0.459*C	0.128 + 0.262*Tr + 0.301*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EOLLX6	A-Z	A_Z (rise)	0.065 + 0.222*Tr + 0.269*C	0.192 + 0.241*Tr + 0.559*C	0.123 + 0.223*Tr + 0.378*C
EOLLX6	A-Z	A_Z_state_1 (fall) (B)	0.089 + 0.177*Tr + 0.214*C	0.214 + 0.210*Tr + 0.449*C	0.136 + 0.190*Tr + 0.293*C
EOLLX6	A-Z	A_Z_state_1 (rise) (B)	0.081 + 0.220*Tr + 0.266*C	0.198 + 0.229*Tr + 0.552*C	0.123 + 0.222*Tr + 0.377*C
EOLLX6	A-Z	A_Z_state_2 (fall) (!B)	0.081 + 0.261*Tr + 0.219*C	0.184 + 0.281*Tr + 0.461*C	0.121 + 0.269*Tr + 0.302*C
EOLLX6	A-Z	A_Z_state_2 (rise) (!B)	0.065 + 0.222*Tr + 0.269*C	0.155 + 0.264*Tr + 0.562*C	0.097 + 0.238*Tr + 0.384*C
EOLLX6	B-Z	B_Z (fall)	0.066 + 0.176*Tr + 0.213*C	0.147 + 0.251*Tr + 0.458*C	0.094 + 0.244*Tr + 0.300*C
EOLLX6	B-Z	B_Z (rise)	0.048 + 0.191*Tr + 0.268*C	0.141 + 0.221*Tr + 0.556*C	0.089 + 0.212*Tr + 0.377*C
EOLLX6	B-Z	B_Z_state_3 (fall) (A)	0.068 + 0.174*Tr + 0.213*C	0.159 + 0.202*Tr + 0.447*C	0.103 + 0.184*Tr + 0.292*C
EOLLX6	B-Z	B_Z_state_3 (rise) (A)	0.058 + 0.212*Tr + 0.265*C	0.143 + 0.217*Tr + 0.552*C	0.089 + 0.212*Tr + 0.377*C
EOLLX6	B-Z	B_Z_state_4 (fall) (!A)	0.060 + 0.243*Tr + 0.218*C	0.141 + 0.255*Tr + 0.459*C	0.091 + 0.246*Tr + 0.301*C
EOLLX6	B-Z	B_Z_state_4 (rise) (!A)	0.048 + 0.191*Tr + 0.268*C	0.117 + 0.232*Tr + 0.560*C	0.073 + 0.208*Tr + 0.383*C
EOLLX8	A-Z	A_Z (fall)	0.083 + 0.181*Tr + 0.160*C	0.195 + 0.267*Tr + 0.344*C	0.124 + 0.259*Tr + 0.226*C
EOLLX8	A-Z	A_Z (rise)	0.064 + 0.222*Tr + 0.202*C	0.185 + 0.242*Tr + 0.419*C	0.118 + 0.222*Tr + 0.285*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EOLLX8	A-Z	A_Z_state_1 (fall) (B)	0.086 + 0.177*Tr + 0.160*C	0.207 + 0.209*Tr + 0.336*C	0.131 + 0.190*Tr + 0.219*C
EOLLX8	A-Z	A_Z_state_1 (rise) (B)	0.078 + 0.217*Tr + 0.199*C	0.191 + 0.225*Tr + 0.413*C	0.119 + 0.219*Tr + 0.283*C
EOLLX8	A-Z	A_Z_state_2 (fall) (!B)	0.079 + 0.257*Tr + 0.164*C	0.179 + 0.277*Tr + 0.345*C	0.118 + 0.265*Tr + 0.226*C
EOLLX8	A-Z	A_Z_state_2 (rise) (!B)	0.064 + 0.222*Tr + 0.202*C	0.151 + 0.263*Tr + 0.421*C	0.094 + 0.238*Tr + 0.288*C
EOLLX8	B-Z	B_Z (fall)	0.065 + 0.177*Tr + 0.159*C	0.143 + 0.247*Tr + 0.343*C	0.091 + 0.241*Tr + 0.225*C
EOLLX8	B-Z	B_Z (rise)	0.046 + 0.191*Tr + 0.202*C	0.136 + 0.220*Tr + 0.417*C	0.087 + 0.209*Tr + 0.283*C
EOLLX8	B-Z	B_Z_state_3 (fall) (A)	0.067 + 0.174*Tr + 0.159*C	0.155 + 0.201*Tr + 0.335*C	0.100 + 0.184*Tr + 0.218*C
EOLLX8	B-Z	B_Z_state_3 (rise) (A)	0.057 + 0.209*Tr + 0.199*C	0.139 + 0.214*Tr + 0.414*C	0.087 + 0.209*Tr + 0.283*C
EOLLX8	B-Z	B_Z_state_4 (fall) (!A)	0.058 + 0.240*Tr + 0.163*C	0.137 + 0.252*Tr + 0.343*C	0.089 + 0.243*Tr + 0.225*C
EOLLX8	B-Z	B_Z_state_4 (rise) (!A)	0.046 + 0.191*Tr + 0.202*C	0.114 + 0.231*Tr + 0.420*C	0.071 + 0.207*Tr + 0.288*C

Average Leakage Power

picoWatts

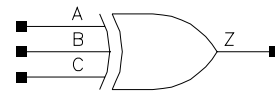
Cell	bc_1.32V_25C	bc_1.32V_125C
EOLL	7474.050	138722.000
EOLLP	11278.600	231980.000
EOLLX4	20062.000	430652.000
EOLLX6	31208.000	660478.000
EOLLX8	40362.200	866832.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
EOLL	Z(max)	$0.023 + 0.011 * Tr$
EOLLP	Z(max)	$0.038 + 0.022 * Tr$
EOLLX4	Z(max)	$0.069 + 0.044 * Tr$
EOLLX6	Z(max)	$0.108 + 0.066 * Tr$
EOLLX8	Z(max)	$0.141 + 0.089 * Tr$

EO3LL
EO3LLP
EO3LLX4
EO3LLX6
EO3LLX8



Function: Function = 3 Input Exclusive OR

Truth Table

A	B	C	Z
A	B	!B	!A
A	B	B	A

Physical Dimensions

Property	EO3LL	EO3LLP	EO3LLX4	EO3LLX6	EO3LLX8
Area(um ²)	28.241	28.241	32.275	54.464	58.499

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
EO3LL	Z Max Load	0.160	0.160	0.160
EO3LL	B Input Cap.	0.0041	0.0036	0.0037
EO3LL	C Input Cap.	0.0037	0.0032	0.0034
EO3LL	A Input Cap.	0.0019	0.0017	0.0018
EO3LLP	Z Max Load	0.320	0.320	0.320
EO3LLP	B Input Cap.	0.0066	0.0060	0.0061
EO3LLP	C Input Cap.	0.0060	0.0055	0.0056
EO3LLP	A Input Cap.	0.0032	0.0028	0.0032
EO3LLX4	C Input Cap.	0.0108	0.0103	0.0105
EO3LLX4	A Input Cap.	0.0059	0.0052	0.0058
EO3LLX4	Z Max Load	0.640	0.640	0.640
EO3LLX4	B Input Cap.	0.0116	0.0111	0.0109
EO3LLX6	B Input Cap.	0.0163	0.0158	0.0154
EO3LLX6	C Input Cap.	0.0157	0.0148	0.0152
EO3LLX6	Z Max Load	0.960	0.960	0.960

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
EO3LLX6	A Input Cap.	0.0088	0.0073	0.0081
EO3LLX8	Z Max Load	1.280	1.280	1.280
EO3LLX8	B Input Cap.	0.0221	0.0210	0.0205
EO3LLX8	C Input Cap.	0.0206	0.0196	0.0201
EO3LLX8	A Input Cap.	0.0117	0.0098	0.0108

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
EO3LL	A-Z	A_Z (fall)	0.150 + 0.200*Tr + 1.273*C	0.458 + 0.260*Tr + 3.213*C	0.301 + 0.217*Tr + 1.943*C
EO3LL	A-Z	A_Z (rise)	0.110 + 0.233*Tr + 1.684*C	0.418 + 0.248*Tr + 3.447*C	0.254 + 0.225*Tr + 2.379*C
EO3LL	A-Z	A_Z_state_1 (fall) (!B && C B && !C)	0.151 + 0.199*Tr + 1.270*C	0.476 + 0.198*Tr + 3.187*C	0.303 + 0.175*Tr + 2.044*C
EO3LL	A-Z	A_Z_state_1 (rise) (!B && C B && !C)	0.137 + 0.276*Tr + 1.628*C	0.349 + 0.292*Tr + 3.446*C	0.226 + 0.246*Tr + 2.426*C
EO3LL	A-Z	A_Z_state_2 (fall) (B && C !B && !C)	0.145 + 0.299*Tr + 1.464*C	0.361 + 0.320*Tr + 3.211*C	0.276 + 0.245*Tr + 1.777*C
EO3LL	A-Z	A_Z_state_2 (rise) (B && C !B && !C)	0.110 + 0.233*Tr + 1.684*C	0.431 + 0.198*Tr + 3.447*C	0.265 + 0.175*Tr + 2.338*C
EO3LL	B-Z	B_Z (fall)	0.138 + 0.181*Tr + 1.443*C	0.361 + 0.332*Tr + 3.212*C	0.260 + 0.239*Tr + 1.777*C
EO3LL	B-Z	B_Z (rise)	0.097 + 0.217*Tr + 1.688*C	0.331 + 0.289*Tr + 3.448*C	0.205 + 0.243*Tr + 2.425*C
EO3LL	B-Z	B_Z_state_3 (fall) (!A && C A && !C)	0.138 + 0.181*Tr + 1.443*C	0.337 + 0.223*Tr + 2.779*C	0.211 + 0.194*Tr + 1.779*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EO3LL	B-Z	B_Z_state_3 (rise) (!A && C A && !C)	0.130 + 0.277*Tr + 1.628*C	0.331 + 0.289*Tr + 3.448*C	0.205 + 0.243*Tr + 2.425*C
EO3LL	B-Z	B_Z_state_4 (fall) (A && C !A && !C)	0.145 + 0.312*Tr + 1.461*C	0.361 + 0.332*Tr + 3.212*C	0.260 + 0.239*Tr + 1.777*C
EO3LL	B-Z	B_Z_state_4 (rise) (A && C !A && !C)	0.097 + 0.217*Tr + 1.688*C	0.260 + 0.269*Tr + 3.659*C	0.200 + 0.187*Tr + 2.339*C
EO3LL	C-Z	C_Z (fall)	0.087 + 0.193*Tr + 1.326*C	0.226 + 0.261*Tr + 3.044*C	0.142 + 0.261*Tr + 1.929*C
EO3LL	C-Z	C_Z (rise)	0.062 + 0.194*Tr + 1.680*C	0.217 + 0.239*Tr + 3.440*C	0.132 + 0.237*Tr + 2.337*C
EO3LL	C-Z	C_Z_state_5 (fall) (!A && B A && !B)	0.097 + 0.175*Tr + 1.412*C	0.235 + 0.209*Tr + 3.115*C	0.150 + 0.187*Tr + 1.993*C
EO3LL	C-Z	C_Z_state_5 (rise) (!A && B A && !B)	0.085 + 0.238*Tr + 1.626*C	0.217 + 0.239*Tr + 3.440*C	0.132 + 0.237*Tr + 2.337*C
EO3LL	C-Z	C_Z_state_6 (fall) (A && B !A && !B)	0.080 + 0.267*Tr + 1.292*C	0.196 + 0.287*Tr + 2.814*C	0.128 + 0.278*Tr + 1.810*C
EO3LL	C-Z	C_Z_state_6 (rise) (A && B !A && !B)	0.062 + 0.194*Tr + 1.680*C	0.163 + 0.241*Tr + 3.629*C	0.098 + 0.213*Tr + 2.432*C
EO3LLP	A-Z	A_Z (fall)	0.129 + 0.205*Tr + 0.639*C	0.307 + 0.301*Tr + 1.529*C	0.251 + 0.204*Tr + 0.945*C
EO3LLP	A-Z	A_Z (rise)	0.097 + 0.238*Tr + 0.823*C	0.301 + 0.274*Tr + 1.658*C	0.215 + 0.211*Tr + 1.148*C
EO3LLP	A-Z	A_Z_state_1 (fall) (!B && C B && !C)	0.130 + 0.205*Tr + 0.637*C	0.313 + 0.250*Tr + 1.340*C	0.251 + 0.181*Tr + 0.985*C
EO3LLP	A-Z	A_Z_state_1 (rise) (!B && C B && !C)	0.120 + 0.255*Tr + 0.795*C	0.301 + 0.274*Tr + 1.657*C	0.195 + 0.226*Tr + 1.172*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EO3LLP	A-Z	A_Z_state_2 (fall) (B && C !B && !C)	0.125 + 0.279*Tr + 0.721*C	0.306 + 0.302*Tr + 1.532*C	0.233 + 0.225*Tr + 0.874*C
EO3LLP	A-Z	A_Z_state_2 (rise) (B && C !B && !C)	0.097 + 0.238*Tr + 0.823*C	0.250 + 0.285*Tr + 1.754*C	0.223 + 0.181*Tr + 1.131*C
EO3LLP	B-Z	B_Z (fall)	0.118 + 0.180*Tr + 0.710*C	0.294 + 0.313*Tr + 1.532*C	0.216 + 0.218*Tr + 0.874*C
EO3LLP	B-Z	B_Z (rise)	0.083 + 0.219*Tr + 0.826*C	0.277 + 0.265*Tr + 1.656*C	0.172 + 0.222*Tr + 1.172*C
EO3LLP	B-Z	B_Z_state_3 (fall) (!A && C A && !C)	0.118 + 0.180*Tr + 0.710*C	0.281 + 0.222*Tr + 1.341*C	0.177 + 0.195*Tr + 0.874*C
EO3LLP	B-Z	B_Z_state_3 (rise) (!A && C A && !C)	0.110 + 0.255*Tr + 0.795*C	0.277 + 0.265*Tr + 1.656*C	0.172 + 0.222*Tr + 1.172*C
EO3LLP	B-Z	B_Z_state_4 (fall) (A && C !A && !C)	0.121 + 0.291*Tr + 0.719*C	0.294 + 0.313*Tr + 1.532*C	0.216 + 0.218*Tr + 0.874*C
EO3LLP	B-Z	B_Z_state_4 (rise) (A && C !A && !C)	0.083 + 0.219*Tr + 0.826*C	0.220 + 0.267*Tr + 1.758*C	0.171 + 0.186*Tr + 1.131*C
EO3LLP	C-Z	C_Z (fall)	0.072 + 0.195*Tr + 0.661*C	0.190 + 0.245*Tr + 1.458*C	0.121 + 0.243*Tr + 0.941*C
EO3LLP	C-Z	C_Z (rise)	0.053 + 0.200*Tr + 0.821*C	0.179 + 0.226*Tr + 1.673*C	0.113 + 0.217*Tr + 1.130*C
EO3LLP	C-Z	C_Z_state_5 (fall) (!A && B A && !B)	0.083 + 0.177*Tr + 0.698*C	0.197 + 0.206*Tr + 1.485*C	0.127 + 0.187*Tr + 0.965*C
EO3LLP	C-Z	C_Z_state_5 (rise) (!A && B A && !B)	0.073 + 0.218*Tr + 0.794*C	0.183 + 0.220*Tr + 1.652*C	0.113 + 0.217*Tr + 1.130*C
EO3LLP	C-Z	C_Z_state_6 (fall) (A && B !A && !B)	0.067 + 0.247*Tr + 0.649*C	0.164 + 0.269*Tr + 1.363*C	0.108 + 0.259*Tr + 0.891*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EO3LLP	C-Z	C_Z_state_6 (rise) (A && B !A && !B)	0.053 + 0.200*Tr + 0.821*C	0.138 + 0.242*Tr + 1.743*C	0.084 + 0.217*Tr + 1.178*C
EO3LLX4	A-Z	A_Z (fall)	0.122 + 0.208*Tr + 0.318*C	0.291 + 0.291*Tr + 0.753*C	0.232 + 0.197*Tr + 0.469*C
EO3LLX4	A-Z	A_Z (rise)	0.094 + 0.241*Tr + 0.411*C	0.282 + 0.269*Tr + 0.836*C	0.201 + 0.203*Tr + 0.573*C
EO3LLX4	A-Z	A_Z_state_1 (fall) (!B && C B && !C)	0.123 + 0.208*Tr + 0.317*C	0.294 + 0.251*Tr + 0.666*C	0.231 + 0.183*Tr + 0.484*C
EO3LLX4	A-Z	A_Z_state_1 (rise) (!B && C B && !C)	0.114 + 0.245*Tr + 0.398*C	0.286 + 0.264*Tr + 0.827*C	0.184 + 0.215*Tr + 0.584*C
EO3LLX4	A-Z	A_Z_state_2 (fall) (B && C !B && !C)	0.119 + 0.268*Tr + 0.355*C	0.290 + 0.292*Tr + 0.755*C	0.216 + 0.214*Tr + 0.434*C
EO3LLX4	A-Z	A_Z_state_2 (rise) (B && C !B && !C)	0.094 + 0.241*Tr + 0.411*C	0.239 + 0.286*Tr + 0.873*C	0.206 + 0.183*Tr + 0.565*C
EO3LLX4	B-Z	B_Z (fall)	0.111 + 0.180*Tr + 0.349*C	0.274 + 0.301*Tr + 0.754*C	0.199 + 0.206*Tr + 0.434*C
EO3LLX4	B-Z	B_Z (rise)	0.080 + 0.220*Tr + 0.412*C	0.258 + 0.253*Tr + 0.828*C	0.161 + 0.211*Tr + 0.584*C
EO3LLX4	B-Z	B_Z_state_3 (fall) (!A && C A && !C)	0.111 + 0.180*Tr + 0.349*C	0.262 + 0.220*Tr + 0.666*C	0.165 + 0.196*Tr + 0.434*C
EO3LLX4	B-Z	B_Z_state_3 (rise) (!A && C A && !C)	0.103 + 0.243*Tr + 0.398*C	0.258 + 0.253*Tr + 0.827*C	0.161 + 0.211*Tr + 0.584*C
EO3LLX4	B-Z	B_Z_state_4 (fall) (A && C !A && !C)	0.113 + 0.280*Tr + 0.354*C	0.274 + 0.301*Tr + 0.754*C	0.199 + 0.206*Tr + 0.434*C
EO3LLX4	B-Z	B_Z_state_4 (rise) (A && C !A && !C)	0.080 + 0.220*Tr + 0.412*C	0.208 + 0.265*Tr + 0.875*C	0.161 + 0.185*Tr + 0.565*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EO3LLX4	C-Z	C_Z (fall)	0.068 + 0.196*Tr + 0.328*C	0.181 + 0.238*Tr + 0.720*C	0.115 + 0.235*Tr + 0.465*C
EO3LLX4	C-Z	C_Z (rise)	0.052 + 0.205*Tr + 0.410*C	0.165 + 0.226*Tr + 0.844*C	0.105 + 0.209*Tr + 0.568*C
EO3LLX4	C-Z	C_Z_state_5 (fall) (!A && B A && !B)	0.079 + 0.179*Tr + 0.345*C	0.186 + 0.205*Tr + 0.732*C	0.120 + 0.187*Tr + 0.476*C
EO3LLX4	C-Z	C_Z_state_5 (rise) (!A && B A && !B)	0.069 + 0.207*Tr + 0.397*C	0.172 + 0.210*Tr + 0.826*C	0.106 + 0.207*Tr + 0.565*C
EO3LLX4	C-Z	C_Z_state_6 (fall) (A && B !A && !B)	0.064 + 0.238*Tr + 0.323*C	0.155 + 0.259*Tr + 0.677*C	0.102 + 0.249*Tr + 0.443*C
EO3LLX4	C-Z	C_Z_state_6 (rise) (A && B !A && !B)	0.052 + 0.205*Tr + 0.410*C	0.133 + 0.243*Tr + 0.867*C	0.081 + 0.220*Tr + 0.588*C
EO3LLX6	A-Z	A_Z (fall)	0.125 + 0.210*Tr + 0.214*C	0.296 + 0.294*Tr + 0.505*C	0.233 + 0.204*Tr + 0.312*C
EO3LLX6	A-Z	A_Z (rise)	0.095 + 0.240*Tr + 0.274*C	0.296 + 0.270*Tr + 0.555*C	0.205 + 0.239*Tr + 0.378*C
EO3LLX6	A-Z	A_Z_state_1 (fall) (!B && C B && !C)	0.126 + 0.209*Tr + 0.212*C	0.304 + 0.253*Tr + 0.447*C	0.232 + 0.183*Tr + 0.326*C
EO3LLX6	A-Z	A_Z_state_1 (rise) (!B && C B && !C)	0.118 + 0.216*Tr + 0.273*C	0.297 + 0.269*Tr + 0.553*C	0.184 + 0.257*Tr + 0.378*C
EO3LLX6	A-Z	A_Z_state_2 (fall) (B && C !B && !C)	0.120 + 0.272*Tr + 0.239*C	0.292 + 0.295*Tr + 0.509*C	0.222 + 0.217*Tr + 0.291*C
EO3LLX6	A-Z	A_Z_state_2 (rise) (B && C !B && !C)	0.095 + 0.241*Tr + 0.275*C	0.241 + 0.286*Tr + 0.585*C	0.212 + 0.183*Tr + 0.378*C
EO3LLX6	B-Z	B_Z (fall)	0.111 + 0.178*Tr + 0.235*C	0.273 + 0.303*Tr + 0.508*C	0.204 + 0.209*Tr + 0.291*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EO3LLX6	B-Z	B_Z (rise)	0.079 + 0.218*Tr + 0.276*C	0.267 + 0.257*Tr + 0.553*C	0.165 + 0.210*Tr + 0.391*C
EO3LLX6	B-Z	B_Z_state_3 (fall) (!A && C A && !C)	0.111 + 0.178*Tr + 0.235*C	0.269 + 0.221*Tr + 0.447*C	0.169 + 0.196*Tr + 0.292*C
EO3LLX6	B-Z	B_Z_state_3 (rise) (!A && C A && !C)	0.106 + 0.211*Tr + 0.273*C	0.267 + 0.257*Tr + 0.553*C	0.165 + 0.210*Tr + 0.391*C
EO3LLX6	B-Z	B_Z_state_4 (fall) (A && C !A && !C)	0.112 + 0.282*Tr + 0.238*C	0.273 + 0.303*Tr + 0.508*C	0.204 + 0.209*Tr + 0.291*C
EO3LLX6	B-Z	B_Z_state_4 (rise) (A && C !A && !C)	0.079 + 0.218*Tr + 0.276*C	0.207 + 0.263*Tr + 0.587*C	0.166 + 0.184*Tr + 0.378*C
EO3LLX6	C-Z	C_Z (fall)	0.068 + 0.196*Tr + 0.220*C	0.181 + 0.238*Tr + 0.485*C	0.115 + 0.235*Tr + 0.313*C
EO3LLX6	C-Z	C_Z (rise)	0.051 + 0.203*Tr + 0.274*C	0.170 + 0.222*Tr + 0.562*C	0.104 + 0.212*Tr + 0.378*C
EO3LLX6	C-Z	C_Z_state_5 (fall) (!A && B A && !B)	0.079 + 0.178*Tr + 0.232*C	0.187 + 0.204*Tr + 0.492*C	0.121 + 0.187*Tr + 0.320*C
EO3LLX6	C-Z	C_Z_state_5 (rise) (!A && B A && !B)	0.070 + 0.210*Tr + 0.266*C	0.175 + 0.212*Tr + 0.552*C	0.104 + 0.212*Tr + 0.378*C
EO3LLX6	C-Z	C_Z_state_6 (fall) (A && B !A && !B)	0.063 + 0.239*Tr + 0.217*C	0.154 + 0.260*Tr + 0.455*C	0.101 + 0.251*Tr + 0.298*C
EO3LLX6	C-Z	C_Z_state_6 (rise) (A && B !A && !B)	0.051 + 0.203*Tr + 0.274*C	0.129 + 0.242*Tr + 0.581*C	0.079 + 0.218*Tr + 0.393*C
EO3LLX8	A-Z	A_Z (fall)	0.121 + 0.211*Tr + 0.160*C	0.288 + 0.290*Tr + 0.377*C	0.226 + 0.200*Tr + 0.234*C
EO3LLX8	A-Z	A_Z (rise)	0.095 + 0.237*Tr + 0.205*C	0.285 + 0.268*Tr + 0.418*C	0.198 + 0.236*Tr + 0.283*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EO3LLX8	A-Z	A_Z_state_1 (fall) (!B && C B && !C)	0.123 + 0.209*Tr + 0.159*C	0.294 + 0.252*Tr + 0.335*C	0.225 + 0.184*Tr + 0.243*C
EO3LLX8	A-Z	A_Z_state_1 (rise) (!B && C B && !C)	0.115 + 0.212*Tr + 0.205*C	0.287 + 0.264*Tr + 0.415*C	0.178 + 0.253*Tr + 0.283*C
EO3LLX8	A-Z	A_Z_state_2 (fall) (B && C !B && !C)	0.118 + 0.268*Tr + 0.178*C	0.285 + 0.291*Tr + 0.380*C	0.215 + 0.213*Tr + 0.218*C
EO3LLX8	A-Z	A_Z_state_2 (rise) (B && C !B && !C)	0.093 + 0.242*Tr + 0.206*C	0.236 + 0.286*Tr + 0.439*C	0.205 + 0.183*Tr + 0.283*C
EO3LLX8	B-Z	B_Z (fall)	0.108 + 0.179*Tr + 0.176*C	0.267 + 0.299*Tr + 0.379*C	0.197 + 0.205*Tr + 0.218*C
EO3LLX8	B-Z	B_Z (rise)	0.078 + 0.219*Tr + 0.207*C	0.258 + 0.253*Tr + 0.415*C	0.161 + 0.207*Tr + 0.293*C
EO3LLX8	B-Z	B_Z_state_3 (fall) (!A && C A && !C)	0.108 + 0.179*Tr + 0.176*C	0.260 + 0.220*Tr + 0.334*C	0.163 + 0.196*Tr + 0.218*C
EO3LLX8	B-Z	B_Z_state_3 (rise) (!A && C A && !C)	0.103 + 0.243*Tr + 0.199*C	0.258 + 0.253*Tr + 0.415*C	0.161 + 0.207*Tr + 0.293*C
EO3LLX8	B-Z	B_Z_state_4 (fall) (A && C !A && !C)	0.110 + 0.278*Tr + 0.178*C	0.267 + 0.299*Tr + 0.379*C	0.197 + 0.205*Tr + 0.218*C
EO3LLX8	B-Z	B_Z_state_4 (rise) (A && C !A && !C)	0.078 + 0.219*Tr + 0.207*C	0.203 + 0.263*Tr + 0.440*C	0.161 + 0.184*Tr + 0.283*C
EO3LLX8	C-Z	C_Z (fall)	0.066 + 0.195*Tr + 0.165*C	0.176 + 0.235*Tr + 0.362*C	0.112 + 0.232*Tr + 0.234*C
EO3LLX8	C-Z	C_Z (rise)	0.050 + 0.204*Tr + 0.206*C	0.162 + 0.223*Tr + 0.423*C	0.100 + 0.210*Tr + 0.285*C
EO3LLX8	C-Z	C_Z_state_5 (fall) (!A && B A && !B)	0.077 + 0.178*Tr + 0.173*C	0.182 + 0.204*Tr + 0.367*C	0.118 + 0.186*Tr + 0.239*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
EO3LLX8	C-Z	C_Z_state_5 (rise) (!A && B A && !B)	0.068 + 0.206*Tr + 0.199*C	0.169 + 0.208*Tr + 0.414*C	0.101 + 0.208*Tr + 0.283*C
EO3LLX8	C-Z	C_Z_state_6 (fall) (A && B !A && !B)	0.061 + 0.236*Tr + 0.162*C	0.150 + 0.256*Tr + 0.341*C	0.099 + 0.247*Tr + 0.223*C
EO3LLX8	C-Z	C_Z_state_6 (rise) (A && B !A && !B)	0.050 + 0.204*Tr + 0.206*C	0.127 + 0.242*Tr + 0.436*C	0.078 + 0.218*Tr + 0.295*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
EO3LL	11311.400	203328.000
EO3LLP	16493.700	330740.000
EO3LLX4	28598.300	602844.000
EO3LLX6	44870.300	930161.000
EO3LLX8	57288.700	1208230.000

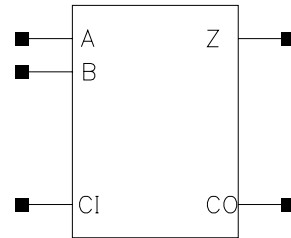
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
EO3LL	Z(max)	0.031 + 0.014*Tr
EO3LLP	Z(max)	0.049 + 0.028*Tr
EO3LLX4	Z(max)	0.090 + 0.055*Tr
EO3LLX6	Z(max)	0.140 + 0.084*Tr
EO3LLX8	Z(max)	0.181 + 0.111*Tr

FA1LL
FA1LLP
FA1LLX4
FA1LLX6
FA1LLX8

Function: Function = 1 Bit Full-Adder



Truth Table

A	B	CI	Z
A	B	!B	!A
A	B	B	A

Truth Table

A	B	CI	CO
A	A	-	A
A	-	A	A
-	B	B	B

Physical Dimensions

Property	FA1LL	FA1LLP	FA1LLX4	FA1LLX6	FA1LLX8
Area(um2)	32.275	38.327	44.378	76.654	86.740

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FA1LL	CI Input Cap.	0.0060	0.0053	0.0056
FA1LL	B Input Cap.	0.0083	0.0075	0.0077
FA1LL	CO Max Load	0.160	0.160	0.160
FA1LL	A Input Cap.	0.0078	0.0068	0.0073
FA1LL	Z Max Load	0.160	0.160	0.160
FA1LLP	CO Max Load	0.320	0.320	0.320
FA1LLP	A Input Cap.	0.0118	0.0106	0.0110

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FA1LLP	Z Max Load	0.320	0.320	0.320
FA1LLP	CI Input Cap.	0.0086	0.0077	0.0080
FA1LLP	B Input Cap.	0.0122	0.0111	0.0114
FA1LLX4	B Input Cap.	0.0218	0.0203	0.0206
FA1LLX4	CO Max Load	0.640	0.640	0.640
FA1LLX4	CI Input Cap.	0.0158	0.0143	0.0147
FA1LLX4	A Input Cap.	0.0216	0.0197	0.0203
FA1LLX4	Z Max Load	0.640	0.640	0.640
FA1LLX6	A Input Cap.	0.0343	0.0310	0.0321
FA1LLX6	CI Input Cap.	0.0246	0.0222	0.0229
FA1LLX6	CO Max Load	0.960	0.960	0.960
FA1LLX6	B Input Cap.	0.0333	0.0308	0.0314
FA1LLX6	Z Max Load	0.960	0.960	0.960
FA1LLX8	CO Max Load	1.280	1.280	1.280
FA1LLX8	A Input Cap.	0.0441	0.0401	0.0415
FA1LLX8	Z Max Load	1.280	1.280	1.280
FA1LLX8	CI Input Cap.	0.0313	0.0283	0.0292
FA1LLX8	B Input Cap.	0.0430	0.0398	0.0405

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FA1LL	A-CO	A_CO (fall)	0.098 + 0.239*Tr + 1.316*C	0.230 + 0.249*Tr + 2.859*C	0.149 + 0.244*Tr + 1.848*C
FA1LL	A-CO	A_CO (rise)	0.073 + 0.202*Tr + 1.655*C	0.198 + 0.245*Tr + 3.541*C	0.117 + 0.222*Tr + 2.392*C
FA1LL	A-Z	A_Z (fall)	0.086 + 0.221*Tr + 1.262*C	0.345 + 0.244*Tr + 2.758*C	0.209 + 0.231*Tr + 1.760*C
FA1LL	A-Z	A_Z (rise)	0.066 + 0.183*Tr + 1.635*C	0.393 + 0.247*Tr + 3.368*C	0.244 + 0.242*Tr + 2.277*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FA1LL	A-Z	A_Z_state_1 (fall) (!B && CI B && !CI)	0.136 + 0.204*Tr + 1.253*C	0.345 + 0.244*Tr + 2.758*C	0.216 + 0.216*Tr + 1.701*C
FA1LL	A-Z	A_Z_state_1 (rise) (!B && CI B && !CI)	0.145 + 0.240*Tr + 1.592*C	0.393 + 0.247*Tr + 3.368*C	0.244 + 0.242*Tr + 2.277*C
FA1LL	A-Z	A_Z_state_2 (fall) (B && CI !B && !CI)	0.086 + 0.221*Tr + 1.262*C	0.261 + 0.259*Tr + 2.899*C	0.166 + 0.257*Tr + 1.855*C
FA1LL	A-Z	A_Z_state_2 (rise) (B && CI !B && !CI)	0.066 + 0.183*Tr + 1.635*C	0.241 + 0.257*Tr + 3.571*C	0.136 + 0.235*Tr + 2.398*C
FA1LL	B-CO	B_CO (fall)	0.102 + 0.290*Tr + 1.311*C	0.228 + 0.303*Tr + 2.849*C	0.155 + 0.230*Tr + 1.936*C
FA1LL	B-CO	B_CO (rise)	0.071 + 0.184*Tr + 1.667*C	0.210 + 0.283*Tr + 3.538*C	0.126 + 0.252*Tr + 2.390*C
FA1LL	B-Z	B_Z (fall)	0.095 + 0.219*Tr + 1.246*C	0.360 + 0.283*Tr + 2.763*C	0.220 + 0.252*Tr + 1.760*C
FA1LL	B-Z	B_Z (rise)	0.071 + 0.197*Tr + 1.638*C	0.356 + 0.301*Tr + 3.369*C	0.246 + 0.226*Tr + 2.272*C
FA1LL	B-Z	B_Z_state_3 (fall) (!A && CI A && !CI)	0.134 + 0.182*Tr + 1.216*C	0.360 + 0.283*Tr + 2.763*C	0.220 + 0.252*Tr + 1.760*C
FA1LL	B-Z	B_Z_state_3 (rise) (!A && CI A && !CI)	0.150 + 0.290*Tr + 1.589*C	0.356 + 0.301*Tr + 3.369*C	0.246 + 0.226*Tr + 2.272*C
FA1LL	B-Z	B_Z_state_4 (fall) (A && CI !A && !CI)	0.092 + 0.229*Tr + 1.266*C	0.284 + 0.214*Tr + 2.906*C	0.178 + 0.212*Tr + 1.860*C
FA1LL	B-Z	B_Z_state_4 (rise) (A && CI !A && !CI)	0.071 + 0.197*Tr + 1.638*C	0.255 + 0.216*Tr + 3.580*C	0.141 + 0.200*Tr + 2.406*C
FA1LL	CI-CO	CI_CO (fall)	0.093 + 0.284*Tr + 1.352*C	0.209 + 0.294*Tr + 2.849*C	0.139 + 0.286*Tr + 1.841*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FA1LL	CI-CO	CI_CO (rise)	0.071 + 0.215*Tr + 1.662*C	0.189 + 0.271*Tr + 3.528*C	0.115 + 0.240*Tr + 2.388*C
FA1LL	CI-Z	CI_Z (fall)	0.087 + 0.207*Tr + 1.310*C	0.348 + 0.265*Tr + 2.666*C	0.208 + 0.259*Tr + 1.759*C
FA1LL	CI-Z	CI_Z (rise)	0.062 + 0.165*Tr + 1.646*C	0.370 + 0.288*Tr + 3.370*C	0.233 + 0.281*Tr + 2.276*C
FA1LL	CI-Z	CI_Z_state_5 (fall) (!A && B A && !B)	0.133 + 0.213*Tr + 1.213*C	0.348 + 0.265*Tr + 2.664*C	0.217 + 0.235*Tr + 1.701*C
FA1LL	CI-Z	CI_Z_state_5 (rise) (!A && B A && !B)	0.148 + 0.280*Tr + 1.581*C	0.370 + 0.288*Tr + 3.370*C	0.233 + 0.281*Tr + 2.276*C
FA1LL	CI-Z	CI_Z_state_6 (fall) (A && B !A && !B)	0.087 + 0.207*Tr + 1.310*C	0.240 + 0.301*Tr + 2.883*C	0.156 + 0.293*Tr + 1.843*C
FA1LL	CI-Z	CI_Z_state_6 (rise) (A && B !A && !B)	0.062 + 0.165*Tr + 1.646*C	0.246 + 0.288*Tr + 3.567*C	0.141 + 0.258*Tr + 2.395*C
FA1LLP	A-CO	A_CO (fall)	0.096 + 0.232*Tr + 0.677*C	0.225 + 0.244*Tr + 1.424*C	0.146 + 0.237*Tr + 0.936*C
FA1LLP	A-CO	A_CO (rise)	0.074 + 0.212*Tr + 0.816*C	0.195 + 0.253*Tr + 1.730*C	0.116 + 0.232*Tr + 1.172*C
FA1LLP	A-Z	A_Z (fall)	0.082 + 0.212*Tr + 0.646*C	0.353 + 0.248*Tr + 1.303*C	0.214 + 0.235*Tr + 0.869*C
FA1LLP	A-Z	A_Z (rise)	0.065 + 0.190*Tr + 0.803*C	0.394 + 0.244*Tr + 1.621*C	0.247 + 0.237*Tr + 1.099*C
FA1LLP	A-Z	A_Z_state_1 (fall) (!B && CI B && !CI)	0.139 + 0.216*Tr + 0.636*C	0.353 + 0.248*Tr + 1.303*C	0.218 + 0.227*Tr + 0.848*C
FA1LLP	A-Z	A_Z_state_1 (rise) (!B && CI B && !CI)	0.148 + 0.233*Tr + 0.775*C	0.394 + 0.244*Tr + 1.621*C	0.247 + 0.237*Tr + 1.099*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FA1LLP	A-Z	A_Z_state_2 (fall) (B && CI !B && !CI)	0.082 + 0.212*Tr + 0.646*C	0.263 + 0.259*Tr + 1.453*C	0.169 + 0.255*Tr + 0.946*C
FA1LLP	A-Z	A_Z_state_2 (rise) (B && CI !B && !CI)	0.065 + 0.190*Tr + 0.803*C	0.242 + 0.268*Tr + 1.749*C	0.138 + 0.247*Tr + 1.177*C
FA1LLP	B-CO	B_CO (fall)	0.097 + 0.283*Tr + 0.674*C	0.216 + 0.298*Tr + 1.416*C	0.149 + 0.226*Tr + 0.982*C
FA1LLP	B-CO	B_CO (rise)	0.069 + 0.196*Tr + 0.823*C	0.203 + 0.292*Tr + 1.727*C	0.123 + 0.262*Tr + 1.171*C
FA1LLP	B-Z	B_Z (fall)	0.088 + 0.219*Tr + 0.647*C	0.355 + 0.293*Tr + 1.356*C	0.220 + 0.264*Tr + 0.878*C
FA1LLP	B-Z	B_Z (rise)	0.070 + 0.203*Tr + 0.806*C	0.351 + 0.298*Tr + 1.622*C	0.247 + 0.223*Tr + 1.097*C
FA1LLP	B-Z	B_Z_state_3 (fall) (!A && CI A && !CI)	0.135 + 0.195*Tr + 0.617*C	0.355 + 0.293*Tr + 1.356*C	0.220 + 0.264*Tr + 0.878*C
FA1LLP	B-Z	B_Z_state_3 (rise) (!A && CI A && !CI)	0.150 + 0.285*Tr + 0.772*C	0.351 + 0.298*Tr + 1.622*C	0.247 + 0.223*Tr + 1.097*C
FA1LLP	B-Z	B_Z_state_4 (fall) (A && CI !A && !CI)	0.088 + 0.219*Tr + 0.647*C	0.285 + 0.213*Tr + 1.456*C	0.180 + 0.210*Tr + 0.948*C
FA1LLP	B-Z	B_Z_state_4 (rise) (A && CI !A && !CI)	0.070 + 0.203*Tr + 0.806*C	0.255 + 0.227*Tr + 1.752*C	0.143 + 0.212*Tr + 1.180*C
FA1LLP	CI-CO	CI_CO (fall)	0.090 + 0.278*Tr + 0.697*C	0.202 + 0.291*Tr + 1.418*C	0.135 + 0.281*Tr + 0.932*C
FA1LLP	CI-CO	CI_CO (rise)	0.070 + 0.228*Tr + 0.821*C	0.184 + 0.282*Tr + 1.723*C	0.113 + 0.252*Tr + 1.170*C
FA1LLP	CI-Z	CI_Z (fall)	0.083 + 0.198*Tr + 0.669*C	0.347 + 0.278*Tr + 1.302*C	0.210 + 0.263*Tr + 0.875*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FA1LLP	CI-Z	CI_Z (rise)	0.061 + 0.173*Tr + 0.809*C	0.370 + 0.287*Tr + 1.621*C	0.235 + 0.278*Tr + 1.097*C
FA1LLP	CI-Z	CI_Z_state_5 (fall) (!A && B A && !B)	0.134 + 0.227*Tr + 0.615*C	0.347 + 0.278*Tr + 1.302*C	0.217 + 0.249*Tr + 0.846*C
FA1LLP	CI-Z	CI_Z_state_5 (rise) (!A && B A && !B)	0.151 + 0.276*Tr + 0.767*C	0.370 + 0.287*Tr + 1.621*C	0.235 + 0.278*Tr + 1.097*C
FA1LLP	CI-Z	CI_Z_state_6 (fall) (A && B !A && !B)	0.083 + 0.198*Tr + 0.669*C	0.241 + 0.301*Tr + 1.445*C	0.159 + 0.293*Tr + 0.940*C
FA1LLP	CI-Z	CI_Z_state_6 (rise) (A && B !A && !B)	0.061 + 0.173*Tr + 0.809*C	0.246 + 0.300*Tr + 1.745*C	0.143 + 0.270*Tr + 1.175*C
FA1LLX4	A-CO	A_CO (fall)	0.087 + 0.222*Tr + 0.334*C	0.203 + 0.234*Tr + 0.702*C	0.132 + 0.227*Tr + 0.461*C
FA1LLX4	A-CO	A_CO (rise)	0.070 + 0.216*Tr + 0.407*C	0.181 + 0.255*Tr + 0.860*C	0.109 + 0.234*Tr + 0.584*C
FA1LLX4	A-Z	A_Z (fall)	0.078 + 0.201*Tr + 0.321*C	0.325 + 0.250*Tr + 0.648*C	0.201 + 0.233*Tr + 0.426*C
FA1LLX4	A-Z	A_Z (rise)	0.064 + 0.195*Tr + 0.402*C	0.363 + 0.235*Tr + 0.810*C	0.228 + 0.228*Tr + 0.549*C
FA1LLX4	A-Z	A_Z_state_1 (fall) (!B && CI B && !CI)	0.129 + 0.220*Tr + 0.316*C	0.325 + 0.250*Tr + 0.648*C	0.202 + 0.230*Tr + 0.421*C
FA1LLX4	A-Z	A_Z_state_1 (rise) (!B && CI B && !CI)	0.137 + 0.225*Tr + 0.387*C	0.363 + 0.235*Tr + 0.810*C	0.228 + 0.228*Tr + 0.549*C
FA1LLX4	A-Z	A_Z_state_2 (fall) (B && CI !B && !CI)	0.078 + 0.201*Tr + 0.321*C	0.248 + 0.249*Tr + 0.720*C	0.159 + 0.246*Tr + 0.468*C
FA1LLX4	A-Z	A_Z_state_2 (rise) (B && CI !B && !CI)	0.064 + 0.195*Tr + 0.402*C	0.235 + 0.272*Tr + 0.871*C	0.135 + 0.252*Tr + 0.588*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FA1LLX4	B-CO	B_CO (fall)	0.090 + 0.271*Tr + 0.333*C	0.198 + 0.285*Tr + 0.699*C	0.136 + 0.214*Tr + 0.484*C
FA1LLX4	B-CO	B_CO (rise)	0.066 + 0.199*Tr + 0.411*C	0.190 + 0.292*Tr + 0.859*C	0.116 + 0.263*Tr + 0.584*C
FA1LLX4	B-Z	B_Z (fall)	0.082 + 0.209*Tr + 0.322*C	0.329 + 0.293*Tr + 0.674*C	0.205 + 0.265*Tr + 0.436*C
FA1LLX4	B-Z	B_Z (rise)	0.068 + 0.209*Tr + 0.403*C	0.325 + 0.287*Tr + 0.811*C	0.229 + 0.213*Tr + 0.548*C
FA1LLX4	B-Z	B_Z_state_3 (fall) (!A && CI A && !CI)	0.126 + 0.199*Tr + 0.307*C	0.329 + 0.293*Tr + 0.674*C	0.205 + 0.265*Tr + 0.436*C
FA1LLX4	B-Z	B_Z_state_3 (rise) (!A && CI A && !CI)	0.140 + 0.274*Tr + 0.386*C	0.325 + 0.287*Tr + 0.811*C	0.229 + 0.213*Tr + 0.548*C
FA1LLX4	B-Z	B_Z_state_4 (fall) (A && CI !A && !CI)	0.082 + 0.209*Tr + 0.322*C	0.266 + 0.206*Tr + 0.721*C	0.168 + 0.202*Tr + 0.469*C
FA1LLX4	B-Z	B_Z_state_4 (rise) (A && CI !A && !CI)	0.068 + 0.209*Tr + 0.403*C	0.244 + 0.232*Tr + 0.873*C	0.138 + 0.218*Tr + 0.589*C
FA1LLX4	CI-CO	CI_CO (fall)	0.083 + 0.265*Tr + 0.344*C	0.185 + 0.277*Tr + 0.699*C	0.124 + 0.268*Tr + 0.459*C
FA1LLX4	CI-CO	CI_CO (rise)	0.066 + 0.230*Tr + 0.410*C	0.173 + 0.281*Tr + 0.857*C	0.107 + 0.253*Tr + 0.583*C
FA1LLX4	CI-Z	CI_Z (fall)	0.079 + 0.187*Tr + 0.333*C	0.322 + 0.278*Tr + 0.647*C	0.199 + 0.256*Tr + 0.429*C
FA1LLX4	CI-Z	CI_Z (rise)	0.059 + 0.178*Tr + 0.405*C	0.343 + 0.274*Tr + 0.810*C	0.218 + 0.266*Tr + 0.548*C
FA1LLX4	CI-Z	CI_Z_state_5 (fall) (!A && B A && !B)	0.125 + 0.229*Tr + 0.306*C	0.322 + 0.278*Tr + 0.647*C	0.202 + 0.250*Tr + 0.420*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FA1LLX4	CI-Z	CI_Z_state_5 (rise) (!A && B A && !B)	0.141 + 0.265*Tr + 0.384*C	0.343 + 0.274*Tr + 0.810*C	0.218 + 0.266*Tr + 0.548*C
FA1LLX4	CI-Z	CI_Z_state_6 (fall) (A && B !A && !B)	0.079 + 0.187*Tr + 0.333*C	0.226 + 0.291*Tr + 0.715*C	0.149 + 0.282*Tr + 0.465*C
FA1LLX4	CI-Z	CI_Z_state_6 (rise) (A && B !A && !B)	0.059 + 0.178*Tr + 0.405*C	0.238 + 0.303*Tr + 0.870*C	0.139 + 0.275*Tr + 0.587*C
FA1LLX6	A-CO	A_CO (fall)	0.088 + 0.224*Tr + 0.224*C	0.204 + 0.238*Tr + 0.472*C	0.134 + 0.230*Tr + 0.310*C
FA1LLX6	A-CO	A_CO (rise)	0.070 + 0.214*Tr + 0.273*C	0.182 + 0.253*Tr + 0.576*C	0.109 + 0.232*Tr + 0.391*C
FA1LLX6	A-Z	A_Z (fall)	0.080 + 0.204*Tr + 0.216*C	0.332 + 0.250*Tr + 0.434*C	0.204 + 0.234*Tr + 0.288*C
FA1LLX6	A-Z	A_Z (rise)	0.065 + 0.193*Tr + 0.269*C	0.371 + 0.238*Tr + 0.541*C	0.234 + 0.231*Tr + 0.367*C
FA1LLX6	A-Z	A_Z_state_1 (fall) (!B && CI B && !CI)	0.132 + 0.218*Tr + 0.212*C	0.332 + 0.250*Tr + 0.434*C	0.207 + 0.229*Tr + 0.282*C
FA1LLX6	A-Z	A_Z_state_1 (rise) (!B && CI B && !CI)	0.141 + 0.228*Tr + 0.258*C	0.371 + 0.238*Tr + 0.541*C	0.234 + 0.231*Tr + 0.367*C
FA1LLX6	A-Z	A_Z_state_2 (fall) (B && CI !B && !CI)	0.080 + 0.204*Tr + 0.216*C	0.253 + 0.252*Tr + 0.485*C	0.162 + 0.248*Tr + 0.316*C
FA1LLX6	A-Z	A_Z_state_2 (rise) (B && CI !B && !CI)	0.065 + 0.193*Tr + 0.269*C	0.239 + 0.271*Tr + 0.585*C	0.137 + 0.251*Tr + 0.394*C
FA1LLX6	B-CO	B_CO (fall)	0.090 + 0.275*Tr + 0.224*C	0.198 + 0.289*Tr + 0.470*C	0.135 + 0.218*Tr + 0.326*C
FA1LLX6	B-CO	B_CO (rise)	0.065 + 0.198*Tr + 0.275*C	0.189 + 0.291*Tr + 0.575*C	0.115 + 0.262*Tr + 0.391*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FA1LLX6	B-Z	B_Z (fall)	0.084 + 0.212*Tr + 0.216*C	0.334 + 0.293*Tr + 0.453*C	0.208 + 0.264*Tr + 0.293*C
FA1LLX6	B-Z	B_Z (rise)	0.068 + 0.207*Tr + 0.269*C	0.330 + 0.291*Tr + 0.542*C	0.233 + 0.217*Tr + 0.366*C
FA1LLX6	B-Z	B_Z_state_3 (fall) (!A && CI A && !CI)	0.128 + 0.198*Tr + 0.206*C	0.334 + 0.293*Tr + 0.453*C	0.208 + 0.264*Tr + 0.293*C
FA1LLX6	B-Z	B_Z_state_3 (rise) (!A && CI A && !CI)	0.143 + 0.278*Tr + 0.257*C	0.330 + 0.291*Tr + 0.542*C	0.233 + 0.217*Tr + 0.366*C
FA1LLX6	B-Z	B_Z_state_4 (fall) (A && CI !A && !CI)	0.084 + 0.212*Tr + 0.216*C	0.270 + 0.209*Tr + 0.486*C	0.171 + 0.205*Tr + 0.316*C
FA1LLX6	B-Z	B_Z_state_4 (rise) (A && CI !A && !CI)	0.068 + 0.207*Tr + 0.269*C	0.247 + 0.231*Tr + 0.586*C	0.139 + 0.216*Tr + 0.395*C
FA1LLX6	CI-CO	CI_CO (fall)	0.084 + 0.268*Tr + 0.231*C	0.187 + 0.281*Tr + 0.470*C	0.125 + 0.271*Tr + 0.309*C
FA1LLX6	CI-CO	CI_CO (rise)	0.066 + 0.228*Tr + 0.274*C	0.174 + 0.280*Tr + 0.574*C	0.107 + 0.251*Tr + 0.390*C
FA1LLX6	CI-Z	CI_Z (fall)	0.080 + 0.191*Tr + 0.224*C	0.328 + 0.278*Tr + 0.434*C	0.202 + 0.259*Tr + 0.290*C
FA1LLX6	CI-Z	CI_Z (rise)	0.060 + 0.176*Tr + 0.270*C	0.351 + 0.278*Tr + 0.541*C	0.223 + 0.270*Tr + 0.366*C
FA1LLX6	CI-Z	CI_Z_state_5 (fall) (!A && B A && !B)	0.128 + 0.228*Tr + 0.205*C	0.328 + 0.278*Tr + 0.434*C	0.207 + 0.249*Tr + 0.282*C
FA1LLX6	CI-Z	CI_Z_state_5 (rise) (!A && B A && !B)	0.144 + 0.269*Tr + 0.256*C	0.351 + 0.278*Tr + 0.541*C	0.223 + 0.270*Tr + 0.366*C
FA1LLX6	CI-Z	CI_Z_state_6 (fall) (A && B !A && !B)	0.080 + 0.191*Tr + 0.224*C	0.229 + 0.295*Tr + 0.482*C	0.151 + 0.286*Tr + 0.313*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FA1LLX6	CI-Z	CI_Z_state_6 (rise) (A && B !A && !B)	0.060 + 0.176*Tr + 0.270*C	0.241 + 0.303*Tr + 0.584*C	0.141 + 0.274*Tr + 0.393*C
FA1LLX8	A-CO	A_CO (fall)	0.086 + 0.221*Tr + 0.168*C	0.199 + 0.234*Tr + 0.353*C	0.131 + 0.226*Tr + 0.232*C
FA1LLX8	A-CO	A_CO (rise)	0.069 + 0.216*Tr + 0.205*C	0.178 + 0.253*Tr + 0.432*C	0.107 + 0.233*Tr + 0.293*C
FA1LLX8	A-Z	A_Z (fall)	0.078 + 0.201*Tr + 0.162*C	0.325 + 0.250*Tr + 0.326*C	0.201 + 0.233*Tr + 0.214*C
FA1LLX8	A-Z	A_Z (rise)	0.064 + 0.195*Tr + 0.202*C	0.364 + 0.234*Tr + 0.406*C	0.229 + 0.228*Tr + 0.275*C
FA1LLX8	A-Z	A_Z_state_1 (fall) (!B && CI B && !CI)	0.129 + 0.219*Tr + 0.159*C	0.325 + 0.250*Tr + 0.326*C	0.203 + 0.230*Tr + 0.212*C
FA1LLX8	A-Z	A_Z_state_1 (rise) (!B && CI B && !CI)	0.137 + 0.225*Tr + 0.194*C	0.364 + 0.234*Tr + 0.406*C	0.229 + 0.228*Tr + 0.275*C
FA1LLX8	A-Z	A_Z_state_2 (fall) (B && CI !B && !CI)	0.078 + 0.201*Tr + 0.162*C	0.245 + 0.249*Tr + 0.363*C	0.158 + 0.246*Tr + 0.236*C
FA1LLX8	A-Z	A_Z_state_2 (rise) (B && CI !B && !CI)	0.064 + 0.195*Tr + 0.202*C	0.234 + 0.272*Tr + 0.439*C	0.135 + 0.252*Tr + 0.296*C
FA1LLX8	B-CO	B_CO (fall)	0.087 + 0.271*Tr + 0.167*C	0.193 + 0.284*Tr + 0.352*C	0.132 + 0.214*Tr + 0.244*C
FA1LLX8	B-CO	B_CO (rise)	0.064 + 0.199*Tr + 0.206*C	0.185 + 0.291*Tr + 0.431*C	0.113 + 0.262*Tr + 0.293*C
FA1LLX8	B-Z	B_Z (fall)	0.083 + 0.209*Tr + 0.162*C	0.325 + 0.293*Tr + 0.339*C	0.203 + 0.265*Tr + 0.219*C
FA1LLX8	B-Z	B_Z (rise)	0.068 + 0.209*Tr + 0.202*C	0.322 + 0.287*Tr + 0.407*C	0.227 + 0.214*Tr + 0.275*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FA1LLX8	B-Z	B_Z_state_3 (fall) (!A && CI A && !CI)	0.125 + 0.199*Tr + 0.154*C	0.325 + 0.293*Tr + 0.339*C	0.203 + 0.265*Tr + 0.219*C
FA1LLX8	B-Z	B_Z_state_3 (rise) (!A && CI A && !CI)	0.140 + 0.274*Tr + 0.193*C	0.322 + 0.287*Tr + 0.407*C	0.227 + 0.214*Tr + 0.275*C
FA1LLX8	B-Z	B_Z_state_4 (fall) (A && CI !A && !CI)	0.083 + 0.209*Tr + 0.162*C	0.267 + 0.206*Tr + 0.364*C	0.169 + 0.202*Tr + 0.237*C
FA1LLX8	B-Z	B_Z_state_4 (rise) (A && CI !A && !CI)	0.068 + 0.209*Tr + 0.202*C	0.245 + 0.232*Tr + 0.440*C	0.139 + 0.217*Tr + 0.296*C
FA1LLX8	CI-CO	CI_CO (fall)	0.082 + 0.265*Tr + 0.173*C	0.183 + 0.276*Tr + 0.352*C	0.122 + 0.267*Tr + 0.231*C
FA1LLX8	CI-CO	CI_CO (rise)	0.065 + 0.229*Tr + 0.206*C	0.170 + 0.280*Tr + 0.431*C	0.105 + 0.252*Tr + 0.293*C
FA1LLX8	CI-Z	CI_Z (fall)	0.079 + 0.187*Tr + 0.168*C	0.322 + 0.277*Tr + 0.325*C	0.199 + 0.256*Tr + 0.216*C
FA1LLX8	CI-Z	CI_Z (rise)	0.059 + 0.178*Tr + 0.203*C	0.344 + 0.274*Tr + 0.406*C	0.219 + 0.266*Tr + 0.275*C
FA1LLX8	CI-Z	CI_Z_state_5 (fall) (!A && B A && !B)	0.125 + 0.229*Tr + 0.153*C	0.322 + 0.277*Tr + 0.325*C	0.203 + 0.250*Tr + 0.211*C
FA1LLX8	CI-Z	CI_Z_state_5 (rise) (!A && B A && !B)	0.141 + 0.265*Tr + 0.192*C	0.344 + 0.274*Tr + 0.406*C	0.219 + 0.266*Tr + 0.275*C
FA1LLX8	CI-Z	CI_Z_state_6 (fall) (A && B !A && !B)	0.079 + 0.187*Tr + 0.168*C	0.225 + 0.291*Tr + 0.361*C	0.148 + 0.282*Tr + 0.235*C
FA1LLX8	CI-Z	CI_Z_state_6 (rise) (A && B !A && !B)	0.059 + 0.178*Tr + 0.203*C	0.237 + 0.303*Tr + 0.438*C	0.139 + 0.275*Tr + 0.295*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FA1LL	8232.750	162181.000
FA1LLP	12375.500	262199.000
FA1LLX4	22981.700	503053.000
FA1LLX6	35102.400	759296.000
FA1LLX8	45963.100	1006110.000

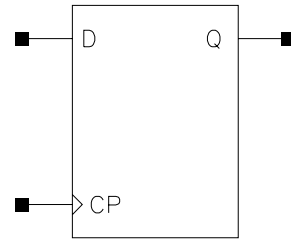
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FA1LL	Z(max)	$0.036 + 0.008 * Tr$
FA1LL	CO(max)	$0.036 + 0.008 * Tr$
FA1LLP	Z(max)	$0.063 + 0.015 * Tr$
FA1LLP	CO(max)	$0.063 + 0.015 * Tr$
FA1LLX4	Z(max)	$0.117 + 0.032 * Tr$
FA1LLX4	CO(max)	$0.117 + 0.032 * Tr$
FA1LLX6	Z(max)	$0.181 + 0.048 * Tr$
FA1LLX6	CO(max)	$0.181 + 0.048 * Tr$
FA1LLX8	Z(max)	$0.231 + 0.072 * Tr$
FA1LLX8	CO(max)	$0.231 + 0.072 * Tr$

FD1QLL
FD1QLLP
FD1QLLX4

Function: Function = D Flip-Flop with 1 Phase Positive Edge Triggered Clock, Q Output Only



Truth Table

IQ	Q
IQ	IQ

Truth Table

D	CP	IQ	IQ
D	/	-	D
-	-	IQ	IQ

Physical Dimensions

Property	FD1QLL	FD1QLLP	FD1QLLX4
Area(um2)	28.241	28.241	30.258

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1QLL	CP Input Cap.	0.0032	0.0028	0.0030
FD1QLL	Q Max Load	0.160	0.160	0.160
FD1QLL	D Input Cap.	0.0023	0.0020	0.0021
FD1QLLP	Q Max Load	0.320	0.320	0.320
FD1QLLP	D Input Cap.	0.0022	0.0019	0.0021
FD1QLLP	CP Input Cap.	0.0032	0.0027	0.0029
FD1QLLX4	CP Input Cap.	0.0032	0.0027	0.0029
FD1QLLX4	Q Max Load	0.640	0.640	0.640
FD1QLLX4	D Input Cap.	0.0022	0.0019	0.0020

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1QLL	CP-Q	CP_Q (fall)	0.082 + 0.119*Tr + 1.221*C	0.195 + 0.179*Tr + 2.777*C	0.125 + 0.148*Tr + 1.731*C
FD1QLL	CP-Q	CP_Q (rise)	0.075 + 0.118*Tr + 1.672*C	0.178 + 0.180*Tr + 3.473*C	0.113 + 0.148*Tr + 2.408*C
FD1QLLP	CP-Q	CP_Q (fall)	0.087 + 0.121*Tr + 0.644*C	0.205 + 0.182*Tr + 1.428*C	0.133 + 0.150*Tr + 0.903*C
FD1QLLP	CP-Q	CP_Q (rise)	0.079 + 0.120*Tr + 0.836*C	0.189 + 0.182*Tr + 1.727*C	0.120 + 0.150*Tr + 1.198*C
FD1QLLX4	CP-Q	CP_Q (fall)	0.111 + 0.122*Tr + 0.342*C	0.267 + 0.183*Tr + 0.760*C	0.173 + 0.152*Tr + 0.482*C
FD1QLLX4	CP-Q	CP_Q (rise)	0.093 + 0.121*Tr + 0.425*C	0.224 + 0.184*Tr + 0.891*C	0.141 + 0.151*Tr + 0.612*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1QLL	D_CP_HOLD (fall)	0.003 + 0.090*Tr(CP)	-0.004 + 0.147*Tr(CP)	0.049 - 0.059*Tr(D) + 0.059*Tr(CP)
FD1QLL	D_CP_HOLD (rise)	0.001 + 0.026*Tr(CP)	-0.008 + 0.047*Tr(CP)	0.023 - 0.023*Tr(D) + 0.023*Tr(CP)
FD1QLL	D_CP_SETUP (fall)	0.085 - 0.122*Tr(CP) + 0.196*Tr(D)	0.222 - 0.173*Tr(CP) + 0.178*Tr(D)	0.180 - 0.141*Tr(CP) + 0.161*Tr(D)
FD1QLL	D_CP_SETUP (rise)	0.061 - 0.081*Tr(CP) + 0.183*Tr(D)	0.170 - 0.128*Tr(CP) + 0.245*Tr(D)	0.131 - 0.099*Tr(CP) + 0.192*Tr(D)
FD1QLL	Pulse Width High CP	0.030	0.095	0.060
FD1QLL	Pulse Width Low CP	0.090	0.340	0.215

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1QLLP	D_CP_HOLD (fall)	0.002 + 0.095*Tr(CP)	-0.004 + 0.148*Tr(CP)	0.049 - 0.059*Tr(D) + 0.059*Tr(CP)
FD1QLLP	D_CP_HOLD (rise)	0.001 + 0.024*Tr(CP)	-0.006 + 0.038*Tr(CP)	0.021 - 0.022*Tr(D) + 0.022*Tr(CP)
FD1QLLP	D_CP_SETUP (fall)	0.081 - 0.120*Tr(CP) + 0.191*Tr(D)	0.224 - 0.174*Tr(CP) + 0.170*Tr(D)	0.177 - 0.141*Tr(CP) + 0.154*Tr(D)
FD1QLLP	D_CP_SETUP (rise)	0.070 - 0.088*Tr(CP) + 0.198*Tr(D)	0.197 - 0.139*Tr(CP) + 0.265*Tr(D)	0.144 - 0.107*Tr(CP) + 0.211*Tr(D)
FD1QLLP	Pulse Width High CP	0.035	0.105	0.070
FD1QLLP	Pulse Width Low CP	0.100	0.340	0.215
FD1QLLX4	D_CP_HOLD (fall)	0.006 + 0.093*Tr(CP)	0.002 + 0.152*Tr(CP)	0.049 - 0.059*Tr(D) + 0.059*Tr(CP)
FD1QLLX4	D_CP_HOLD (rise)	0.002 + 0.020*Tr(CP)	-0.006 + 0.038*Tr(CP)	0.021 - 0.022*Tr(D) + 0.022*Tr(CP)
FD1QLLX4	D_CP_SETUP (fall)	0.062 - 0.108*Tr(CP) + 0.183*Tr(D)	0.164 - 0.149*Tr(CP) + 0.154*Tr(D)	0.155 - 0.130*Tr(CP) + 0.144*Tr(D)
FD1QLLX4	D_CP_SETUP (rise)	0.062 - 0.079*Tr(CP) + 0.199*Tr(D)	0.172 - 0.125*Tr(CP) + 0.267*Tr(D)	0.126 - 0.095*Tr(CP) + 0.212*Tr(D)
FD1QLLX4	Pulse Width High CP	0.045	0.145	0.090
FD1QLLX4	Pulse Width Low CP	0.090	0.280	0.180

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD1QLL	10767.200	200860.000
FD1QLLP	12226.500	235294.000
FD1QLLX4	15436.600	308319.000

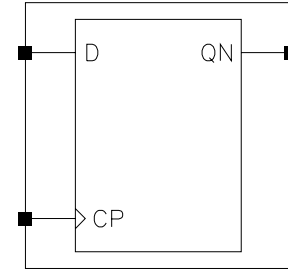
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD1QLL	Q(related_pin:CP)	$0.029 + 0.013 * Tr$
FD1QLL	D(max)	$0.020 + 0.007 * Tr$
FD1QLL	CP(max)	$0.016 + 0.012 * Tr$
FD1QLLP	Q(related_pin:CP)	$0.038 + 0.013 * Tr$
FD1QLLP	D(max)	$0.021 + 0.006 * Tr$
FD1QLLP	CP(max)	$0.017 + 0.012 * Tr$
FD1QLLX4	Q(related_pin:CP)	$0.060 + 0.013 * Tr$
FD1QLLX4	D(max)	$0.022 + 0.007 * Tr$
FD1QLLX4	CP(max)	$0.017 + 0.012 * Tr$

FD1QNLL
FD1QNLLP
FD1QNLLX4

Function: Function = D Flip-Flop with 1 Phase Positive Edge Triggered Clock,QN Output Only



Truth Table

IQ	QN
IQ	!IQ

Truth Table

D	CP	IQ	IQ
D	/	-	D
-	-	IQ	IQ

Physical Dimensions

Property	FD1QNLL	FD1QNLLP	FD1QNLLX4
Area(um2)	30.258	30.258	32.275

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1QNLL	D Input Cap.	0.0023	0.0020	0.0021
FD1QNLL	QN Max Load	0.160	0.160	0.160
FD1QNLL	CP Input Cap.	0.0032	0.0027	0.0029
FD1QNLLP	CP Input Cap.	0.0032	0.0027	0.0029
FD1QNLLP	QN Max Load	0.320	0.320	0.320
FD1QNLLP	D Input Cap.	0.0022	0.0019	0.0021
FD1QNLLX4	D Input Cap.	0.0022	0.0019	0.0021
FD1QNLLX4	CP Input Cap.	0.0032	0.0027	0.0029
FD1QNLLX4	QN Max Load	0.640	0.640	0.640

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1QNLL	CP-QN	CP_QN (fall)	0.107 + 0.116*Tr + 1.168*C	0.255 + 0.178*Tr + 2.648*C	0.163 + 0.146*Tr + 1.647*C
FD1QNLL	CP-QN	CP_QN (rise)	0.099 + 0.115*Tr + 1.668*C	0.241 + 0.175*Tr + 3.461*C	0.150 + 0.145*Tr + 2.402*C
FD1QNLLP	CP-QN	CP_QN (fall)	0.112 + 0.116*Tr + 0.614*C	0.265 + 0.178*Tr + 1.356*C	0.170 + 0.146*Tr + 0.855*C
FD1QNLLP	CP-QN	CP_QN (rise)	0.114 + 0.116*Tr + 0.834*C	0.277 + 0.176*Tr + 1.726*C	0.172 + 0.145*Tr + 1.197*C
FD1QNLLX4	CP-QN	CP_QN (fall)	0.125 + 0.117*Tr + 0.313*C	0.293 + 0.178*Tr + 0.693*C	0.190 + 0.147*Tr + 0.438*C
FD1QNLLX4	CP-QN	CP_QN (rise)	0.122 + 0.117*Tr + 0.418*C	0.290 + 0.177*Tr + 0.866*C	0.183 + 0.147*Tr + 0.601*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1QNLL	D_CP_HOLD (fall)	0.003 + 0.090*Tr(CP)	-0.004 + 0.147*Tr(CP)	0.048 - 0.057*Tr(D) + 0.057*Tr(CP)
FD1QNLL	D_CP_HOLD (rise)	0.002 + 0.020*Tr(CP)	-0.006 + 0.038*Tr(CP)	0.021 - 0.022*Tr(D) + 0.022*Tr(CP)
FD1QNLL	D_CP_SETUP (fall)	0.081 - 0.108*Tr(CP) + 0.195*Tr(D)	0.211 - 0.163*Tr(CP) + 0.172*Tr(D)	0.167 - 0.130*Tr(CP) + 0.161*Tr(D)
FD1QNLL	D_CP_SETUP (rise)	0.061 - 0.077*Tr(CP) + 0.195*Tr(D)	0.172 - 0.124*Tr(CP) + 0.264*Tr(D)	0.126 - 0.095*Tr(CP) + 0.209*Tr(D)
FD1QNLL	Pulse Width High CP	0.030	0.090	0.055
FD1QNLL	Pulse Width Low CP	0.085	0.325	0.205

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1QNLLP	D_CP_HOLD (fall)	0.003 + 0.090*Tr(CP)	-0.004 + 0.147*Tr(CP)	0.049 - 0.059*Tr(D) + 0.059*Tr(CP)
FD1QNLLP	D_CP_HOLD (rise)	0.002 + 0.020*Tr(CP)	-0.006 + 0.038*Tr(CP)	0.020 - 0.020*Tr(D) + 0.020*Tr(CP)
FD1QNLLP	D_CP_SETUP (fall)	0.077 - 0.108*Tr(CP) + 0.196*Tr(D)	0.210 - 0.164*Tr(CP) + 0.170*Tr(D)	0.171 - 0.136*Tr(CP) + 0.156*Tr(D)
FD1QNLLP	D_CP_SETUP (rise)	0.061 - 0.077*Tr(CP) + 0.196*Tr(D)	0.172 - 0.124*Tr(CP) + 0.264*Tr(D)	0.126 - 0.095*Tr(CP) + 0.209*Tr(D)
FD1QNLLP	Pulse Width High CP	0.030	0.105	0.070
FD1QNLLP	Pulse Width Low CP	0.085	0.325	0.210
FD1QNLLX4	D_CP_HOLD (fall)	0.003 + 0.090*Tr(CP)	-0.004 + 0.147*Tr(CP)	0.049 - 0.059*Tr(D) + 0.059*Tr(CP)
FD1QNLLX4	D_CP_HOLD (rise)	0.002 + 0.020*Tr(CP)	-0.006 + 0.038*Tr(CP)	0.021 - 0.022*Tr(D) + 0.022*Tr(CP)
FD1QNLLX4	D_CP_SETUP (fall)	0.076 - 0.110*Tr(CP) + 0.193*Tr(D)	0.209 - 0.166*Tr(CP) + 0.167*Tr(D)	0.166 - 0.132*Tr(CP) + 0.156*Tr(D)
FD1QNLLX4	D_CP_SETUP (rise)	0.061 - 0.077*Tr(CP) + 0.197*Tr(D)	0.172 - 0.124*Tr(CP) + 0.263*Tr(D)	0.124 - 0.094*Tr(CP) + 0.207*Tr(D)
FD1QNLLX4	Pulse Width High CP	0.035	0.120	0.075
FD1QNLLX4	Pulse Width Low CP	0.085	0.325	0.200

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD1QNLL	10699.800	199149.000
FD1QNLLP	12090.000	231759.000
FD1QNLLX4	15392.000	304478.000

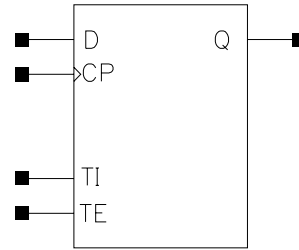
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD1QNLL	QN(related_pin:CP)	$0.030 + 0.013 * Tr$
FD1QNLL	D(max)	$0.019 + 0.006 * Tr$
FD1QNLL	CP(max)	$0.016 + 0.012 * Tr$
FD1QNLLP	QN(related_pin:CP)	$0.038 + 0.013 * Tr$
FD1QNLLP	D(max)	$0.019 + 0.006 * Tr$
FD1QNLLP	CP(max)	$0.016 + 0.012 * Tr$
FD1QNLLX4	QN(related_pin:CP)	$0.058 + 0.013 * Tr$
FD1QNLLX4	D(max)	$0.019 + 0.006 * Tr$
FD1QNLLX4	CP(max)	$0.016 + 0.012 * Tr$

FD1SPLL
FD1SPLL
FD1SPLLX4

Function: Function = Scan D Flip-Flop with 1 Phase Positive Edge Triggered Clock, Q Output Only



Truth Table

IQ	Q
IQ	IQ

Truth Table

D	CP	TI	TE	IQ	IQ
D	/	-	0	-	D
-	/	TI	1	-	TI
-	-	-	-	IQ	IQ

Physical Dimensions

Property	FD1SPLL	FD1SPLL	FD1SPLLX4
Area(um2)	34.292	34.292	36.310

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1SPLL	CP Input Cap.	0.0032	0.0027	0.0029
FD1SPLL	D Input Cap.	0.0037	0.0033	0.0034
FD1SPLL	TI Input Cap.	0.0015	0.0014	0.0014
FD1SPLL	Q Max Load	0.160	0.160	0.160
FD1SPLL	TE Input Cap.	0.0044	0.0040	0.0042
FD1SPLL	CP Input Cap.	0.0032	0.0027	0.0029
FD1SPLL	D Input Cap.	0.0038	0.0034	0.0035
FD1SPLL	TI Input Cap.	0.0015	0.0014	0.0014
FD1SPLL	Q Max Load	0.320	0.320	0.320

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1SQLLP	TE Input Cap.	0.0044	0.0040	0.0042
FD1SQLLX4	Q Max Load	0.640	0.640	0.640
FD1SQLLX4	TE Input Cap.	0.0044	0.0040	0.0042
FD1SQLLX4	CP Input Cap.	0.0032	0.0027	0.0029
FD1SQLLX4	D Input Cap.	0.0038	0.0034	0.0035
FD1SQLLX4	TI Input Cap.	0.0015	0.0014	0.0014

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1SPLL	CP-Q	CP_Q (fall)	0.083 + 0.120*Tr + 1.221*C	0.196 + 0.181*Tr + 2.776*C	0.126 + 0.150*Tr + 1.731*C
FD1SPLL	CP-Q	CP_Q (rise)	0.075 + 0.119*Tr + 1.672*C	0.180 + 0.182*Tr + 3.473*C	0.114 + 0.150*Tr + 2.408*C
FD1SPLLP	CP-Q	CP_Q (fall)	0.088 + 0.122*Tr + 0.644*C	0.207 + 0.183*Tr + 1.428*C	0.134 + 0.152*Tr + 0.903*C
FD1SPLLP	CP-Q	CP_Q (rise)	0.080 + 0.121*Tr + 0.836*C	0.190 + 0.185*Tr + 1.728*C	0.121 + 0.152*Tr + 1.198*C
FD1SPLLX4	CP-Q	CP_Q (fall)	0.112 + 0.123*Tr + 0.342*C	0.268 + 0.185*Tr + 0.760*C	0.173 + 0.153*Tr + 0.482*C
FD1SPLLX4	CP-Q	CP_Q (rise)	0.094 + 0.123*Tr + 0.425*C	0.225 + 0.186*Tr + 0.891*C	0.142 + 0.153*Tr + 0.612*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1SPLL	D_CP_HOLD (fall)	-0.001 + 0.081*Tr(CP)	-0.015 + 0.138*Tr(CP)	0.044 - 0.052*Tr(D) + 0.052*Tr(CP)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1SPLL	D_CP_HOLD (rise)	0.001 + 0.026*Tr(CP)	-0.008 + 0.047*Tr(CP)	0.023 - 0.023*Tr(D) + 0.023*Tr(CP)
FD1SPLL	D_CP_SETUP (fall)	0.084 - 0.122*Tr(CP) + 0.206*Tr(D)	0.218 - 0.173*Tr(CP) + 0.173*Tr(D)	0.185 - 0.144*Tr(CP) + 0.164*Tr(D)
FD1SPLL	D_CP_SETUP (rise)	0.051 - 0.069*Tr(CP) + 0.149*Tr(D)	0.141 - 0.112*Tr(CP) + 0.206*Tr(D)	0.112 - 0.087*Tr(CP) + 0.161*Tr(D)
FD1SPLL	Pulse Width High CP	0.030	0.095	0.060
FD1SPLL	Pulse Width Low CP	0.110	0.530	0.335
FD1SPLL	TE_CP_HOLD (fall)	0.001 + 0.080*Tr(CP)	-0.014 + 0.137*Tr(CP)	0.004 + 0.107*Tr(CP)
FD1SPLL	TE_CP_HOLD (rise)	0.005	0.005	0.005 + 0.003*Tr(CP)
FD1SPLL	TE_CP_SETUP (fall)	0.098 + 0.245*Tr(TE)	0.245 + 0.242*Tr(TE)	0.144 + 0.244*Tr(TE)
FD1SPLL	TE_CP_SETUP (rise)	0.213 + 0.197*Tr(TE)	0.554 + 0.283*Tr(TE)	0.344 + 0.238*Tr(TE)
FD1SPLL	TI_CP_HOLD (fall)	0.005	0.003 + 0.004*Tr(CP)	0.005 + 0.010*Tr(CP)
FD1SPLL	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD1SPLL	TI_CP_SETUP (fall)	0.206 + 0.244*Tr(TI)	0.546 + 0.238*Tr(TI)	0.329 + 0.244*Tr(TI)
FD1SPLL	TI_CP_SETUP (rise)	0.126 + 0.190*Tr(TI)	0.413 + 0.255*Tr(TI)	0.209 + 0.221*Tr(TI)
FD1SPLL	D_CP_HOLD (fall)	-0.001 + 0.081*Tr(CP)	-0.015 + 0.138*Tr(CP)	0.045 - 0.054*Tr(D) + 0.054*Tr(CP)
FD1SPLL	D_CP_HOLD (rise)	0.000 + 0.030*Tr(CP)	-0.009 + 0.053*Tr(CP)	0.023 - 0.023*Tr(D) + 0.023*Tr(CP)
FD1SPLL	D_CP_SETUP (fall)	0.081 - 0.127*Tr(CP) + 0.210*Tr(D)	0.216 - 0.174*Tr(CP) + 0.175*Tr(D)	0.187 - 0.147*Tr(CP) + 0.164*Tr(D)
FD1SPLL	D_CP_SETUP (rise)	0.051 - 0.070*Tr(CP) + 0.142*Tr(D)	0.143 - 0.115*Tr(CP) + 0.200*Tr(D)	0.112 - 0.087*Tr(CP) + 0.154*Tr(D)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1SQLLP	Pulse Width High CP	0.035	0.105	0.070
FD1SQLLP	Pulse Width Low CP	0.115	0.540	0.335
FD1SQLLP	TE_CP_HOLD (fall)	0.000 + 0.085*Tr(CP)	-0.013 + 0.139*Tr(CP)	0.004 + 0.107*Tr(CP)
FD1SQLLP	TE_CP_HOLD (rise)	0.005	0.005	0.005 + 0.003*Tr(CP)
FD1SQLLP	TE_CP_SETUP (fall)	0.094 + 0.256*Tr(TE)	0.245 + 0.246*Tr(TE)	0.144 + 0.248*Tr(TE)
FD1SQLLP	TE_CP_SETUP (rise)	0.212 + 0.202*Tr(TE)	0.563 + 0.286*Tr(TE)	0.344 + 0.241*Tr(TE)
FD1SQLLP	TI_CP_HOLD (fall)	0.005	0.003 + 0.007*Tr(CP)	0.005 + 0.010*Tr(CP)
FD1SQLLP	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD1SQLLP	TI_CP_SETUP (fall)	0.206 + 0.244*Tr(TI)	0.548 + 0.242*Tr(TI)	0.334 + 0.241*Tr(TI)
FD1SQLLP	TI_CP_SETUP (rise)	0.132 + 0.192*Tr(TI)	0.428 + 0.255*Tr(TI)	0.214 + 0.224*Tr(TI)
FD1SQLLX4	D_CP_HOLD (fall)	0.000 + 0.085*Tr(CP)	-0.012 + 0.138*Tr(CP)	0.045 - 0.054*Tr(D) + 0.054*Tr(CP)
FD1SQLLX4	D_CP_HOLD (rise)	0.000 + 0.030*Tr(CP)	-0.009 + 0.054*Tr(CP)	0.024 - 0.025*Tr(D) + 0.025*Tr(CP)
FD1SQLLX4	D_CP_SETUP (fall)	0.074 - 0.121*Tr(CP) + 0.203*Tr(D)	0.194 - 0.166*Tr(CP) + 0.169*Tr(D)	0.176 - 0.142*Tr(CP) + 0.162*Tr(D)
FD1SQLLX4	D_CP_SETUP (rise)	0.051 - 0.071*Tr(CP) + 0.142*Tr(D)	0.142 - 0.115*Tr(CP) + 0.200*Tr(D)	0.113 - 0.089*Tr(CP) + 0.152*Tr(D)
FD1SQLLX4	Pulse Width High CP	0.045	0.145	0.090
FD1SQLLX4	Pulse Width Low CP	0.115	0.510	0.325
FD1SQLLX4	TE_CP_HOLD (fall)	0.000 + 0.086*Tr(CP)	-0.012 + 0.138*Tr(CP)	0.004 + 0.107*Tr(CP)
FD1SQLLX4	TE_CP_HOLD (rise)	0.005	0.005	0.005 + 0.007*Tr(CP)
FD1SQLLX4	TE_CP_SETUP (fall)	0.092 + 0.259*Tr(TE)	0.241 + 0.249*Tr(TE)	0.134 + 0.254*Tr(TE)
FD1SQLLX4	TE_CP_SETUP (rise)	0.204 + 0.205*Tr(TE)	0.536 + 0.300*Tr(TE)	0.334 + 0.248*Tr(TE)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1SQLLX4	TI_CP_HOLD (fall)	0.005	0.003 + 0.007*Tr(CP)	0.005 + 0.013*Tr(CP)
FD1SQLLX4	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD1SQLLX4	TI_CP_SETUP (fall)	0.198 + 0.241*Tr(TI)	0.526 + 0.239*Tr(TI)	0.324 + 0.238*Tr(TI)
FD1SQLLX4	TI_CP_SETUP (rise)	0.130 + 0.195*Tr(TI)	0.428 + 0.254*Tr(TI)	0.214 + 0.224*Tr(TI)

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD1SPLL	12667.200	239610.000
FD1SPLL	14152.000	274865.000
FD1SPLLX4	17242.400	342554.000

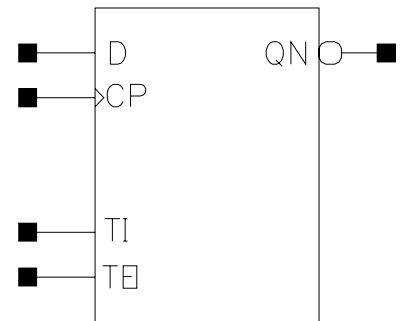
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD1SPLL	Q(related_pin:CP)	0.029 + 0.013*Tr
FD1SPLL	D(max)	0.023 + 0.010*Tr
FD1SPLL	CP(max)	0.025 + 0.006*Tr
FD1SPLL	TI(max)	0.029 + 0.002*Tr
FD1SPLL	TE(max)	0.034 + 0.010*Tr
FD1SPLL	Q(related_pin:CP)	0.038 + 0.013*Tr
FD1SPLL	D(max)	0.024 + 0.010*Tr
FD1SPLL	CP(max)	0.025 + 0.006*Tr
FD1SPLL	TI(max)	0.030 + 0.002*Tr
FD1SPLL	TE(max)	0.035 + 0.010*Tr
FD1SPLLX4	Q(related_pin:CP)	0.060 + 0.013*Tr
FD1SPLLX4	D(max)	0.024 + 0.010*Tr
FD1SPLLX4	CP(max)	0.025 + 0.006*Tr
FD1SPLLX4	TI(max)	0.030 + 0.002*Tr
FD1SPLLX4	TE(max)	0.035 + 0.010*Tr

FD1SQNLL
FD1SQNLLP
FD1SQNLLX4

Function: Function = Scan D Flip-Flop with 1 Phase Positive Edge Triggered Clock, QN Output Only



Truth Table

IQ	QN
IQ	!IQ

Truth Table

D	CP	TI	TE	IQ	IQ
D	/	-	0	-	D
-	/	TI	1	-	TI
-	-	-	-	IQ	IQ

Physical Dimensions

Property	FD1SQNLL	FD1SQNLLP	FD1SQNLLX4
Area(um ²)	36.310	36.310	38.327

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1SQNLL	D Input Cap.	0.0038	0.0034	0.0035
FD1SQNLL	TI Input Cap.	0.0015	0.0014	0.0014
FD1SQNLL	TE Input Cap.	0.0044	0.0040	0.0041
FD1SQNLL	QN Max Load	0.160	0.160	0.160
FD1SQNLL	CP Input Cap.	0.0032	0.0027	0.0029
FD1SQNLLP	D Input Cap.	0.0038	0.0034	0.0035
FD1SQNLLP	TI Input Cap.	0.0015	0.0014	0.0014
FD1SQNLLP	TE Input Cap.	0.0044	0.0040	0.0042
FD1SQNLLP	CP Input Cap.	0.0032	0.0027	0.0029

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1SQNLLP	QN Max Load	0.320	0.320	0.320
FD1SQNLLX4	TE Input Cap.	0.0044	0.0040	0.0042
FD1SQNLLX4	CP Input Cap.	0.0032	0.0028	0.0029
FD1SQNLLX4	QN Max Load	0.640	0.640	0.640
FD1SQNLLX4	D Input Cap.	0.0039	0.0034	0.0035
FD1SQNLLX4	TI Input Cap.	0.0015	0.0014	0.0015

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1SQNLL	CP-QN	CP_QN (fall)	0.100 + 0.118*Tr + 1.154*C	0.236 + 0.181*Tr + 2.615*C	0.151 + 0.148*Tr + 1.624*C
FD1SQNLL	CP-QN	CP_QN (rise)	0.095 + 0.118*Tr + 1.665*C	0.229 + 0.178*Tr + 3.444*C	0.145 + 0.147*Tr + 2.396*C
FD1SQNLLP	CP-QN	CP_QN (fall)	0.110 + 0.118*Tr + 0.610*C	0.260 + 0.180*Tr + 1.344*C	0.167 + 0.148*Tr + 0.848*C
FD1SQNLLP	CP-QN	CP_QN (rise)	0.105 + 0.118*Tr + 0.829*C	0.251 + 0.178*Tr + 1.703*C	0.158 + 0.147*Tr + 1.187*C
FD1SQNLLX4	CP-QN	CP_QN (fall)	0.126 + 0.118*Tr + 0.313*C	0.294 + 0.180*Tr + 0.693*C	0.190 + 0.148*Tr + 0.438*C
FD1SQNLLX4	CP-QN	CP_QN (rise)	0.122 + 0.118*Tr + 0.418*C	0.291 + 0.178*Tr + 0.866*C	0.184 + 0.148*Tr + 0.600*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1SQNLL	D_CP_HOLD (fall)	-0.001 + 0.080*Tr(CP)	-0.015 + 0.135*Tr(CP)	0.044 - 0.052*Tr(D) + 0.052*Tr(CP)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1SQNLL	D_CP_HOLD (rise)	0.001 + 0.026*Tr(CP)	-0.008 + 0.051*Tr(CP)	0.023 - 0.023*Tr(D) + 0.023*Tr(CP)
FD1SQNLL	D_CP_SETUP (fall)	0.084 - 0.120*Tr(CP) + 0.214*Tr(D)	0.211 - 0.169*Tr(CP) + 0.178*Tr(D)	0.180 - 0.141*Tr(CP) + 0.171*Tr(D)
FD1SQNLL	D_CP_SETUP (rise)	0.047 - 0.065*Tr(CP) + 0.143*Tr(D)	0.131 - 0.106*Tr(CP) + 0.198*Tr(D)	0.102 - 0.080*Tr(CP) + 0.154*Tr(D)
FD1SQNLL	Pulse Width High CP	0.030	0.090	0.060
FD1SQNLL	Pulse Width Low CP	0.105	0.525	0.330
FD1SQNLL	TE_CP_HOLD (fall)	-0.001 + 0.081*Tr(CP)	-0.014 + 0.135*Tr(CP)	0.004 + 0.104*Tr(CP)
FD1SQNLL	TE_CP_HOLD (rise)	0.005	0.005	0.005
FD1SQNLL	TE_CP_SETUP (fall)	0.094 + 0.247*Tr(TE)	0.235 + 0.239*Tr(TE)	0.144 + 0.241*Tr(TE)
FD1SQNLL	TE_CP_SETUP (rise)	0.214 + 0.192*Tr(TE)	0.556 + 0.277*Tr(TE)	0.344 + 0.231*Tr(TE)
FD1SQNLL	TI_CP_HOLD (fall)	0.005	0.004 + 0.002*Tr(CP)	0.005 + 0.010*Tr(CP)
FD1SQNLL	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD1SQNLL	TI_CP_SETUP (fall)	0.206 + 0.244*Tr(TI)	0.542 + 0.239*Tr(TI)	0.329 + 0.244*Tr(TI)
FD1SQNLL	TI_CP_SETUP (rise)	0.126 + 0.184*Tr(TI)	0.406 + 0.255*Tr(TI)	0.204 + 0.224*Tr(TI)
FD1SQNLLP	D_CP_HOLD (fall)	-0.001 + 0.080*Tr(CP)	-0.015 + 0.135*Tr(CP)	0.044 - 0.052*Tr(D) + 0.052*Tr(CP)
FD1SQNLLP	D_CP_HOLD (rise)	0.001 + 0.026*Tr(CP)	-0.008 + 0.051*Tr(CP)	0.023 - 0.023*Tr(D) + 0.023*Tr(CP)
FD1SQNLLP	D_CP_SETUP (fall)	0.084 - 0.122*Tr(CP) + 0.212*Tr(D)	0.210 - 0.169*Tr(CP) + 0.177*Tr(D)	0.180 - 0.141*Tr(CP) + 0.171*Tr(D)
FD1SQNLLP	D_CP_SETUP (rise)	0.046 - 0.065*Tr(CP) + 0.144*Tr(D)	0.130 - 0.106*Tr(CP) + 0.199*Tr(D)	0.098 - 0.079*Tr(CP) + 0.156*Tr(D)
FD1SQNLLP	Pulse Width High CP	0.030	0.100	0.065
FD1SQNLLP	Pulse Width Low CP	0.105	0.520	0.330

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1SQNLLP	TE_CP_HOLD (fall)	-0.001 + 0.081*Tr(CP)	-0.013 + 0.134*Tr(CP)	0.004 + 0.104*Tr(CP)
FD1SQNLLP	TE_CP_HOLD (rise)	0.005	0.005	0.005
FD1SQNLLP	TE_CP_SETUP (fall)	0.094 + 0.247*Tr(TE)	0.233 + 0.240*Tr(TE)	0.144 + 0.241*Tr(TE)
FD1SQNLLP	TE_CP_SETUP (rise)	0.214 + 0.192*Tr(TE)	0.556 + 0.277*Tr(TE)	0.344 + 0.231*Tr(TE)
FD1SQNLLP	TI_CP_HOLD (fall)	0.005	0.004 + 0.002*Tr(CP)	0.005 + 0.010*Tr(CP)
FD1SQNLLP	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD1SQNLLP	TI_CP_SETUP (fall)	0.206 + 0.243*Tr(TI)	0.545 + 0.237*Tr(TI)	0.329 + 0.244*Tr(TI)
FD1SQNLLP	TI_CP_SETUP (rise)	0.126 + 0.184*Tr(TI)	0.408 + 0.254*Tr(TI)	0.204 + 0.224*Tr(TI)
FD1SQNLLX4	D_CP_HOLD (fall)	-0.001 + 0.080*Tr(CP)	-0.015 + 0.135*Tr(CP)	0.044 - 0.052*Tr(D) + 0.052*Tr(CP)
FD1SQNLLX4	D_CP_HOLD (rise)	0.001 + 0.026*Tr(CP)	-0.008 + 0.051*Tr(CP)	0.023 - 0.023*Tr(D) + 0.023*Tr(CP)
FD1SQNLLX4	D_CP_SETUP (fall)	0.078 - 0.118*Tr(CP) + 0.215*Tr(D)	0.209 - 0.170*Tr(CP) + 0.175*Tr(D)	0.179 - 0.139*Tr(CP) + 0.169*Tr(D)
FD1SQNLLX4	D_CP_SETUP (rise)	0.046 - 0.064*Tr(CP) + 0.143*Tr(D)	0.130 - 0.106*Tr(CP) + 0.198*Tr(D)	0.098 - 0.079*Tr(CP) + 0.156*Tr(D)
FD1SQNLLX4	Pulse Width High CP	0.035	0.120	0.075
FD1SQNLLX4	Pulse Width Low CP	0.105	0.520	0.325
FD1SQNLLX4	TE_CP_HOLD (fall)	-0.001 + 0.081*Tr(CP)	-0.013 + 0.135*Tr(CP)	0.004 + 0.104*Tr(CP)
FD1SQNLLX4	TE_CP_HOLD (rise)	0.005	0.005	0.005
FD1SQNLLX4	TE_CP_SETUP (fall)	0.091 + 0.250*Tr(TE)	0.233 + 0.240*Tr(TE)	0.144 + 0.241*Tr(TE)
FD1SQNLLX4	TE_CP_SETUP (rise)	0.214 + 0.192*Tr(TE)	0.555 + 0.275*Tr(TE)	0.339 + 0.234*Tr(TE)
FD1SQNLLX4	TI_CP_HOLD (fall)	0.005	0.004 + 0.002*Tr(CP)	0.005 + 0.010*Tr(CP)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD1SQNLLX4	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD1SQNLLX4	TI_CP_SETUP (fall)	0.204 + 0.247*Tr(TI)	0.542 + 0.236*Tr(TI)	0.329 + 0.241*Tr(TI)
FD1SQNLLX4	TI_CP_SETUP (rise)	0.124 + 0.187*Tr(TI)	0.404 + 0.253*Tr(TI)	0.199 + 0.224*Tr(TI)

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD1SQNLL	12864.100	245352.000
FD1SQNLLP	14155.200	275311.000
FD1SQNLLX4	17384.400	345404.000

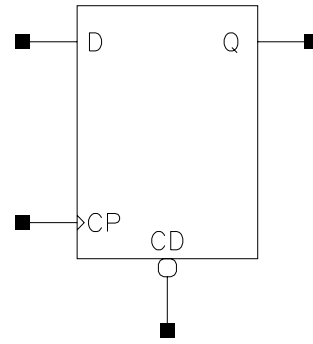
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD1SQNLL	QN(related_pin:CP)	0.032 + 0.013*Tr
FD1SQNLL	D(max)	0.022 + 0.010*Tr
FD1SQNLL	CP(max)	0.024 + 0.006*Tr
FD1SQNLL	TI(max)	0.028 + 0.002*Tr
FD1SQNLL	TE(max)	0.034 + 0.010*Tr
FD1SQNLLP	QN(related_pin:CP)	0.039 + 0.013*Tr
FD1SQNLLP	D(max)	0.023 + 0.010*Tr
FD1SQNLLP	CP(max)	0.024 + 0.006*Tr
FD1SQNLLP	TI(max)	0.028 + 0.002*Tr
FD1SQNLLP	TE(max)	0.034 + 0.010*Tr
FD1SQNLLX4	QN(related_pin:CP)	0.058 + 0.013*Tr
FD1SQNLLX4	D(max)	0.023 + 0.010*Tr
FD1SQNLLX4	CP(max)	0.024 + 0.006*Tr
FD1SQNLLX4	TI(max)	0.029 + 0.002*Tr
FD1SQNLLX4	TE(max)	0.034 + 0.010*Tr

FD2QLL
FD2QLLP
FD2QLLX4

Function: Function = D Flip-Flop with 1 Phase Positive Edge Triggered Clock, Clear Active Low, Q Output Only



Truth Table

IQ	Q
IQ	IQ

Truth Table

D	CP	CD	IQ	IQ
-	-	0	-	0
D	/	1	-	D
-	-	1	IQ	IQ

Physical Dimensions

Property	FD2QLL	FD2QLLP	FD2QLLX4
Area(um2)	34.292	34.292	36.310

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2QLL	D Input Cap.	0.0021	0.0018	0.0019
FD2QLL	CD Input Cap.	0.0033	0.0027	0.0029
FD2QLL	Q Max Load	0.160	0.160	0.160
FD2QLL	CP Input Cap.	0.0032	0.0027	0.0029
FD2QLLP	D Input Cap.	0.0020	0.0018	0.0019
FD2QLLP	CD Input Cap.	0.0033	0.0027	0.0029

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2QLLP	Q Max Load	0.320	0.320	0.320
FD2QLLP	CP Input Cap.	0.0033	0.0028	0.0030
FD2QLLX4	Q Max Load	0.640	0.640	0.640
FD2QLLX4	CP Input Cap.	0.0032	0.0027	0.0029
FD2QLLX4	D Input Cap.	0.0020	0.0017	0.0018
FD2QLLX4	CD Input Cap.	0.0033	0.0028	0.0029

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2QLL	CP-Q	CP_Q (fall)	0.082 + 0.119*Tr + 1.218*C	0.195 + 0.180*Tr + 2.767*C	0.125 + 0.149*Tr + 1.725*C
FD2QLL	CP-Q	CP_Q (rise)	0.077 + 0.120*Tr + 1.673*C	0.184 + 0.183*Tr + 3.480*C	0.117 + 0.150*Tr + 2.410*C
FD2QLL	CD-Q	CD_Q (fall)	0.084 + 0.287*Tr + 1.234*C	0.246 + 0.240*Tr + 2.668*C	0.130 + 0.290*Tr + 1.767*C
FD2QLLP	CP-Q	CP_Q (fall)	0.096 + 0.121*Tr + 0.658*C	0.229 + 0.182*Tr + 1.462*C	0.147 + 0.151*Tr + 0.925*C
FD2QLLP	CP-Q	CP_Q (rise)	0.083 + 0.120*Tr + 0.838*C	0.199 + 0.183*Tr + 1.736*C	0.126 + 0.151*Tr + 1.202*C
FD2QLLP	CD-Q	CD_Q (fall)	0.104 + 0.307*Tr + 0.663*C	0.263 + 0.244*Tr + 1.381*C	0.159 + 0.314*Tr + 0.947*C
FD2QLLX4	CP-Q	CP_Q (fall)	0.120 + 0.122*Tr + 0.352*C	0.292 + 0.184*Tr + 0.785*C	0.187 + 0.152*Tr + 0.497*C
FD2QLLX4	CP-Q	CP_Q (rise)	0.097 + 0.121*Tr + 0.426*C	0.233 + 0.184*Tr + 0.894*C	0.147 + 0.152*Tr + 0.613*C
FD2QLLX4	CD-Q	CD_Q (fall)	0.122 + 0.251*Tr + 0.325*C	0.299 + 0.249*Tr + 0.721*C	0.189 + 0.247*Tr + 0.456*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2QLL	CD_CP_RECOVERY (rise)	0.101 + 0.139*Tr(CD)	0.241 + 0.206*Tr(CD)	0.144 + 0.171*Tr(CD)
FD2QLL	CD_CP_REMOVAL (rise)	0.006 + 0.101*Tr(CP)	0.018 + 0.176*Tr(CP)	0.004 + 0.130*Tr(CP)
FD2QLL	D_CP_HOLD (fall)	0.000 + 0.086*Tr(CP)	-0.014 + 0.141*Tr(CP)	0.045 - 0.054*Tr(D) + 0.054*Tr(CP)
FD2QLL	D_CP_HOLD (rise)	0.001 + 0.024*Tr(CP)	-0.008 + 0.047*Tr(CP)	0.023 - 0.023*Tr(D) + 0.023*Tr(CP)
FD2QLL	D_CP_SETUP (fall)	0.095 - 0.116*Tr(CP) + 0.235*Tr(D)	0.253 - 0.182*Tr(CP) + 0.225*Tr(D)	0.192 - 0.144*Tr(CP) + 0.207*Tr(D)
FD2QLL	D_CP_SETUP (rise)	0.101 - 0.113*Tr(CP) + 0.156*Tr(D)	0.267 - 0.172*Tr(CP) + 0.223*Tr(D)	0.190 - 0.134*Tr(CP) + 0.174*Tr(D)
FD2QLL	Pulse Width High CP	0.030	0.095	0.060
FD2QLL	Pulse Width Low CD	0.065	0.225	0.130
FD2QLL	Pulse Width Low CP	0.135	0.380	0.235
FD2QLLP	CD_CP_RECOVERY (rise)	0.100 + 0.144*Tr(CD)	0.247 + 0.204*Tr(CD)	0.144 + 0.171*Tr(CD)
FD2QLLP	CD_CP_REMOVAL (rise)	0.006 + 0.101*Tr(CP)	0.018 + 0.176*Tr(CP)	0.004 + 0.130*Tr(CP)
FD2QLLP	D_CP_HOLD (fall)	0.000 + 0.086*Tr(CP)	-0.016 + 0.140*Tr(CP)	0.045 - 0.054*Tr(D) + 0.054*Tr(CP)
FD2QLLP	D_CP_HOLD (rise)	0.001 + 0.024*Tr(CP)	-0.008 + 0.047*Tr(CP)	0.023 - 0.023*Tr(D) + 0.023*Tr(CP)
FD2QLLP	D_CP_SETUP (fall)	0.087 - 0.127*Tr(CP) + 0.244*Tr(D)	0.247 - 0.188*Tr(CP) + 0.229*Tr(D)	0.190 - 0.147*Tr(CP) + 0.204*Tr(D)
FD2QLLP	D_CP_SETUP (rise)	0.103 - 0.115*Tr(CP) + 0.155*Tr(D)	0.274 - 0.175*Tr(CP) + 0.224*Tr(D)	0.190 - 0.134*Tr(CP) + 0.174*Tr(D)
FD2QLLP	Pulse Width High CP	0.035	0.120	0.075
FD2QLLP	Pulse Width Low CD	0.080	0.225	0.130
FD2QLLP	Pulse Width Low CP	0.135	0.375	0.230

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2QLLX4	CD_CP_RECOVERY (rise)	0.103 + 0.144*Tr(CD)	0.255 + 0.201*Tr(CD)	0.149 + 0.174*Tr(CD)
FD2QLLX4	CD_CP_REMOVAL (rise)	0.006 + 0.101*Tr(CP)	0.018 + 0.176*Tr(CP)	0.004 + 0.130*Tr(CP)
FD2QLLX4	D_CP_HOLD (fall)	0.000 + 0.091*Tr(CP)	-0.012 + 0.138*Tr(CP)	0.045 - 0.054*Tr(D) + 0.054*Tr(CP)
FD2QLLX4	D_CP_HOLD (rise)	0.001 + 0.024*Tr(CP)	-0.008 + 0.050*Tr(CP)	0.023 - 0.023*Tr(D) + 0.023*Tr(CP)
FD2QLLX4	D_CP_SETUP (fall)	0.084 - 0.124*Tr(CP) + 0.244*Tr(D)	0.234 - 0.185*Tr(CP) + 0.230*Tr(D)	0.181 - 0.142*Tr(CP) + 0.206*Tr(D)
FD2QLLX4	D_CP_SETUP (rise)	0.107 - 0.117*Tr(CP) + 0.156*Tr(D)	0.279 - 0.176*Tr(CP) + 0.223*Tr(D)	0.195 - 0.137*Tr(CP) + 0.174*Tr(D)
FD2QLLX4	Pulse Width High CP	0.045	0.165	0.105
FD2QLLX4	Pulse Width Low CD	0.085	0.270	0.180
FD2QLLX4	Pulse Width Low CP	0.140	0.360	0.220

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD2QLL	12002.000	226411.000
FD2QLLP	13240.600	256850.000
FD2QLLX4	16018.700	321403.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD2QLL	Q(related_pin:CP)	0.031 + 0.013*Tr
FD2QLL	D(max)	0.021 + 0.006*Tr
FD2QLL	CP(max)	0.021 + 0.012*Tr
FD2QLL	CD(max)	0.018 + 0.010*Tr
FD2QLLP	Q(related_pin:CP)	0.040 + 0.013*Tr
FD2QLLP	D(max)	0.021 + 0.005*Tr
FD2QLLP	CP(max)	0.021 + 0.012*Tr

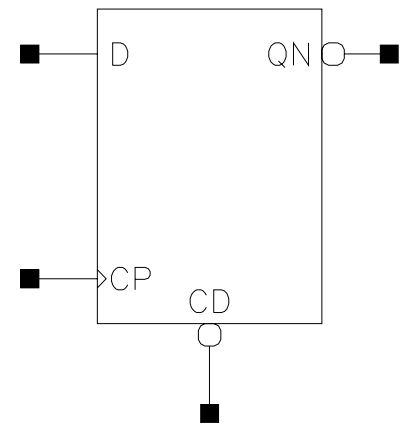
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD2QLLP	CD(max)	$0.018 + 0.010 * Tr$
FD2QLLX4	Q(related_pin:CP)	$0.063 + 0.013 * Tr$
FD2QLLX4	D(max)	$0.021 + 0.005 * Tr$
FD2QLLX4	CP(max)	$0.021 + 0.012 * Tr$
FD2QLLX4	CD(max)	$0.018 + 0.010 * Tr$

FD2QNLL
FD2QNLLP
FD2QNLLX4

Function: Function = D Flip-Flop with 1 Phase Positive Edge Triggered Clock, Clear Active Low, QN Output Only



Truth Table

IQ	QN
IQ	!IQ

Truth Table

D	CP	CD	IQ	IQ
-	-	0	-	0
D	/	1	-	D
-	-	1	IQ	IQ

Physical Dimensions

Property	FD2QNLL	FD2QNLLP	FD2QNLLX4
Area(um2)	34.292	34.292	36.310

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2QNLL	CD Input Cap.	0.0034	0.0028	0.0029
FD2QNLL	QN Max Load	0.160	0.160	0.160
FD2QNLL	CP Input Cap.	0.0032	0.0027	0.0029
FD2QNLL	D Input Cap.	0.0020	0.0017	0.0018
FD2QNLLP	CD Input Cap.	0.0034	0.0027	0.0029
FD2QNLLP	CP Input Cap.	0.0032	0.0027	0.0029
FD2QNLLP	QN Max Load	0.320	0.320	0.320

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2QNLLP	D Input Cap.	0.0019	0.0016	0.0017
FD2QNLLX4	CP Input Cap.	0.0032	0.0027	0.0029
FD2QNLLX4	QN Max Load	0.640	0.640	0.640
FD2QNLLX4	D Input Cap.	0.0018	0.0016	0.0017
FD2QNLLX4	CD Input Cap.	0.0034	0.0027	0.0029

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2QNLL	CP-QN	CP_QN (fall)	0.104 + 0.118*Tr + 1.160*C	0.246 + 0.180*Tr + 2.631*C	0.158 + 0.148*Tr + 1.635*C
FD2QNLL	CP-QN	CP_QN (rise)	0.101 + 0.116*Tr + 1.665*C	0.245 + 0.177*Tr + 3.453*C	0.154 + 0.146*Tr + 2.399*C
FD2QNLL	CD-QN	CD_QN (rise)	0.096 + 0.268*Tr + 1.666*C	0.232 + 0.268*Tr + 3.455*C	0.147 + 0.266*Tr + 2.398*C
FD2QNLLP	CP-QN	CP_QN (fall)	0.112 + 0.118*Tr + 0.613*C	0.266 + 0.180*Tr + 1.352*C	0.170 + 0.148*Tr + 0.854*C
FD2QNLLP	CP-QN	CP_QN (rise)	0.111 + 0.117*Tr + 0.832*C	0.269 + 0.177*Tr + 1.712*C	0.169 + 0.147*Tr + 1.191*C
FD2QNLLP	CD-QN	CD_QN (rise)	0.106 + 0.271*Tr + 0.831*C	0.315 + 0.240*Tr + 1.704*C	0.162 + 0.270*Tr + 1.191*C
FD2QNLLX4	CP-QN	CP_QN (fall)	0.132 + 0.118*Tr + 0.317*C	0.309 + 0.180*Tr + 0.703*C	0.200 + 0.148*Tr + 0.444*C
FD2QNLLX4	CP-QN	CP_QN (rise)	0.132 + 0.117*Tr + 0.420*C	0.315 + 0.178*Tr + 0.876*C	0.198 + 0.147*Tr + 0.605*C
FD2QNLLX4	CD-QN	CD_QN (rise)	0.126 + 0.275*Tr + 0.420*C	0.358 + 0.240*Tr + 0.873*C	0.191 + 0.274*Tr + 0.605*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2QNLL	CD_CP_RECOVERY (rise)	0.087 + 0.141*Tr(CD)	0.212 + 0.204*Tr(CD)	0.124 + 0.174*Tr(CD)
FD2QNLL	CD_CP_REMOVAL (rise)	0.006 + 0.101*Tr(CP)	0.021 + 0.175*Tr(CP)	0.004 + 0.134*Tr(CP)
FD2QNLL	D_CP_HOLD (fall)	0.000 + 0.086*Tr(CP)	-0.013 + 0.142*Tr(CP)	0.045 - 0.054*Tr(D) + 0.054*Tr(CP)
FD2QNLL	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.004 + 0.028*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD2QNLL	D_CP_SETUP (fall)	0.091 - 0.113*Tr(CP) + 0.223*Tr(D)	0.241 - 0.177*Tr(CP) + 0.207*Tr(D)	0.183 - 0.139*Tr(CP) + 0.192*Tr(D)
FD2QNLL	D_CP_SETUP (rise)	0.097 - 0.106*Tr(CP) + 0.190*Tr(D)	0.266 - 0.163*Tr(CP) + 0.263*Tr(D)	0.178 - 0.125*Tr(CP) + 0.209*Tr(D)
FD2QNLL	Pulse Width High CP	0.030	0.095	0.060
FD2QNLL	Pulse Width Low CD	0.055	0.220	0.130
FD2QNLL	Pulse Width Low CP	0.130	0.365	0.225
FD2QNLLP	CD_CP_RECOVERY (rise)	0.085 + 0.144*Tr(CD)	0.210 + 0.204*Tr(CD)	0.119 + 0.174*Tr(CD)
FD2QNLLP	CD_CP_REMOVAL (rise)	0.006 + 0.101*Tr(CP)	0.021 + 0.175*Tr(CP)	0.004 + 0.134*Tr(CP)
FD2QNLLP	D_CP_HOLD (fall)	0.000 + 0.086*Tr(CP)	-0.012 + 0.138*Tr(CP)	0.045 - 0.054*Tr(D) + 0.054*Tr(CP)
FD2QNLLP	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.003 + 0.022*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD2QNLLP	D_CP_SETUP (fall)	0.089 - 0.112*Tr(CP) + 0.224*Tr(D)	0.243 - 0.178*Tr(CP) + 0.207*Tr(D)	0.190 - 0.144*Tr(CP) + 0.191*Tr(D)
FD2QNLLP	D_CP_SETUP (rise)	0.098 - 0.105*Tr(CP) + 0.200*Tr(D)	0.277 - 0.164*Tr(CP) + 0.272*Tr(D)	0.182 - 0.127*Tr(CP) + 0.217*Tr(D)
FD2QNLLP	Pulse Width High CP	0.030	0.105	0.070
FD2QNLLP	Pulse Width Low CD	0.065	0.220	0.130
FD2QNLLP	Pulse Width Low CP	0.130	0.365	0.230

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2QNLLX4	CD_CP_RECOVERY (rise)	0.084 + 0.141*Tr(CD)	0.202 + 0.205*Tr(CD)	0.114 + 0.174*Tr(CD)
FD2QNLLX4	CD_CP_REMOVAL (rise)	0.006 + 0.101*Tr(CP)	0.025 + 0.173*Tr(CP)	0.004 + 0.134*Tr(CP)
FD2QNLLX4	D_CP_HOLD (fall)	0.000 + 0.086*Tr(CP)	-0.013 + 0.142*Tr(CP)	0.045 - 0.054*Tr(D) + 0.054*Tr(CP)
FD2QNLLX4	D_CP_HOLD (rise)	0.003 + 0.010*Tr(CP)	0.000 + 0.016*Tr(CP)	0.015 - 0.013*Tr(D) + 0.013*Tr(CP)
FD2QNLLX4	D_CP_SETUP (fall)	0.087 - 0.117*Tr(CP) + 0.220*Tr(D)	0.236 - 0.177*Tr(CP) + 0.203*Tr(D)	0.177 - 0.137*Tr(CP) + 0.184*Tr(D)
FD2QNLLX4	D_CP_SETUP (rise)	0.100 - 0.105*Tr(CP) + 0.207*Tr(D)	0.288 - 0.163*Tr(CP) + 0.285*Tr(D)	0.189 - 0.130*Tr(CP) + 0.228*Tr(D)
FD2QNLLX4	Pulse Width High CP	0.035	0.125	0.080
FD2QNLLX4	Pulse Width Low CD	0.075	0.220	0.130
FD2QNLLX4	Pulse Width Low CP	0.130	0.360	0.220

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD2QNLL	12562.900	233080.000
FD2QNLLP	13978.300	264250.000
FD2QNLLX4	17402.500	333932.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD2QNLL	QN(related_pin:CP)	0.032 + 0.013*Tr
FD2QNLL	D(max)	0.020 + 0.005*Tr
FD2QNLL	CP(max)	0.020 + 0.013*Tr
FD2QNLL	CD(max)	0.017 + 0.010*Tr
FD2QNLLP	QN(related_pin:CP)	0.040 + 0.013*Tr
FD2QNLLP	D(max)	0.020 + 0.005*Tr

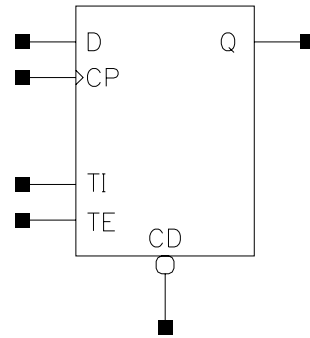
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD2QNLLP	CP(max)	$0.020 + 0.013 * Tr$
FD2QNLLP	CD(max)	$0.017 + 0.010 * Tr$
FD2QNLLX4	QN(related_pin:CP)	$0.059 + 0.013 * Tr$
FD2QNLLX4	D(max)	$0.020 + 0.004 * Tr$
FD2QNLLX4	CP(max)	$0.020 + 0.013 * Tr$
FD2QNLLX4	CD(max)	$0.017 + 0.010 * Tr$

FD2SPLL
FD2SPLL
FD2SPLLX4

Function: Function = Scan D Flip-Flop with 1 Phase Positive Edge Triggered Clock, Clear Active Low, Q Output Only



Truth Table

IQ	Q
IQ	IQ

Truth Table

D	CP	CD	TI	TE	IQ	IQ
-	-	0	-	-	-	0
D	/	1	-	0	-	D
-	/	1	TI	1	-	TI
-	-	1	-	-	IQ	IQ

Physical Dimensions

Property	FD2SPLL	FD2SPLL	FD2SPLLX4
Area(um2)	40.344	40.344	44.378

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2SPLL	TE Input Cap.	0.0039	0.0035	0.0037
FD2SPLL	Q Max Load	0.160	0.160	0.160
FD2SPLL	CP Input Cap.	0.0032	0.0027	0.0029
FD2SPLL	TI Input Cap.	0.0015	0.0014	0.0015
FD2SPLL	D Input Cap.	0.0034	0.0029	0.0031
FD2SPLL	CD Input Cap.	0.0034	0.0028	0.0029

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2SQLLP	D Input Cap.	0.0034	0.0029	0.0031
FD2SQLLP	CD Input Cap.	0.0033	0.0028	0.0029
FD2SQLLP	TE Input Cap.	0.0039	0.0035	0.0037
FD2SQLLP	Q Max Load	0.320	0.320	0.320
FD2SQLLP	CP Input Cap.	0.0032	0.0027	0.0029
FD2SQLLP	TI Input Cap.	0.0015	0.0014	0.0015
FD2SQLLX4	TI Input Cap.	0.0015	0.0014	0.0015
FD2SQLLX4	Q Max Load	0.640	0.640	0.640
FD2SQLLX4	CD Input Cap.	0.0032	0.0027	0.0029
FD2SQLLX4	TE Input Cap.	0.0039	0.0035	0.0036
FD2SQLLX4	D Input Cap.	0.0034	0.0030	0.0031
FD2SQLLX4	CP Input Cap.	0.0032	0.0027	0.0029

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2SQLL	CP-Q	CP_Q (fall)	0.082 + 0.119*Tr + 1.218*C	0.195 + 0.181*Tr + 2.770*C	0.126 + 0.149*Tr + 1.727*C
FD2SQLL	CP-Q	CP_Q (rise)	0.077 + 0.120*Tr + 1.672*C	0.184 + 0.183*Tr + 3.480*C	0.117 + 0.150*Tr + 2.411*C
FD2SQLL	CD-Q	CD_Q (fall)	0.085 + 0.288*Tr + 1.236*C	0.202 + 0.300*Tr + 2.837*C	0.155 + 0.239*Tr + 1.661*C
FD2SQLLP	CP-Q	CP_Q (fall)	0.096 + 0.122*Tr + 0.658*C	0.229 + 0.183*Tr + 1.463*C	0.147 + 0.151*Tr + 0.925*C
FD2SQLLP	CP-Q	CP_Q (rise)	0.083 + 0.121*Tr + 0.838*C	0.199 + 0.184*Tr + 1.736*C	0.126 + 0.151*Tr + 1.202*C
FD2SQLLP	CD-Q	CD_Q (fall)	0.104 + 0.308*Tr + 0.664*C	0.245 + 0.325*Tr + 1.503*C	0.165 + 0.242*Tr + 0.873*C
FD2SQLLX4	CP-Q	CP_Q (fall)	0.120 + 0.122*Tr + 0.352*C	0.293 + 0.184*Tr + 0.786*C	0.188 + 0.152*Tr + 0.498*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2SPLLX4	CP-Q	CP_Q (rise)	0.097 + 0.121*Tr + 0.426*C	0.234 + 0.185*Tr + 0.894*C	0.147 + 0.152*Tr + 0.614*C
FD2SPLLX4	CD-Q	CD_Q (fall)	0.123 + 0.251*Tr + 0.325*C	0.340 + 0.358*Tr + 0.804*C	0.223 + 0.347*Tr + 0.505*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2SPLL	CD_CP_RECOVERY (rise)	0.100 + 0.144*Tr(CD)	0.242 + 0.205*Tr(CD)	0.144 + 0.171*Tr(CD)
FD2SPLL	CD_CP_REMOVAL (rise)	0.006 + 0.102*Tr(CP)	0.021 + 0.178*Tr(CP)	0.004 + 0.134*Tr(CP)
FD2SPLL	D_CP_HOLD (fall)	-0.004 + 0.075*Tr(CP)	-0.018 + 0.118*Tr(CP)	0.040 - 0.047*Tr(D) + 0.047*Tr(CP)
FD2SPLL	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.006 + 0.038*Tr(CP)	0.020 - 0.020*Tr(D) + 0.020*Tr(CP)
FD2SPLL	D_CP_SETUP (fall)	0.109 - 0.126*Tr(CP) + 0.246*Tr(D)	0.287 - 0.195*Tr(CP) + 0.227*Tr(D)	0.220 - 0.157*Tr(CP) + 0.214*Tr(D)
FD2SPLL	D_CP_SETUP (rise)	0.098 - 0.108*Tr(CP) + 0.120*Tr(D)	0.268 - 0.170*Tr(CP) + 0.177*Tr(D)	0.194 - 0.136*Tr(CP) + 0.136*Tr(D)
FD2SPLL	Pulse Width High CP	0.035	0.095	0.060
FD2SPLL	Pulse Width Low CD	0.065	0.225	0.130
FD2SPLL	Pulse Width Low CP	0.170	0.610	0.375
FD2SPLL	TE_CP_HOLD (fall)	-0.004 + 0.075*Tr(CP)	-0.018 + 0.121*Tr(CP)	0.004 + 0.094*Tr(CP)
FD2SPLL	TE_CP_HOLD (rise)	0.005	0.005	0.005 + 0.007*Tr(CP)
FD2SPLL	TE_CP_SETUP (fall)	0.149 + 0.257*Tr(TE)	0.380 + 0.250*Tr(TE)	0.219 + 0.254*Tr(TE)
FD2SPLL	TE_CP_SETUP (rise)	0.230 + 0.212*Tr(TE)	0.603 + 0.312*Tr(TE)	0.374 + 0.251*Tr(TE)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2SPLL	TI_CP_HOLD (fall)	0.005	0.003 + 0.007*Tr(CP)	0.005 + 0.017*Tr(CP)
FD2SPLL	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD2SPLL	TI_CP_SETUP (fall)	0.221 + 0.238*Tr(TI)	0.590 + 0.240*Tr(TI)	0.354 + 0.241*Tr(TI)
FD2SPLL	TI_CP_SETUP (rise)	0.185 + 0.189*Tr(TI)	0.574 + 0.250*Tr(TI)	0.304 + 0.221*Tr(TI)
FD2SPLL	CD_CP_RECOVERY (rise)	0.100 + 0.144*Tr(CD)	0.248 + 0.205*Tr(CD)	0.144 + 0.174*Tr(CD)
FD2SPLL	CD_CP_REMOVAL (rise)	0.006 + 0.102*Tr(CP)	0.021 + 0.178*Tr(CP)	0.004 + 0.134*Tr(CP)
FD2SPLL	D_CP_HOLD (fall)	-0.004 + 0.075*Tr(CP)	-0.017 + 0.119*Tr(CP)	0.040 - 0.047*Tr(D) + 0.047*Tr(CP)
FD2SPLL	D_CP_HOLD (rise)	0.002 + 0.020*Tr(CP)	-0.006 + 0.041*Tr(CP)	0.020 - 0.020*Tr(D) + 0.020*Tr(CP)
FD2SPLL	D_CP_SETUP (fall)	0.103 - 0.139*Tr(CP) + 0.242*Tr(D)	0.275 - 0.198*Tr(CP) + 0.222*Tr(D)	0.213 - 0.159*Tr(CP) + 0.206*Tr(D)
FD2SPLL	D_CP_SETUP (rise)	0.103 - 0.111*Tr(CP) + 0.118*Tr(D)	0.273 - 0.172*Tr(CP) + 0.177*Tr(D)	0.195 - 0.137*Tr(CP) + 0.137*Tr(D)
FD2SPLL	Pulse Width High CP	0.035	0.120	0.075
FD2SPLL	Pulse Width Low CD	0.080	0.225	0.130
FD2SPLL	Pulse Width Low CP	0.170	0.595	0.360
FD2SPLL	TE_CP_HOLD (fall)	-0.003 + 0.076*Tr(CP)	-0.017 + 0.125*Tr(CP)	0.004 + 0.094*Tr(CP)
FD2SPLL	TE_CP_HOLD (rise)	0.005	0.005	0.005 + 0.010*Tr(CP)
FD2SPLL	TE_CP_SETUP (fall)	0.149 + 0.257*Tr(TE)	0.385 + 0.246*Tr(TE)	0.219 + 0.258*Tr(TE)
FD2SPLL	TE_CP_SETUP (rise)	0.219 + 0.225*Tr(TE)	0.592 + 0.322*Tr(TE)	0.359 + 0.261*Tr(TE)
FD2SPLL	TI_CP_HOLD (fall)	0.005	0.001 + 0.011*Tr(CP)	0.005 + 0.020*Tr(CP)
FD2SPLL	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD2SPLL	TI_CP_SETUP (fall)	0.212 + 0.239*Tr(TI)	0.579 + 0.238*Tr(TI)	0.339 + 0.244*Tr(TI)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2SQLLP	TI_CP_SETUP (rise)	0.185 + 0.189*Tr(TI)	0.578 + 0.251*Tr(TI)	0.304 + 0.221*Tr(TI)
FD2SQLLX4	CD_CP_RECOVERY (rise)	0.105 + 0.141*Tr(CD)	0.257 + 0.204*Tr(CD)	0.149 + 0.177*Tr(CD)
FD2SQLLX4	CD_CP_REMOVAL (rise)	0.006 + 0.102*Tr(CP)	0.019 + 0.179*Tr(CP)	0.004 + 0.134*Tr(CP)
FD2SQLLX4	D_CP_HOLD (fall)	-0.004 + 0.075*Tr(CP)	-0.017 + 0.122*Tr(CP)	0.040 - 0.047*Tr(D) + 0.047*Tr(CP)
FD2SQLLX4	D_CP_HOLD (rise)	0.002 + 0.020*Tr(CP)	-0.007 + 0.044*Tr(CP)	0.021 - 0.022*Tr(D) + 0.022*Tr(CP)
FD2SQLLX4	D_CP_SETUP (fall)	0.096 - 0.135*Tr(CP) + 0.247*Tr(D)	0.259 - 0.197*Tr(CP) + 0.225*Tr(D)	0.206 - 0.156*Tr(CP) + 0.206*Tr(D)
FD2SQLLX4	D_CP_SETUP (rise)	0.105 - 0.113*Tr(CP) + 0.114*Tr(D)	0.275 - 0.173*Tr(CP) + 0.171*Tr(D)	0.199 - 0.139*Tr(CP) + 0.132*Tr(D)
FD2SQLLX4	Pulse Width High CP	0.045	0.165	0.105
FD2SQLLX4	Pulse Width Low CD	0.085	0.275	0.180
FD2SQLLX4	Pulse Width Low CP	0.175	0.580	0.355
FD2SQLLX4	TE_CP_HOLD (fall)	-0.002 + 0.076*Tr(CP)	-0.016 + 0.125*Tr(CP)	0.004 + 0.097*Tr(CP)
FD2SQLLX4	TE_CP_HOLD (rise)	0.005	0.004 + 0.002*Tr(CP)	0.005 + 0.010*Tr(CP)
FD2SQLLX4	TE_CP_SETUP (fall)	0.151 + 0.258*Tr(TE)	0.388 + 0.247*Tr(TE)	0.229 + 0.254*Tr(TE)
FD2SQLLX4	TE_CP_SETUP (rise)	0.215 + 0.231*Tr(TE)	0.581 + 0.332*Tr(TE)	0.354 + 0.268*Tr(TE)
FD2SQLLX4	TI_CP_HOLD (fall)	0.005	0.000 + 0.016*Tr(CP)	0.005 + 0.023*Tr(CP)
FD2SQLLX4	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD2SQLLX4	TI_CP_SETUP (fall)	0.206 + 0.244*Tr(TI)	0.564 + 0.238*Tr(TI)	0.329 + 0.244*Tr(TI)
FD2SQLLX4	TI_CP_SETUP (rise)	0.191 + 0.190*Tr(TI)	0.588 + 0.253*Tr(TI)	0.314 + 0.221*Tr(TI)

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD2SPLL	13598.200	256110.000
FD2SPLL	14849.700	286878.000
FD2SPLLX4	17652.800	351865.000

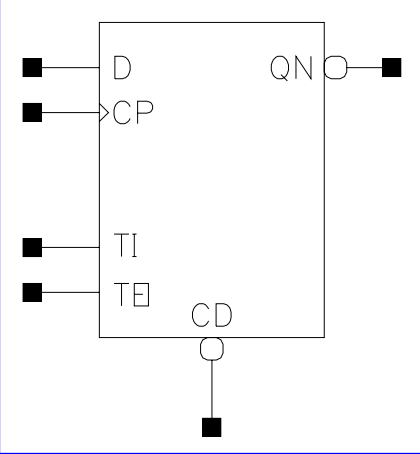
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD2SPLL	Q(related_pin:CP)	$0.031 + 0.013 * Tr$
FD2SPLL	D(max)	$0.023 + 0.008 * Tr$
FD2SPLL	CP(max)	$0.022 + 0.012 * Tr$
FD2SPLL	CD(max)	$0.018 + 0.010 * Tr$
FD2SPLL	TI(max)	$0.028 + 0.002 * Tr$
FD2SPLL	TE(max)	$0.033 + 0.009 * Tr$
FD2SPLL	Q(related_pin:CP)	$0.040 + 0.013 * Tr$
FD2SPLL	D(max)	$0.023 + 0.008 * Tr$
FD2SPLL	CP(max)	$0.022 + 0.012 * Tr$
FD2SPLL	CD(max)	$0.018 + 0.010 * Tr$
FD2SPLL	TI(max)	$0.028 + 0.002 * Tr$
FD2SPLL	TE(max)	$0.033 + 0.009 * Tr$
FD2SPLLX4	Q(related_pin:CP)	$0.064 + 0.013 * Tr$
FD2SPLLX4	D(max)	$0.023 + 0.008 * Tr$
FD2SPLLX4	CP(max)	$0.022 + 0.012 * Tr$
FD2SPLLX4	CD(max)	$0.018 + 0.010 * Tr$
FD2SPLLX4	TI(max)	$0.028 + 0.002 * Tr$
FD2SPLLX4	TE(max)	$0.033 + 0.009 * Tr$

FD2SQNLL
FD2SQNLLP
FD2SQNLLX4

Function: Function = Scan D Flip-Flop with 1 Phase Positive Edge Triggered Clock, Clear Active Low, QN Output Only



Truth Table

IQ	QN
IQ	!IQ

Truth Table

D	CP	CD	TI	TE	IQ	IQ
-	-	0	-	-	-	0
D	/	1	-	0	-	D
-	/	1	TI	1	-	TI
-	-	1	-	-	IQ	IQ

Physical Dimensions

Property	FD2SQNLL	FD2SQNLLP	FD2SQNLLX4
Area(um2)	40.344	40.344	44.378

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2SQNLL	CD Input Cap.	0.0034	0.0028	0.0029
FD2SQNLL	D Input Cap.	0.0032	0.0028	0.0029
FD2SQNLL	TE Input Cap.	0.0039	0.0035	0.0037
FD2SQNLL	CP Input Cap.	0.0032	0.0027	0.0029
FD2SQNLL	QN Max Load	0.160	0.160	0.160

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2SQNLL	TI Input Cap.	0.0016	0.0014	0.0015
FD2SQNLLP	QN Max Load	0.320	0.320	0.320
FD2SQNLLP	CP Input Cap.	0.0032	0.0027	0.0029
FD2SQNLLP	TI Input Cap.	0.0016	0.0014	0.0015
FD2SQNLLP	CD Input Cap.	0.0034	0.0029	0.0029
FD2SQNLLP	D Input Cap.	0.0031	0.0027	0.0028
FD2SQNLLP	TE Input Cap.	0.0039	0.0035	0.0037
FD2SQNLLX4	CD Input Cap.	0.0034	0.0028	0.0029
FD2SQNLLX4	TE Input Cap.	0.0039	0.0035	0.0036
FD2SQNLLX4	D Input Cap.	0.0030	0.0026	0.0028
FD2SQNLLX4	QN Max Load	0.640	0.640	0.640
FD2SQNLLX4	CP Input Cap.	0.0032	0.0027	0.0029
FD2SQNLLX4	TI Input Cap.	0.0016	0.0014	0.0015

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2SQNLL	CP-QN	CP_QN (fall)	0.104 + 0.118*Tr + 1.160*C	0.247 + 0.180*Tr + 2.631*C	0.158 + 0.148*Tr + 1.635*C
FD2SQNLL	CP-QN	CP_QN (rise)	0.102 + 0.117*Tr + 1.666*C	0.246 + 0.177*Tr + 3.453*C	0.155 + 0.146*Tr + 2.398*C
FD2SQNLL	CD-QN	CD_QN (rise)	0.096 + 0.268*Tr + 1.667*C	0.295 + 0.239*Tr + 3.440*C	0.185 + 0.238*Tr + 2.391*C
FD2SQNLLP	CP-QN	CP_QN (fall)	0.114 + 0.118*Tr + 0.615*C	0.270 + 0.180*Tr + 1.358*C	0.173 + 0.148*Tr + 0.857*C
FD2SQNLLP	CP-QN	CP_QN (rise)	0.111 + 0.116*Tr + 0.832*C	0.267 + 0.177*Tr + 1.712*C	0.167 + 0.146*Tr + 1.191*C
FD2SQNLLP	CD-QN	CD_QN (rise)	0.105 + 0.270*Tr + 0.831*C	0.255 + 0.274*Tr + 1.713*C	0.197 + 0.238*Tr + 1.187*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2SQNLLX4	CP-QN	CP_QN (fall)	0.132 + 0.117*Tr + 0.318*C	0.310 + 0.180*Tr + 0.704*C	0.200 + 0.148*Tr + 0.445*C
FD2SQNLLX4	CP-QN	CP_QN (rise)	0.132 + 0.117*Tr + 0.420*C	0.316 + 0.178*Tr + 0.876*C	0.198 + 0.147*Tr + 0.605*C
FD2SQNLLX4	CD-QN	CD_QN (rise)	0.126 + 0.275*Tr + 0.420*C	0.304 + 0.280*Tr + 0.877*C	0.225 + 0.239*Tr + 0.603*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2SQNLL	CD_CP_RECOVERY (rise)	0.087 + 0.141*Tr(CD)	0.212 + 0.205*Tr(CD)	0.124 + 0.171*Tr(CD)
FD2SQNLL	CD_CP_REMOVAL (rise)	0.010 + 0.099*Tr(CP)	0.025 + 0.176*Tr(CP)	0.004 + 0.134*Tr(CP)
FD2SQNLL	D_CP_HOLD (fall)	-0.004 + 0.075*Tr(CP)	-0.017 + 0.119*Tr(CP)	0.040 - 0.047*Tr(D) + 0.047*Tr(CP)
FD2SQNLL	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.005 + 0.034*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD2SQNLL	D_CP_SETUP (fall)	0.104 - 0.121*Tr(CP) + 0.237*Tr(D)	0.274 - 0.189*Tr(CP) + 0.216*Tr(D)	0.208 - 0.152*Tr(CP) + 0.206*Tr(D)
FD2SQNLL	D_CP_SETUP (rise)	0.089 - 0.098*Tr(CP) + 0.137*Tr(D)	0.248 - 0.158*Tr(CP) + 0.194*Tr(D)	0.179 - 0.125*Tr(CP) + 0.152*Tr(D)
FD2SQNLL	Pulse Width High CP	0.030	0.095	0.060
FD2SQNLL	Pulse Width Low CD	0.055	0.220	0.130
FD2SQNLL	Pulse Width Low CP	0.155	0.575	0.360
FD2SQNLL	TE_CP_HOLD (fall)	-0.004 + 0.075*Tr(CP)	-0.018 + 0.121*Tr(CP)	0.004 + 0.094*Tr(CP)
FD2SQNLL	TE_CP_HOLD (rise)	0.005	0.005	0.005 + 0.010*Tr(CP)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2SQNLL	TE_CP_SETUP (fall)	0.136 + 0.258*Tr(TE)	0.359 + 0.247*Tr(TE)	0.204 + 0.254*Tr(TE)
FD2SQNLL	TE_CP_SETUP (rise)	0.218 + 0.209*Tr(TE)	0.569 + 0.311*Tr(TE)	0.354 + 0.251*Tr(TE)
FD2SQNLL	TI_CP_HOLD (fall)	0.005	0.001 + 0.011*Tr(CP)	0.005 + 0.020*Tr(CP)
FD2SQNLL	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD2SQNLL	TI_CP_SETUP (fall)	0.208 + 0.241*Tr(TI)	0.562 + 0.236*Tr(TI)	0.339 + 0.241*Tr(TI)
FD2SQNLL	TI_CP_SETUP (rise)	0.169 + 0.186*Tr(TI)	0.529 + 0.252*Tr(TI)	0.279 + 0.217*Tr(TI)
FD2SQNLLP	CD_CP_RECOVERY (rise)	0.087 + 0.141*Tr(CD)	0.211 + 0.203*Tr(CD)	0.119 + 0.174*Tr(CD)
FD2SQNLLP	CD_CP_REMOVAL (rise)	0.007 + 0.114*Tr(CP)	0.025 + 0.176*Tr(CP)	0.004 + 0.134*Tr(CP)
FD2SQNLLP	D_CP_HOLD (fall)	0.006 - 0.004*Tr(D) + 0.012*Tr(CP)	-0.017 + 0.118*Tr(CP)	0.040 - 0.047*Tr(D) + 0.047*Tr(CP)
FD2SQNLLP	D_CP_HOLD (rise)	0.005	-0.004 + 0.028*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD2SQNLLP	D_CP_SETUP (fall)	0.112 - 0.177*Tr(CP) + 0.240*Tr(D)	0.273 - 0.189*Tr(CP) + 0.214*Tr(D)	0.211 - 0.156*Tr(CP) + 0.202*Tr(D)
FD2SQNLLP	D_CP_SETUP (rise)	0.099 - 0.152*Tr(CP) + 0.147*Tr(D)	0.253 - 0.158*Tr(CP) + 0.204*Tr(D)	0.179 - 0.125*Tr(CP) + 0.159*Tr(D)
FD2SQNLLP	Pulse Width High CP	0.030	0.105	0.065
FD2SQNLLP	Pulse Width Low CD	0.065	0.220	0.130
FD2SQNLLP	Pulse Width Low CP	0.155	0.570	0.355
FD2SQNLLP	TE_CP_HOLD (fall)	-0.001 + 0.059*Tr(CP)	-0.017 + 0.119*Tr(CP)	0.004 + 0.094*Tr(CP)
FD2SQNLLP	TE_CP_HOLD (rise)	0.005	0.003 + 0.004*Tr(CP)	0.005 + 0.010*Tr(CP)
FD2SQNLLP	TE_CP_SETUP (fall)	0.136 + 0.258*Tr(TE)	0.361 + 0.248*Tr(TE)	0.204 + 0.254*Tr(TE)
FD2SQNLLP	TE_CP_SETUP (rise)	0.214 + 0.209*Tr(TE)	0.560 + 0.313*Tr(TE)	0.344 + 0.251*Tr(TE)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2SQNLLP	TI_CP_HOLD (fall)	0.005	0.000 + 0.013*Tr(CP)	0.005 + 0.020*Tr(CP)
FD2SQNLLP	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD2SQNLLP	TI_CP_SETUP (fall)	0.206 + 0.243*Tr(TI)	0.553 + 0.237*Tr(TI)	0.334 + 0.241*Tr(TI)
FD2SQNLLP	TI_CP_SETUP (rise)	0.167 + 0.186*Tr(TI)	0.524 + 0.249*Tr(TI)	0.269 + 0.221*Tr(TI)
FD2SQNLLX4	CD_CP_RECOVERY (rise)	0.083 + 0.146*Tr(CD)	0.208 + 0.204*Tr(CD)	0.119 + 0.171*Tr(CD)
FD2SQNLLX4	CD_CP_REMOVAL (rise)	0.010 + 0.099*Tr(CP)	0.024 + 0.176*Tr(CP)	0.004 + 0.134*Tr(CP)
FD2SQNLLX4	D_CP_HOLD (fall)	-0.003 + 0.070*Tr(CP)	-0.017 + 0.118*Tr(CP)	0.040 - 0.047*Tr(D) + 0.047*Tr(CP)
FD2SQNLLX4	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.004 + 0.028*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD2SQNLLX4	D_CP_SETUP (fall)	0.103 - 0.129*Tr(CP) + 0.236*Tr(D)	0.269 - 0.190*Tr(CP) + 0.214*Tr(D)	0.206 - 0.152*Tr(CP) + 0.202*Tr(D)
FD2SQNLLX4	D_CP_SETUP (rise)	0.090 - 0.098*Tr(CP) + 0.144*Tr(D)	0.251 - 0.157*Tr(CP) + 0.204*Tr(D)	0.175 - 0.124*Tr(CP) + 0.161*Tr(D)
FD2SQNLLX4	Pulse Width High CP	0.035	0.125	0.080
FD2SQNLLX4	Pulse Width Low CD	0.075	0.220	0.130
FD2SQNLLX4	Pulse Width Low CP	0.150	0.560	0.345
FD2SQNLLX4	TE_CP_HOLD (fall)	-0.004 + 0.075*Tr(CP)	-0.017 + 0.119*Tr(CP)	0.004 + 0.094*Tr(CP)
FD2SQNLLX4	TE_CP_HOLD (rise)	0.005	0.003 + 0.007*Tr(CP)	0.005 + 0.010*Tr(CP)
FD2SQNLLX4	TE_CP_SETUP (fall)	0.135 + 0.258*Tr(TE)	0.359 + 0.245*Tr(TE)	0.199 + 0.254*Tr(TE)
FD2SQNLLX4	TE_CP_SETUP (rise)	0.207 + 0.215*Tr(TE)	0.549 + 0.314*Tr(TE)	0.339 + 0.251*Tr(TE)
FD2SQNLLX4	TI_CP_HOLD (fall)	0.005	0.000 + 0.013*Tr(CP)	0.005 + 0.023*Tr(CP)
FD2SQNLLX4	TI_CP_HOLD (rise)	0.005	0.005	0.005

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD2SQNLLX4	TI_CP_SETUP (fall)	0.205 + 0.242*Tr(TI)	0.548 + 0.234*Tr(TI)	0.324 + 0.238*Tr(TI)
FD2SQNLLX4	TI_CP_SETUP (rise)	0.163 + 0.187*Tr(TI)	0.516 + 0.252*Tr(TI)	0.269 + 0.217*Tr(TI)

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD2SQNLL	14102.000	262050.000
FD2SQNLLP	15465.400	292159.000
FD2SQNLLX4	18893.100	362401.000

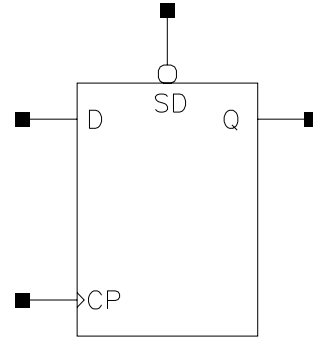
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD2SQNLL	QN(related_pin:CP)	0.032 + 0.013*Tr
FD2SQNLL	D(max)	0.022 + 0.008*Tr
FD2SQNLL	CP(max)	0.023 + 0.013*Tr
FD2SQNLL	CD(max)	0.017 + 0.010*Tr
FD2SQNLL	TI(max)	0.026 + 0.002*Tr
FD2SQNLL	TE(max)	0.031 + 0.009*Tr
FD2SQNLLP	QN(related_pin:CP)	0.040 + 0.013*Tr
FD2SQNLLP	D(max)	0.022 + 0.007*Tr
FD2SQNLLP	CP(max)	0.023 + 0.013*Tr
FD2SQNLLP	CD(max)	0.017 + 0.010*Tr
FD2SQNLLP	TI(max)	0.026 + 0.002*Tr
FD2SQNLLP	TE(max)	0.030 + 0.009*Tr
FD2SQNLLX4	QN(related_pin:CP)	0.060 + 0.013*Tr
FD2SQNLLX4	D(max)	0.022 + 0.007*Tr
FD2SQNLLX4	CP(max)	0.022 + 0.013*Tr
FD2SQNLLX4	CD(max)	0.017 + 0.010*Tr
FD2SQNLLX4	TI(max)	0.026 + 0.002*Tr
FD2SQNLLX4	TE(max)	0.030 + 0.009*Tr

FD4QLL
FD4QLLP
FD4QLLX4

Function: Function = D Flip-Flop with 1 Phase Positive Edge Triggered Clock, Preset Active Low, Q Output Only



Truth Table

IQ	Q
IQ	IQ

Truth Table

D	CP	SD	IQ	IQ
-	-	0	-	1
D	/	1	-	D
-	-	1	IQ	IQ

Physical Dimensions

Property	FD4QLL	FD4QLLP	FD4QLLX4
Area(um2)	34.292	34.292	36.310

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4QLL	CP Input Cap.	0.0032	0.0027	0.0029
FD4QLL	D Input Cap.	0.0024	0.0021	0.0022
FD4QLL	SD Input Cap.	0.0029	0.0023	0.0024
FD4QLL	Q Max Load	0.160	0.160	0.160
FD4QLLP	CP Input Cap.	0.0032	0.0027	0.0029
FD4QLLP	D Input Cap.	0.0024	0.0021	0.0022

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4QLLP	SD Input Cap.	0.0028	0.0023	0.0024
FD4QLLP	Q Max Load	0.320	0.320	0.320
FD4QLLX4	SD Input Cap.	0.0028	0.0022	0.0024
FD4QLLX4	Q Max Load	0.640	0.640	0.640
FD4QLLX4	CP Input Cap.	0.0032	0.0027	0.0029
FD4QLLX4	D Input Cap.	0.0024	0.0021	0.0022

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4QLL	SD-Q	SD_Q (rise)	0.079 + 0.262*Tr + 1.669*C	0.196 + 0.257*Tr + 3.461*C	0.123 + 0.258*Tr + 2.403*C
FD4QLL	CP-Q	CP_Q (fall)	0.090 + 0.120*Tr + 1.249*C	0.219 + 0.181*Tr + 2.852*C	0.139 + 0.150*Tr + 1.778*C
FD4QLL	CP-Q	CP_Q (rise)	0.079 + 0.120*Tr + 1.675*C	0.190 + 0.183*Tr + 3.488*C	0.120 + 0.150*Tr + 2.413*C
FD4QLLP	SD-Q	SD_Q (rise)	0.089 + 0.268*Tr + 0.832*C	0.220 + 0.264*Tr + 1.715*C	0.137 + 0.263*Tr + 1.192*C
FD4QLLP	CP-Q	CP_Q (fall)	0.091 + 0.122*Tr + 0.649*C	0.218 + 0.184*Tr + 1.445*C	0.140 + 0.152*Tr + 0.913*C
FD4QLLP	CP-Q	CP_Q (rise)	0.084 + 0.123*Tr + 0.839*C	0.201 + 0.186*Tr + 1.742*C	0.127 + 0.153*Tr + 1.203*C
FD4QLLX4	SD-Q	SD_Q (rise)	0.100 + 0.269*Tr + 0.419*C	0.246 + 0.265*Tr + 0.871*C	0.154 + 0.265*Tr + 0.602*C
FD4QLLX4	CP-Q	CP_Q (fall)	0.115 + 0.123*Tr + 0.344*C	0.279 + 0.185*Tr + 0.767*C	0.179 + 0.153*Tr + 0.486*C
FD4QLLX4	CP-Q	CP_Q (rise)	0.097 + 0.123*Tr + 0.426*C	0.233 + 0.187*Tr + 0.894*C	0.147 + 0.154*Tr + 0.614*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4QLL	D_CP_HOLD (fall)	0.000 + 0.091*Tr(CP)	-0.016 + 0.142*Tr(CP)	0.046 - 0.055*Tr(D) + 0.055*Tr(CP)
FD4QLL	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	0.000 + 0.016*Tr(CP)	0.016 - 0.015*Tr(D) + 0.015*Tr(CP)
FD4QLL	D_CP_SETUP (fall)	0.112 - 0.128*Tr(CP) + 0.173*Tr(D)	0.331 - 0.197*Tr(CP) + 0.162*Tr(D)	0.215 - 0.154*Tr(CP) + 0.151*Tr(D)
FD4QLL	D_CP_SETUP (rise)	0.079 - 0.089*Tr(CP) + 0.247*Tr(D)	0.233 - 0.142*Tr(CP) + 0.318*Tr(D)	0.158 - 0.112*Tr(CP) + 0.259*Tr(D)
FD4QLL	Pulse Width High CP	0.035	0.120	0.075
FD4QLL	Pulse Width Low CP	0.100	0.465	0.270
FD4QLL	Pulse Width Low SD	0.060	0.190	0.115
FD4QLL	SD_CP_RECOVERY (rise)	0.065 + 0.206*Tr(SD)	0.202 + 0.271*Tr(SD)	0.104 + 0.231*Tr(SD)
FD4QLL	SD_CP_REMOVAL (rise)	0.051 + 0.114*Tr(CP)	0.105 + 0.177*Tr(CP)	0.054 + 0.151*Tr(CP)
FD4QLLP	D_CP_HOLD (fall)	0.000 + 0.091*Tr(CP)	-0.017 + 0.142*Tr(CP)	0.046 - 0.055*Tr(D) + 0.055*Tr(CP)
FD4QLLP	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.002 + 0.020*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD4QLLP	D_CP_SETUP (fall)	0.117 - 0.126*Tr(CP) + 0.175*Tr(D)	0.344 - 0.200*Tr(CP) + 0.164*Tr(D)	0.224 - 0.159*Tr(CP) + 0.156*Tr(D)
FD4QLLP	D_CP_SETUP (rise)	0.083 - 0.094*Tr(CP) + 0.247*Tr(D)	0.246 - 0.150*Tr(CP) + 0.319*Tr(D)	0.167 - 0.120*Tr(CP) + 0.261*Tr(D)
FD4QLLP	Pulse Width High CP	0.035	0.120	0.075
FD4QLLP	Pulse Width Low CP	0.110	0.480	0.285
FD4QLLP	Pulse Width Low SD	0.065	0.245	0.145
FD4QLLP	SD_CP_RECOVERY (rise)	0.067 + 0.207*Tr(SD)	0.216 + 0.276*Tr(SD)	0.109 + 0.238*Tr(SD)
FD4QLLP	SD_CP_REMOVAL (rise)	0.049 + 0.117*Tr(CP)	0.102 + 0.179*Tr(CP)	0.054 + 0.151*Tr(CP)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4QLLX4	D_CP_HOLD (fall)	0.000 + 0.091*Tr(CP)	-0.014 + 0.141*Tr(CP)	0.046 - 0.055*Tr(D) + 0.055*Tr(CP)
FD4QLLX4	D_CP_HOLD (rise)	0.002 + 0.020*Tr(CP)	-0.003 + 0.025*Tr(CP)	0.019 - 0.018*Tr(D) + 0.018*Tr(CP)
FD4QLLX4	D_CP_SETUP (fall)	0.110 - 0.133*Tr(CP) + 0.179*Tr(D)	0.325 - 0.200*Tr(CP) + 0.174*Tr(D)	0.209 - 0.152*Tr(CP) + 0.159*Tr(D)
FD4QLLX4	D_CP_SETUP (rise)	0.081 - 0.093*Tr(CP) + 0.248*Tr(D)	0.242 - 0.153*Tr(CP) + 0.320*Tr(D)	0.163 - 0.119*Tr(CP) + 0.263*Tr(D)
FD4QLLX4	Pulse Width High CP	0.045	0.165	0.105
FD4QLLX4	Pulse Width Low CP	0.110	0.460	0.270
FD4QLLX4	Pulse Width Low SD	0.065	0.335	0.200
FD4QLLX4	SD_CP_RECOVERY (rise)	0.060 + 0.205*Tr(SD)	0.196 + 0.276*Tr(SD)	0.094 + 0.238*Tr(SD)
FD4QLLX4	SD_CP_REMOVAL (rise)	0.051 + 0.114*Tr(CP)	0.103 + 0.181*Tr(CP)	0.054 + 0.151*Tr(CP)

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD4QLL	11967.000	221230.000
FD4QLLP	13583.200	258344.000
FD4QLLX4	16858.400	325798.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD4QLL	Q(related_pin:CP)	0.031 + 0.013*Tr
FD4QLL	D(max)	0.023 + 0.005*Tr
FD4QLL	CP(max)	0.025 + 0.012*Tr
FD4QLL	SD(max)	0.015 + 0.013*Tr
FD4QLLP	Q(related_pin:CP)	0.040 + 0.013*Tr
FD4QLLP	D(max)	0.024 + 0.005*Tr
FD4QLLP	CP(max)	0.025 + 0.012*Tr

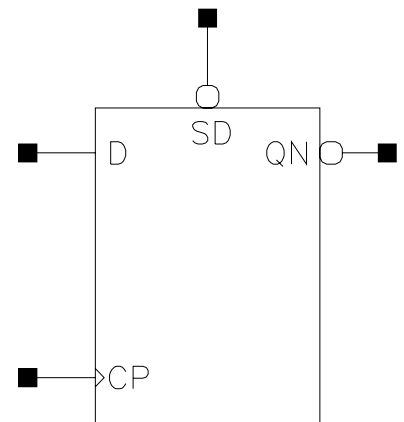
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD4QLLP	SD(max)	$0.016 + 0.014 * Tr$
FD4QLX4	Q(related_pin:CP)	$0.062 + 0.013 * Tr$
FD4QLX4	D(max)	$0.024 + 0.005 * Tr$
FD4QLX4	CP(max)	$0.024 + 0.012 * Tr$
FD4QLX4	SD(max)	$0.016 + 0.014 * Tr$

FD4QNLL
FD4QNLLP
FD4QNLLX4

Function: Function = D Flip-Flop with 1 Phase Positive Edge Triggered Clock, Preset Active Low, QN Output Only



Truth Table

IQ	QN
IQ	!IQ

Truth Table

D	CP	SD	IQ	IQ
-	-	0	-	1
D	/	1	-	D
-	-	1	IQ	IQ

Physical Dimensions

Property	FD4QNLL	FD4QNLLP	FD4QNLLX4
Area(um2)	36.310	36.310	38.327

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4QNLL	D Input Cap.	0.0024	0.0021	0.0022
FD4QNLL	SD Input Cap.	0.0028	0.0023	0.0024
FD4QNLL	QN Max Load	0.160	0.160	0.160
FD4QNLL	CP Input Cap.	0.0032	0.0027	0.0029
FD4QNLLP	D Input Cap.	0.0022	0.0020	0.0021
FD4QNLLP	SD Input Cap.	0.0029	0.0023	0.0025
FD4QNLLP	CP Input Cap.	0.0032	0.0027	0.0029

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4QNLLP	QN Max Load	0.320	0.320	0.320
FD4QNLLX4	CP Input Cap.	0.0032	0.0027	0.0029
FD4QNLLX4	QN Max Load	0.640	0.640	0.640
FD4QNLLX4	D Input Cap.	0.0022	0.0019	0.0020
FD4QNLLX4	SD Input Cap.	0.0028	0.0023	0.0024

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4QNLL	SD-QN	SD_QN (fall)	0.118 + 0.261*Tr + 1.178°C	0.291 + 0.256*Tr + 2.672°C	0.183 + 0.256*Tr + 1.663°C
FD4QNLL	CP-QN	CP_QN (fall)	0.117 + 0.119*Tr + 1.178°C	0.283 + 0.182*Tr + 2.672°C	0.180 + 0.150*Tr + 1.663°C
FD4QNLL	CP-QN	CP_QN (rise)	0.109 + 0.118*Tr + 1.669°C	0.272 + 0.179*Tr + 3.468°C	0.167 + 0.148*Tr + 2.404°C
FD4QNLLP	SD-QN	SD_QN (fall)	0.121 + 0.260*Tr + 0.619°C	0.296 + 0.255*Tr + 1.367°C	0.187 + 0.256*Tr + 0.863°C
FD4QNLLP	CP-QN	CP_QN (fall)	0.121 + 0.119*Tr + 0.619°C	0.289 + 0.182*Tr + 1.367°C	0.184 + 0.150*Tr + 0.863°C
FD4QNLLP	CP-QN	CP_QN (rise)	0.123 + 0.118*Tr + 0.835°C	0.306 + 0.179*Tr + 1.730°C	0.188 + 0.148*Tr + 1.199°C
FD4QNLLX4	SD-QN	SD_QN (fall)	0.142 + 0.261*Tr + 0.321°C	0.342 + 0.256*Tr + 0.712°C	0.219 + 0.257*Tr + 0.450°C
FD4QNLLX4	CP-QN	CP_QN (fall)	0.142 + 0.119*Tr + 0.321°C	0.335 + 0.182*Tr + 0.712°C	0.216 + 0.150*Tr + 0.450°C
FD4QNLLX4	CP-QN	CP_QN (rise)	0.150 + 0.118*Tr + 0.424°C	0.369 + 0.179*Tr + 0.894°C	0.227 + 0.148*Tr + 0.613°C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4QNLL	D_CP_HOLD (fall)	0.000 + 0.086*Tr(CP)	-0.016 + 0.140*Tr(CP)	0.045 - 0.054*Tr(D) + 0.054*Tr(CP)
FD4QNLL	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	0.000 + 0.013*Tr(CP)	0.015 - 0.013*Tr(D) + 0.013*Tr(CP)
FD4QNLL	D_CP_SETUP (fall)	0.114 - 0.117*Tr(CP) + 0.173*Tr(D)	0.326 - 0.191*Tr(CP) + 0.166*Tr(D)	0.211 - 0.149*Tr(CP) + 0.159*Tr(D)
FD4QNLL	D_CP_SETUP (rise)	0.078 - 0.085*Tr(CP) + 0.249*Tr(D)	0.233 - 0.138*Tr(CP) + 0.322*Tr(D)	0.154 - 0.110*Tr(CP) + 0.268*Tr(D)
FD4QNLL	Pulse Width High CP	0.035	0.110	0.070
FD4QNLL	Pulse Width Low CP	0.095	0.455	0.270
FD4QNLL	Pulse Width Low SD	0.060	0.180	0.110
FD4QNLL	SD_CP_RECOVERY (rise)	0.063 + 0.198*Tr(SD)	0.196 + 0.267*Tr(SD)	0.099 + 0.228*Tr(SD)
FD4QNLL	SD_CP_REMOVAL (rise)	0.051 + 0.114*Tr(CP)	0.103 + 0.178*Tr(CP)	0.054 + 0.151*Tr(CP)
FD4QNLLP	D_CP_HOLD (fall)	0.000 + 0.086*Tr(CP)	-0.017 + 0.140*Tr(CP)	0.045 - 0.054*Tr(D) + 0.054*Tr(CP)
FD4QNLLP	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	0.000 + 0.013*Tr(CP)	0.015 - 0.013*Tr(D) + 0.013*Tr(CP)
FD4QNLLP	D_CP_SETUP (fall)	0.110 - 0.113*Tr(CP) + 0.184*Tr(D)	0.320 - 0.192*Tr(CP) + 0.175*Tr(D)	0.207 - 0.147*Tr(CP) + 0.164*Tr(D)
FD4QNLLP	D_CP_SETUP (rise)	0.081 - 0.089*Tr(CP) + 0.248*Tr(D)	0.246 - 0.144*Tr(CP) + 0.319*Tr(D)	0.160 - 0.115*Tr(CP) + 0.266*Tr(D)
FD4QNLLP	Pulse Width High CP	0.035	0.130	0.075
FD4QNLLP	Pulse Width Low CP	0.105	0.450	0.270
FD4QNLLP	Pulse Width Low SD	0.060	0.190	0.110
FD4QNLLP	SD_CP_RECOVERY (rise)	0.065 + 0.195*Tr(SD)	0.186 + 0.267*Tr(SD)	0.094 + 0.228*Tr(SD)
FD4QNLLP	SD_CP_REMOVAL (rise)	0.051 + 0.116*Tr(CP)	0.108 + 0.178*Tr(CP)	0.054 + 0.151*Tr(CP)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4QNLLX4	D_CP_HOLD (fall)	0.000 + 0.085*Tr(CP)	-0.017 + 0.134*Tr(CP)	0.045 - 0.054*Tr(D) + 0.054*Tr(CP)
FD4QNLLX4	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	0.000 + 0.016*Tr(CP)	0.016 - 0.015*Tr(D) + 0.015*Tr(CP)
FD4QNLLX4	D_CP_SETUP (fall)	0.114 - 0.127*Tr(CP) + 0.184*Tr(D)	0.322 - 0.194*Tr(CP) + 0.181*Tr(D)	0.210 - 0.151*Tr(CP) + 0.171*Tr(D)
FD4QNLLX4	D_CP_SETUP (rise)	0.077 - 0.085*Tr(CP) + 0.245*Tr(D)	0.230 - 0.137*Tr(CP) + 0.317*Tr(D)	0.149 - 0.107*Tr(CP) + 0.261*Tr(D)
FD4QNLLX4	Pulse Width High CP	0.035	0.155	0.095
FD4QNLLX4	Pulse Width Low CP	0.095	0.450	0.270
FD4QNLLX4	Pulse Width Low SD	0.060	0.205	0.125
FD4QNLLX4	SD_CP_RECOVERY (rise)	0.058 + 0.199*Tr(SD)	0.184 + 0.265*Tr(SD)	0.089 + 0.231*Tr(SD)
FD4QNLLX4	SD_CP_REMOVAL (rise)	0.051 + 0.114*Tr(CP)	0.103 + 0.178*Tr(CP)	0.054 + 0.151*Tr(CP)

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD4QNLL	11421.200	215274.000
FD4QNLLP	12682.200	246209.000
FD4QNLLX4	15499.700	311564.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD4QNLL	QN(related_pin:CP)	0.033 + 0.012*Tr
FD4QNLL	D(max)	0.023 + 0.005*Tr
FD4QNLL	CP(max)	0.025 + 0.012*Tr
FD4QNLL	SD(max)	0.015 + 0.013*Tr
FD4QNLLP	QN(related_pin:CP)	0.041 + 0.012*Tr
FD4QNLLP	D(max)	0.022 + 0.005*Tr

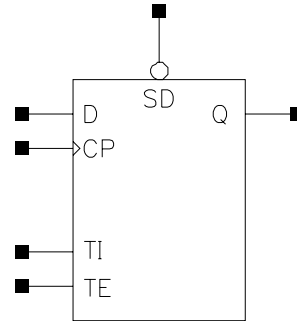
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD4QNLLP	CP(max)	$0.025 + 0.012 * Tr$
FD4QNLLP	SD(max)	$0.015 + 0.013 * Tr$
FD4QNLLX4	QN(related_pin:CP)	$0.063 + 0.012 * Tr$
FD4QNLLX4	D(max)	$0.023 + 0.005 * Tr$
FD4QNLLX4	CP(max)	$0.025 + 0.012 * Tr$
FD4QNLLX4	SD(max)	$0.015 + 0.013 * Tr$

FD4SPLL
FD4SPLL
FD4SPLLX4

Function: Function = Scan D Flip-Flop with 1 Phase Positive Edge Triggered Clock, Preset Active Low, Q Output Only



Truth Table

IQ	Q
IQ	IQ

Truth Table

D	CP	SD	TI	TE	IQ	IQ
-	-	0	-	-	-	1
D	/	1	-	0	-	D
-	/	1	TI	1	-	TI
-	-	1	-	-	IQ	IQ

Physical Dimensions

Property	FD4SPLL	FD4SPLL	FD4SPLLX4
Area(um2)	42.361	42.361	44.378

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4SPLL	CP Input Cap.	0.0032	0.0027	0.0029
FD4SPLL	Q Max Load	0.160	0.160	0.160
FD4SPLL	TI Input Cap.	0.0017	0.0015	0.0016
FD4SPLL	TE Input Cap.	0.0046	0.0042	0.0043
FD4SPLL	SD Input Cap.	0.0028	0.0022	0.0023

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4SPLL	D Input Cap.	0.0030	0.0029	0.0029
FD4SPLL	TE Input Cap.	0.0045	0.0041	0.0043
FD4SPLL	SD Input Cap.	0.0028	0.0022	0.0023
FD4SPLL	D Input Cap.	0.0028	0.0027	0.0027
FD4SPLL	CP Input Cap.	0.0032	0.0027	0.0029
FD4SPLL	Q Max Load	0.320	0.320	0.320
FD4SPLL	TI Input Cap.	0.0017	0.0015	0.0016
FD4SPLLX4	CP Input Cap.	0.0032	0.0027	0.0029
FD4SPLLX4	TI Input Cap.	0.0016	0.0014	0.0015
FD4SPLLX4	D Input Cap.	0.0027	0.0026	0.0026
FD4SPLLX4	TE Input Cap.	0.0044	0.0040	0.0042
FD4SPLLX4	Q Max Load	0.640	0.640	0.640
FD4SPLLX4	SD Input Cap.	0.0028	0.0021	0.0023

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4SPLL	SD-Q	SD_Q (rise)	0.084 + 0.267*Tr + 1.669*C	0.263 + 0.274*Tr + 3.561*C	0.158 + 0.271*Tr + 2.439*C
FD4SPLL	CP-Q	CP_Q (fall)	0.082 + 0.121*Tr + 1.215*C	0.195 + 0.183*Tr + 2.768*C	0.125 + 0.152*Tr + 1.723*C
FD4SPLL	CP-Q	CP_Q (rise)	0.080 + 0.123*Tr + 1.675*C	0.192 + 0.187*Tr + 3.495*C	0.121 + 0.154*Tr + 2.416*C
FD4SPLL	SD-Q	SD_Q (rise)	0.089 + 0.268*Tr + 0.832*C	0.290 + 0.275*Tr + 1.798*C	0.174 + 0.272*Tr + 1.226*C
FD4SPLL	CP-Q	CP_Q (fall)	0.092 + 0.123*Tr + 0.650*C	0.220 + 0.185*Tr + 1.447*C	0.141 + 0.153*Tr + 0.914*C
FD4SPLL	CP-Q	CP_Q (rise)	0.084 + 0.123*Tr + 0.839*C	0.202 + 0.187*Tr + 1.743*C	0.128 + 0.154*Tr + 1.204*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4SPLLX4	SD-Q	SD_Q (rise)	0.102 + 0.270*Tr + 0.420*C	0.375 + 0.276*Tr + 0.927*C	0.225 + 0.274*Tr + 0.625*C
FD4SPLLX4	CP-Q	CP_Q (fall)	0.115 + 0.124*Tr + 0.346*C	0.279 + 0.186*Tr + 0.772*C	0.179 + 0.154*Tr + 0.489*C
FD4SPLLX4	CP-Q	CP_Q (rise)	0.099 + 0.124*Tr + 0.427*C	0.239 + 0.188*Tr + 0.902*C	0.150 + 0.155*Tr + 0.617*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4SPLL	D_CP_HOLD (fall)	-0.003 + 0.076*Tr(CP)	-0.018 + 0.124*Tr(CP)	0.041 - 0.049*Tr(D) + 0.049*Tr(CP)
FD4SPLL	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.003 + 0.025*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD4SPLL	D_CP_SETUP (fall)	0.130 - 0.118*Tr(CP) + 0.188*Tr(D)	0.370 - 0.196*Tr(CP) + 0.164*Tr(D)	0.235 - 0.161*Tr(CP) + 0.174*Tr(D)
FD4SPLL	D_CP_SETUP (rise)	0.073 - 0.088*Tr(CP) + 0.194*Tr(D)	0.208 - 0.141*Tr(CP) + 0.257*Tr(D)	0.152 - 0.110*Tr(CP) + 0.207*Tr(D)
FD4SPLL	Pulse Width High CP	0.035	0.095	0.060
FD4SPLL	Pulse Width Low CP	0.135	0.735	0.435
FD4SPLL	Pulse Width Low SD	0.065	0.200	0.120
FD4SPLL	SD_CP_RECOVERY (rise)	0.072 + 0.202*Tr(SD)	0.216 + 0.277*Tr(SD)	0.109 + 0.238*Tr(SD)
FD4SPLL	SD_CP_REMOVAL (rise)	0.048 + 0.119*Tr(CP)	0.101 + 0.182*Tr(CP)	0.054 + 0.154*Tr(CP)
FD4SPLL	TE_CP_HOLD (fall)	-0.003 + 0.076*Tr(CP)	-0.019 + 0.122*Tr(CP)	0.004 + 0.097*Tr(CP)
FD4SPLL	TE_CP_HOLD (rise)	0.005	0.005	0.005
FD4SPLL	TE_CP_SETUP (fall)	0.136 + 0.253*Tr(TE)	0.394 + 0.222*Tr(TE)	0.229 + 0.238*Tr(TE)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4SPLL	TE_CP_SETUP (rise)	0.266 + 0.179*Tr(TE)	0.746 + 0.231*Tr(TE)	0.434 + 0.217*Tr(TE)
FD4SPLL	TI_CP_HOLD (fall)	0.005	0.005	0.005
FD4SPLL	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD4SPLL	TI_CP_SETUP (fall)	0.263 + 0.241*Tr(TI)	0.736 + 0.242*Tr(TI)	0.429 + 0.244*Tr(TI)
FD4SPLL	TI_CP_SETUP (rise)	0.146 + 0.190*Tr(TI)	0.465 + 0.254*Tr(TI)	0.234 + 0.224*Tr(TI)
FD4SPLL	D_CP_HOLD (fall)	-0.004 + 0.075*Tr(CP)	-0.020 + 0.119*Tr(CP)	0.040 - 0.047*Tr(D) + 0.047*Tr(CP)
FD4SPLL	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.005 + 0.031*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD4SPLL	D_CP_SETUP (fall)	0.130 - 0.128*Tr(CP) + 0.199*Tr(D)	0.378 - 0.205*Tr(CP) + 0.177*Tr(D)	0.247 - 0.171*Tr(CP) + 0.174*Tr(D)
FD4SPLL	D_CP_SETUP (rise)	0.073 - 0.087*Tr(CP) + 0.186*Tr(D)	0.209 - 0.142*Tr(CP) + 0.251*Tr(D)	0.151 - 0.109*Tr(CP) + 0.199*Tr(D)
FD4SPLL	Pulse Width High CP	0.035	0.120	0.075
FD4SPLL	Pulse Width Low CP	0.135	0.735	0.430
FD4SPLL	Pulse Width Low SD	0.065	0.245	0.145
FD4SPLL	SD_CP_RECOVERY (rise)	0.070 + 0.204*Tr(SD)	0.216 + 0.277*Tr(SD)	0.109 + 0.231*Tr(SD)
FD4SPLL	SD_CP_REMOVAL (rise)	0.049 + 0.117*Tr(CP)	0.101 + 0.182*Tr(CP)	0.054 + 0.154*Tr(CP)
FD4SPLL	TE_CP_HOLD (fall)	-0.004 + 0.075*Tr(CP)	-0.021 + 0.118*Tr(CP)	0.004 + 0.094*Tr(CP)
FD4SPLL	TE_CP_HOLD (rise)	0.005	0.005	0.005
FD4SPLL	TE_CP_SETUP (fall)	0.141 + 0.222*Tr(TE)	0.413 + 0.183*Tr(TE)	0.234 + 0.207*Tr(TE)
FD4SPLL	TE_CP_SETUP (rise)	0.262 + 0.177*Tr(TE)	0.750 + 0.222*Tr(TE)	0.429 + 0.207*Tr(TE)
FD4SPLL	TI_CP_HOLD (fall)	0.005	0.005	0.005
FD4SPLL	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD4SPLL	TI_CP_SETUP (fall)	0.258 + 0.246*Tr(TI)	0.732 + 0.243*Tr(TI)	0.419 + 0.248*Tr(TI)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4SQLLP	TI_CP_SETUP (rise)	0.147 + 0.185*Tr(TI)	0.465 + 0.254*Tr(TI)	0.234 + 0.224*Tr(TI)
FD4SQLLX4	D_CP_HOLD (fall)	-0.003 + 0.076*Tr(CP)	-0.018 + 0.120*Tr(CP)	0.041 - 0.049*Tr(D) + 0.049*Tr(CP)
FD4SQLLX4	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.005 + 0.031*Tr(CP)	0.019 - 0.018*Tr(D) + 0.018*Tr(CP)
FD4SQLLX4	D_CP_SETUP (fall)	0.127 - 0.143*Tr(CP) + 0.203*Tr(D)	0.372 - 0.211*Tr(CP) + 0.182*Tr(D)	0.241 - 0.169*Tr(CP) + 0.176*Tr(D)
FD4SQLLX4	D_CP_SETUP (rise)	0.075 - 0.089*Tr(CP) + 0.186*Tr(D)	0.216 - 0.145*Tr(CP) + 0.250*Tr(D)	0.156 - 0.112*Tr(CP) + 0.199*Tr(D)
FD4SQLLX4	Pulse Width High CP	0.040	0.200	0.130
FD4SQLLX4	Pulse Width Low CP	0.135	0.715	0.420
FD4SQLLX4	Pulse Width Low SD	0.070	0.290	0.175
FD4SQLLX4	SD_CP_RECOVERY (rise)	0.061 + 0.208*Tr(SD)	0.201 + 0.279*Tr(SD)	0.099 + 0.238*Tr(SD)
FD4SQLLX4	SD_CP_REMOVAL (rise)	0.045 + 0.121*Tr(CP)	0.101 + 0.182*Tr(CP)	0.049 + 0.154*Tr(CP)
FD4SQLLX4	TE_CP_HOLD (fall)	-0.003 + 0.076*Tr(CP)	-0.018 + 0.118*Tr(CP)	0.004 + 0.097*Tr(CP)
FD4SQLLX4	TE_CP_HOLD (rise)	0.005	0.005	0.005
FD4SQLLX4	TE_CP_SETUP (fall)	0.137 + 0.226*Tr(TE)	0.402 + 0.191*Tr(TE)	0.224 + 0.221*Tr(TE)
FD4SQLLX4	TE_CP_SETUP (rise)	0.253 + 0.179*Tr(TE)	0.732 + 0.226*Tr(TE)	0.419 + 0.211*Tr(TE)
FD4SQLLX4	TI_CP_HOLD (fall)	0.005	0.005	0.005
FD4SQLLX4	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD4SQLLX4	TI_CP_SETUP (fall)	0.248 + 0.241*Tr(TI)	0.716 + 0.242*Tr(TI)	0.414 + 0.241*Tr(TI)
FD4SQLLX4	TI_CP_SETUP (rise)	0.146 + 0.190*Tr(TI)	0.470 + 0.254*Tr(TI)	0.239 + 0.224*Tr(TI)

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD4SPLL	13858.900	257359.000
FD4SPLL	15238.300	287987.000
FD4SPLLX4	18745.200	360920.000

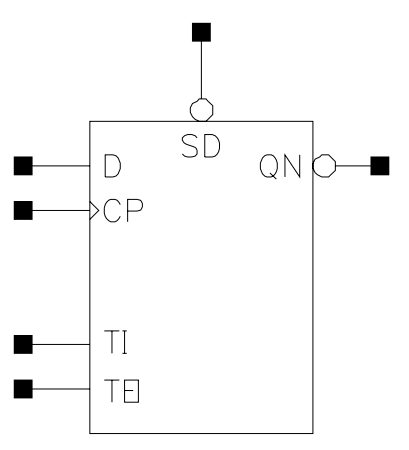
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD4SPLL	Q(related_pin:CP)	$0.032 + 0.013 * Tr$
FD4SPLL	D(max)	$0.026 + 0.009 * Tr$
FD4SPLL	CP(max)	$0.026 + 0.012 * Tr$
FD4SPLL	SD(max)	$0.016 + 0.014 * Tr$
FD4SPLL	TI(max)	$0.032 + 0.002 * Tr$
FD4SPLL	TE(max)	$0.035 + 0.009 * Tr$
FD4SPLL	Q(related_pin:CP)	$0.040 + 0.013 * Tr$
FD4SPLL	D(max)	$0.026 + 0.008 * Tr$
FD4SPLL	CP(max)	$0.026 + 0.012 * Tr$
FD4SPLL	SD(max)	$0.016 + 0.014 * Tr$
FD4SPLL	TI(max)	$0.031 + 0.002 * Tr$
FD4SPLL	TE(max)	$0.035 + 0.010 * Tr$
FD4SPLLX4	Q(related_pin:CP)	$0.065 + 0.013 * Tr$
FD4SPLLX4	D(max)	$0.026 + 0.008 * Tr$
FD4SPLLX4	CP(max)	$0.026 + 0.012 * Tr$
FD4SPLLX4	SD(max)	$0.017 + 0.014 * Tr$
FD4SPLLX4	TI(max)	$0.031 + 0.002 * Tr$
FD4SPLLX4	TE(max)	$0.035 + 0.010 * Tr$

FD4SQNLL
FD4SQNLLP
FD4SQNLLX4

Function: Function = Scan D Flip-Flop with 1 Phase Positive Edge Triggered Clock, Preset Active Low, QN Output Only



Truth Table

IQ	QN
IQ	!IQ

Truth Table

D	CP	SD	TI	TE	IQ	IQ
-	-	0	-	-	-	1
D	/	1	-	0	-	D
-	/	1	TI	1	-	TI
-	-	1	-	-	IQ	IQ

Physical Dimensions

Property	FD4SQNLL	FD4SQNLLP	FD4SQNLLX4
Area(um2)	42.361	42.361	44.378

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4SQNLL	TE Input Cap.	0.0045	0.0040	0.0042
FD4SQNLL	QN Max Load	0.160	0.160	0.160
FD4SQNLL	SD Input Cap.	0.0028	0.0022	0.0023
FD4SQNLL	CP Input Cap.	0.0032	0.0027	0.0029
FD4SQNLL	TI Input Cap.	0.0017	0.0015	0.0016

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4SQNLL	D Input Cap.	0.0029	0.0027	0.0028
FD4SQNLLP	CP Input Cap.	0.0032	0.0027	0.0029
FD4SQNLLP	TI Input Cap.	0.0017	0.0015	0.0016
FD4SQNLLP	D Input Cap.	0.0028	0.0026	0.0027
FD4SQNLLP	TE Input Cap.	0.0045	0.0040	0.0042
FD4SQNLLP	QN Max Load	0.320	0.320	0.320
FD4SQNLLP	SD Input Cap.	0.0028	0.0022	0.0023
FD4SQNLLX4	CP Input Cap.	0.0032	0.0027	0.0029
FD4SQNLLX4	TI Input Cap.	0.0017	0.0015	0.0016
FD4SQNLLX4	TE Input Cap.	0.0043	0.0039	0.0041
FD4SQNLLX4	QN Max Load	0.640	0.640	0.640
FD4SQNLLX4	SD Input Cap.	0.0028	0.0022	0.0023
FD4SQNLLX4	D Input Cap.	0.0026	0.0025	0.0025

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4SQNLL	SD-QN	SD_QN (fall)	0.118 + 0.260*Tr + 1.179*C	0.329 + 0.271*Tr + 2.677*C	0.201 + 0.269*Tr + 1.663*C
FD4SQNLL	CP-QN	CP_QN (fall)	0.117 + 0.120*Tr + 1.178*C	0.282 + 0.183*Tr + 2.673*C	0.179 + 0.151*Tr + 1.663*C
FD4SQNLL	CP-QN	CP_QN (rise)	0.108 + 0.118*Tr + 1.668*C	0.269 + 0.180*Tr + 3.467*C	0.166 + 0.148*Tr + 2.405*C
FD4SQNLLP	SD-QN	SD_QN (fall)	0.121 + 0.260*Tr + 0.619*C	0.338 + 0.272*Tr + 1.369*C	0.208 + 0.269*Tr + 0.863*C
FD4SQNLLP	CP-QN	CP_QN (fall)	0.121 + 0.120*Tr + 0.619*C	0.289 + 0.183*Tr + 1.368*C	0.184 + 0.151*Tr + 0.863*C
FD4SQNLLP	CP-QN	CP_QN (rise)	0.122 + 0.119*Tr + 0.835*C	0.303 + 0.180*Tr + 1.730*C	0.187 + 0.149*Tr + 1.198*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4SQNLLX4	SD-QN	SD_QN (fall)	0.141 + 0.261*Tr + 0.321*C	0.384 + 0.272*Tr + 0.711*C	0.238 + 0.270*Tr + 0.449*C
FD4SQNLLX4	CP-QN	CP_QN (fall)	0.140 + 0.120*Tr + 0.321*C	0.331 + 0.183*Tr + 0.711*C	0.213 + 0.150*Tr + 0.449*C
FD4SQNLLX4	CP-QN	CP_QN (rise)	0.149 + 0.119*Tr + 0.424*C	0.365 + 0.180*Tr + 0.894*C	0.225 + 0.149*Tr + 0.613*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4SQNLL	D_CP_HOLD (fall)	-0.004 + 0.075*Tr(CP)	-0.019 + 0.121*Tr(CP)	0.040 - 0.047*Tr(D) + 0.047*Tr(CP)
FD4SQNLL	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.003 + 0.025*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD4SQNLL	D_CP_SETUP (fall)	0.125 - 0.118*Tr(CP) + 0.191*Tr(D)	0.356 - 0.196*Tr(CP) + 0.169*Tr(D)	0.227 - 0.157*Tr(CP) + 0.174*Tr(D)
FD4SQNLL	D_CP_SETUP (rise)	0.067 - 0.078*Tr(CP) + 0.190*Tr(D)	0.191 - 0.130*Tr(CP) + 0.255*Tr(D)	0.138 - 0.102*Tr(CP) + 0.206*Tr(D)
FD4SQNLL	Pulse Width High CP	0.035	0.110	0.065
FD4SQNLL	Pulse Width Low CP	0.125	0.705	0.420
FD4SQNLL	Pulse Width Low SD	0.060	0.180	0.110
FD4SQNLL	SD_CP_RECOVERY (rise)	0.065 + 0.195*Tr(SD)	0.198 + 0.267*Tr(SD)	0.099 + 0.228*Tr(SD)
FD4SQNLL	SD_CP_REMOVAL (rise)	0.051 + 0.116*Tr(CP)	0.105 + 0.180*Tr(CP)	0.054 + 0.154*Tr(CP)
FD4SQNLL	TE_CP_HOLD (fall)	-0.004 + 0.075*Tr(CP)	-0.018 + 0.118*Tr(CP)	0.004 + 0.094*Tr(CP)
FD4SQNLL	TE_CP_HOLD (rise)	0.005	0.005	0.005
FD4SQNLL	TE_CP_SETUP (fall)	0.132 + 0.240*Tr(TE)	0.379 + 0.214*Tr(TE)	0.219 + 0.231*Tr(TE)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4SQNLL	TE_CP_SETUP (rise)	0.258 + 0.173*Tr(TE)	0.718 + 0.225*Tr(TE)	0.419 + 0.211*Tr(TE)
FD4SQNLL	TI_CP_HOLD (fall)	0.005	0.005	0.005
FD4SQNLL	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD4SQNLL	TI_CP_SETUP (fall)	0.253 + 0.241*Tr(TI)	0.709 + 0.243*Tr(TI)	0.414 + 0.241*Tr(TI)
FD4SQNLL	TI_CP_SETUP (rise)	0.132 + 0.192*Tr(TI)	0.433 + 0.255*Tr(TI)	0.219 + 0.224*Tr(TI)
FD4SQNLLP	D_CP_HOLD (fall)	-0.004 + 0.075*Tr(CP)	-0.019 + 0.119*Tr(CP)	0.040 - 0.047*Tr(D) + 0.047*Tr(CP)
FD4SQNLLP	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.004 + 0.027*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD4SQNLLP	D_CP_SETUP (fall)	0.125 - 0.122*Tr(CP) + 0.200*Tr(D)	0.356 - 0.198*Tr(CP) + 0.176*Tr(D)	0.231 - 0.159*Tr(CP) + 0.179*Tr(D)
FD4SQNLLP	D_CP_SETUP (rise)	0.067 - 0.080*Tr(CP) + 0.187*Tr(D)	0.189 - 0.129*Tr(CP) + 0.251*Tr(D)	0.137 - 0.100*Tr(CP) + 0.201*Tr(D)
FD4SQNLLP	Pulse Width High CP	0.035	0.125	0.075
FD4SQNLLP	Pulse Width Low CP	0.120	0.700	0.420
FD4SQNLLP	Pulse Width Low SD	0.060	0.185	0.110
FD4SQNLLP	SD_CP_RECOVERY (rise)	0.067 + 0.193*Tr(SD)	0.191 + 0.268*Tr(SD)	0.099 + 0.228*Tr(SD)
FD4SQNLLP	SD_CP_REMOVAL (rise)	0.051 + 0.116*Tr(CP)	0.107 + 0.179*Tr(CP)	0.054 + 0.154*Tr(CP)
FD4SQNLLP	TE_CP_HOLD (fall)	-0.004 + 0.075*Tr(CP)	-0.020 + 0.119*Tr(CP)	0.004 + 0.094*Tr(CP)
FD4SQNLLP	TE_CP_HOLD (rise)	0.005	0.005	0.005
FD4SQNLLP	TE_CP_SETUP (fall)	0.137 + 0.213*Tr(TE)	0.388 + 0.179*Tr(TE)	0.219 + 0.207*Tr(TE)
FD4SQNLLP	TE_CP_SETUP (rise)	0.261 + 0.164*Tr(TE)	0.718 + 0.220*Tr(TE)	0.419 + 0.201*Tr(TE)
FD4SQNLLP	TI_CP_HOLD (fall)	0.005	0.005	0.005
FD4SQNLLP	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD4SQNLLP	TI_CP_SETUP (fall)	0.254 + 0.239*Tr(TI)	0.702 + 0.242*Tr(TI)	0.414 + 0.241*Tr(TI)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD4SQNLLP	TI_CP_SETUP (rise)	0.133 + 0.187*Tr(TI)	0.430 + 0.254*Tr(TI)	0.214 + 0.224*Tr(TI)
FD4SQNLLX4	D_CP_HOLD (fall)	-0.004 + 0.074*Tr(CP)	-0.020 + 0.116*Tr(CP)	0.040 - 0.047*Tr(D) + 0.047*Tr(CP)
FD4SQNLLX4	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.003 + 0.025*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD4SQNLLX4	D_CP_SETUP (fall)	0.127 - 0.131*Tr(CP) + 0.203*Tr(D)	0.356 - 0.201*Tr(CP) + 0.182*Tr(D)	0.232 - 0.161*Tr(CP) + 0.184*Tr(D)
FD4SQNLLX4	D_CP_SETUP (rise)	0.067 - 0.078*Tr(CP) + 0.186*Tr(D)	0.192 - 0.130*Tr(CP) + 0.252*Tr(D)	0.137 - 0.100*Tr(CP) + 0.201*Tr(D)
FD4SQNLLX4	Pulse Width High CP	0.035	0.155	0.095
FD4SQNLLX4	Pulse Width Low CP	0.120	0.695	0.415
FD4SQNLLX4	Pulse Width Low SD	0.060	0.200	0.120
FD4SQNLLX4	SD_CP_RECOVERY (rise)	0.055 + 0.202*Tr(SD)	0.184 + 0.265*Tr(SD)	0.089 + 0.228*Tr(SD)
FD4SQNLLX4	SD_CP_REMOVAL (rise)	0.051 + 0.116*Tr(CP)	0.107 + 0.179*Tr(CP)	0.054 + 0.154*Tr(CP)
FD4SQNLLX4	TE_CP_HOLD (fall)	-0.004 + 0.074*Tr(CP)	-0.020 + 0.112*Tr(CP)	0.004 + 0.094*Tr(CP)
FD4SQNLLX4	TE_CP_HOLD (rise)	0.005	0.005	0.005
FD4SQNLLX4	TE_CP_SETUP (fall)	0.135 + 0.216*Tr(TE)	0.387 + 0.184*Tr(TE)	0.219 + 0.207*Tr(TE)
FD4SQNLLX4	TE_CP_SETUP (rise)	0.247 + 0.167*Tr(TE)	0.706 + 0.217*Tr(TE)	0.409 + 0.197*Tr(TE)
FD4SQNLLX4	TI_CP_HOLD (fall)	0.005	0.005	0.005
FD4SQNLLX4	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD4SQNLLX4	TI_CP_SETUP (fall)	0.242 + 0.246*Tr(TI)	0.689 + 0.243*Tr(TI)	0.404 + 0.244*Tr(TI)
FD4SQNLLX4	TI_CP_SETUP (rise)	0.128 + 0.191*Tr(TI)	0.425 + 0.254*Tr(TI)	0.214 + 0.221*Tr(TI)

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD4SQNLL	13156.800	245962.000
FD4SQNLLP	14473.000	278368.000
FD4SQNLLX4	17260.600	342777.000

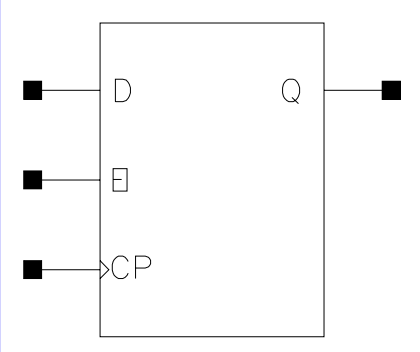
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD4SQNLL	QN(related_pin:CP)	$0.033 + 0.013 * Tr$
FD4SQNLL	D(max)	$0.024 + 0.008 * Tr$
FD4SQNLL	CP(max)	$0.027 + 0.012 * Tr$
FD4SQNLL	SD(max)	$0.015 + 0.013 * Tr$
FD4SQNLL	TI(max)	$0.030 + 0.002 * Tr$
FD4SQNLL	TE(max)	$0.033 + 0.009 * Tr$
FD4SQNLLP	QN(related_pin:CP)	$0.041 + 0.012 * Tr$
FD4SQNLLP	D(max)	$0.024 + 0.008 * Tr$
FD4SQNLLP	CP(max)	$0.027 + 0.012 * Tr$
FD4SQNLLP	SD(max)	$0.015 + 0.013 * Tr$
FD4SQNLLP	TI(max)	$0.030 + 0.002 * Tr$
FD4SQNLLP	TE(max)	$0.033 + 0.010 * Tr$
FD4SQNLLX4	QN(related_pin:CP)	$0.063 + 0.012 * Tr$
FD4SQNLLX4	D(max)	$0.024 + 0.008 * Tr$
FD4SQNLLX4	CP(max)	$0.027 + 0.012 * Tr$
FD4SQNLLX4	SD(max)	$0.015 + 0.013 * Tr$
FD4SQNLLX4	TI(max)	$0.029 + 0.002 * Tr$
FD4SQNLLX4	TE(max)	$0.033 + 0.010 * Tr$

FD7QLL
FD7QLLP
FD7QLLX4

Function: Function = D Flip-Flop with 1 Phase Positive Edge Triggered Clock, Data Enable Active High, Q Output Only



Truth Table

IQ	Q
IQ	IQ

Truth Table

CP	E	D	IQ	IQ
/	0	-	IQ	IQ
/	1	D	-	D
-	-	-	IQ	IQ

Physical Dimensions

Property	FD7QLL	FD7QLLP	FD7QLLX4
Area(um2)	36.310	36.310	38.327

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7QLL	D Input Cap.	0.0039	0.0035	0.0037
FD7QLL	CP Input Cap.	0.0028	0.0023	0.0025
FD7QLL	Q Max Load	0.160	0.160	0.160
FD7QLL	E Input Cap.	0.0048	0.0043	0.0045
FD7QLLP	CP Input Cap.	0.0028	0.0023	0.0025
FD7QLLP	E Input Cap.	0.0048	0.0043	0.0045
FD7QLLP	Q Max Load	0.320	0.320	0.320
FD7QLLP	D Input Cap.	0.0039	0.0035	0.0037

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7QLLX4	D Input Cap.	0.0038	0.0034	0.0036
FD7QLLX4	CP Input Cap.	0.0028	0.0023	0.0025
FD7QLLX4	E Input Cap.	0.0048	0.0043	0.0044
FD7QLLX4	Q Max Load	0.640	0.640	0.640

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7QLL	CP-Q	CP_Q (fall)	0.085 + 0.125*Tr + 1.225*C	0.201 + 0.188*Tr + 2.786*C	0.129 + 0.156*Tr + 1.737*C
FD7QLL	CP-Q	CP_Q (rise)	0.079 + 0.124*Tr + 1.670*C	0.186 + 0.189*Tr + 3.468*C	0.119 + 0.156*Tr + 2.405*C
FD7QLLP	CP-Q	CP_Q (fall)	0.090 + 0.128*Tr + 0.645*C	0.212 + 0.191*Tr + 1.431*C	0.137 + 0.158*Tr + 0.905*C
FD7QLLP	CP-Q	CP_Q (rise)	0.083 + 0.127*Tr + 0.836*C	0.198 + 0.192*Tr + 1.725*C	0.126 + 0.158*Tr + 1.197*C
FD7QLLX4	CP-Q	CP_Q (fall)	0.109 + 0.130*Tr + 0.337*C	0.258 + 0.194*Tr + 0.748*C	0.167 + 0.161*Tr + 0.474*C
FD7QLLX4	CP-Q	CP_Q (rise)	0.095 + 0.128*Tr + 0.424*C	0.228 + 0.194*Tr + 0.886*C	0.144 + 0.160*Tr + 0.610*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7QLL	D_CP_HOLD (fall)	-0.003 + 0.069*Tr(CP)	-0.019 + 0.119*Tr(CP)	0.039 - 0.045*Tr(D) + 0.045*Tr(CP)
FD7QLL	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.003 + 0.022*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7QLL	D_CP_SETUP (fall)	0.107 - 0.140*Tr(CP) + 0.188*Tr(D)	0.277 - 0.203*Tr(CP) + 0.161*Tr(D)	0.228 - 0.174*Tr(CP) + 0.144*Tr(D)
FD7QLL	D_CP_SETUP (rise)	0.061 - 0.064*Tr(CP) + 0.146*Tr(D)	0.180 - 0.109*Tr(CP) + 0.200*Tr(D)	0.122 - 0.087*Tr(CP) + 0.164*Tr(D)
FD7QLL	E_CP_HOLD (fall)	-0.001 + 0.086*Tr(CP)	-0.017 + 0.140*Tr(CP)	0.004 + 0.107*Tr(CP)
FD7QLL	E_CP_HOLD (rise)	-0.003 + 0.063*Tr(CP)	-0.019 + 0.115*Tr(CP)	0.005 + 0.090*Tr(CP)
FD7QLL	E_CP_SETUP (fall)	0.086 + 0.274*Tr(E)	0.232 + 0.265*Tr(E)	0.124 + 0.268*Tr(E)
FD7QLL	E_CP_SETUP (rise)	0.140 + 0.127*Tr(E)	0.340 + 0.191*Tr(E)	0.204 + 0.161*Tr(E)
FD7QLL	Pulse Width High CP	0.035	0.120	0.075
FD7QLL	Pulse Width Low CP	0.095	0.365	0.235
FD7QLLP	D_CP_HOLD (fall)	-0.003 + 0.069*Tr(CP)	-0.018 + 0.118*Tr(CP)	0.040 - 0.047*Tr(D) + 0.047*Tr(CP)
FD7QLLP	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.003 + 0.025*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD7QLLP	D_CP_SETUP (fall)	0.104 - 0.146*Tr(CP) + 0.189*Tr(D)	0.274 - 0.204*Tr(CP) + 0.159*Tr(D)	0.228 - 0.174*Tr(CP) + 0.144*Tr(D)
FD7QLLP	D_CP_SETUP (rise)	0.062 - 0.066*Tr(CP) + 0.146*Tr(D)	0.187 - 0.115*Tr(CP) + 0.201*Tr(D)	0.125 - 0.090*Tr(CP) + 0.164*Tr(D)
FD7QLLP	E_CP_HOLD (fall)	-0.001 + 0.086*Tr(CP)	-0.017 + 0.142*Tr(CP)	0.004 + 0.107*Tr(CP)
FD7QLLP	E_CP_HOLD (rise)	-0.003 + 0.063*Tr(CP)	-0.020 + 0.119*Tr(CP)	0.005 + 0.090*Tr(CP)
FD7QLLP	E_CP_SETUP (fall)	0.088 + 0.271*Tr(E)	0.232 + 0.265*Tr(E)	0.129 + 0.268*Tr(E)
FD7QLLP	E_CP_SETUP (rise)	0.138 + 0.123*Tr(E)	0.340 + 0.191*Tr(E)	0.199 + 0.164*Tr(E)
FD7QLLP	Pulse Width High CP	0.040	0.130	0.090
FD7QLLP	Pulse Width Low CP	0.100	0.370	0.235

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7QLLX4	D_CP_HOLD (fall)	-0.003 + 0.069*Tr(CP)	-0.018 + 0.118*Tr(CP)	0.040 - 0.047*Tr(D) + 0.047*Tr(CP)
FD7QLLX4	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.004 + 0.028*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD7QLLX4	D_CP_SETUP (fall)	0.099 - 0.147*Tr(CP) + 0.188*Tr(D)	0.265 - 0.204*Tr(CP) + 0.156*Tr(D)	0.220 - 0.171*Tr(CP) + 0.144*Tr(D)
FD7QLLX4	D_CP_SETUP (rise)	0.064 - 0.068*Tr(CP) + 0.144*Tr(D)	0.190 - 0.119*Tr(CP) + 0.199*Tr(D)	0.130 - 0.094*Tr(CP) + 0.161*Tr(D)
FD7QLLX4	E_CP_HOLD (fall)	0.000 + 0.085*Tr(CP)	-0.017 + 0.142*Tr(CP)	0.004 + 0.107*Tr(CP)
FD7QLLX4	E_CP_HOLD (rise)	-0.003 + 0.063*Tr(CP)	-0.020 + 0.116*Tr(CP)	0.005 + 0.090*Tr(CP)
FD7QLLX4	E_CP_SETUP (fall)	0.086 + 0.274*Tr(E)	0.231 + 0.263*Tr(E)	0.124 + 0.268*Tr(E)
FD7QLLX4	E_CP_SETUP (rise)	0.133 + 0.128*Tr(E)	0.330 + 0.190*Tr(E)	0.189 + 0.161*Tr(E)
FD7QLLX4	Pulse Width High CP	0.045	0.175	0.115
FD7QLLX4	Pulse Width Low CP	0.105	0.360	0.225

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD7QLL	12359.500	236827.000
FD7QLLP	13806.700	271097.000
FD7QLLX4	16952.400	339688.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD7QLL	Q(related_pin:CP)	0.037 + 0.011*Tr
FD7QLL	D(max)	0.032 + 0.009*Tr
FD7QLL	E(max)	0.032 + 0.017*Tr
FD7QLL	CP(max)	0.024 + 0.005*Tr

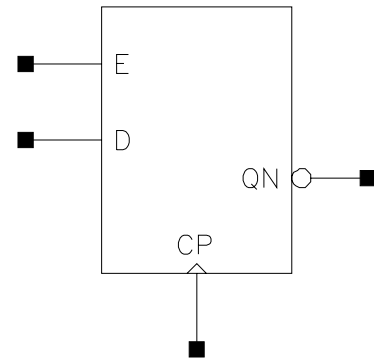
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD7QLLP	Q(related_pin:CP)	$0.046 + 0.011 * Tr$
FD7QLLP	D(max)	$0.033 + 0.009 * Tr$
FD7QLLP	E(max)	$0.033 + 0.017 * Tr$
FD7QLLP	CP(max)	$0.025 + 0.005 * Tr$
FD7QLLX4	Q(related_pin:CP)	$0.066 + 0.011 * Tr$
FD7QLLX4	D(max)	$0.033 + 0.009 * Tr$
FD7QLLX4	E(max)	$0.033 + 0.017 * Tr$
FD7QLLX4	CP(max)	$0.025 + 0.005 * Tr$

FD7QNLL
FD7QNLLP
FD7QNLLX4

Function: Function = D Flip-Flop with 1 Phase Positive Edge Triggered Clock, Data Enable Active High, QN Output Only



Truth Table

IQ	QN
IQ	!IQ

Truth Table

CP	E	D	IQ	IQ
/	0	-	IQ	IQ
/	1	D	-	D
-	-	-	IQ	IQ

Physical Dimensions

Property	FD7QNLL	FD7QNLLP	FD7QNLLX4
Area(um2)	38.327	38.327	40.344

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7QNLL	QN Max Load	0.160	0.160	0.160
FD7QNLL	CP Input Cap.	0.0028	0.0024	0.0025
FD7QNLL	E Input Cap.	0.0048	0.0043	0.0045
FD7QNLL	D Input Cap.	0.0039	0.0035	0.0037
FD7QNLLP	D Input Cap.	0.0039	0.0035	0.0037
FD7QNLLP	CP Input Cap.	0.0028	0.0024	0.0025

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7QNLLP	QN Max Load	0.320	0.320	0.320
FD7QNLLP	E Input Cap.	0.0048	0.0043	0.0045
FD7QNLLX4	E Input Cap.	0.0048	0.0043	0.0045
FD7QNLLX4	D Input Cap.	0.0039	0.0035	0.0036
FD7QNLLX4	CP Input Cap.	0.0028	0.0024	0.0025
FD7QNLLX4	QN Max Load	0.640	0.640	0.640

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7QNLL	CP-QN	CP_QN (fall)	0.120 + 0.123*Tr + 1.192*C	0.284 + 0.188*Tr + 2.701*C	0.182 + 0.154*Tr + 1.684*C
FD7QNLL	CP-QN	CP_QN (rise)	0.128 + 0.123*Tr + 1.688*C	0.312 + 0.185*Tr + 3.537*C	0.194 + 0.153*Tr + 2.439*C
FD7QNLLP	CP-QN	CP_QN (fall)	0.124 + 0.123*Tr + 0.627*C	0.293 + 0.188*Tr + 1.386*C	0.188 + 0.154*Tr + 0.876*C
FD7QNLLP	CP-QN	CP_QN (rise)	0.140 + 0.123*Tr + 0.849*C	0.340 + 0.185*Tr + 1.778*C	0.211 + 0.153*Tr + 1.223*C
FD7QNLLX4	CP-QN	CP_QN (fall)	0.146 + 0.123*Tr + 0.327*C	0.340 + 0.187*Tr + 0.725*C	0.220 + 0.154*Tr + 0.459*C
FD7QNLLX4	CP-QN	CP_QN (rise)	0.164 + 0.123*Tr + 0.432*C	0.395 + 0.186*Tr + 0.921*C	0.246 + 0.153*Tr + 0.627*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7QNLL	D_CP_HOLD (fall)	-0.003 + 0.069*Tr(CP)	-0.019 + 0.119*Tr(CP)	0.039 - 0.045*Tr(D) + 0.045*Tr(CP)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7QNLL	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.003 + 0.022*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD7QNLL	D_CP_SETUP (fall)	0.106 - 0.138*Tr(CP) + 0.188*Tr(D)	0.264 - 0.196*Tr(CP) + 0.159*Tr(D)	0.214 - 0.162*Tr(CP) + 0.152*Tr(D)
FD7QNLL	D_CP_SETUP (rise)	0.058 - 0.061*Tr(CP) + 0.148*Tr(D)	0.175 - 0.107*Tr(CP) + 0.200*Tr(D)	0.113 - 0.082*Tr(CP) + 0.166*Tr(D)
FD7QNLL	E_CP_HOLD (fall)	-0.001 + 0.086*Tr(CP)	-0.017 + 0.140*Tr(CP)	0.004 + 0.107*Tr(CP)
FD7QNLL	E_CP_HOLD (rise)	-0.003 + 0.063*Tr(CP)	-0.019 + 0.115*Tr(CP)	0.005 + 0.090*Tr(CP)
FD7QNLL	E_CP_SETUP (fall)	0.084 + 0.277*Tr(E)	0.230 + 0.264*Tr(E)	0.124 + 0.268*Tr(E)
FD7QNLL	E_CP_SETUP (rise)	0.139 + 0.125*Tr(E)	0.327 + 0.191*Tr(E)	0.194 + 0.161*Tr(E)
FD7QNLL	Pulse Width High CP	0.035	0.115	0.075
FD7QNLL	Pulse Width Low CP	0.090	0.355	0.230
FD7QNLLP	D_CP_HOLD (fall)	-0.003 + 0.069*Tr(CP)	-0.019 + 0.119*Tr(CP)	0.039 - 0.045*Tr(D) + 0.045*Tr(CP)
FD7QNLLP	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.003 + 0.022*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD7QNLLP	D_CP_SETUP (fall)	0.106 - 0.141*Tr(CP) + 0.188*Tr(D)	0.262 - 0.196*Tr(CP) + 0.157*Tr(D)	0.215 - 0.164*Tr(CP) + 0.147*Tr(D)
FD7QNLLP	D_CP_SETUP (rise)	0.058 - 0.061*Tr(CP) + 0.148*Tr(D)	0.175 - 0.107*Tr(CP) + 0.200*Tr(D)	0.118 - 0.085*Tr(CP) + 0.162*Tr(D)
FD7QNLLP	E_CP_HOLD (fall)	-0.001 + 0.086*Tr(CP)	-0.017 + 0.140*Tr(CP)	0.004 + 0.107*Tr(CP)
FD7QNLLP	E_CP_HOLD (rise)	-0.003 + 0.063*Tr(CP)	-0.019 + 0.115*Tr(CP)	0.005 + 0.090*Tr(CP)
FD7QNLLP	E_CP_SETUP (fall)	0.084 + 0.277*Tr(E)	0.230 + 0.264*Tr(E)	0.124 + 0.268*Tr(E)
FD7QNLLP	E_CP_SETUP (rise)	0.141 + 0.122*Tr(E)	0.323 + 0.192*Tr(E)	0.194 + 0.157*Tr(E)
FD7QNLLP	Pulse Width High CP	0.035	0.130	0.080

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7QNLLP	Pulse Width Low CP	0.090	0.350	0.230
FD7QNLLX4	D_CP_HOLD (fall)	-0.003 + 0.069*Tr(CP)	-0.019 + 0.119*Tr(CP)	0.039 - 0.045*Tr(D) + 0.045*Tr(CP)
FD7QNLLX4	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.003 + 0.022*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD7QNLLX4	D_CP_SETUP (fall)	0.101 - 0.139*Tr(CP) + 0.179*Tr(D)	0.253 - 0.194*Tr(CP) + 0.155*Tr(D)	0.211 - 0.162*Tr(CP) + 0.146*Tr(D)
FD7QNLLX4	D_CP_SETUP (rise)	0.058 - 0.061*Tr(CP) + 0.147*Tr(D)	0.175 - 0.107*Tr(CP) + 0.199*Tr(D)	0.115 - 0.084*Tr(CP) + 0.164*Tr(D)
FD7QNLLX4	E_CP_HOLD (fall)	-0.001 + 0.086*Tr(CP)	-0.017 + 0.140*Tr(CP)	0.004 + 0.107*Tr(CP)
FD7QNLLX4	E_CP_HOLD (rise)	-0.003 + 0.063*Tr(CP)	-0.019 + 0.115*Tr(CP)	0.005 + 0.090*Tr(CP)
FD7QNLLX4	E_CP_SETUP (fall)	0.084 + 0.277*Tr(E)	0.230 + 0.264*Tr(E)	0.124 + 0.268*Tr(E)
FD7QNLLX4	E_CP_SETUP (rise)	0.129 + 0.125*Tr(E)	0.318 + 0.192*Tr(E)	0.184 + 0.164*Tr(E)
FD7QNLLX4	Pulse Width High CP	0.035	0.155	0.095
FD7QNLLX4	Pulse Width Low CP	0.090	0.340	0.220

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD7QNLL	12451.600	239260.000
FD7QNLLP	13817.200	271188.000
FD7QNLLX4	16902.700	337892.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD7QNLL	QN(related_pin:CP)	0.039 + 0.011*Tr
FD7QNLL	D(max)	0.031 + 0.009*Tr

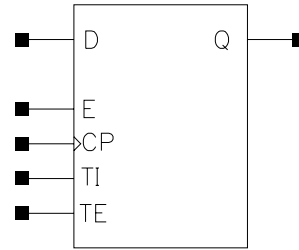
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD7QNLL	E(max)	$0.031 + 0.017 * Tr$
FD7QNLL	CP(max)	$0.023 + 0.005 * Tr$
FD7QNLLP	QN(related_pin:CP)	$0.048 + 0.011 * Tr$
FD7QNLLP	D(max)	$0.031 + 0.009 * Tr$
FD7QNLLP	E(max)	$0.031 + 0.017 * Tr$
FD7QNLLP	CP(max)	$0.023 + 0.005 * Tr$
FD7QNLLX4	QN(related_pin:CP)	$0.071 + 0.011 * Tr$
FD7QNLLX4	D(max)	$0.031 + 0.009 * Tr$
FD7QNLLX4	E(max)	$0.031 + 0.017 * Tr$
FD7QNLLX4	CP(max)	$0.023 + 0.005 * Tr$

FD7SQLL
FD7SQLLP
FD7SQLLX4

Function: Function = Scan D Flip-Flop with 1 Phase Positive Edge Triggered Clock, Data Enable Active High, Q Output Only



Truth Table

IQ	Q
IQ	IQ

Truth Table

CP	TE	TI	E	D	IQ	IQ
/	0	-	1	D	-	D
/	1	0	-	-	1	0
/	-	0	-	0	0	0
/	-	0	0	-	0	0
/	0	-	0	-	IQ	IQ
/	1	1	-	-	-	1
/	1	0	1	1	-	0
-	-	-	-	-	IQ	IQ

Physical Dimensions

Property	FD7SQLL	FD7SQLLP	FD7SQLLX4
Area(um2)	44.378	44.378	46.396

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7SQLL	TE Input Cap.	0.0043	0.0037	0.0039
FD7SQLL	D Input Cap.	0.0034	0.0031	0.0033
FD7SQLL	E Input Cap.	0.0049	0.0045	0.0046

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7SPLL	Q Max Load	0.160	0.160	0.160
FD7SPLL	CP Input Cap.	0.0033	0.0028	0.0030
FD7SPLL	TI Input Cap.	0.0018	0.0016	0.0017
FD7SPLL	TE Input Cap.	0.0043	0.0037	0.0039
FD7SPLL	D Input Cap.	0.0034	0.0031	0.0033
FD7SPLL	Q Max Load	0.320	0.320	0.320
FD7SPLL	E Input Cap.	0.0049	0.0045	0.0046
FD7SPLL	CP Input Cap.	0.0033	0.0028	0.0030
FD7SPLL	TI Input Cap.	0.0018	0.0016	0.0017
FD7SPLL	TE Input Cap.	0.0043	0.0037	0.0039
FD7SPLL	CP Input Cap.	0.0033	0.0028	0.0030
FD7SPLL	D Input Cap.	0.0034	0.0031	0.0033
FD7SPLL	TI Input Cap.	0.0018	0.0016	0.0017
FD7SPLL	Q Max Load	0.640	0.640	0.640
FD7SPLL	E Input Cap.	0.0049	0.0045	0.0046

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7SPLL	CP-Q	CP_Q (fall)	0.076 + 0.120*Tr + 1.205*C	0.179 + 0.182*Tr + 2.737*C	0.115 + 0.150*Tr + 1.704*C
FD7SPLL	CP-Q	CP_Q (rise)	0.076 + 0.121*Tr + 1.670*C	0.181 + 0.185*Tr + 3.471*C	0.115 + 0.152*Tr + 2.406*C
FD7SPLL	CP-Q	CP_Q (fall)	0.087 + 0.122*Tr + 0.645*C	0.206 + 0.184*Tr + 1.431*C	0.133 + 0.152*Tr + 0.904*C
FD7SPLL	CP-Q	CP_Q (rise)	0.081 + 0.122*Tr + 0.835*C	0.192 + 0.185*Tr + 1.726*C	0.122 + 0.153*Tr + 1.197*C
FD7SPLL	CP-Q	CP_Q (fall)	0.111 + 0.124*Tr + 0.343*C	0.266 + 0.186*Tr + 0.761*C	0.172 + 0.154*Tr + 0.483*C
FD7SPLL	CP-Q	CP_Q (rise)	0.093 + 0.123*Tr + 0.423*C	0.223 + 0.187*Tr + 0.885*C	0.141 + 0.154*Tr + 0.609*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7SPLL	D_CP_HOLD (fall)	0.004 + 0.005*Tr(CP)	-0.006 + 0.031*Tr(CP)	0.016 - 0.015*Tr(D) + 0.015*Tr(CP)
FD7SPLL	D_CP_HOLD (rise)	0.005	0.005	0.005
FD7SPLL	D_CP_SETUP (fall)	0.137 - 0.095*Tr(CP) + 0.202*Tr(D)	0.355 - 0.175*Tr(CP) + 0.187*Tr(D)	0.237 - 0.141*Tr(CP) + 0.197*Tr(D)
FD7SPLL	D_CP_SETUP (rise)	0.105 - 0.078*Tr(CP) + 0.183*Tr(D)	0.333 - 0.136*Tr(CP) + 0.238*Tr(D)	0.193 - 0.115*Tr(CP) + 0.212*Tr(D)
FD7SPLL	E_CP_HOLD (fall)	0.001 + 0.024*Tr(CP)	-0.011 + 0.055*Tr(CP)	0.005 + 0.050*Tr(CP)
FD7SPLL	E_CP_HOLD (rise)	0.005	-0.003 + 0.022*Tr(CP)	0.005 + 0.023*Tr(CP)
FD7SPLL	E_CP_SETUP (fall)	0.128 + 0.271*Tr(E)	0.362 + 0.265*Tr(E)	0.194 + 0.268*Tr(E)
FD7SPLL	E_CP_SETUP (rise)	0.168 + 0.145*Tr(E)	0.414 + 0.223*Tr(E)	0.249 + 0.187*Tr(E)
FD7SPLL	Pulse Width High CP	0.035	0.100	0.065
FD7SPLL	Pulse Width Low CP	0.095	0.340	0.215
FD7SPLL	TE_CP_HOLD (fall)	-0.003 + 0.057*Tr(CP)	-0.018 + 0.106*Tr(CP)	0.005 + 0.084*Tr(CP)
FD7SPLL	TE_CP_HOLD (rise)	0.005	0.005	0.005
FD7SPLL	TE_CP_SETUP (fall)	0.117 + 0.276*Tr(TE)	0.325 + 0.285*Tr(TE)	0.179 + 0.268*Tr(TE)
FD7SPLL	TE_CP_SETUP (rise)	0.185 + 0.196*Tr(TE)	0.493 + 0.298*Tr(TE)	0.304 + 0.241*Tr(TE)
FD7SPLL	TI_CP_HOLD (fall)	0.005	0.005	0.005
FD7SPLL	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD7SPLL	TI_CP_SETUP (fall)	0.183 + 0.274*Tr(TI)	0.488 + 0.276*Tr(TI)	0.293 + 0.274*Tr(TI)
FD7SPLL	TI_CP_SETUP (rise)	0.135 + 0.211*Tr(TI)	0.417 + 0.285*Tr(TI)	0.214 + 0.244*Tr(TI)
FD7SPLL	D_CP_HOLD (fall)	0.004 + 0.005*Tr(CP)	-0.006 + 0.031*Tr(CP)	0.016 - 0.015*Tr(D) + 0.015*Tr(CP)
FD7SPLL	D_CP_HOLD (rise)	0.005	0.005	0.005

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7SQLLP	D_CP_SETUP (fall)	0.134 - 0.118*Tr(CP) + 0.200*Tr(D)	0.351 - 0.189*Tr(CP) + 0.187*Tr(D)	0.240 - 0.161*Tr(CP) + 0.191*Tr(D)
FD7SQLLP	D_CP_SETUP (rise)	0.106 - 0.078*Tr(CP) + 0.182*Tr(D)	0.335 - 0.137*Tr(CP) + 0.238*Tr(D)	0.198 - 0.119*Tr(CP) + 0.212*Tr(D)
FD7SQLLP	E_CP_HOLD (fall)	0.001 + 0.024*Tr(CP)	-0.012 + 0.058*Tr(CP)	0.005 + 0.050*Tr(CP)
FD7SQLLP	E_CP_HOLD (rise)	0.005	-0.003 + 0.022*Tr(CP)	0.005 + 0.023*Tr(CP)
FD7SQLLP	E_CP_SETUP (fall)	0.128 + 0.271*Tr(E)	0.358 + 0.267*Tr(E)	0.194 + 0.268*Tr(E)
FD7SQLLP	E_CP_SETUP (rise)	0.161 + 0.155*Tr(E)	0.410 + 0.223*Tr(E)	0.244 + 0.191*Tr(E)
FD7SQLLP	Pulse Width High CP	0.040	0.135	0.090
FD7SQLLP	Pulse Width Low CP	0.095	0.340	0.215
FD7SQLLP	TE_CP_HOLD (fall)	-0.003 + 0.063*Tr(CP)	-0.019 + 0.108*Tr(CP)	0.005 + 0.084*Tr(CP)
FD7SQLLP	TE_CP_HOLD (rise)	0.005	0.005	0.005
FD7SQLLP	TE_CP_SETUP (fall)	0.114 + 0.279*Tr(TE)	0.326 + 0.284*Tr(TE)	0.179 + 0.268*Tr(TE)
FD7SQLLP	TE_CP_SETUP (rise)	0.177 + 0.209*Tr(TE)	0.491 + 0.300*Tr(TE)	0.304 + 0.241*Tr(TE)
FD7SQLLP	TI_CP_HOLD (fall)	0.005	0.005	0.005
FD7SQLLP	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD7SQLLP	TI_CP_SETUP (fall)	0.181 + 0.270*Tr(TI)	0.485 + 0.275*Tr(TI)	0.293 + 0.271*Tr(TI)
FD7SQLLP	TI_CP_SETUP (rise)	0.135 + 0.211*Tr(TI)	0.418 + 0.286*Tr(TI)	0.214 + 0.248*Tr(TI)
FD7SQLLX4	D_CP_HOLD (fall)	0.003 + 0.010*Tr(CP)	-0.006 + 0.034*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD7SQLLX4	D_CP_HOLD (rise)	0.005	0.005	0.005
FD7SQLLX4	D_CP_SETUP (fall)	0.125 - 0.122*Tr(CP) + 0.203*Tr(D)	0.329 - 0.193*Tr(CP) + 0.186*Tr(D)	0.224 - 0.152*Tr(CP) + 0.189*Tr(D)
FD7SQLLX4	D_CP_SETUP (rise)	0.106 - 0.079*Tr(CP) + 0.182*Tr(D)	0.335 - 0.137*Tr(CP) + 0.239*Tr(D)	0.198 - 0.119*Tr(CP) + 0.212*Tr(D)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7SQLLX4	E_CP_HOLD (fall)	0.000 + 0.029*Tr(CP)	-0.012 + 0.061*Tr(CP)	0.005 + 0.050*Tr(CP)
FD7SQLLX4	E_CP_HOLD (rise)	0.005	-0.003 + 0.022*Tr(CP)	0.005 + 0.023*Tr(CP)
FD7SQLLX4	E_CP_SETUP (fall)	0.128 + 0.271*Tr(E)	0.357 + 0.265*Tr(E)	0.194 + 0.268*Tr(E)
FD7SQLLX4	E_CP_SETUP (rise)	0.149 + 0.165*Tr(E)	0.385 + 0.240*Tr(E)	0.229 + 0.201*Tr(E)
FD7SQLLX4	Pulse Width High CP	0.045	0.200	0.130
FD7SQLLX4	Pulse Width Low CP	0.095	0.320	0.200
FD7SQLLX4	TE_CP_HOLD (fall)	-0.003 + 0.063*Tr(CP)	-0.018 + 0.109*Tr(CP)	0.005 + 0.084*Tr(CP)
FD7SQLLX4	TE_CP_HOLD (rise)	0.005	0.005	0.005
FD7SQLLX4	TE_CP_SETUP (fall)	0.102 + 0.289*Tr(TE)	0.327 + 0.284*Tr(TE)	0.163 + 0.278*Tr(TE)
FD7SQLLX4	TE_CP_SETUP (rise)	0.168 + 0.219*Tr(TE)	0.464 + 0.316*Tr(TE)	0.289 + 0.251*Tr(TE)
FD7SQLLX4	TI_CP_HOLD (fall)	0.005	0.005	0.005
FD7SQLLX4	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD7SQLLX4	TI_CP_SETUP (fall)	0.171 + 0.272*Tr(TI)	0.463 + 0.273*Tr(TI)	0.273 + 0.274*Tr(TI)
FD7SQLLX4	TI_CP_SETUP (rise)	0.135 + 0.211*Tr(TI)	0.421 + 0.284*Tr(TI)	0.214 + 0.248*Tr(TI)

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD7SPLL	15206.100	287984.000
FD7SPLL	16523.100	318698.000
FD7SPLLX4	19609.100	385689.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD7SPLL	Q(related_pin:CP)	0.040 + 0.013*Tr

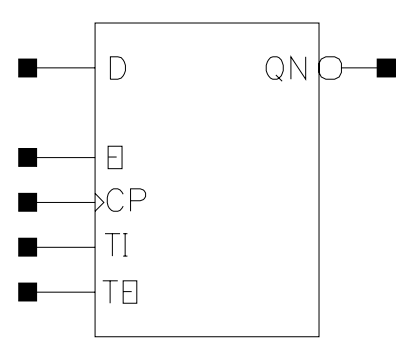
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD7SPLL	D(max)	$0.041 + 0.008 * Tr$
FD7SPLL	E(max)	$0.041 + 0.016 * Tr$
FD7SPLL	CP(max)	$0.018 + 0.012 * Tr$
FD7SPLL	TI(max)	$0.029 + 0.004 * Tr$
FD7SPLL	TE(max)	$0.037 + 0.007 * Tr$
FD7SPLL	Q(related_pin:CP)	$0.047 + 0.013 * Tr$
FD7SPLL	D(max)	$0.041 + 0.008 * Tr$
FD7SPLL	E(max)	$0.041 + 0.016 * Tr$
FD7SPLL	CP(max)	$0.018 + 0.012 * Tr$
FD7SPLL	TI(max)	$0.029 + 0.004 * Tr$
FD7SPLL	TE(max)	$0.037 + 0.007 * Tr$
FD7SPLL	Q(related_pin:CP)	$0.069 + 0.013 * Tr$
FD7SPLL	D(max)	$0.041 + 0.008 * Tr$
FD7SPLL	E(max)	$0.041 + 0.016 * Tr$
FD7SPLL	CP(max)	$0.018 + 0.012 * Tr$
FD7SPLL	TI(max)	$0.029 + 0.004 * Tr$
FD7SPLL	TE(max)	$0.037 + 0.007 * Tr$

FD7SQNLL
FD7SQNLLP
FD7SQNLLX4

Function: Function = Scan D Flip-Flop with 1 Phase Positive Edge Triggered Clock, Data Enable Active High, QN Output Only



Truth Table

IQ	QN
IQ	!IQ

Truth Table

CP	TE	TI	E	D	IQ	IQ
/	0	-	1	D	-	D
/	0	-	0	-	IQ	IQ
/	1	TI	-	-	-	TI
-	-	-	-	-	IQ	IQ

Physical Dimensions

Property	FD7SQNLL	FD7SQNLLP	FD7SQNLLX4
Area(um ²)	46.396	46.396	48.413

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7SQNLL	TE Input Cap.	0.0043	0.0037	0.0039
FD7SQNLL	QN Max Load	0.160	0.160	0.160
FD7SQNLL	D Input Cap.	0.0034	0.0031	0.0033
FD7SQNLL	CP Input Cap.	0.0033	0.0028	0.0030
FD7SQNLL	TI Input Cap.	0.0018	0.0016	0.0017
FD7SQNLL	E Input Cap.	0.0049	0.0045	0.0046
FD7SQNLLP	TE Input Cap.	0.0043	0.0037	0.0039

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7SQNLLP	QN Max Load	0.320	0.320	0.320
FD7SQNLLP	D Input Cap.	0.0034	0.0031	0.0033
FD7SQNLLP	CP Input Cap.	0.0033	0.0028	0.0030
FD7SQNLLP	TI Input Cap.	0.0018	0.0016	0.0017
FD7SQNLLP	E Input Cap.	0.0049	0.0045	0.0046
FD7SQNLLX4	CP Input Cap.	0.0033	0.0028	0.0030
FD7SQNLLX4	TI Input Cap.	0.0018	0.0016	0.0017
FD7SQNLLX4	D Input Cap.	0.0034	0.0031	0.0033
FD7SQNLLX4	TE Input Cap.	0.0043	0.0037	0.0039
FD7SQNLLX4	E Input Cap.	0.0049	0.0045	0.0046
FD7SQNLLX4	QN Max Load	0.640	0.640	0.640

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7SQNLL	CP-QN	CP_QN (fall)	$0.114 + 0.121*Tr + 1.182*C$	$0.278 + 0.184*Tr + 2.684*C$	$0.178 + 0.151*Tr + 1.672*C$
FD7SQNLL	CP-QN	CP_QN (rise)	$0.124 + 0.117*Tr + 1.686*C$	$0.303 + 0.178*Tr + 3.539*C$	$0.188 + 0.147*Tr + 2.436*C$
FD7SQNLLP	CP-QN	CP_QN (fall)	$0.123 + 0.121*Tr + 0.628*C$	$0.297 + 0.184*Tr + 1.392*C$	$0.191 + 0.151*Tr + 0.880*C$
FD7SQNLLP	CP-QN	CP_QN (rise)	$0.133 + 0.117*Tr + 0.848*C$	$0.325 + 0.179*Tr + 1.781*C$	$0.202 + 0.148*Tr + 1.222*C$
FD7SQNLLX4	CP-QN	CP_QN (fall)	$0.143 + 0.121*Tr + 0.326*C$	$0.342 + 0.184*Tr + 0.727*C$	$0.222 + 0.151*Tr + 0.461*C$
FD7SQNLLX4	CP-QN	CP_QN (rise)	$0.156 + 0.117*Tr + 0.432*C$	$0.376 + 0.179*Tr + 0.923*C$	$0.234 + 0.148*Tr + 0.627*C$

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7SQNLL	D_CP_HOLD (fall)	0.004 + 0.005*Tr(CP)	-0.006 + 0.031*Tr(CP)	0.016 - 0.015*Tr(D) + 0.015*Tr(CP)
FD7SQNLL	D_CP_HOLD (rise)	0.005	0.005	0.005
FD7SQNLL	D_CP_SETUP (fall)	0.132 - 0.097*Tr(CP) + 0.200*Tr(D)	0.340 - 0.176*Tr(CP) + 0.186*Tr(D)	0.228 - 0.146*Tr(CP) + 0.196*Tr(D)
FD7SQNLL	D_CP_SETUP (rise)	0.103 - 0.076*Tr(CP) + 0.182*Tr(D)	0.327 - 0.134*Tr(CP) + 0.238*Tr(D)	0.188 - 0.112*Tr(CP) + 0.212*Tr(D)
FD7SQNLL	E_CP_HOLD (fall)	0.001 + 0.024*Tr(CP)	-0.012 + 0.058*Tr(CP)	0.005 + 0.050*Tr(CP)
FD7SQNLL	E_CP_HOLD (rise)	0.005	-0.003 + 0.022*Tr(CP)	0.005 + 0.023*Tr(CP)
FD7SQNLL	E_CP_SETUP (fall)	0.125 + 0.273*Tr(E)	0.356 + 0.265*Tr(E)	0.188 + 0.271*Tr(E)
FD7SQNLL	E_CP_SETUP (rise)	0.162 + 0.150*Tr(E)	0.398 + 0.226*Tr(E)	0.239 + 0.187*Tr(E)
FD7SQNLL	Pulse Width High CP	0.030	0.095	0.060
FD7SQNLL	Pulse Width Low CP	0.090	0.325	0.205
FD7SQNLL	TE_CP_HOLD (fall)	-0.003 + 0.057*Tr(CP)	-0.018 + 0.106*Tr(CP)	0.005 + 0.084*Tr(CP)
FD7SQNLL	TE_CP_HOLD (rise)	0.005	0.005	0.005
FD7SQNLL	TE_CP_SETUP (fall)	0.136 + 0.255*Tr(TE)	0.395 + 0.251*Tr(TE)	0.214 + 0.248*Tr(TE)
FD7SQNLL	TE_CP_SETUP (rise)	0.176 + 0.202*Tr(TE)	0.476 + 0.300*Tr(TE)	0.294 + 0.241*Tr(TE)
FD7SQNLL	TI_CP_HOLD (fall)	0.005	0.005	0.005
FD7SQNLL	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD7SQNLL	TI_CP_SETUP (fall)	0.179 + 0.273*Tr(TI)	0.468 + 0.273*Tr(TI)	0.288 + 0.271*Tr(TI)
FD7SQNLL	TI_CP_SETUP (rise)	0.126 + 0.210*Tr(TI)	0.404 + 0.285*Tr(TI)	0.209 + 0.241*Tr(TI)
FD7SQNLLP	D_CP_HOLD (fall)	0.004 + 0.005*Tr(CP)	-0.006 + 0.031*Tr(CP)	0.016 - 0.015*Tr(D) + 0.015*Tr(CP)
FD7SQNLLP	D_CP_HOLD (rise)	0.005	0.005	0.005

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7SQNLLP	D_CP_SETUP (fall)	0.132 - 0.098*Tr(CP) + 0.200*Tr(D)	0.340 - 0.177*Tr(CP) + 0.186*Tr(D)	0.225 - 0.147*Tr(CP) + 0.197*Tr(D)
FD7SQNLLP	D_CP_SETUP (rise)	0.103 - 0.075*Tr(CP) + 0.183*Tr(D)	0.327 - 0.134*Tr(CP) + 0.238*Tr(D)	0.188 - 0.112*Tr(CP) + 0.212*Tr(D)
FD7SQNLLP	E_CP_HOLD (fall)	0.001 + 0.024*Tr(CP)	-0.012 + 0.059*Tr(CP)	0.005 + 0.050*Tr(CP)
FD7SQNLLP	E_CP_HOLD (rise)	0.005	-0.003 + 0.022*Tr(CP)	0.005 + 0.023*Tr(CP)
FD7SQNLLP	E_CP_SETUP (fall)	0.127 + 0.270*Tr(E)	0.356 + 0.265*Tr(E)	0.189 + 0.268*Tr(E)
FD7SQNLLP	E_CP_SETUP (rise)	0.160 + 0.153*Tr(E)	0.399 + 0.224*Tr(E)	0.239 + 0.187*Tr(E)
FD7SQNLLP	Pulse Width High CP	0.035	0.105	0.065
FD7SQNLLP	Pulse Width Low CP	0.090	0.325	0.210
FD7SQNLLP	TE_CP_HOLD (fall)	-0.003 + 0.057*Tr(CP)	-0.018 + 0.106*Tr(CP)	0.005 + 0.084*Tr(CP)
FD7SQNLLP	TE_CP_HOLD (rise)	0.005	0.005	0.005
FD7SQNLLP	TE_CP_SETUP (fall)	0.136 + 0.255*Tr(TE)	0.395 + 0.251*Tr(TE)	0.209 + 0.251*Tr(TE)
FD7SQNLLP	TE_CP_SETUP (rise)	0.176 + 0.202*Tr(TE)	0.475 + 0.300*Tr(TE)	0.294 + 0.241*Tr(TE)
FD7SQNLLP	TI_CP_HOLD (fall)	0.005	0.005	0.005
FD7SQNLLP	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD7SQNLLP	TI_CP_SETUP (fall)	0.176 + 0.276*Tr(TI)	0.468 + 0.273*Tr(TI)	0.288 + 0.271*Tr(TI)
FD7SQNLLP	TI_CP_SETUP (rise)	0.125 + 0.211*Tr(TI)	0.406 + 0.284*Tr(TI)	0.209 + 0.241*Tr(TI)
FD7SQNLLX4	D_CP_HOLD (fall)	0.004 + 0.005*Tr(CP)	-0.006 + 0.031*Tr(CP)	0.016 - 0.015*Tr(D) + 0.015*Tr(CP)
FD7SQNLLX4	D_CP_HOLD (rise)	0.005	0.005	0.005
FD7SQNLLX4	D_CP_SETUP (fall)	0.129 - 0.098*Tr(CP) + 0.202*Tr(D)	0.334 - 0.177*Tr(CP) + 0.187*Tr(D)	0.226 - 0.149*Tr(CP) + 0.196*Tr(D)
FD7SQNLLX4	D_CP_SETUP (rise)	0.103 - 0.075*Tr(CP) + 0.183*Tr(D)	0.325 - 0.134*Tr(CP) + 0.238*Tr(D)	0.184 - 0.110*Tr(CP) + 0.214*Tr(D)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD7SQNLLX4	E_CP_HOLD (fall)	0.001 + 0.024*Tr(CP)	-0.012 + 0.059*Tr(CP)	0.005 + 0.050*Tr(CP)
FD7SQNLLX4	E_CP_HOLD (rise)	0.005	-0.003 + 0.022*Tr(CP)	0.005 + 0.023*Tr(CP)
FD7SQNLLX4	E_CP_SETUP (fall)	0.124 + 0.274*Tr(E)	0.356 + 0.263*Tr(E)	0.189 + 0.268*Tr(E)
FD7SQNLLX4	E_CP_SETUP (rise)	0.159 + 0.148*Tr(E)	0.393 + 0.226*Tr(E)	0.234 + 0.191*Tr(E)
FD7SQNLLX4	Pulse Width High CP	0.035	0.130	0.080
FD7SQNLLX4	Pulse Width Low CP	0.090	0.325	0.205
FD7SQNLLX4	TE_CP_HOLD (fall)	-0.003 + 0.057*Tr(CP)	-0.018 + 0.106*Tr(CP)	0.005 + 0.084*Tr(CP)
FD7SQNLLX4	TE_CP_HOLD (rise)	0.005	0.005	0.005
FD7SQNLLX4	TE_CP_SETUP (fall)	0.136 + 0.255*Tr(TE)	0.394 + 0.250*Tr(TE)	0.209 + 0.248*Tr(TE)
FD7SQNLLX4	TE_CP_SETUP (rise)	0.178 + 0.199*Tr(TE)	0.471 + 0.300*Tr(TE)	0.289 + 0.241*Tr(TE)
FD7SQNLLX4	TI_CP_HOLD (fall)	0.005	0.005	0.005
FD7SQNLLX4	TI_CP_HOLD (rise)	0.005	0.005	0.005
FD7SQNLLX4	TI_CP_SETUP (fall)	0.181 + 0.270*Tr(TI)	0.463 + 0.273*Tr(TI)	0.283 + 0.274*Tr(TI)
FD7SQNLLX4	TI_CP_SETUP (rise)	0.125 + 0.211*Tr(TI)	0.401 + 0.284*Tr(TI)	0.204 + 0.244*Tr(TI)

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD7SQNLL	15422.400	293813.000
FD7SQNLLP	16738.900	324385.000
FD7SQNLLX4	19824.200	391091.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD7SQNLL	QN(related_pin:CP)	0.043 + 0.013*Tr

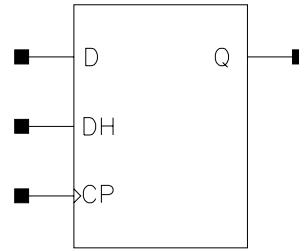
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD7SQNLL	D(max)	$0.041 + 0.008 * Tr$
FD7SQNLL	E(max)	$0.041 + 0.016 * Tr$
FD7SQNLL	CP(max)	$0.018 + 0.012 * Tr$
FD7SQNLL	TI(max)	$0.029 + 0.004 * Tr$
FD7SQNLL	TE(max)	$0.036 + 0.011 * Tr$
FD7SQNLLP	QN(related_pin:CP)	$0.051 + 0.013 * Tr$
FD7SQNLLP	D(max)	$0.041 + 0.008 * Tr$
FD7SQNLLP	E(max)	$0.041 + 0.016 * Tr$
FD7SQNLLP	CP(max)	$0.018 + 0.012 * Tr$
FD7SQNLLP	TI(max)	$0.029 + 0.004 * Tr$
FD7SQNLLP	TE(max)	$0.036 + 0.011 * Tr$
FD7SQNLLX4	QN(related_pin:CP)	$0.073 + 0.013 * Tr$
FD7SQNLLX4	D(max)	$0.041 + 0.008 * Tr$
FD7SQNLLX4	E(max)	$0.041 + 0.016 * Tr$
FD7SQNLLX4	CP(max)	$0.018 + 0.012 * Tr$
FD7SQNLLX4	TI(max)	$0.029 + 0.004 * Tr$
FD7SQNLLX4	TE(max)	$0.036 + 0.011 * Tr$

FD9QLL
FD9QLLP
FD9QLLX4

Function: D Flip-Flop with 1 Phase Positive Edge Triggered Clock, Active High Hold Mode, Q Output Only



Truth Table

D	DH	INTERN	Q
D	0	-	D
-	1	INTERN	INTERN

Truth Table

D	DH	CP	INTERN	INTERN
D	0	/	-	D
-	1	/	INTERN	INTERN
-	-	-	INTERN	INTERN

Physical Dimensions

Property	FD9QLL	FD9QLLP	FD9QLLX4
Area(um2)	40.344	40.344	42.361

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD9QLL	Q Max Load	0.160	0.160	0.160
FD9QLL	D Input Cap.	0.0063	0.0057	0.0058
FD9QLL	DH Input Cap.	0.0075	0.0075	0.0069
FD9QLL	CP Input Cap.	0.0030	0.0026	0.0027
FD9QLLP	CP Input Cap.	0.0030	0.0026	0.0027
FD9QLLP	Q Max Load	0.320	0.320	0.320
FD9QLLP	DH Input Cap.	0.0079	0.0066	0.0069
FD9QLLP	D Input Cap.	0.0062	0.0055	0.0057

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD9QLLX4	DH Input Cap.	0.0073	0.0064	0.0068
FD9QLLX4	D Input Cap.	0.0061	0.0055	0.0057
FD9QLLX4	CP Input Cap.	0.0029	0.0025	0.0027
FD9QLLX4	Q Max Load	0.640	0.640	0.640

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD9QLL	DH-Q	DH_Q (fall)	0.057 + 0.220*Tr + 1.207°C	0.245 + 0.239*Tr + 2.760°C	0.156 + 0.200*Tr + 1.718°C
FD9QLL	DH-Q	DH_Q (rise)	0.042 + 0.155*Tr + 1.690°C	0.204 + 0.246*Tr + 3.474°C	0.126 + 0.250*Tr + 2.407°C
FD9QLL	DH-Q	DH_Q_state_1 (fall) (D)	0.101 + 0.171*Tr + 1.211°C	0.245 + 0.239*Tr + 2.760°C	0.156 + 0.200*Tr + 1.718°C
FD9QLL	DH-Q	DH_Q_state_1 (rise) (D)	0.081 + 0.255*Tr + 1.672°C	0.204 + 0.246*Tr + 3.474°C	0.126 + 0.250*Tr + 2.407°C
FD9QLL	DH-Q	DH_Q_state_2 (fall) (!D)	0.051 + 0.247*Tr + 1.220°C	0.130 + 0.239*Tr + 2.771°C	0.081 + 0.239*Tr + 1.731°C
FD9QLL	DH-Q	DH_Q_state_2 (rise) (!D)	0.042 + 0.155*Tr + 1.690°C	0.105 + 0.221*Tr + 3.514°C	0.064 + 0.185*Tr + 2.439°C
FD9QLL	D-Q	D_Q (fall)	0.062 + 0.234*Tr + 1.217°C	0.154 + 0.224*Tr + 2.780°C	0.099 + 0.228*Tr + 1.739°C
FD9QLL	D-Q	D_Q (rise)	0.049 + 0.158*Tr + 1.684°C	0.127 + 0.219*Tr + 3.507°C	0.077 + 0.187*Tr + 2.431°C
FD9QLLP	DH-Q	DH_Q (fall)	0.063 + 0.222*Tr + 0.633°C	0.259 + 0.240*Tr + 1.420°C	0.164 + 0.201*Tr + 0.898°C
FD9QLLP	DH-Q	DH_Q (rise)	0.044 + 0.162*Tr + 0.845°C	0.208 + 0.247*Tr + 1.716°C	0.129 + 0.251*Tr + 1.193°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD9QLLP	DH-Q	DH_Q_state_1 (fall) (D)	0.108 + 0.171*Tr + 0.638*C	0.259 + 0.240*Tr + 1.420*C	0.165 + 0.200*Tr + 0.896*C
FD9QLLP	DH-Q	DH_Q_state_1 (rise) (D)	0.083 + 0.256*Tr + 0.833*C	0.208 + 0.247*Tr + 1.716*C	0.129 + 0.251*Tr + 1.193*C
FD9QLLP	DH-Q	DH_Q_state_2 (fall) (!D)	0.056 + 0.255*Tr + 0.640*C	0.140 + 0.248*Tr + 1.417*C	0.087 + 0.248*Tr + 0.900*C
FD9QLLP	DH-Q	DH_Q_state_2 (rise) (!D)	0.044 + 0.162*Tr + 0.845*C	0.110 + 0.230*Tr + 1.744*C	0.067 + 0.193*Tr + 1.214*C
FD9QLLP	D-Q	D_Q (fall)	0.066 + 0.238*Tr + 0.638*C	0.164 + 0.229*Tr + 1.424*C	0.106 + 0.232*Tr + 0.903*C
FD9QLLP	D-Q	D_Q (rise)	0.051 + 0.163*Tr + 0.841*C	0.131 + 0.224*Tr + 1.739*C	0.079 + 0.192*Tr + 1.209*C
FD9QLLX4	DH-Q	DH_Q (fall)	0.077 + 0.228*Tr + 0.327*C	0.300 + 0.240*Tr + 0.740*C	0.191 + 0.205*Tr + 0.471*C
FD9QLLX4	DH-Q	DH_Q (rise)	0.053 + 0.178*Tr + 0.425*C	0.228 + 0.249*Tr + 0.868*C	0.140 + 0.253*Tr + 0.601*C
FD9QLLX4	DH-Q	DH_Q_state_1 (fall) (D)	0.126 + 0.171*Tr + 0.331*C	0.300 + 0.240*Tr + 0.740*C	0.193 + 0.200*Tr + 0.467*C
FD9QLLX4	DH-Q	DH_Q_state_1 (rise) (D)	0.091 + 0.258*Tr + 0.419*C	0.228 + 0.249*Tr + 0.868*C	0.140 + 0.253*Tr + 0.601*C
FD9QLLX4	DH-Q	DH_Q_state_2 (fall) (!D)	0.070 + 0.268*Tr + 0.329*C	0.173 + 0.266*Tr + 0.729*C	0.109 + 0.263*Tr + 0.465*C
FD9QLLX4	DH-Q	DH_Q_state_2 (rise) (!D)	0.053 + 0.178*Tr + 0.425*C	0.131 + 0.248*Tr + 0.882*C	0.081 + 0.210*Tr + 0.612*C
FD9QLLX4	D-Q	D_Q (fall)	0.082 + 0.245*Tr + 0.328*C	0.197 + 0.238*Tr + 0.732*C	0.128 + 0.241*Tr + 0.465*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD9QLLX4	D-Q	D_Q (rise)	0.059 + 0.174*Tr + 0.423*C	0.151 + 0.235*Tr + 0.880*C	0.092 + 0.203*Tr + 0.609*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD9QLL	DH_CP_HOLD (fall)	0.002 + 0.015*Tr(CP)	-0.005 + 0.029*Tr(CP)	0.005 + 0.033*Tr(CP)
FD9QLL	DH_CP_HOLD (rise)	0.046 + 0.122*Tr(CP)	0.091 + 0.185*Tr(CP)	0.044 + 0.157*Tr(CP)
FD9QLL	DH_CP_SETUP (fall)	0.195 + 0.257*Tr(DH)	0.523 + 0.246*Tr(DH)	0.294 + 0.254*Tr(DH)
FD9QLL	DH_CP_SETUP (rise)	0.164 + 0.147*Tr(DH)	0.416 + 0.217*Tr(DH)	0.239 + 0.184*Tr(DH)
FD9QLL	D_CP_HOLD (fall)	0.005	0.000 + 0.016*Tr(CP)	0.013 - 0.010*Tr(D) + 0.010*Tr(CP)
FD9QLL	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.006 + 0.031*Tr(CP)	0.020 - 0.020*Tr(D) + 0.020*Tr(CP)
FD9QLL	D_CP_SETUP (fall)	0.101 - 0.089*Tr(CP) + 0.228*Tr(D)	0.263 - 0.144*Tr(CP) + 0.214*Tr(D)	0.183 - 0.122*Tr(CP) + 0.219*Tr(D)
FD9QLL	D_CP_SETUP (rise)	0.152 - 0.116*Tr(CP) + 0.155*Tr(D)	0.408 - 0.185*Tr(CP) + 0.213*Tr(D)	0.255 - 0.157*Tr(CP) + 0.184*Tr(D)
FD9QLL	Pulse Width High CP	0.035	0.120	0.075
FD9QLL	Pulse Width Low CP	0.100	0.425	0.255
FD9QLLP	DH_CP_HOLD (fall)	0.004 + 0.005*Tr(CP)	-0.002 + 0.020*Tr(CP)	0.005 + 0.023*Tr(CP)
FD9QLLP	DH_CP_HOLD (rise)	0.043 + 0.123*Tr(CP)	0.083 + 0.184*Tr(CP)	0.039 + 0.157*Tr(CP)
FD9QLLP	DH_CP_SETUP (fall)	0.202 + 0.255*Tr(DH)	0.535 + 0.246*Tr(DH)	0.304 + 0.254*Tr(DH)
FD9QLLP	DH_CP_SETUP (rise)	0.166 + 0.162*Tr(DH)	0.428 + 0.230*Tr(DH)	0.249 + 0.194*Tr(DH)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD9QLLP	D_CP_HOLD (fall)	0.005	0.002 + 0.009*Tr(CP)	0.009 - 0.005*Tr(D) + 0.005*Tr(CP)
FD9QLLP	D_CP_HOLD (rise)	0.002 + 0.015*Tr(CP)	-0.003 + 0.025*Tr(CP)	0.018 - 0.017*Tr(D) + 0.017*Tr(CP)
FD9QLLP	D_CP_SETUP (fall)	0.111 - 0.094*Tr(CP) + 0.233*Tr(D)	0.281 - 0.145*Tr(CP) + 0.221*Tr(D)	0.197 - 0.130*Tr(CP) + 0.228*Tr(D)
FD9QLLP	D_CP_SETUP (rise)	0.156 - 0.115*Tr(CP) + 0.161*Tr(D)	0.418 - 0.185*Tr(CP) + 0.222*Tr(D)	0.260 - 0.157*Tr(CP) + 0.194*Tr(D)
FD9QLLP	Pulse Width High CP	0.035	0.120	0.075
FD9QLLP	Pulse Width Low CP	0.100	0.425	0.255
FD9QLLX4	DH_CP_HOLD (fall)	0.005	0.003 + 0.007*Tr(CP)	0.005 + 0.010*Tr(CP)
FD9QLLX4	DH_CP_HOLD (rise)	0.038 + 0.120*Tr(CP)	0.071 + 0.185*Tr(CP)	0.034 + 0.157*Tr(CP)
FD9QLLX4	DH_CP_SETUP (fall)	0.210 + 0.257*Tr(DH)	0.556 + 0.250*Tr(DH)	0.314 + 0.258*Tr(DH)
FD9QLLX4	DH_CP_SETUP (rise)	0.176 + 0.185*Tr(DH)	0.449 + 0.253*Tr(DH)	0.259 + 0.221*Tr(DH)
FD9QLLX4	D_CP_HOLD (fall)	0.005	0.005	0.005
FD9QLLX4	D_CP_HOLD (rise)	0.004 + 0.005*Tr(CP)	0.000 + 0.016*Tr(CP)	0.015 - 0.013*Tr(D) + 0.013*Tr(CP)
FD9QLLX4	D_CP_SETUP (fall)	0.129 - 0.095*Tr(CP) + 0.243*Tr(D)	0.317 - 0.147*Tr(CP) + 0.234*Tr(D)	0.221 - 0.132*Tr(CP) + 0.239*Tr(D)
FD9QLLX4	D_CP_SETUP (rise)	0.164 - 0.117*Tr(CP) + 0.177*Tr(D)	0.438 - 0.185*Tr(CP) + 0.239*Tr(D)	0.270 - 0.157*Tr(CP) + 0.211*Tr(D)
FD9QLLX4	Pulse Width High CP	0.035	0.120	0.075
FD9QLLX4	Pulse Width Low CP	0.100	0.425	0.255

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD9QLL	15775.100	309666.000
FD9QLLP	17105.100	340561.000
FD9QLLX4	20204.200	407647.000

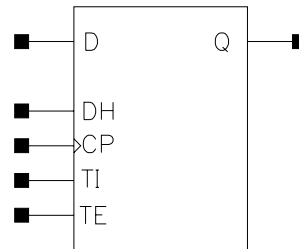
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD9QLL	Q(max)	$0.046 + 0.033 * Tr$
FD9QLL	D(max)	0.005
FD9QLL	DH(max)	$0.008 + 0.009 * Tr$
FD9QLL	CP(max)	$0.034 + 0.013 * Tr$
FD9QLLP	Q(max)	$0.053 + 0.036 * Tr$
FD9QLLP	D(max)	0.005
FD9QLLP	DH(max)	$0.008 + 0.009 * Tr$
FD9QLLP	CP(max)	$0.034 + 0.013 * Tr$
FD9QLLX4	Q(max)	$0.069 + 0.044 * Tr$
FD9QLLX4	D(max)	0.005
FD9QLLX4	DH(max)	$0.008 + 0.009 * Tr$
FD9QLLX4	CP(max)	$0.034 + 0.013 * Tr$

FD9SPLL
FD9SPLL
FD9SPLLX4

Function: D Flip-Flop with 1 Phase Positive Edge Triggered Clock, Active High Hold Mode, Scanable, Q Output Only



Truth Table

D	DH	INTERN	Q
-	1	INTERN	INTERN
0	-	0	0
-	1	0	0
D	0	-	D

Truth Table

D	DH	CP	TI	TE	INTERN	INTERN
D	0	/	-	0	-	D
-	1	/	-	0	INTERN	INTERN
-	-	/	TI	1	-	TI
1	-	/	1	-	1	1
-	-	-	-	-	INTERN	INTERN

Physical Dimensions

Property	FD9SPLL	FD9SPLL	FD9SPLLX4
Area(um ²)	48.413	48.413	50.430

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD9SPLL	CP Input Cap.	0.0032	0.0027	0.0029
FD9SPLL	TI Input Cap.	0.0013	0.0012	0.0013
FD9SPLL	Q Max Load	0.160	0.160	0.160

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD9SPLL	D Input Cap.	0.0062	0.0055	0.0058
FD9SPLL	DH Input Cap.	0.0083	0.0068	0.0072
FD9SPLL	TE Input Cap.	0.0034	0.0031	0.0032
FD9SPLL	DH Input Cap.	0.0082	0.0067	0.0071
FD9SPLL	TE Input Cap.	0.0034	0.0031	0.0032
FD9SPLL	CP Input Cap.	0.0032	0.0027	0.0029
FD9SPLL	TI Input Cap.	0.0013	0.0012	0.0013
FD9SPLL	Q Max Load	0.320	0.320	0.320
FD9SPLL	D Input Cap.	0.0062	0.0055	0.0057
FD9SPLLX4	TE Input Cap.	0.0035	0.0031	0.0032
FD9SPLLX4	Q Max Load	0.640	0.640	0.640
FD9SPLLX4	D Input Cap.	0.0061	0.0055	0.0057
FD9SPLLX4	CP Input Cap.	0.0033	0.0028	0.0030
FD9SPLLX4	TI Input Cap.	0.0014	0.0012	0.0013
FD9SPLLX4	DH Input Cap.	0.0080	0.0066	0.0070

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD9SPLL	CP-Q	CP_Q (fall)	0.139 + 0.120*Tr + 1.208*C	0.336 + 0.183*Tr + 2.753*C	0.214 + 0.151*Tr + 1.712*C
FD9SPLL	CP-Q	CP_Q (rise)	0.116 + 0.121*Tr + 1.672*C	0.283 + 0.182*Tr + 3.474*C	0.177 + 0.151*Tr + 2.409*C
FD9SPLL	DH-Q	DH_Q (fall)	0.054 + 0.220*Tr + 1.199*C	0.239 + 0.239*Tr + 2.755*C	0.152 + 0.200*Tr + 1.714*C
FD9SPLL	DH-Q	DH_Q (rise)	0.040 + 0.153*Tr + 1.690*C	0.200 + 0.246*Tr + 3.474*C	0.123 + 0.249*Tr + 2.406*C
FD9SPLL	DH-Q	DH_Q_state_1 (fall) (D)	0.098 + 0.171*Tr + 1.209*C	0.239 + 0.239*Tr + 2.755*C	0.152 + 0.200*Tr + 1.714*C
FD9SPLL	DH-Q	DH_Q_state_1 (rise) (D)	0.081 + 0.253*Tr + 1.672*C	0.200 + 0.246*Tr + 3.474*C	0.123 + 0.249*Tr + 2.406*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD9SPLL	DH-Q	DH_Q_state_2 (fall) (!D)	0.049 + 0.244*Tr + 1.211*C	0.125 + 0.236*Tr + 2.768*C	0.077 + 0.235*Tr + 1.717*C
FD9SPLL	DH-Q	DH_Q_state_2 (rise) (!D)	0.040 + 0.153*Tr + 1.690*C	0.102 + 0.219*Tr + 3.514*C	0.062 + 0.183*Tr + 2.439*C
FD9SPLL	D-Q	D_Q (fall)	0.060 + 0.233*Tr + 1.216*C	0.150 + 0.222*Tr + 2.779*C	0.096 + 0.226*Tr + 1.738*C
FD9SPLL	D-Q	D_Q (rise)	0.048 + 0.156*Tr + 1.683*C	0.124 + 0.217*Tr + 3.507*C	0.075 + 0.186*Tr + 2.432*C
FD9SPLL	CP-Q	CP_Q (fall)	0.139 + 0.120*Tr + 1.208*C	0.336 + 0.183*Tr + 2.753*C	0.214 + 0.151*Tr + 1.712*C
FD9SPLL	CP-Q	CP_Q (rise)	0.116 + 0.121*Tr + 1.672*C	0.283 + 0.182*Tr + 3.474*C	0.177 + 0.151*Tr + 2.409*C
FD9SPLL	DH-Q	DH_Q (fall)	0.054 + 0.220*Tr + 1.199*C	0.239 + 0.239*Tr + 2.755*C	0.152 + 0.200*Tr + 1.714*C
FD9SPLL	DH-Q	DH_Q (rise)	0.040 + 0.153*Tr + 1.690*C	0.200 + 0.246*Tr + 3.474*C	0.123 + 0.249*Tr + 2.406*C
FD9SPLL	DH-Q	DH_Q_state_1 (fall) (D)	0.098 + 0.171*Tr + 1.209*C	0.239 + 0.239*Tr + 2.755*C	0.152 + 0.200*Tr + 1.714*C
FD9SPLL	DH-Q	DH_Q_state_1 (rise) (D)	0.081 + 0.253*Tr + 1.672*C	0.200 + 0.246*Tr + 3.474*C	0.123 + 0.249*Tr + 2.406*C
FD9SPLL	DH-Q	DH_Q_state_2 (fall) (!D)	0.049 + 0.244*Tr + 1.211*C	0.125 + 0.236*Tr + 2.768*C	0.077 + 0.235*Tr + 1.717*C
FD9SPLL	DH-Q	DH_Q_state_2 (rise) (!D)	0.040 + 0.153*Tr + 1.690*C	0.102 + 0.219*Tr + 3.514*C	0.062 + 0.183*Tr + 2.439*C
FD9SPLL	D-Q	D_Q (fall)	0.060 + 0.233*Tr + 1.216*C	0.150 + 0.222*Tr + 2.779*C	0.096 + 0.226*Tr + 1.738*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD9SQLLP	D-Q	D_Q (rise)	0.048 + 0.156*Tr + 1.683*C	0.124 + 0.217*Tr + 3.507*C	0.075 + 0.186*Tr + 2.432*C
FD9SQLLX4	CP-Q	CP_Q (fall)	0.139 + 0.120*Tr + 1.208*C	0.336 + 0.183*Tr + 2.753*C	0.214 + 0.151*Tr + 1.712*C
FD9SQLLX4	CP-Q	CP_Q (rise)	0.116 + 0.121*Tr + 1.672*C	0.283 + 0.182*Tr + 3.474*C	0.177 + 0.151*Tr + 2.409*C
FD9SQLLX4	DH-Q	DH_Q (fall)	0.054 + 0.220*Tr + 1.199*C	0.239 + 0.239*Tr + 2.755*C	0.152 + 0.200*Tr + 1.714*C
FD9SQLLX4	DH-Q	DH_Q (rise)	0.040 + 0.153*Tr + 1.690*C	0.200 + 0.246*Tr + 3.474*C	0.123 + 0.249*Tr + 2.406*C
FD9SQLLX4	DH-Q	DH_Q_state_1 (fall) (D)	0.098 + 0.171*Tr + 1.209*C	0.239 + 0.239*Tr + 2.755*C	0.152 + 0.200*Tr + 1.714*C
FD9SQLLX4	DH-Q	DH_Q_state_1 (rise) (D)	0.081 + 0.253*Tr + 1.672*C	0.200 + 0.246*Tr + 3.474*C	0.123 + 0.249*Tr + 2.406*C
FD9SQLLX4	DH-Q	DH_Q_state_2 (fall) (!D)	0.049 + 0.244*Tr + 1.211*C	0.125 + 0.236*Tr + 2.768*C	0.077 + 0.235*Tr + 1.717*C
FD9SQLLX4	DH-Q	DH_Q_state_2 (rise) (!D)	0.040 + 0.153*Tr + 1.690*C	0.102 + 0.219*Tr + 3.514*C	0.062 + 0.183*Tr + 2.439*C
FD9SQLLX4	D-Q	D_Q (fall)	0.060 + 0.233*Tr + 1.216*C	0.150 + 0.222*Tr + 2.779*C	0.096 + 0.226*Tr + 1.738*C
FD9SQLLX4	D-Q	D_Q (rise)	0.048 + 0.156*Tr + 1.683*C	0.124 + 0.217*Tr + 3.507*C	0.075 + 0.186*Tr + 2.432*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD9SPLL	DH_CP_HOLD (fall)	0.005	0.005	0.005 + 0.007*Tr(CP)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD9SPLL	DH_CP_HOLD (rise)	0.047 + 0.121*Tr(CP)	0.091 + 0.185*Tr(CP)	0.044 + 0.161*Tr(CP)
FD9SPLL	DH_CP_SETUP (fall)	0.266 + 0.251*Tr(DH)	0.719 + 0.244*Tr(DH)	0.409 + 0.254*Tr(DH)
FD9SPLL	DH_CP_SETUP (rise)	0.225 + 0.144*Tr(DH)	0.606 + 0.210*Tr(DH)	0.354 + 0.177*Tr(DH)
FD9SPLL	D_CP_HOLD (fall)	0.005	0.005	0.005
FD9SPLL	D_CP_HOLD (rise)	0.005	0.005	0.005
FD9SPLL	D_CP_SETUP (fall)	0.120 - 0.087*Tr(CP) + 0.228*Tr(D)	0.329 - 0.142*Tr(CP) + 0.215*Tr(D)	0.216 - 0.125*Tr(CP) + 0.222*Tr(D)
FD9SPLL	D_CP_SETUP (rise)	0.219 - 0.119*Tr(CP) + 0.151*Tr(D)	0.604 - 0.193*Tr(CP) + 0.209*Tr(D)	0.370 - 0.164*Tr(CP) + 0.181*Tr(D)
FD9SPLL	Pulse Width High CP	0.040	0.155	0.095
FD9SPLL	Pulse Width Low CP	0.110	0.565	0.335
FD9SPLL	TE_CP_HOLD (fall)	0.005	0.002 + 0.009*Tr(CP)	0.005 + 0.020*Tr(CP)
FD9SPLL	TE_CP_HOLD (rise)	0.001 + 0.024*Tr(CP)	-0.007 + 0.043*Tr(CP)	0.005 + 0.047*Tr(CP)
FD9SPLL	TE_CP_SETUP (fall)	0.188 + 0.256*Tr(TE)	0.532 + 0.245*Tr(TE)	0.309 + 0.251*Tr(TE)
FD9SPLL	TE_CP_SETUP (rise)	0.184 + 0.111*Tr(TE)	0.499 + 0.173*Tr(TE)	0.279 + 0.144*Tr(TE)
FD9SPLL	TI_CP_HOLD (fall)	0.005	0.002 + 0.009*Tr(CP)	0.005 + 0.017*Tr(CP)
FD9SPLL	TI_CP_HOLD (rise)	0.002 + 0.020*Tr(CP)	-0.006 + 0.034*Tr(CP)	0.005 + 0.043*Tr(CP)
FD9SPLL	TI_CP_SETUP (fall)	0.126 + 0.264*Tr(TI)	0.346 + 0.262*Tr(TI)	0.189 + 0.264*Tr(TI)
FD9SPLL	TI_CP_SETUP (rise)	0.184 + 0.125*Tr(TI)	0.510 + 0.186*Tr(TI)	0.284 + 0.157*Tr(TI)
FD9SPLL	DH_CP_HOLD (fall)	0.005	0.005	0.005 + 0.007*Tr(CP)
FD9SPLL	DH_CP_HOLD (rise)	0.047 + 0.121*Tr(CP)	0.091 + 0.185*Tr(CP)	0.044 + 0.161*Tr(CP)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD9SQLLP	DH_CP_SETUP (fall)	0.266 + 0.251*Tr(DH)	0.719 + 0.244*Tr(DH)	0.409 + 0.254*Tr(DH)
FD9SQLLP	DH_CP_SETUP (rise)	0.225 + 0.144*Tr(DH)	0.606 + 0.210*Tr(DH)	0.354 + 0.177*Tr(DH)
FD9SQLLP	D_CP_HOLD (fall)	0.005	0.005	0.005
FD9SQLLP	D_CP_HOLD (rise)	0.005	0.005	0.005
FD9SQLLP	D_CP_SETUP (fall)	0.120 - 0.087*Tr(CP) + 0.228*Tr(D)	0.329 - 0.142*Tr(CP) + 0.215*Tr(D)	0.216 - 0.125*Tr(CP) + 0.222*Tr(D)
FD9SQLLP	D_CP_SETUP (rise)	0.219 - 0.119*Tr(CP) + 0.151*Tr(D)	0.604 - 0.193*Tr(CP) + 0.209*Tr(D)	0.370 - 0.164*Tr(CP) + 0.181*Tr(D)
FD9SQLLP	Pulse Width High CP	0.040	0.155	0.100
FD9SQLLP	Pulse Width Low CP	0.110	0.565	0.340
FD9SQLLP	TE_CP_HOLD (fall)	0.005	0.002 + 0.009*Tr(CP)	0.005 + 0.020*Tr(CP)
FD9SQLLP	TE_CP_HOLD (rise)	0.001 + 0.024*Tr(CP)	-0.007 + 0.043*Tr(CP)	0.005 + 0.047*Tr(CP)
FD9SQLLP	TE_CP_SETUP (fall)	0.188 + 0.256*Tr(TE)	0.532 + 0.245*Tr(TE)	0.309 + 0.251*Tr(TE)
FD9SQLLP	TE_CP_SETUP (rise)	0.184 + 0.111*Tr(TE)	0.499 + 0.173*Tr(TE)	0.279 + 0.144*Tr(TE)
FD9SQLLP	TI_CP_HOLD (fall)	0.005	0.002 + 0.009*Tr(CP)	0.005 + 0.017*Tr(CP)
FD9SQLLP	TI_CP_HOLD (rise)	0.002 + 0.020*Tr(CP)	-0.006 + 0.034*Tr(CP)	0.005 + 0.043*Tr(CP)
FD9SQLLP	TI_CP_SETUP (fall)	0.126 + 0.264*Tr(TI)	0.346 + 0.262*Tr(TI)	0.189 + 0.264*Tr(TI)
FD9SQLLP	TI_CP_SETUP (rise)	0.184 + 0.125*Tr(TI)	0.510 + 0.186*Tr(TI)	0.284 + 0.157*Tr(TI)
FD9SQLLX4	DH_CP_HOLD (fall)	0.005	0.005	0.005 + 0.007*Tr(CP)
FD9SQLLX4	DH_CP_HOLD (rise)	0.047 + 0.121*Tr(CP)	0.091 + 0.185*Tr(CP)	0.044 + 0.161*Tr(CP)
FD9SQLLX4	DH_CP_SETUP (fall)	0.266 + 0.251*Tr(DH)	0.719 + 0.244*Tr(DH)	0.409 + 0.254*Tr(DH)
FD9SQLLX4	DH_CP_SETUP (rise)	0.225 + 0.144*Tr(DH)	0.606 + 0.210*Tr(DH)	0.354 + 0.177*Tr(DH)
FD9SQLLX4	D_CP_HOLD (fall)	0.005	0.005	0.005

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
FD9SQLLX4	D_CP_HOLD (rise)	0.005	0.005	0.005
FD9SQLLX4	D_CP_SETUP (fall)	0.120 - 0.087*Tr(CP) + 0.228*Tr(D)	0.329 - 0.142*Tr(CP) + 0.215*Tr(D)	0.216 - 0.125*Tr(CP) + 0.222*Tr(D)
FD9SQLLX4	D_CP_SETUP (rise)	0.219 - 0.119*Tr(CP) + 0.151*Tr(D)	0.604 - 0.193*Tr(CP) + 0.209*Tr(D)	0.370 - 0.164*Tr(CP) + 0.181*Tr(D)
FD9SQLLX4	Pulse Width High CP	0.040	0.165	0.105
FD9SQLLX4	Pulse Width Low CP	0.110	0.565	0.335
FD9SQLLX4	TE_CP_HOLD (fall)	0.005	0.002 + 0.009*Tr(CP)	0.005 + 0.020*Tr(CP)
FD9SQLLX4	TE_CP_HOLD (rise)	0.001 + 0.024*Tr(CP)	-0.007 + 0.043*Tr(CP)	0.005 + 0.047*Tr(CP)
FD9SQLLX4	TE_CP_SETUP (fall)	0.188 + 0.256*Tr(TE)	0.532 + 0.245*Tr(TE)	0.309 + 0.251*Tr(TE)
FD9SQLLX4	TE_CP_SETUP (rise)	0.184 + 0.111*Tr(TE)	0.499 + 0.173*Tr(TE)	0.279 + 0.144*Tr(TE)
FD9SQLLX4	TI_CP_HOLD (fall)	0.005	0.002 + 0.009*Tr(CP)	0.005 + 0.017*Tr(CP)
FD9SQLLX4	TI_CP_HOLD (rise)	0.002 + 0.020*Tr(CP)	-0.006 + 0.034*Tr(CP)	0.005 + 0.043*Tr(CP)
FD9SQLLX4	TI_CP_SETUP (fall)	0.126 + 0.264*Tr(TI)	0.346 + 0.262*Tr(TI)	0.189 + 0.264*Tr(TI)
FD9SQLLX4	TI_CP_SETUP (rise)	0.184 + 0.125*Tr(TI)	0.510 + 0.186*Tr(TI)	0.284 + 0.157*Tr(TI)

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
FD9SPLL	17718.700	345753.000
FD9SPLL	19048.700	376650.000
FD9SPLLX4	22147.800	443736.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
FD9SPLL	Q(related_pin:CP)	$0.058 + 0.013 * Tr$
FD9SPLL	D(max)	0.005
FD9SPLL	DH(max)	$0.010 + 0.009 * Tr$
FD9SPLL	CP(max)	$0.036 + 0.012 * Tr$
FD9SPLL	TI(max)	$0.028 + 0.006 * Tr$
FD9SPLL	TE(max)	$0.028 + 0.005 * Tr$
FD9SPLL	Q(related_pin:CP)	$0.065 + 0.013 * Tr$
FD9SPLL	D(max)	0.005
FD9SPLL	DH(max)	$0.010 + 0.009 * Tr$
FD9SPLL	CP(max)	$0.036 + 0.012 * Tr$
FD9SPLL	TI(max)	$0.028 + 0.006 * Tr$
FD9SPLL	TE(max)	$0.028 + 0.005 * Tr$
FD9SPLLX4	Q(related_pin:CP)	$0.085 + 0.013 * Tr$
FD9SPLLX4	D(max)	0.005
FD9SPLLX4	DH(max)	$0.010 + 0.009 * Tr$
FD9SPLLX4	CP(max)	$0.036 + 0.012 * Tr$
FD9SPLLX4	TI(max)	$0.028 + 0.006 * Tr$
FD9SPLLX4	TE(max)	$0.028 + 0.005 * Tr$

HA1LL
HA1LLP
HA1LLX4
HA1LLX6
HA1LLX8



Function: Function = Half-Adder

Truth Table

A	B	S
A	1	!A
A	0	A

Truth Table

A	B	CO
0	-	0
-	0	0
1	1	1

Physical Dimensions

Property	HA1LL	HA1LLP	HA1LLX4	HA1LLX6	HA1LLX8
Area(um2)	18.155	22.189	26.224	40.344	46.396

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
HA1LL	A Input Cap.	0.0035	0.0030	0.0032
HA1LL	B Input Cap.	0.0031	0.0026	0.0028
HA1LL	S Max Load	0.160	0.160	0.160
HA1LL	CO Max Load	0.160	0.160	0.160
HA1LLP	B Input Cap.	0.0053	0.0046	0.0049
HA1LLP	S Max Load	0.320	0.320	0.320
HA1LLP	CO Max Load	0.320	0.320	0.320

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
HA1LLP	A Input Cap.	0.0057	0.0051	0.0053
HA1LLX4	S Max Load	0.640	0.640	0.640
HA1LLX4	A Input Cap.	0.0107	0.0097	0.0100
HA1LLX4	CO Max Load	0.640	0.640	0.640
HA1LLX4	B Input Cap.	0.0100	0.0090	0.0094
HA1LLX6	B Input Cap.	0.0151	0.0135	0.0140
HA1LLX6	CO Max Load	0.960	0.960	0.960
HA1LLX6	A Input Cap.	0.0179	0.0161	0.0167
HA1LLX6	S Max Load	0.960	0.960	0.960
HA1LLX8	A Input Cap.	0.0230	0.0209	0.0216
HA1LLX8	B Input Cap.	0.0195	0.0175	0.0181
HA1LLX8	S Max Load	1.280	1.280	1.280
HA1LLX8	CO Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
HA1LL	A-CO	A_CO (fall)	0.080 + 0.302*Tr + 1.269*C	0.176 + 0.321*Tr + 2.754*C	0.119 + 0.309*Tr + 1.780*C
HA1LL	A-CO	A_CO (rise)	0.060 + 0.168*Tr + 1.645*C	0.150 + 0.206*Tr + 3.487*C	0.091 + 0.186*Tr + 2.371*C
HA1LL	B-CO	B_CO (fall)	0.074 + 0.293*Tr + 1.266*C	0.162 + 0.311*Tr + 2.745*C	0.109 + 0.300*Tr + 1.775*C
HA1LL	B-CO	B_CO (rise)	0.060 + 0.190*Tr + 1.642*C	0.146 + 0.233*Tr + 3.481*C	0.090 + 0.207*Tr + 2.367*C
HA1LL	A-S	A_S (fall)	0.074 + 0.227*Tr + 1.213*C	0.307 + 0.209*Tr + 2.569*C	0.186 + 0.199*Tr + 1.668*C
HA1LL	A-S	A_S (rise)	0.053 + 0.189*Tr + 1.625*C	0.304 + 0.311*Tr + 3.356*C	0.191 + 0.302*Tr + 2.278*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
HA1LL	A-S	A_S_state_1 (fall) (B)	0.124 + 0.172*Tr + 1.180*C	0.307 + 0.209*Tr + 2.569*C	0.190 + 0.189*Tr + 1.642*C
HA1LL	A-S	A_S_state_1 (rise) (B)	0.125 + 0.296*Tr + 1.591*C	0.304 + 0.311*Tr + 3.356*C	0.191 + 0.302*Tr + 2.278*C
HA1LL	A-S	A_S_state_2 (fall) (!B)	0.067 + 0.258*Tr + 1.232*C	0.151 + 0.265*Tr + 2.684*C	0.100 + 0.259*Tr + 1.723*C
HA1LL	A-S	A_S_state_2 (rise) (!B)	0.053 + 0.189*Tr + 1.625*C	0.131 + 0.235*Tr + 3.425*C	0.081 + 0.207*Tr + 2.334*C
HA1LL	B-S	B_S (fall)	0.068 + 0.219*Tr + 1.240*C	0.302 + 0.237*Tr + 2.564*C	0.189 + 0.211*Tr + 1.636*C
HA1LL	B-S	B_S (rise)	0.058 + 0.211*Tr + 1.625*C	0.272 + 0.302*Tr + 3.344*C	0.172 + 0.293*Tr + 2.274*C
HA1LL	B-S	B_S_state_3 (fall) (A)	0.124 + 0.195*Tr + 1.177*C	0.302 + 0.237*Tr + 2.564*C	0.189 + 0.211*Tr + 1.636*C
HA1LL	B-S	B_S_state_3 (rise) (A)	0.113 + 0.287*Tr + 1.591*C	0.272 + 0.302*Tr + 3.344*C	0.172 + 0.293*Tr + 2.274*C
HA1LL	B-S	B_S_state_4 (fall) (!A)	0.068 + 0.219*Tr + 1.240*C	0.160 + 0.226*Tr + 2.700*C	0.103 + 0.223*Tr + 1.736*C
HA1LL	B-S	B_S_state_4 (rise) (!A)	0.058 + 0.211*Tr + 1.625*C	0.148 + 0.256*Tr + 3.437*C	0.090 + 0.227*Tr + 2.336*C
HA1LLP	A-CO	A_CO (fall)	0.066 + 0.279*Tr + 0.634*C	0.144 + 0.298*Tr + 1.323*C	0.097 + 0.286*Tr + 0.870*C
HA1LLP	A-CO	A_CO (rise)	0.051 + 0.173*Tr + 0.802*C	0.127 + 0.207*Tr + 1.670*C	0.078 + 0.189*Tr + 1.144*C
HA1LLP	B-CO	B_CO (fall)	0.062 + 0.268*Tr + 0.633*C	0.133 + 0.286*Tr + 1.321*C	0.090 + 0.275*Tr + 0.870*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
HA1LLP	B-CO	B_CO (rise)	0.052 + 0.192*Tr + 0.800*C	0.124 + 0.230*Tr + 1.667*C	0.077 + 0.207*Tr + 1.143*C
HA1LLP	A-S	A_S (fall)	0.073 + 0.224*Tr + 0.620*C	0.276 + 0.212*Tr + 1.262*C	0.169 + 0.205*Tr + 0.841*C
HA1LLP	A-S	A_S (rise)	0.052 + 0.198*Tr + 0.797*C	0.269 + 0.291*Tr + 1.619*C	0.170 + 0.281*Tr + 1.102*C
HA1LLP	A-S	A_S_state_1 (fall) (B)	0.115 + 0.178*Tr + 0.602*C	0.276 + 0.212*Tr + 1.262*C	0.174 + 0.194*Tr + 0.822*C
HA1LLP	A-S	A_S_state_1 (rise) (B)	0.112 + 0.275*Tr + 0.777*C	0.269 + 0.291*Tr + 1.619*C	0.170 + 0.281*Tr + 1.102*C
HA1LLP	A-S	A_S_state_2 (fall) (!B)	0.067 + 0.253*Tr + 0.632*C	0.149 + 0.262*Tr + 1.329*C	0.099 + 0.255*Tr + 0.870*C
HA1LLP	A-S	A_S_state_2 (rise) (!B)	0.052 + 0.198*Tr + 0.797*C	0.127 + 0.241*Tr + 1.659*C	0.079 + 0.215*Tr + 1.137*C
HA1LLP	B-S	B_S (fall)	0.068 + 0.213*Tr + 0.636*C	0.274 + 0.236*Tr + 1.257*C	0.174 + 0.213*Tr + 0.818*C
HA1LLP	B-S	B_S (rise)	0.058 + 0.220*Tr + 0.798*C	0.242 + 0.280*Tr + 1.611*C	0.154 + 0.270*Tr + 1.100*C
HA1LLP	B-S	B_S_state_3 (fall) (A)	0.116 + 0.198*Tr + 0.599*C	0.274 + 0.236*Tr + 1.257*C	0.174 + 0.213*Tr + 0.818*C
HA1LLP	B-S	B_S_state_3 (rise) (A)	0.102 + 0.264*Tr + 0.776*C	0.242 + 0.280*Tr + 1.611*C	0.154 + 0.270*Tr + 1.100*C
HA1LLP	B-S	B_S_state_4 (fall) (!A)	0.068 + 0.213*Tr + 0.636*C	0.160 + 0.223*Tr + 1.338*C	0.103 + 0.218*Tr + 0.876*C
HA1LLP	B-S	B_S_state_4 (rise) (!A)	0.058 + 0.220*Tr + 0.798*C	0.145 + 0.263*Tr + 1.666*C	0.089 + 0.235*Tr + 1.137*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
HA1LLX4	A-CO	A_CO (fall)	0.065 + 0.272*Tr + 0.316*C	0.139 + 0.290*Tr + 0.660*C	0.094 + 0.278*Tr + 0.434*C
HA1LLX4	A-CO	A_CO (rise)	0.051 + 0.175*Tr + 0.401*C	0.123 + 0.207*Tr + 0.834*C	0.076 + 0.190*Tr + 0.572*C
HA1LLX4	B-CO	B_CO (fall)	0.060 + 0.261*Tr + 0.316*C	0.127 + 0.278*Tr + 0.659*C	0.086 + 0.267*Tr + 0.434*C
HA1LLX4	B-CO	B_CO (rise)	0.050 + 0.195*Tr + 0.400*C	0.119 + 0.229*Tr + 0.833*C	0.075 + 0.208*Tr + 0.571*C
HA1LLX4	A-S	A_S (fall)	0.069 + 0.225*Tr + 0.310*C	0.261 + 0.212*Tr + 0.628*C	0.163 + 0.201*Tr + 0.416*C
HA1LLX4	A-S	A_S (rise)	0.052 + 0.204*Tr + 0.399*C	0.260 + 0.285*Tr + 0.808*C	0.165 + 0.275*Tr + 0.550*C
HA1LLX4	A-S	A_S_state_1 (fall) (B)	0.111 + 0.181*Tr + 0.300*C	0.261 + 0.212*Tr + 0.628*C	0.166 + 0.195*Tr + 0.410*C
HA1LLX4	A-S	A_S_state_1 (rise) (B)	0.109 + 0.270*Tr + 0.388*C	0.260 + 0.285*Tr + 0.808*C	0.165 + 0.275*Tr + 0.550*C
HA1LLX4	A-S	A_S_state_2 (fall) (!B)	0.065 + 0.244*Tr + 0.316*C	0.143 + 0.253*Tr + 0.664*C	0.095 + 0.246*Tr + 0.434*C
HA1LLX4	A-S	A_S_state_2 (rise) (!B)	0.052 + 0.204*Tr + 0.399*C	0.124 + 0.244*Tr + 0.830*C	0.077 + 0.220*Tr + 0.569*C
HA1LLX4	B-S	B_S (fall)	0.066 + 0.205*Tr + 0.318*C	0.257 + 0.236*Tr + 0.626*C	0.165 + 0.214*Tr + 0.407*C
HA1LLX4	B-S	B_S (rise)	0.058 + 0.226*Tr + 0.399*C	0.232 + 0.274*Tr + 0.804*C	0.148 + 0.265*Tr + 0.550*C
HA1LLX4	B-S	B_S_state_3 (fall) (A)	0.111 + 0.201*Tr + 0.299*C	0.257 + 0.236*Tr + 0.626*C	0.165 + 0.214*Tr + 0.407*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
HA1LLX4	B-S	B_S_state_3 (rise) (A)	0.099 + 0.259*Tr + 0.387°C	0.232 + 0.274*Tr + 0.804°C	0.148 + 0.265*Tr + 0.550°C
HA1LLX4	B-S	B_S_state_4 (fall) (!A)	0.066 + 0.205*Tr + 0.318°C	0.153 + 0.214*Tr + 0.669°C	0.099 + 0.209*Tr + 0.438°C
HA1LLX4	B-S	B_S_state_4 (rise) (!A)	0.058 + 0.226*Tr + 0.399°C	0.142 + 0.266*Tr + 0.833°C	0.087 + 0.240*Tr + 0.570°C
HA1LLX6	A-CO	A_CO (fall)	0.062 + 0.271*Tr + 0.211°C	0.134 + 0.288*Tr + 0.440°C	0.090 + 0.276*Tr + 0.290°C
HA1LLX6	A-CO	A_CO (rise)	0.049 + 0.173*Tr + 0.268°C	0.119 + 0.205*Tr + 0.558°C	0.074 + 0.188*Tr + 0.382°C
HA1LLX6	B-CO	B_CO (fall)	0.057 + 0.258*Tr + 0.211°C	0.122 + 0.275*Tr + 0.439°C	0.083 + 0.264*Tr + 0.289°C
HA1LLX6	B-CO	B_CO (rise)	0.049 + 0.192*Tr + 0.268°C	0.116 + 0.227*Tr + 0.557°C	0.073 + 0.206*Tr + 0.382°C
HA1LLX6	A-S	A_S (fall)	0.074 + 0.198*Tr + 0.207°C	0.222 + 0.210*Tr + 0.415°C	0.137 + 0.201*Tr + 0.278°C
HA1LLX6	A-S	A_S (rise)	0.057 + 0.200*Tr + 0.267°C	0.231 + 0.288*Tr + 0.534°C	0.150 + 0.277*Tr + 0.365°C
HA1LLX6	A-S	A_S_state_1 (fall) (B)	0.095 + 0.178*Tr + 0.199°C	0.223 + 0.210*Tr + 0.415°C	0.142 + 0.193*Tr + 0.270°C
HA1LLX6	A-S	A_S_state_1 (rise) (B)	0.101 + 0.272*Tr + 0.257°C	0.231 + 0.288*Tr + 0.534°C	0.150 + 0.277*Tr + 0.365°C
HA1LLX6	A-S	A_S_state_2 (fall) (!B)	0.069 + 0.215*Tr + 0.212°C	0.162 + 0.223*Tr + 0.447°C	0.105 + 0.218*Tr + 0.292°C
HA1LLX6	A-S	A_S_state_2 (rise) (!B)	0.057 + 0.200*Tr + 0.267°C	0.146 + 0.234*Tr + 0.557°C	0.088 + 0.215*Tr + 0.381°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
HA1LLX6	B-S	B_S (fall)	0.075 + 0.220*Tr + 0.203*C	0.217 + 0.238*Tr + 0.418*C	0.133 + 0.234*Tr + 0.279*C
HA1LLX6	B-S	B_S (rise)	0.051 + 0.181*Tr + 0.267*C	0.237 + 0.273*Tr + 0.535*C	0.152 + 0.264*Tr + 0.365*C
HA1LLX6	B-S	B_S_state_3 (fall) (A)	0.095 + 0.199*Tr + 0.198*C	0.220 + 0.234*Tr + 0.413*C	0.141 + 0.212*Tr + 0.269*C
HA1LLX6	B-S	B_S_state_3 (rise) (A)	0.102 + 0.259*Tr + 0.257*C	0.237 + 0.273*Tr + 0.535*C	0.152 + 0.264*Tr + 0.365*C
HA1LLX6	B-S	B_S_state_4 (fall) (!A)	0.068 + 0.256*Tr + 0.211*C	0.151 + 0.265*Tr + 0.444*C	0.101 + 0.257*Tr + 0.290*C
HA1LLX6	B-S	B_S_state_4 (rise) (!A)	0.051 + 0.181*Tr + 0.267*C	0.127 + 0.217*Tr + 0.555*C	0.078 + 0.197*Tr + 0.381*C
HA1LLX8	A-CO	A_CO (fall)	0.061 + 0.268*Tr + 0.158*C	0.131 + 0.285*Tr + 0.330*C	0.089 + 0.274*Tr + 0.217*C
HA1LLX8	A-CO	A_CO (rise)	0.048 + 0.173*Tr + 0.201*C	0.116 + 0.203*Tr + 0.418*C	0.072 + 0.187*Tr + 0.287*C
HA1LLX8	B-CO	B_CO (fall)	0.056 + 0.256*Tr + 0.158*C	0.119 + 0.272*Tr + 0.329*C	0.081 + 0.262*Tr + 0.217*C
HA1LLX8	B-CO	B_CO (rise)	0.048 + 0.191*Tr + 0.201*C	0.112 + 0.225*Tr + 0.417*C	0.071 + 0.204*Tr + 0.286*C
HA1LLX8	A-S	A_S (fall)	0.071 + 0.198*Tr + 0.156*C	0.220 + 0.208*Tr + 0.311*C	0.137 + 0.198*Tr + 0.207*C
HA1LLX8	A-S	A_S (rise)	0.056 + 0.202*Tr + 0.201*C	0.226 + 0.285*Tr + 0.400*C	0.147 + 0.275*Tr + 0.274*C
HA1LLX8	A-S	A_S_state_1 (fall) (B)	0.094 + 0.178*Tr + 0.149*C	0.220 + 0.208*Tr + 0.311*C	0.140 + 0.192*Tr + 0.203*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
HA1LLX8	A-S	A_S_state_1 (rise) (B)	0.099 + 0.269*Tr + 0.193*C	0.226 + 0.285*Tr + 0.400*C	0.147 + 0.275*Tr + 0.274*C
HA1LLX8	A-S	A_S_state_2 (fall) (!B)	0.067 + 0.212*Tr + 0.159*C	0.158 + 0.220*Tr + 0.335*C	0.102 + 0.215*Tr + 0.219*C
HA1LLX8	A-S	A_S_state_2 (rise) (!B)	0.056 + 0.202*Tr + 0.201*C	0.143 + 0.236*Tr + 0.418*C	0.086 + 0.216*Tr + 0.286*C
HA1LLX8	B-S	B_S (fall)	0.073 + 0.221*Tr + 0.153*C	0.214 + 0.235*Tr + 0.313*C	0.132 + 0.230*Tr + 0.209*C
HA1LLX8	B-S	B_S (rise)	0.051 + 0.182*Tr + 0.201*C	0.231 + 0.271*Tr + 0.402*C	0.149 + 0.262*Tr + 0.274*C
HA1LLX8	B-S	B_S_state_3 (fall) (A)	0.094 + 0.198*Tr + 0.148*C	0.216 + 0.231*Tr + 0.310*C	0.139 + 0.211*Tr + 0.202*C
HA1LLX8	B-S	B_S_state_3 (rise) (A)	0.100 + 0.256*Tr + 0.193*C	0.231 + 0.271*Tr + 0.402*C	0.149 + 0.262*Tr + 0.274*C
HA1LLX8	B-S	B_S_state_4 (fall) (!A)	0.066 + 0.252*Tr + 0.158*C	0.148 + 0.260*Tr + 0.333*C	0.098 + 0.253*Tr + 0.217*C
HA1LLX8	B-S	B_S_state_4 (rise) (!A)	0.051 + 0.182*Tr + 0.201*C	0.125 + 0.217*Tr + 0.417*C	0.077 + 0.198*Tr + 0.286*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
HA1LL	6008.580	122122.000
HA1LLP	9796.500	214005.000
HA1LLX4	18554.900	413968.000
HA1LLX6	28081.000	622444.000
HA1LLX8	36885.900	823473.000

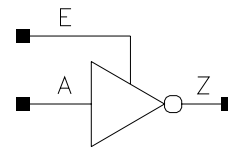
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
HA1LL	S(max)	$0.030 + 0.008 * Tr$
HA1LL	CO(max)	$0.030 + 0.008 * Tr$
HA1LLP	S(max)	$0.052 + 0.017 * Tr$
HA1LLP	CO(max)	$0.052 + 0.017 * Tr$
HA1LLX4	S(max)	$0.099 + 0.035 * Tr$
HA1LLX4	CO(max)	$0.099 + 0.035 * Tr$
HA1LLX6	S(max)	$0.130 + 0.061 * Tr$
HA1LLX6	CO(max)	$0.130 + 0.061 * Tr$
HA1LLX8	S(max)	$0.169 + 0.082 * Tr$
HA1LLX8	CO(max)	$0.169 + 0.082 * Tr$

ITSLL
ITSLLP
ITSLLX10
ITSLLX12
ITSLLX4
ITSLLX6
ITSLLX8

Function: Function = Internal Tristate Inverting Buffer, Positive Enable



Truth Table

A	E	Z
A	1	!A
-	0	Z

Physical Dimensions

Property	ITSLL	ITSLLP	ITSLLX10	ITSLLX12	ITSLLX4
Area(um2)	8.069	10.086	32.275	36.310	14.120

Property	ITSLLX6	ITSLLX8
Area(um2)	20.172	26.224

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ITSLL	E Input Cap.	0.0026	0.0021	0.0023
ITSLL	Z Input Cap.	0.0024	0.0027	0.0025
ITSLL	A Input Cap.	0.0036	0.0033	0.0035
ITSLL	Z Max Load	0.160	0.160	0.160
ITSLLP	Z Input Cap.	0.0032	0.0038	0.0034
ITSLLP	A Input Cap.	0.0059	0.0055	0.0056
ITSLLP	Z Max Load	0.320	0.320	0.320
ITSLLP	E Input Cap.	0.0045	0.0039	0.0041
ITSLLX10	E Input Cap.	0.0215	0.0192	0.0200

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ITSLLX10	Z Input Cap.	0.0141	0.0170	0.0153
ITSLLX10	Z Max Load	1.600	1.600	1.600
ITSLLX10	A Input Cap.	0.0289	0.0265	0.0275
ITSLLX12	A Input Cap.	0.0357	0.0328	0.0340
ITSLLX12	Z Max Load	1.920	1.920	1.920
ITSLLX12	E Input Cap.	0.0250	0.0223	0.0232
ITSLLX12	Z Input Cap.	0.0175	0.0208	0.0189
ITSLLX4	E Input Cap.	0.0086	0.0076	0.0080
ITSLLX4	Z Input Cap.	0.0056	0.0066	0.0060
ITSLLX4	A Input Cap.	0.0121	0.0111	0.0115
ITSLLX4	Z Max Load	0.640	0.640	0.640
ITSLLX6	A Input Cap.	0.0175	0.0160	0.0166
ITSLLX6	E Input Cap.	0.0129	0.0115	0.0120
ITSLLX6	Z Max Load	0.960	0.960	0.960
ITSLLX6	Z Input Cap.	0.0087	0.0105	0.0094
ITSLLX8	Z Input Cap.	0.0126	0.0150	0.0137
ITSLLX8	A Input Cap.	0.0254	0.0235	0.0242
ITSLLX8	Z Max Load	1.280	1.280	1.280
ITSLLX8	E Input Cap.	0.0183	0.0163	0.0170

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ITSLL	E-Z	E_Z_3s_disable (fall)	0.068 + 0.267*Tr	0.141 + 0.275*Tr	0.096 + 0.269*Tr
ITSLL	E-Z	E_Z_3s_disable (rise)	-0.010 + 0.346*Tr	-0.027 + 0.376*Tr	-0.013 + 0.333*Tr
ITSLL	E-Z	E_Z_3s_enable (fall)	-0.019 + 0.194*Tr + 2.447*C	-0.029 + 0.238*Tr + 5.859*C	-0.030 + 0.218*Tr + 3.714*C
ITSLL	E-Z	E_Z_3s_enable (rise)	0.032 + 0.146*Tr + 3.021*C	0.076 + 0.187*Tr + 6.604*C	0.048 + 0.163*Tr + 4.439*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ITSLL	A-Z	A_Z (fall)	0.005 + 0.218*Tr + 2.161*C	0.023 + 0.253*Tr + 5.407*C	0.007 + 0.237*Tr + 3.303*C
ITSLL	A-Z	A_Z (rise)	0.014 + 0.233*Tr + 3.135*C	0.037 + 0.243*Tr + 6.859*C	0.020 + 0.240*Tr + 4.659*C
ITSLLP	E-Z	E_Z_3s_disable (fall)	0.052 + 0.245*Tr	0.114 + 0.247*Tr	0.079 + 0.242*Tr
ITSLLP	E-Z	E_Z_3s_disable (rise)	-0.010 + 0.351*Tr	-0.023 + 0.402*Tr	-0.013 + 0.357*Tr
ITSLLP	E-Z	E_Z_3s_enable (fall)	-0.023 + 0.190*Tr + 1.256*C	-0.038 + 0.227*Tr + 2.916*C	-0.037 + 0.211*Tr + 1.885*C
ITSLLP	E-Z	E_Z_3s_enable (rise)	0.029 + 0.158*Tr + 1.563*C	0.066 + 0.193*Tr + 3.369*C	0.042 + 0.173*Tr + 2.278*C
ITSLLP	A-Z	A_Z (fall)	0.002 + 0.217*Tr + 1.097*C	0.015 + 0.249*Tr + 2.642*C	0.001 + 0.235*Tr + 1.650*C
ITSLLP	A-Z	A_Z (rise)	0.011 + 0.228*Tr + 1.627*C	0.031 + 0.238*Tr + 3.513*C	0.016 + 0.235*Tr + 2.400*C
ITSLLX10	E-Z	E_Z_3s_disable (fall)	0.048 + 0.230*Tr	0.105 + 0.232*Tr	0.073 + 0.227*Tr
ITSLLX10	E-Z	E_Z_3s_disable (rise)	-0.008 + 0.360*Tr	-0.025 + 0.405*Tr	-0.015 + 0.361*Tr
ITSLLX10	E-Z	E_Z_3s_enable (fall)	-0.024 + 0.181*Tr + 0.243*C	-0.042 + 0.217*Tr + 0.561*C	-0.039 + 0.201*Tr + 0.365*C
ITSLLX10	E-Z	E_Z_3s_enable (rise)	0.027 + 0.167*Tr + 0.295*C	0.060 + 0.196*Tr + 0.634*C	0.039 + 0.179*Tr + 0.429*C
ITSLLX10	A-Z	A_Z (fall)	0.002 + 0.213*Tr + 0.209*C	0.015 + 0.245*Tr + 0.500*C	0.001 + 0.230*Tr + 0.314*C
ITSLLX10	A-Z	A_Z (rise)	0.012 + 0.225*Tr + 0.308*C	0.032 + 0.234*Tr + 0.665*C	0.016 + 0.232*Tr + 0.456*C
ITSLLX12	E-Z	E_Z_3s_disable (fall)	0.048 + 0.230*Tr	0.104 + 0.231*Tr	0.072 + 0.226*Tr

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ITSLLX12	E-Z	E_Z_3s_disable (rise)	-0.008 + 0.360*Tr	-0.024 + 0.404*Tr	-0.014 + 0.361*Tr
ITSLLX12	E-Z	E_Z_3s_enable (fall)	-0.027 + 0.189*Tr + 0.200*C	-0.046 + 0.224*Tr + 0.463*C	-0.043 + 0.209*Tr + 0.301*C
ITSLLX12	E-Z	E_Z_3s_enable (rise)	0.027 + 0.168*Tr + 0.246*C	0.060 + 0.197*Tr + 0.529*C	0.039 + 0.179*Tr + 0.358*C
ITSLLX12	A-Z	A_Z (fall)	0.001 + 0.216*Tr + 0.173*C	0.012 + 0.248*Tr + 0.415*C	-0.001 + 0.234*Tr + 0.260*C
ITSLLX12	A-Z	A_Z (rise)	0.011 + 0.227*Tr + 0.256*C	0.030 + 0.236*Tr + 0.553*C	0.015 + 0.234*Tr + 0.378*C
ITSLLX4	E-Z	E_Z_3s_disable (fall)	0.051 + 0.235*Tr	0.111 + 0.239*Tr	0.077 + 0.233*Tr
ITSLLX4	E-Z	E_Z_3s_disable (rise)	-0.011 + 0.351*Tr	-0.024 + 0.403*Tr	-0.014 + 0.360*Tr
ITSLLX4	E-Z	E_Z_3s_enable (fall)	-0.017 + 0.174*Tr + 0.622*C	-0.029 + 0.211*Tr + 1.443*C	-0.028 + 0.194*Tr + 0.934*C
ITSLLX4	E-Z	E_Z_3s_enable (rise)	0.029 + 0.168*Tr + 0.770*C	0.065 + 0.199*Tr + 1.660*C	0.042 + 0.181*Tr + 1.122*C
ITSLLX4	A-Z	A_Z (fall)	0.005 + 0.209*Tr + 0.541*C	0.020 + 0.242*Tr + 1.300*C	0.006 + 0.227*Tr + 0.814*C
ITSLLX4	A-Z	A_Z (rise)	0.013 + 0.224*Tr + 0.803*C	0.034 + 0.233*Tr + 1.734*C	0.019 + 0.231*Tr + 1.185*C
ITSLLX6	E-Z	E_Z_3s_disable (fall)	0.049 + 0.231*Tr	0.108 + 0.233*Tr	0.074 + 0.228*Tr
ITSLLX6	E-Z	E_Z_3s_disable (rise)	-0.008 + 0.358*Tr	-0.025 + 0.403*Tr	-0.015 + 0.362*Tr
ITSLLX6	E-Z	E_Z_3s_enable (fall)	-0.020 + 0.167*Tr + 0.405*C	-0.034 + 0.202*Tr + 0.934*C	-0.033 + 0.186*Tr + 0.608*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ITSLLX6	E-Z	E_Z_3s_enable (rise)	0.028 + 0.168*Tr + 0.491*C	0.062 + 0.198*Tr + 1.057*C	0.040 + 0.180*Tr + 0.715*C
ITSLLX6	A-Z	A_Z (fall)	0.004 + 0.206*Tr + 0.349*C	0.018 + 0.238*Tr + 0.833*C	0.004 + 0.224*Tr + 0.524*C
ITSLLX6	A-Z	A_Z (rise)	0.013 + 0.221*Tr + 0.514*C	0.034 + 0.229*Tr + 1.109*C	0.018 + 0.228*Tr + 0.759*C
ITSLLX8	E-Z	E_Z_3s_disable (fall)	0.049 + 0.233*Tr	0.107 + 0.235*Tr	0.074 + 0.230*Tr
ITSLLX8	E-Z	E_Z_3s_disable (rise)	-0.008 + 0.358*Tr	-0.024 + 0.404*Tr	-0.014 + 0.359*Tr
ITSLLX8	E-Z	E_Z_3s_enable (fall)	-0.018 + 0.165*Tr + 0.303*C	-0.030 + 0.201*Tr + 0.700*C	-0.029 + 0.185*Tr + 0.456*C
ITSLLX8	E-Z	E_Z_3s_enable (rise)	0.028 + 0.166*Tr + 0.368*C	0.062 + 0.196*Tr + 0.793*C	0.041 + 0.178*Tr + 0.536*C
ITSLLX8	A-Z	A_Z (fall)	0.004 + 0.205*Tr + 0.261*C	0.019 + 0.238*Tr + 0.625*C	0.005 + 0.222*Tr + 0.393*C
ITSLLX8	A-Z	A_Z (rise)	0.013 + 0.221*Tr + 0.386*C	0.034 + 0.229*Tr + 0.832*C	0.018 + 0.227*Tr + 0.570*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
ITSLL	1850.950	35611.800
ITSLLP	2716.650	58656.200
ITSLLX10	12405.600	283140.000
ITSLLX12	14788.500	339665.000
ITSLLX4	4931.480	111319.000
ITSLLX6	7394.250	169832.000
ITSLLX8	10106.800	228960.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
ITSLL	Z(max)	$0.007 + 0.011 * Tr$
ITSLLP	Z(max)	$0.012 + 0.023 * Tr$
ITSLX10	Z(max)	$0.061 + 0.129 * Tr$
ITSLX12	Z(max)	$0.072 + 0.155 * Tr$
ITSLX4	Z(max)	$0.023 + 0.048 * Tr$
ITSLX6	Z(max)	$0.037 + 0.076 * Tr$
ITSLX8	Z(max)	$0.049 + 0.103 * Tr$

<p>IVLL IVLLP IVLLX05 IVLLX10 IVLLX12 IVLLX4 IVLLX6 IVLLX8</p> <p>Function: Function = Inverter</p> <p>Boolean Expression: $Z = A'$</p>	
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Physical Dimensions

Property	IVLL	IVLLP	IVLLX05	IVLLX10	IVLLX12
Area(um2)	6.052	6.052	4.034	16.138	18.155

Property	IVLLX4	IVLLX6	IVLLX8
Area(um2)	8.069	10.086	14.120

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
IVLL	Z Max Load	0.160	0.160	0.160
IVLL	A Input Cap.	0.0028	0.0026	0.0027
IVLLP	A Input Cap.	0.0054	0.0050	0.0051
IVLLP	Z Max Load	0.320	0.320	0.320
IVLLX05	A Input Cap.	0.0016	0.0014	0.0015
IVLLX05	Z Max Load	0.080	0.080	0.080
IVLLX10	A Input Cap.	0.0268	0.0245	0.0253
IVLLX10	Z Max Load	1.600	1.600	1.600
IVLLX12	Z Max Load	1.920	1.920	1.920
IVLLX12	A Input Cap.	0.0319	0.0292	0.0301
IVLLX4	Z Max Load	0.640	0.640	0.640
IVLLX4	A Input Cap.	0.0109	0.0099	0.0102
IVLLX6	Z Max Load	0.960	0.960	0.960

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
IVLLX6	A Input Cap.	0.0162	0.0148	0.0152
IVLLX8	A Input Cap.	0.0216	0.0197	0.0203
IVLLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
IVLL	A-Z	A_Z (fall)	-0.008 + 0.227*Tr + 1.558*C	-0.014 + 0.271*Tr + 3.272*C	-0.015 + 0.246*Tr + 2.255*C
IVLL	A-Z	A_Z (rise)	-0.005 + 0.275*Tr + 1.927*C	-0.008 + 0.291*Tr + 3.978*C	-0.011 + 0.283*Tr + 2.841*C
IVLLP	A-Z	A_Z (fall)	-0.012 + 0.230*Tr + 0.802*C	-0.022 + 0.269*Tr + 1.641*C	-0.021 + 0.247*Tr + 1.147*C
IVLLP	A-Z	A_Z (rise)	-0.009 + 0.267*Tr + 0.964*C	-0.017 + 0.282*Tr + 1.969*C	-0.018 + 0.275*Tr + 1.414*C
IVLLX05	A-Z	A_Z (fall)	-0.011 + 0.244*Tr + 3.177*C	-0.018 + 0.298*Tr + 7.021*C	-0.021 + 0.268*Tr + 4.696*C
IVLLX05	A-Z	A_Z (rise)	-0.005 + 0.314*Tr + 4.206*C	-0.006 + 0.332*Tr + 8.955*C	-0.011 + 0.324*Tr + 6.265*C
IVLLX10	A-Z	A_Z (fall)	-0.011 + 0.226*Tr + 0.162*C	-0.022 + 0.265*Tr + 0.332*C	-0.021 + 0.243*Tr + 0.233*C
IVLLX10	A-Z	A_Z (rise)	-0.009 + 0.263*Tr + 0.195*C	-0.018 + 0.278*Tr + 0.398*C	-0.018 + 0.271*Tr + 0.286*C
IVLLX12	A-Z	A_Z (fall)	-0.014 + 0.232*Tr + 0.134*C	-0.027 + 0.271*Tr + 0.274*C	-0.025 + 0.249*Tr + 0.192*C
IVLLX12	A-Z	A_Z (rise)	-0.011 + 0.268*Tr + 0.161*C	-0.022 + 0.283*Tr + 0.329*C	-0.021 + 0.276*Tr + 0.236*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
IVLLX4	A-Z	A_Z (fall)	-0.007 + 0.218*Tr + 0.402°C	-0.013 + 0.256*Tr + 0.823°C	-0.014 + 0.234*Tr + 0.576°C
IVLLX4	A-Z	A_Z (rise)	-0.005 + 0.256*Tr + 0.483°C	-0.009 + 0.270*Tr + 0.988°C	-0.011 + 0.263*Tr + 0.709°C
IVLLX6	A-Z	A_Z (fall)	-0.009 + 0.217*Tr + 0.271°C	-0.017 + 0.255*Tr + 0.554°C	-0.017 + 0.233*Tr + 0.388°C
IVLLX6	A-Z	A_Z (rise)	-0.007 + 0.255*Tr + 0.325°C	-0.013 + 0.268*Tr + 0.664°C	-0.014 + 0.261*Tr + 0.477°C
IVLLX8	A-Z	A_Z (fall)	-0.008 + 0.215*Tr + 0.203°C	-0.014 + 0.252*Tr + 0.416°C	-0.015 + 0.231*Tr + 0.291°C
IVLLX8	A-Z	A_Z (rise)	-0.006 + 0.253*Tr + 0.244°C	-0.011 + 0.266*Tr + 0.498°C	-0.012 + 0.259*Tr + 0.358°C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
IVLL	1762.500	35972.500
IVLLP	3085.200	66641.500
IVLLX05	1136.010	20366.000
IVLLX10	15426.000	333205.000
IVLLX12	18511.500	399845.000
IVLLX4	6170.450	133280.000
IVLLX6	9255.400	199925.000
IVLLX8	12340.700	266565.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
IVLL	Z(max)	0.003 + 0.017*Tr
IVLLP	Z(max)	0.005 + 0.035*Tr
IVLLX05	Z(max)	0.002 + 0.007*Tr

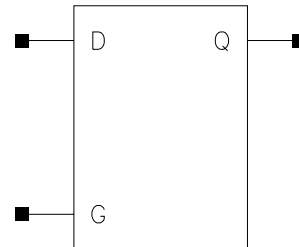
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
IVLLX10	Z(max)	$0.024 + 0.185 * Tr$
IVLLX12	Z(max)	$0.028 + 0.223 * Tr$
IVLLX4	Z(max)	$0.009 + 0.073 * Tr$
IVLLX6	Z(max)	$0.015 + 0.110 * Tr$
IVLLX8	Z(max)	$0.019 + 0.148 * Tr$

LD1QLL
LD1QLLP
LD1QLLX4
LD1QLLX6
LD1QLLX8

Function: Function = D Latch with Active High Clock, Q Output Only



Truth Table

IQ	Q
IQ	IQ

Truth Table

D	G	IQ	IQ
D	1	-	D
-	0	IQ	IQ

Physical Dimensions

Property	LD1QLL	LD1QLLP	LD1QLLX4	LD1QLLX6	LD1QLLX8
Area(um ²)	18.155	20.172	24.206	30.258	32.275

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1QLL	G Input Cap.	0.0024	0.0019	0.0021
LD1QLL	D Input Cap.	0.0023	0.0020	0.0021
LD1QLL	Q Max Load	0.160	0.160	0.160
LD1QLLP	Q Max Load	0.320	0.320	0.320
LD1QLLP	G Input Cap.	0.0025	0.0021	0.0022
LD1QLLP	D Input Cap.	0.0029	0.0025	0.0027
LD1QLLX4	D Input Cap.	0.0051	0.0046	0.0048
LD1QLLX4	Q Max Load	0.640	0.640	0.640
LD1QLLX4	G Input Cap.	0.0040	0.0034	0.0035
LD1QLLX6	D Input Cap.	0.0078	0.0068	0.0072

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1QLLX6	Q Max Load	0.960	0.960	0.960
LD1QLLX6	G Input Cap.	0.0057	0.0049	0.0052
LD1QLLX8	G Input Cap.	0.0076	0.0065	0.0068
LD1QLLX8	D Input Cap.	0.0100	0.0088	0.0092
LD1QLLX8	Q Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1QLL	G-Q	G_Q (fall)	0.111 + 0.182*Tr + 1.334*C	0.256 + 0.220*Tr + 2.909*C	0.166 + 0.197*Tr + 1.866*C
LD1QLL	G-Q	G_Q (rise)	0.105 + 0.175*Tr + 1.633*C	0.259 + 0.212*Tr + 3.459*C	0.159 + 0.189*Tr + 2.345*C
LD1QLL	D-Q	D_Q (fall)	0.094 + 0.249*Tr + 1.353*C	0.218 + 0.256*Tr + 2.956*C	0.143 + 0.252*Tr + 1.903*C
LD1QLL	D-Q	D_Q (rise)	0.063 + 0.186*Tr + 1.647*C	0.162 + 0.226*Tr + 3.506*C	0.097 + 0.204*Tr + 2.378*C
LD1QLLP	G-Q	G_Q (fall)	0.108 + 0.179*Tr + 0.658*C	0.247 + 0.218*Tr + 1.384*C	0.161 + 0.195*Tr + 0.905*C
LD1QLLP	G-Q	G_Q (rise)	0.112 + 0.174*Tr + 0.805*C	0.274 + 0.212*Tr + 1.688*C	0.169 + 0.189*Tr + 1.147*C
LD1QLLP	D-Q	D_Q (fall)	0.090 + 0.237*Tr + 0.668*C	0.207 + 0.247*Tr + 1.411*C	0.136 + 0.241*Tr + 0.925*C
LD1QLLP	D-Q	D_Q (rise)	0.067 + 0.202*Tr + 0.813*C	0.171 + 0.240*Tr + 1.714*C	0.102 + 0.219*Tr + 1.165*C
LD1QLLX4	G-Q	G_Q (fall)	0.093 + 0.181*Tr + 0.320*C	0.210 + 0.214*Tr + 0.672*C	0.137 + 0.194*Tr + 0.439*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1QLLX4	G-Q	G_Q (rise)	0.093 + 0.175*Tr + 0.400*C	0.224 + 0.208*Tr + 0.833*C	0.140 + 0.188*Tr + 0.569*C
LD1QLLX4	D-Q	D_Q (fall)	0.079 + 0.223*Tr + 0.326*C	0.182 + 0.232*Tr + 0.685*C	0.119 + 0.227*Tr + 0.449*C
LD1QLLX4	D-Q	D_Q (rise)	0.061 + 0.205*Tr + 0.403*C	0.154 + 0.239*Tr + 0.845*C	0.094 + 0.219*Tr + 0.577*C
LD1QLLX6	G-Q	G_Q (fall)	0.089 + 0.182*Tr + 0.213*C	0.201 + 0.213*Tr + 0.447*C	0.132 + 0.195*Tr + 0.292*C
LD1QLLX6	G-Q	G_Q (rise)	0.090 + 0.176*Tr + 0.266*C	0.217 + 0.207*Tr + 0.555*C	0.135 + 0.189*Tr + 0.379*C
LD1QLLX6	D-Q	D_Q (fall)	0.077 + 0.224*Tr + 0.217*C	0.178 + 0.233*Tr + 0.457*C	0.117 + 0.228*Tr + 0.299*C
LD1QLLX6	D-Q	D_Q (rise)	0.060 + 0.199*Tr + 0.269*C	0.151 + 0.234*Tr + 0.563*C	0.091 + 0.215*Tr + 0.384*C
LD1QLLX8	G-Q	G_Q (fall)	0.086 + 0.180*Tr + 0.159*C	0.192 + 0.209*Tr + 0.334*C	0.126 + 0.191*Tr + 0.218*C
LD1QLLX8	G-Q	G_Q (rise)	0.085 + 0.174*Tr + 0.200*C	0.206 + 0.203*Tr + 0.416*C	0.128 + 0.185*Tr + 0.284*C
LD1QLLX8	D-Q	D_Q (fall)	0.075 + 0.220*Tr + 0.162*C	0.173 + 0.229*Tr + 0.341*C	0.113 + 0.224*Tr + 0.223*C
LD1QLLX8	D-Q	D_Q (rise)	0.059 + 0.202*Tr + 0.201*C	0.147 + 0.235*Tr + 0.422*C	0.090 + 0.216*Tr + 0.288*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1QLL	D_G_HOLD (fall)	-0.010 + 0.154*Tr(G)	-0.023 + 0.131*Tr(G)	0.004 + 0.137*Tr(G)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1QLL	D_G_HOLD (rise)	0.015 + 0.231*Tr(G)	0.019 + 0.237*Tr(G)	0.004 + 0.238*Tr(G)
LD1QLL	D_G_SETUP (fall)	0.066 - 0.128*Tr(G) + 0.200*Tr(D)	0.146 - 0.135*Tr(G) + 0.212*Tr(D)	0.146 - 0.129*Tr(G) + 0.172*Tr(D)
LD1QLL	D_G_SETUP (rise)	0.033 - 0.081*Tr(G) + 0.108*Tr(D)	0.081 - 0.109*Tr(G) + 0.143*Tr(D)	0.103 - 0.117*Tr(G) + 0.104*Tr(D)
LD1QLL	Pulse Width High G	0.055	0.165	0.100
LD1QLLP	D_G_HOLD (fall)	-0.009 + 0.153*Tr(G)	-0.023 + 0.141*Tr(G)	0.004 + 0.147*Tr(G)
LD1QLLP	D_G_HOLD (rise)	0.016 + 0.241*Tr(G)	0.018 + 0.246*Tr(G)	0.004 + 0.244*Tr(G)
LD1QLLP	D_G_SETUP (fall)	0.066 - 0.128*Tr(G) + 0.186*Tr(D)	0.147 - 0.139*Tr(G) + 0.201*Tr(D)	0.146 - 0.132*Tr(G) + 0.159*Tr(D)
LD1QLLP	D_G_SETUP (rise)	0.034 - 0.088*Tr(G) + 0.122*Tr(D)	0.083 - 0.114*Tr(G) + 0.157*Tr(D)	0.109 - 0.125*Tr(G) + 0.112*Tr(D)
LD1QLLP	Pulse Width High G	0.060	0.165	0.105
LD1QLLX4	D_G_HOLD (fall)	-0.007 + 0.143*Tr(G)	-0.021 + 0.130*Tr(G)	0.004 + 0.134*Tr(G)
LD1QLLX4	D_G_HOLD (rise)	0.014 + 0.221*Tr(G)	0.018 + 0.229*Tr(G)	0.004 + 0.228*Tr(G)
LD1QLLX4	D_G_SETUP (fall)	0.059 - 0.116*Tr(G) + 0.171*Tr(D)	0.132 - 0.127*Tr(G) + 0.187*Tr(D)	0.136 - 0.125*Tr(G) + 0.149*Tr(D)
LD1QLLX4	D_G_SETUP (rise)	0.038 - 0.094*Tr(G) + 0.130*Tr(D)	0.081 - 0.112*Tr(G) + 0.164*Tr(D)	0.115 - 0.130*Tr(G) + 0.114*Tr(D)
LD1QLLX4	Pulse Width High G	0.045	0.135	0.090
LD1QLLX6	D_G_HOLD (fall)	-0.008 + 0.138*Tr(G)	-0.020 + 0.122*Tr(G)	0.004 + 0.124*Tr(G)
LD1QLLX6	D_G_HOLD (rise)	0.012 + 0.219*Tr(G)	0.017 + 0.221*Tr(G)	0.004 + 0.221*Tr(G)
LD1QLLX6	D_G_SETUP (fall)	0.058 - 0.115*Tr(G) + 0.176*Tr(D)	0.131 - 0.124*Tr(G) + 0.187*Tr(D)	0.131 - 0.119*Tr(G) + 0.152*Tr(D)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1QLLX6	D_G_SETUP (rise)	0.035 - 0.090*Tr(G) + 0.127*Tr(D)	0.079 - 0.109*Tr(G) + 0.162*Tr(D)	0.109 - 0.125*Tr(G) + 0.112*Tr(D)
LD1QLLX6	Pulse Width High G	0.045	0.130	0.085
LD1QLLX8	D_G_HOLD (fall)	-0.008 + 0.138*Tr(G)	-0.020 + 0.122*Tr(G)	0.004 + 0.124*Tr(G)
LD1QLLX8	D_G_HOLD (rise)	0.011 + 0.218*Tr(G)	0.016 + 0.218*Tr(G)	0.004 + 0.217*Tr(G)
LD1QLLX8	D_G_SETUP (fall)	0.056 - 0.111*Tr(G) + 0.172*Tr(D)	0.127 - 0.122*Tr(G) + 0.184*Tr(D)	0.127 - 0.117*Tr(G) + 0.147*Tr(D)
LD1QLLX8	D_G_SETUP (rise)	0.037 - 0.094*Tr(G) + 0.130*Tr(D)	0.080 - 0.110*Tr(G) + 0.164*Tr(D)	0.109 - 0.125*Tr(G) + 0.115*Tr(D)
LD1QLLX8	Pulse Width High G	0.045	0.120	0.080

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
LD1QLL	6608.380	125573.000
LD1QLLP	8120.070	160593.000
LD1QLLX4	13058.800	272647.000
LD1QLLX6	18446.300	390925.000
LD1QLLX8	23602.700	506833.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD1QLL	Q(related_pin:G)	0.028 + 0.010*Tr
LD1QLL	D(max)	0.002
LD1QLL	G(max)	0.012 + 0.010*Tr
LD1QLLP	Q(related_pin:G)	0.040 + 0.010*Tr
LD1QLLP	D(max)	0.002
LD1QLLP	G(max)	0.013 + 0.010*Tr
LD1QLLX4	Q(related_pin:G)	0.064 + 0.020*Tr
LD1QLLX4	D(max)	0.004

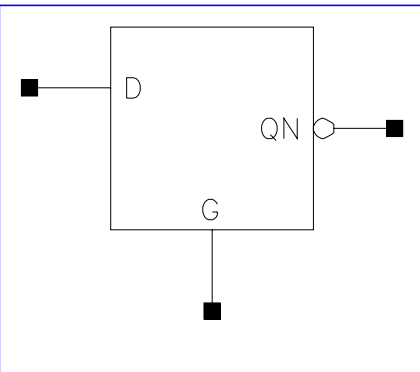
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD1QLLX4	G(max)	$0.020 + 0.019 * Tr$
LD1QLLX6	Q(related_pin:G)	$0.092 + 0.029 * Tr$
LD1QLLX6	D(max)	0.006
LD1QLLX6	G(max)	$0.029 + 0.028 * Tr$
LD1QLLX8	Q(related_pin:G)	$0.116 + 0.039 * Tr$
LD1QLLX8	D(max)	0.008
LD1QLLX8	G(max)	$0.036 + 0.037 * Tr$

LD1QNLL
LD1QNLLP
LD1QNLLX4
LD1QNLLX6
LD1QNLLX8

Function: Function = D Latch with Active Transparent; QN Output Only



Truth Table

IQ	QN
IQ	!IQ

Truth Table

D	G	IQ	IQ
D	1	-	D
-	0	IQ	IQ

Physical Dimensions

Property	LD1QNLL	LD1QNLLP	LD1QNLLX4	LD1QNLLX6	LD1QNLLX8
Area(um2)	18.155	18.155	24.206	26.224	30.258

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1QNLL	QN Max Load	0.160	0.160	0.160
LD1QNLL	G Input Cap.	0.0027	0.0022	0.0023
LD1QNLL	D Input Cap.	0.0017	0.0015	0.0016
LD1QNLLP	D Input Cap.	0.0023	0.0020	0.0021
LD1QNLLP	QN Max Load	0.320	0.320	0.320
LD1QNLLP	G Input Cap.	0.0026	0.0022	0.0023
LD1QNLLX4	G Input Cap.	0.0039	0.0033	0.0035
LD1QNLLX4	D Input Cap.	0.0034	0.0029	0.0031
LD1QNLLX4	QN Max Load	0.640	0.640	0.640
LD1QNLLX6	QN Max Load	0.960	0.960	0.960

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1QNLLX6	G Input Cap.	0.0057	0.0049	0.0051
LD1QNLLX6	D Input Cap.	0.0049	0.0042	0.0044
LD1QNLLX8	QN Max Load	1.280	1.280	1.280
LD1QNLLX8	G Input Cap.	0.0073	0.0063	0.0066
LD1QNLLX8	D Input Cap.	0.0062	0.0054	0.0057

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1QNLL	D-QN	D_QN (fall)	0.104 + 0.167*Tr + 1.290°C	0.258 + 0.208*Tr + 2.809°C	0.159 + 0.185*Tr + 1.797°C
LD1QNLL	D-QN	D_QN (rise)	0.103 + 0.247*Tr + 1.605°C	0.246 + 0.249*Tr + 3.342°C	0.158 + 0.247*Tr + 2.291°C
LD1QNLL	G-QN	G_QN (fall)	0.146 + 0.174*Tr + 1.290°C	0.356 + 0.210*Tr + 2.810°C	0.222 + 0.188*Tr + 1.797°C
LD1QNLL	G-QN	G_QN (rise)	0.114 + 0.181*Tr + 1.605°C	0.270 + 0.217*Tr + 3.351°C	0.171 + 0.195*Tr + 2.294°C
LD1QNLLP	D-QN	D_QN (fall)	0.103 + 0.174*Tr + 0.620°C	0.250 + 0.212*Tr + 1.293°C	0.156 + 0.191*Tr + 0.846°C
LD1QNLLP	D-QN	D_QN (rise)	0.103 + 0.230*Tr + 0.788°C	0.245 + 0.233*Tr + 1.627°C	0.156 + 0.231*Tr + 1.118°C
LD1QNLLP	G-QN	G_QN (fall)	0.146 + 0.178*Tr + 0.620°C	0.346 + 0.215*Tr + 1.293°C	0.219 + 0.192*Tr + 0.847°C
LD1QNLLP	G-QN	G_QN (rise)	0.118 + 0.183*Tr + 0.788°C	0.276 + 0.219*Tr + 1.631°C	0.175 + 0.197*Tr + 1.119°C
LD1QNLLX4	D-QN	D_QN (fall)	0.096 + 0.180*Tr + 0.308°C	0.229 + 0.216*Tr + 0.641°C	0.144 + 0.196*Tr + 0.420°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1QNLLX4	D-QN	D_QN (rise)	0.101 + 0.222*Tr + 0.394°C	0.235 + 0.228*Tr + 0.813°C	0.151 + 0.223*Tr + 0.560°C
LD1QNLLX4	G-QN	G_QN (fall)	0.125 + 0.176*Tr + 0.308°C	0.293 + 0.208*Tr + 0.641°C	0.187 + 0.188*Tr + 0.420°C
LD1QNLLX4	G-QN	G_QN (rise)	0.112 + 0.182*Tr + 0.395°C	0.257 + 0.214*Tr + 0.815°C	0.165 + 0.194*Tr + 0.561°C
LD1QNLLX6	D-QN	D_QN (fall)	0.089 + 0.175*Tr + 0.205°C	0.210 + 0.208*Tr + 0.427°C	0.133 + 0.190*Tr + 0.280°C
LD1QNLLX6	D-QN	D_QN (rise)	0.095 + 0.216*Tr + 0.263°C	0.220 + 0.221*Tr + 0.543°C	0.142 + 0.217*Tr + 0.374°C
LD1QNLLX6	G-QN	G_QN (fall)	0.114 + 0.176*Tr + 0.206°C	0.264 + 0.205*Tr + 0.427°C	0.169 + 0.187*Tr + 0.280°C
LD1QNLLX6	G-QN	G_QN (rise)	0.103 + 0.180*Tr + 0.264°C	0.235 + 0.209*Tr + 0.545°C	0.151 + 0.191*Tr + 0.374°C
LD1QNLLX8	D-QN	D_QN (fall)	0.088 + 0.183*Tr + 0.153°C	0.207 + 0.215*Tr + 0.319°C	0.131 + 0.197*Tr + 0.209°C
LD1QNLLX8	D-QN	D_QN (rise)	0.092 + 0.212*Tr + 0.197°C	0.214 + 0.218*Tr + 0.407°C	0.138 + 0.214*Tr + 0.280°C
LD1QNLLX8	G-QN	G_QN (fall)	0.109 + 0.175*Tr + 0.153°C	0.254 + 0.203*Tr + 0.319°C	0.162 + 0.186*Tr + 0.209°C
LD1QNLLX8	G-QN	G_QN (rise)	0.102 + 0.181*Tr + 0.198°C	0.231 + 0.210*Tr + 0.407°C	0.149 + 0.192*Tr + 0.280°C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1QNLL	D_G_HOLD (fall)	-0.011 + 0.143*Tr(G)	-0.024 + 0.121*Tr(G)	0.004 + 0.134*Tr(G)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1QNLL	D_G_HOLD (rise)	0.009 + 0.226*Tr(G)	0.005 + 0.224*Tr(G)	0.004 + 0.224*Tr(G)
LD1QNLL	D_G_SETUP (fall)	0.061 - 0.125*Tr(G) + 0.205*Tr(D)	0.139 - 0.133*Tr(G) + 0.214*Tr(D)	0.142 - 0.127*Tr(G) + 0.174*Tr(D)
LD1QNLL	D_G_SETUP (rise)	0.029 - 0.067*Tr(G) + 0.081*Tr(D)	0.074 - 0.096*Tr(G) + 0.120*Tr(D)	0.088 - 0.100*Tr(G) + 0.090*Tr(D)
LD1QNLL	Pulse Width High G	0.050	0.150	0.090
LD1QNLLP	D_G_HOLD (fall)	-0.010 + 0.154*Tr(G)	-0.023 + 0.136*Tr(G)	0.004 + 0.144*Tr(G)
LD1QNLLP	D_G_HOLD (rise)	0.013 + 0.232*Tr(G)	0.016 + 0.233*Tr(G)	0.004 + 0.234*Tr(G)
LD1QNLLP	D_G_SETUP (fall)	0.055 - 0.116*Tr(G) + 0.184*Tr(D)	0.123 - 0.126*Tr(G) + 0.193*Tr(D)	0.132 - 0.124*Tr(G) + 0.154*Tr(D)
LD1QNLLP	D_G_SETUP (rise)	0.026 - 0.065*Tr(G) + 0.083*Tr(D)	0.065 - 0.091*Tr(G) + 0.118*Tr(D)	0.081 - 0.099*Tr(G) + 0.095*Tr(D)
LD1QNLLP	Pulse Width High G	0.045	0.135	0.085
LD1QNLLX4	D_G_HOLD (fall)	-0.010 + 0.138*Tr(G)	-0.021 + 0.119*Tr(G)	0.004 + 0.124*Tr(G)
LD1QNLLX4	D_G_HOLD (rise)	0.011 + 0.218*Tr(G)	0.013 + 0.217*Tr(G)	0.004 + 0.217*Tr(G)
LD1QNLLX4	D_G_SETUP (fall)	0.055 - 0.113*Tr(G) + 0.178*Tr(D)	0.123 - 0.122*Tr(G) + 0.189*Tr(D)	0.127 - 0.117*Tr(G) + 0.154*Tr(D)
LD1QNLLX4	D_G_SETUP (rise)	0.030 - 0.073*Tr(G) + 0.097*Tr(D)	0.071 - 0.097*Tr(G) + 0.129*Tr(D)	0.093 - 0.107*Tr(G) + 0.097*Tr(D)
LD1QNLLX4	Pulse Width High G	0.040	0.130	0.080
LD1QNLLX6	D_G_HOLD (fall)	-0.008 + 0.138*Tr(G)	-0.021 + 0.122*Tr(G)	0.004 + 0.124*Tr(G)
LD1QNLLX6	D_G_HOLD (rise)	0.013 + 0.208*Tr(G)	0.019 + 0.210*Tr(G)	0.004 + 0.211*Tr(G)
LD1QNLLX6	D_G_SETUP (fall)	0.051 - 0.105*Tr(G) + 0.170*Tr(D)	0.111 - 0.114*Tr(G) + 0.180*Tr(D)	0.119 - 0.112*Tr(G) + 0.146*Tr(D)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1QNLLX6	D_G_SETUP (rise)	0.027 - 0.068*Tr(G) + 0.091*Tr(D)	0.061 - 0.087*Tr(G) + 0.120*Tr(D)	0.081 - 0.099*Tr(G) + 0.095*Tr(D)
LD1QNLLX6	Pulse Width High G	0.030	0.105	0.065
LD1QNLLX8	D_G_HOLD (fall)	-0.008 + 0.132*Tr(G)	-0.021 + 0.122*Tr(G)	0.004 + 0.124*Tr(G)
LD1QNLLX8	D_G_HOLD (rise)	0.010 + 0.205*Tr(G)	0.016 + 0.207*Tr(G)	0.004 + 0.207*Tr(G)
LD1QNLLX8	D_G_SETUP (fall)	0.050 - 0.103*Tr(G) + 0.166*Tr(D)	0.111 - 0.113*Tr(G) + 0.174*Tr(D)	0.117 - 0.110*Tr(G) + 0.144*Tr(D)
LD1QNLLX8	D_G_SETUP (rise)	0.029 - 0.073*Tr(G) + 0.101*Tr(D)	0.067 - 0.095*Tr(G) + 0.130*Tr(D)	0.089 - 0.105*Tr(G) + 0.099*Tr(D)
LD1QNLLX8	Pulse Width High G	0.030	0.105	0.070

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
LD1QNLL	6515.950	122058.000
LD1QNLLP	8070.980	159697.000
LD1QNLLX4	13133.500	275577.000
LD1QNLLX6	18310.200	390770.000
LD1QNLLX8	24070.200	520633.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD1QNLL	QN(related_pin:G)	0.026 + 0.010*Tr
LD1QNLL	D(max)	0.001
LD1QNLL	G(max)	0.012 + 0.010*Tr
LD1QNLLP	QN(related_pin:G)	0.036 + 0.010*Tr
LD1QNLLP	D(max)	0.002
LD1QNLLP	G(max)	0.012 + 0.010*Tr
LD1QNLLX4	QN(related_pin:G)	0.062 + 0.019*Tr
LD1QNLLX4	D(max)	0.002

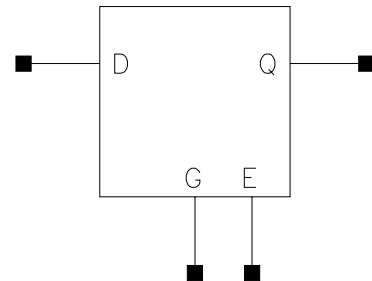
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD1QNLLX4	G(max)	$0.018 + 0.018 \cdot Tr$
LD1QNLLX6	QN(related_pin:G)	$0.087 + 0.028 \cdot Tr$
LD1QNLLX6	D(max)	0.004
LD1QNLLX6	G(max)	$0.023 + 0.027 \cdot Tr$
LD1QNLLX8	QN(related_pin:G)	$0.113 + 0.038 \cdot Tr$
LD1QNLLX8	D(max)	0.005
LD1QNLLX8	G(max)	$0.030 + 0.037 \cdot Tr$

LD1TQLL
LD1TQLLP
LD1TQLLX4
LD1TQLLX6
LD1TQLLX8

Function: Function = D Latch with Active High Clock, Q Output Only



Physical Dimensions

Property	LD1TQLL	LD1TQLLP	LD1TQLLX4	LD1TQLLX6	LD1TQLLX8
Area(um2)	22.189	26.224	30.258	42.361	42.361

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1TQLL	Q Max Load	0.160	0.160	0.160
LD1TQLL	G Input Cap.	0.0025	0.0020	0.0022
LD1TQLL	E Input Cap.	0.0032	0.0027	0.0029
LD1TQLL	D Input Cap.	0.0020	0.0017	0.0018
LD1TQLL	Q Input Cap.	0.0017	0.0020	0.0018
LD1TQLLP	D Input Cap.	0.0029	0.0025	0.0027
LD1TQLLP	Q Input Cap.	0.0033	0.0040	0.0036
LD1TQLLP	Q Max Load	0.320	0.320	0.320
LD1TQLLP	G Input Cap.	0.0026	0.0021	0.0022
LD1TQLLP	E Input Cap.	0.0040	0.0035	0.0037
LD1TQLLX4	D Input Cap.	0.0053	0.0047	0.0049
LD1TQLLX4	Q Input Cap.	0.0056	0.0066	0.0060
LD1TQLLX4	Q Max Load	0.640	0.640	0.640
LD1TQLLX4	G Input Cap.	0.0038	0.0032	0.0034
LD1TQLLX4	E Input Cap.	0.0077	0.0069	0.0072
LD1TQLLX6	E Input Cap.	0.0106	0.0095	0.0099
LD1TQLLX6	Q Max Load	0.960	0.960	0.960
LD1TQLLX6	D Input Cap.	0.0084	0.0074	0.0077
LD1TQLLX6	Q Input Cap.	0.0085	0.0102	0.0092

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1TQLLX6	G Input Cap.	0.0055	0.0047	0.0049
LD1TQLLX8	Q Max Load	1.280	1.280	1.280
LD1TQLLX8	G Input Cap.	0.0073	0.0062	0.0065
LD1TQLLX8	E Input Cap.	0.0117	0.0105	0.0109
LD1TQLLX8	D Input Cap.	0.0109	0.0097	0.0101
LD1TQLLX8	Q Input Cap.	0.0106	0.0125	0.0114

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1TQLL	G-Q	G_Q (fall)	0.117 + 0.170*Tr + 1.878*C	0.273 + 0.208*Tr + 4.830*C	0.176 + 0.186*Tr + 2.843*C
LD1TQLL	G-Q	G_Q (rise)	0.117 + 0.166*Tr + 3.032*C	0.287 + 0.203*Tr + 6.628*C	0.178 + 0.181*Tr + 4.453*C
LD1TQLL	D-Q	D_Q (fall)	0.105 + 0.258*Tr + 1.886*C	0.247 + 0.264*Tr + 4.849*C	0.161 + 0.261*Tr + 2.859*C
LD1TQLL	D-Q	D_Q (rise)	0.069 + 0.172*Tr + 3.036*C	0.177 + 0.212*Tr + 6.640*C	0.108 + 0.191*Tr + 4.459*C
LD1TQLL	E-Q	E_Q_3s_disable (fall)	0.056 + 0.263*Tr	0.126 + 0.265*Tr	0.087 + 0.259*Tr
LD1TQLL	E-Q	E_Q_3s_disable (rise)	-0.010 + 0.353*Tr	-0.025 + 0.383*Tr	-0.012 + 0.341*Tr
LD1TQLL	E-Q	E_Q_3s_enable (fall)	-0.018 + 0.188*Tr + 2.342*C	-0.025 + 0.232*Tr + 5.580*C	-0.028 + 0.212*Tr + 3.560*C
LD1TQLL	E-Q	E_Q_3s_enable (rise)	0.029 + 0.145*Tr + 3.021*C	0.066 + 0.182*Tr + 6.602*C	0.042 + 0.161*Tr + 4.440*C
LD1TQLLP	G-Q	G_Q (fall)	0.110 + 0.179*Tr + 0.957*C	0.257 + 0.217*Tr + 2.371*C	0.165 + 0.195*Tr + 1.422*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1TQLLP	G-Q	G_Q (rise)	0.118 + 0.174*Tr + 1.513*C	0.291 + 0.212*Tr + 3.264*C	0.180 + 0.189*Tr + 2.204*C
LD1TQLLP	D-Q	D_Q (fall)	0.092 + 0.236*Tr + 0.961*C	0.218 + 0.244*Tr + 2.382*C	0.141 + 0.240*Tr + 1.431*C
LD1TQLLP	D-Q	D_Q (rise)	0.074 + 0.195*Tr + 1.514*C	0.191 + 0.233*Tr + 3.271*C	0.115 + 0.212*Tr + 2.208*C
LD1TQLLP	E-Q	E_Q_3s_disable (fall)	0.074 + 0.267*Tr	0.149 + 0.278*Tr	0.103 + 0.271*Tr
LD1TQLLP	E-Q	E_Q_3s_disable (rise)	-0.005 + 0.332*Tr	-0.017 + 0.372*Tr	-0.005 + 0.322*Tr
LD1TQLLP	E-Q	E_Q_3s_enable (fall)	-0.023 + 0.188*Tr + 1.214*C	-0.036 + 0.225*Tr + 2.818*C	-0.036 + 0.209*Tr + 1.830*C
LD1TQLLP	E-Q	E_Q_3s_enable (rise)	0.034 + 0.156*Tr + 1.508*C	0.078 + 0.196*Tr + 3.249*C	0.050 + 0.173*Tr + 2.198*C
LD1TQLLX4	G-Q	G_Q (fall)	0.101 + 0.188*Tr + 0.490*C	0.231 + 0.221*Tr + 1.216*C	0.150 + 0.201*Tr + 0.728*C
LD1TQLLX4	G-Q	G_Q (rise)	0.101 + 0.181*Tr + 0.772*C	0.244 + 0.215*Tr + 1.661*C	0.152 + 0.194*Tr + 1.124*C
LD1TQLLX4	D-Q	D_Q (fall)	0.086 + 0.228*Tr + 0.492*C	0.203 + 0.235*Tr + 1.221*C	0.131 + 0.231*Tr + 0.732*C
LD1TQLLX4	D-Q	D_Q (rise)	0.068 + 0.193*Tr + 0.772*C	0.172 + 0.227*Tr + 1.666*C	0.105 + 0.208*Tr + 1.126*C
LD1TQLLX4	E-Q	E_Q_3s_disable (fall)	0.059 + 0.255*Tr	0.127 + 0.260*Tr	0.088 + 0.252*Tr
LD1TQLLX4	E-Q	E_Q_3s_disable (rise)	-0.009 + 0.349*Tr	-0.024 + 0.381*Tr	-0.012 + 0.341*Tr
LD1TQLLX4	E-Q	E_Q_3s_enable (fall)	-0.017 + 0.174*Tr + 0.622*C	-0.027 + 0.213*Tr + 1.451*C	-0.029 + 0.194*Tr + 0.935*C
LD1TQLLX4	E-Q	E_Q_3s_enable (rise)	0.030 + 0.159*Tr + 0.769*C	0.067 + 0.192*Tr + 1.660*C	0.044 + 0.173*Tr + 1.121*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1TQLLX6	G-Q	G_Q (fall)	0.093 + 0.190*Tr + 0.312*C	0.216 + 0.221*Tr + 0.771*C	0.139 + 0.202*Tr + 0.463*C
LD1TQLLX6	G-Q	G_Q (rise)	0.097 + 0.184*Tr + 0.491*C	0.235 + 0.215*Tr + 1.057*C	0.147 + 0.196*Tr + 0.715*C
LD1TQLLX6	D-Q	D_Q (fall)	0.080 + 0.226*Tr + 0.313*C	0.192 + 0.233*Tr + 0.775*C	0.123 + 0.229*Tr + 0.465*C
LD1TQLLX6	D-Q	D_Q (rise)	0.066 + 0.187*Tr + 0.492*C	0.167 + 0.221*Tr + 1.060*C	0.102 + 0.202*Tr + 0.717*C
LD1TQLLX6	E-Q	E_Q_3s_disable (fall)	0.054 + 0.239*Tr	0.118 + 0.243*Tr	0.082 + 0.237*Tr
LD1TQLLX6	E-Q	E_Q_3s_disable (rise)	-0.010 + 0.352*Tr	-0.023 + 0.402*Tr	-0.013 + 0.358*Tr
LD1TQLLX6	E-Q	E_Q_3s_enable (fall)	-0.020 + 0.167*Tr + 0.404*C	-0.032 + 0.203*Tr + 0.939*C	-0.032 + 0.187*Tr + 0.612*C
LD1TQLLX6	E-Q	E_Q_3s_enable (rise)	0.031 + 0.174*Tr + 0.490*C	0.068 + 0.206*Tr + 1.054*C	0.045 + 0.187*Tr + 0.714*C
LD1TQLLX8	G-Q	G_Q (fall)	0.089 + 0.188*Tr + 0.261*C	0.205 + 0.218*Tr + 0.649*C	0.133 + 0.200*Tr + 0.388*C
LD1TQLLX8	G-Q	G_Q (rise)	0.093 + 0.181*Tr + 0.416*C	0.224 + 0.211*Tr + 0.897*C	0.141 + 0.192*Tr + 0.606*C
LD1TQLLX8	D-Q	D_Q (fall)	0.077 + 0.222*Tr + 0.261*C	0.185 + 0.228*Tr + 0.652*C	0.119 + 0.225*Tr + 0.390*C
LD1TQLLX8	D-Q	D_Q (rise)	0.065 + 0.187*Tr + 0.417*C	0.164 + 0.220*Tr + 0.899*C	0.100 + 0.202*Tr + 0.607*C
LD1TQLLX8	E-Q	E_Q_3s_disable (fall)	0.071 + 0.248*Tr	0.140 + 0.259*Tr	0.098 + 0.252*Tr
LD1TQLLX8	E-Q	E_Q_3s_disable (rise)	-0.008 + 0.348*Tr	-0.021 + 0.381*Tr	-0.010 + 0.340*Tr

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1TQLX8	E-Q	E_Q_3s_enable (fall)	-0.018 + 0.172*Tr + 0.329*C	-0.028 + 0.209*Tr + 0.774*C	-0.029 + 0.191*Tr + 0.496*C
LD1TQLX8	E-Q	E_Q_3s_enable (rise)	0.037 + 0.184*Tr + 0.415*C	0.080 + 0.219*Tr + 0.899*C	0.053 + 0.198*Tr + 0.606*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1TQLL	D_G_HOLD (fall)	-0.012 + 0.153*Tr(G)	-0.026 + 0.130*Tr(G)	0.004 + 0.141*Tr(G)
LD1TQLL	D_G_HOLD (rise)	0.015 + 0.246*Tr(G)	0.020 + 0.246*Tr(G)	0.004 + 0.248*Tr(G)
LD1TQLL	D_G_SETUP (fall)	0.075 - 0.140*Tr(G) + 0.213*Tr(D)	0.171 - 0.151*Tr(G) + 0.228*Tr(D)	0.162 - 0.141*Tr(G) + 0.184*Tr(D)
LD1TQLL	D_G_SETUP (rise)	0.029 - 0.070*Tr(G) + 0.089*Tr(D)	0.065 - 0.093*Tr(G) + 0.124*Tr(D)	0.083 - 0.100*Tr(G) + 0.097*Tr(D)
LD1TQLL	Pulse Width High G	0.050	0.180	0.115
LD1TQLLP	D_G_HOLD (fall)	-0.010 + 0.154*Tr(G)	-0.024 + 0.139*Tr(G)	0.004 + 0.144*Tr(G)
LD1TQLLP	D_G_HOLD (rise)	0.013 + 0.242*Tr(G)	0.015 + 0.246*Tr(G)	0.004 + 0.244*Tr(G)
LD1TQLLP	D_G_SETUP (fall)	0.064 - 0.125*Tr(G) + 0.185*Tr(D)	0.145 - 0.135*Tr(G) + 0.199*Tr(D)	0.142 - 0.130*Tr(G) + 0.161*Tr(D)
LD1TQLLP	D_G_SETUP (rise)	0.032 - 0.084*Tr(G) + 0.117*Tr(D)	0.076 - 0.108*Tr(G) + 0.149*Tr(D)	0.103 - 0.120*Tr(G) + 0.110*Tr(D)
LD1TQLLP	Pulse Width High G	0.055	0.160	0.100
LD1TQLX4	D_G_HOLD (fall)	-0.009 + 0.133*Tr(G)	-0.020 + 0.116*Tr(G)	0.004 + 0.124*Tr(G)
LD1TQLX4	D_G_HOLD (rise)	0.013 + 0.218*Tr(G)	0.017 + 0.224*Tr(G)	0.004 + 0.224*Tr(G)
LD1TQLX4	D_G_SETUP (fall)	0.059 - 0.115*Tr(G) + 0.180*Tr(D)	0.136 - 0.124*Tr(G) + 0.194*Tr(D)	0.131 - 0.119*Tr(G) + 0.159*Tr(D)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD1TQLLX4	D_G_SETUP (rise)	0.033 - 0.085*Tr(G) + 0.120*Tr(D)	0.072 - 0.104*Tr(G) + 0.148*Tr(D)	0.098 - 0.117*Tr(G) + 0.110*Tr(D)
LD1TQLLX4	Pulse Width High G	0.045	0.140	0.090
LD1TQLLX6	D_G_HOLD (fall)	-0.009 + 0.133*Tr(G)	-0.019 + 0.113*Tr(G)	0.004 + 0.120*Tr(G)
LD1TQLLX6	D_G_HOLD (rise)	0.015 + 0.216*Tr(G)	0.022 + 0.217*Tr(G)	0.004 + 0.217*Tr(G)
LD1TQLLX6	D_G_SETUP (fall)	0.056 - 0.110*Tr(G) + 0.177*Tr(D)	0.129 - 0.119*Tr(G) + 0.190*Tr(D)	0.125 - 0.114*Tr(G) + 0.157*Tr(D)
LD1TQLLX6	D_G_SETUP (rise)	0.030 - 0.078*Tr(G) + 0.111*Tr(D)	0.066 - 0.097*Tr(G) + 0.139*Tr(D)	0.090 - 0.110*Tr(G) + 0.107*Tr(D)
LD1TQLLX6	Pulse Width High G	0.040	0.130	0.080
LD1TQLLX8	D_G_HOLD (fall)	-0.008 + 0.132*Tr(G)	-0.019 + 0.113*Tr(G)	0.004 + 0.120*Tr(G)
LD1TQLLX8	D_G_HOLD (rise)	0.012 + 0.213*Tr(G)	0.018 + 0.215*Tr(G)	0.004 + 0.214*Tr(G)
LD1TQLLX8	D_G_SETUP (fall)	0.054 - 0.108*Tr(G) + 0.173*Tr(D)	0.124 - 0.116*Tr(G) + 0.186*Tr(D)	0.120 - 0.110*Tr(G) + 0.154*Tr(D)
LD1TQLLX8	D_G_SETUP (rise)	0.030 - 0.079*Tr(G) + 0.113*Tr(D)	0.066 - 0.097*Tr(G) + 0.140*Tr(D)	0.090 - 0.110*Tr(G) + 0.107*Tr(D)
LD1TQLLX8	Pulse Width High G	0.040	0.120	0.080

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
LD1TQLL	6860.540	128422.000
LD1TQLLP	7951.290	156898.000
LD1TQLLX4	12195.700	258644.000
LD1TQLLX6	17171.400	372637.000
LD1TQLLX8	20308.100	444359.000

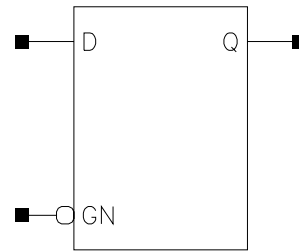
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD1TQLL	Q(related_pin:G)	$0.031 + 0.009 * Tr$
LD1TQLL	D(max)	$0.015 + 0.006 * Tr$
LD1TQLL	G(max)	$0.019 + 0.009 * Tr$
LD1TQLLP	Q(related_pin:G)	$0.046 + 0.010 * Tr$
LD1TQLLP	D(max)	$0.021 + 0.009 * Tr$
LD1TQLLP	G(max)	$0.024 + 0.010 * Tr$
LD1TQLLX4	Q(related_pin:G)	$0.076 + 0.018 * Tr$
LD1TQLLX4	D(max)	$0.034 + 0.018 * Tr$
LD1TQLLX4	G(max)	$0.036 + 0.018 * Tr$
LD1TQLLX6	Q(related_pin:G)	$0.113 + 0.027 * Tr$
LD1TQLLX6	D(max)	$0.048 + 0.029 * Tr$
LD1TQLLX6	G(max)	$0.050 + 0.027 * Tr$
LD1TQLLX8	Q(related_pin:G)	$0.136 + 0.037 * Tr$
LD1TQLLX8	D(max)	$0.060 + 0.038 * Tr$
LD1TQLLX8	G(max)	$0.062 + 0.036 * Tr$

LD2QLL
LD2QLLP
LD2QLLX4
LD2QLLX6
LD2QLLX8

Function: Function = D Latch with Active Low Clock, Q Output Only



Truth Table

IQ	Q
IQ	IQ

Truth Table

D	GN	IQ	IQ
D	0	-	D
-	1	IQ	IQ

Physical Dimensions

Property	LD2QLL	LD2QLLP	LD2QLLX4	LD2QLLX6	LD2QLLX8
Area(um ²)	18.155	20.172	24.206	30.258	32.275

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD2QLL	D Input Cap.	0.0023	0.0020	0.0021
LD2QLL	GN Input Cap.	0.0021	0.0018	0.0019
LD2QLL	Q Max Load	0.160	0.160	0.160
LD2QLLP	D Input Cap.	0.0030	0.0027	0.0028
LD2QLLP	GN Input Cap.	0.0021	0.0017	0.0018
LD2QLLP	Q Max Load	0.320	0.320	0.320
LD2QLLX4	D Input Cap.	0.0052	0.0046	0.0048
LD2QLLX4	GN Input Cap.	0.0037	0.0032	0.0033
LD2QLLX4	Q Max Load	0.640	0.640	0.640

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD2QLLX6	D Input Cap.	0.0080	0.0070	0.0074
LD2QLLX6	GN Input Cap.	0.0053	0.0046	0.0047
LD2QLLX6	Q Max Load	0.960	0.960	0.960
LD2QLLX8	D Input Cap.	0.0103	0.0091	0.0095
LD2QLLX8	GN Input Cap.	0.0070	0.0061	0.0063
LD2QLLX8	Q Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD2QLL	D-Q	D_Q (fall)	0.094 + 0.249*Tr + 1.353*C	0.218 + 0.256*Tr + 2.958*C	0.143 + 0.252*Tr + 1.904*C
LD2QLL	D-Q	D_Q (rise)	0.063 + 0.187*Tr + 1.649*C	0.162 + 0.226*Tr + 3.506*C	0.097 + 0.204*Tr + 2.378*C
LD2QLL	GN-Q	GN_Q (fall)	0.143 + 0.241*Tr + 1.334*C	0.325 + 0.249*Tr + 2.908*C	0.213 + 0.243*Tr + 1.865*C
LD2QLL	GN-Q	GN_Q (rise)	0.091 + 0.251*Tr + 1.635*C	0.220 + 0.258*Tr + 3.465*C	0.139 + 0.253*Tr + 2.349*C
LD2QLLP	D-Q	D_Q (fall)	0.089 + 0.239*Tr + 0.666*C	0.206 + 0.249*Tr + 1.406*C	0.135 + 0.243*Tr + 0.921*C
LD2QLLP	D-Q	D_Q (rise)	0.063 + 0.195*Tr + 0.810*C	0.158 + 0.232*Tr + 1.700*C	0.096 + 0.212*Tr + 1.159*C
LD2QLLP	GN-Q	GN_Q (fall)	0.139 + 0.249*Tr + 0.655*C	0.313 + 0.258*Tr + 1.377*C	0.206 + 0.251*Tr + 0.901*C
LD2QLLP	GN-Q	GN_Q (rise)	0.094 + 0.259*Tr + 0.802*C	0.224 + 0.267*Tr + 1.677*C	0.142 + 0.261*Tr + 1.143*C
LD2QLLX4	D-Q	D_Q (fall)	0.080 + 0.226*Tr + 0.326*C	0.184 + 0.235*Tr + 0.685*C	0.120 + 0.230*Tr + 0.449*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD2QLLX4	D-Q	D_Q (rise)	0.059 + 0.199*Tr + 0.402*C	0.147 + 0.233*Tr + 0.842*C	0.090 + 0.214*Tr + 0.575*C
LD2QLLX4	GN-Q	GN_Q (fall)	0.116 + 0.230*Tr + 0.320*C	0.260 + 0.238*Tr + 0.672*C	0.172 + 0.232*Tr + 0.439*C
LD2QLLX4	GN-Q	GN_Q (rise)	0.082 + 0.239*Tr + 0.399*C	0.194 + 0.247*Tr + 0.831*C	0.123 + 0.241*Tr + 0.568*C
LD2QLLX6	D-Q	D_Q (fall)	0.078 + 0.227*Tr + 0.217*C	0.180 + 0.236*Tr + 0.457*C	0.118 + 0.231*Tr + 0.299*C
LD2QLLX6	D-Q	D_Q (rise)	0.058 + 0.194*Tr + 0.268*C	0.144 + 0.229*Tr + 0.561*C	0.088 + 0.209*Tr + 0.383*C
LD2QLLX6	GN-Q	GN_Q (fall)	0.110 + 0.224*Tr + 0.213*C	0.246 + 0.231*Tr + 0.447*C	0.162 + 0.225*Tr + 0.292*C
LD2QLLX6	GN-Q	GN_Q (rise)	0.078 + 0.231*Tr + 0.266*C	0.186 + 0.239*Tr + 0.553*C	0.118 + 0.233*Tr + 0.378*C
LD2QLLX8	D-Q	D_Q (fall)	0.076 + 0.224*Tr + 0.162*C	0.174 + 0.232*Tr + 0.341*C	0.114 + 0.227*Tr + 0.224*C
LD2QLLX8	D-Q	D_Q (rise)	0.057 + 0.196*Tr + 0.201*C	0.141 + 0.229*Tr + 0.420*C	0.086 + 0.210*Tr + 0.287*C
LD2QLLX8	GN-Q	GN_Q (fall)	0.104 + 0.220*Tr + 0.159*C	0.234 + 0.227*Tr + 0.334*C	0.154 + 0.221*Tr + 0.218*C
LD2QLLX8	GN-Q	GN_Q (rise)	0.075 + 0.228*Tr + 0.199*C	0.179 + 0.235*Tr + 0.415*C	0.113 + 0.230*Tr + 0.284*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD2QLL	D_GN_HOLD (fall)	-0.002 + 0.144*Tr(GN)	-0.011 + 0.173*Tr(GN)	0.004 + 0.147*Tr(GN)
LD2QLL	D_GN_HOLD (rise)	-0.004 + 0.100*Tr(GN)	-0.015 + 0.112*Tr(GN)	0.004 + 0.100*Tr(GN)
LD2QLL	D_GN_SETUP (fall)	0.047 - 0.107*Tr(GN) + 0.200*Tr(D)	0.106 - 0.125*Tr(GN) + 0.195*Tr(D)	0.128 - 0.119*Tr(GN) + 0.166*Tr(D)
LD2QLL	D_GN_SETUP (rise)	0.052 - 0.093*Tr(GN) + 0.161*Tr(D)	0.125 - 0.115*Tr(GN) + 0.201*Tr(D)	0.108 - 0.095*Tr(GN) + 0.159*Tr(D)
LD2QLL	Pulse Width Low GN	0.075	0.200	0.135
LD2QLLP	D_GN_HOLD (fall)	0.001 + 0.145*Tr(GN)	-0.007 + 0.181*Tr(GN)	0.004 + 0.154*Tr(GN)
LD2QLLP	D_GN_HOLD (rise)	-0.003 + 0.085*Tr(GN)	-0.014 + 0.101*Tr(GN)	0.005 + 0.090*Tr(GN)
LD2QLLP	D_GN_SETUP (fall)	0.048 - 0.107*Tr(GN) + 0.189*Tr(D)	0.104 - 0.123*Tr(GN) + 0.189*Tr(D)	0.121 - 0.115*Tr(GN) + 0.162*Tr(D)
LD2QLLP	D_GN_SETUP (rise)	0.051 - 0.088*Tr(GN) + 0.173*Tr(D)	0.123 - 0.109*Tr(GN) + 0.207*Tr(D)	0.106 - 0.092*Tr(GN) + 0.169*Tr(D)
LD2QLLP	Pulse Width Low GN	0.080	0.200	0.135
LD2QLLX4	D_GN_HOLD (fall)	0.002 + 0.151*Tr(GN)	-0.004 + 0.179*Tr(GN)	0.004 + 0.157*Tr(GN)
LD2QLLX4	D_GN_HOLD (rise)	-0.004 + 0.090*Tr(GN)	-0.015 + 0.101*Tr(GN)	0.004 + 0.094*Tr(GN)
LD2QLLX4	D_GN_SETUP (fall)	0.046 - 0.102*Tr(GN) + 0.174*Tr(D)	0.099 - 0.118*Tr(GN) + 0.176*Tr(D)	0.122 - 0.117*Tr(GN) + 0.147*Tr(D)
LD2QLLX4	D_GN_SETUP (rise)	0.050 - 0.090*Tr(GN) + 0.176*Tr(D)	0.118 - 0.108*Tr(GN) + 0.207*Tr(D)	0.103 - 0.092*Tr(GN) + 0.169*Tr(D)
LD2QLLX4	Pulse Width Low GN	0.065	0.155	0.105
LD2QLLX6	D_GN_HOLD (fall)	0.002 + 0.151*Tr(GN)	-0.007 + 0.181*Tr(GN)	0.004 + 0.157*Tr(GN)
LD2QLLX6	D_GN_HOLD (rise)	-0.005 + 0.096*Tr(GN)	-0.016 + 0.103*Tr(GN)	0.004 + 0.097*Tr(GN)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD2QLLX6	D_GN_SETUP (fall)	0.046 - 0.104*Tr(GN) + 0.175*Tr(D)	0.099 - 0.118*Tr(GN) + 0.178*Tr(D)	0.121 - 0.115*Tr(GN) + 0.149*Tr(D)
LD2QLLX6	D_GN_SETUP (rise)	0.050 - 0.091*Tr(GN) + 0.170*Tr(D)	0.117 - 0.108*Tr(GN) + 0.202*Tr(D)	0.103 - 0.092*Tr(GN) + 0.162*Tr(D)
LD2QLLX6	Pulse Width Low GN	0.065	0.145	0.100
LD2QLLX8	D_GN_HOLD (fall)	0.002 + 0.151*Tr(GN)	-0.006 + 0.177*Tr(GN)	0.004 + 0.154*Tr(GN)
LD2QLLX8	D_GN_HOLD (rise)	-0.004 + 0.090*Tr(GN)	-0.015 + 0.100*Tr(GN)	0.004 + 0.094*Tr(GN)
LD2QLLX8	D_GN_SETUP (fall)	0.045 - 0.101*Tr(GN) + 0.172*Tr(D)	0.096 - 0.115*Tr(GN) + 0.174*Tr(D)	0.116 - 0.112*Tr(GN) + 0.146*Tr(D)
LD2QLLX8	D_GN_SETUP (rise)	0.050 - 0.090*Tr(GN) + 0.172*Tr(D)	0.114 - 0.105*Tr(GN) + 0.203*Tr(D)	0.103 - 0.092*Tr(GN) + 0.162*Tr(D)
LD2QLLX8	Pulse Width Low GN	0.060	0.135	0.090

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
LD2QLL	6608.370	125568.000
LD2QLLP	8149.150	161257.000
LD2QLLX4	13117.500	273890.000
LD2QLLX6	18527.700	392690.000
LD2QLLX8	23720.500	509357.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD2QLL	Q(related_pin:GN)	0.036 + 0.010*Tr
LD2QLL	D(max)	0.002
LD2QLL	GN(max)	0.012 + 0.010*Tr
LD2QLLP	Q(related_pin:GN)	0.046 + 0.010*Tr
LD2QLLP	D(max)	0.002

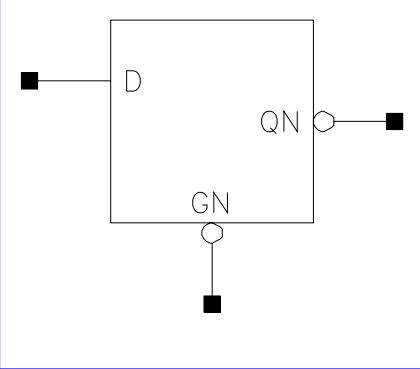
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD2QLLP	GN(max)	$0.013 + 0.010 * Tr$
LD2QLLX4	Q(related_pin:GN)	$0.076 + 0.020 * Tr$
LD2QLLX4	D(max)	0.004
LD2QLLX4	GN(max)	$0.021 + 0.019 * Tr$
LD2QLLX6	Q(related_pin:GN)	$0.108 + 0.030 * Tr$
LD2QLLX6	D(max)	0.006
LD2QLLX6	GN(max)	$0.028 + 0.028 * Tr$
LD2QLLX8	Q(related_pin:GN)	$0.136 + 0.041 * Tr$
LD2QLLX8	D(max)	0.008
LD2QLLX8	GN(max)	$0.035 + 0.038 * Tr$

LD2QNLL
LD2QNLLP
LD2QNLLX4
LD2QNLLX6
LD2QNLLX8

Function: Function = D Latch with Active Low Transparent
 ,QN Output Only



Truth Table

IQ	QN
IQ	!IQ

Truth Table

D	GN	IQ	IQ
D	0	-	D
-	1	IQ	IQ

Physical Dimensions

Property	LD2QNLL	LD2QNLLP	LD2QNLLX4	LD2QNLLX6	LD2QNLLX8
Area(um ²)	18.155	18.155	24.206	26.224	30.258

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD2QNLL	QN Max Load	0.160	0.160	0.160
LD2QNLL	D Input Cap.	0.0016	0.0014	0.0015
LD2QNLL	GN Input Cap.	0.0022	0.0018	0.0019
LD2QNLLP	QN Max Load	0.320	0.320	0.320
LD2QNLLP	D Input Cap.	0.0022	0.0019	0.0021
LD2QNLLP	GN Input Cap.	0.0021	0.0017	0.0018
LD2QNLLX4	D Input Cap.	0.0032	0.0028	0.0030
LD2QNLLX4	GN Input Cap.	0.0036	0.0031	0.0032
LD2QNLLX4	QN Max Load	0.640	0.640	0.640

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD2QNLLX6	QN Max Load	0.960	0.960	0.960
LD2QNLLX6	D Input Cap.	0.0048	0.0042	0.0044
LD2QNLLX6	GN Input Cap.	0.0048	0.0042	0.0043
LD2QNLLX8	QN Max Load	1.280	1.280	1.280
LD2QNLLX8	D Input Cap.	0.0062	0.0054	0.0057
LD2QNLLX8	GN Input Cap.	0.0068	0.0060	0.0062

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD2QNLL	D-QN	D_QN (fall)	0.106 + 0.169*Tr + 1.291*C	0.264 + 0.211*Tr + 2.814*C	0.163 + 0.187*Tr + 1.799*C
LD2QNLL	D-QN	D_QN (rise)	0.109 + 0.248*Tr + 1.605*C	0.262 + 0.251*Tr + 3.352*C	0.168 + 0.249*Tr + 2.295*C
LD2QNLL	GN-QN	GN_QN (fall)	0.128 + 0.239*Tr + 1.292*C	0.308 + 0.243*Tr + 2.814*C	0.194 + 0.240*Tr + 1.800*C
LD2QNLL	GN-QN	GN_QN (rise)	0.153 + 0.232*Tr + 1.607*C	0.357 + 0.237*Tr + 3.357*C	0.230 + 0.232*Tr + 2.294*C
LD2QNLLP	D-QN	D_QN (fall)	0.101 + 0.176*Tr + 0.617*C	0.246 + 0.214*Tr + 1.287*C	0.154 + 0.193*Tr + 0.842*C
LD2QNLLP	D-QN	D_QN (rise)	0.108 + 0.231*Tr + 0.789*C	0.256 + 0.236*Tr + 1.628*C	0.163 + 0.232*Tr + 1.119*C
LD2QNLLP	GN-QN	GN_QN (fall)	0.124 + 0.239*Tr + 0.618*C	0.291 + 0.245*Tr + 1.287*C	0.187 + 0.241*Tr + 0.843*C
LD2QNLLP	GN-QN	GN_QN (rise)	0.151 + 0.234*Tr + 0.790*C	0.352 + 0.239*Tr + 1.633*C	0.226 + 0.234*Tr + 1.121*C
LD2QNLLX4	D-QN	D_QN (fall)	0.092 + 0.172*Tr + 0.307*C	0.217 + 0.207*Tr + 0.639*C	0.138 + 0.188*Tr + 0.418*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD2QNLLX4	D-QN	D_QN (rise)	0.101 + 0.228*Tr + 0.394*C	0.237 + 0.234*Tr + 0.813*C	0.153 + 0.230*Tr + 0.559*C
LD2QNLLX4	GN-QN	GN_QN (fall)	0.112 + 0.226*Tr + 0.307*C	0.257 + 0.233*Tr + 0.639*C	0.167 + 0.228*Tr + 0.418*C
LD2QNLLX4	GN-QN	GN_QN (rise)	0.133 + 0.222*Tr + 0.395*C	0.302 + 0.228*Tr + 0.814*C	0.196 + 0.223*Tr + 0.560*C
LD2QNLLX6	D-QN	D_QN (fall)	0.090 + 0.179*Tr + 0.205*C	0.213 + 0.212*Tr + 0.427*C	0.135 + 0.194*Tr + 0.280*C
LD2QNLLX6	D-QN	D_QN (rise)	0.094 + 0.212*Tr + 0.264*C	0.218 + 0.218*Tr + 0.543*C	0.141 + 0.214*Tr + 0.374*C
LD2QNLLX6	GN-QN	GN_QN (fall)	0.107 + 0.218*Tr + 0.206*C	0.246 + 0.224*Tr + 0.427*C	0.159 + 0.220*Tr + 0.280*C
LD2QNLLX6	GN-QN	GN_QN (rise)	0.122 + 0.215*Tr + 0.264*C	0.276 + 0.221*Tr + 0.544*C	0.179 + 0.216*Tr + 0.374*C
LD2QNLLX8	D-QN	D_QN (fall)	0.088 + 0.183*Tr + 0.153*C	0.207 + 0.215*Tr + 0.319*C	0.131 + 0.197*Tr + 0.209*C
LD2QNLLX8	D-QN	D_QN (rise)	0.092 + 0.212*Tr + 0.197*C	0.214 + 0.218*Tr + 0.407*C	0.138 + 0.214*Tr + 0.280*C
LD2QNLLX8	GN-QN	GN_QN (fall)	0.103 + 0.215*Tr + 0.153*C	0.236 + 0.221*Tr + 0.319*C	0.153 + 0.216*Tr + 0.209*C
LD2QNLLX8	GN-QN	GN_QN (rise)	0.117 + 0.211*Tr + 0.198*C	0.265 + 0.216*Tr + 0.407*C	0.173 + 0.211*Tr + 0.280*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD2QNLL	D_GN_HOLD (fall)	-0.006 + 0.133*Tr(GN)	-0.021 + 0.156*Tr(GN)	0.004 + 0.134*Tr(GN)
LD2QNLL	D_GN_HOLD (rise)	-0.005 + 0.095*Tr(GN)	-0.018 + 0.100*Tr(GN)	0.004 + 0.097*Tr(GN)
LD2QNLL	D_GN_SETUP (fall)	0.051 - 0.111*Tr(GN) + 0.205*Tr(D)	0.117 - 0.128*Tr(GN) + 0.196*Tr(D)	0.131 - 0.119*Tr(GN) + 0.172*Tr(D)
LD2QNLL	D_GN_SETUP (rise)	0.049 - 0.089*Tr(GN) + 0.140*Tr(D)	0.128 - 0.115*Tr(GN) + 0.181*Tr(D)	0.109 - 0.095*Tr(GN) + 0.136*Tr(D)
LD2QNLL	Pulse Width Low GN	0.065	0.200	0.135
LD2QNLLP	D_GN_HOLD (fall)	-0.005 + 0.138*Tr(GN)	-0.018 + 0.170*Tr(GN)	0.004 + 0.147*Tr(GN)
LD2QNLLP	D_GN_HOLD (rise)	-0.005 + 0.096*Tr(GN)	-0.017 + 0.106*Tr(GN)	0.004 + 0.097*Tr(GN)
LD2QNLLP	D_GN_SETUP (fall)	0.047 - 0.105*Tr(GN) + 0.181*Tr(D)	0.105 - 0.122*Tr(GN) + 0.177*Tr(D)	0.126 - 0.119*Tr(GN) + 0.149*Tr(D)
LD2QNLLP	D_GN_SETUP (rise)	0.046 - 0.087*Tr(GN) + 0.144*Tr(D)	0.116 - 0.110*Tr(GN) + 0.182*Tr(D)	0.103 - 0.092*Tr(GN) + 0.139*Tr(D)
LD2QNLLP	Pulse Width Low GN	0.065	0.190	0.120
LD2QNLLX4	D_GN_HOLD (fall)	-0.005 + 0.154*Tr(GN)	-0.014 + 0.177*Tr(GN)	0.004 + 0.154*Tr(GN)
LD2QNLLX4	D_GN_HOLD (rise)	-0.004 + 0.100*Tr(GN)	-0.016 + 0.112*Tr(GN)	0.004 + 0.107*Tr(GN)
LD2QNLLX4	D_GN_SETUP (fall)	0.045 - 0.103*Tr(GN) + 0.177*Tr(D)	0.101 - 0.120*Tr(GN) + 0.173*Tr(D)	0.124 - 0.119*Tr(GN) + 0.146*Tr(D)
LD2QNLLX4	D_GN_SETUP (rise)	0.041 - 0.082*Tr(GN) + 0.133*Tr(D)	0.100 - 0.102*Tr(GN) + 0.167*Tr(D)	0.094 - 0.089*Tr(GN) + 0.129*Tr(D)
LD2QNLLX4	Pulse Width Low GN	0.050	0.150	0.100
LD2QNLLX6	D_GN_HOLD (fall)	0.001 + 0.155*Tr(GN)	-0.004 + 0.185*Tr(GN)	0.004 + 0.164*Tr(GN)
LD2QNLLX6	D_GN_HOLD (rise)	-0.004 + 0.106*Tr(GN)	-0.015 + 0.115*Tr(GN)	0.004 + 0.110*Tr(GN)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD2QNLLX6	D_GN_SETUP (fall)	0.039 - 0.093*Tr(GN) + 0.151*Tr(D)	0.083 - 0.105*Tr(GN) + 0.149*Tr(D)	0.109 - 0.112*Tr(GN) + 0.125*Tr(D)
LD2QNLLX6	D_GN_SETUP (rise)	0.040 - 0.083*Tr(GN) + 0.141*Tr(D)	0.097 - 0.101*Tr(GN) + 0.171*Tr(D)	0.095 - 0.090*Tr(GN) + 0.134*Tr(D)
LD2QNLLX6	Pulse Width Low GN	0.045	0.115	0.080
LD2QNLLX8	D_GN_HOLD (fall)	0.000 + 0.150*Tr(GN)	-0.009 + 0.178*Tr(GN)	0.004 + 0.157*Tr(GN)
LD2QNLLX8	D_GN_HOLD (rise)	-0.004 + 0.100*Tr(GN)	-0.017 + 0.111*Tr(GN)	0.004 + 0.104*Tr(GN)
LD2QNLLX8	D_GN_SETUP (fall)	0.040 - 0.093*Tr(GN) + 0.156*Tr(D)	0.086 - 0.106*Tr(GN) + 0.154*Tr(D)	0.111 - 0.112*Tr(GN) + 0.129*Tr(D)
LD2QNLLX8	D_GN_SETUP (rise)	0.041 - 0.084*Tr(GN) + 0.147*Tr(D)	0.098 - 0.101*Tr(GN) + 0.177*Tr(D)	0.093 - 0.089*Tr(GN) + 0.139*Tr(D)
LD2QNLLX8	Pulse Width Low GN	0.045	0.115	0.080

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
LD2QNLL	6530.770	122460.000
LD2QNLLP	8133.970	161567.000
LD2QNLLX4	13085.000	273732.000
LD2QNLLX6	17907.700	381710.000
LD2QNLLX8	24070.500	520620.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD2QNLL	QN(related_pin:GN)	0.033 + 0.010*Tr
LD2QNLL	D(max)	0.001
LD2QNLL	GN(max)	0.011 + 0.010*Tr
LD2QNLLP	QN(related_pin:GN)	0.043 + 0.010*Tr
LD2QNLLP	D(max)	0.002

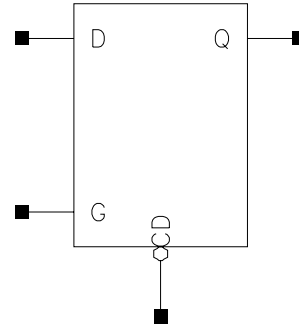
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD2QNLLP	GN(max)	$0.012 + 0.010 * Tr$
LD2QNLLX4	QN(related_pin:GN)	$0.071 + 0.019 * Tr$
LD2QNLLX4	D(max)	0.002
LD2QNLLX4	GN(max)	$0.017 + 0.018 * Tr$
LD2QNLLX6	QN(related_pin:GN)	$0.100 + 0.025 * Tr$
LD2QNLLX6	D(max)	0.004
LD2QNLLX6	GN(max)	$0.022 + 0.025 * Tr$
LD2QNLLX8	QN(related_pin:GN)	$0.133 + 0.038 * Tr$
LD2QNLLX8	D(max)	0.005
LD2QNLLX8	GN(max)	$0.030 + 0.037 * Tr$

LD3QLL
LD3QLLP
LD3QLLX4
LD3QLLX6
LD3QLLX8

Function: Function = D Latch with Active High Clock, Clear Active Low, Q Output Only



Truth Table

IQ	Q
IQ	IQ

Truth Table

D	G	CD	IQ	IQ
-	-	0	-	0
D	1	1	-	D
-	0	1	IQ	IQ

Physical Dimensions

Property	LD3QLL	LD3QLLP	LD3QLLX4	LD3QLLX6	LD3QLLX8
Area(um ²)	22.189	22.189	28.241	36.310	40.344

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD3QLL	Q Max Load	0.160	0.160	0.160
LD3QLL	CD Input Cap.	0.0020	0.0018	0.0018
LD3QLL	D Input Cap.	0.0020	0.0017	0.0018
LD3QLL	G Input Cap.	0.0022	0.0018	0.0019
LD3QLLP	D Input Cap.	0.0029	0.0026	0.0027
LD3QLLP	G Input Cap.	0.0022	0.0018	0.0020
LD3QLLP	Q Max Load	0.320	0.320	0.320

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD3QLLP	CD Input Cap.	0.0029	0.0026	0.0027
LD3QLLX4	D Input Cap.	0.0050	0.0045	0.0047
LD3QLLX4	CD Input Cap.	0.0049	0.0043	0.0045
LD3QLLX4	G Input Cap.	0.0038	0.0032	0.0034
LD3QLLX4	Q Max Load	0.640	0.640	0.640
LD3QLLX6	CD Input Cap.	0.0075	0.0065	0.0068
LD3QLLX6	D Input Cap.	0.0080	0.0071	0.0074
LD3QLLX6	Q Max Load	0.960	0.960	0.960
LD3QLLX6	G Input Cap.	0.0053	0.0045	0.0047
LD3QLLX8	G Input Cap.	0.0072	0.0062	0.0065
LD3QLLX8	Q Max Load	1.280	1.280	1.280
LD3QLLX8	CD Input Cap.	0.0095	0.0083	0.0087
LD3QLLX8	D Input Cap.	0.0100	0.0089	0.0093

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD3QLL	CD-Q	CD_Q (fall)	0.087 + 0.297*Tr + 1.236*C	0.199 + 0.332*Tr + 2.845*C	0.134 + 0.320*Tr + 1.830*C
LD3QLL	CD-Q	CD_Q (rise)	0.090 + 0.179*Tr + 1.706*C	0.255 + 0.213*Tr + 3.711*C	0.145 + 0.196*Tr + 2.480*C
LD3QLL	G-Q	G_Q (fall)	0.140 + 0.182*Tr + 1.370*C	0.327 + 0.221*Tr + 3.011*C	0.210 + 0.197*Tr + 1.930*C
LD3QLL	G-Q	G_Q (rise)	0.126 + 0.177*Tr + 1.692*C	0.327 + 0.215*Tr + 3.676*C	0.195 + 0.192*Tr + 2.451*C
LD3QLL	D-Q	D_Q (fall)	0.124 + 0.262*Tr + 1.386*C	0.291 + 0.274*Tr + 3.052*C	0.189 + 0.268*Tr + 1.963*C
LD3QLL	D-Q	D_Q (rise)	0.086 + 0.204*Tr + 1.703*C	0.235 + 0.243*Tr + 3.704*C	0.137 + 0.222*Tr + 2.477*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD3QLLP	CD-Q	CD_Q (fall)	0.066 + 0.253*Tr + 0.622*C	0.150 + 0.290*Tr + 1.360*C	0.101 + 0.278*Tr + 0.891*C
LD3QLLP	CD-Q	CD_Q (rise)	0.092 + 0.199*Tr + 0.840*C	0.259 + 0.229*Tr + 1.810*C	0.148 + 0.213*Tr + 1.213*C
LD3QLLP	G-Q	G_Q (fall)	0.115 + 0.184*Tr + 0.663*C	0.263 + 0.224*Tr + 1.400*C	0.171 + 0.200*Tr + 0.914*C
LD3QLLP	G-Q	G_Q (rise)	0.127 + 0.182*Tr + 0.833*C	0.326 + 0.220*Tr + 1.792*C	0.195 + 0.197*Tr + 1.198*C
LD3QLLP	D-Q	D_Q (fall)	0.096 + 0.232*Tr + 0.674*C	0.221 + 0.245*Tr + 1.426*C	0.144 + 0.239*Tr + 0.934*C
LD3QLLP	D-Q	D_Q (rise)	0.089 + 0.227*Tr + 0.839*C	0.242 + 0.263*Tr + 1.807*C	0.140 + 0.242*Tr + 1.211*C
LD3QLLX4	CD-Q	CD_Q (fall)	0.057 + 0.224*Tr + 0.308*C	0.133 + 0.269*Tr + 0.670*C	0.090 + 0.257*Tr + 0.439*C
LD3QLLX4	CD-Q	CD_Q (rise)	0.084 + 0.204*Tr + 0.414*C	0.234 + 0.230*Tr + 0.883*C	0.135 + 0.216*Tr + 0.596*C
LD3QLLX4	G-Q	G_Q (fall)	0.100 + 0.188*Tr + 0.323*C	0.226 + 0.222*Tr + 0.680*C	0.147 + 0.202*Tr + 0.444*C
LD3QLLX4	G-Q	G_Q (rise)	0.106 + 0.185*Tr + 0.411*C	0.270 + 0.217*Tr + 0.874*C	0.162 + 0.197*Tr + 0.589*C
LD3QLLX4	D-Q	D_Q (fall)	0.085 + 0.217*Tr + 0.329*C	0.196 + 0.230*Tr + 0.694*C	0.128 + 0.224*Tr + 0.454*C
LD3QLLX4	D-Q	D_Q (rise)	0.083 + 0.231*Tr + 0.414*C	0.222 + 0.263*Tr + 0.882*C	0.130 + 0.244*Tr + 0.595*C
LD3QLLX6	CD-Q	CD_Q (fall)	0.054 + 0.215*Tr + 0.205*C	0.129 + 0.269*Tr + 0.446*C	0.087 + 0.259*Tr + 0.292*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD3QLLX6	CD-Q	CD_Q (rise)	0.076 + 0.194*Tr + 0.274*C	0.211 + 0.221*Tr + 0.581*C	0.122 + 0.207*Tr + 0.393*C
LD3QLLX6	G-Q	G_Q (fall)	0.095 + 0.198*Tr + 0.215*C	0.217 + 0.230*Tr + 0.451*C	0.141 + 0.210*Tr + 0.295*C
LD3QLLX6	G-Q	G_Q (rise)	0.099 + 0.194*Tr + 0.271*C	0.248 + 0.223*Tr + 0.574*C	0.150 + 0.204*Tr + 0.388*C
LD3QLLX6	D-Q	D_Q (fall)	0.082 + 0.221*Tr + 0.218*C	0.189 + 0.232*Tr + 0.461*C	0.123 + 0.226*Tr + 0.301*C
LD3QLLX6	D-Q	D_Q (rise)	0.075 + 0.219*Tr + 0.273*C	0.200 + 0.252*Tr + 0.580*C	0.118 + 0.233*Tr + 0.393*C
LD3QLLX8	CD-Q	CD_Q (fall)	0.053 + 0.200*Tr + 0.154*C	0.125 + 0.261*Tr + 0.335*C	0.084 + 0.251*Tr + 0.219*C
LD3QLLX8	CD-Q	CD_Q (rise)	0.079 + 0.201*Tr + 0.206*C	0.218 + 0.227*Tr + 0.439*C	0.126 + 0.213*Tr + 0.297*C
LD3QLLX8	G-Q	G_Q (fall)	0.091 + 0.188*Tr + 0.161*C	0.205 + 0.217*Tr + 0.338*C	0.134 + 0.199*Tr + 0.221*C
LD3QLLX8	G-Q	G_Q (rise)	0.095 + 0.183*Tr + 0.204*C	0.241 + 0.211*Tr + 0.434*C	0.144 + 0.193*Tr + 0.293*C
LD3QLLX8	D-Q	D_Q (fall)	0.079 + 0.214*Tr + 0.164*C	0.184 + 0.226*Tr + 0.345*C	0.120 + 0.220*Tr + 0.226*C
LD3QLLX8	D-Q	D_Q (rise)	0.078 + 0.227*Tr + 0.206*C	0.208 + 0.259*Tr + 0.438*C	0.122 + 0.240*Tr + 0.296*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD3QLL	CD_G_RECOVERY (rise)	0.049 + 0.184*Tr(CD)	0.164 + 0.213*Tr(CD)	0.069 + 0.204*Tr(CD)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD3QLL	CD_G_REMOVAL (rise)	0.003 + 0.225*Tr(G)	-0.019 + 0.220*Tr(G)	0.004 + 0.217*Tr(G)
LD3QLL	D_G_HOLD (fall)	-0.010 + 0.122*Tr(G)	-0.020 + 0.096*Tr(G)	0.004 + 0.114*Tr(G)
LD3QLL	D_G_HOLD (rise)	0.006 + 0.229*Tr(G)	-0.012 + 0.228*Tr(G)	0.004 + 0.228*Tr(G)
LD3QLL	D_G_SETUP (fall)	0.088 - 0.146*Tr(G) + 0.225*Tr(D)	0.202 - 0.152*Tr(G) + 0.241*Tr(D)	0.176 - 0.142*Tr(G) + 0.202*Tr(D)
LD3QLL	D_G_SETUP (rise)	0.049 - 0.109*Tr(G) + 0.134*Tr(D)	0.129 - 0.144*Tr(G) + 0.184*Tr(D)	0.146 - 0.149*Tr(G) + 0.112*Tr(D)
LD3QLL	Pulse Width High G	0.080	0.220	0.140
LD3QLL	Pulse Width Low CD	0.065	0.150	0.100
LD3QLLP	CD_G_RECOVERY (rise)	0.052 + 0.212*Tr(CD)	0.171 + 0.236*Tr(CD)	0.079 + 0.224*Tr(CD)
LD3QLLP	CD_G_REMOVAL (rise)	0.002 + 0.231*Tr(G)	-0.019 + 0.227*Tr(G)	0.004 + 0.224*Tr(G)
LD3QLLP	D_G_HOLD (fall)	-0.011 + 0.149*Tr(G)	-0.023 + 0.128*Tr(G)	0.004 + 0.134*Tr(G)
LD3QLLP	D_G_HOLD (rise)	0.004 + 0.239*Tr(G)	-0.012 + 0.234*Tr(G)	0.004 + 0.231*Tr(G)
LD3QLLP	D_G_SETUP (fall)	0.065 - 0.123*Tr(G) + 0.178*Tr(D)	0.148 - 0.133*Tr(G) + 0.194*Tr(D)	0.140 - 0.127*Tr(G) + 0.157*Tr(D)
LD3QLLP	D_G_SETUP (rise)	0.054 - 0.121*Tr(G) + 0.159*Tr(D)	0.142 - 0.157*Tr(G) + 0.210*Tr(D)	0.156 - 0.156*Tr(G) + 0.139*Tr(D)
LD3QLLP	Pulse Width High G	0.070	0.225	0.130
LD3QLLP	Pulse Width Low CD	0.045	0.100	0.065
LD3QLLX4	CD_G_RECOVERY (rise)	0.053 + 0.215*Tr(CD)	0.161 + 0.237*Tr(CD)	0.079 + 0.228*Tr(CD)
LD3QLLX4	CD_G_REMOVAL (rise)	0.002 + 0.215*Tr(G)	-0.017 + 0.213*Tr(G)	0.004 + 0.207*Tr(G)
LD3QLLX4	D_G_HOLD (fall)	-0.009 + 0.133*Tr(G)	-0.020 + 0.116*Tr(G)	0.004 + 0.124*Tr(G)
LD3QLLX4	D_G_HOLD (rise)	0.004 + 0.214*Tr(G)	-0.013 + 0.214*Tr(G)	0.004 + 0.211*Tr(G)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD3QLLX4	D_G_SETUP (fall)	0.058 - 0.111*Tr(G) + 0.165*Tr(D)	0.133 - 0.120*Tr(G) + 0.180*Tr(D)	0.131 - 0.119*Tr(G) + 0.146*Tr(D)
LD3QLLX4	D_G_SETUP (rise)	0.052 - 0.119*Tr(G) + 0.176*Tr(D)	0.136 - 0.151*Tr(G) + 0.219*Tr(D)	0.150 - 0.147*Tr(G) + 0.154*Tr(D)
LD3QLLX4	Pulse Width High G	0.060	0.190	0.110
LD3QLLX4	Pulse Width Low CD	0.035	0.075	0.050
LD3QLLX6	CD_G_RECOVERY (rise)	0.043 + 0.205*Tr(CD)	0.134 + 0.232*Tr(CD)	0.064 + 0.217*Tr(CD)
LD3QLLX6	CD_G_REMOVAL (rise)	0.007 + 0.201*Tr(G)	-0.011 + 0.206*Tr(G)	0.004 + 0.204*Tr(G)
LD3QLLX6	D_G_HOLD (fall)	-0.007 + 0.117*Tr(G)	-0.018 + 0.105*Tr(G)	0.004 + 0.110*Tr(G)
LD3QLLX6	D_G_HOLD (rise)	0.007 + 0.202*Tr(G)	-0.006 + 0.207*Tr(G)	0.004 + 0.204*Tr(G)
LD3QLLX6	D_G_SETUP (fall)	0.059 - 0.109*Tr(G) + 0.170*Tr(D)	0.130 - 0.113*Tr(G) + 0.185*Tr(D)	0.121 - 0.109*Tr(G) + 0.156*Tr(D)
LD3QLLX6	D_G_SETUP (rise)	0.047 - 0.110*Tr(G) + 0.162*Tr(D)	0.116 - 0.137*Tr(G) + 0.204*Tr(D)	0.136 - 0.136*Tr(G) + 0.142*Tr(D)
LD3QLLX6	Pulse Width High G	0.060	0.165	0.095
LD3QLLX6	Pulse Width Low CD	0.035	0.070	0.045
LD3QLLX8	CD_G_RECOVERY (rise)	0.050 + 0.213*Tr(CD)	0.150 + 0.236*Tr(CD)	0.079 + 0.221*Tr(CD)
LD3QLLX8	CD_G_REMOVAL (rise)	0.000 + 0.207*Tr(G)	-0.015 + 0.201*Tr(G)	0.004 + 0.197*Tr(G)
LD3QLLX8	D_G_HOLD (fall)	-0.009 + 0.127*Tr(G)	-0.019 + 0.111*Tr(G)	0.004 + 0.117*Tr(G)
LD3QLLX8	D_G_HOLD (rise)	0.003 + 0.204*Tr(G)	-0.012 + 0.200*Tr(G)	0.004 + 0.197*Tr(G)
LD3QLLX8	D_G_SETUP (fall)	0.056 - 0.107*Tr(G) + 0.163*Tr(D)	0.126 - 0.114*Tr(G) + 0.178*Tr(D)	0.119 - 0.109*Tr(G) + 0.146*Tr(D)
LD3QLLX8	D_G_SETUP (rise)	0.051 - 0.116*Tr(G) + 0.175*Tr(D)	0.128 - 0.144*Tr(G) + 0.217*Tr(D)	0.140 - 0.137*Tr(G) + 0.154*Tr(D)
LD3QLLX8	Pulse Width High G	0.055	0.165	0.095

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD3QLLX8	Pulse Width Low CD	0.030	0.065	0.045

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
LD3QLL	6618.120	127982.000
LD3QLLP	8320.380	169814.000
LD3QLLX4	13414.400	289210.000
LD3QLLX6	18893.100	413474.000
LD3QLLX8	24412.400	540797.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD3QLL	Q(related_pin:G)	$0.031 + 0.010 * Tr$
LD3QLL	D(max)	0.001
LD3QLL	G(max)	$0.013 + 0.009 * Tr$
LD3QLL	CD(max)	0.001
LD3QLLP	Q(related_pin:G)	$0.042 + 0.010 * Tr$
LD3QLLP	D(max)	0.002
LD3QLLP	G(max)	$0.013 + 0.009 * Tr$
LD3QLLP	CD(max)	0.002
LD3QLLX4	Q(related_pin:G)	$0.068 + 0.019 * Tr$
LD3QLLX4	D(max)	0.004
LD3QLLX4	G(max)	$0.020 + 0.018 * Tr$
LD3QLLX4	CD(max)	0.004
LD3QLLX6	Q(related_pin:G)	$0.096 + 0.027 * Tr$
LD3QLLX6	D(max)	0.007
LD3QLLX6	G(max)	$0.028 + 0.025 * Tr$
LD3QLLX6	CD(max)	0.006
LD3QLLX8	Q(related_pin:G)	$0.122 + 0.038 * Tr$
LD3QLLX8	D(max)	0.009
LD3QLLX8	G(max)	$0.035 + 0.036 * Tr$

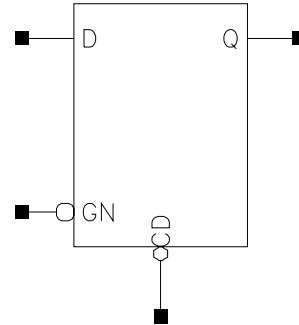
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD3QLLX8	CD(max)	0.007

LD4QLL
LD4QLLP
LD4QLLX4
LD4QLLX6
LD4QLLX8

Function: Function = D Latch with Active Low Clock, Clear Active Low, Q Output Only



Truth Table

IQ	Q
IQ	IQ

Truth Table

D	GN	CD	IQ	IQ
-	-	0	-	0
D	0	1	-	D
-	1	1	IQ	IQ

Physical Dimensions

Property	LD4QLL	LD4QLLP	LD4QLLX4	LD4QLLX6	LD4QLLX8
Area(um ²)	22.189	22.189	28.241	38.327	40.344

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD4QLL	GN Input Cap.	0.0020	0.0016	0.0017
LD4QLL	CD Input Cap.	0.0019	0.0016	0.0017
LD4QLL	D Input Cap.	0.0019	0.0017	0.0018
LD4QLL	Q Max Load	0.160	0.160	0.160
LD4QLLP	GN Input Cap.	0.0020	0.0016	0.0017
LD4QLLP	CD Input Cap.	0.0029	0.0025	0.0026
LD4QLLP	D Input Cap.	0.0029	0.0026	0.0027

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD4QLLP	Q Max Load	0.320	0.320	0.320
LD4QLLX4	D Input Cap.	0.0050	0.0045	0.0047
LD4QLLX4	GN Input Cap.	0.0036	0.0030	0.0032
LD4QLLX4	CD Input Cap.	0.0049	0.0043	0.0045
LD4QLLX4	Q Max Load	0.640	0.640	0.640
LD4QLLX6	GN Input Cap.	0.0048	0.0041	0.0043
LD4QLLX6	CD Input Cap.	0.0074	0.0064	0.0067
LD4QLLX6	Q Max Load	0.960	0.960	0.960
LD4QLLX6	D Input Cap.	0.0078	0.0070	0.0073
LD4QLLX8	D Input Cap.	0.0101	0.0090	0.0094
LD4QLLX8	Q Max Load	1.280	1.280	1.280
LD4QLLX8	GN Input Cap.	0.0068	0.0059	0.0061
LD4QLLX8	CD Input Cap.	0.0095	0.0083	0.0087

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD4QLL	CD-Q	CD_Q (fall)	0.082 + 0.291*Tr + 1.230*C	0.188 + 0.326*Tr + 2.816*C	0.127 + 0.314*Tr + 1.811*C
LD4QLL	CD-Q	CD_Q (rise)	0.086 + 0.177*Tr + 1.697*C	0.241 + 0.210*Tr + 3.676*C	0.138 + 0.193*Tr + 2.462*C
LD4QLL	D-Q	D_Q (fall)	0.118 + 0.260*Tr + 1.366*C	0.275 + 0.271*Tr + 3.000*C	0.179 + 0.266*Tr + 1.930*C
LD4QLL	D-Q	D_Q (rise)	0.082 + 0.201*Tr + 1.692*C	0.223 + 0.239*Tr + 3.661*C	0.130 + 0.218*Tr + 2.455*C
LD4QLL	GN-Q	GN_Q (fall)	0.165 + 0.244*Tr + 1.349*C	0.380 + 0.252*Tr + 2.956*C	0.248 + 0.246*Tr + 1.895*C
LD4QLL	GN-Q	GN_Q (rise)	0.104 + 0.253*Tr + 1.682*C	0.266 + 0.259*Tr + 3.636*C	0.161 + 0.254*Tr + 2.432*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD4QLLP	CD-Q	CD_Q (fall)	0.064 + 0.251*Tr + 0.620*C	0.146 + 0.287*Tr + 1.355*C	0.099 + 0.276*Tr + 0.887*C
LD4QLLP	CD-Q	CD_Q (rise)	0.090 + 0.198*Tr + 0.837*C	0.253 + 0.228*Tr + 1.802*C	0.145 + 0.212*Tr + 1.208*C
LD4QLLP	D-Q	D_Q (fall)	0.093 + 0.231*Tr + 0.670*C	0.216 + 0.243*Tr + 1.416*C	0.141 + 0.237*Tr + 0.928*C
LD4QLLP	D-Q	D_Q (rise)	0.087 + 0.226*Tr + 0.835*C	0.237 + 0.262*Tr + 1.795*C	0.137 + 0.241*Tr + 1.205*C
LD4QLLP	GN-Q	GN_Q (fall)	0.143 + 0.247*Tr + 0.659*C	0.326 + 0.256*Tr + 1.388*C	0.213 + 0.249*Tr + 0.907*C
LD4QLLP	GN-Q	GN_Q (rise)	0.107 + 0.256*Tr + 0.831*C	0.273 + 0.263*Tr + 1.784*C	0.165 + 0.258*Tr + 1.194*C
LD4QLLX4	CD-Q	CD_Q (fall)	0.056 + 0.222*Tr + 0.308*C	0.132 + 0.267*Tr + 0.669*C	0.089 + 0.256*Tr + 0.438*C
LD4QLLX4	CD-Q	CD_Q (rise)	0.084 + 0.202*Tr + 0.413*C	0.230 + 0.230*Tr + 0.881*C	0.133 + 0.215*Tr + 0.595*C
LD4QLLX4	D-Q	D_Q (fall)	0.084 + 0.216*Tr + 0.328*C	0.194 + 0.229*Tr + 0.692*C	0.126 + 0.223*Tr + 0.453*C
LD4QLLX4	D-Q	D_Q (rise)	0.081 + 0.230*Tr + 0.413*C	0.218 + 0.262*Tr + 0.879*C	0.128 + 0.243*Tr + 0.594*C
LD4QLLX4	GN-Q	GN_Q (fall)	0.120 + 0.225*Tr + 0.322*C	0.270 + 0.233*Tr + 0.677*C	0.178 + 0.227*Tr + 0.442*C
LD4QLLX4	GN-Q	GN_Q (rise)	0.092 + 0.232*Tr + 0.410*C	0.234 + 0.238*Tr + 0.872*C	0.140 + 0.234*Tr + 0.588*C
LD4QLLX6	CD-Q	CD_Q (fall)	0.054 + 0.213*Tr + 0.205*C	0.127 + 0.266*Tr + 0.446*C	0.085 + 0.255*Tr + 0.292*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD4QLLX6	CD-Q	CD_Q (rise)	0.080 + 0.198*Tr + 0.275*C	0.220 + 0.226*Tr + 0.585*C	0.127 + 0.210*Tr + 0.395*C
LD4QLLX6	D-Q	D_Q (fall)	0.081 + 0.217*Tr + 0.218*C	0.188 + 0.229*Tr + 0.460*C	0.122 + 0.224*Tr + 0.301*C
LD4QLLX6	D-Q	D_Q (rise)	0.078 + 0.225*Tr + 0.274*C	0.209 + 0.258*Tr + 0.584*C	0.123 + 0.238*Tr + 0.394*C
LD4QLLX6	GN-Q	GN_Q (fall)	0.116 + 0.221*Tr + 0.214*C	0.262 + 0.228*Tr + 0.450*C	0.173 + 0.222*Tr + 0.294*C
LD4QLLX6	GN-Q	GN_Q (rise)	0.088 + 0.226*Tr + 0.273*C	0.222 + 0.232*Tr + 0.578*C	0.134 + 0.228*Tr + 0.390*C
LD4QLLX8	CD-Q	CD_Q (fall)	0.053 + 0.199*Tr + 0.154*C	0.124 + 0.260*Tr + 0.334*C	0.083 + 0.250*Tr + 0.218*C
LD4QLLX8	CD-Q	CD_Q (rise)	0.079 + 0.200*Tr + 0.206*C	0.217 + 0.227*Tr + 0.438*C	0.125 + 0.212*Tr + 0.296*C
LD4QLLX8	D-Q	D_Q (fall)	0.079 + 0.213*Tr + 0.163*C	0.183 + 0.225*Tr + 0.344*C	0.119 + 0.219*Tr + 0.225*C
LD4QLLX8	D-Q	D_Q (rise)	0.077 + 0.227*Tr + 0.206*C	0.206 + 0.259*Tr + 0.437*C	0.121 + 0.240*Tr + 0.296*C
LD4QLLX8	GN-Q	GN_Q (fall)	0.108 + 0.215*Tr + 0.160*C	0.243 + 0.221*Tr + 0.337*C	0.160 + 0.215*Tr + 0.220*C
LD4QLLX8	GN-Q	GN_Q (rise)	0.083 + 0.221*Tr + 0.204*C	0.213 + 0.226*Tr + 0.433*C	0.128 + 0.222*Tr + 0.293*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD4QLL	CD_GN_RECOVERY (rise)	0.072 + 0.181*Tr(CD)	0.207 + 0.210*Tr(CD)	0.109 + 0.194*Tr(CD)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD4QLL	CD_GN_REMOVAL (rise)	-0.004 + 0.068*Tr(GN)	-0.013 + 0.068*Tr(GN)	0.005 + 0.074*Tr(GN)
LD4QLL	D_GN_HOLD (fall)	-0.007 + 0.128*Tr(GN)	-0.021 + 0.157*Tr(GN)	0.004 + 0.134*Tr(GN)
LD4QLL	D_GN_HOLD (rise)	-0.004 + 0.074*Tr(GN)	-0.015 + 0.076*Tr(GN)	0.005 + 0.080*Tr(GN)
LD4QLL	D_GN_SETUP (fall)	0.065 - 0.123*Tr(GN) + 0.217*Tr(D)	0.145 - 0.144*Tr(GN) + 0.221*Tr(D)	0.148 - 0.125*Tr(GN) + 0.189*Tr(D)
LD4QLL	D_GN_SETUP (rise)	0.065 - 0.100*Tr(GN) + 0.182*Tr(D)	0.172 - 0.126*Tr(GN) + 0.220*Tr(D)	0.131 - 0.105*Tr(GN) + 0.176*Tr(D)
LD4QLL	Pulse Width Low CD	0.065	0.135	0.095
LD4QLL	Pulse Width Low GN	0.080	0.240	0.160
LD4QLLP	CD_GN_RECOVERY (rise)	0.083 + 0.205*Tr(CD)	0.236 + 0.230*Tr(CD)	0.129 + 0.217*Tr(CD)
LD4QLLP	CD_GN_REMOVAL (rise)	-0.004 + 0.061*Tr(GN)	-0.010 + 0.053*Tr(GN)	0.005 + 0.064*Tr(GN)
LD4QLLP	D_GN_HOLD (fall)	0.000 + 0.150*Tr(GN)	-0.008 + 0.184*Tr(GN)	0.004 + 0.157*Tr(GN)
LD4QLLP	D_GN_HOLD (rise)	-0.004 + 0.062*Tr(GN)	-0.011 + 0.060*Tr(GN)	0.005 + 0.070*Tr(GN)
LD4QLLP	D_GN_SETUP (fall)	0.045 - 0.103*Tr(GN) + 0.174*Tr(D)	0.098 - 0.118*Tr(GN) + 0.175*Tr(D)	0.117 - 0.114*Tr(GN) + 0.151*Tr(D)
LD4QLLP	D_GN_SETUP (rise)	0.075 - 0.102*Tr(GN) + 0.214*Tr(D)	0.199 - 0.127*Tr(GN) + 0.250*Tr(D)	0.143 - 0.109*Tr(GN) + 0.209*Tr(D)
LD4QLLP	Pulse Width Low CD	0.045	0.095	0.065
LD4QLLP	Pulse Width Low GN	0.085	0.245	0.140
LD4QLLX4	CD_GN_RECOVERY (rise)	0.077 + 0.210*Tr(CD)	0.213 + 0.234*Tr(CD)	0.114 + 0.224*Tr(CD)
LD4QLLX4	CD_GN_REMOVAL (rise)	-0.004 + 0.067*Tr(GN)	-0.011 + 0.060*Tr(GN)	0.005 + 0.074*Tr(GN)
LD4QLLX4	D_GN_HOLD (fall)	0.002 + 0.151*Tr(GN)	-0.008 + 0.184*Tr(GN)	0.004 + 0.161*Tr(GN)
LD4QLLX4	D_GN_HOLD (rise)	-0.005 + 0.073*Tr(GN)	-0.013 + 0.068*Tr(GN)	0.005 + 0.077*Tr(GN)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD4QLLX4	D_GN_SETUP (fall)	0.040 - 0.093*Tr(GN) + 0.158*Tr(D)	0.093 - 0.112*Tr(GN) + 0.159*Tr(D)	0.115 - 0.114*Tr(GN) + 0.130*Tr(D)
LD4QLLX4	D_GN_SETUP (rise)	0.072 - 0.108*Tr(GN) + 0.219*Tr(D)	0.188 - 0.131*Tr(GN) + 0.252*Tr(D)	0.143 - 0.112*Tr(GN) + 0.209*Tr(D)
LD4QLLX4	Pulse Width Low CD	0.035	0.075	0.050
LD4QLLX4	Pulse Width Low GN	0.065	0.205	0.120
LD4QLLX6	CD_GN_RECOVERY (rise)	0.073 + 0.205*Tr(CD)	0.203 + 0.231*Tr(CD)	0.109 + 0.221*Tr(CD)
LD4QLLX6	CD_GN_REMOVAL (rise)	-0.006 + 0.078*Tr(GN)	-0.013 + 0.068*Tr(GN)	0.005 + 0.077*Tr(GN)
LD4QLLX6	D_GN_HOLD (fall)	0.001 + 0.161*Tr(GN)	-0.005 + 0.187*Tr(GN)	0.004 + 0.167*Tr(GN)
LD4QLLX6	D_GN_HOLD (rise)	-0.005 + 0.079*Tr(GN)	-0.015 + 0.077*Tr(GN)	0.005 + 0.084*Tr(GN)
LD4QLLX6	D_GN_SETUP (fall)	0.041 - 0.095*Tr(GN) + 0.153*Tr(D)	0.092 - 0.111*Tr(GN) + 0.157*Tr(D)	0.116 - 0.115*Tr(GN) + 0.129*Tr(D)
LD4QLLX6	D_GN_SETUP (rise)	0.070 - 0.111*Tr(GN) + 0.210*Tr(D)	0.179 - 0.134*Tr(GN) + 0.246*Tr(D)	0.138 - 0.112*Tr(GN) + 0.202*Tr(D)
LD4QLLX6	Pulse Width Low CD	0.035	0.065	0.045
LD4QLLX6	Pulse Width Low GN	0.065	0.195	0.115
LD4QLLX8	CD_GN_RECOVERY (rise)	0.072 + 0.210*Tr(CD)	0.199 + 0.233*Tr(CD)	0.109 + 0.221*Tr(CD)
LD4QLLX8	CD_GN_REMOVAL (rise)	-0.005 + 0.073*Tr(GN)	-0.013 + 0.065*Tr(GN)	0.005 + 0.074*Tr(GN)
LD4QLLX8	D_GN_HOLD (fall)	0.002 + 0.151*Tr(GN)	-0.007 + 0.181*Tr(GN)	0.004 + 0.157*Tr(GN)
LD4QLLX8	D_GN_HOLD (rise)	-0.006 + 0.078*Tr(GN)	-0.014 + 0.072*Tr(GN)	0.005 + 0.080*Tr(GN)
LD4QLLX8	D_GN_SETUP (fall)	0.041 - 0.094*Tr(GN) + 0.153*Tr(D)	0.092 - 0.110*Tr(GN) + 0.157*Tr(D)	0.114 - 0.112*Tr(GN) + 0.129*Tr(D)
LD4QLLX8	D_GN_SETUP (rise)	0.069 - 0.109*Tr(GN) + 0.215*Tr(D)	0.178 - 0.129*Tr(GN) + 0.248*Tr(D)	0.136 - 0.109*Tr(GN) + 0.206*Tr(D)
LD4QLLX8	Pulse Width Low CD	0.030	0.065	0.045

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD4QLLX8	Pulse Width Low GN	0.060	0.185	0.105

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
LD4QLL	6587.190	127012.000
LD4QLLP	8320.380	169808.000
LD4QLLX4	13414.400	289201.000
LD4QLLX6	18677.200	408034.000
LD4QLLX8	24412.400	540782.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD4QLL	Q(related_pin:GN)	$0.036 + 0.010 * Tr$
LD4QLL	D(max)	0.001
LD4QLL	GN(max)	$0.013 + 0.010 * Tr$
LD4QLL	CD(max)	0.001
LD4QLLP	Q(related_pin:GN)	$0.048 + 0.010 * Tr$
LD4QLLP	D(max)	0.002
LD4QLLP	GN(max)	$0.015 + 0.010 * Tr$
LD4QLLP	CD(max)	0.002
LD4QLLX4	Q(related_pin:GN)	$0.078 + 0.019 * Tr$
LD4QLLX4	D(max)	0.004
LD4QLLX4	GN(max)	$0.023 + 0.019 * Tr$
LD4QLLX4	CD(max)	0.004
LD4QLLX6	Q(related_pin:GN)	$0.110 + 0.026 * Tr$
LD4QLLX6	D(max)	0.006
LD4QLLX6	GN(max)	$0.032 + 0.025 * Tr$
LD4QLLX6	CD(max)	0.006
LD4QLLX8	Q(related_pin:GN)	$0.140 + 0.039 * Tr$
LD4QLLX8	D(max)	0.008
LD4QLLX8	GN(max)	$0.041 + 0.038 * Tr$

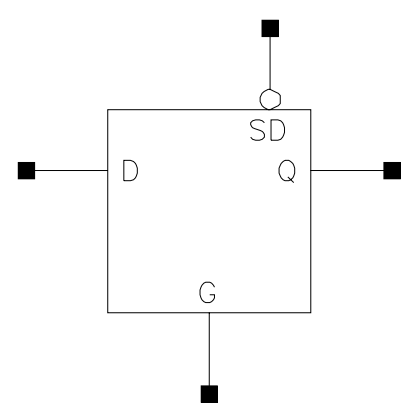
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD4QLX8	CD(max)	0.008

LD5QLL
LD5QLLP
LD5QLLX4
LD5QLLX6
LD5QLLX8

Function: Function = D Latch with Active High Transparent, Preset Active Low, Q Output Only



Truth Table

IQ	Q
IQ	IQ

Truth Table

D	G	SD	IQ	IQ
-	-	0	-	1
D	1	1	-	D
-	0	1	IQ	IQ

Physical Dimensions

Property	LD5QLL	LD5QLLP	LD5QLLX4	LD5QLLX6	LD5QLLX8
Area(um2)	24.206	24.206	30.258	40.344	44.378

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD5QLL	D Input Cap.	0.0019	0.0016	0.0017
LD5QLL	Q Max Load	0.160	0.160	0.160
LD5QLL	SD Input Cap.	0.0024	0.0020	0.0021
LD5QLL	G Input Cap.	0.0024	0.0020	0.0021
LD5QLLP	D Input Cap.	0.0027	0.0024	0.0025
LD5QLLP	Q Max Load	0.320	0.320	0.320
LD5QLLP	G Input Cap.	0.0024	0.0020	0.0021

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD5QLLP	SD Input Cap.	0.0024	0.0020	0.0021
LD5QLLX4	G Input Cap.	0.0038	0.0032	0.0034
LD5QLLX4	SD Input Cap.	0.0039	0.0034	0.0035
LD5QLLX4	D Input Cap.	0.0050	0.0045	0.0046
LD5QLLX4	Q Max Load	0.640	0.640	0.640
LD5QLLX6	SD Input Cap.	0.0050	0.0042	0.0044
LD5QLLX6	D Input Cap.	0.0078	0.0069	0.0072
LD5QLLX6	G Input Cap.	0.0050	0.0042	0.0044
LD5QLLX6	Q Max Load	0.960	0.960	0.960
LD5QLLX8	D Input Cap.	0.0098	0.0088	0.0092
LD5QLLX8	Q Max Load	1.280	1.280	1.280
LD5QLLX8	SD Input Cap.	0.0056	0.0047	0.0050
LD5QLLX8	G Input Cap.	0.0073	0.0062	0.0065

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD5QLL	SD-Q	SD_Q (fall)	0.191 + 0.146*Tr + 1.484*C	0.458 + 0.182*Tr + 3.299*C	0.292 + 0.161*Tr + 2.109*C
LD5QLL	SD-Q	SD_Q (rise)	0.072 + 0.233*Tr + 1.614*C	0.177 + 0.238*Tr + 3.414*C	0.112 + 0.234*Tr + 2.328*C
LD5QLL	G-Q	G_Q (fall)	0.160 + 0.180*Tr + 1.493*C	0.380 + 0.217*Tr + 3.326*C	0.243 + 0.194*Tr + 2.125*C
LD5QLL	G-Q	G_Q (rise)	0.110 + 0.175*Tr + 1.636*C	0.271 + 0.212*Tr + 3.471*C	0.166 + 0.190*Tr + 2.352*C
LD5QLL	D-Q	D_Q (fall)	0.154 + 0.290*Tr + 1.494*C	0.368 + 0.292*Tr + 3.323*C	0.237 + 0.290*Tr + 2.131*C
LD5QLL	D-Q	D_Q (rise)	0.067 + 0.169*Tr + 1.654*C	0.170 + 0.215*Tr + 3.521*C	0.102 + 0.192*Tr + 2.387*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD5QLLP	SD-Q	SD_Q (fall)	0.159 + 0.155*Tr + 0.712*C	0.376 + 0.192*Tr + 1.519*C	0.241 + 0.171*Tr + 0.990*C
LD5QLLP	SD-Q	SD_Q (rise)	0.078 + 0.242*Tr + 0.789*C	0.194 + 0.250*Tr + 1.651*C	0.124 + 0.245*Tr + 1.131*C
LD5QLLP	G-Q	G_Q (fall)	0.136 + 0.183*Tr + 0.715*C	0.313 + 0.222*Tr + 1.526*C	0.203 + 0.199*Tr + 0.993*C
LD5QLLP	G-Q	G_Q (rise)	0.114 + 0.180*Tr + 0.804*C	0.279 + 0.219*Tr + 1.687*C	0.173 + 0.195*Tr + 1.147*C
LD5QLLP	D-Q	D_Q (fall)	0.124 + 0.266*Tr + 0.720*C	0.291 + 0.269*Tr + 1.538*C	0.188 + 0.266*Tr + 1.005*C
LD5QLLP	D-Q	D_Q (rise)	0.069 + 0.190*Tr + 0.813*C	0.174 + 0.233*Tr + 1.712*C	0.105 + 0.210*Tr + 1.165*C
LD5QLLX4	SD-Q	SD_Q (fall)	0.140 + 0.165*Tr + 0.343*C	0.330 + 0.198*Tr + 0.728*C	0.212 + 0.178*Tr + 0.474*C
LD5QLLX4	SD-Q	SD_Q (rise)	0.067 + 0.223*Tr + 0.394*C	0.173 + 0.233*Tr + 0.821*C	0.111 + 0.227*Tr + 0.563*C
LD5QLLX4	G-Q	G_Q (fall)	0.118 + 0.188*Tr + 0.344*C	0.268 + 0.221*Tr + 0.729*C	0.175 + 0.201*Tr + 0.475*C
LD5QLLX4	G-Q	G_Q (rise)	0.097 + 0.183*Tr + 0.400*C	0.233 + 0.217*Tr + 0.834*C	0.145 + 0.196*Tr + 0.569*C
LD5QLLX4	D-Q	D_Q (fall)	0.110 + 0.252*Tr + 0.347*C	0.257 + 0.256*Tr + 0.738*C	0.167 + 0.253*Tr + 0.482*C
LD5QLLX4	D-Q	D_Q (rise)	0.064 + 0.193*Tr + 0.404*C	0.160 + 0.232*Tr + 0.846*C	0.097 + 0.211*Tr + 0.577*C
LD5QLLX6	SD-Q	SD_Q (fall)	0.140 + 0.173*Tr + 0.228*C	0.328 + 0.204*Tr + 0.484*C	0.210 + 0.185*Tr + 0.316*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD5QLLX6	SD-Q	SD_Q (rise)	0.066 + 0.219*Tr + 0.263*C	0.172 + 0.230*Tr + 0.547*C	0.111 + 0.225*Tr + 0.375*C
LD5QLLX6	G-Q	G_Q (fall)	0.114 + 0.191*Tr + 0.229*C	0.259 + 0.223*Tr + 0.485*C	0.169 + 0.203*Tr + 0.316*C
LD5QLLX6	G-Q	G_Q (rise)	0.095 + 0.187*Tr + 0.266*C	0.229 + 0.220*Tr + 0.556*C	0.143 + 0.200*Tr + 0.379*C
LD5QLLX6	D-Q	D_Q (fall)	0.108 + 0.255*Tr + 0.231*C	0.252 + 0.258*Tr + 0.491*C	0.164 + 0.255*Tr + 0.321*C
LD5QLLX6	D-Q	D_Q (rise)	0.063 + 0.188*Tr + 0.269*C	0.156 + 0.228*Tr + 0.564*C	0.095 + 0.207*Tr + 0.385*C
LD5QLLX8	SD-Q	SD_Q (fall)	0.137 + 0.182*Tr + 0.170*C	0.322 + 0.214*Tr + 0.361*C	0.207 + 0.194*Tr + 0.235*C
LD5QLLX8	SD-Q	SD_Q (rise)	0.066 + 0.216*Tr + 0.197*C	0.172 + 0.228*Tr + 0.411*C	0.112 + 0.223*Tr + 0.282*C
LD5QLLX8	G-Q	G_Q (fall)	0.109 + 0.186*Tr + 0.170*C	0.246 + 0.215*Tr + 0.361*C	0.161 + 0.197*Tr + 0.235*C
LD5QLLX8	G-Q	G_Q (rise)	0.088 + 0.181*Tr + 0.200*C	0.212 + 0.211*Tr + 0.417*C	0.133 + 0.193*Tr + 0.284*C
LD5QLLX8	D-Q	D_Q (fall)	0.105 + 0.251*Tr + 0.172*C	0.245 + 0.254*Tr + 0.366*C	0.159 + 0.251*Tr + 0.239*C
LD5QLLX8	D-Q	D_Q (rise)	0.062 + 0.190*Tr + 0.202*C	0.153 + 0.229*Tr + 0.423*C	0.094 + 0.209*Tr + 0.289*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD5QLL	D_G_HOLD (fall)	-0.009 + 0.090*Tr(G)	-0.011 + 0.050*Tr(G)	0.005 + 0.084*Tr(G)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD5QLL	D_G_HOLD (rise)	0.016 + 0.235*Tr(G)	0.020 + 0.239*Tr(G)	0.004 + 0.241*Tr(G)
LD5QLL	D_G_SETUP (fall)	0.122 - 0.172*Tr(G) + 0.263*Tr(D)	0.283 - 0.177*Tr(G) + 0.276*Tr(D)	0.223 - 0.166*Tr(G) + 0.243*Tr(D)
LD5QLL	D_G_SETUP (rise)	0.031 - 0.072*Tr(G) + 0.090*Tr(D)	0.075 - 0.100*Tr(G) + 0.128*Tr(D)	0.088 - 0.104*Tr(G) + 0.097*Tr(D)
LD5QLL	Pulse Width High G	0.055	0.285	0.180
LD5QLL	Pulse Width Low SD	0.050	0.115	0.075
LD5QLL	SD_G_RECOVERY (rise)	0.160 + 0.144*Tr(SD)	0.386 + 0.182*Tr(SD)	0.229 + 0.167*Tr(SD)
LD5QLL	SD_G_REMOVAL (rise)	-0.006 + 0.064*Tr(G)	-0.001 + 0.018*Tr(G)	0.005 + 0.057*Tr(G)
LD5QLLP	D_G_HOLD (fall)	-0.010 + 0.116*Tr(G)	-0.019 + 0.089*Tr(G)	0.004 + 0.110*Tr(G)
LD5QLLP	D_G_HOLD (rise)	0.015 + 0.246*Tr(G)	0.022 + 0.246*Tr(G)	0.009 + 0.244*Tr(G)
LD5QLLP	D_G_SETUP (fall)	0.096 - 0.157*Tr(G) + 0.227*Tr(D)	0.219 - 0.165*Tr(G) + 0.242*Tr(D)	0.192 - 0.154*Tr(G) + 0.201*Tr(D)
LD5QLLP	D_G_SETUP (rise)	0.034 - 0.083*Tr(G) + 0.110*Tr(D)	0.080 - 0.110*Tr(G) + 0.148*Tr(D)	0.105 - 0.120*Tr(G) + 0.107*Tr(D)
LD5QLLP	Pulse Width High G	0.060	0.225	0.145
LD5QLLP	Pulse Width Low SD	0.060	0.125	0.080
LD5QLLP	SD_G_RECOVERY (rise)	0.131 + 0.155*Tr(SD)	0.318 + 0.190*Tr(SD)	0.184 + 0.174*Tr(SD)
LD5QLLP	SD_G_REMOVAL (rise)	-0.010 + 0.089*Tr(G)	-0.011 + 0.048*Tr(G)	0.005 + 0.084*Tr(G)
LD5QLLX4	D_G_HOLD (fall)	-0.010 + 0.110*Tr(G)	-0.018 + 0.085*Tr(G)	0.004 + 0.100*Tr(G)
LD5QLLX4	D_G_HOLD (rise)	0.014 + 0.221*Tr(G)	0.018 + 0.226*Tr(G)	0.004 + 0.224*Tr(G)
LD5QLLX4	D_G_SETUP (fall)	0.086 - 0.143*Tr(G) + 0.218*Tr(D)	0.196 - 0.151*Tr(G) + 0.227*Tr(D)	0.176 - 0.142*Tr(G) + 0.189*Tr(D)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD5QLLX4	D_G_SETUP (rise)	0.035 - 0.089*Tr(G) + 0.122*Tr(D)	0.081 - 0.111*Tr(G) + 0.157*Tr(D)	0.108 - 0.124*Tr(G) + 0.110*Tr(D)
LD5QLLX4	Pulse Width High G	0.050	0.190	0.125
LD5QLLX4	Pulse Width Low SD	0.045	0.100	0.065
LD5QLLX4	SD_G_RECOVERY (rise)	0.118 + 0.162*Tr(SD)	0.278 + 0.197*Tr(SD)	0.164 + 0.181*Tr(SD)
LD5QLLX4	SD_G_REMOVAL (rise)	-0.008 + 0.081*Tr(G)	-0.011 + 0.049*Tr(G)	0.005 + 0.077*Tr(G)
LD5QLLX6	D_G_HOLD (fall)	-0.009 + 0.105*Tr(G)	-0.016 + 0.079*Tr(G)	0.004 + 0.097*Tr(G)
LD5QLLX6	D_G_HOLD (rise)	0.015 + 0.216*Tr(G)	0.020 + 0.222*Tr(G)	0.004 + 0.221*Tr(G)
LD5QLLX6	D_G_SETUP (fall)	0.077 - 0.130*Tr(G) + 0.218*Tr(D)	0.178 - 0.134*Tr(G) + 0.223*Tr(D)	0.155 - 0.127*Tr(G) + 0.191*Tr(D)
LD5QLLX6	D_G_SETUP (rise)	0.034 - 0.087*Tr(G) + 0.120*Tr(D)	0.080 - 0.109*Tr(G) + 0.156*Tr(D)	0.106 - 0.122*Tr(G) + 0.109*Tr(D)
LD5QLLX6	Pulse Width High G	0.050	0.165	0.105
LD5QLLX6	Pulse Width Low SD	0.045	0.100	0.065
LD5QLLX6	SD_G_RECOVERY (rise)	0.109 + 0.171*Tr(SD)	0.253 + 0.205*Tr(SD)	0.149 + 0.187*Tr(SD)
LD5QLLX6	SD_G_REMOVAL (rise)	-0.007 + 0.075*Tr(G)	-0.009 + 0.044*Tr(G)	0.005 + 0.074*Tr(G)
LD5QLLX8	D_G_HOLD (fall)	-0.008 + 0.099*Tr(G)	-0.015 + 0.077*Tr(G)	0.004 + 0.094*Tr(G)
LD5QLLX8	D_G_HOLD (rise)	0.012 + 0.209*Tr(G)	0.016 + 0.212*Tr(G)	0.004 + 0.211*Tr(G)
LD5QLLX8	D_G_SETUP (fall)	0.077 - 0.129*Tr(G) + 0.212*Tr(D)	0.172 - 0.131*Tr(G) + 0.220*Tr(D)	0.151 - 0.125*Tr(G) + 0.189*Tr(D)
LD5QLLX8	D_G_SETUP (rise)	0.038 - 0.092*Tr(G) + 0.126*Tr(D)	0.083 - 0.111*Tr(G) + 0.164*Tr(D)	0.111 - 0.125*Tr(G) + 0.112*Tr(D)
LD5QLLX8	Pulse Width High G	0.045	0.150	0.100
LD5QLLX8	Pulse Width Low SD	0.045	0.095	0.065
LD5QLLX8	SD_G_RECOVERY (rise)	0.108 + 0.176*Tr(SD)	0.250 + 0.213*Tr(SD)	0.144 + 0.197*Tr(SD)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD5QLLX8	SD_G_REMOVAL (rise)	-0.007 + 0.075*Tr(G)	-0.009 + 0.040*Tr(G)	0.005 + 0.070*Tr(G)

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
LD5QLL	8441.480	155350.000
LD5QLLP	10127.300	195012.000
LD5QLLX4	16085.600	329934.000
LD5QLLX6	22512.900	468062.000
LD5QLLX8	28808.400	609017.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD5QLL	Q(related_pin:G)	0.031 + 0.009*Tr
LD5QLL	D(max)	0.001
LD5QLL	G(max)	0.012 + 0.009*Tr
LD5QLL	SD(max)	0.004 + 0.009*Tr
LD5QLLP	Q(related_pin:G)	0.043 + 0.010*Tr
LD5QLLP	D(max)	0.002
LD5QLLP	G(max)	0.013 + 0.009*Tr
LD5QLLP	SD(max)	0.006 + 0.009*Tr
LD5QLLX4	Q(related_pin:G)	0.069 + 0.018*Tr
LD5QLLX4	D(max)	0.004
LD5QLLX4	G(max)	0.020 + 0.018*Tr
LD5QLLX4	SD(max)	0.009 + 0.017*Tr
LD5QLLX6	Q(related_pin:G)	0.100 + 0.024*Tr
LD5QLLX6	D(max)	0.006
LD5QLLX6	G(max)	0.028 + 0.024*Tr
LD5QLLX6	SD(max)	0.013 + 0.022*Tr
LD5QLLX8	Q(related_pin:G)	0.126 + 0.037*Tr
LD5QLLX8	D(max)	0.008

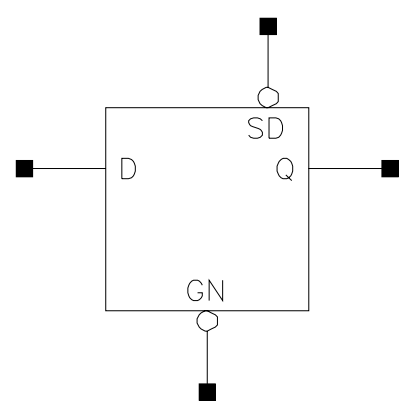
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD5QLLX8	G(max)	$0.035 + 0.036 * Tr$
LD5QLLX8	SD(max)	$0.016 + 0.025 * Tr$

LD6QLL
LD6QLLP
LD6QLLX4
LD6QLLX6
LD6QLLX8

Function: Function = D Latch with Active Low Transparent, Preset Active Low, Q Output Only



Truth Table

IQ	Q
IQ	IQ

Truth Table

D	GN	SD	IQ	IQ
-	-	0	-	1
D	0	1	-	D
-	1	1	IQ	IQ

Physical Dimensions

Property	LD6QLL	LD6QLLP	LD6QLLX4	LD6QLLX6	LD6QLLX8
Area(um2)	26.224	26.224	30.258	40.344	44.378

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD6QLL	Q Max Load	0.160	0.160	0.160
LD6QLL	D Input Cap.	0.0021	0.0018	0.0019
LD6QLL	GN Input Cap.	0.0022	0.0019	0.0020
LD6QLL	SD Input Cap.	0.0024	0.0020	0.0022
LD6QLLP	Q Max Load	0.320	0.320	0.320
LD6QLLP	D Input Cap.	0.0029	0.0026	0.0027
LD6QLLP	GN Input Cap.	0.0023	0.0019	0.0020

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD6QLLP	SD Input Cap.	0.0023	0.0019	0.0020
LD6QLLX4	D Input Cap.	0.0052	0.0046	0.0048
LD6QLLX4	GN Input Cap.	0.0038	0.0032	0.0034
LD6QLLX4	SD Input Cap.	0.0032	0.0027	0.0029
LD6QLLX4	Q Max Load	0.640	0.640	0.640
LD6QLLX6	GN Input Cap.	0.0053	0.0046	0.0048
LD6QLLX6	D Input Cap.	0.0079	0.0071	0.0074
LD6QLLX6	SD Input Cap.	0.0045	0.0038	0.0040
LD6QLLX6	Q Max Load	0.960	0.960	0.960
LD6QLLX8	Q Max Load	1.280	1.280	1.280
LD6QLLX8	D Input Cap.	0.0103	0.0092	0.0095
LD6QLLX8	GN Input Cap.	0.0070	0.0061	0.0063
LD6QLLX8	SD Input Cap.	0.0056	0.0048	0.0050

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD6QLL	SD-Q	SD_Q (fall)	0.171 + 0.150*Tr + 1.419*C	0.405 + 0.185*Tr + 3.130*C	0.260 + 0.165*Tr + 2.005*C
LD6QLL	SD-Q	SD_Q (rise)	0.075 + 0.233*Tr + 1.615*C	0.185 + 0.238*Tr + 3.417*C	0.117 + 0.234*Tr + 2.329*C
LD6QLL	D-Q	D_Q (fall)	0.137 + 0.279*Tr + 1.433*C	0.322 + 0.281*Tr + 3.161*C	0.209 + 0.279*Tr + 2.032*C
LD6QLL	D-Q	D_Q (rise)	0.068 + 0.178*Tr + 1.655*C	0.175 + 0.223*Tr + 3.523*C	0.105 + 0.200*Tr + 2.386*C
LD6QLL	GN-Q	GN_Q (fall)	0.188 + 0.245*Tr + 1.427*C	0.432 + 0.255*Tr + 3.150*C	0.282 + 0.248*Tr + 2.018*C
LD6QLL	GN-Q	GN_Q (rise)	0.099 + 0.255*Tr + 1.641*C	0.240 + 0.263*Tr + 3.482*C	0.150 + 0.257*Tr + 2.358*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD6QLLP	SD-Q	SD_Q (fall)	0.162 + 0.157*Tr + 0.711*C	0.382 + 0.195*Tr + 1.515*C	0.245 + 0.173*Tr + 0.987*C
LD6QLLP	SD-Q	SD_Q (rise)	0.076 + 0.241*Tr + 0.789*C	0.189 + 0.249*Tr + 1.645*C	0.121 + 0.244*Tr + 1.127*C
LD6QLLP	D-Q	D_Q (fall)	0.127 + 0.270*Tr + 0.718*C	0.297 + 0.273*Tr + 1.533*C	0.193 + 0.270*Tr + 1.002*C
LD6QLLP	D-Q	D_Q (rise)	0.066 + 0.185*Tr + 0.811*C	0.166 + 0.228*Tr + 1.701*C	0.101 + 0.205*Tr + 1.160*C
LD6QLLP	GN-Q	GN_Q (fall)	0.179 + 0.248*Tr + 0.713*C	0.406 + 0.258*Tr + 1.522*C	0.266 + 0.251*Tr + 0.991*C
LD6QLLP	GN-Q	GN_Q (rise)	0.098 + 0.256*Tr + 0.803*C	0.232 + 0.265*Tr + 1.681*C	0.148 + 0.259*Tr + 1.144*C
LD6QLLX4	SD-Q	SD_Q (fall)	0.146 + 0.168*Tr + 0.344*C	0.344 + 0.203*Tr + 0.730*C	0.220 + 0.183*Tr + 0.476*C
LD6QLLX4	SD-Q	SD_Q (rise)	0.071 + 0.232*Tr + 0.394*C	0.179 + 0.244*Tr + 0.819*C	0.116 + 0.238*Tr + 0.562*C
LD6QLLX4	D-Q	D_Q (fall)	0.113 + 0.257*Tr + 0.348*C	0.264 + 0.261*Tr + 0.741*C	0.171 + 0.257*Tr + 0.484*C
LD6QLLX4	D-Q	D_Q (rise)	0.063 + 0.188*Tr + 0.403*C	0.155 + 0.227*Tr + 0.844*C	0.095 + 0.207*Tr + 0.576*C
LD6QLLX4	GN-Q	GN_Q (fall)	0.144 + 0.231*Tr + 0.345*C	0.326 + 0.239*Tr + 0.731*C	0.214 + 0.233*Tr + 0.477*C
LD6QLLX4	GN-Q	GN_Q (rise)	0.084 + 0.239*Tr + 0.400*C	0.200 + 0.247*Tr + 0.833*C	0.127 + 0.241*Tr + 0.569*C
LD6QLLX6	SD-Q	SD_Q (fall)	0.142 + 0.175*Tr + 0.228*C	0.334 + 0.208*Tr + 0.485*C	0.215 + 0.188*Tr + 0.316*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD6QLLX6	SD-Q	SD_Q (rise)	0.068 + 0.225*Tr + 0.262*C	0.173 + 0.238*Tr + 0.546*C	0.113 + 0.231*Tr + 0.375*C
LD6QLLX6	D-Q	D_Q (fall)	0.109 + 0.258*Tr + 0.231*C	0.255 + 0.261*Tr + 0.492*C	0.165 + 0.258*Tr + 0.321*C
LD6QLLX6	D-Q	D_Q (rise)	0.060 + 0.183*Tr + 0.269*C	0.150 + 0.222*Tr + 0.562*C	0.091 + 0.202*Tr + 0.384*C
LD6QLLX6	GN-Q	GN_Q (fall)	0.136 + 0.225*Tr + 0.229*C	0.307 + 0.232*Tr + 0.485*C	0.202 + 0.226*Tr + 0.316*C
LD6QLLX6	GN-Q	GN_Q (rise)	0.080 + 0.231*Tr + 0.266*C	0.189 + 0.239*Tr + 0.554*C	0.120 + 0.234*Tr + 0.378*C
LD6QLLX8	SD-Q	SD_Q (fall)	0.139 + 0.176*Tr + 0.171*C	0.326 + 0.208*Tr + 0.362*C	0.209 + 0.189*Tr + 0.236*C
LD6QLLX8	SD-Q	SD_Q (rise)	0.065 + 0.220*Tr + 0.197*C	0.169 + 0.233*Tr + 0.410*C	0.109 + 0.227*Tr + 0.281*C
LD6QLLX8	D-Q	D_Q (fall)	0.107 + 0.254*Tr + 0.173*C	0.250 + 0.258*Tr + 0.368*C	0.162 + 0.254*Tr + 0.240*C
LD6QLLX8	D-Q	D_Q (rise)	0.060 + 0.185*Tr + 0.202*C	0.148 + 0.223*Tr + 0.421*C	0.090 + 0.203*Tr + 0.288*C
LD6QLLX8	GN-Q	GN_Q (fall)	0.129 + 0.221*Tr + 0.171*C	0.292 + 0.228*Tr + 0.362*C	0.192 + 0.222*Tr + 0.236*C
LD6QLLX8	GN-Q	GN_Q (rise)	0.077 + 0.228*Tr + 0.200*C	0.183 + 0.235*Tr + 0.416*C	0.116 + 0.230*Tr + 0.284*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD6QLL	D_GN_HOLD (fall)	-0.007 + 0.118*Tr(GN)	-0.022 + 0.144*Tr(GN)	0.004 + 0.124*Tr(GN)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD6QLL	D_GN_HOLD (rise)	-0.003 + 0.095*Tr(GN)	-0.015 + 0.106*Tr(GN)	0.004 + 0.097*Tr(GN)
LD6QLL	D_GN_SETUP (fall)	0.077 - 0.136*Tr(GN) + 0.245*Tr(D)	0.176 - 0.162*Tr(GN) + 0.242*Tr(D)	0.171 - 0.139*Tr(GN) + 0.209*Tr(D)
LD6QLL	D_GN_SETUP (rise)	0.052 - 0.091*Tr(GN) + 0.150*Tr(D)	0.128 - 0.113*Tr(GN) + 0.193*Tr(D)	0.108 - 0.095*Tr(GN) + 0.149*Tr(D)
LD6QLL	Pulse Width Low GN	0.080	0.280	0.190
LD6QLL	Pulse Width Low SD	0.055	0.115	0.080
LD6QLL	SD_GN_RECOVERY (rise)	0.119 + 0.147*Tr(SD)	0.271 + 0.185*Tr(SD)	0.159 + 0.171*Tr(SD)
LD6QLL	SD_GN_REMOVAL (rise)	-0.009 + 0.098*Tr(GN)	-0.023 + 0.109*Tr(GN)	0.004 + 0.104*Tr(GN)
LD6QLLP	D_GN_HOLD (fall)	-0.007 + 0.134*Tr(GN)	-0.023 + 0.163*Tr(GN)	0.004 + 0.141*Tr(GN)
LD6QLLP	D_GN_HOLD (rise)	-0.003 + 0.095*Tr(GN)	-0.015 + 0.106*Tr(GN)	0.004 + 0.097*Tr(GN)
LD6QLLP	D_GN_SETUP (fall)	0.068 - 0.129*Tr(GN) + 0.230*Tr(D)	0.153 - 0.152*Tr(GN) + 0.227*Tr(D)	0.162 - 0.137*Tr(GN) + 0.194*Tr(D)
LD6QLLP	D_GN_SETUP (rise)	0.054 - 0.092*Tr(GN) + 0.160*Tr(D)	0.128 - 0.114*Tr(GN) + 0.200*Tr(D)	0.108 - 0.095*Tr(GN) + 0.159*Tr(D)
LD6QLLP	Pulse Width Low GN	0.080	0.260	0.170
LD6QLLP	Pulse Width Low SD	0.055	0.120	0.080
LD6QLLP	SD_GN_RECOVERY (rise)	0.110 + 0.156*Tr(SD)	0.249 + 0.198*Tr(SD)	0.144 + 0.181*Tr(SD)
LD6QLLP	SD_GN_REMOVAL (rise)	-0.009 + 0.111*Tr(GN)	-0.026 + 0.124*Tr(GN)	0.004 + 0.114*Tr(GN)
LD6QLLX4	D_GN_HOLD (fall)	-0.008 + 0.133*Tr(GN)	-0.021 + 0.153*Tr(GN)	0.004 + 0.134*Tr(GN)
LD6QLLX4	D_GN_HOLD (rise)	-0.004 + 0.090*Tr(GN)	-0.015 + 0.099*Tr(GN)	0.004 + 0.094*Tr(GN)
LD6QLLX4	D_GN_SETUP (fall)	0.067 - 0.125*Tr(GN) + 0.217*Tr(D)	0.149 - 0.146*Tr(GN) + 0.220*Tr(D)	0.151 - 0.129*Tr(GN) + 0.186*Tr(D)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD6QLLX4	D_GN_SETUP (rise)	0.055 - 0.092*Tr(GN) + 0.166*Tr(D)	0.126 - 0.110*Tr(GN) + 0.203*Tr(D)	0.108 - 0.095*Tr(GN) + 0.162*Tr(D)
LD6QLLX4	Pulse Width Low GN	0.065	0.205	0.135
LD6QLLX4	Pulse Width Low SD	0.050	0.110	0.075
LD6QLLX4	SD_GN_RECOVERY (rise)	0.105 + 0.166*Tr(SD)	0.245 + 0.202*Tr(SD)	0.139 + 0.187*Tr(SD)
LD6QLLX4	SD_GN_REMOVAL (rise)	-0.008 + 0.106*Tr(GN)	-0.025 + 0.119*Tr(GN)	0.004 + 0.110*Tr(GN)
LD6QLLX6	D_GN_HOLD (fall)	-0.007 + 0.134*Tr(GN)	-0.022 + 0.153*Tr(GN)	0.004 + 0.134*Tr(GN)
LD6QLLX6	D_GN_HOLD (rise)	-0.005 + 0.096*Tr(GN)	-0.016 + 0.103*Tr(GN)	0.004 + 0.097*Tr(GN)
LD6QLLX6	D_GN_SETUP (fall)	0.064 - 0.123*Tr(GN) + 0.218*Tr(D)	0.143 - 0.142*Tr(GN) + 0.217*Tr(D)	0.147 - 0.127*Tr(GN) + 0.187*Tr(D)
LD6QLLX6	D_GN_SETUP (rise)	0.053 - 0.093*Tr(GN) + 0.161*Tr(D)	0.121 - 0.110*Tr(GN) + 0.198*Tr(D)	0.105 - 0.094*Tr(GN) + 0.157*Tr(D)
LD6QLLX6	Pulse Width Low GN	0.065	0.190	0.125
LD6QLLX6	Pulse Width Low SD	0.045	0.100	0.065
LD6QLLX6	SD_GN_RECOVERY (rise)	0.102 + 0.173*Tr(SD)	0.237 + 0.207*Tr(SD)	0.139 + 0.191*Tr(SD)
LD6QLLX6	SD_GN_REMOVAL (rise)	-0.009 + 0.111*Tr(GN)	-0.025 + 0.119*Tr(GN)	0.004 + 0.110*Tr(GN)
LD6QLLX8	D_GN_HOLD (fall)	-0.008 + 0.133*Tr(GN)	-0.023 + 0.150*Tr(GN)	0.004 + 0.134*Tr(GN)
LD6QLLX8	D_GN_HOLD (rise)	-0.004 + 0.090*Tr(GN)	-0.015 + 0.097*Tr(GN)	0.004 + 0.094*Tr(GN)
LD6QLLX8	D_GN_SETUP (fall)	0.062 - 0.121*Tr(GN) + 0.217*Tr(D)	0.142 - 0.140*Tr(GN) + 0.215*Tr(D)	0.146 - 0.125*Tr(GN) + 0.186*Tr(D)
LD6QLLX8	D_GN_SETUP (rise)	0.053 - 0.092*Tr(GN) + 0.162*Tr(D)	0.121 - 0.108*Tr(GN) + 0.200*Tr(D)	0.103 - 0.092*Tr(GN) + 0.162*Tr(D)
LD6QLLX8	Pulse Width Low GN	0.060	0.175	0.115
LD6QLLX8	Pulse Width Low SD	0.045	0.095	0.065
LD6QLLX8	SD_GN_RECOVERY (rise)	0.099 + 0.177*Tr(SD)	0.228 + 0.208*Tr(SD)	0.134 + 0.194*Tr(SD)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD6QLLX8	SD_GN_REMOVAL (rise)	-0.008 + 0.106*Tr(GN)	-0.024 + 0.115*Tr(GN)	0.004 + 0.110*Tr(GN)

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
LD6QLL	8543.200	158892.000
LD6QLLP	10265.600	199178.000
LD6QLLX4	16205.300	332644.000
LD6QLLX6	23135.100	481002.000
LD6QLLX8	29445.700	621727.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD6QLL	Q(related_pin:GN)	0.039 + 0.010*Tr
LD6QLL	D(max)	0.002
LD6QLL	GN(max)	0.016 + 0.009*Tr
LD6QLL	SD(max)	0.005 + 0.009*Tr
LD6QLLP	Q(related_pin:GN)	0.052 + 0.010*Tr
LD6QLLP	D(max)	0.002
LD6QLLP	GN(max)	0.017 + 0.009*Tr
LD6QLLP	SD(max)	0.007 + 0.009*Tr
LD6QLLX4	Q(related_pin:GN)	0.082 + 0.020*Tr
LD6QLLX4	D(max)	0.004
LD6QLLX4	GN(max)	0.022 + 0.018*Tr
LD6QLLX4	SD(max)	0.009 + 0.013*Tr
LD6QLLX6	Q(related_pin:GN)	0.116 + 0.030*Tr
LD6QLLX6	D(max)	0.006
LD6QLLX6	GN(max)	0.034 + 0.027*Tr
LD6QLLX6	SD(max)	0.017 + 0.020*Tr
LD6QLLX8	Q(related_pin:GN)	0.148 + 0.040*Tr
LD6QLLX8	D(max)	0.008

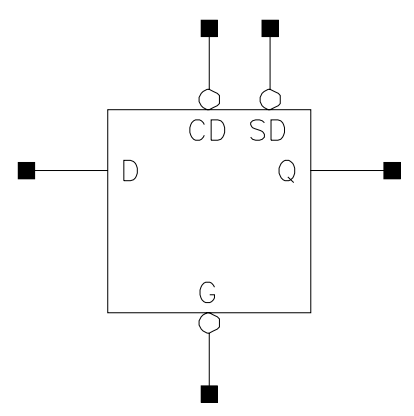
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD6QLLX8	GN(max)	$0.042 + 0.037 \cdot Tr$
LD6QLLX8	SD(max)	$0.021 + 0.026 \cdot Tr$

LD7QLL
LD7QLLP
LD7QLLX4
LD7QLLX6
LD7QLLX8

**Function: Function = D Latch with Active High Transparent ,
 Clear Active Low, Preset Active Low, Q Output Only**



Truth Table

IQ	Q
IQ	IQ

Truth Table

D	G	CD	SD	IQ	IQ
-	-	-	0	-	1
-	-	0	1	-	0
D	1	1	1	-	D
-	0	1	1	IQ	IQ

Physical Dimensions

Property	LD7QLL	LD7QLLP	LD7QLLX4	LD7QLLX6	LD7QLLX8
Area(um ²)	28.241	28.241	34.292	46.396	48.413

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD7QLL	Q Max Load	0.160	0.160	0.160
LD7QLL	D Input Cap.	0.0018	0.0016	0.0017
LD7QLL	G Input Cap.	0.0025	0.0020	0.0022
LD7QLL	CD Input Cap.	0.0018	0.0015	0.0016
LD7QLL	SD Input Cap.	0.0024	0.0020	0.0021

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD7QLLP	SD Input Cap.	0.0024	0.0020	0.0021
LD7QLLP	Q Max Load	0.320	0.320	0.320
LD7QLLP	D Input Cap.	0.0026	0.0023	0.0025
LD7QLLP	CD Input Cap.	0.0026	0.0022	0.0024
LD7QLLP	G Input Cap.	0.0024	0.0020	0.0021
LD7QLLX4	Q Max Load	0.640	0.640	0.640
LD7QLLX4	CD Input Cap.	0.0045	0.0040	0.0041
LD7QLLX4	SD Input Cap.	0.0039	0.0033	0.0034
LD7QLLX4	D Input Cap.	0.0046	0.0042	0.0043
LD7QLLX4	G Input Cap.	0.0039	0.0033	0.0034
LD7QLLX6	CD Input Cap.	0.0070	0.0061	0.0064
LD7QLLX6	D Input Cap.	0.0075	0.0067	0.0070
LD7QLLX6	Q Max Load	0.960	0.960	0.960
LD7QLLX6	SD Input Cap.	0.0050	0.0042	0.0044
LD7QLLX6	G Input Cap.	0.0052	0.0044	0.0046
LD7QLLX8	G Input Cap.	0.0073	0.0063	0.0066
LD7QLLX8	CD Input Cap.	0.0090	0.0079	0.0083
LD7QLLX8	SD Input Cap.	0.0056	0.0047	0.0050
LD7QLLX8	Q Max Load	1.280	1.280	1.280
LD7QLLX8	D Input Cap.	0.0096	0.0086	0.0089

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD7QLL	SD-Q	SD_Q (fall)	$0.142 + 0.152 \cdot Tr + 1.368 \cdot C$	$0.486 + 0.183 \cdot Tr + 3.329 \cdot C$	$0.312 + 0.163 \cdot Tr + 2.127 \cdot C$
LD7QLL	SD-Q	SD_Q (rise)	$0.075 + 0.232 \cdot Tr + 1.617 \cdot C$	$0.193 + 0.237 \cdot Tr + 3.415 \cdot C$	$0.122 + 0.234 \cdot Tr + 2.327 \cdot C$
LD7QLL	G-Q	G_Q (fall)	$0.171 + 0.179 \cdot Tr + 1.502 \cdot C$	$0.403 + 0.217 \cdot Tr + 3.347 \cdot C$	$0.259 + 0.194 \cdot Tr + 2.140 \cdot C$
LD7QLL	G-Q	G_Q (rise)	$0.129 + 0.178 \cdot Tr + 1.687 \cdot C$	$0.334 + 0.215 \cdot Tr + 3.660 \cdot C$	$0.199 + 0.193 \cdot Tr + 2.441 \cdot C$

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD7QLL	CD-Q	CD_Q (fall)	0.132 + 0.328*Tr + 1.379*C	0.322 + 0.350*Tr + 3.192*C	0.212 + 0.341*Tr + 2.044*C
LD7QLL	CD-Q	CD_Q (rise)	0.092 + 0.170*Tr + 1.701*C	0.257 + 0.208*Tr + 3.689*C	0.147 + 0.190*Tr + 2.469*C
LD7QLL	D-Q	D_Q (fall)	0.165 + 0.285*Tr + 1.504*C	0.391 + 0.290*Tr + 3.346*C	0.252 + 0.287*Tr + 2.146*C
LD7QLL	D-Q	D_Q (rise)	0.089 + 0.196*Tr + 1.697*C	0.240 + 0.238*Tr + 3.684*C	0.140 + 0.216*Tr + 2.468*C
LD7QLLP	SD-Q	SD_Q (fall)	0.122 + 0.161*Tr + 0.671*C	0.402 + 0.194*Tr + 1.545*C	0.259 + 0.172*Tr + 1.005*C
LD7QLLP	SD-Q	SD_Q (rise)	0.080 + 0.242*Tr + 0.792*C	0.213 + 0.250*Tr + 1.657*C	0.136 + 0.245*Tr + 1.133*C
LD7QLLP	G-Q	G_Q (fall)	0.144 + 0.183*Tr + 0.724*C	0.332 + 0.223*Tr + 1.551*C	0.215 + 0.199*Tr + 1.008*C
LD7QLLP	G-Q	G_Q (rise)	0.131 + 0.184*Tr + 0.833*C	0.337 + 0.222*Tr + 1.791*C	0.201 + 0.199*Tr + 1.198*C
LD7QLLP	CD-Q	CD_Q (fall)	0.100 + 0.291*Tr + 0.678*C	0.243 + 0.319*Tr + 1.510*C	0.162 + 0.309*Tr + 0.983*C
LD7QLLP	CD-Q	CD_Q (rise)	0.094 + 0.188*Tr + 0.839*C	0.264 + 0.222*Tr + 1.808*C	0.151 + 0.205*Tr + 1.212*C
LD7QLLP	D-Q	D_Q (fall)	0.133 + 0.261*Tr + 0.728*C	0.310 + 0.267*Tr + 1.562*C	0.201 + 0.264*Tr + 1.019*C
LD7QLLP	D-Q	D_Q (rise)	0.092 + 0.217*Tr + 0.838*C	0.248 + 0.257*Tr + 1.806*C	0.144 + 0.235*Tr + 1.212*C
LD7QLLX4	SD-Q	SD_Q (fall)	0.108 + 0.170*Tr + 0.329*C	0.358 + 0.199*Tr + 0.743*C	0.230 + 0.180*Tr + 0.484*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD7QLLX4	SD-Q	SD_Q (rise)	0.071 + 0.223*Tr + 0.395*C	0.195 + 0.232*Tr + 0.824*C	0.125 + 0.227*Tr + 0.564*C
LD7QLLX4	G-Q	G_Q (fall)	0.125 + 0.187*Tr + 0.349*C	0.287 + 0.220*Tr + 0.745*C	0.186 + 0.200*Tr + 0.485*C
LD7QLLX4	G-Q	G_Q (rise)	0.112 + 0.186*Tr + 0.412*C	0.286 + 0.218*Tr + 0.879*C	0.170 + 0.198*Tr + 0.592*C
LD7QLLX4	CD-Q	CD_Q (fall)	0.085 + 0.264*Tr + 0.331*C	0.214 + 0.300*Tr + 0.734*C	0.142 + 0.290*Tr + 0.478*C
LD7QLLX4	CD-Q	CD_Q (rise)	0.090 + 0.194*Tr + 0.416*C	0.247 + 0.225*Tr + 0.889*C	0.142 + 0.210*Tr + 0.599*C
LD7QLLX4	D-Q	D_Q (fall)	0.119 + 0.248*Tr + 0.353*C	0.277 + 0.254*Tr + 0.754*C	0.180 + 0.250*Tr + 0.492*C
LD7QLLX4	D-Q	D_Q (rise)	0.088 + 0.223*Tr + 0.415*C	0.235 + 0.259*Tr + 0.888*C	0.138 + 0.239*Tr + 0.598*C
LD7QLLX6	SD-Q	SD_Q (fall)	0.107 + 0.178*Tr + 0.219*C	0.352 + 0.205*Tr + 0.496*C	0.227 + 0.187*Tr + 0.322*C
LD7QLLX6	SD-Q	SD_Q (rise)	0.069 + 0.220*Tr + 0.263*C	0.190 + 0.231*Tr + 0.549*C	0.122 + 0.225*Tr + 0.376*C
LD7QLLX6	G-Q	G_Q (fall)	0.120 + 0.192*Tr + 0.233*C	0.276 + 0.225*Tr + 0.496*C	0.179 + 0.205*Tr + 0.323*C
LD7QLLX6	G-Q	G_Q (rise)	0.108 + 0.191*Tr + 0.274*C	0.276 + 0.222*Tr + 0.582*C	0.165 + 0.203*Tr + 0.392*C
LD7QLLX6	CD-Q	CD_Q (fall)	0.081 + 0.256*Tr + 0.220*C	0.206 + 0.301*Tr + 0.490*C	0.137 + 0.290*Tr + 0.319*C
LD7QLLX6	CD-Q	CD_Q (rise)	0.084 + 0.187*Tr + 0.276*C	0.233 + 0.220*Tr + 0.589*C	0.134 + 0.203*Tr + 0.398*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD7QLLX6	D-Q	D_Q (fall)	0.115 + 0.249*Tr + 0.235*C	0.270 + 0.256*Tr + 0.503*C	0.175 + 0.252*Tr + 0.328*C
LD7QLLX6	D-Q	D_Q (rise)	0.083 + 0.214*Tr + 0.276*C	0.223 + 0.253*Tr + 0.589*C	0.131 + 0.232*Tr + 0.397*C
LD7QLLX8	SD-Q	SD_Q (fall)	0.108 + 0.189*Tr + 0.163*C	0.346 + 0.215*Tr + 0.369*C	0.223 + 0.196*Tr + 0.240*C
LD7QLLX8	SD-Q	SD_Q (rise)	0.068 + 0.217*Tr + 0.197*C	0.190 + 0.229*Tr + 0.411*C	0.122 + 0.223*Tr + 0.282*C
LD7QLLX8	G-Q	G_Q (fall)	0.113 + 0.186*Tr + 0.173*C	0.260 + 0.216*Tr + 0.369*C	0.169 + 0.198*Tr + 0.240*C
LD7QLLX8	G-Q	G_Q (rise)	0.100 + 0.185*Tr + 0.205*C	0.256 + 0.213*Tr + 0.436*C	0.152 + 0.195*Tr + 0.294*C
LD7QLLX8	CD-Q	CD_Q (fall)	0.078 + 0.243*Tr + 0.164*C	0.200 + 0.295*Tr + 0.366*C	0.133 + 0.285*Tr + 0.238*C
LD7QLLX8	CD-Q	CD_Q (rise)	0.083 + 0.189*Tr + 0.207*C	0.228 + 0.221*Tr + 0.441*C	0.132 + 0.205*Tr + 0.298*C
LD7QLLX8	D-Q	D_Q (fall)	0.112 + 0.245*Tr + 0.175*C	0.262 + 0.252*Tr + 0.374*C	0.169 + 0.248*Tr + 0.244*C
LD7QLLX8	D-Q	D_Q (rise)	0.082 + 0.216*Tr + 0.207*C	0.218 + 0.254*Tr + 0.441*C	0.128 + 0.233*Tr + 0.298*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD7QLL	CD_G_RECOVERY (rise)	0.050 + 0.173*Tr(CD)	0.160 + 0.203*Tr(CD)	0.069 + 0.194*Tr(CD)
LD7QLL	CD_G_REMOVAL (rise)	0.004 + 0.229*Tr(G)	-0.016 + 0.224*Tr(G)	0.004 + 0.224*Tr(G)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD7QLL	D_G_HOLD (fall)	-0.009 + 0.084*Tr(G)	-0.009 + 0.043*Tr(G)	0.005 + 0.077*Tr(G)
LD7QLL	D_G_HOLD (rise)	0.005 + 0.234*Tr(G)	-0.012 + 0.230*Tr(G)	0.004 + 0.231*Tr(G)
LD7QLL	D_G_SETUP (fall)	0.123 - 0.168*Tr(G) + 0.262*Tr(D)	0.288 - 0.170*Tr(G) + 0.270*Tr(D)	0.222 - 0.164*Tr(G) + 0.244*Tr(D)
LD7QLL	D_G_SETUP (rise)	0.048 - 0.105*Tr(G) + 0.125*Tr(D)	0.127 - 0.142*Tr(G) + 0.175*Tr(D)	0.144 - 0.146*Tr(G) + 0.105*Tr(D)
LD7QLL	Pulse Width High G	0.080	0.285	0.185
LD7QLL	Pulse Width Low CD	0.110	0.260	0.170
LD7QLL	Pulse Width Low SD	0.055	0.120	0.080
LD7QLL	SD_CD_RECOVERY (rise)	0.154 + 0.147*Tr(SD)	0.353 + 0.184*Tr(SD)	0.214 + 0.167*Tr(SD)
LD7QLL	SD_CD_REMOVAL (rise)	0.005	0.005	0.005
LD7QLL	SD_G_RECOVERY (rise)	0.160 + 0.150*Tr(SD)	0.392 + 0.183*Tr(SD)	0.234 + 0.167*Tr(SD)
LD7QLL	SD_G_REMOVAL (rise)	-0.005 + 0.059*Tr(G)	0.001 + 0.011*Tr(G)	0.005 + 0.050*Tr(G)
LD7QLLP	CD_G_RECOVERY (rise)	0.052 + 0.197*Tr(CD)	0.169 + 0.226*Tr(CD)	0.079 + 0.214*Tr(CD)
LD7QLLP	CD_G_REMOVAL (rise)	0.004 + 0.235*Tr(G)	-0.018 + 0.231*Tr(G)	0.004 + 0.231*Tr(G)
LD7QLLP	D_G_HOLD (fall)	-0.010 + 0.114*Tr(G)	-0.018 + 0.083*Tr(G)	0.004 + 0.104*Tr(G)
LD7QLLP	D_G_HOLD (rise)	0.004 + 0.239*Tr(G)	-0.014 + 0.237*Tr(G)	0.004 + 0.231*Tr(G)
LD7QLLP	D_G_SETUP (fall)	0.095 - 0.152*Tr(G) + 0.222*Tr(D)	0.218 - 0.157*Tr(G) + 0.235*Tr(D)	0.182 - 0.147*Tr(G) + 0.201*Tr(D)
LD7QLLP	D_G_SETUP (rise)	0.053 - 0.118*Tr(G) + 0.148*Tr(D)	0.139 - 0.155*Tr(G) + 0.202*Tr(D)	0.154 - 0.156*Tr(G) + 0.129*Tr(D)
LD7QLLP	Pulse Width High G	0.080	0.225	0.140
LD7QLLP	Pulse Width Low CD	0.080	0.180	0.120
LD7QLLP	Pulse Width Low SD	0.060	0.135	0.085
LD7QLLP	SD_CD_RECOVERY (rise)	0.122 + 0.157*Tr(SD)	0.283 + 0.195*Tr(SD)	0.164 + 0.181*Tr(SD)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD7QLLP	SD_CD_REMOVAL (rise)	0.005	0.005	0.005
LD7QLLP	SD_G_RECOVERY (rise)	0.131 + 0.155*Tr(SD)	0.314 + 0.193*Tr(SD)	0.184 + 0.174*Tr(SD)
LD7QLLP	SD_G_REMOVAL (rise)	-0.008 + 0.079*Tr(G)	-0.008 + 0.038*Tr(G)	0.005 + 0.074*Tr(G)
LD7QLLX4	CD_G_RECOVERY (rise)	0.058 + 0.205*Tr(CD)	0.172 + 0.230*Tr(CD)	0.084 + 0.221*Tr(CD)
LD7QLLX4	CD_G_REMOVAL (rise)	-0.001 + 0.212*Tr(G)	-0.019 + 0.208*Tr(G)	0.004 + 0.207*Tr(G)
LD7QLLX4	D_G_HOLD (fall)	-0.009 + 0.104*Tr(G)	-0.016 + 0.076*Tr(G)	0.004 + 0.097*Tr(G)
LD7QLLX4	D_G_HOLD (rise)	0.003 + 0.210*Tr(G)	-0.015 + 0.212*Tr(G)	0.004 + 0.207*Tr(G)
LD7QLLX4	D_G_SETUP (fall)	0.084 - 0.136*Tr(G) + 0.212*Tr(D)	0.193 - 0.141*Tr(G) + 0.222*Tr(D)	0.165 - 0.134*Tr(G) + 0.187*Tr(D)
LD7QLLX4	D_G_SETUP (rise)	0.055 - 0.121*Tr(G) + 0.171*Tr(D)	0.143 - 0.154*Tr(G) + 0.217*Tr(D)	0.151 - 0.146*Tr(G) + 0.149*Tr(D)
LD7QLLX4	Pulse Width High G	0.075	0.200	0.115
LD7QLLX4	Pulse Width Low CD	0.065	0.140	0.095
LD7QLLX4	Pulse Width Low SD	0.050	0.110	0.075
LD7QLLX4	SD_CD_RECOVERY (rise)	0.101 + 0.168*Tr(SD)	0.234 + 0.202*Tr(SD)	0.134 + 0.187*Tr(SD)
LD7QLLX4	SD_CD_REMOVAL (rise)	0.005	0.005	0.005
LD7QLLX4	SD_G_RECOVERY (rise)	0.116 + 0.164*Tr(SD)	0.279 + 0.195*Tr(SD)	0.159 + 0.184*Tr(SD)
LD7QLLX4	SD_G_REMOVAL (rise)	-0.007 + 0.075*Tr(G)	-0.008 + 0.038*Tr(G)	0.005 + 0.070*Tr(G)
LD7QLLX6	CD_G_RECOVERY (rise)	0.049 + 0.200*Tr(CD)	0.152 + 0.227*Tr(CD)	0.074 + 0.214*Tr(CD)
LD7QLLX6	CD_G_REMOVAL (rise)	0.004 + 0.214*Tr(G)	-0.013 + 0.212*Tr(G)	0.004 + 0.207*Tr(G)
LD7QLLX6	D_G_HOLD (fall)	-0.009 + 0.098*Tr(G)	-0.015 + 0.073*Tr(G)	0.004 + 0.090*Tr(G)
LD7QLLX6	D_G_HOLD (rise)	0.006 + 0.212*Tr(G)	-0.012 + 0.212*Tr(G)	0.004 + 0.207*Tr(G)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD7QLLX6	D_G_SETUP (fall)	0.084 - 0.133*Tr(G) + 0.211*Tr(D)	0.192 - 0.137*Tr(G) + 0.221*Tr(D)	0.158 - 0.129*Tr(G) + 0.192*Tr(D)
LD7QLLX6	D_G_SETUP (rise)	0.052 - 0.116*Tr(G) + 0.157*Tr(D)	0.131 - 0.146*Tr(G) + 0.206*Tr(D)	0.145 - 0.144*Tr(G) + 0.141*Tr(D)
LD7QLLX6	Pulse Width High G	0.065	0.185	0.115
LD7QLLX6	Pulse Width Low CD	0.060	0.130	0.090
LD7QLLX6	Pulse Width Low SD	0.045	0.100	0.070
LD7QLLX6	SD_CD_RECOVERY (rise)	0.099 + 0.177*Tr(SD)	0.227 + 0.208*Tr(SD)	0.134 + 0.194*Tr(SD)
LD7QLLX6	SD_CD_REMOVAL (rise)	0.005	0.005	0.005
LD7QLLX6	SD_G_RECOVERY (rise)	0.115 + 0.170*Tr(SD)	0.273 + 0.205*Tr(SD)	0.159 + 0.191*Tr(SD)
LD7QLLX6	SD_G_REMOVAL (rise)	-0.007 + 0.068*Tr(G)	-0.006 + 0.034*Tr(G)	0.005 + 0.064*Tr(G)
LD7QLLX8	CD_G_RECOVERY (rise)	0.054 + 0.200*Tr(CD)	0.161 + 0.226*Tr(CD)	0.079 + 0.214*Tr(CD)
LD7QLLX8	CD_G_REMOVAL (rise)	0.000 + 0.207*Tr(G)	-0.017 + 0.202*Tr(G)	0.004 + 0.197*Tr(G)
LD7QLLX8	D_G_HOLD (fall)	-0.009 + 0.098*Tr(G)	-0.015 + 0.073*Tr(G)	0.004 + 0.090*Tr(G)
LD7QLLX8	D_G_HOLD (rise)	0.003 + 0.204*Tr(G)	-0.013 + 0.201*Tr(G)	0.004 + 0.197*Tr(G)
LD7QLLX8	D_G_SETUP (fall)	0.082 - 0.131*Tr(G) + 0.208*Tr(D)	0.186 - 0.134*Tr(G) + 0.219*Tr(D)	0.153 - 0.125*Tr(G) + 0.189*Tr(D)
LD7QLLX8	D_G_SETUP (rise)	0.053 - 0.116*Tr(G) + 0.166*Tr(D)	0.134 - 0.147*Tr(G) + 0.213*Tr(D)	0.145 - 0.141*Tr(G) + 0.147*Tr(D)
LD7QLLX8	Pulse Width High G	0.065	0.170	0.105
LD7QLLX8	Pulse Width Low CD	0.055	0.120	0.080
LD7QLLX8	Pulse Width Low SD	0.045	0.100	0.065
LD7QLLX8	SD_CD_RECOVERY (rise)	0.094 + 0.187*Tr(SD)	0.222 + 0.220*Tr(SD)	0.129 + 0.207*Tr(SD)
LD7QLLX8	SD_CD_REMOVAL (rise)	0.005	0.005	0.005
LD7QLLX8	SD_G_RECOVERY (rise)	0.112 + 0.184*Tr(SD)	0.268 + 0.216*Tr(SD)	0.154 + 0.201*Tr(SD)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD7QLLX8	SD_G_REMOVAL (rise)	-0.006 + 0.064*Tr(G)	-0.006 + 0.034*Tr(G)	0.005 + 0.064*Tr(G)

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
LD7QLL	8534.390	160091.000
LD7QLLP	10323.800	203980.000
LD7QLLX4	16412.000	344982.000
LD7QLLX6	23240.200	493696.000
LD7QLLX8	29828.600	643882.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD7QLL	Q(related_pin:G)	0.033 + 0.009*Tr
LD7QLL	D(max)	0.001
LD7QLL	G(max)	0.015 + 0.009*Tr
LD7QLL	CD(max)	0.002
LD7QLL	SD(max)	0.004 + 0.009*Tr
LD7QLLP	Q(related_pin:G)	0.046 + 0.010*Tr
LD7QLLP	D(max)	0.002
LD7QLLP	G(max)	0.017 + 0.009*Tr
LD7QLLP	CD(max)	0.003
LD7QLLP	SD(max)	0.005 + 0.009*Tr
LD7QLLX4	Q(related_pin:G)	0.074 + 0.018*Tr
LD7QLLX4	D(max)	0.004
LD7QLLX4	G(max)	0.025 + 0.017*Tr
LD7QLLX4	CD(max)	0.004
LD7QLLX4	SD(max)	0.009 + 0.017*Tr
LD7QLLX6	Q(related_pin:G)	0.107 + 0.025*Tr
LD7QLLX6	D(max)	0.007
LD7QLLX6	G(max)	0.035 + 0.023*Tr

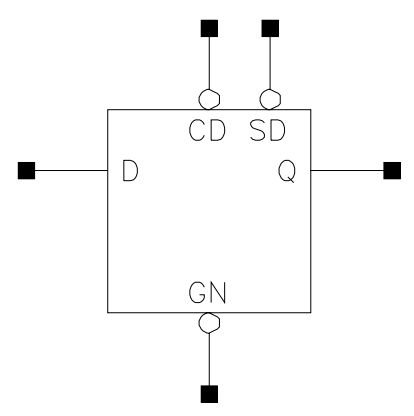
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD7QLLX6	CD(max)	0.006
LD7QLLX6	SD(max)	$0.013 + 0.022 * Tr$
LD7QLLX8	Q(related_pin:G)	$0.136 + 0.037 * Tr$
LD7QLLX8	D(max)	0.009
LD7QLLX8	G(max)	$0.044 + 0.035 * Tr$
LD7QLLX8	CD(max)	0.008
LD7QLLX8	SD(max)	$0.016 + 0.025 * Tr$

LD8QLL
LD8QLLP
LD8QLLX4
LD8QLLX6
LD8QLLX8

Function: Function = D Latch with Active Low Transparent, Clear Active Low, Preset Active Low, Q Output Only



Truth Table

IQ	Q
IQ	IQ

Truth Table

D	GN	CD	SD	IQ	IQ
-	-	-	0	-	1
-	-	0	1	-	0
D	0	1	1	-	D
-	1	1	1	IQ	IQ

Physical Dimensions

Property	LD8QLL	LD8QLLP	LD8QLLX4	LD8QLLX6	LD8QLLX8
Area(um ²)	28.241	28.241	34.292	46.396	48.413

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD8QLL	D Input Cap.	0.0021	0.0019	0.0020
LD8QLL	GN Input Cap.	0.0023	0.0019	0.0020
LD8QLL	CD Input Cap.	0.0020	0.0017	0.0018
LD8QLL	Q Max Load	0.160	0.160	0.160
LD8QLL	SD Input Cap.	0.0024	0.0021	0.0022

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD8QLLP	GN Input Cap.	0.0023	0.0019	0.0020
LD8QLLP	CD Input Cap.	0.0028	0.0024	0.0026
LD8QLLP	Q Max Load	0.320	0.320	0.320
LD8QLLP	SD Input Cap.	0.0024	0.0020	0.0021
LD8QLLP	D Input Cap.	0.0029	0.0026	0.0027
LD8QLLX4	Q Max Load	0.640	0.640	0.640
LD8QLLX4	GN Input Cap.	0.0037	0.0032	0.0033
LD8QLLX4	CD Input Cap.	0.0049	0.0043	0.0045
LD8QLLX4	D Input Cap.	0.0051	0.0046	0.0047
LD8QLLX4	SD Input Cap.	0.0032	0.0027	0.0028
LD8QLLX6	SD Input Cap.	0.0045	0.0038	0.0040
LD8QLLX6	Q Max Load	0.960	0.960	0.960
LD8QLLX6	D Input Cap.	0.0077	0.0069	0.0072
LD8QLLX6	GN Input Cap.	0.0054	0.0046	0.0048
LD8QLLX6	CD Input Cap.	0.0074	0.0065	0.0067
LD8QLLX8	D Input Cap.	0.0099	0.0089	0.0093
LD8QLLX8	GN Input Cap.	0.0070	0.0061	0.0063
LD8QLLX8	CD Input Cap.	0.0094	0.0083	0.0086
LD8QLLX8	Q Max Load	1.280	1.280	1.280
LD8QLLX8	SD Input Cap.	0.0058	0.0050	0.0052

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD8QLL	SD-Q	SD_Q (fall)	0.128 + 0.154*Tr + 1.340*C	0.433 + 0.186*Tr + 3.205*C	0.277 + 0.165*Tr + 2.052*C
LD8QLL	SD-Q	SD_Q (rise)	0.078 + 0.233*Tr + 1.618*C	0.204 + 0.238*Tr + 3.424*C	0.128 + 0.234*Tr + 2.331*C
LD8QLL	CD-Q	CD_Q (fall)	0.117 + 0.312*Tr + 1.352*C	0.283 + 0.335*Tr + 3.111*C	0.187 + 0.326*Tr + 1.993*C
LD8QLL	CD-Q	CD_Q (rise)	0.094 + 0.178*Tr + 1.708*C	0.268 + 0.215*Tr + 3.717*C	0.152 + 0.197*Tr + 2.484*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD8QLL	D-Q	D_Q (fall)	0.147 + 0.275*Tr + 1.468*C	0.345 + 0.279*Tr + 3.234*C	0.224 + 0.276*Tr + 2.078*C
LD8QLL	D-Q	D_Q (rise)	0.091 + 0.205*Tr + 1.701*C	0.250 + 0.247*Tr + 3.701*C	0.145 + 0.224*Tr + 2.472*C
LD8QLL	GN-Q	GN_Q (fall)	0.195 + 0.244*Tr + 1.455*C	0.449 + 0.253*Tr + 3.223*C	0.293 + 0.246*Tr + 2.062*C
LD8QLL	GN-Q	GN_Q (rise)	0.117 + 0.253*Tr + 1.694*C	0.299 + 0.259*Tr + 3.688*C	0.182 + 0.254*Tr + 2.454*C
LD8QLLP	SD-Q	SD_Q (fall)	0.122 + 0.163*Tr + 0.672*C	0.406 + 0.196*Tr + 1.549*C	0.260 + 0.173*Tr + 1.007*C
LD8QLLP	SD-Q	SD_Q (rise)	0.079 + 0.241*Tr + 0.791*C	0.206 + 0.249*Tr + 1.647*C	0.132 + 0.244*Tr + 1.129*C
LD8QLLP	CD-Q	CD_Q (fall)	0.101 + 0.294*Tr + 0.679*C	0.249 + 0.323*Tr + 1.512*C	0.165 + 0.313*Tr + 0.985*C
LD8QLLP	CD-Q	CD_Q (rise)	0.090 + 0.184*Tr + 0.836*C	0.249 + 0.219*Tr + 1.793*C	0.143 + 0.202*Tr + 1.206*C
LD8QLLP	D-Q	D_Q (fall)	0.135 + 0.265*Tr + 0.733*C	0.315 + 0.270*Tr + 1.566*C	0.205 + 0.266*Tr + 1.022*C
LD8QLLP	D-Q	D_Q (rise)	0.087 + 0.211*Tr + 0.834*C	0.235 + 0.251*Tr + 1.787*C	0.137 + 0.230*Tr + 1.202*C
LD8QLLP	GN-Q	GN_Q (fall)	0.182 + 0.247*Tr + 0.725*C	0.416 + 0.257*Tr + 1.554*C	0.272 + 0.250*Tr + 1.010*C
LD8QLLP	GN-Q	GN_Q (rise)	0.114 + 0.255*Tr + 0.829*C	0.286 + 0.262*Tr + 1.775*C	0.176 + 0.257*Tr + 1.190*C
LD8QLLX4	SD-Q	SD_Q (fall)	0.112 + 0.175*Tr + 0.328*C	0.366 + 0.205*Tr + 0.743*C	0.234 + 0.184*Tr + 0.484*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD8QLLX4	SD-Q	SD_Q (rise)	0.073 + 0.233*Tr + 0.394*C	0.197 + 0.245*Tr + 0.821*C	0.127 + 0.239*Tr + 0.563*C
LD8QLLX4	CD-Q	CD_Q (fall)	0.085 + 0.266*Tr + 0.331*C	0.216 + 0.304*Tr + 0.734*C	0.144 + 0.293*Tr + 0.478*C
LD8QLLX4	CD-Q	CD_Q (rise)	0.084 + 0.187*Tr + 0.413*C	0.229 + 0.219*Tr + 0.880*C	0.132 + 0.203*Tr + 0.594*C
LD8QLLX4	D-Q	D_Q (fall)	0.120 + 0.250*Tr + 0.353*C	0.279 + 0.258*Tr + 0.754*C	0.182 + 0.253*Tr + 0.492*C
LD8QLLX4	D-Q	D_Q (rise)	0.082 + 0.214*Tr + 0.413*C	0.218 + 0.251*Tr + 0.878*C	0.129 + 0.230*Tr + 0.593*C
LD8QLLX4	GN-Q	GN_Q (fall)	0.149 + 0.231*Tr + 0.349*C	0.338 + 0.239*Tr + 0.745*C	0.221 + 0.233*Tr + 0.484*C
LD8QLLX4	GN-Q	GN_Q (rise)	0.100 + 0.239*Tr + 0.410*C	0.249 + 0.246*Tr + 0.870*C	0.153 + 0.240*Tr + 0.587*C
LD8QLLX6	SD-Q	SD_Q (fall)	0.111 + 0.182*Tr + 0.219*C	0.363 + 0.209*Tr + 0.499*C	0.232 + 0.189*Tr + 0.324*C
LD8QLLX6	SD-Q	SD_Q (rise)	0.071 + 0.227*Tr + 0.263*C	0.193 + 0.239*Tr + 0.548*C	0.124 + 0.233*Tr + 0.376*C
LD8QLLX6	CD-Q	CD_Q (fall)	0.083 + 0.259*Tr + 0.221*C	0.213 + 0.305*Tr + 0.493*C	0.141 + 0.295*Tr + 0.321*C
LD8QLLX6	CD-Q	CD_Q (rise)	0.082 + 0.183*Tr + 0.276*C	0.226 + 0.216*Tr + 0.588*C	0.130 + 0.200*Tr + 0.397*C
LD8QLLX6	D-Q	D_Q (fall)	0.119 + 0.252*Tr + 0.237*C	0.278 + 0.259*Tr + 0.506*C	0.180 + 0.255*Tr + 0.330*C
LD8QLLX6	D-Q	D_Q (rise)	0.081 + 0.210*Tr + 0.275*C	0.215 + 0.248*Tr + 0.587*C	0.126 + 0.227*Tr + 0.396*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD8QLLX6	GN-Q	GN_Q (fall)	0.145 + 0.225*Tr + 0.234*C	0.331 + 0.233*Tr + 0.499*C	0.217 + 0.227*Tr + 0.325*C
LD8QLLX6	GN-Q	GN_Q (rise)	0.095 + 0.232*Tr + 0.273*C	0.240 + 0.239*Tr + 0.581*C	0.147 + 0.234*Tr + 0.391*C
LD8QLLX8	SD-Q	SD_Q (fall)	0.107 + 0.183*Tr + 0.164*C	0.349 + 0.209*Tr + 0.370*C	0.223 + 0.190*Tr + 0.241*C
LD8QLLX8	SD-Q	SD_Q (rise)	0.068 + 0.222*Tr + 0.197*C	0.186 + 0.234*Tr + 0.411*C	0.120 + 0.228*Tr + 0.282*C
LD8QLLX8	CD-Q	CD_Q (fall)	0.079 + 0.246*Tr + 0.165*C	0.205 + 0.300*Tr + 0.367*C	0.136 + 0.289*Tr + 0.239*C
LD8QLLX8	CD-Q	CD_Q (rise)	0.080 + 0.185*Tr + 0.206*C	0.219 + 0.217*Tr + 0.439*C	0.127 + 0.201*Tr + 0.297*C
LD8QLLX8	D-Q	D_Q (fall)	0.114 + 0.249*Tr + 0.176*C	0.267 + 0.255*Tr + 0.376*C	0.173 + 0.251*Tr + 0.245*C
LD8QLLX8	D-Q	D_Q (rise)	0.079 + 0.211*Tr + 0.206*C	0.209 + 0.248*Tr + 0.438*C	0.123 + 0.228*Tr + 0.296*C
LD8QLLX8	GN-Q	GN_Q (fall)	0.136 + 0.221*Tr + 0.174*C	0.311 + 0.228*Tr + 0.370*C	0.203 + 0.223*Tr + 0.241*C
LD8QLLX8	GN-Q	GN_Q (rise)	0.091 + 0.228*Tr + 0.204*C	0.229 + 0.234*Tr + 0.434*C	0.140 + 0.230*Tr + 0.293*C

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD8QLL	CD_GN_RECOVERY (rise)	0.083 + 0.180*Tr(CD)	0.238 + 0.212*Tr(CD)	0.119 + 0.201*Tr(CD)
LD8QLL	CD_GN_REMOVAL (rise)	-0.004 + 0.062*Tr(GN)	-0.011 + 0.056*Tr(GN)	0.005 + 0.067*Tr(GN)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD8QLL	D_GN_HOLD (fall)	-0.008 + 0.112*Tr(GN)	-0.026 + 0.131*Tr(GN)	0.004 + 0.117*Tr(GN)
LD8QLL	D_GN_HOLD (rise)	-0.004 + 0.068*Tr(GN)	-0.013 + 0.065*Tr(GN)	0.005 + 0.074*Tr(GN)
LD8QLL	D_GN_SETUP (fall)	0.087 - 0.142*Tr(GN) + 0.243*Tr(D)	0.199 - 0.169*Tr(GN) + 0.242*Tr(D)	0.178 - 0.142*Tr(GN) + 0.212*Tr(D)
LD8QLL	D_GN_SETUP (rise)	0.073 - 0.104*Tr(GN) + 0.187*Tr(D)	0.196 - 0.130*Tr(GN) + 0.231*Tr(D)	0.143 - 0.112*Tr(GN) + 0.186*Tr(D)
LD8QLL	Pulse Width Low CD	0.095	0.225	0.150
LD8QLL	Pulse Width Low GN	0.090	0.300	0.200
LD8QLL	Pulse Width Low SD	0.055	0.125	0.080
LD8QLL	SD_CD_RECOVERY (rise)	0.133 + 0.152*Tr(SD)	0.315 + 0.186*Tr(SD)	0.184 + 0.171*Tr(SD)
LD8QLL	SD_CD_REMOVAL (rise)	0.005	0.005	0.005
LD8QLL	SD_GN_RECOVERY (rise)	0.127 + 0.152*Tr(SD)	0.300 + 0.186*Tr(SD)	0.184 + 0.167*Tr(SD)
LD8QLL	SD_GN_REMOVAL (rise)	-0.007 + 0.076*Tr(GN)	-0.018 + 0.086*Tr(GN)	0.004 + 0.090*Tr(GN)
LD8QLLP	CD_GN_RECOVERY (rise)	0.082 + 0.186*Tr(CD)	0.224 + 0.222*Tr(CD)	0.119 + 0.207*Tr(CD)
LD8QLLP	CD_GN_REMOVAL (rise)	-0.004 + 0.062*Tr(GN)	-0.011 + 0.057*Tr(GN)	0.005 + 0.070*Tr(GN)
LD8QLLP	D_GN_HOLD (fall)	-0.009 + 0.128*Tr(GN)	-0.024 + 0.151*Tr(GN)	0.004 + 0.130*Tr(GN)
LD8QLLP	D_GN_HOLD (rise)	-0.004 + 0.068*Tr(GN)	-0.013 + 0.068*Tr(GN)	0.005 + 0.074*Tr(GN)
LD8QLLP	D_GN_SETUP (fall)	0.074 - 0.132*Tr(GN) + 0.233*Tr(D)	0.170 - 0.159*Tr(GN) + 0.230*Tr(D)	0.168 - 0.139*Tr(GN) + 0.199*Tr(D)
LD8QLLP	D_GN_SETUP (rise)	0.073 - 0.104*Tr(GN) + 0.197*Tr(D)	0.194 - 0.128*Tr(GN) + 0.237*Tr(D)	0.143 - 0.112*Tr(GN) + 0.196*Tr(D)
LD8QLLP	Pulse Width Low CD	0.080	0.190	0.125
LD8QLLP	Pulse Width Low GN	0.095	0.265	0.175
LD8QLLP	Pulse Width Low SD	0.060	0.130	0.085
LD8QLLP	SD_CD_RECOVERY (rise)	0.125 + 0.156*Tr(SD)	0.285 + 0.201*Tr(SD)	0.169 + 0.181*Tr(SD)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD8QLLP	SD_CD_REMOVAL (rise)	0.005	0.005	0.005
LD8QLLP	SD_GN_RECOVERY (rise)	0.119 + 0.156*Tr(SD)	0.275 + 0.196*Tr(SD)	0.159 + 0.181*Tr(SD)
LD8QLLP	SD_GN_REMOVAL (rise)	-0.009 + 0.098*Tr(GN)	-0.022 + 0.105*Tr(GN)	0.004 + 0.104*Tr(GN)
LD8QLLX4	CD_GN_RECOVERY (rise)	0.080 + 0.189*Tr(CD)	0.206 + 0.223*Tr(CD)	0.114 + 0.207*Tr(CD)
LD8QLLX4	CD_GN_REMOVAL (rise)	-0.004 + 0.062*Tr(GN)	-0.011 + 0.057*Tr(GN)	0.005 + 0.067*Tr(GN)
LD8QLLX4	D_GN_HOLD (fall)	-0.008 + 0.123*Tr(GN)	-0.023 + 0.146*Tr(GN)	0.004 + 0.130*Tr(GN)
LD8QLLX4	D_GN_HOLD (rise)	-0.004 + 0.068*Tr(GN)	-0.013 + 0.066*Tr(GN)	0.005 + 0.074*Tr(GN)
LD8QLLX4	D_GN_SETUP (fall)	0.069 - 0.126*Tr(GN) + 0.215*Tr(D)	0.155 - 0.148*Tr(GN) + 0.218*Tr(D)	0.158 - 0.132*Tr(GN) + 0.182*Tr(D)
LD8QLLX4	D_GN_SETUP (rise)	0.073 - 0.105*Tr(GN) + 0.201*Tr(D)	0.183 - 0.123*Tr(GN) + 0.238*Tr(D)	0.138 - 0.109*Tr(GN) + 0.196*Tr(D)
LD8QLLX4	Pulse Width Low CD	0.065	0.140	0.100
LD8QLLX4	Pulse Width Low GN	0.080	0.205	0.140
LD8QLLX4	Pulse Width Low SD	0.055	0.115	0.075
LD8QLLX4	SD_CD_RECOVERY (rise)	0.105 + 0.172*Tr(SD)	0.242 + 0.208*Tr(SD)	0.139 + 0.194*Tr(SD)
LD8QLLX4	SD_CD_REMOVAL (rise)	0.005	0.005	0.005
LD8QLLX4	SD_GN_RECOVERY (rise)	0.111 + 0.169*Tr(SD)	0.257 + 0.205*Tr(SD)	0.149 + 0.191*Tr(SD)
LD8QLLX4	SD_GN_REMOVAL (rise)	-0.008 + 0.099*Tr(GN)	-0.022 + 0.106*Tr(GN)	0.004 + 0.104*Tr(GN)
LD8QLLX6	CD_GN_RECOVERY (rise)	0.076 + 0.192*Tr(CD)	0.210 + 0.220*Tr(CD)	0.114 + 0.204*Tr(CD)
LD8QLLX6	CD_GN_REMOVAL (rise)	-0.004 + 0.067*Tr(GN)	-0.011 + 0.060*Tr(GN)	0.005 + 0.070*Tr(GN)
LD8QLLX6	D_GN_HOLD (fall)	-0.009 + 0.128*Tr(GN)	-0.022 + 0.143*Tr(GN)	0.004 + 0.130*Tr(GN)
LD8QLLX6	D_GN_HOLD (rise)	-0.005 + 0.073*Tr(GN)	-0.013 + 0.068*Tr(GN)	0.005 + 0.074*Tr(GN)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD8QLLX6	D_GN_SETUP (fall)	0.069 - 0.127*Tr(GN) + 0.215*Tr(D)	0.155 - 0.148*Tr(GN) + 0.219*Tr(D)	0.158 - 0.132*Tr(GN) + 0.182*Tr(D)
LD8QLLX6	D_GN_SETUP (rise)	0.072 - 0.106*Tr(GN) + 0.199*Tr(D)	0.185 - 0.127*Tr(GN) + 0.237*Tr(D)	0.138 - 0.109*Tr(GN) + 0.192*Tr(D)
LD8QLLX6	Pulse Width Low CD	0.060	0.135	0.095
LD8QLLX6	Pulse Width Low GN	0.080	0.205	0.135
LD8QLLX6	Pulse Width Low SD	0.050	0.110	0.070
LD8QLLX6	SD_CD_RECOVERY (rise)	0.104 + 0.177*Tr(SD)	0.239 + 0.213*Tr(SD)	0.139 + 0.201*Tr(SD)
LD8QLLX6	SD_CD_REMOVAL (rise)	0.005	0.005	0.005
LD8QLLX6	SD_GN_RECOVERY (rise)	0.109 + 0.171*Tr(SD)	0.257 + 0.207*Tr(SD)	0.149 + 0.194*Tr(SD)
LD8QLLX6	SD_GN_REMOVAL (rise)	-0.008 + 0.099*Tr(GN)	-0.022 + 0.106*Tr(GN)	0.004 + 0.107*Tr(GN)
LD8QLLX8	CD_GN_RECOVERY (rise)	0.074 + 0.194*Tr(CD)	0.202 + 0.222*Tr(CD)	0.109 + 0.207*Tr(CD)
LD8QLLX8	CD_GN_REMOVAL (rise)	-0.004 + 0.067*Tr(GN)	-0.011 + 0.057*Tr(GN)	0.005 + 0.070*Tr(GN)
LD8QLLX8	D_GN_HOLD (fall)	-0.009 + 0.128*Tr(GN)	-0.022 + 0.142*Tr(GN)	0.004 + 0.127*Tr(GN)
LD8QLLX8	D_GN_HOLD (rise)	-0.005 + 0.073*Tr(GN)	-0.013 + 0.066*Tr(GN)	0.005 + 0.074*Tr(GN)
LD8QLLX8	D_GN_SETUP (fall)	0.066 - 0.123*Tr(GN) + 0.214*Tr(D)	0.150 - 0.143*Tr(GN) + 0.214*Tr(D)	0.150 - 0.127*Tr(GN) + 0.184*Tr(D)
LD8QLLX8	D_GN_SETUP (rise)	0.071 - 0.104*Tr(GN) + 0.199*Tr(D)	0.181 - 0.124*Tr(GN) + 0.236*Tr(D)	0.133 - 0.105*Tr(GN) + 0.196*Tr(D)
LD8QLLX8	Pulse Width Low CD	0.055	0.125	0.085
LD8QLLX8	Pulse Width Low GN	0.075	0.190	0.125
LD8QLLX8	Pulse Width Low SD	0.045	0.100	0.065
LD8QLLX8	SD_CD_RECOVERY (rise)	0.094 + 0.187*Tr(SD)	0.225 + 0.212*Tr(SD)	0.134 + 0.197*Tr(SD)
LD8QLLX8	SD_CD_REMOVAL (rise)	0.005	0.005	0.005
LD8QLLX8	SD_GN_RECOVERY (rise)	0.104 + 0.177*Tr(SD)	0.246 + 0.208*Tr(SD)	0.139 + 0.197*Tr(SD)

Timing Constraints

nanoSeconds, as a function of Tr (input transition time in nS)

Cell	Constraint	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
LD8QLLX8	SD_GN_REMOVAL (rise)	-0.008 + 0.099*Tr(GN)	-0.022 + 0.106*Tr(GN)	0.004 + 0.104*Tr(GN)

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
LD8QLL	8605.530	162319.000
LD8QLLP	10409.300	206010.000
LD8QLLX4	16622.200	348643.000
LD8QLLX6	23872.700	506718.000
LD8QLLX8	30454.500	656237.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD8QLL	Q(related_pin:GN)	0.040 + 0.010*Tr
LD8QLL	D(max)	0.002
LD8QLL	GN(max)	0.015 + 0.009*Tr
LD8QLL	CD(max)	0.002
LD8QLL	SD(max)	0.005 + 0.009*Tr
LD8QLLP	Q(related_pin:GN)	0.053 + 0.010*Tr
LD8QLLP	D(max)	0.002
LD8QLLP	GN(max)	0.017 + 0.009*Tr
LD8QLLP	CD(max)	0.003
LD8QLLP	SD(max)	0.006 + 0.009*Tr
LD8QLLX4	Q(related_pin:GN)	0.086 + 0.020*Tr
LD8QLLX4	D(max)	0.004
LD8QLLX4	GN(max)	0.025 + 0.018*Tr
LD8QLLX4	CD(max)	0.006
LD8QLLX4	SD(max)	0.009 + 0.013*Tr
LD8QLLX6	Q(related_pin:GN)	0.126 + 0.029*Tr
LD8QLLX6	D(max)	0.007
LD8QLLX6	GN(max)	0.036 + 0.027*Tr

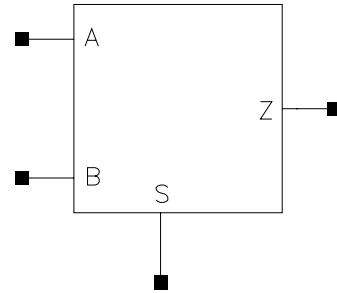
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
LD8QLLX6	CD(max)	0.010
LD8QLLX6	SD(max)	$0.016 + 0.020 * Tr$
LD8QLLX8	Q(related_pin:GN)	$0.157 + 0.040 * Tr$
LD8QLLX8	D(max)	0.009
LD8QLLX8	GN(max)	$0.044 + 0.038 * Tr$
LD8QLLX8	CD(max)	0.012
LD8QLLX8	SD(max)	$0.020 + 0.026 * Tr$

MUX21LL
MUX21LLP
MUX21LLX4
MUX21LLX6
MUX21LLX8

Function: Function = 2:1 Non-Inverting Multiplexer



Truth Table

A	B	S	Z
A	-	0	A
-	B	1	B

Physical Dimensions

Property	MUX21LL	MUX21LLP	MUX21LLX4	MUX21LLX6	MUX21LLX8
Area(um2)	16.138	18.155	22.189	40.344	42.361

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX21LL	A Input Cap.	0.0021	0.0018	0.0019
MUX21LL	S Input Cap.	0.0044	0.0037	0.0039
MUX21LL	B Input Cap.	0.0020	0.0017	0.0018
MUX21LL	Z Max Load	0.160	0.160	0.160
MUX21LLP	A Input Cap.	0.0034	0.0029	0.0031
MUX21LLP	S Input Cap.	0.0062	0.0055	0.0057
MUX21LLP	B Input Cap.	0.0033	0.0028	0.0030
MUX21LLP	Z Max Load	0.320	0.320	0.320
MUX21LLX4	Z Max Load	0.640	0.640	0.640
MUX21LLX4	A Input Cap.	0.0061	0.0053	0.0056
MUX21LLX4	S Input Cap.	0.0111	0.0100	0.0105
MUX21LLX4	B Input Cap.	0.0061	0.0054	0.0056
MUX21LLX6	A Input Cap.	0.0090	0.0078	0.0082

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX21LLX6	S Input Cap.	0.0168	0.0151	0.0158
MUX21LLX6	Z Max Load	0.960	0.960	0.960
MUX21LLX6	B Input Cap.	0.0090	0.0077	0.0081
MUX21LLX8	B Input Cap.	0.0117	0.0101	0.0106
MUX21LLX8	Z Max Load	1.280	1.280	1.280
MUX21LLX8	A Input Cap.	0.0117	0.0101	0.0106
MUX21LLX8	S Input Cap.	0.0214	0.0194	0.0203

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX21LL	A-Z	A_Z (fall)	0.072 + 0.259*Tr + 1.262*C	0.171 + 0.274*Tr + 2.745*C	0.110 + 0.264*Tr + 1.766*C
MUX21LL	A-Z	A_Z (rise)	0.058 + 0.190*Tr + 1.628*C	0.145 + 0.234*Tr + 3.432*C	0.089 + 0.208*Tr + 2.339*C
MUX21LL	B-Z	B_Z (fall)	0.073 + 0.260*Tr + 1.262*C	0.174 + 0.275*Tr + 2.747*C	0.112 + 0.265*Tr + 1.767*C
MUX21LL	B-Z	B_Z (rise)	0.057 + 0.192*Tr + 1.627*C	0.143 + 0.237*Tr + 3.431*C	0.088 + 0.210*Tr + 2.338*C
MUX21LL	S-Z	S_Z (fall)	0.076 + 0.183*Tr + 1.237*C	0.170 + 0.268*Tr + 2.742*C	0.106 + 0.265*Tr + 1.761*C
MUX21LL	S-Z	S_Z (rise)	0.050 + 0.173*Tr + 1.631*C	0.173 + 0.258*Tr + 3.400*C	0.108 + 0.248*Tr + 2.318*C
MUX21LL	S-Z	S_Z_state_1 (fall) (A && !B)	0.077 + 0.182*Tr + 1.238*C	0.183 + 0.222*Tr + 2.697*C	0.117 + 0.197*Tr + 1.727*C
MUX21LL	S-Z	S_Z_state_1 (rise) (A && !B)	0.070 + 0.246*Tr + 1.619*C	0.173 + 0.258*Tr + 3.400*C	0.108 + 0.248*Tr + 2.318*C
MUX21LL	S-Z	S_Z_state_2 (fall) (!A && B)	0.068 + 0.265*Tr + 1.258*C	0.157 + 0.275*Tr + 2.740*C	0.103 + 0.268*Tr + 1.761*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX21LL	S-Z	S_Z_state_2 (rise) (!A && B)	0.050 + 0.173*Tr + 1.631*C	0.126 + 0.221*Tr + 3.438*C	0.077 + 0.193*Tr + 2.344*C
MUX21LLP	A-Z	A_Z (fall)	0.069 + 0.251*Tr + 0.645*C	0.163 + 0.268*Tr + 1.357*C	0.105 + 0.257*Tr + 0.888*C
MUX21LLP	A-Z	A_Z (rise)	0.055 + 0.197*Tr + 0.798*C	0.136 + 0.239*Tr + 1.661*C	0.084 + 0.214*Tr + 1.137*C
MUX21LLP	B-Z	B_Z (fall)	0.070 + 0.251*Tr + 0.645*C	0.166 + 0.268*Tr + 1.357*C	0.107 + 0.257*Tr + 0.889*C
MUX21LLP	B-Z	B_Z (rise)	0.055 + 0.199*Tr + 0.798*C	0.135 + 0.241*Tr + 1.660*C	0.083 + 0.215*Tr + 1.137*C
MUX21LLP	S-Z	S_Z (fall)	0.071 + 0.178*Tr + 0.633*C	0.153 + 0.264*Tr + 1.356*C	0.097 + 0.257*Tr + 0.889*C
MUX21LLP	S-Z	S_Z (rise)	0.048 + 0.182*Tr + 0.801*C	0.151 + 0.236*Tr + 1.641*C	0.095 + 0.229*Tr + 1.124*C
MUX21LLP	S-Z	S_Z_state_1 (fall) (A && !B)	0.071 + 0.178*Tr + 0.633*C	0.166 + 0.210*Tr + 1.330*C	0.107 + 0.190*Tr + 0.868*C
MUX21LLP	S-Z	S_Z_state_1 (rise) (A && !B)	0.062 + 0.228*Tr + 0.792*C	0.151 + 0.236*Tr + 1.641*C	0.095 + 0.229*Tr + 1.124*C
MUX21LLP	S-Z	S_Z_state_2 (fall) (!A && B)	0.063 + 0.255*Tr + 0.645*C	0.147 + 0.267*Tr + 1.356*C	0.096 + 0.258*Tr + 0.889*C
MUX21LLP	S-Z	S_Z_state_2 (rise) (!A && B)	0.048 + 0.182*Tr + 0.801*C	0.117 + 0.225*Tr + 1.665*C	0.072 + 0.200*Tr + 1.141*C
MUX21LLX4	A-Z	A_Z (fall)	0.069 + 0.243*Tr + 0.323*C	0.162 + 0.260*Tr + 0.679*C	0.105 + 0.249*Tr + 0.444*C
MUX21LLX4	A-Z	A_Z (rise)	0.057 + 0.208*Tr + 0.400*C	0.139 + 0.247*Tr + 0.833*C	0.086 + 0.223*Tr + 0.571*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX21LLX4	B-Z	B_Z (fall)	0.069 + 0.242*Tr + 0.322*C	0.163 + 0.259*Tr + 0.679*C	0.106 + 0.248*Tr + 0.444*C
MUX21LLX4	B-Z	B_Z (rise)	0.056 + 0.209*Tr + 0.400*C	0.136 + 0.248*Tr + 0.833*C	0.084 + 0.224*Tr + 0.571*C
MUX21LLX4	S-Z	S_Z (fall)	0.067 + 0.185*Tr + 0.317*C	0.151 + 0.247*Tr + 0.679*C	0.096 + 0.242*Tr + 0.444*C
MUX21LLX4	S-Z	S_Z (rise)	0.047 + 0.190*Tr + 0.402*C	0.148 + 0.222*Tr + 0.824*C	0.093 + 0.216*Tr + 0.564*C
MUX21LLX4	S-Z	S_Z_state_1 (fall) (A && !B)	0.070 + 0.181*Tr + 0.317*C	0.162 + 0.210*Tr + 0.665*C	0.104 + 0.192*Tr + 0.434*C
MUX21LLX4	S-Z	S_Z_state_1 (rise) (A && !B)	0.061 + 0.216*Tr + 0.397*C	0.148 + 0.222*Tr + 0.824*C	0.093 + 0.216*Tr + 0.564*C
MUX21LLX4	S-Z	S_Z_state_2 (fall) (!A && B)	0.060 + 0.242*Tr + 0.323*C	0.140 + 0.254*Tr + 0.679*C	0.091 + 0.246*Tr + 0.445*C
MUX21LLX4	S-Z	S_Z_state_2 (rise) (!A && B)	0.047 + 0.190*Tr + 0.402*C	0.114 + 0.230*Tr + 0.836*C	0.071 + 0.206*Tr + 0.573*C
MUX21LLX6	A-Z	A_Z (fall)	0.069 + 0.245*Tr + 0.217*C	0.162 + 0.263*Tr + 0.456*C	0.105 + 0.252*Tr + 0.299*C
MUX21LLX6	A-Z	A_Z (rise)	0.057 + 0.206*Tr + 0.267*C	0.140 + 0.247*Tr + 0.558*C	0.087 + 0.222*Tr + 0.382*C
MUX21LLX6	B-Z	B_Z (fall)	0.070 + 0.245*Tr + 0.216*C	0.164 + 0.263*Tr + 0.456*C	0.106 + 0.251*Tr + 0.298*C
MUX21LLX6	B-Z	B_Z (rise)	0.056 + 0.207*Tr + 0.267*C	0.137 + 0.248*Tr + 0.557*C	0.085 + 0.223*Tr + 0.381*C
MUX21LLX6	S-Z	S_Z (fall)	0.067 + 0.177*Tr + 0.212*C	0.147 + 0.252*Tr + 0.457*C	0.094 + 0.245*Tr + 0.300*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX21LLX6	S-Z	S_Z (rise)	0.047 + 0.189*Tr + 0.268*C	0.143 + 0.221*Tr + 0.552*C	0.090 + 0.214*Tr + 0.377*C
MUX21LLX6	S-Z	S_Z_state_1 (fall) (A && !B)	0.068 + 0.175*Tr + 0.212*C	0.158 + 0.204*Tr + 0.446*C	0.102 + 0.186*Tr + 0.291*C
MUX21LLX6	S-Z	S_Z_state_1 (rise) (A && !B)	0.059 + 0.214*Tr + 0.265*C	0.144 + 0.219*Tr + 0.551*C	0.090 + 0.214*Tr + 0.377*C
MUX21LLX6	S-Z	S_Z_state_2 (fall) (!A && B)	0.060 + 0.243*Tr + 0.217*C	0.142 + 0.255*Tr + 0.457*C	0.092 + 0.246*Tr + 0.300*C
MUX21LLX6	S-Z	S_Z_state_2 (rise) (!A && B)	0.047 + 0.189*Tr + 0.268*C	0.117 + 0.230*Tr + 0.559*C	0.072 + 0.206*Tr + 0.383*C
MUX21LLX8	A-Z	A_Z (fall)	0.067 + 0.241*Tr + 0.162*C	0.159 + 0.259*Tr + 0.342*C	0.103 + 0.248*Tr + 0.224*C
MUX21LLX8	A-Z	A_Z (rise)	0.056 + 0.207*Tr + 0.201*C	0.136 + 0.246*Tr + 0.418*C	0.084 + 0.222*Tr + 0.286*C
MUX21LLX8	B-Z	B_Z (fall)	0.068 + 0.240*Tr + 0.162*C	0.160 + 0.258*Tr + 0.341*C	0.104 + 0.247*Tr + 0.224*C
MUX21LLX8	B-Z	B_Z (rise)	0.055 + 0.207*Tr + 0.201*C	0.133 + 0.247*Tr + 0.418*C	0.083 + 0.223*Tr + 0.286*C
MUX21LLX8	S-Z	S_Z (fall)	0.065 + 0.177*Tr + 0.159*C	0.143 + 0.250*Tr + 0.342*C	0.091 + 0.242*Tr + 0.225*C
MUX21LLX8	S-Z	S_Z (rise)	0.046 + 0.189*Tr + 0.201*C	0.137 + 0.218*Tr + 0.415*C	0.087 + 0.210*Tr + 0.283*C
MUX21LLX8	S-Z	S_Z_state_1 (fall) (A && !B)	0.067 + 0.175*Tr + 0.159*C	0.154 + 0.203*Tr + 0.334*C	0.100 + 0.185*Tr + 0.218*C
MUX21LLX8	S-Z	S_Z_state_1 (rise) (A && !B)	0.057 + 0.210*Tr + 0.199*C	0.139 + 0.214*Tr + 0.413*C	0.087 + 0.210*Tr + 0.283*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX21LLX8	S-Z	S_Z_state_2 (fall) (!A && B)	0.059 + 0.240*Tr + 0.163*C	0.138 + 0.253*Tr + 0.343*C	0.090 + 0.244*Tr + 0.225*C
MUX21LLX8	S-Z	S_Z_state_2 (rise) (!A && B)	0.046 + 0.189*Tr + 0.201*C	0.113 + 0.228*Tr + 0.420*C	0.070 + 0.205*Tr + 0.288*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
MUX21LL	7761.580	146795.000
MUX21LLP	11442.300	235400.000
MUX21LLX4	20061.500	430510.000
MUX21LLX6	31296.500	662225.000
MUX21LLX8	39967.000	856755.000

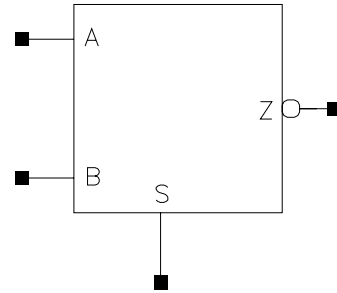
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
MUX21LL	Z(max)	0.021 + 0.014*Tr
MUX21LLP	Z(max)	0.032 + 0.025*Tr
MUX21LLX4	Z(max)	0.062 + 0.047*Tr
MUX21LLX6	Z(max)	0.071 + 0.100*Tr
MUX21LLX8	Z(max)	0.091 + 0.132*Tr

MUX21NLL
MUX21NLLP
MUX21NLLX4
MUX21NLLX6
MUX21NLLX8

Function: Function = 2:1 Inverting Multiplexer



Truth Table

A	B	S	Z
A	-	0	!A
-	B	1	!B

Physical Dimensions

Property	MUX21NLL	MUX21NLLP	MUX21NLLX 4	MUX21NLLX 6	MUX21NLLX 8
Area(um2)	12.103	16.138	32.275	40.344	58.499

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX21NLL	A Input Cap.	0.0030	0.0027	0.0028
MUX21NLL	S Input Cap.	0.0064	0.0057	0.0060
MUX21NLL	Z Max Load	0.160	0.160	0.160
MUX21NLL	B Input Cap.	0.0032	0.0029	0.0030
MUX21NLLP	A Input Cap.	0.0056	0.0052	0.0053
MUX21NLLP	S Input Cap.	0.0115	0.0103	0.0108
MUX21NLLP	Z Max Load	0.320	0.320	0.320
MUX21NLLP	B Input Cap.	0.0057	0.0053	0.0054
MUX21NLLX4	S Input Cap.	0.0223	0.0202	0.0211
MUX21NLLX4	Z Max Load	0.640	0.640	0.640
MUX21NLLX4	B Input Cap.	0.0110	0.0100	0.0104
MUX21NLLX4	A Input Cap.	0.0108	0.0098	0.0102

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX21NLLX6	Z Max Load	0.960	0.960	0.960
MUX21NLLX6	A Input Cap.	0.0174	0.0160	0.0165
MUX21NLLX6	S Input Cap.	0.0351	0.0316	0.0331
MUX21NLLX6	B Input Cap.	0.0175	0.0160	0.0166
MUX21NLLX8	A Input Cap.	0.0230	0.0211	0.0218
MUX21NLLX8	S Input Cap.	0.0468	0.0422	0.0442
MUX21NLLX8	Z Max Load	1.280	1.280	1.280
MUX21NLLX8	B Input Cap.	0.0231	0.0211	0.0219

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX21NLL	A-Z	A_Z (fall)	0.012 + 0.215*Tr + 2.181*C	0.041 + 0.251*Tr + 5.452*C	0.017 + 0.235*Tr + 3.331*C
MUX21NLL	A-Z	A_Z (rise)	0.023 + 0.239*Tr + 3.395*C	0.058 + 0.250*Tr + 7.442*C	0.034 + 0.247*Tr + 5.044*C
MUX21NLL	B-Z	B_Z (fall)	0.011 + 0.216*Tr + 2.178*C	0.038 + 0.252*Tr + 5.447*C	0.016 + 0.236*Tr + 3.328*C
MUX21NLL	B-Z	B_Z (rise)	0.023 + 0.239*Tr + 3.393*C	0.059 + 0.250*Tr + 7.444*C	0.035 + 0.246*Tr + 5.045*C
MUX21NLL	S-Z	S_Z (fall)	0.005 + 0.207*Tr + 2.185*C	0.069 + 0.266*Tr + 5.430*C	0.038 + 0.257*Tr + 3.293*C
MUX21NLL	S-Z	S_Z (rise)	0.027 + 0.180*Tr + 3.291*C	0.054 + 0.282*Tr + 7.569*C	0.021 + 0.286*Tr + 5.189*C
MUX21NLL	S-Z	S_Z_state_1 (fall) (!A && B)	-0.008 + 0.237*Tr + 2.340*C	-0.001 + 0.279*Tr + 5.684*C	-0.013 + 0.256*Tr + 3.560*C
MUX21NLL	S-Z	S_Z_state_1 (rise) (!A && B)	0.003 + 0.294*Tr + 3.522*C	0.016 + 0.305*Tr + 7.610*C	0.004 + 0.300*Tr + 5.218*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX21NLL	S-Z	S_Z_state_2 (fall) (A && !B)	0.041 + 0.219*Tr + 1.968*C	0.099 + 0.223*Tr + 5.104*C	0.063 + 0.219*Tr + 2.987*C
MUX21NLL	S-Z	S_Z_state_2 (rise) (A && !B)	0.039 + 0.166*Tr + 3.272*C	0.094 + 0.194*Tr + 7.196*C	0.058 + 0.178*Tr + 4.815*C
MUX21NLLP	A-Z	A_Z (fall)	0.011 + 0.219*Tr + 1.117*C	0.039 + 0.252*Tr + 2.699*C	0.015 + 0.238*Tr + 1.680*C
MUX21NLLP	A-Z	A_Z (rise)	0.021 + 0.231*Tr + 1.662*C	0.056 + 0.242*Tr + 3.587*C	0.032 + 0.239*Tr + 2.451*C
MUX21NLLP	B-Z	B_Z (fall)	0.010 + 0.220*Tr + 1.116*C	0.037 + 0.253*Tr + 2.696*C	0.014 + 0.239*Tr + 1.678*C
MUX21NLLP	B-Z	B_Z (rise)	0.021 + 0.231*Tr + 1.661*C	0.056 + 0.242*Tr + 3.586*C	0.032 + 0.239*Tr + 2.451*C
MUX21NLLP	S-Z	S_Z (fall)	0.006 + 0.201*Tr + 1.101*C	0.055 + 0.269*Tr + 2.699*C	0.028 + 0.260*Tr + 1.676*C
MUX21NLLP	S-Z	S_Z (rise)	0.026 + 0.178*Tr + 1.599*C	0.043 + 0.281*Tr + 3.651*C	0.015 + 0.281*Tr + 2.531*C
MUX21NLLP	S-Z	S_Z_state_1 (fall) (!A && B)	-0.010 + 0.241*Tr + 1.198*C	-0.006 + 0.278*Tr + 2.826*C	-0.016 + 0.259*Tr + 1.798*C
MUX21NLLP	S-Z	S_Z_state_1 (rise) (!A && B)	0.001 + 0.286*Tr + 1.733*C	0.013 + 0.296*Tr + 3.686*C	0.001 + 0.291*Tr + 2.549*C
MUX21NLLP	S-Z	S_Z_state_2 (fall) (A && !B)	0.038 + 0.208*Tr + 1.004*C	0.092 + 0.211*Tr + 2.507*C	0.058 + 0.208*Tr + 1.495*C
MUX21NLLP	S-Z	S_Z_state_2 (rise) (A && !B)	0.035 + 0.168*Tr + 1.587*C	0.087 + 0.194*Tr + 3.434*C	0.053 + 0.179*Tr + 2.314*C
MUX21NLLX4	A-Z	A_Z (fall)	0.013 + 0.213*Tr + 0.554*C	0.043 + 0.246*Tr + 1.338*C	0.019 + 0.231*Tr + 0.833*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX21NLLX4	A-Z	A_Z (rise)	0.022 + 0.228*Tr + 0.823*C	0.058 + 0.239*Tr + 1.777*C	0.033 + 0.235*Tr + 1.214*C
MUX21NLLX4	B-Z	B_Z (fall)	0.012 + 0.214*Tr + 0.554*C	0.041 + 0.247*Tr + 1.337*C	0.018 + 0.232*Tr + 0.833*C
MUX21NLLX4	B-Z	B_Z (rise)	0.023 + 0.227*Tr + 0.823*C	0.059 + 0.238*Tr + 1.777*C	0.035 + 0.234*Tr + 1.214*C
MUX21NLLX4	S-Z	S_Z (fall)	0.008 + 0.195*Tr + 0.546*C	0.055 + 0.260*Tr + 1.345*C	0.030 + 0.249*Tr + 0.835*C
MUX21NLLX4	S-Z	S_Z (rise)	0.025 + 0.176*Tr + 0.792*C	0.044 + 0.277*Tr + 1.809*C	0.017 + 0.275*Tr + 1.255*C
MUX21NLLX4	S-Z	S_Z_state_1 (fall) (!A && B)	-0.006 + 0.229*Tr + 0.596*C	0.001 + 0.268*Tr + 1.404*C	-0.010 + 0.247*Tr + 0.894*C
MUX21NLLX4	S-Z	S_Z_state_1 (rise) (!A && B)	0.003 + 0.279*Tr + 0.860*C	0.017 + 0.289*Tr + 1.829*C	0.005 + 0.284*Tr + 1.265*C
MUX21NLLX4	S-Z	S_Z_state_2 (fall) (A && !B)	0.036 + 0.205*Tr + 0.497*C	0.087 + 0.208*Tr + 1.241*C	0.055 + 0.205*Tr + 0.741*C
MUX21NLLX4	S-Z	S_Z_state_2 (rise) (A && !B)	0.033 + 0.167*Tr + 0.785*C	0.082 + 0.191*Tr + 1.698*C	0.050 + 0.177*Tr + 1.144*C
MUX21NLLX6	A-Z	A_Z (fall)	0.011 + 0.208*Tr + 0.346*C	0.038 + 0.241*Tr + 0.827*C	0.016 + 0.226*Tr + 0.520*C
MUX21NLLX6	A-Z	A_Z (rise)	0.021 + 0.223*Tr + 0.519*C	0.055 + 0.233*Tr + 1.120*C	0.032 + 0.230*Tr + 0.766*C
MUX21NLLX6	B-Z	B_Z (fall)	0.011 + 0.208*Tr + 0.348*C	0.037 + 0.241*Tr + 0.833*C	0.015 + 0.226*Tr + 0.523*C
MUX21NLLX6	B-Z	B_Z (rise)	0.022 + 0.224*Tr + 0.522*C	0.057 + 0.233*Tr + 1.126*C	0.033 + 0.231*Tr + 0.771*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX21NLLX6	S-Z	S_Z (fall)	0.007 + 0.189*Tr + 0.342*C	0.051 + 0.258*Tr + 0.833*C	0.027 + 0.249*Tr + 0.521*C
MUX21NLLX6	S-Z	S_Z (rise)	0.024 + 0.176*Tr + 0.500*C	0.043 + 0.269*Tr + 1.147*C	0.016 + 0.269*Tr + 0.798*C
MUX21NLLX6	S-Z	S_Z_state_1 (fall) (!A && B)	-0.008 + 0.223*Tr + 0.378*C	-0.004 + 0.261*Tr + 0.880*C	-0.014 + 0.240*Tr + 0.566*C
MUX21NLLX6	S-Z	S_Z_state_1 (rise) (!A && B)	0.001 + 0.274*Tr + 0.546*C	0.012 + 0.284*Tr + 1.158*C	0.001 + 0.279*Tr + 0.804*C
MUX21NLLX6	S-Z	S_Z_state_2 (fall) (A && !B)	0.035 + 0.204*Tr + 0.306*C	0.085 + 0.207*Tr + 0.758*C	0.054 + 0.204*Tr + 0.454*C
MUX21NLLX6	S-Z	S_Z_state_2 (rise) (A && !B)	0.034 + 0.166*Tr + 0.496*C	0.081 + 0.190*Tr + 1.072*C	0.050 + 0.176*Tr + 0.722*C
MUX21NLLX8	A-Z	A_Z (fall)	0.012 + 0.208*Tr + 0.259*C	0.041 + 0.241*Tr + 0.620*C	0.018 + 0.225*Tr + 0.389*C
MUX21NLLX8	A-Z	A_Z (rise)	0.021 + 0.224*Tr + 0.385*C	0.057 + 0.234*Tr + 0.830*C	0.032 + 0.231*Tr + 0.568*C
MUX21NLLX8	B-Z	B_Z (fall)	0.012 + 0.208*Tr + 0.261*C	0.039 + 0.241*Tr + 0.624*C	0.017 + 0.225*Tr + 0.391*C
MUX21NLLX8	B-Z	B_Z (rise)	0.022 + 0.225*Tr + 0.387*C	0.058 + 0.234*Tr + 0.834*C	0.034 + 0.231*Tr + 0.571*C
MUX21NLLX8	S-Z	S_Z (fall)	0.007 + 0.189*Tr + 0.257*C	0.054 + 0.258*Tr + 0.623*C	0.030 + 0.247*Tr + 0.388*C
MUX21NLLX8	S-Z	S_Z (rise)	0.024 + 0.176*Tr + 0.370*C	0.044 + 0.269*Tr + 0.849*C	0.017 + 0.268*Tr + 0.591*C
MUX21NLLX8	S-Z	S_Z_state_1 (fall) (!A && B)	-0.006 + 0.222*Tr + 0.283*C	-0.001 + 0.261*Tr + 0.659*C	-0.011 + 0.239*Tr + 0.423*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX21NLLX8	S-Z	S_Z_state_1 (rise) (!A && B)	0.002 + 0.273*Tr + 0.405*C	0.014 + 0.282*Tr + 0.859*C	0.003 + 0.277*Tr + 0.596*C
MUX21NLLX8	S-Z	S_Z_state_2 (fall) (A && !B)	0.036 + 0.205*Tr + 0.229*C	0.086 + 0.208*Tr + 0.568*C	0.054 + 0.204*Tr + 0.340*C
MUX21NLLX8	S-Z	S_Z_state_2 (rise) (A && !B)	0.033 + 0.166*Tr + 0.366*C	0.081 + 0.190*Tr + 0.792*C	0.050 + 0.176*Tr + 0.534*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
MUX21NLL	4646.330	95034.800
MUX21NLLP	7924.200	171890.000
MUX21NLLX4	16001.800	347458.000
MUX21NLLX6	25684.200	560430.000
MUX21NLLX8	34409.200	751700.000

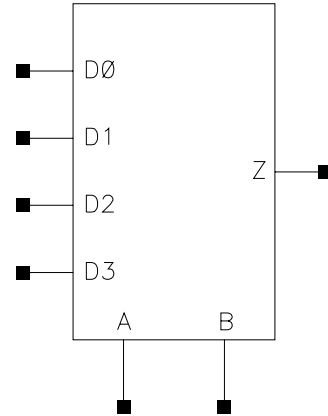
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
MUX21NLL	Z(max)	0.008 + 0.028*Tr
MUX21NLLP	Z(max)	0.015 + 0.055*Tr
MUX21NLLX4	Z(max)	0.028 + 0.115*Tr
MUX21NLLX6	Z(max)	0.043 + 0.188*Tr
MUX21NLLX8	Z(max)	0.059 + 0.253*Tr

MUX41LL
MUX41LLP
MUX41LLX4
MUX41LLX6
MUX41LLX8

Function: Function = 4:1 Non-Inverting Multiplexer



Truth Table

D0	D1	D2	D3	A	B	Z
D0	-	-	-	0	0	D0
-	D1	-	-	1	0	D1
-	-	D2	-	0	1	D2
-	-	-	D3	1	1	D3

Physical Dimensions

Property	MUX41LL	MUX41LLP	MUX41LLX4	MUX41LLX6	MUX41LLX8
Area(um ²)	34.292	36.310	46.396	66.568	78.671

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41LL	D0 Input Cap.	0.0032	0.0029	0.0030
MUX41LL	A Input Cap.	0.0096	0.0086	0.0088
MUX41LL	D3 Input Cap.	0.0030	0.0027	0.0028
MUX41LL	D1 Input Cap.	0.0032	0.0028	0.0029
MUX41LL	Z Max Load	0.160	0.160	0.160
MUX41LL	B Input Cap.	0.0052	0.0045	0.0047
MUX41LL	D2 Input Cap.	0.0033	0.0029	0.0031

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41LLP	D2 Input Cap.	0.0031	0.0027	0.0029
MUX41LLP	D0 Input Cap.	0.0031	0.0028	0.0029
MUX41LLP	A Input Cap.	0.0105	0.0092	0.0096
MUX41LLP	D3 Input Cap.	0.0030	0.0027	0.0028
MUX41LLP	D1 Input Cap.	0.0031	0.0027	0.0029
MUX41LLP	Z Max Load	0.320	0.320	0.320
MUX41LLP	B Input Cap.	0.0063	0.0057	0.0060
MUX41LLX4	D2 Input Cap.	0.0054	0.0049	0.0051
MUX41LLX4	Z Max Load	0.640	0.640	0.640
MUX41LLX4	B Input Cap.	0.0121	0.0111	0.0115
MUX41LLX4	D0 Input Cap.	0.0055	0.0050	0.0052
MUX41LLX4	D3 Input Cap.	0.0053	0.0048	0.0049
MUX41LLX4	D1 Input Cap.	0.0054	0.0049	0.0051
MUX41LLX4	A Input Cap.	0.0198	0.0177	0.0182
MUX41LLX6	A Input Cap.	0.0231	0.0207	0.0215
MUX41LLX6	D1 Input Cap.	0.0088	0.0079	0.0082
MUX41LLX6	B Input Cap.	0.0125	0.0110	0.0114
MUX41LLX6	D2 Input Cap.	0.0088	0.0079	0.0083
MUX41LLX6	D0 Input Cap.	0.0091	0.0083	0.0086
MUX41LLX6	Z Max Load	0.960	0.960	0.960
MUX41LLX6	D3 Input Cap.	0.0091	0.0083	0.0085
MUX41LLX8	D2 Input Cap.	0.0111	0.0099	0.0103
MUX41LLX8	D0 Input Cap.	0.0111	0.0100	0.0104
MUX41LLX8	A Input Cap.	0.0296	0.0271	0.0286
MUX41LLX8	D3 Input Cap.	0.0111	0.0101	0.0104
MUX41LLX8	D1 Input Cap.	0.0110	0.0100	0.0103
MUX41LLX8	Z Max Load	1.280	1.280	1.280
MUX41LLX8	B Input Cap.	0.0166	0.0148	0.0154

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41LL	A-Z	A_Z (fall)	0.111 + 0.209*Tr + 1.320*C	0.417 + 0.240*Tr + 2.919*C	0.264 + 0.213*Tr + 1.854*C
MUX41LL	A-Z	A_Z (rise)	0.077 + 0.180*Tr + 1.655*C	0.369 + 0.284*Tr + 3.520*C	0.222 + 0.276*Tr + 2.373*C
MUX41LL	A-Z	A_Z_state_1 (fall) (D2 && !D3 && B D0 && !D1 && !B)	0.164 + 0.192*Tr + 1.305*C	0.417 + 0.240*Tr + 2.919*C	0.264 + 0.213*Tr + 1.854*C
MUX41LL	A-Z	A_Z_state_1 (rise) (D2 && !D3 && B D0 && !D1 && !B)	0.140 + 0.269*Tr + 1.645*C	0.369 + 0.284*Tr + 3.520*C	0.222 + 0.276*Tr + 2.373*C
MUX41LL	A-Z	A_Z_state_2 (fall) (!D2 && D3 && B !D0 && D1 && !B)	0.111 + 0.209*Tr + 1.320*C	0.297 + 0.216*Tr + 2.953*C	0.185 + 0.211*Tr + 1.881*C
MUX41LL	A-Z	A_Z_state_2 (rise) (!D2 && D3 && B !D0 && D1 && !B)	0.077 + 0.180*Tr + 1.655*C	0.224 + 0.214*Tr + 3.545*C	0.125 + 0.198*Tr + 2.391*C
MUX41LL	D1-Z	D1_Z (fall)	0.113 + 0.244*Tr + 1.341*C	0.280 + 0.254*Tr + 2.972*C	0.177 + 0.247*Tr + 1.899*C
MUX41LL	D1-Z	D1_Z (rise)	0.077 + 0.194*Tr + 1.651*C	0.221 + 0.242*Tr + 3.529*C	0.126 + 0.220*Tr + 2.382*C
MUX41LL	B-Z	B_Z (fall)	0.081 + 0.188*Tr + 1.322*C	0.258 + 0.250*Tr + 2.934*C	0.130 + 0.279*Tr + 1.858*C
MUX41LL	B-Z	B_Z (rise)	0.049 + 0.175*Tr + 1.644*C	0.255 + 0.236*Tr + 3.525*C	0.153 + 0.233*Tr + 2.374*C
MUX41LL	B-Z	B_Z_state_3 (fall) (D1 && !D3 && A D0 && !D2 && !A)	0.097 + 0.167*Tr + 1.330*C	0.274 + 0.187*Tr + 2.936*C	0.139 + 0.189*Tr + 1.866*C
MUX41LL	B-Z	B_Z_state_3 (rise) (D1 && !D3 && A D0 && !D2 && !A)	0.079 + 0.248*Tr + 1.647*C	0.255 + 0.236*Tr + 3.525*C	0.153 + 0.233*Tr + 2.374*C
MUX41LL	B-Z	B_Z_state_4 (fall) (!D1 && D3 && A !D0 && D2 && !A)	0.070 + 0.270*Tr + 1.324*C	0.193 + 0.292*Tr + 2.911*C	0.127 + 0.282*Tr + 1.852*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41LL	B-Z	B_Z_state_4 (rise) (!D1 && D3 && A !D0 && D2 && !A)	0.049 + 0.175*Tr + 1.644*C	0.130 + 0.221*Tr + 3.473*C	0.078 + 0.194*Tr + 2.361*C
MUX41LL	D2-Z	D2_Z (fall)	0.120 + 0.244*Tr + 1.350*C	0.299 + 0.255*Tr + 2.998*C	0.189 + 0.249*Tr + 1.885*C
MUX41LL	D2-Z	D2_Z (rise)	0.080 + 0.199*Tr + 1.654*C	0.229 + 0.248*Tr + 3.543*C	0.130 + 0.225*Tr + 2.389*C
MUX41LL	D3-Z	D3_Z (fall)	0.120 + 0.244*Tr + 1.350*C	0.298 + 0.256*Tr + 2.998*C	0.187 + 0.249*Tr + 1.914*C
MUX41LL	D3-Z	D3_Z (rise)	0.079 + 0.199*Tr + 1.654*C	0.228 + 0.248*Tr + 3.542*C	0.130 + 0.225*Tr + 2.389*C
MUX41LL	D0-Z	D0_Z (fall)	0.112 + 0.244*Tr + 1.341*C	0.279 + 0.254*Tr + 2.971*C	0.175 + 0.247*Tr + 1.899*C
MUX41LL	D0-Z	D0_Z (rise)	0.077 + 0.195*Tr + 1.651*C	0.220 + 0.243*Tr + 3.529*C	0.126 + 0.220*Tr + 2.383*C
MUX41LLP	A-Z	A_Z (fall)	0.126 + 0.209*Tr + 0.694*C	0.413 + 0.234*Tr + 1.481*C	0.265 + 0.210*Tr + 0.959*C
MUX41LLP	A-Z	A_Z (rise)	0.085 + 0.186*Tr + 0.822*C	0.341 + 0.227*Tr + 1.742*C	0.199 + 0.222*Tr + 1.172*C
MUX41LLP	A-Z	A_Z_state_1 (fall) (D2 && !D3 && B D0 && !D1 && !B)	0.166 + 0.196*Tr + 0.685*C	0.413 + 0.234*Tr + 1.481*C	0.265 + 0.210*Tr + 0.959*C
MUX41LLP	A-Z	A_Z_state_1 (rise) (D2 && !D3 && B D0 && !D1 && !B)	0.124 + 0.218*Tr + 0.815*C	0.341 + 0.227*Tr + 1.742*C	0.199 + 0.222*Tr + 1.172*C
MUX41LLP	A-Z	A_Z_state_2 (fall) (!D2 && D3 && B !D0 && D1 && !B)	0.126 + 0.209*Tr + 0.694*C	0.326 + 0.219*Tr + 1.502*C	0.206 + 0.213*Tr + 0.976*C
MUX41LLP	A-Z	A_Z_state_2 (rise) (!D2 && D3 && B !D0 && D1 && !B)	0.085 + 0.186*Tr + 0.822*C	0.252 + 0.221*Tr + 1.760*C	0.142 + 0.206*Tr + 1.185*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41LLP	D1-Z	D1_Z (fall)	0.128 + 0.249*Tr + 0.702*C	0.309 + 0.260*Tr + 1.507*C	0.198 + 0.253*Tr + 0.980*C
MUX41LLP	D1-Z	D1_Z (rise)	0.086 + 0.208*Tr + 0.820*C	0.246 + 0.254*Tr + 1.747*C	0.141 + 0.232*Tr + 1.179*C
MUX41LLP	B-Z	B_Z (fall)	0.081 + 0.213*Tr + 0.693*C	0.275 + 0.267*Tr + 1.488*C	0.149 + 0.291*Tr + 0.957*C
MUX41LLP	B-Z	B_Z (rise)	0.056 + 0.197*Tr + 0.817*C	0.256 + 0.189*Tr + 1.744*C	0.151 + 0.190*Tr + 1.172*C
MUX41LLP	B-Z	B_Z_state_3 (fall) (D1 && !D3 && A D0 && !D2 && !A)	0.113 + 0.173*Tr + 0.697*C	0.292 + 0.198*Tr + 1.488*C	0.149 + 0.203*Tr + 0.964*C
MUX41LLP	B-Z	B_Z_state_3 (rise) (D1 && !D3 && A D0 && !D2 && !A)	0.073 + 0.207*Tr + 0.817*C	0.256 + 0.189*Tr + 1.744*C	0.151 + 0.190*Tr + 1.172*C
MUX41LLP	B-Z	B_Z_state_4 (fall) (!D1 && D3 && A !D0 && D2 && !A)	0.073 + 0.269*Tr + 0.695*C	0.223 + 0.301*Tr + 1.476*C	0.149 + 0.291*Tr + 0.957*C
MUX41LLP	B-Z	B_Z_state_4 (rise) (!D1 && D3 && A !D0 && D2 && !A)	0.056 + 0.197*Tr + 0.817*C	0.145 + 0.242*Tr + 1.724*C	0.088 + 0.215*Tr + 1.169*C
MUX41LLP	D2-Z	D2_Z (fall)	0.134 + 0.250*Tr + 0.706*C	0.325 + 0.262*Tr + 1.519*C	0.208 + 0.255*Tr + 0.973*C
MUX41LLP	D2-Z	D2_Z (rise)	0.089 + 0.212*Tr + 0.822*C	0.255 + 0.258*Tr + 1.756*C	0.145 + 0.236*Tr + 1.183*C
MUX41LLP	D3-Z	D3_Z (fall)	0.134 + 0.249*Tr + 0.706*C	0.327 + 0.261*Tr + 1.519*C	0.207 + 0.255*Tr + 0.988*C
MUX41LLP	D3-Z	D3_Z (rise)	0.089 + 0.212*Tr + 0.822*C	0.255 + 0.258*Tr + 1.756*C	0.146 + 0.236*Tr + 1.183*C
MUX41LLP	D0-Z	D0_Z (fall)	0.127 + 0.249*Tr + 0.701*C	0.308 + 0.260*Tr + 1.507*C	0.196 + 0.253*Tr + 0.980*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41LLP	D0-Z	D0_Z (rise)	0.086 + 0.208*Tr + 0.820°C	0.245 + 0.255*Tr + 1.747°C	0.141 + 0.233*Tr + 1.178°C
MUX41LLX4	A-Z	A_Z (fall)	0.121 + 0.202*Tr + 0.343°C	0.373 + 0.213*Tr + 0.731°C	0.238 + 0.192*Tr + 0.473°C
MUX41LLX4	A-Z	A_Z (rise)	0.085 + 0.192*Tr + 0.411°C	0.325 + 0.226*Tr + 0.869°C	0.191 + 0.221*Tr + 0.585°C
MUX41LLX4	A-Z	A_Z_state_1 (fall) (D2 && !D3 && B D0 && !D1 && !B)	0.152 + 0.179*Tr + 0.339°C	0.373 + 0.213*Tr + 0.731°C	0.238 + 0.192*Tr + 0.473°C
MUX41LLX4	A-Z	A_Z_state_1 (rise) (D2 && !D3 && B D0 && !D1 && !B)	0.120 + 0.218*Tr + 0.408°C	0.325 + 0.226*Tr + 0.869°C	0.191 + 0.221*Tr + 0.585°C
MUX41LLX4	A-Z	A_Z_state_2 (fall) (!D2 && D3 && B !D0 && D1 && !B)	0.121 + 0.202*Tr + 0.344°C	0.308 + 0.211*Tr + 0.742°C	0.194 + 0.206*Tr + 0.482°C
MUX41LLX4	A-Z	A_Z_state_2 (rise) (!D2 && D3 && B !D0 && D1 && !B)	0.085 + 0.192*Tr + 0.411°C	0.247 + 0.225*Tr + 0.877°C	0.139 + 0.210*Tr + 0.592°C
MUX41LLX4	D1-Z	D1_Z (fall)	0.121 + 0.240*Tr + 0.348°C	0.293 + 0.252*Tr + 0.748°C	0.187 + 0.245*Tr + 0.486°C
MUX41LLX4	D1-Z	D1_Z (rise)	0.085 + 0.213*Tr + 0.410°C	0.241 + 0.258*Tr + 0.873°C	0.139 + 0.237*Tr + 0.589°C
MUX41LLX4	B-Z	B_Z (fall)	0.079 + 0.189*Tr + 0.343°C	0.247 + 0.271*Tr + 0.733°C	0.143 + 0.282*Tr + 0.474°C
MUX41LLX4	B-Z	B_Z (rise)	0.054 + 0.199*Tr + 0.410°C	0.233 + 0.266*Tr + 0.872°C	0.147 + 0.193*Tr + 0.586°C
MUX41LLX4	B-Z	B_Z_state_3 (fall) (D1 && !D3 && A D0 && !D2 && !A)	0.100 + 0.161*Tr + 0.345°C	0.264 + 0.181*Tr + 0.734°C	0.133 + 0.187*Tr + 0.476°C
MUX41LLX4	B-Z	B_Z_state_3 (rise) (D1 && !D3 && A D0 && !D2 && !A)	0.070 + 0.212*Tr + 0.409°C	0.246 + 0.194*Tr + 0.871°C	0.147 + 0.193*Tr + 0.586°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41LLX4	B-Z	B_Z_state_4 (fall) (!D1 && D3 && A !D0 && D2 && !A)	0.070 + 0.258*Tr + 0.345*C	0.215 + 0.292*Tr + 0.731*C	0.143 + 0.282*Tr + 0.474*C
MUX41LLX4	B-Z	B_Z_state_4 (rise) (!D1 && D3 && A !D0 && D2 && !A)	0.054 + 0.199*Tr + 0.410*C	0.200 + 0.288*Tr + 0.873*C	0.084 + 0.215*Tr + 0.586*C
MUX41LLX4	D2-Z	D2_Z (fall)	0.123 + 0.244*Tr + 0.345*C	0.304 + 0.253*Tr + 0.752*C	0.192 + 0.247*Tr + 0.480*C
MUX41LLX4	D2-Z	D2_Z (rise)	0.086 + 0.216*Tr + 0.411*C	0.246 + 0.261*Tr + 0.875*C	0.141 + 0.240*Tr + 0.591*C
MUX41LLX4	D3-Z	D3_Z (fall)	0.125 + 0.241*Tr + 0.349*C	0.303 + 0.253*Tr + 0.752*C	0.192 + 0.246*Tr + 0.488*C
MUX41LLX4	D3-Z	D3_Z (rise)	0.086 + 0.216*Tr + 0.411*C	0.245 + 0.261*Tr + 0.875*C	0.141 + 0.240*Tr + 0.590*C
MUX41LLX4	D0-Z	D0_Z (fall)	0.121 + 0.241*Tr + 0.348*C	0.292 + 0.252*Tr + 0.748*C	0.185 + 0.245*Tr + 0.486*C
MUX41LLX4	D0-Z	D0_Z (rise)	0.085 + 0.214*Tr + 0.410*C	0.240 + 0.258*Tr + 0.873*C	0.138 + 0.237*Tr + 0.589*C
MUX41LLX6	A-Z	A_Z (fall)	0.122 + 0.204*Tr + 0.231*C	0.395 + 0.246*Tr + 0.489*C	0.252 + 0.222*Tr + 0.316*C
MUX41LLX6	A-Z	A_Z (rise)	0.084 + 0.190*Tr + 0.275*C	0.352 + 0.260*Tr + 0.580*C	0.212 + 0.252*Tr + 0.390*C
MUX41LLX6	A-Z	A_Z_state_1 (fall) (D2 && !D3 && B D0 && !D1 && !B)	0.166 + 0.206*Tr + 0.228*C	0.395 + 0.246*Tr + 0.489*C	0.252 + 0.222*Tr + 0.316*C
MUX41LLX6	A-Z	A_Z_state_1 (rise) (D2 && !D3 && B D0 && !D1 && !B)	0.135 + 0.246*Tr + 0.272*C	0.352 + 0.260*Tr + 0.580*C	0.212 + 0.252*Tr + 0.390*C
MUX41LLX6	A-Z	A_Z_state_2 (fall) (!D2 && D3 && B !D0 && D1 && !B)	0.122 + 0.204*Tr + 0.231*C	0.303 + 0.213*Tr + 0.496*C	0.192 + 0.207*Tr + 0.322*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41LLX6	A-Z	A_Z_state_2 (rise) (!D2 && D3 && B !D0 && D1 && !B)	0.084 + 0.190*Tr + 0.275*C	0.242 + 0.221*Tr + 0.586*C	0.138 + 0.204*Tr + 0.395*C
MUX41LLX6	D1-Z	D1_Z (fall)	0.121 + 0.243*Tr + 0.234*C	0.295 + 0.255*Tr + 0.503*C	0.187 + 0.248*Tr + 0.327*C
MUX41LLX6	D1-Z	D1_Z (rise)	0.085 + 0.210*Tr + 0.274*C	0.240 + 0.255*Tr + 0.584*C	0.138 + 0.234*Tr + 0.394*C
MUX41LLX6	B-Z	B_Z (fall)	0.090 + 0.200*Tr + 0.230*C	0.272 + 0.220*Tr + 0.494*C	0.142 + 0.278*Tr + 0.319*C
MUX41LLX6	B-Z	B_Z (rise)	0.055 + 0.199*Tr + 0.273*C	0.259 + 0.240*Tr + 0.584*C	0.159 + 0.218*Tr + 0.393*C
MUX41LLX6	B-Z	B_Z_state_3 (fall) (D1 && !D3 && A D0 && !D2 && !A)	0.101 + 0.186*Tr + 0.230*C	0.278 + 0.202*Tr + 0.491*C	0.150 + 0.203*Tr + 0.318*C
MUX41LLX6	B-Z	B_Z_state_3 (rise) (D1 && !D3 && A D0 && !D2 && !A)	0.101 + 0.216*Tr + 0.273*C	0.266 + 0.216*Tr + 0.583*C	0.160 + 0.213*Tr + 0.392*C
MUX41LLX6	B-Z	B_Z_state_4 (fall) (!D1 && D3 && A !D0 && D2 && !A)	0.082 + 0.276*Tr + 0.231*C	0.177 + 0.276*Tr + 0.494*C	0.140 + 0.280*Tr + 0.319*C
MUX41LLX6	B-Z	B_Z_state_4 (rise) (!D1 && D3 && A !D0 && D2 && !A)	0.055 + 0.199*Tr + 0.273*C	0.190 + 0.283*Tr + 0.583*C	0.115 + 0.252*Tr + 0.393*C
MUX41LLX6	D2-Z	D2_Z (fall)	0.123 + 0.242*Tr + 0.234*C	0.297 + 0.254*Tr + 0.503*C	0.189 + 0.248*Tr + 0.322*C
MUX41LLX6	D2-Z	D2_Z (rise)	0.083 + 0.212*Tr + 0.274*C	0.237 + 0.257*Tr + 0.584*C	0.136 + 0.236*Tr + 0.394*C
MUX41LLX6	D3-Z	D3_Z (fall)	0.123 + 0.242*Tr + 0.234*C	0.299 + 0.253*Tr + 0.503*C	0.189 + 0.247*Tr + 0.327*C
MUX41LLX6	D3-Z	D3_Z (rise)	0.084 + 0.212*Tr + 0.274*C	0.238 + 0.257*Tr + 0.584*C	0.137 + 0.236*Tr + 0.394*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41LLX6	D0-Z	D0_Z (fall)	0.122 + 0.243*Tr + 0.234*C	0.295 + 0.255*Tr + 0.503*C	0.188 + 0.248*Tr + 0.327*C
MUX41LLX6	D0-Z	D0_Z (rise)	0.085 + 0.210*Tr + 0.274*C	0.240 + 0.255*Tr + 0.585*C	0.139 + 0.234*Tr + 0.394*C
MUX41LLX8	A-Z	A_Z (fall)	0.118 + 0.201*Tr + 0.172*C	0.382 + 0.245*Tr + 0.364*C	0.244 + 0.222*Tr + 0.236*C
MUX41LLX8	A-Z	A_Z (rise)	0.083 + 0.192*Tr + 0.206*C	0.344 + 0.255*Tr + 0.435*C	0.207 + 0.247*Tr + 0.293*C
MUX41LLX8	A-Z	A_Z_state_1 (fall) (D2 && !D3 && B D0 && !D1 && !B)	0.160 + 0.207*Tr + 0.170*C	0.382 + 0.245*Tr + 0.364*C	0.244 + 0.222*Tr + 0.236*C
MUX41LLX8	A-Z	A_Z_state_1 (rise) (D2 && !D3 && B D0 && !D1 && !B)	0.132 + 0.241*Tr + 0.204*C	0.344 + 0.255*Tr + 0.435*C	0.207 + 0.247*Tr + 0.293*C
MUX41LLX8	A-Z	A_Z_state_2 (fall) (!D2 && D3 && B !D0 && D1 && !B)	0.118 + 0.201*Tr + 0.172*C	0.294 + 0.211*Tr + 0.370*C	0.186 + 0.204*Tr + 0.240*C
MUX41LLX8	A-Z	A_Z_state_2 (rise) (!D2 && D3 && B !D0 && D1 && !B)	0.083 + 0.192*Tr + 0.206*C	0.238 + 0.223*Tr + 0.439*C	0.136 + 0.207*Tr + 0.296*C
MUX41LLX8	D1-Z	D1_Z (fall)	0.117 + 0.239*Tr + 0.175*C	0.283 + 0.251*Tr + 0.375*C	0.181 + 0.244*Tr + 0.244*C
MUX41LLX8	D1-Z	D1_Z (rise)	0.083 + 0.211*Tr + 0.205*C	0.234 + 0.256*Tr + 0.438*C	0.135 + 0.235*Tr + 0.296*C
MUX41LLX8	B-Z	B_Z (fall)	0.086 + 0.203*Tr + 0.172*C	0.264 + 0.216*Tr + 0.368*C	0.160 + 0.252*Tr + 0.238*C
MUX41LLX8	B-Z	B_Z (rise)	0.054 + 0.200*Tr + 0.205*C	0.251 + 0.243*Tr + 0.438*C	0.154 + 0.220*Tr + 0.295*C
MUX41LLX8	B-Z	B_Z_state_3 (fall) (D1 && !D3 && A D0 && !D2 && !A)	0.098 + 0.187*Tr + 0.172*C	0.269 + 0.203*Tr + 0.366*C	0.173 + 0.185*Tr + 0.237*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41LLX8	B-Z	B_Z_state_3 (rise) (D1 && !D3 && A D0 && !D2 && !A)	0.099 + 0.212*Tr + 0.205*C	0.260 + 0.211*Tr + 0.437*C	0.157 + 0.209*Tr + 0.294*C
MUX41LLX8	B-Z	B_Z_state_4 (fall) (!D1 && D3 && A !D0 && D2 && !A)	0.078 + 0.270*Tr + 0.172*C	0.171 + 0.270*Tr + 0.368*C	0.112 + 0.293*Tr + 0.238*C
MUX41LLX8	B-Z	B_Z_state_4 (rise) (!D1 && D3 && A !D0 && D2 && !A)	0.054 + 0.200*Tr + 0.205*C	0.187 + 0.284*Tr + 0.437*C	0.113 + 0.253*Tr + 0.295*C
MUX41LLX8	D2-Z	D2_Z (fall)	0.116 + 0.242*Tr + 0.172*C	0.287 + 0.250*Tr + 0.375*C	0.182 + 0.243*Tr + 0.244*C
MUX41LLX8	D2-Z	D2_Z (rise)	0.082 + 0.213*Tr + 0.205*C	0.232 + 0.258*Tr + 0.438*C	0.134 + 0.237*Tr + 0.295*C
MUX41LLX8	D3-Z	D3_Z (fall)	0.118 + 0.238*Tr + 0.175*C	0.287 + 0.250*Tr + 0.375*C	0.182 + 0.243*Tr + 0.244*C
MUX41LLX8	D3-Z	D3_Z (rise)	0.082 + 0.213*Tr + 0.205*C	0.232 + 0.258*Tr + 0.438*C	0.134 + 0.237*Tr + 0.295*C
MUX41LLX8	D0-Z	D0_Z (fall)	0.117 + 0.239*Tr + 0.175*C	0.284 + 0.251*Tr + 0.375*C	0.180 + 0.244*Tr + 0.244*C
MUX41LLX8	D0-Z	D0_Z (rise)	0.083 + 0.211*Tr + 0.205*C	0.235 + 0.256*Tr + 0.438*C	0.136 + 0.235*Tr + 0.296*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
MUX41LL	8717.850	171798.000
MUX41LLP	10808.900	222378.000
MUX41LLX4	19795.400	425649.000
MUX41LLX6	25776.400	551008.000
MUX41LLX8	33944.900	737839.000

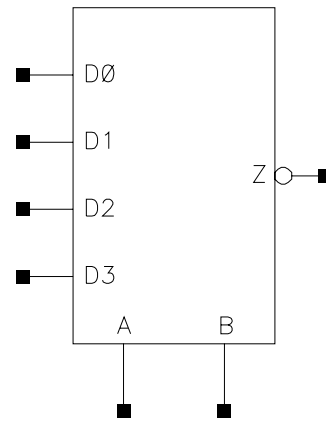
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
MUX41LL	Z(max)	$0.041 + 0.016 \cdot Tr$
MUX41LLP	Z(max)	$0.050 + 0.025 \cdot Tr$
MUX41LLX4	Z(max)	$0.093 + 0.050 \cdot Tr$
MUX41LLX6	Z(max)	$0.150 + 0.054 \cdot Tr$
MUX41LLX8	Z(max)	$0.199 + 0.074 \cdot Tr$

MUX41NLL
MUX41NLLP
MUX41NLLX4
MUX41NLLX6
MUX41NLLX8

Function: Function = 4:1 Inverting Multiplexer



Truth Table

D0	D1	D2	D3	A	B	Z
D0	-	-	-	0	0	!D0
-	D1	-	-	1	0	!D1
-	-	D2	-	0	1	!D2
-	-	-	D3	1	1	!D3

Physical Dimensions

Property	MUX41NLL	MUX41NLLP	MUX41NLLX 4	MUX41NLLX 6	MUX41NLLX 8
Area(um2)	30.258	38.327	66.568	88.757	123.049

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41NLL	D2 Input Cap.	0.0032	0.0029	0.0031
MUX41NLL	D0 Input Cap.	0.0031	0.0028	0.0029
MUX41NLL	Z Max Load	0.160	0.160	0.160
MUX41NLL	D3 Input Cap.	0.0030	0.0027	0.0028
MUX41NLL	A Input Cap.	0.0096	0.0086	0.0089
MUX41NLL	D1 Input Cap.	0.0031	0.0028	0.0029
MUX41NLL	B Input Cap.	0.0050	0.0044	0.0046

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41NLLP	D2 Input Cap.	0.0053	0.0049	0.0050
MUX41NLLP	D0 Input Cap.	0.0054	0.0050	0.0051
MUX41NLLP	Z Max Load	0.320	0.320	0.320
MUX41NLLP	D3 Input Cap.	0.0052	0.0048	0.0049
MUX41NLLP	A Input Cap.	0.0162	0.0146	0.0152
MUX41NLLP	D1 Input Cap.	0.0053	0.0048	0.0050
MUX41NLLP	B Input Cap.	0.0090	0.0079	0.0082
MUX41NLLX4	D3 Input Cap.	0.0108	0.0099	0.0102
MUX41NLLX4	B Input Cap.	0.0162	0.0145	0.0150
MUX41NLLX4	D1 Input Cap.	0.0110	0.0100	0.0103
MUX41NLLX4	Z Max Load	0.640	0.640	0.640
MUX41NLLX4	D2 Input Cap.	0.0109	0.0100	0.0103
MUX41NLLX4	A Input Cap.	0.0295	0.0267	0.0277
MUX41NLLX4	D0 Input Cap.	0.0108	0.0099	0.0102
MUX41NLLX6	A Input Cap.	0.0488	0.0438	0.0451
MUX41NLLX6	D2 Input Cap.	0.0160	0.0147	0.0151
MUX41NLLX6	Z Max Load	0.960	0.960	0.960
MUX41NLLX6	B Input Cap.	0.0275	0.0242	0.0252
MUX41NLLX6	D0 Input Cap.	0.0160	0.0147	0.0151
MUX41NLLX6	D3 Input Cap.	0.0162	0.0148	0.0152
MUX41NLLX6	D1 Input Cap.	0.0161	0.0147	0.0152
MUX41NLLX8	D0 Input Cap.	0.0209	0.0190	0.0196
MUX41NLLX8	Z Max Load	1.280	1.280	1.280
MUX41NLLX8	D3 Input Cap.	0.0208	0.0189	0.0196
MUX41NLLX8	A Input Cap.	0.0619	0.0558	0.0575
MUX41NLLX8	D1 Input Cap.	0.0209	0.0190	0.0196
MUX41NLLX8	B Input Cap.	0.0314	0.0278	0.0290
MUX41NLLX8	D2 Input Cap.	0.0208	0.0190	0.0196

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41NLL	A-Z	A_Z (fall)	0.033 + 0.196*Tr + 2.798*C	0.260 + 0.283*Tr + 7.556*C	0.159 + 0.274*Tr + 4.263*C
MUX41NLL	A-Z	A_Z (rise)	0.058 + 0.206*Tr + 4.878*C	0.278 + 0.239*Tr + 10.884*C	0.175 + 0.212*Tr + 7.224*C
MUX41NLL	A-Z	A_Z_state_1 (fall) (!D2 && D3 && B !D0 && D1 && !B)	0.033 + 0.196*Tr + 2.798*C	0.111 + 0.228*Tr + 7.701*C	0.055 + 0.216*Tr + 4.435*C
MUX41NLL	A-Z	A_Z_state_1 (rise) (!D2 && D3 && B !D0 && D1 && !B)	0.058 + 0.206*Tr + 4.878*C	0.162 + 0.220*Tr + 10.959*C	0.099 + 0.215*Tr + 7.301*C
MUX41NLL	A-Z	A_Z_state_2 (fall) (D2 && !D3 && B D0 && !D1 && !B)	0.103 + 0.268*Tr + 2.692*C	0.260 + 0.283*Tr + 7.556*C	0.159 + 0.274*Tr + 4.263*C
MUX41NLL	A-Z	A_Z_state_2 (rise) (D2 && !D3 && B D0 && !D1 && !B)	0.110 + 0.190*Tr + 4.856*C	0.278 + 0.239*Tr + 10.884*C	0.175 + 0.212*Tr + 7.224*C
MUX41NLL	D1-Z	D1_Z (fall)	0.031 + 0.228*Tr + 2.846*C	0.107 + 0.263*Tr + 7.711*C	0.050 + 0.247*Tr + 4.487*C
MUX41NLL	D1-Z	D1_Z (rise)	0.055 + 0.256*Tr + 4.900*C	0.147 + 0.264*Tr + 10.966*C	0.089 + 0.261*Tr + 7.331*C
MUX41NLL	B-Z	B_Z (fall)	-0.002 + 0.224*Tr + 2.890*C	0.133 + 0.269*Tr + 7.658*C	0.080 + 0.259*Tr + 4.380*C
MUX41NLL	B-Z	B_Z (rise)	0.017 + 0.210*Tr + 4.836*C	0.105 + 0.283*Tr + 10.983*C	0.032 + 0.312*Tr + 7.381*C
MUX41NLL	B-Z	B_Z_state_3 (fall) (!D1 && D3 && A !D0 && D2 && !A)	-0.008 + 0.239*Tr + 2.958*C	0.053 + 0.299*Tr + 7.806*C	0.005 + 0.268*Tr + 4.665*C
MUX41NLL	B-Z	B_Z_state_3 (rise) (!D1 && D3 && A !D0 && D2 && !A)	-0.003 + 0.300*Tr + 4.956*C	0.052 + 0.316*Tr + 11.015*C	0.032 + 0.312*Tr + 7.382*C
MUX41NLL	B-Z	B_Z_state_4 (fall) (D1 && !D3 && A D0 && !D2 && !A)	0.041 + 0.250*Tr + 2.625*C	0.149 + 0.243*Tr + 7.514*C	0.093 + 0.239*Tr + 4.239*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41NLL	B-Z	B_Z_state_4 (rise) (D1 && !D3 && A D0 && !D2 && !A)	0.059 + 0.159*Tr + 4.837*C	0.136 + 0.196*Tr + 10.841*C	0.050 + 0.192*Tr + 7.085*C
MUX41NLL	D2-Z	D2_Z (fall)	0.032 + 0.230*Tr + 2.843*C	0.112 + 0.265*Tr + 7.711*C	0.052 + 0.249*Tr + 4.481*C
MUX41NLL	D2-Z	D2_Z (rise)	0.061 + 0.255*Tr + 4.901*C	0.161 + 0.263*Tr + 10.968*C	0.098 + 0.260*Tr + 7.324*C
MUX41NLL	D3-Z	D3_Z (fall)	0.031 + 0.230*Tr + 2.843*C	0.111 + 0.265*Tr + 7.709*C	0.052 + 0.249*Tr + 4.482*C
MUX41NLL	D3-Z	D3_Z (rise)	0.060 + 0.255*Tr + 4.903*C	0.160 + 0.264*Tr + 10.965*C	0.097 + 0.261*Tr + 7.331*C
MUX41NLL	D0-Z	D0_Z (fall)	0.030 + 0.228*Tr + 2.845*C	0.106 + 0.263*Tr + 7.712*C	0.050 + 0.247*Tr + 4.485*C
MUX41NLL	D0-Z	D0_Z (rise)	0.055 + 0.256*Tr + 4.899*C	0.147 + 0.263*Tr + 10.966*C	0.089 + 0.261*Tr + 7.332*C
MUX41NLLP	A-Z	A_Z (fall)	0.033 + 0.201*Tr + 1.453*C	0.236 + 0.262*Tr + 3.791*C	0.144 + 0.254*Tr + 2.176*C
MUX41NLLP	A-Z	A_Z (rise)	0.053 + 0.197*Tr + 2.282*C	0.249 + 0.242*Tr + 4.980*C	0.157 + 0.218*Tr + 3.328*C
MUX41NLLP	A-Z	A_Z_state_1 (fall) (!D2 && D3 && B !D0 && D1 && !B)	0.033 + 0.201*Tr + 1.453*C	0.110 + 0.230*Tr + 3.871*C	0.053 + 0.219*Tr + 2.266*C
MUX41NLLP	A-Z	A_Z_state_1 (rise) (!D2 && D3 && B !D0 && D1 && !B)	0.053 + 0.197*Tr + 2.282*C	0.147 + 0.210*Tr + 5.044*C	0.088 + 0.206*Tr + 3.383*C
MUX41NLLP	A-Z	A_Z_state_2 (fall) (D2 && !D3 && B D0 && !D1 && !B)	0.094 + 0.248*Tr + 1.398*C	0.236 + 0.262*Tr + 3.791*C	0.144 + 0.254*Tr + 2.176*C
MUX41NLLP	A-Z	A_Z_state_2 (rise) (D2 && !D3 && B D0 && !D1 && !B)	0.100 + 0.200*Tr + 2.259*C	0.249 + 0.242*Tr + 4.980*C	0.157 + 0.218*Tr + 3.328*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41NLLP	D1-Z	D1_Z (fall)	0.029 + 0.232*Tr + 1.480*C	0.104 + 0.265*Tr + 3.879*C	0.047 + 0.250*Tr + 2.297*C
MUX41NLLP	D1-Z	D1_Z (rise)	0.048 + 0.245*Tr + 2.298*C	0.131 + 0.253*Tr + 5.055*C	0.077 + 0.250*Tr + 3.410*C
MUX41NLLP	B-Z	B_Z (fall)	0.018 + 0.219*Tr + 1.450*C	0.119 + 0.270*Tr + 3.875*C	0.077 + 0.243*Tr + 2.229*C
MUX41NLLP	B-Z	B_Z (rise)	0.025 + 0.208*Tr + 2.258*C	0.096 + 0.261*Tr + 5.068*C	0.050 + 0.272*Tr + 3.440*C
MUX41NLLP	B-Z	B_Z_state_3 (fall) (!D1 && D3 && A !D0 && D2 && !A)	0.004 + 0.257*Tr + 1.529*C	0.051 + 0.302*Tr + 3.932*C	-0.015 + 0.260*Tr + 2.347*C
MUX41NLLP	B-Z	B_Z_state_3 (rise) (!D1 && D3 && A !D0 && D2 && !A)	0.005 + 0.292*Tr + 2.331*C	0.023 + 0.294*Tr + 5.131*C	0.021 + 0.293*Tr + 3.461*C
MUX41NLLP	B-Z	B_Z_state_4 (fall) (D1 && !D3 && A D0 && !D2 && !A)	0.039 + 0.233*Tr + 1.359*C	0.143 + 0.228*Tr + 3.770*C	0.089 + 0.224*Tr + 2.164*C
MUX41NLLP	B-Z	B_Z_state_4 (rise) (D1 && !D3 && A D0 && !D2 && !A)	0.054 + 0.174*Tr + 2.247*C	0.124 + 0.207*Tr + 4.958*C	0.080 + 0.187*Tr + 3.313*C
MUX41NLLP	D2-Z	D2_Z (fall)	0.029 + 0.234*Tr + 1.478*C	0.107 + 0.267*Tr + 3.877*C	0.051 + 0.255*Tr + 2.291*C
MUX41NLLP	D2-Z	D2_Z (rise)	0.051 + 0.245*Tr + 2.298*C	0.142 + 0.253*Tr + 5.053*C	0.084 + 0.250*Tr + 3.407*C
MUX41NLLP	D3-Z	D3_Z (fall)	0.029 + 0.234*Tr + 1.478*C	0.106 + 0.267*Tr + 3.877*C	0.051 + 0.255*Tr + 2.290*C
MUX41NLLP	D3-Z	D3_Z (rise)	0.051 + 0.245*Tr + 2.298*C	0.140 + 0.253*Tr + 5.054*C	0.083 + 0.250*Tr + 3.409*C
MUX41NLLP	D0-Z	D0_Z (fall)	0.029 + 0.233*Tr + 1.477*C	0.104 + 0.265*Tr + 3.879*C	0.050 + 0.254*Tr + 2.293*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41NLLP	D0-Z	D0_Z (rise)	0.048 + 0.246*Tr + 2.297*C	0.131 + 0.253*Tr + 5.055*C	0.077 + 0.250*Tr + 3.410*C
MUX41NLLX4	A-Z	A_Z (fall)	0.034 + 0.197*Tr + 0.702*C	0.224 + 0.254*Tr + 1.816*C	0.137 + 0.245*Tr + 1.044*C
MUX41NLLX4	A-Z	A_Z (rise)	0.054 + 0.195*Tr + 1.097*C	0.235 + 0.243*Tr + 2.389*C	0.149 + 0.220*Tr + 1.598*C
MUX41NLLX4	A-Z	A_Z_state_1 (fall) (!D2 && D3 && B !D0 && D1 && !B)	0.034 + 0.197*Tr + 0.702*C	0.111 + 0.227*Tr + 1.859*C	0.056 + 0.215*Tr + 1.092*C
MUX41NLLX4	A-Z	A_Z_state_1 (rise) (!D2 && D3 && B !D0 && D1 && !B)	0.054 + 0.195*Tr + 1.097*C	0.145 + 0.208*Tr + 2.424*C	0.088 + 0.204*Tr + 1.627*C
MUX41NLLX4	A-Z	A_Z_state_2 (fall) (D2 && !D3 && B D0 && !D1 && !B)	0.087 + 0.239*Tr + 0.672*C	0.224 + 0.254*Tr + 1.816*C	0.137 + 0.245*Tr + 1.044*C
MUX41NLLX4	A-Z	A_Z_state_2 (rise) (D2 && !D3 && B D0 && !D1 && !B)	0.097 + 0.205*Tr + 1.085*C	0.235 + 0.243*Tr + 2.389*C	0.149 + 0.220*Tr + 1.598*C
MUX41NLLX4	D1-Z	D1_Z (fall)	0.033 + 0.231*Tr + 0.713*C	0.106 + 0.262*Tr + 1.863*C	0.051 + 0.244*Tr + 1.108*C
MUX41NLLX4	D1-Z	D1_Z (rise)	0.048 + 0.244*Tr + 1.105*C	0.131 + 0.251*Tr + 2.430*C	0.078 + 0.248*Tr + 1.640*C
MUX41NLLX4	B-Z	B_Z (fall)	0.003 + 0.218*Tr + 0.720*C	0.118 + 0.263*Tr + 1.867*C	0.064 + 0.258*Tr + 1.101*C
MUX41NLLX4	B-Z	B_Z (rise)	0.013 + 0.221*Tr + 1.088*C	0.095 + 0.272*Tr + 2.432*C	0.052 + 0.269*Tr + 1.653*C
MUX41NLLX4	B-Z	B_Z_state_3 (fall) (!D1 && D3 && A !D0 && D2 && !A)	-0.005 + 0.235*Tr + 0.741*C	0.049 + 0.295*Tr + 1.897*C	0.020 + 0.271*Tr + 1.147*C
MUX41NLLX4	B-Z	B_Z_state_3 (rise) (!D1 && D3 && A !D0 && D2 && !A)	-0.003 + 0.281*Tr + 1.125*C	0.045 + 0.300*Tr + 2.451*C	0.005 + 0.306*Tr + 1.664*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41NLLX4	B-Z	B_Z_state_4 (fall) (D1 && !D3 && A D0 && !D2 && !A)	0.055 + 0.216*Tr + 0.668*C	0.141 + 0.219*Tr + 1.810*C	0.085 + 0.216*Tr + 1.037*C
MUX41NLLX4	B-Z	B_Z_state_4 (rise) (D1 && !D3 && A D0 && !D2 && !A)	0.054 + 0.179*Tr + 1.079*C	0.122 + 0.210*Tr + 2.378*C	0.079 + 0.191*Tr + 1.590*C
MUX41NLLX4	D2-Z	D2_Z (fall)	0.030 + 0.228*Tr + 0.715*C	0.104 + 0.264*Tr + 1.863*C	0.052 + 0.250*Tr + 1.104*C
MUX41NLLX4	D2-Z	D2_Z (rise)	0.050 + 0.243*Tr + 1.105*C	0.136 + 0.250*Tr + 2.429*C	0.081 + 0.247*Tr + 1.640*C
MUX41NLLX4	D3-Z	D3_Z (fall)	0.030 + 0.228*Tr + 0.714*C	0.104 + 0.264*Tr + 1.862*C	0.049 + 0.245*Tr + 1.107*C
MUX41NLLX4	D3-Z	D3_Z (rise)	0.050 + 0.243*Tr + 1.105*C	0.136 + 0.250*Tr + 2.429*C	0.081 + 0.247*Tr + 1.640*C
MUX41NLLX4	D0-Z	D0_Z (fall)	0.031 + 0.227*Tr + 0.715*C	0.106 + 0.262*Tr + 1.863*C	0.050 + 0.244*Tr + 1.107*C
MUX41NLLX4	D0-Z	D0_Z (rise)	0.048 + 0.244*Tr + 1.105*C	0.132 + 0.251*Tr + 2.429*C	0.079 + 0.248*Tr + 1.640*C
MUX41NLLX6	A-Z	A_Z (fall)	0.032 + 0.195*Tr + 0.469*C	0.198 + 0.235*Tr + 1.211*C	0.120 + 0.229*Tr + 0.696*C
MUX41NLLX6	A-Z	A_Z (rise)	0.053 + 0.193*Tr + 0.732*C	0.213 + 0.225*Tr + 1.592*C	0.135 + 0.205*Tr + 1.065*C
MUX41NLLX6	A-Z	A_Z_state_1 (fall) (!D2 && D3 && B !D0 && D1 && !B)	0.032 + 0.195*Tr + 0.469*C	0.107 + 0.225*Tr + 1.242*C	0.055 + 0.212*Tr + 0.731*C
MUX41NLLX6	A-Z	A_Z_state_1 (rise) (!D2 && D3 && B !D0 && D1 && !B)	0.053 + 0.193*Tr + 0.732*C	0.141 + 0.205*Tr + 1.617*C	0.085 + 0.201*Tr + 1.086*C
MUX41NLLX6	A-Z	A_Z_state_2 (fall) (D2 && !D3 && B D0 && !D1 && !B)	0.076 + 0.225*Tr + 0.448*C	0.198 + 0.235*Tr + 1.211*C	0.120 + 0.229*Tr + 0.696*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41NLLX6	A-Z	A_Z_state_2 (rise) (D2 && !D3 && B D0 && !D1 && !B)	0.086 + 0.191*Tr + 0.723*C	0.213 + 0.225*Tr + 1.592*C	0.135 + 0.205*Tr + 1.065*C
MUX41NLLX6	D1-Z	D1_Z (fall)	0.031 + 0.229*Tr + 0.477*C	0.101 + 0.259*Tr + 1.245*C	0.047 + 0.241*Tr + 0.742*C
MUX41NLLX6	D1-Z	D1_Z (rise)	0.046 + 0.241*Tr + 0.738*C	0.128 + 0.247*Tr + 1.622*C	0.076 + 0.244*Tr + 1.096*C
MUX41NLLX6	B-Z	B_Z (fall)	0.006 + 0.198*Tr + 0.469*C	0.098 + 0.260*Tr + 1.254*C	0.049 + 0.259*Tr + 0.744*C
MUX41NLLX6	B-Z	B_Z (rise)	0.023 + 0.202*Tr + 0.724*C	0.082 + 0.269*Tr + 1.628*C	0.045 + 0.273*Tr + 1.105*C
MUX41NLLX6	B-Z	B_Z_state_3 (fall) (!D1 && D3 && A !D0 && D2 && !A)	-0.008 + 0.231*Tr + 0.498*C	0.042 + 0.286*Tr + 1.273*C	0.017 + 0.270*Tr + 0.764*C
MUX41NLLX6	B-Z	B_Z_state_3 (rise) (!D1 && D3 && A !D0 && D2 && !A)	0.004 + 0.282*Tr + 0.750*C	0.040 + 0.295*Tr + 1.637*C	0.025 + 0.290*Tr + 1.109*C
MUX41NLLX6	B-Z	B_Z_state_4 (fall) (D1 && !D3 && A D0 && !D2 && !A)	0.031 + 0.216*Tr + 0.437*C	0.125 + 0.209*Tr + 1.208*C	0.073 + 0.208*Tr + 0.691*C
MUX41NLLX6	B-Z	B_Z_state_4 (rise) (D1 && !D3 && A D0 && !D2 && !A)	0.049 + 0.171*Tr + 0.720*C	0.111 + 0.199*Tr + 1.589*C	0.072 + 0.182*Tr + 1.062*C
MUX41NLLX6	D2-Z	D2_Z (fall)	0.028 + 0.225*Tr + 0.478*C	0.100 + 0.260*Tr + 1.245*C	0.046 + 0.242*Tr + 0.741*C
MUX41NLLX6	D2-Z	D2_Z (rise)	0.048 + 0.240*Tr + 0.738*C	0.132 + 0.246*Tr + 1.622*C	0.078 + 0.244*Tr + 1.095*C
MUX41NLLX6	D3-Z	D3_Z (fall)	0.031 + 0.229*Tr + 0.477*C	0.100 + 0.260*Tr + 1.245*C	0.046 + 0.242*Tr + 0.741*C
MUX41NLLX6	D3-Z	D3_Z (rise)	0.048 + 0.241*Tr + 0.738*C	0.131 + 0.246*Tr + 1.622*C	0.078 + 0.244*Tr + 1.096*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41NLLX6	D0-Z	D0_Z (fall)	0.030 + 0.229*Tr + 0.477°C	0.101 + 0.259*Tr + 1.245°C	0.047 + 0.241*Tr + 0.741°C
MUX41NLLX6	D0-Z	D0_Z (rise)	0.047 + 0.241*Tr + 0.738°C	0.128 + 0.247*Tr + 1.622°C	0.076 + 0.244*Tr + 1.096°C
MUX41NLLX8	A-Z	A_Z (fall)	0.033 + 0.194*Tr + 0.352°C	0.220 + 0.250*Tr + 0.909°C	0.135 + 0.244*Tr + 0.523°C
MUX41NLLX8	A-Z	A_Z (rise)	0.053 + 0.194*Tr + 0.549°C	0.230 + 0.239*Tr + 1.195°C	0.146 + 0.217*Tr + 0.799°C
MUX41NLLX8	A-Z	A_Z_state_1 (fall) (!D2 && D3 && B !D0 && D1 && !B)	0.033 + 0.194*Tr + 0.352°C	0.110 + 0.225*Tr + 0.932°C	0.056 + 0.213*Tr + 0.548°C
MUX41NLLX8	A-Z	A_Z_state_1 (rise) (!D2 && D3 && B !D0 && D1 && !B)	0.053 + 0.194*Tr + 0.549°C	0.143 + 0.207*Tr + 1.213°C	0.086 + 0.202*Tr + 0.815°C
MUX41NLLX8	A-Z	A_Z_state_2 (fall) (D2 && !D3 && B D0 && !D1 && !B)	0.087 + 0.239*Tr + 0.337°C	0.220 + 0.250*Tr + 0.909°C	0.135 + 0.244*Tr + 0.523°C
MUX41NLLX8	A-Z	A_Z_state_2 (rise) (D2 && !D3 && B D0 && !D1 && !B)	0.097 + 0.203*Tr + 0.542°C	0.230 + 0.239*Tr + 1.195°C	0.146 + 0.217*Tr + 0.799°C
MUX41NLLX8	D1-Z	D1_Z (fall)	0.032 + 0.228*Tr + 0.358°C	0.104 + 0.260*Tr + 0.934°C	0.050 + 0.241*Tr + 0.556°C
MUX41NLLX8	D1-Z	D1_Z (rise)	0.047 + 0.242*Tr + 0.554°C	0.130 + 0.248*Tr + 1.217°C	0.078 + 0.245*Tr + 0.822°C
MUX41NLLX8	B-Z	B_Z (fall)	0.005 + 0.205*Tr + 0.355°C	0.107 + 0.265*Tr + 0.934°C	0.044 + 0.271*Tr + 0.550°C
MUX41NLLX8	B-Z	B_Z (rise)	0.012 + 0.220*Tr + 0.544°C	0.093 + 0.268*Tr + 1.219°C	0.051 + 0.264*Tr + 0.829°C
MUX41NLLX8	B-Z	B_Z_state_3 (fall) (!D1 && D3 && A !D0 && D2 && !A)	-0.005 + 0.230*Tr + 0.373°C	0.042 + 0.291*Tr + 0.956°C	0.014 + 0.263*Tr + 0.583°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
MUX41NLLX8	B-Z	B_Z_state_3 (rise) (!D1 && D3 && A !D0 && D2 && !A)	-0.003 + 0.276*Tr + 0.564*C	0.040 + 0.297*Tr + 1.230*C	0.002 + 0.301*Tr + 0.835*C
MUX41NLLX8	B-Z	B_Z_state_4 (fall) (D1 && !D3 && A D0 && !D2 && !A)	0.036 + 0.224*Tr + 0.327*C	0.131 + 0.221*Tr + 0.903*C	0.064 + 0.230*Tr + 0.515*C
MUX41NLLX8	B-Z	B_Z_state_4 (rise) (D1 && !D3 && A D0 && !D2 && !A)	0.053 + 0.178*Tr + 0.540*C	0.120 + 0.207*Tr + 1.190*C	0.078 + 0.189*Tr + 0.796*C
MUX41NLLX8	D2-Z	D2_Z (fall)	0.029 + 0.225*Tr + 0.359*C	0.102 + 0.261*Tr + 0.934*C	0.048 + 0.242*Tr + 0.556*C
MUX41NLLX8	D2-Z	D2_Z (rise)	0.049 + 0.241*Tr + 0.553*C	0.134 + 0.247*Tr + 1.217*C	0.080 + 0.244*Tr + 0.822*C
MUX41NLLX8	D3-Z	D3_Z (fall)	0.029 + 0.225*Tr + 0.359*C	0.102 + 0.261*Tr + 0.934*C	0.051 + 0.247*Tr + 0.554*C
MUX41NLLX8	D3-Z	D3_Z (rise)	0.049 + 0.241*Tr + 0.554*C	0.134 + 0.247*Tr + 1.217*C	0.080 + 0.244*Tr + 0.822*C
MUX41NLLX8	D0-Z	D0_Z (fall)	0.032 + 0.228*Tr + 0.358*C	0.104 + 0.260*Tr + 0.934*C	0.049 + 0.241*Tr + 0.556*C
MUX41NLLX8	D0-Z	D0_Z (rise)	0.047 + 0.242*Tr + 0.553*C	0.130 + 0.248*Tr + 1.217*C	0.078 + 0.245*Tr + 0.822*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
MUX41NLL	6960.980	135713.000
MUX41NLLP	11095.500	235207.000
MUX41NLLX4	21600.200	469612.000
MUX41NLLX6	35596.500	770502.000
MUX41NLLX8	43200.600	939217.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
MUX41NLL	Z(max)	$0.033 + 0.013 \cdot Tr$
MUX41NLLP	Z(max)	$0.056 + 0.028 \cdot Tr$
MUX41NLLX4	Z(max)	$0.112 + 0.060 \cdot Tr$
MUX41NLLX6	Z(max)	$0.179 + 0.109 \cdot Tr$
MUX41NLLX8	Z(max)	$0.219 + 0.121 \cdot Tr$

<p>ND2LL ND2LLP ND2LLX4 ND2LLX6 ND2LLX8</p> <p>Function: Function = 2 Input NAND</p> <p>Boolean Expression: $Z = \overline{(A \bullet B)}$</p>	
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Physical Dimensions

Property	ND2LL	ND2LLP	ND2LLX4	ND2LLX6	ND2LLX8
Area(um ²)	6.052	8.069	12.103	16.138	20.172

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND2LL	Z Max Load	0.160	0.160	0.160
ND2LL	B Input Cap.	0.0026	0.0023	0.0024
ND2LL	A Input Cap.	0.0027	0.0025	0.0026
ND2LLP	A Input Cap.	0.0051	0.0047	0.0049
ND2LLP	Z Max Load	0.320	0.320	0.320
ND2LLP	B Input Cap.	0.0048	0.0044	0.0046
ND2LLX4	B Input Cap.	0.0093	0.0085	0.0088
ND2LLX4	A Input Cap.	0.0106	0.0097	0.0100
ND2LLX4	Z Max Load	0.640	0.640	0.640
ND2LLX6	B Input Cap.	0.0142	0.0130	0.0135
ND2LLX6	A Input Cap.	0.0153	0.0140	0.0145
ND2LLX6	Z Max Load	0.960	0.960	0.960
ND2LLX8	Z Max Load	1.280	1.280	1.280
ND2LLX8	B Input Cap.	0.0188	0.0172	0.0178
ND2LLX8	A Input Cap.	0.0208	0.0191	0.0197

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND2LL	A-Z	A_Z (fall)	0.003 + 0.199*Tr + 1.928*C	0.015 + 0.233*Tr + 4.728*C	0.002 + 0.218*Tr + 2.942*C
ND2LL	A-Z	A_Z (rise)	0.006 + 0.304*Tr + 2.446*C	0.017 + 0.322*Tr + 5.087*C	0.005 + 0.314*Tr + 3.580*C
ND2LL	B-Z	B_Z (fall)	-0.004 + 0.230*Tr + 2.022*C	0.003 + 0.268*Tr + 4.851*C	-0.008 + 0.248*Tr + 3.076*C
ND2LL	B-Z	B_Z (rise)	0.001 + 0.296*Tr + 2.478*C	0.006 + 0.314*Tr + 5.149*C	-0.001 + 0.306*Tr + 3.631*C
ND2LLP	A-Z	A_Z (fall)	-0.001 + 0.198*Tr + 0.983*C	0.007 + 0.230*Tr + 2.324*C	-0.004 + 0.216*Tr + 1.476*C
ND2LLP	A-Z	A_Z (rise)	0.001 + 0.297*Tr + 1.213*C	0.007 + 0.314*Tr + 2.481*C	-0.002 + 0.306*Tr + 1.764*C
ND2LLP	B-Z	B_Z (fall)	-0.008 + 0.230*Tr + 1.033*C	-0.008 + 0.264*Tr + 2.394*C	-0.015 + 0.246*Tr + 1.548*C
ND2LLP	B-Z	B_Z (rise)	-0.004 + 0.288*Tr + 1.234*C	-0.005 + 0.305*Tr + 2.522*C	-0.010 + 0.298*Tr + 1.796*C
ND2LLX4	A-Z	A_Z (fall)	0.002 + 0.190*Tr + 0.493*C	0.012 + 0.222*Tr + 1.164*C	0.001 + 0.207*Tr + 0.740*C
ND2LLX4	A-Z	A_Z (rise)	0.004 + 0.289*Tr + 0.608*C	0.013 + 0.305*Tr + 1.243*C	0.003 + 0.297*Tr + 0.883*C
ND2LLX4	B-Z	B_Z (fall)	-0.004 + 0.219*Tr + 0.517*C	-0.001 + 0.253*Tr + 1.200*C	-0.008 + 0.234*Tr + 0.776*C
ND2LLX4	B-Z	B_Z (rise)	-0.001 + 0.279*Tr + 0.619*C	0.001 + 0.295*Tr + 1.264*C	-0.004 + 0.287*Tr + 0.900*C
ND2LLX6	A-Z	A_Z (fall)	0.000 + 0.188*Tr + 0.331*C	0.010 + 0.219*Tr + 0.780*C	-0.001 + 0.205*Tr + 0.496*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND2LLX6	A-Z	A_Z (rise)	0.003 + 0.287*Tr + 0.407*C	0.010 + 0.302*Tr + 0.833*C	0.001 + 0.295*Tr + 0.592*C
ND2LLX6	B-Z	B_Z (fall)	-0.006 + 0.217*Tr + 0.347*C	-0.004 + 0.250*Tr + 0.805*C	-0.011 + 0.232*Tr + 0.521*C
ND2LLX6	B-Z	B_Z (rise)	-0.002 + 0.277*Tr + 0.415*C	-0.001 + 0.292*Tr + 0.848*C	-0.007 + 0.285*Tr + 0.604*C
ND2LLX8	A-Z	A_Z (fall)	0.002 + 0.188*Tr + 0.248*C	0.012 + 0.219*Tr + 0.585*C	0.001 + 0.205*Tr + 0.372*C
ND2LLX8	A-Z	A_Z (rise)	0.004 + 0.284*Tr + 0.303*C	0.012 + 0.299*Tr + 0.617*C	0.003 + 0.291*Tr + 0.440*C
ND2LLX8	B-Z	B_Z (fall)	-0.004 + 0.216*Tr + 0.260*C	-0.001 + 0.250*Tr + 0.603*C	-0.009 + 0.231*Tr + 0.390*C
ND2LLX8	B-Z	B_Z (rise)	-0.001 + 0.273*Tr + 0.309*C	0.000 + 0.288*Tr + 0.629*C	-0.005 + 0.281*Tr + 0.449*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
ND2LL	1951.280	42310.200
ND2LLP	3451.730	78152.500
ND2LLX4	6903.450	156302.000
ND2LLX6	10355.000	234460.000
ND2LLX8	13990.200	317882.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

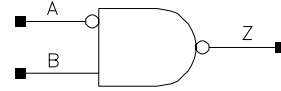
Cell	Cycle on pin	nom_1.20V_25C
ND2LL	Z(max)	0.005 + 0.012*Tr
ND2LLP	Z(max)	0.009 + 0.025*Tr
ND2LLX4	Z(max)	0.016 + 0.053*Tr

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
ND2LLX6	Z(max)	$0.025 + 0.080 * Tr$
ND2LLX8	Z(max)	$0.033 + 0.108 * Tr$

ND2ALL
ND2ALLP
ND2ALLX4
ND2ALLX6
ND2ALLX8



Function: Function = 2 Input NAND, A Input Inverted

Boolean Expression: $Z = \overline{A \bullet B}$

Physical Dimensions

Property	ND2ALL	ND2ALLP	ND2ALLX4	ND2ALLX6	ND2ALLX8
Area(um ²)	10.086	10.086	14.120	20.172	22.189

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND2ALL	Z Max Load	0.160	0.160	0.160
ND2ALL	B Input Cap.	0.0027	0.0024	0.0025
ND2ALL	A Input Cap.	0.0014	0.0011	0.0012
ND2ALLP	Z Max Load	0.320	0.320	0.320
ND2ALLP	B Input Cap.	0.0048	0.0044	0.0046
ND2ALLP	A Input Cap.	0.0021	0.0018	0.0019
ND2ALLX4	B Input Cap.	0.0093	0.0085	0.0088
ND2ALLX4	A Input Cap.	0.0035	0.0030	0.0031
ND2ALLX4	Z Max Load	0.640	0.640	0.640
ND2ALLX6	Z Max Load	0.960	0.960	0.960
ND2ALLX6	B Input Cap.	0.0143	0.0132	0.0136
ND2ALLX6	A Input Cap.	0.0051	0.0044	0.0046
ND2ALLX8	Z Max Load	1.280	1.280	1.280
ND2ALLX8	B Input Cap.	0.0187	0.0172	0.0178
ND2ALLX8	A Input Cap.	0.0066	0.0057	0.0059

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND2ALL	A-Z	A_Z (fall)	0.064 + 0.272*Tr + 1.683*C	0.148 + 0.279*Tr + 4.315*C	0.097 + 0.275*Tr + 2.543*C
ND2ALL	A-Z	A_Z (rise)	0.057 + 0.179*Tr + 2.216*C	0.138 + 0.229*Tr + 4.681*C	0.086 + 0.198*Tr + 3.194*C
ND2ALL	B-Z	B_Z (fall)	-0.004 + 0.230*Tr + 2.023*C	0.002 + 0.268*Tr + 4.851*C	-0.008 + 0.248*Tr + 3.076*C
ND2ALL	B-Z	B_Z (rise)	0.001 + 0.296*Tr + 2.478*C	0.006 + 0.314*Tr + 5.149*C	-0.002 + 0.306*Tr + 3.631*C
ND2ALLP	A-Z	A_Z (fall)	0.061 + 0.261*Tr + 0.848*C	0.137 + 0.271*Tr + 2.085*C	0.091 + 0.265*Tr + 1.256*C
ND2ALLP	A-Z	A_Z (rise)	0.053 + 0.186*Tr + 1.080*C	0.121 + 0.229*Tr + 2.234*C	0.078 + 0.203*Tr + 1.538*C
ND2ALLP	B-Z	B_Z (fall)	-0.008 + 0.230*Tr + 1.033*C	-0.008 + 0.264*Tr + 2.393*C	-0.015 + 0.246*Tr + 1.548*C
ND2ALLP	B-Z	B_Z (rise)	-0.004 + 0.288*Tr + 1.235*C	-0.005 + 0.305*Tr + 2.521*C	-0.010 + 0.298*Tr + 1.794*C
ND2ALLX4	A-Z	A_Z (fall)	0.059 + 0.247*Tr + 0.424*C	0.130 + 0.259*Tr + 1.042*C	0.087 + 0.252*Tr + 0.628*C
ND2ALLX4	A-Z	A_Z (rise)	0.053 + 0.200*Tr + 0.540*C	0.118 + 0.239*Tr + 1.118*C	0.077 + 0.216*Tr + 0.769*C
ND2ALLX4	B-Z	B_Z (fall)	-0.004 + 0.219*Tr + 0.517*C	-0.001 + 0.253*Tr + 1.199*C	-0.009 + 0.234*Tr + 0.776*C
ND2ALLX4	B-Z	B_Z (rise)	-0.001 + 0.279*Tr + 0.618*C	0.001 + 0.295*Tr + 1.264*C	-0.005 + 0.288*Tr + 0.899*C
ND2ALLX6	A-Z	A_Z (fall)	0.057 + 0.241*Tr + 0.283*C	0.126 + 0.253*Tr + 0.695*C	0.084 + 0.246*Tr + 0.419*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND2ALLX6	A-Z	A_Z (rise)	0.052 + 0.204*Tr + 0.360*C	0.116 + 0.240*Tr + 0.745*C	0.076 + 0.218*Tr + 0.513*C
ND2ALLX6	B-Z	B_Z (fall)	-0.006 + 0.217*Tr + 0.347*C	-0.004 + 0.250*Tr + 0.804*C	-0.012 + 0.233*Tr + 0.521*C
ND2ALLX6	B-Z	B_Z (rise)	-0.003 + 0.277*Tr + 0.415*C	-0.002 + 0.292*Tr + 0.847*C	-0.007 + 0.285*Tr + 0.604*C
ND2ALLX8	A-Z	A_Z (fall)	0.056 + 0.240*Tr + 0.212*C	0.125 + 0.251*Tr + 0.522*C	0.083 + 0.244*Tr + 0.314*C
ND2ALLX8	A-Z	A_Z (rise)	0.052 + 0.204*Tr + 0.268*C	0.114 + 0.239*Tr + 0.551*C	0.075 + 0.217*Tr + 0.380*C
ND2ALLX8	B-Z	B_Z (fall)	-0.005 + 0.216*Tr + 0.260*C	-0.002 + 0.250*Tr + 0.603*C	-0.009 + 0.232*Tr + 0.390*C
ND2ALLX8	B-Z	B_Z (rise)	-0.002 + 0.273*Tr + 0.309*C	0.000 + 0.288*Tr + 0.629*C	-0.006 + 0.281*Tr + 0.448*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
ND2ALL	3384.930	62495.200
ND2ALLP	4967.380	103738.000
ND2ALLX4	9018.620	195900.000
ND2ALLX6	13156.500	288882.000
ND2ALLX8	17531.500	388192.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

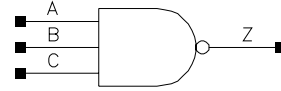
Cell	Cycle on pin	nom_1.20V_25C
ND2ALL	Z(max)	0.012 + 0.006*Tr
ND2ALLP	Z(max)	0.020 + 0.011*Tr
ND2ALLX4	Z(max)	0.039 + 0.022*Tr

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
ND2ALLX6	Z(max)	$0.058 + 0.033 \cdot Tr$
ND2ALLX8	Z(max)	$0.077 + 0.045 \cdot Tr$

ND3LL
ND3LLP
ND3LLX4
ND3LLX6
ND3LLX8



Function: Function = 3 Input NAND

Boolean Expression: $Z = \overline{(A \bullet B \bullet C)}$

Physical Dimensions

Property	ND3LL	ND3LLP	ND3LLX4	ND3LLX6	ND3LLX8
Area(um2)	8.069	10.086	18.155	22.189	28.241

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND3LL	B Input Cap.	0.0025	0.0023	0.0024
ND3LL	C Input Cap.	0.0024	0.0022	0.0022
ND3LL	Z Max Load	0.160	0.160	0.160
ND3LL	A Input Cap.	0.0027	0.0025	0.0026
ND3LLP	B Input Cap.	0.0046	0.0042	0.0043
ND3LLP	C Input Cap.	0.0042	0.0039	0.0040
ND3LLP	Z Max Load	0.320	0.320	0.320
ND3LLP	A Input Cap.	0.0046	0.0042	0.0044
ND3LLX4	A Input Cap.	0.0091	0.0083	0.0086
ND3LLX4	B Input Cap.	0.0091	0.0084	0.0087
ND3LLX4	C Input Cap.	0.0081	0.0075	0.0077
ND3LLX4	Z Max Load	0.640	0.640	0.640
ND3LLX6	C Input Cap.	0.0122	0.0112	0.0116
ND3LLX6	A Input Cap.	0.0132	0.0121	0.0125
ND3LLX6	Z Max Load	0.960	0.960	0.960
ND3LLX6	B Input Cap.	0.0132	0.0122	0.0126
ND3LLX8	C Input Cap.	0.0162	0.0149	0.0154
ND3LLX8	Z Max Load	1.280	1.280	1.280

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND3LLX8	A Input Cap.	0.0175	0.0160	0.0166
ND3LLX8	B Input Cap.	0.0179	0.0165	0.0171

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND3LL	A-Z	A_Z (fall)	0.014 + 0.173*Tr + 2.438*C	0.048 + 0.203*Tr + 6.570*C	0.022 + 0.192*Tr + 3.851*C
ND3LL	A-Z	A_Z (rise)	0.019 + 0.326*Tr + 3.122*C	0.046 + 0.347*Tr + 6.598*C	0.026 + 0.338*Tr + 4.569*C
ND3LL	B-Z	B_Z (fall)	0.008 + 0.210*Tr + 2.507*C	0.036 + 0.239*Tr + 6.641*C	0.013 + 0.227*Tr + 3.943*C
ND3LL	B-Z	B_Z (rise)	0.014 + 0.320*Tr + 3.148*C	0.036 + 0.340*Tr + 6.635*C	0.019 + 0.331*Tr + 4.605*C
ND3LL	C-Z	C_Z (fall)	0.002 + 0.234*Tr + 2.572*C	0.021 + 0.266*Tr + 6.713*C	0.002 + 0.249*Tr + 4.029*C
ND3LL	C-Z	C_Z (rise)	0.009 + 0.313*Tr + 3.175*C	0.024 + 0.333*Tr + 6.701*C	0.011 + 0.325*Tr + 4.647*C
ND3LLP	A-Z	A_Z (fall)	0.010 + 0.171*Tr + 1.237*C	0.037 + 0.198*Tr + 3.202*C	0.015 + 0.189*Tr + 1.918*C
ND3LLP	A-Z	A_Z (rise)	0.013 + 0.318*Tr + 1.546*C	0.034 + 0.338*Tr + 3.185*C	0.017 + 0.330*Tr + 2.234*C
ND3LLP	B-Z	B_Z (fall)	0.002 + 0.208*Tr + 1.276*C	0.023 + 0.233*Tr + 3.249*C	0.004 + 0.223*Tr + 1.971*C
ND3LLP	B-Z	B_Z (rise)	0.008 + 0.311*Tr + 1.561*C	0.023 + 0.331*Tr + 3.209*C	0.009 + 0.322*Tr + 2.257*C
ND3LLP	C-Z	C_Z (fall)	-0.005 + 0.232*Tr + 1.311*C	0.005 + 0.259*Tr + 3.290*C	-0.008 + 0.245*Tr + 2.019*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND3LLP	C-Z	C_Z (rise)	0.002 + 0.303*Tr + 1.580*C	0.008 + 0.322*Tr + 3.250*C	-0.001 + 0.314*Tr + 2.287*C
ND3LLX4	A-Z	A_Z (fall)	0.013 + 0.166*Tr + 0.620*C	0.043 + 0.193*Tr + 1.603*C	0.020 + 0.183*Tr + 0.960*C
ND3LLX4	A-Z	A_Z (rise)	0.017 + 0.313*Tr + 0.774*C	0.040 + 0.333*Tr + 1.593*C	0.022 + 0.324*Tr + 1.118*C
ND3LLX4	B-Z	B_Z (fall)	0.006 + 0.200*Tr + 0.639*C	0.028 + 0.227*Tr + 1.627*C	0.009 + 0.215*Tr + 0.987*C
ND3LLX4	B-Z	B_Z (rise)	0.011 + 0.305*Tr + 0.782*C	0.027 + 0.325*Tr + 1.607*C	0.014 + 0.316*Tr + 1.130*C
ND3LLX4	C-Z	C_Z (fall)	-0.001 + 0.222*Tr + 0.656*C	0.010 + 0.252*Tr + 1.648*C	-0.002 + 0.236*Tr + 1.011*C
ND3LLX4	C-Z	C_Z (rise)	0.004 + 0.297*Tr + 0.790*C	0.013 + 0.315*Tr + 1.629*C	0.004 + 0.307*Tr + 1.144*C
ND3LLX6	A-Z	A_Z (fall)	0.011 + 0.164*Tr + 0.414*C	0.041 + 0.191*Tr + 1.071*C	0.017 + 0.181*Tr + 0.642*C
ND3LLX6	A-Z	A_Z (rise)	0.015 + 0.308*Tr + 0.510*C	0.036 + 0.326*Tr + 1.042*C	0.019 + 0.317*Tr + 0.734*C
ND3LLX6	B-Z	B_Z (fall)	0.004 + 0.198*Tr + 0.428*C	0.026 + 0.224*Tr + 1.087*C	0.007 + 0.213*Tr + 0.661*C
ND3LLX6	B-Z	B_Z (rise)	0.009 + 0.299*Tr + 0.516*C	0.025 + 0.317*Tr + 1.051*C	0.011 + 0.309*Tr + 0.743*C
ND3LLX6	C-Z	C_Z (fall)	-0.003 + 0.220*Tr + 0.439*C	0.009 + 0.249*Tr + 1.101*C	-0.004 + 0.234*Tr + 0.677*C
ND3LLX6	C-Z	C_Z (rise)	0.003 + 0.290*Tr + 0.522*C	0.010 + 0.307*Tr + 1.065*C	0.001 + 0.300*Tr + 0.753*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND3LLX8	A-Z	A_Z (fall)	0.012 + 0.163*Tr + 0.311*C	0.041 + 0.190*Tr + 0.804*C	0.018 + 0.180*Tr + 0.482*C
ND3LLX8	A-Z	A_Z (rise)	0.015 + 0.308*Tr + 0.384*C	0.037 + 0.327*Tr + 0.788*C	0.020 + 0.318*Tr + 0.555*C
ND3LLX8	B-Z	B_Z (fall)	0.005 + 0.197*Tr + 0.321*C	0.026 + 0.223*Tr + 0.817*C	0.008 + 0.212*Tr + 0.497*C
ND3LLX8	B-Z	B_Z (rise)	0.010 + 0.299*Tr + 0.389*C	0.025 + 0.318*Tr + 0.795*C	0.012 + 0.309*Tr + 0.561*C
ND3LLX8	C-Z	C_Z (fall)	-0.002 + 0.218*Tr + 0.330*C	0.009 + 0.247*Tr + 0.828*C	-0.004 + 0.232*Tr + 0.509*C
ND3LLX8	C-Z	C_Z (rise)	0.003 + 0.290*Tr + 0.394*C	0.010 + 0.308*Tr + 0.807*C	0.002 + 0.300*Tr + 0.569*C

Average Leakage Power

picoWatts

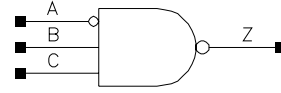
Cell	bc_1.32V_25C	bc_1.32V_125C
ND3LL	2006.750	44456.300
ND3LLP	3563.770	82184.300
ND3LLX4	7127.480	164370.000
ND3LLX6	10630.700	245265.000
ND3LLX8	14190.700	327308.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
ND3LL	Z(max)	0.008 + 0.009*Tr
ND3LLP	Z(max)	0.013 + 0.019*Tr
ND3LLX4	Z(max)	0.026 + 0.039*Tr
ND3LLX6	Z(max)	0.037 + 0.060*Tr
ND3LLX8	Z(max)	0.049 + 0.080*Tr

ND3ALL
ND3ALLP
ND3ALLX4
ND3ALLX6
ND3ALLX8



Function: Function = 3 Input NAND, A Input Inverted

Boolean Expression: $Z = (A' \bullet B \bullet C)'$

Physical Dimensions

Property	ND3ALL	ND3ALLP	ND3ALLX4	ND3ALLX6	ND3ALLX8
Area(um2)	12.103	12.103	20.172	24.206	32.275

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND3ALL	Z Max Load	0.160	0.160	0.160
ND3ALL	C Input Cap.	0.0024	0.0022	0.0023
ND3ALL	A Input Cap.	0.0015	0.0012	0.0013
ND3ALL	B Input Cap.	0.0026	0.0024	0.0025
ND3ALLP	Z Max Load	0.320	0.320	0.320
ND3ALLP	C Input Cap.	0.0042	0.0039	0.0040
ND3ALLP	A Input Cap.	0.0023	0.0019	0.0020
ND3ALLP	B Input Cap.	0.0046	0.0042	0.0044
ND3ALLX4	B Input Cap.	0.0092	0.0085	0.0088
ND3ALLX4	Z Max Load	0.640	0.640	0.640
ND3ALLX4	C Input Cap.	0.0081	0.0075	0.0077
ND3ALLX4	A Input Cap.	0.0035	0.0030	0.0031
ND3ALLX6	A Input Cap.	0.0053	0.0045	0.0047
ND3ALLX6	Z Max Load	0.960	0.960	0.960
ND3ALLX6	B Input Cap.	0.0132	0.0123	0.0127
ND3ALLX6	C Input Cap.	0.0123	0.0113	0.0117
ND3ALLX8	Z Max Load	1.280	1.280	1.280
ND3ALLX8	C Input Cap.	0.0162	0.0149	0.0154

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND3ALLX8	A Input Cap.	0.0065	0.0056	0.0058
ND3ALLX8	B Input Cap.	0.0179	0.0166	0.0171

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND3ALL	A-Z	A_Z (fall)	0.071 + 0.275*Tr + 2.276*C	0.174 + 0.284*Tr + 6.317*C	0.110 + 0.279*Tr + 3.586*C
ND3ALL	A-Z	A_Z (rise)	0.066 + 0.172*Tr + 2.977*C	0.160 + 0.223*Tr + 6.362*C	0.100 + 0.192*Tr + 4.319*C
ND3ALL	B-Z	B_Z (fall)	0.007 + 0.210*Tr + 2.510*C	0.033 + 0.238*Tr + 6.648*C	0.011 + 0.227*Tr + 3.945*C
ND3ALL	B-Z	B_Z (rise)	0.013 + 0.319*Tr + 3.150*C	0.034 + 0.339*Tr + 6.643*C	0.018 + 0.331*Tr + 4.611*C
ND3ALL	C-Z	C_Z (fall)	0.001 + 0.233*Tr + 2.576*C	0.017 + 0.265*Tr + 6.728*C	0.001 + 0.249*Tr + 4.036*C
ND3ALL	C-Z	C_Z (rise)	0.008 + 0.312*Tr + 3.178*C	0.021 + 0.332*Tr + 6.710*C	0.009 + 0.324*Tr + 4.657*C
ND3ALLP	A-Z	A_Z (fall)	0.062 + 0.251*Tr + 1.141*C	0.149 + 0.260*Tr + 3.042*C	0.095 + 0.254*Tr + 1.762*C
ND3ALLP	A-Z	A_Z (rise)	0.060 + 0.184*Tr + 1.454*C	0.140 + 0.227*Tr + 3.025*C	0.090 + 0.202*Tr + 2.076*C
ND3ALLP	B-Z	B_Z (fall)	0.003 + 0.208*Tr + 1.275*C	0.024 + 0.233*Tr + 3.248*C	0.004 + 0.223*Tr + 1.970*C
ND3ALLP	B-Z	B_Z (rise)	0.008 + 0.311*Tr + 1.560*C	0.024 + 0.331*Tr + 3.210*C	0.010 + 0.322*Tr + 2.258*C
ND3ALLP	C-Z	C_Z (fall)	-0.004 + 0.232*Tr + 1.310*C	0.006 + 0.259*Tr + 3.291*C	-0.007 + 0.246*Tr + 2.019*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND3ALLP	C-Z	C_Z (rise)	0.002 + 0.303*Tr + 1.579*C	0.009 + 0.322*Tr + 3.250*C	0.000 + 0.315*Tr + 2.285*C
ND3ALLX4	A-Z	A_Z (fall)	0.061 + 0.242*Tr + 0.571*C	0.144 + 0.251*Tr + 1.522*C	0.093 + 0.245*Tr + 0.881*C
ND3ALLX4	A-Z	A_Z (rise)	0.061 + 0.199*Tr + 0.727*C	0.137 + 0.238*Tr + 1.512*C	0.089 + 0.214*Tr + 1.038*C
ND3ALLX4	B-Z	B_Z (fall)	0.005 + 0.200*Tr + 0.639*C	0.026 + 0.227*Tr + 1.628*C	0.008 + 0.215*Tr + 0.988*C
ND3ALLX4	B-Z	B_Z (rise)	0.010 + 0.305*Tr + 0.781*C	0.027 + 0.324*Tr + 1.608*C	0.013 + 0.315*Tr + 1.131*C
ND3ALLX4	C-Z	C_Z (fall)	-0.001 + 0.222*Tr + 0.657*C	0.009 + 0.251*Tr + 1.649*C	-0.003 + 0.236*Tr + 1.012*C
ND3ALLX4	C-Z	C_Z (rise)	0.004 + 0.296*Tr + 0.791*C	0.012 + 0.315*Tr + 1.630*C	0.003 + 0.307*Tr + 1.145*C
ND3ALLX6	A-Z	A_Z (fall)	0.058 + 0.232*Tr + 0.381*C	0.137 + 0.242*Tr + 1.014*C	0.087 + 0.236*Tr + 0.587*C
ND3ALLX6	A-Z	A_Z (rise)	0.058 + 0.198*Tr + 0.476*C	0.129 + 0.233*Tr + 0.982*C	0.084 + 0.212*Tr + 0.676*C
ND3ALLX6	B-Z	B_Z (fall)	0.004 + 0.198*Tr + 0.428*C	0.026 + 0.224*Tr + 1.088*C	0.006 + 0.213*Tr + 0.661*C
ND3ALLX6	B-Z	B_Z (rise)	0.009 + 0.299*Tr + 0.516*C	0.024 + 0.317*Tr + 1.051*C	0.011 + 0.308*Tr + 0.743*C
ND3ALLX6	C-Z	C_Z (fall)	-0.003 + 0.220*Tr + 0.440*C	0.008 + 0.248*Tr + 1.102*C	-0.005 + 0.234*Tr + 0.677*C
ND3ALLX6	C-Z	C_Z (rise)	0.003 + 0.290*Tr + 0.522*C	0.010 + 0.307*Tr + 1.066*C	0.001 + 0.300*Tr + 0.753*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND3ALLX8	A-Z	A_Z (fall)	0.056 + 0.229*Tr + 0.286*C	0.133 + 0.237*Tr + 0.761*C	0.085 + 0.232*Tr + 0.440*C
ND3ALLX8	A-Z	A_Z (rise)	0.056 + 0.197*Tr + 0.360*C	0.125 + 0.231*Tr + 0.743*C	0.082 + 0.210*Tr + 0.511*C
ND3ALLX8	B-Z	B_Z (fall)	0.005 + 0.197*Tr + 0.321*C	0.026 + 0.223*Tr + 0.817*C	0.007 + 0.212*Tr + 0.497*C
ND3ALLX8	B-Z	B_Z (rise)	0.010 + 0.299*Tr + 0.389*C	0.025 + 0.318*Tr + 0.796*C	0.012 + 0.309*Tr + 0.561*C
ND3ALLX8	C-Z	C_Z (fall)	-0.002 + 0.218*Tr + 0.330*C	0.009 + 0.248*Tr + 0.828*C	-0.003 + 0.232*Tr + 0.509*C
ND3ALLX8	C-Z	C_Z (rise)	0.003 + 0.290*Tr + 0.394*C	0.010 + 0.308*Tr + 0.807*C	0.002 + 0.300*Tr + 0.569*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
ND3ALL	3558.920	65766.500
ND3ALLP	5189.730	109015.000
ND3ALLX4	9360.200	205123.000
ND3ALLX6	13580.800	301175.000
ND3ALLX8	17883.700	398750.000

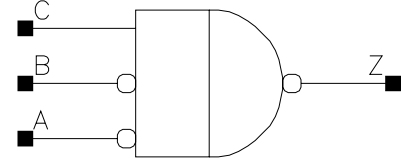
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
ND3ALL	Z(max)	0.014 + 0.005*Tr
ND3ALLP	Z(max)	0.024 + 0.010*Tr
ND3ALLX4	Z(max)	0.045 + 0.018*Tr
ND3ALLX6	Z(max)	0.066 + 0.028*Tr
ND3ALLX8	Z(max)	0.086 + 0.037*Tr

ND3ABLL
ND3ABLLP
ND3ABLLX4
ND3ABLLX6
ND3ABLLX8

Function: Function = 3 Input NAND, A and B Inputs Inverted



Truth Table

A	B	C	Z
0	0	1	0
-	-	0	1
1	-	-	1
-	1	-	1

Physical Dimensions

Property	ND3ABLL	ND3ABLLP	ND3ABLLX4	ND3ABLLX6	ND3ABLLX8
Area(um ²)	10.086	12.103	18.155	24.206	28.241

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND3ABLL	A Input Cap.	0.0018	0.0015	0.0016
ND3ABLL	Z Max Load	0.160	0.160	0.160
ND3ABLL	B Input Cap.	0.0017	0.0014	0.0015
ND3ABLL	C Input Cap.	0.0026	0.0023	0.0024
ND3ABLLP	C Input Cap.	0.0048	0.0044	0.0046
ND3ABLLP	A Input Cap.	0.0030	0.0026	0.0027
ND3ABLLP	Z Max Load	0.320	0.320	0.320
ND3ABLLP	B Input Cap.	0.0027	0.0023	0.0024
ND3ABLLX4	A Input Cap.	0.0056	0.0049	0.0051
ND3ABLLX4	Z Max Load	0.640	0.640	0.640
ND3ABLLX4	B Input Cap.	0.0052	0.0045	0.0047
ND3ABLLX4	C Input Cap.	0.0093	0.0086	0.0088

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND3ABLLX6	C Input Cap.	0.0143	0.0131	0.0135
ND3ABLLX6	A Input Cap.	0.0085	0.0075	0.0078
ND3ABLLX6	B Input Cap.	0.0078	0.0067	0.0070
ND3ABLLX6	Z Max Load	0.960	0.960	0.960
ND3ABLLX8	B Input Cap.	0.0101	0.0087	0.0091
ND3ABLLX8	C Input Cap.	0.0188	0.0173	0.0179
ND3ABLLX8	A Input Cap.	0.0110	0.0097	0.0101
ND3ABLLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND3ABLL	A-Z	A_Z (fall)	0.074 + 0.221*Tr + 1.695*C	0.180 + 0.223*Tr + 4.349*C	0.115 + 0.222*Tr + 2.564*C
ND3ABLL	A-Z	A_Z (rise)	0.065 + 0.212*Tr + 2.214*C	0.157 + 0.266*Tr + 4.690*C	0.098 + 0.232*Tr + 3.193*C
ND3ABLL	B-Z	B_Z (fall)	0.073 + 0.263*Tr + 1.692*C	0.168 + 0.265*Tr + 4.341*C	0.110 + 0.262*Tr + 2.560*C
ND3ABLL	B-Z	B_Z (rise)	0.060 + 0.191*Tr + 2.218*C	0.143 + 0.245*Tr + 4.688*C	0.089 + 0.213*Tr + 3.195*C
ND3ABLL	C-Z	C_Z (fall)	-0.004 + 0.230*Tr + 2.020*C	0.001 + 0.268*Tr + 4.847*C	-0.008 + 0.248*Tr + 3.074*C
ND3ABLL	C-Z	C_Z (rise)	0.001 + 0.297*Tr + 2.474*C	0.005 + 0.314*Tr + 5.147*C	-0.002 + 0.306*Tr + 3.629*C
ND3ABLLP	A-Z	A_Z (fall)	0.064 + 0.200*Tr + 0.852*C	0.155 + 0.204*Tr + 2.097*C	0.099 + 0.203*Tr + 1.263*C
ND3ABLLP	A-Z	A_Z (rise)	0.060 + 0.226*Tr + 1.079*C	0.141 + 0.272*Tr + 2.238*C	0.089 + 0.243*Tr + 1.537*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND3ABLLP	B-Z	B_Z (fall)	0.062 + 0.239*Tr + 0.851*C	0.142 + 0.240*Tr + 2.092*C	0.093 + 0.238*Tr + 1.260*C
ND3ABLLP	B-Z	B_Z (rise)	0.054 + 0.203*Tr + 1.081*C	0.124 + 0.249*Tr + 2.235*C	0.079 + 0.222*Tr + 1.538*C
ND3ABLLP	C-Z	C_Z (fall)	-0.008 + 0.230*Tr + 1.032*C	-0.008 + 0.264*Tr + 2.392*C	-0.015 + 0.246*Tr + 1.547*C
ND3ABLLP	C-Z	C_Z (rise)	-0.004 + 0.288*Tr + 1.233*C	-0.004 + 0.305*Tr + 2.520*C	-0.010 + 0.298*Tr + 1.794*C
ND3ABLLX4	A-Z	A_Z (fall)	0.063 + 0.190*Tr + 0.426*C	0.150 + 0.195*Tr + 1.049*C	0.096 + 0.193*Tr + 0.632*C
ND3ABLLX4	A-Z	A_Z (rise)	0.060 + 0.237*Tr + 0.540*C	0.137 + 0.279*Tr + 1.119*C	0.088 + 0.252*Tr + 0.769*C
ND3ABLLX4	B-Z	B_Z (fall)	0.061 + 0.227*Tr + 0.426*C	0.138 + 0.230*Tr + 1.047*C	0.091 + 0.227*Tr + 0.630*C
ND3ABLLX4	B-Z	B_Z (rise)	0.054 + 0.214*Tr + 0.541*C	0.121 + 0.256*Tr + 1.118*C	0.078 + 0.231*Tr + 0.769*C
ND3ABLLX4	C-Z	C_Z (fall)	-0.004 + 0.219*Tr + 0.517*C	-0.001 + 0.254*Tr + 1.198*C	-0.008 + 0.235*Tr + 0.775*C
ND3ABLLX4	C-Z	C_Z (rise)	-0.001 + 0.279*Tr + 0.618*C	0.002 + 0.296*Tr + 1.263*C	-0.004 + 0.288*Tr + 0.899*C
ND3ABLLX6	A-Z	A_Z (fall)	0.060 + 0.188*Tr + 0.284*C	0.145 + 0.195*Tr + 0.699*C	0.093 + 0.192*Tr + 0.421*C
ND3ABLLX6	A-Z	A_Z (rise)	0.059 + 0.235*Tr + 0.360*C	0.132 + 0.274*Tr + 0.746*C	0.085 + 0.249*Tr + 0.512*C
ND3ABLLX6	B-Z	B_Z (fall)	0.059 + 0.225*Tr + 0.284*C	0.134 + 0.229*Tr + 0.698*C	0.088 + 0.225*Tr + 0.421*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND3ABLLX6	B-Z	B_Z (rise)	0.052 + 0.212*Tr + 0.361*C	0.116 + 0.251*Tr + 0.746*C	0.076 + 0.227*Tr + 0.513*C
ND3ABLLX6	C-Z	C_Z (fall)	-0.006 + 0.217*Tr + 0.347*C	-0.004 + 0.250*Tr + 0.804*C	-0.012 + 0.233*Tr + 0.521*C
ND3ABLLX6	C-Z	C_Z (rise)	-0.002 + 0.277*Tr + 0.415*C	-0.001 + 0.292*Tr + 0.847*C	-0.007 + 0.285*Tr + 0.604*C
ND3ABLLX8	A-Z	A_Z (fall)	0.061 + 0.188*Tr + 0.214*C	0.146 + 0.194*Tr + 0.525*C	0.093 + 0.191*Tr + 0.316*C
ND3ABLLX8	A-Z	A_Z (rise)	0.059 + 0.235*Tr + 0.268*C	0.133 + 0.277*Tr + 0.552*C	0.086 + 0.250*Tr + 0.380*C
ND3ABLLX8	B-Z	B_Z (fall)	0.059 + 0.225*Tr + 0.213*C	0.134 + 0.228*Tr + 0.524*C	0.088 + 0.225*Tr + 0.316*C
ND3ABLLX8	B-Z	B_Z (rise)	0.052 + 0.212*Tr + 0.268*C	0.117 + 0.253*Tr + 0.551*C	0.076 + 0.228*Tr + 0.380*C
ND3ABLLX8	C-Z	C_Z (fall)	-0.005 + 0.216*Tr + 0.260*C	-0.002 + 0.250*Tr + 0.603*C	-0.009 + 0.232*Tr + 0.390*C
ND3ABLLX8	C-Z	C_Z (rise)	-0.002 + 0.273*Tr + 0.309*C	0.000 + 0.288*Tr + 0.629*C	-0.006 + 0.282*Tr + 0.448*C

Average Leakage Power

picoWatts

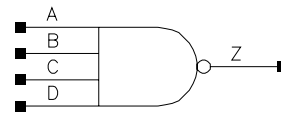
Cell	bc_1.32V_25C	bc_1.32V_125C
ND3ABLL	4421.430	78699.000
ND3ABLLP	6218.850	126579.000
ND3ABLLX4	10984.900	235662.000
ND3ABLLX6	15800.800	343768.000
ND3ABLLX8	22154.000	476605.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
ND3ABLL	Z(max)	$0.014 + 0.007 * Tr$
ND3ABLLP	Z(max)	$0.025 + 0.013 * Tr$
ND3ABLLX4	Z(max)	$0.047 + 0.025 * Tr$
ND3ABLLX6	Z(max)	$0.069 + 0.037 * Tr$
ND3ABLLX8	Z(max)	$0.092 + 0.052 * Tr$

ND4LL
ND4LLP
ND4LLX4
ND4LLX6
ND4LLX8



Function: Function = 4 Input NAND

Boolean Expression: $Z = \overline{(A \bullet B \bullet C \bullet D)}$

Physical Dimensions

Property	ND4LL	ND4LLP	ND4LLX4	ND4LLX6	ND4LLX8
Area(um ²)	10.086	12.103	18.155	26.224	34.292

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4LL	B Input Cap.	0.0024	0.0022	0.0023
ND4LL	Z Max Load	0.160	0.160	0.160
ND4LL	C Input Cap.	0.0024	0.0022	0.0022
ND4LL	A Input Cap.	0.0026	0.0023	0.0024
ND4LL	D Input Cap.	0.0023	0.0021	0.0022
ND4LLP	D Input Cap.	0.0037	0.0035	0.0036
ND4LLP	B Input Cap.	0.0042	0.0038	0.0040
ND4LLP	Z Max Load	0.320	0.320	0.320
ND4LLP	C Input Cap.	0.0041	0.0038	0.0039
ND4LLP	A Input Cap.	0.0042	0.0039	0.0040
ND4LLX4	A Input Cap.	0.0082	0.0076	0.0078
ND4LLX4	D Input Cap.	0.0071	0.0066	0.0068
ND4LLX4	B Input Cap.	0.0084	0.0078	0.0080
ND4LLX4	Z Max Load	0.640	0.640	0.640
ND4LLX4	C Input Cap.	0.0081	0.0076	0.0078
ND4LLX6	C Input Cap.	0.0119	0.0111	0.0114
ND4LLX6	A Input Cap.	0.0126	0.0116	0.0120
ND4LLX6	Z Max Load	0.960	0.960	0.960
ND4LLX6	D Input Cap.	0.0110	0.0102	0.0105
ND4LLX6	B Input Cap.	0.0123	0.0114	0.0118

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4LLX8	B Input Cap.	0.0166	0.0154	0.0159
ND4LLX8	Z Max Load	1.280	1.280	1.280
ND4LLX8	C Input Cap.	0.0161	0.0149	0.0154
ND4LLX8	A Input Cap.	0.0168	0.0154	0.0160
ND4LLX8	D Input Cap.	0.0146	0.0135	0.0140

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4LL	A-Z	A_Z (fall)	0.026 + 0.155*Tr + 2.986°C	0.083 + 0.182*Tr + 8.518°C	0.042 + 0.174*Tr + 4.821°C
ND4LL	A-Z	A_Z (rise)	0.034 + 0.343*Tr + 3.875°C	0.080 + 0.364*Tr + 8.339°C	0.050 + 0.355*Tr + 5.697°C
ND4LL	B-Z	B_Z (fall)	0.020 + 0.185*Tr + 3.031°C	0.073 + 0.208*Tr + 8.562°C	0.033 + 0.201*Tr + 4.882°C
ND4LL	B-Z	B_Z (rise)	0.029 + 0.337*Tr + 3.896°C	0.070 + 0.359*Tr + 8.356°C	0.042 + 0.349*Tr + 5.724°C
ND4LL	C-Z	C_Z (fall)	0.013 + 0.217*Tr + 3.082°C	0.054 + 0.240*Tr + 8.610°C	0.023 + 0.231*Tr + 4.948°C
ND4LL	C-Z	C_Z (rise)	0.023 + 0.332*Tr + 3.913°C	0.056 + 0.353*Tr + 8.396°C	0.032 + 0.344*Tr + 5.754°C
ND4LL	D-Z	D_Z (fall)	0.005 + 0.236*Tr + 3.126°C	0.030 + 0.263*Tr + 8.648°C	0.009 + 0.249*Tr + 5.008°C
ND4LL	D-Z	D_Z (rise)	0.015 + 0.326*Tr + 3.945°C	0.038 + 0.347*Tr + 8.443°C	0.021 + 0.338*Tr + 5.789°C
ND4LLP	A-Z	A_Z (fall)	0.021 + 0.153*Tr + 1.507°C	0.069 + 0.178*Tr + 4.129°C	0.033 + 0.170*Tr + 2.390°C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4LLP	A-Z	A_Z (rise)	0.027 + 0.334*Tr + 1.901*C	0.063 + 0.355*Tr + 3.953*C	0.038 + 0.346*Tr + 2.746*C
ND4LLP	B-Z	B_Z (fall)	0.013 + 0.182*Tr + 1.536*C	0.056 + 0.203*Tr + 4.157*C	0.023 + 0.197*Tr + 2.427*C
ND4LLP	B-Z	B_Z (rise)	0.021 + 0.327*Tr + 1.913*C	0.052 + 0.349*Tr + 3.964*C	0.029 + 0.340*Tr + 2.761*C
ND4LLP	C-Z	C_Z (fall)	0.006 + 0.213*Tr + 1.564*C	0.036 + 0.232*Tr + 4.193*C	0.011 + 0.225*Tr + 2.468*C
ND4LLP	C-Z	C_Z (rise)	0.014 + 0.321*Tr + 1.925*C	0.037 + 0.342*Tr + 3.990*C	0.019 + 0.333*Tr + 2.784*C
ND4LLP	D-Z	D_Z (fall)	-0.002 + 0.232*Tr + 1.589*C	0.013 + 0.254*Tr + 4.219*C	-0.003 + 0.243*Tr + 2.502*C
ND4LLP	D-Z	D_Z (rise)	0.007 + 0.314*Tr + 1.946*C	0.019 + 0.333*Tr + 4.030*C	0.007 + 0.326*Tr + 2.810*C
ND4LLX4	A-Z	A_Z (fall)	0.022 + 0.150*Tr + 0.755*C	0.072 + 0.176*Tr + 2.064*C	0.036 + 0.167*Tr + 1.195*C
ND4LLX4	A-Z	A_Z (rise)	0.027 + 0.326*Tr + 0.928*C	0.061 + 0.348*Tr + 1.901*C	0.038 + 0.338*Tr + 1.330*C
ND4LLX4	B-Z	B_Z (fall)	0.016 + 0.178*Tr + 0.768*C	0.060 + 0.200*Tr + 2.082*C	0.027 + 0.192*Tr + 1.214*C
ND4LLX4	B-Z	B_Z (rise)	0.022 + 0.319*Tr + 0.935*C	0.052 + 0.341*Tr + 1.906*C	0.031 + 0.331*Tr + 1.337*C
ND4LLX4	C-Z	C_Z (fall)	0.008 + 0.207*Tr + 0.783*C	0.038 + 0.229*Tr + 2.097*C	0.014 + 0.220*Tr + 1.234*C
ND4LLX4	C-Z	C_Z (rise)	0.015 + 0.312*Tr + 0.942*C	0.036 + 0.333*Tr + 1.920*C	0.020 + 0.323*Tr + 1.349*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4LLX4	D-Z	D_Z (fall)	0.001 + 0.224*Tr + 0.795*C	0.015 + 0.251*Tr + 2.110*C	0.001 + 0.237*Tr + 1.250*C
ND4LLX4	D-Z	D_Z (rise)	0.007 + 0.304*Tr + 0.952*C	0.020 + 0.323*Tr + 1.940*C	0.008 + 0.315*Tr + 1.363*C
ND4LLX6	A-Z	A_Z (fall)	0.022 + 0.147*Tr + 0.504*C	0.070 + 0.172*Tr + 1.379*C	0.035 + 0.164*Tr + 0.800*C
ND4LLX6	A-Z	A_Z (rise)	0.027 + 0.324*Tr + 0.627*C	0.062 + 0.345*Tr + 1.289*C	0.038 + 0.336*Tr + 0.900*C
ND4LLX6	B-Z	B_Z (fall)	0.015 + 0.174*Tr + 0.514*C	0.058 + 0.196*Tr + 1.390*C	0.025 + 0.188*Tr + 0.813*C
ND4LLX6	B-Z	B_Z (rise)	0.022 + 0.317*Tr + 0.631*C	0.052 + 0.338*Tr + 1.293*C	0.030 + 0.329*Tr + 0.905*C
ND4LLX6	C-Z	C_Z (fall)	0.007 + 0.203*Tr + 0.524*C	0.037 + 0.224*Tr + 1.402*C	0.013 + 0.216*Tr + 0.827*C
ND4LLX6	C-Z	C_Z (rise)	0.015 + 0.310*Tr + 0.635*C	0.037 + 0.330*Tr + 1.303*C	0.020 + 0.321*Tr + 0.914*C
ND4LLX6	D-Z	D_Z (fall)	-0.001 + 0.220*Tr + 0.533*C	0.015 + 0.244*Tr + 1.411*C	-0.001 + 0.232*Tr + 0.838*C
ND4LLX6	D-Z	D_Z (rise)	0.007 + 0.301*Tr + 0.642*C	0.019 + 0.320*Tr + 1.317*C	0.008 + 0.312*Tr + 0.924*C
ND4LLX8	A-Z	A_Z (fall)	0.022 + 0.146*Tr + 0.379*C	0.071 + 0.172*Tr + 1.035*C	0.035 + 0.163*Tr + 0.600*C
ND4LLX8	A-Z	A_Z (rise)	0.028 + 0.326*Tr + 0.475*C	0.063 + 0.348*Tr + 0.980*C	0.039 + 0.338*Tr + 0.684*C
ND4LLX8	B-Z	B_Z (fall)	0.015 + 0.173*Tr + 0.386*C	0.058 + 0.195*Tr + 1.044*C	0.026 + 0.188*Tr + 0.610*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4LLX8	B-Z	B_Z (rise)	0.022 + 0.319*Tr + 0.478*C	0.053 + 0.340*Tr + 0.983*C	0.031 + 0.331*Tr + 0.687*C
ND4LLX8	C-Z	C_Z (fall)	0.008 + 0.202*Tr + 0.394*C	0.037 + 0.223*Tr + 1.053*C	0.013 + 0.214*Tr + 0.621*C
ND4LLX8	C-Z	C_Z (rise)	0.015 + 0.311*Tr + 0.481*C	0.037 + 0.332*Tr + 0.990*C	0.020 + 0.322*Tr + 0.693*C
ND4LLX8	D-Z	D_Z (fall)	0.000 + 0.219*Tr + 0.400*C	0.014 + 0.244*Tr + 1.060*C	0.000 + 0.231*Tr + 0.630*C
ND4LLX8	D-Z	D_Z (rise)	0.007 + 0.302*Tr + 0.487*C	0.019 + 0.322*Tr + 1.002*C	0.008 + 0.314*Tr + 0.701*C

Average Leakage Power

picoWatts

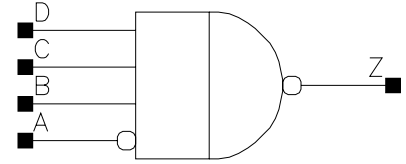
Cell	bc_1.32V_25C	bc_1.32V_125C
ND4LL	2036.720	45603.000
ND4LLP	3630.900	84523.500
ND4LLX4	7177.610	167181.000
ND4LLX6	10816.500	251849.000
ND4LLX8	14411.600	335356.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
ND4LL	Z(max)	0.010 + 0.007*Tr
ND4LLP	Z(max)	0.016 + 0.015*Tr
ND4LLX4	Z(max)	0.031 + 0.030*Tr
ND4LLX6	Z(max)	0.046 + 0.046*Tr
ND4LLX8	Z(max)	0.062 + 0.062*Tr

ND4ALL
ND4ALLP
ND4ALLX4
ND4ALLX6
ND4ALLX8



Function: Function = 4 Input NAND,A Input Inverted

Truth Table

A	B	C	D	Z
0	1	1	1	0
1	-	-	-	1
-	0	-	-	1
-	-	0	-	1
-	-	-	0	1

Physical Dimensions

Property	ND4ALL	ND4ALLP	ND4ALLX4	ND4ALLX6	ND4ALLX8
Area(um ²)	14.120	14.120	22.189	28.241	36.310

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ALL	C Input Cap.	0.0023	0.0021	0.0022
ND4ALL	A Input Cap.	0.0015	0.0011	0.0012
ND4ALL	D Input Cap.	0.0021	0.0019	0.0020
ND4ALL	Z Max Load	0.160	0.160	0.160
ND4ALL	B Input Cap.	0.0024	0.0021	0.0022
ND4ALLP	Z Max Load	0.320	0.320	0.320
ND4ALLP	B Input Cap.	0.0042	0.0039	0.0040
ND4ALLP	C Input Cap.	0.0040	0.0037	0.0039
ND4ALLP	A Input Cap.	0.0021	0.0017	0.0018
ND4ALLP	D Input Cap.	0.0037	0.0034	0.0036
ND4ALLX4	A Input Cap.	0.0034	0.0029	0.0031

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ALLX4	D Input Cap.	0.0072	0.0066	0.0068
ND4ALLX4	Z Max Load	0.640	0.640	0.640
ND4ALLX4	B Input Cap.	0.0084	0.0078	0.0080
ND4ALLX4	C Input Cap.	0.0081	0.0076	0.0078
ND4ALLX6	C Input Cap.	0.0120	0.0111	0.0115
ND4ALLX6	Z Max Load	0.960	0.960	0.960
ND4ALLX6	A Input Cap.	0.0053	0.0045	0.0047
ND4ALLX6	D Input Cap.	0.0111	0.0102	0.0106
ND4ALLX6	B Input Cap.	0.0123	0.0114	0.0118
ND4ALLX8	Z Max Load	1.280	1.280	1.280
ND4ALLX8	B Input Cap.	0.0175	0.0162	0.0168
ND4ALLX8	C Input Cap.	0.0164	0.0152	0.0157
ND4ALLX8	A Input Cap.	0.0067	0.0058	0.0060
ND4ALLX8	D Input Cap.	0.0147	0.0136	0.0141

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ALL	A-Z	A_Z (fall)	0.071 + 0.265*Tr + 2.873*C	0.181 + 0.273*Tr + 8.359*C	0.111 + 0.268*Tr + 4.637*C
ND4ALL	A-Z	A_Z (rise)	0.073 + 0.167*Tr + 3.798*C	0.174 + 0.215*Tr + 8.253*C	0.110 + 0.186*Tr + 5.561*C
ND4ALL	B-Z	B_Z (fall)	0.017 + 0.184*Tr + 3.039*C	0.063 + 0.208*Tr + 8.571*C	0.028 + 0.200*Tr + 4.890*C
ND4ALL	B-Z	B_Z (rise)	0.026 + 0.336*Tr + 3.900*C	0.062 + 0.358*Tr + 8.369*C	0.037 + 0.348*Tr + 5.736*C
ND4ALL	C-Z	C_Z (fall)	0.011 + 0.215*Tr + 3.090*C	0.045 + 0.237*Tr + 8.632*C	0.018 + 0.229*Tr + 4.966*C
ND4ALL	C-Z	C_Z (rise)	0.019 + 0.331*Tr + 3.920*C	0.048 + 0.351*Tr + 8.412*C	0.028 + 0.342*Tr + 5.766*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ALL	D-Z	D_Z (fall)	0.003 + 0.233*Tr + 3.139*C	0.023 + 0.260*Tr + 8.671*C	0.005 + 0.247*Tr + 5.025*C
ND4ALL	D-Z	D_Z (rise)	0.012 + 0.324*Tr + 3.949*C	0.031 + 0.344*Tr + 8.467*C	0.016 + 0.336*Tr + 5.805*C
ND4ALLP	A-Z	A_Z (fall)	0.066 + 0.248*Tr + 1.438*C	0.166 + 0.256*Tr + 4.021*C	0.103 + 0.251*Tr + 2.277*C
ND4ALLP	A-Z	A_Z (rise)	0.069 + 0.181*Tr + 1.843*C	0.159 + 0.223*Tr + 3.869*C	0.103 + 0.198*Tr + 2.644*C
ND4ALLP	B-Z	B_Z (fall)	0.013 + 0.182*Tr + 1.536*C	0.055 + 0.203*Tr + 4.160*C	0.023 + 0.197*Tr + 2.426*C
ND4ALLP	B-Z	B_Z (rise)	0.021 + 0.327*Tr + 1.913*C	0.052 + 0.349*Tr + 3.964*C	0.029 + 0.340*Tr + 2.761*C
ND4ALLP	C-Z	C_Z (fall)	0.006 + 0.213*Tr + 1.564*C	0.036 + 0.232*Tr + 4.193*C	0.011 + 0.225*Tr + 2.468*C
ND4ALLP	C-Z	C_Z (rise)	0.014 + 0.321*Tr + 1.925*C	0.037 + 0.342*Tr + 3.990*C	0.019 + 0.333*Tr + 2.784*C
ND4ALLP	D-Z	D_Z (fall)	-0.002 + 0.232*Tr + 1.588*C	0.013 + 0.254*Tr + 4.218*C	-0.003 + 0.243*Tr + 2.502*C
ND4ALLP	D-Z	D_Z (rise)	0.006 + 0.314*Tr + 1.946*C	0.019 + 0.333*Tr + 4.029*C	0.007 + 0.326*Tr + 2.811*C
ND4ALLX4	A-Z	A_Z (fall)	0.063 + 0.234*Tr + 0.720*C	0.157 + 0.243*Tr + 2.009*C	0.097 + 0.237*Tr + 1.137*C
ND4ALLX4	A-Z	A_Z (rise)	0.066 + 0.192*Tr + 0.898*C	0.149 + 0.229*Tr + 1.850*C	0.098 + 0.207*Tr + 1.273*C
ND4ALLX4	B-Z	B_Z (fall)	0.016 + 0.178*Tr + 0.768*C	0.059 + 0.200*Tr + 2.082*C	0.027 + 0.193*Tr + 1.214*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ALLX4	B-Z	B_Z (rise)	0.022 + 0.319*Tr + 0.935*C	0.052 + 0.341*Tr + 1.906*C	0.031 + 0.331*Tr + 1.338*C
ND4ALLX4	C-Z	C_Z (fall)	0.008 + 0.207*Tr + 0.783*C	0.038 + 0.229*Tr + 2.097*C	0.014 + 0.220*Tr + 1.234*C
ND4ALLX4	C-Z	C_Z (rise)	0.015 + 0.312*Tr + 0.941*C	0.036 + 0.333*Tr + 1.920*C	0.020 + 0.323*Tr + 1.349*C
ND4ALLX4	D-Z	D_Z (fall)	0.001 + 0.224*Tr + 0.795*C	0.016 + 0.251*Tr + 2.109*C	0.001 + 0.237*Tr + 1.250*C
ND4ALLX4	D-Z	D_Z (rise)	0.008 + 0.304*Tr + 0.952*C	0.020 + 0.324*Tr + 1.940*C	0.008 + 0.315*Tr + 1.363*C
ND4ALLX6	A-Z	A_Z (fall)	0.062 + 0.229*Tr + 0.480*C	0.156 + 0.238*Tr + 1.339*C	0.096 + 0.232*Tr + 0.758*C
ND4ALLX6	A-Z	A_Z (rise)	0.067 + 0.197*Tr + 0.605*C	0.150 + 0.232*Tr + 1.255*C	0.098 + 0.211*Tr + 0.862*C
ND4ALLX6	B-Z	B_Z (fall)	0.014 + 0.174*Tr + 0.514*C	0.057 + 0.196*Tr + 1.390*C	0.025 + 0.189*Tr + 0.813*C
ND4ALLX6	B-Z	B_Z (rise)	0.022 + 0.317*Tr + 0.630*C	0.051 + 0.338*Tr + 1.293*C	0.030 + 0.329*Tr + 0.906*C
ND4ALLX6	C-Z	C_Z (fall)	0.007 + 0.203*Tr + 0.524*C	0.037 + 0.224*Tr + 1.402*C	0.013 + 0.216*Tr + 0.827*C
ND4ALLX6	C-Z	C_Z (rise)	0.015 + 0.310*Tr + 0.636*C	0.037 + 0.330*Tr + 1.303*C	0.020 + 0.321*Tr + 0.914*C
ND4ALLX6	D-Z	D_Z (fall)	0.000 + 0.220*Tr + 0.533*C	0.015 + 0.244*Tr + 1.411*C	0.000 + 0.232*Tr + 0.838*C
ND4ALLX6	D-Z	D_Z (rise)	0.007 + 0.301*Tr + 0.642*C	0.020 + 0.320*Tr + 1.317*C	0.008 + 0.312*Tr + 0.924*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ALLX8	A-Z	A_Z (fall)	0.063 + 0.228*Tr + 0.360*C	0.157 + 0.238*Tr + 1.005*C	0.097 + 0.232*Tr + 0.569*C
ND4ALLX8	A-Z	A_Z (rise)	0.068 + 0.199*Tr + 0.459*C	0.152 + 0.233*Tr + 0.954*C	0.100 + 0.212*Tr + 0.654*C
ND4ALLX8	B-Z	B_Z (fall)	0.015 + 0.173*Tr + 0.386*C	0.058 + 0.195*Tr + 1.045*C	0.026 + 0.188*Tr + 0.610*C
ND4ALLX8	B-Z	B_Z (rise)	0.022 + 0.319*Tr + 0.478*C	0.053 + 0.340*Tr + 0.983*C	0.031 + 0.330*Tr + 0.688*C
ND4ALLX8	C-Z	C_Z (fall)	0.008 + 0.202*Tr + 0.394*C	0.037 + 0.224*Tr + 1.053*C	0.013 + 0.215*Tr + 0.621*C
ND4ALLX8	C-Z	C_Z (rise)	0.015 + 0.311*Tr + 0.481*C	0.037 + 0.332*Tr + 0.990*C	0.020 + 0.323*Tr + 0.693*C
ND4ALLX8	D-Z	D_Z (fall)	0.000 + 0.219*Tr + 0.400*C	0.015 + 0.244*Tr + 1.061*C	0.001 + 0.231*Tr + 0.629*C
ND4ALLX8	D-Z	D_Z (rise)	0.007 + 0.302*Tr + 0.487*C	0.020 + 0.322*Tr + 1.001*C	0.008 + 0.314*Tr + 0.701*C

Average Leakage Power

picoWatts

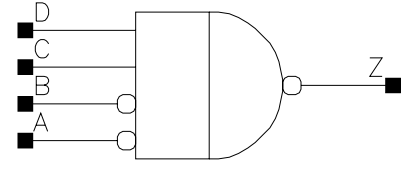
Cell	bc_1.32V_25C	bc_1.32V_125C
ND4ALL	3619.360	68002.900
ND4ALLP	5308.990	111899.000
ND4ALLX4	9469.050	208519.000
ND4ALLX6	13836.100	308385.000
ND4ALLX8	18180.600	407366.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
ND4ALL	Z(max)	$0.015 + 0.005 \cdot Tr$
ND4ALLP	Z(max)	$0.026 + 0.009 \cdot Tr$
ND4ALLX4	Z(max)	$0.049 + 0.017 \cdot Tr$
ND4ALLX6	Z(max)	$0.074 + 0.025 \cdot Tr$
ND4ALLX8	Z(max)	$0.099 + 0.034 \cdot Tr$

ND4ABLL
ND4ABLLP
ND4ABLLX4
ND4ABLLX6
ND4ABLLX8



Function: Function = 4 Input NAND,A and B Inputs Inverted

Truth Table

A	B	C	D	Z
0	0	1	1	0
1	-	-	-	1
-	-	-	0	1
-	-	0	-	1
-	1	-	-	1

Physical Dimensions

Property	ND4ABLL	ND4ABLLP	ND4ABLLX4	ND4ABLLX6	ND4ABLLX8
Area(um ²)	14.120	14.120	20.172	26.224	36.310

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ABLL	C Input Cap.	0.0025	0.0023	0.0024
ND4ABLL	Z Max Load	0.160	0.160	0.160
ND4ABLL	A Input Cap.	0.0018	0.0015	0.0016
ND4ABLL	D Input Cap.	0.0023	0.0021	0.0022
ND4ABLL	B Input Cap.	0.0016	0.0013	0.0014
ND4ABLLP	B Input Cap.	0.0028	0.0023	0.0025
ND4ABLLP	C Input Cap.	0.0045	0.0041	0.0043
ND4ABLLP	Z Max Load	0.320	0.320	0.320
ND4ABLLP	A Input Cap.	0.0031	0.0027	0.0028
ND4ABLLP	D Input Cap.	0.0041	0.0038	0.0039
ND4ABLLX4	C Input Cap.	0.0091	0.0084	0.0087

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ABLLX4	Z Max Load	0.640	0.640	0.640
ND4ABLLX4	A Input Cap.	0.0057	0.0050	0.0052
ND4ABLLX4	D Input Cap.	0.0079	0.0073	0.0075
ND4ABLLX4	B Input Cap.	0.0054	0.0047	0.0049
ND4ABLLX6	Z Max Load	0.960	0.960	0.960
ND4ABLLX6	B Input Cap.	0.0079	0.0068	0.0071
ND4ABLLX6	C Input Cap.	0.0133	0.0123	0.0127
ND4ABLLX6	A Input Cap.	0.0084	0.0074	0.0077
ND4ABLLX6	D Input Cap.	0.0124	0.0114	0.0118
ND4ABLLX8	A Input Cap.	0.0112	0.0098	0.0102
ND4ABLLX8	D Input Cap.	0.0163	0.0150	0.0155
ND4ABLLX8	B Input Cap.	0.0103	0.0088	0.0092
ND4ABLLX8	C Input Cap.	0.0180	0.0166	0.0171
ND4ABLLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ABLL	A-Z	A_Z (fall)	0.072 + 0.213*Tr + 2.280*C	0.181 + 0.212*Tr + 6.325*C	0.113 + 0.213*Tr + 3.590*C
ND4ABLL	A-Z	A_Z (rise)	0.069 + 0.206*Tr + 2.998*C	0.168 + 0.258*Tr + 6.422*C	0.105 + 0.225*Tr + 4.350*C
ND4ABLL	B-Z	B_Z (fall)	0.070 + 0.254*Tr + 2.279*C	0.167 + 0.251*Tr + 6.324*C	0.106 + 0.251*Tr + 3.589*C
ND4ABLL	B-Z	B_Z (rise)	0.064 + 0.183*Tr + 3.003*C	0.151 + 0.235*Tr + 6.423*C	0.095 + 0.204*Tr + 4.360*C
ND4ABLL	C-Z	C_Z (fall)	0.007 + 0.209*Tr + 2.513*C	0.032 + 0.238*Tr + 6.651*C	0.010 + 0.226*Tr + 3.951*C
ND4ABLL	C-Z	C_Z (rise)	0.013 + 0.320*Tr + 3.174*C	0.033 + 0.340*Tr + 6.699*C	0.017 + 0.331*Tr + 4.649*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ABLL	D-Z	D_Z (fall)	0.000 + 0.233*Tr + 2.579*C	0.016 + 0.264*Tr + 6.728*C	0.000 + 0.248*Tr + 4.041*C
ND4ABLL	D-Z	D_Z (rise)	0.008 + 0.312*Tr + 3.207*C	0.021 + 0.332*Tr + 6.769*C	0.009 + 0.324*Tr + 4.696*C
ND4ABLLP	A-Z	A_Z (fall)	0.065 + 0.195*Tr + 1.143*C	0.164 + 0.197*Tr + 3.045*C	0.102 + 0.197*Tr + 1.765*C
ND4ABLLP	A-Z	A_Z (rise)	0.066 + 0.221*Tr + 1.457*C	0.154 + 0.266*Tr + 3.038*C	0.098 + 0.237*Tr + 2.082*C
ND4ABLLP	B-Z	B_Z (fall)	0.063 + 0.232*Tr + 1.143*C	0.152 + 0.232*Tr + 3.044*C	0.097 + 0.231*Tr + 1.763*C
ND4ABLLP	B-Z	B_Z (rise)	0.060 + 0.197*Tr + 1.459*C	0.138 + 0.242*Tr + 3.039*C	0.088 + 0.215*Tr + 2.086*C
ND4ABLLP	C-Z	C_Z (fall)	0.002 + 0.208*Tr + 1.275*C	0.023 + 0.233*Tr + 3.247*C	0.004 + 0.223*Tr + 1.971*C
ND4ABLLP	C-Z	C_Z (rise)	0.008 + 0.312*Tr + 1.566*C	0.023 + 0.331*Tr + 3.222*C	0.009 + 0.323*Tr + 2.266*C
ND4ABLLP	D-Z	D_Z (fall)	-0.005 + 0.232*Tr + 1.311*C	0.006 + 0.259*Tr + 3.290*C	-0.008 + 0.245*Tr + 2.020*C
ND4ABLLP	D-Z	D_Z (rise)	0.002 + 0.304*Tr + 1.586*C	0.009 + 0.322*Tr + 3.264*C	0.000 + 0.315*Tr + 2.296*C
ND4ABLLX4	A-Z	A_Z (fall)	0.064 + 0.184*Tr + 0.572*C	0.161 + 0.189*Tr + 1.524*C	0.100 + 0.187*Tr + 0.883*C
ND4ABLLX4	A-Z	A_Z (rise)	0.067 + 0.235*Tr + 0.729*C	0.154 + 0.277*Tr + 1.520*C	0.099 + 0.250*Tr + 1.042*C
ND4ABLLX4	B-Z	B_Z (fall)	0.063 + 0.220*Tr + 0.572*C	0.150 + 0.222*Tr + 1.524*C	0.096 + 0.220*Tr + 0.882*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ABLLX4	B-Z	B_Z (rise)	0.061 + 0.212*Tr + 0.731*C	0.138 + 0.253*Tr + 1.520*C	0.089 + 0.228*Tr + 1.043*C
ND4ABLLX4	C-Z	C_Z (fall)	0.005 + 0.200*Tr + 0.639*C	0.026 + 0.226*Tr + 1.628*C	0.008 + 0.215*Tr + 0.988*C
ND4ABLLX4	C-Z	C_Z (rise)	0.010 + 0.305*Tr + 0.785*C	0.027 + 0.324*Tr + 1.615*C	0.013 + 0.315*Tr + 1.135*C
ND4ABLLX4	D-Z	D_Z (fall)	-0.001 + 0.221*Tr + 0.657*C	0.009 + 0.251*Tr + 1.649*C	-0.003 + 0.235*Tr + 1.012*C
ND4ABLLX4	D-Z	D_Z (rise)	0.004 + 0.296*Tr + 0.794*C	0.012 + 0.315*Tr + 1.637*C	0.003 + 0.307*Tr + 1.150*C
ND4ABLLX6	A-Z	A_Z (fall)	0.061 + 0.182*Tr + 0.381*C	0.155 + 0.188*Tr + 1.016*C	0.096 + 0.186*Tr + 0.588*C
ND4ABLLX6	A-Z	A_Z (rise)	0.064 + 0.232*Tr + 0.475*C	0.145 + 0.271*Tr + 0.980*C	0.094 + 0.245*Tr + 0.674*C
ND4ABLLX6	B-Z	B_Z (fall)	0.060 + 0.217*Tr + 0.381*C	0.144 + 0.220*Tr + 1.016*C	0.092 + 0.217*Tr + 0.588*C
ND4ABLLX6	B-Z	B_Z (rise)	0.058 + 0.208*Tr + 0.475*C	0.129 + 0.246*Tr + 0.979*C	0.084 + 0.223*Tr + 0.675*C
ND4ABLLX6	C-Z	C_Z (fall)	0.004 + 0.198*Tr + 0.428*C	0.024 + 0.224*Tr + 1.088*C	0.006 + 0.213*Tr + 0.661*C
ND4ABLLX6	C-Z	C_Z (rise)	0.008 + 0.298*Tr + 0.515*C	0.023 + 0.316*Tr + 1.049*C	0.010 + 0.308*Tr + 0.742*C
ND4ABLLX6	D-Z	D_Z (fall)	-0.003 + 0.220*Tr + 0.440*C	0.007 + 0.248*Tr + 1.103*C	-0.006 + 0.233*Tr + 0.678*C
ND4ABLLX6	D-Z	D_Z (rise)	0.002 + 0.289*Tr + 0.522*C	0.009 + 0.306*Tr + 1.065*C	0.000 + 0.299*Tr + 0.752*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ABLLX8	A-Z	A_Z (fall)	0.062 + 0.182*Tr + 0.286*C	0.157 + 0.186*Tr + 0.763*C	0.097 + 0.185*Tr + 0.442*C
ND4ABLLX8	A-Z	A_Z (rise)	0.065 + 0.232*Tr + 0.359*C	0.149 + 0.274*Tr + 0.743*C	0.096 + 0.247*Tr + 0.511*C
ND4ABLLX8	B-Z	B_Z (fall)	0.061 + 0.218*Tr + 0.286*C	0.145 + 0.219*Tr + 0.763*C	0.093 + 0.217*Tr + 0.441*C
ND4ABLLX8	B-Z	B_Z (rise)	0.059 + 0.209*Tr + 0.360*C	0.132 + 0.249*Tr + 0.744*C	0.086 + 0.225*Tr + 0.512*C
ND4ABLLX8	C-Z	C_Z (fall)	0.005 + 0.197*Tr + 0.321*C	0.026 + 0.223*Tr + 0.817*C	0.007 + 0.212*Tr + 0.497*C
ND4ABLLX8	C-Z	C_Z (rise)	0.009 + 0.299*Tr + 0.389*C	0.025 + 0.318*Tr + 0.795*C	0.012 + 0.309*Tr + 0.561*C
ND4ABLLX8	D-Z	D_Z (fall)	-0.002 + 0.218*Tr + 0.330*C	0.009 + 0.247*Tr + 0.828*C	-0.004 + 0.232*Tr + 0.509*C
ND4ABLLX8	D-Z	D_Z (rise)	0.003 + 0.290*Tr + 0.394*C	0.010 + 0.308*Tr + 0.807*C	0.002 + 0.300*Tr + 0.569*C

Average Leakage Power

picoWatts

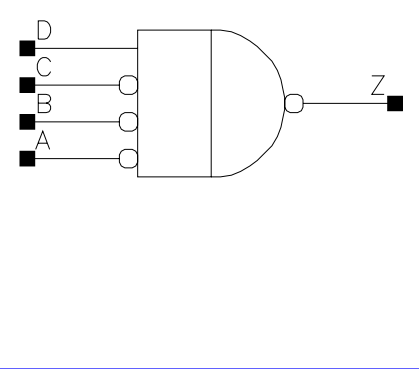
Cell	bc_1.32V_25C	bc_1.32V_125C
ND4ABLL	4738.590	83767.800
ND4ABLLP	6614.410	134342.000
ND4ABLLX4	11532.600	247419.000
ND4ABLLX6	16527.200	360318.000
ND4ABLLX8	23029.200	494206.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
ND4ABLL	Z(max)	$0.015 + 0.006 * Tr$
ND4ABLLP	Z(max)	$0.027 + 0.012 * Tr$
ND4ABLLX4	Z(max)	$0.052 + 0.023 * Tr$
ND4ABLLX6	Z(max)	$0.075 + 0.034 * Tr$
ND4ABLLX8	Z(max)	$0.102 + 0.047 * Tr$

ND4ABCLL
ND4ABCLLP
ND4ABCLLX4
ND4ABCLLX6
ND4ABCLLX8



Function: Function = 4 Input NAND, A ,B and C Inputs Inverted

Truth Table

A	B	C	D	Z
0	0	0	1	0
1	-	-	-	1
-	-	1	-	1
-	1	-	-	1
-	-	-	0	1

Physical Dimensions

Property	ND4ABCLL	ND4ABCLLP	ND4ABCLLX 4	ND4ABCLLX 6	ND4ABCLLX 8
Area(um ²)	14.120	14.120	18.155	28.241	30.258

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ABCLL	A Input Cap.	0.0020	0.0017	0.0018
ND4ABCLL	Z Max Load	0.160	0.160	0.160
ND4ABCLL	D Input Cap.	0.0028	0.0026	0.0027
ND4ABCLL	B Input Cap.	0.0019	0.0017	0.0018
ND4ABCLL	C Input Cap.	0.0018	0.0015	0.0016
ND4ABCLLP	A Input Cap.	0.0028	0.0024	0.0025
ND4ABCLLP	Z Max Load	0.320	0.320	0.320
ND4ABCLLP	D Input Cap.	0.0048	0.0045	0.0046
ND4ABCLLP	B Input Cap.	0.0027	0.0023	0.0024

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ABCLLP	C Input Cap.	0.0025	0.0021	0.0022
ND4ABCLLX4	A Input Cap.	0.0050	0.0044	0.0046
ND4ABCLLX4	Z Max Load	0.640	0.640	0.640
ND4ABCLLX4	D Input Cap.	0.0093	0.0085	0.0088
ND4ABCLLX4	B Input Cap.	0.0047	0.0042	0.0044
ND4ABCLLX4	C Input Cap.	0.0045	0.0039	0.0041
ND4ABCLLX6	C Input Cap.	0.0067	0.0058	0.0061
ND4ABCLLX6	A Input Cap.	0.0076	0.0068	0.0070
ND4ABCLLX6	D Input Cap.	0.0142	0.0130	0.0134
ND4ABCLLX6	B Input Cap.	0.0074	0.0066	0.0068
ND4ABCLLX6	Z Max Load	0.960	0.960	0.960
ND4ABCLLX8	B Input Cap.	0.0095	0.0086	0.0089
ND4ABCLLX8	C Input Cap.	0.0087	0.0077	0.0079
ND4ABCLLX8	A Input Cap.	0.0098	0.0089	0.0092
ND4ABCLLX8	Z Max Load	1.280	1.280	1.280
ND4ABCLLX8	D Input Cap.	0.0189	0.0173	0.0179

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ABCLL	A-Z	A_Z (fall)	0.100 + 0.189*Tr + 1.721*C	0.250 + 0.192*Tr + 4.409*C	0.157 + 0.191*Tr + 2.607*C
ND4ABCLL	A-Z	A_Z (rise)	0.083 + 0.249*Tr + 2.222*C	0.211 + 0.312*Tr + 4.737*C	0.127 + 0.273*Tr + 3.210*C
ND4ABCLL	B-Z	B_Z (fall)	0.095 + 0.232*Tr + 1.719*C	0.229 + 0.230*Tr + 4.406*C	0.147 + 0.231*Tr + 2.604*C
ND4ABCLL	B-Z	B_Z (rise)	0.077 + 0.231*Tr + 2.221*C	0.192 + 0.295*Tr + 4.714*C	0.117 + 0.256*Tr + 3.202*C
ND4ABCLL	C-Z	C_Z (fall)	0.085 + 0.266*Tr + 1.714*C	0.198 + 0.264*Tr + 4.398*C	0.129 + 0.264*Tr + 2.596*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ABCLL	C-Z	C_Z (rise)	0.070 + 0.211*Tr + 2.221*C	0.169 + 0.274*Tr + 4.705*C	0.105 + 0.236*Tr + 3.202*C
ND4ABCLL	D-Z	D_Z (fall)	-0.003 + 0.230*Tr + 2.019*C	0.003 + 0.269*Tr + 4.842*C	-0.007 + 0.248*Tr + 3.071*C
ND4ABCLL	D-Z	D_Z (rise)	0.002 + 0.297*Tr + 2.477*C	0.007 + 0.315*Tr + 5.141*C	-0.001 + 0.306*Tr + 3.629*C
ND4ABCLLP	A-Z	A_Z (fall)	0.095 + 0.181*Tr + 0.870*C	0.237 + 0.187*Tr + 2.140*C	0.149 + 0.185*Tr + 1.291*C
ND4ABCLLP	A-Z	A_Z (rise)	0.081 + 0.260*Tr + 1.084*C	0.195 + 0.317*Tr + 2.265*C	0.121 + 0.281*Tr + 1.548*C
ND4ABCLLP	B-Z	B_Z (fall)	0.091 + 0.223*Tr + 0.869*C	0.217 + 0.224*Tr + 2.139*C	0.140 + 0.223*Tr + 1.291*C
ND4ABCLLP	B-Z	B_Z (rise)	0.075 + 0.242*Tr + 1.083*C	0.178 + 0.299*Tr + 2.255*C	0.112 + 0.264*Tr + 1.546*C
ND4ABCLLP	C-Z	C_Z (fall)	0.081 + 0.256*Tr + 0.867*C	0.187 + 0.258*Tr + 2.133*C	0.123 + 0.255*Tr + 1.286*C
ND4ABCLLP	C-Z	C_Z (rise)	0.067 + 0.222*Tr + 1.083*C	0.156 + 0.277*Tr + 2.250*C	0.099 + 0.244*Tr + 1.544*C
ND4ABCLLP	D-Z	D_Z (fall)	-0.008 + 0.230*Tr + 1.032*C	-0.008 + 0.264*Tr + 2.390*C	-0.015 + 0.246*Tr + 1.546*C
ND4ABCLLP	D-Z	D_Z (rise)	-0.004 + 0.288*Tr + 1.233*C	-0.005 + 0.305*Tr + 2.520*C	-0.010 + 0.298*Tr + 1.794*C
ND4ABCLLX4	A-Z	A_Z (fall)	0.088 + 0.166*Tr + 0.433*C	0.217 + 0.174*Tr + 1.066*C	0.137 + 0.171*Tr + 0.643*C
ND4ABCLLX4	A-Z	A_Z (rise)	0.081 + 0.274*Tr + 0.542*C	0.186 + 0.325*Tr + 1.131*C	0.118 + 0.293*Tr + 0.774*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ABCLLX4	B-Z	B_Z (fall)	0.085 + 0.206*Tr + 0.433*C	0.199 + 0.207*Tr + 1.066*C	0.129 + 0.206*Tr + 0.643*C
ND4ABCLLX4	B-Z	B_Z (rise)	0.074 + 0.255*Tr + 0.542*C	0.169 + 0.307*Tr + 1.126*C	0.108 + 0.275*Tr + 0.772*C
ND4ABCLLX4	C-Z	C_Z (fall)	0.075 + 0.236*Tr + 0.432*C	0.170 + 0.238*Tr + 1.063*C	0.112 + 0.235*Tr + 0.641*C
ND4ABCLLX4	C-Z	C_Z (rise)	0.065 + 0.234*Tr + 0.541*C	0.146 + 0.283*Tr + 1.123*C	0.095 + 0.253*Tr + 0.771*C
ND4ABCLLX4	D-Z	D_Z (fall)	-0.004 + 0.219*Tr + 0.517*C	-0.002 + 0.254*Tr + 1.198*C	-0.009 + 0.235*Tr + 0.775*C
ND4ABCLLX4	D-Z	D_Z (rise)	-0.001 + 0.279*Tr + 0.618*C	0.001 + 0.295*Tr + 1.264*C	-0.004 + 0.288*Tr + 0.899*C
ND4ABCLLX6	A-Z	A_Z (fall)	0.086 + 0.165*Tr + 0.289*C	0.212 + 0.175*Tr + 0.711*C	0.134 + 0.171*Tr + 0.429*C
ND4ABCLLX6	A-Z	A_Z (rise)	0.080 + 0.276*Tr + 0.366*C	0.181 + 0.324*Tr + 0.763*C	0.116 + 0.293*Tr + 0.523*C
ND4ABCLLX6	B-Z	B_Z (fall)	0.083 + 0.203*Tr + 0.289*C	0.195 + 0.207*Tr + 0.711*C	0.127 + 0.205*Tr + 0.429*C
ND4ABCLLX6	B-Z	B_Z (rise)	0.074 + 0.257*Tr + 0.366*C	0.165 + 0.305*Tr + 0.761*C	0.107 + 0.275*Tr + 0.522*C
ND4ABCLLX6	C-Z	C_Z (fall)	0.073 + 0.233*Tr + 0.288*C	0.166 + 0.237*Tr + 0.709*C	0.110 + 0.233*Tr + 0.427*C
ND4ABCLLX6	C-Z	C_Z (rise)	0.065 + 0.235*Tr + 0.366*C	0.142 + 0.281*Tr + 0.759*C	0.093 + 0.253*Tr + 0.522*C
ND4ABCLLX6	D-Z	D_Z (fall)	-0.006 + 0.217*Tr + 0.347*C	-0.005 + 0.250*Tr + 0.804*C	-0.012 + 0.232*Tr + 0.521*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
ND4ABCLLX6	D-Z	D_Z (rise)	-0.002 + 0.278*Tr + 0.419*C	-0.001 + 0.293*Tr + 0.857*C	-0.007 + 0.286*Tr + 0.610*C
ND4ABCLLX8	A-Z	A_Z (fall)	0.086 + 0.163*Tr + 0.217*C	0.212 + 0.173*Tr + 0.534*C	0.134 + 0.169*Tr + 0.322*C
ND4ABCLLX8	A-Z	A_Z (rise)	0.080 + 0.279*Tr + 0.269*C	0.180 + 0.325*Tr + 0.558*C	0.116 + 0.295*Tr + 0.382*C
ND4ABCLLX8	B-Z	B_Z (fall)	0.084 + 0.201*Tr + 0.217*C	0.196 + 0.205*Tr + 0.534*C	0.127 + 0.203*Tr + 0.322*C
ND4ABCLLX8	B-Z	B_Z (rise)	0.074 + 0.260*Tr + 0.269*C	0.165 + 0.307*Tr + 0.556*C	0.107 + 0.277*Tr + 0.382*C
ND4ABCLLX8	C-Z	C_Z (fall)	0.074 + 0.231*Tr + 0.216*C	0.168 + 0.235*Tr + 0.532*C	0.110 + 0.231*Tr + 0.321*C
ND4ABCLLX8	C-Z	C_Z (rise)	0.065 + 0.239*Tr + 0.269*C	0.142 + 0.284*Tr + 0.554*C	0.093 + 0.256*Tr + 0.381*C
ND4ABCLLX8	D-Z	D_Z (fall)	-0.005 + 0.216*Tr + 0.260*C	-0.002 + 0.250*Tr + 0.602*C	-0.009 + 0.232*Tr + 0.390*C
ND4ABCLLX8	D-Z	D_Z (rise)	-0.002 + 0.273*Tr + 0.309*C	0.000 + 0.288*Tr + 0.629*C	-0.006 + 0.281*Tr + 0.448*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
ND4ABCLL	5492.300	92601.100
ND4ABCLLP	6986.040	136054.000
ND4ABCLLX4	11491.800	242688.000
ND4ABCLLX6	16151.500	348334.000
ND4ABCLLX8	21300.500	466352.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
ND4ABCLL	Z(max)	$0.018 + 0.006 * Tr$
ND4ABCLLP	Z(max)	$0.029 + 0.010 * Tr$
ND4ABCLLX4	Z(max)	$0.054 + 0.020 * Tr$
ND4ABCLLX6	Z(max)	$0.079 + 0.029 * Tr$
ND4ABCLLX8	Z(max)	$0.106 + 0.040 * Tr$

<p>NR2LL NR2LLP NR2LLX4 NR2LLX6 NR2LLX8</p> <p>Function: Function = 2 Input NOR</p> <p>Boolean Expression: $Z = \overline{A+B}$</p>	
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Physical Dimensions

Property	NR2LL	NR2LLP	NR2LLX4	NR2LLX6	NR2LLX8
Area(um ²)	6.052	8.069	12.103	16.138	20.172

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR2LL	B Input Cap.	0.0023	0.0021	0.0022
NR2LL	A Input Cap.	0.0026	0.0023	0.0024
NR2LL	Z Max Load	0.160	0.160	0.160
NR2LLP	A Input Cap.	0.0049	0.0045	0.0046
NR2LLP	Z Max Load	0.320	0.320	0.320
NR2LLP	B Input Cap.	0.0044	0.0041	0.0042
NR2LLX4	A Input Cap.	0.0103	0.0095	0.0098
NR2LLX4	Z Max Load	0.640	0.640	0.640
NR2LLX4	B Input Cap.	0.0085	0.0078	0.0081
NR2LLX6	B Input Cap.	0.0130	0.0120	0.0124
NR2LLX6	A Input Cap.	0.0147	0.0136	0.0140
NR2LLX6	Z Max Load	0.960	0.960	0.960
NR2LLX8	B Input Cap.	0.0173	0.0160	0.0165
NR2LLX8	A Input Cap.	0.0199	0.0184	0.0189
NR2LLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR2LL	A-Z	A_Z (fall)	0.004 + 0.268*Tr + 2.208*C	0.018 + 0.316*Tr + 4.814*C	0.003 + 0.290*Tr + 3.190*C
NR2LL	A-Z	A_Z (rise)	0.014 + 0.223*Tr + 3.164*C	0.037 + 0.234*Tr + 6.907*C	0.020 + 0.232*Tr + 4.703*C
NR2LL	B-Z	B_Z (fall)	-0.002 + 0.256*Tr + 2.258*C	0.003 + 0.304*Tr + 4.907*C	-0.006 + 0.278*Tr + 3.261*C
NR2LL	B-Z	B_Z (rise)	0.005 + 0.284*Tr + 3.241*C	0.015 + 0.290*Tr + 7.006*C	0.005 + 0.288*Tr + 4.814*C
NR2LLP	A-Z	A_Z (fall)	0.000 + 0.277*Tr + 1.171*C	0.010 + 0.319*Tr + 2.450*C	-0.003 + 0.296*Tr + 1.659*C
NR2LLP	A-Z	A_Z (rise)	0.008 + 0.210*Tr + 1.561*C	0.025 + 0.222*Tr + 3.358*C	0.011 + 0.219*Tr + 2.307*C
NR2LLP	B-Z	B_Z (fall)	-0.007 + 0.263*Tr + 1.202*C	-0.007 + 0.306*Tr + 2.509*C	-0.014 + 0.284*Tr + 1.705*C
NR2LLP	B-Z	B_Z (rise)	-0.002 + 0.270*Tr + 1.610*C	0.001 + 0.276*Tr + 3.425*C	-0.005 + 0.274*Tr + 2.375*C
NR2LLX4	A-Z	A_Z (fall)	0.004 + 0.267*Tr + 0.586*C	0.016 + 0.310*Tr + 1.227*C	0.003 + 0.286*Tr + 0.831*C
NR2LLX4	A-Z	A_Z (rise)	0.010 + 0.205*Tr + 0.782*C	0.029 + 0.216*Tr + 1.683*C	0.014 + 0.213*Tr + 1.156*C
NR2LLX4	B-Z	B_Z (fall)	-0.003 + 0.252*Tr + 0.602*C	-0.001 + 0.296*Tr + 1.258*C	-0.008 + 0.272*Tr + 0.855*C
NR2LLX4	B-Z	B_Z (rise)	0.001 + 0.263*Tr + 0.807*C	0.005 + 0.268*Tr + 1.717*C	-0.001 + 0.265*Tr + 1.190*C
NR2LLX6	A-Z	A_Z (fall)	0.003 + 0.267*Tr + 0.398*C	0.013 + 0.308*Tr + 0.821*C	0.001 + 0.285*Tr + 0.560*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR2LLX6	A-Z	A_Z (rise)	0.009 + 0.202*Tr + 0.524*C	0.027 + 0.212*Tr + 1.125*C	0.013 + 0.210*Tr + 0.774*C
NR2LLX6	B-Z	B_Z (fall)	-0.005 + 0.252*Tr + 0.409*C	-0.004 + 0.292*Tr + 0.843*C	-0.010 + 0.271*Tr + 0.577*C
NR2LLX6	B-Z	B_Z (rise)	0.000 + 0.258*Tr + 0.541*C	0.004 + 0.263*Tr + 1.149*C	-0.003 + 0.261*Tr + 0.798*C
NR2LLX8	A-Z	A_Z (fall)	0.004 + 0.265*Tr + 0.297*C	0.014 + 0.306*Tr + 0.614*C	0.002 + 0.283*Tr + 0.418*C
NR2LLX8	A-Z	A_Z (rise)	0.009 + 0.202*Tr + 0.393*C	0.028 + 0.212*Tr + 0.845*C	0.013 + 0.209*Tr + 0.581*C
NR2LLX8	B-Z	B_Z (fall)	-0.003 + 0.250*Tr + 0.305*C	-0.002 + 0.291*Tr + 0.631*C	-0.009 + 0.268*Tr + 0.431*C
NR2LLX8	B-Z	B_Z (rise)	0.000 + 0.257*Tr + 0.406*C	0.004 + 0.263*Tr + 0.863*C	-0.002 + 0.260*Tr + 0.599*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
NR2LL	2390.440	44233.200
NR2LLP	3666.500	74856.000
NR2LLX4	7333.170	149710.000
NR2LLX6	10041.800	211670.000
NR2LLX8	13737.300	287220.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

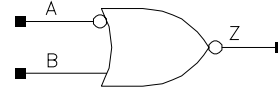
Cell	Cycle on pin	nom_1.20V_25C
NR2LL	Z(max)	0.006 + 0.010*Tr
NR2LLP	Z(max)	0.010 + 0.022*Tr
NR2LLX4	Z(max)	0.019 + 0.045*Tr

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
NR2LLX6	Z(max)	$0.029 + 0.067 * Tr$
NR2LLX8	Z(max)	$0.037 + 0.091 * Tr$

NR2ALL
NR2ALLP
NR2ALLX4
NR2ALLX6
NR2ALLX8



Function: Function = 2 Input NOR, A Input Inverted

Boolean Expression: $Z = \overline{A+B}$

Physical Dimensions

Property	NR2ALL	NR2ALLP	NR2ALLX4	NR2ALLX6	NR2ALLX8
Area(um ²)	8.069	10.086	14.120	18.155	22.189

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR2ALL	Z Max Load	0.160	0.160	0.160
NR2ALL	B Input Cap.	0.0024	0.0022	0.0023
NR2ALL	A Input Cap.	0.0014	0.0011	0.0012
NR2ALLP	Z Max Load	0.320	0.320	0.320
NR2ALLP	B Input Cap.	0.0044	0.0041	0.0042
NR2ALLP	A Input Cap.	0.0021	0.0018	0.0019
NR2ALLX4	B Input Cap.	0.0085	0.0078	0.0081
NR2ALLX4	A Input Cap.	0.0036	0.0031	0.0032
NR2ALLX4	Z Max Load	0.640	0.640	0.640
NR2ALLX6	B Input Cap.	0.0130	0.0121	0.0125
NR2ALLX6	A Input Cap.	0.0051	0.0044	0.0045
NR2ALLX6	Z Max Load	0.960	0.960	0.960
NR2ALLX8	Z Max Load	1.280	1.280	1.280
NR2ALLX8	B Input Cap.	0.0173	0.0160	0.0165
NR2ALLX8	A Input Cap.	0.0066	0.0057	0.0060

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR2ALL	A-Z	A_Z (fall)	0.076 + 0.281*Tr + 1.997*C	0.175 + 0.296*Tr + 4.535*C	0.114 + 0.287*Tr + 2.837*C
NR2ALL	A-Z	A_Z (rise)	0.058 + 0.165*Tr + 3.033*C	0.140 + 0.211*Tr + 6.627*C	0.088 + 0.184*Tr + 4.457*C
NR2ALL	B-Z	B_Z (fall)	-0.001 + 0.258*Tr + 2.304*C	0.005 + 0.306*Tr + 5.023*C	-0.005 + 0.280*Tr + 3.330*C
NR2ALL	B-Z	B_Z (rise)	0.005 + 0.284*Tr + 3.243*C	0.015 + 0.290*Tr + 7.003*C	0.005 + 0.288*Tr + 4.816*C
NR2ALLP	A-Z	A_Z (fall)	0.066 + 0.261*Tr + 1.029*C	0.148 + 0.273*Tr + 2.214*C	0.098 + 0.265*Tr + 1.424*C
NR2ALLP	A-Z	A_Z (rise)	0.052 + 0.178*Tr + 1.474*C	0.121 + 0.216*Tr + 3.173*C	0.078 + 0.193*Tr + 2.148*C
NR2ALLP	B-Z	B_Z (fall)	-0.007 + 0.263*Tr + 1.202*C	-0.007 + 0.306*Tr + 2.509*C	-0.014 + 0.284*Tr + 1.704*C
NR2ALLP	B-Z	B_Z (rise)	-0.002 + 0.271*Tr + 1.610*C	0.001 + 0.276*Tr + 3.423*C	-0.005 + 0.274*Tr + 2.375*C
NR2ALLX4	A-Z	A_Z (fall)	0.066 + 0.251*Tr + 0.515*C	0.144 + 0.265*Tr + 1.107*C	0.097 + 0.256*Tr + 0.713*C
NR2ALLX4	A-Z	A_Z (rise)	0.053 + 0.192*Tr + 0.738*C	0.120 + 0.227*Tr + 1.588*C	0.078 + 0.206*Tr + 1.075*C
NR2ALLX4	B-Z	B_Z (fall)	-0.003 + 0.252*Tr + 0.602*C	-0.001 + 0.296*Tr + 1.259*C	-0.008 + 0.272*Tr + 0.855*C
NR2ALLX4	B-Z	B_Z (rise)	0.001 + 0.263*Tr + 0.807*C	0.005 + 0.269*Tr + 1.716*C	-0.001 + 0.266*Tr + 1.190*C
NR2ALLX6	A-Z	A_Z (fall)	0.063 + 0.244*Tr + 0.349*C	0.138 + 0.258*Tr + 0.736*C	0.092 + 0.249*Tr + 0.478*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR2ALLX6	A-Z	A_Z (rise)	0.051 + 0.194*Tr + 0.492*C	0.116 + 0.227*Tr + 1.058*C	0.075 + 0.207*Tr + 0.717*C
NR2ALLX6	B-Z	B_Z (fall)	-0.005 + 0.252*Tr + 0.410*C	-0.004 + 0.292*Tr + 0.843*C	-0.010 + 0.271*Tr + 0.577*C
NR2ALLX6	B-Z	B_Z (rise)	-0.001 + 0.258*Tr + 0.541*C	0.003 + 0.263*Tr + 1.149*C	-0.004 + 0.261*Tr + 0.798*C
NR2ALLX8	A-Z	A_Z (fall)	0.063 + 0.242*Tr + 0.260*C	0.137 + 0.256*Tr + 0.550*C	0.092 + 0.247*Tr + 0.357*C
NR2ALLX8	A-Z	A_Z (rise)	0.051 + 0.195*Tr + 0.369*C	0.115 + 0.227*Tr + 0.794*C	0.075 + 0.207*Tr + 0.538*C
NR2ALLX8	B-Z	B_Z (fall)	-0.003 + 0.249*Tr + 0.306*C	-0.002 + 0.291*Tr + 0.631*C	-0.009 + 0.268*Tr + 0.431*C
NR2ALLX8	B-Z	B_Z (rise)	0.000 + 0.258*Tr + 0.406*C	0.004 + 0.263*Tr + 0.863*C	-0.003 + 0.261*Tr + 0.599*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
NR2ALL	3054.320	56437.800
NR2ALLP	4545.600	93575.200
NR2ALLX4	8743.030	182192.000
NR2ALLX6	12022.800	258490.000
NR2ALLX8	16366.800	350432.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
NR2ALL	Z(max)	0.014 + 0.005*Tr
NR2ALLP	Z(max)	0.022 + 0.010*Tr
NR2ALLX4	Z(max)	0.042 + 0.019*Tr

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
NR2ALLX6	Z(max)	$0.061 + 0.028 * Tr$
NR2ALLX8	Z(max)	$0.081 + 0.039 * Tr$

<p>NR3LL NR3LLP NR3LLX4 NR3LLX6 NR3LLX8</p> <p>Function: Function = 3 Input NOR</p> <p>Boolean Expression: $Z = \overline{A+B+C}$</p>	
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Physical Dimensions

Property	NR3LL	NR3LLP	NR3LLX4	NR3LLX6	NR3LLX8
Area(um2)	8.069	10.086	16.138	22.189	28.241

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR3LL	A Input Cap.	0.0027	0.0024	0.0025
NR3LL	Z Max Load	0.160	0.160	0.160
NR3LL	B Input Cap.	0.0026	0.0023	0.0024
NR3LL	C Input Cap.	0.0023	0.0021	0.0022
NR3LLP	Z Max Load	0.320	0.320	0.320
NR3LLP	B Input Cap.	0.0044	0.0041	0.0042
NR3LLP	C Input Cap.	0.0039	0.0036	0.0037
NR3LLP	A Input Cap.	0.0046	0.0042	0.0044
NR3LLX4	Z Max Load	0.640	0.640	0.640
NR3LLX4	B Input Cap.	0.0089	0.0083	0.0086
NR3LLX4	C Input Cap.	0.0076	0.0071	0.0073
NR3LLX4	A Input Cap.	0.0089	0.0082	0.0084
NR3LLX6	A Input Cap.	0.0132	0.0121	0.0125
NR3LLX6	B Input Cap.	0.0130	0.0120	0.0124
NR3LLX6	C Input Cap.	0.0116	0.0109	0.0112
NR3LLX6	Z Max Load	0.960	0.960	0.960
NR3LLX8	C Input Cap.	0.0153	0.0143	0.0147
NR3LLX8	A Input Cap.	0.0174	0.0160	0.0166

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR3LLX8	Z Max Load	1.280	1.280	1.280
NR3LLX8	B Input Cap.	0.0176	0.0163	0.0168

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR3LL	A-Z	A_Z (fall)	0.018 + 0.291*Tr + 2.919*C	0.053 + 0.342*Tr + 6.723*C	0.025 + 0.315*Tr + 4.262*C
NR3LL	A-Z	A_Z (rise)	0.032 + 0.184*Tr + 4.519*C	0.084 + 0.198*Tr + 10.114*C	0.050 + 0.194*Tr + 6.756*C
NR3LL	B-Z	B_Z (fall)	0.013 + 0.281*Tr + 2.948*C	0.041 + 0.333*Tr + 6.769*C	0.017 + 0.306*Tr + 4.303*C
NR3LL	B-Z	B_Z (rise)	0.025 + 0.238*Tr + 4.565*C	0.064 + 0.241*Tr + 10.161*C	0.038 + 0.242*Tr + 6.820*C
NR3LL	C-Z	C_Z (fall)	0.005 + 0.271*Tr + 2.992*C	0.021 + 0.322*Tr + 6.852*C	0.005 + 0.296*Tr + 4.367*C
NR3LL	C-Z	C_Z (rise)	0.012 + 0.286*Tr + 4.595*C	0.029 + 0.287*Tr + 10.189*C	0.016 + 0.287*Tr + 6.866*C
NR3LLP	A-Z	A_Z (fall)	0.016 + 0.300*Tr + 1.543*C	0.047 + 0.346*Tr + 3.325*C	0.021 + 0.322*Tr + 2.186*C
NR3LLP	A-Z	A_Z (rise)	0.028 + 0.171*Tr + 2.213*C	0.074 + 0.186*Tr + 4.874*C	0.043 + 0.182*Tr + 3.283*C
NR3LLP	B-Z	B_Z (fall)	0.010 + 0.290*Tr + 1.559*C	0.032 + 0.336*Tr + 3.352*C	0.011 + 0.313*Tr + 2.209*C
NR3LLP	B-Z	B_Z (rise)	0.019 + 0.223*Tr + 2.242*C	0.051 + 0.227*Tr + 4.915*C	0.028 + 0.228*Tr + 3.325*C
NR3LLP	C-Z	C_Z (fall)	0.000 + 0.279*Tr + 1.588*C	0.009 + 0.324*Tr + 3.407*C	-0.003 + 0.301*Tr + 2.251*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR3LLP	C-Z	C_Z (rise)	0.004 + 0.270*Tr + 2.265*C	0.012 + 0.271*Tr + 4.937*C	0.003 + 0.272*Tr + 3.358*C
NR3LLX4	A-Z	A_Z (fall)	0.019 + 0.299*Tr + 0.789*C	0.048 + 0.344*Tr + 1.642*C	0.024 + 0.319*Tr + 1.099*C
NR3LLX4	A-Z	A_Z (rise)	0.028 + 0.167*Tr + 1.109*C	0.075 + 0.183*Tr + 2.441*C	0.043 + 0.178*Tr + 1.645*C
NR3LLX4	B-Z	B_Z (fall)	0.012 + 0.287*Tr + 0.797*C	0.033 + 0.332*Tr + 1.656*C	0.015 + 0.308*Tr + 1.111*C
NR3LLX4	B-Z	B_Z (rise)	0.019 + 0.217*Tr + 1.125*C	0.050 + 0.222*Tr + 2.462*C	0.028 + 0.222*Tr + 1.667*C
NR3LLX4	C-Z	C_Z (fall)	0.003 + 0.274*Tr + 0.813*C	0.011 + 0.318*Tr + 1.685*C	0.001 + 0.295*Tr + 1.133*C
NR3LLX4	C-Z	C_Z (rise)	0.004 + 0.263*Tr + 1.137*C	0.012 + 0.266*Tr + 2.476*C	0.004 + 0.265*Tr + 1.685*C
NR3LLX6	A-Z	A_Z (fall)	0.017 + 0.294*Tr + 0.525*C	0.047 + 0.339*Tr + 1.104*C	0.022 + 0.315*Tr + 0.735*C
NR3LLX6	A-Z	A_Z (rise)	0.027 + 0.164*Tr + 0.740*C	0.074 + 0.179*Tr + 1.629*C	0.042 + 0.175*Tr + 1.098*C
NR3LLX6	B-Z	B_Z (fall)	0.011 + 0.283*Tr + 0.530*C	0.032 + 0.327*Tr + 1.114*C	0.013 + 0.303*Tr + 0.744*C
NR3LLX6	B-Z	B_Z (rise)	0.018 + 0.214*Tr + 0.751*C	0.049 + 0.217*Tr + 1.645*C	0.027 + 0.218*Tr + 1.114*C
NR3LLX6	C-Z	C_Z (fall)	0.002 + 0.269*Tr + 0.541*C	0.010 + 0.312*Tr + 1.134*C	-0.001 + 0.290*Tr + 0.760*C
NR3LLX6	C-Z	C_Z (rise)	0.004 + 0.258*Tr + 0.759*C	0.013 + 0.260*Tr + 1.654*C	0.004 + 0.259*Tr + 1.126*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR3LLX8	A-Z	A_Z (fall)	0.018 + 0.295*Tr + 0.396*C	0.046 + 0.339*Tr + 0.825*C	0.023 + 0.315*Tr + 0.552*C
NR3LLX8	A-Z	A_Z (rise)	0.027 + 0.164*Tr + 0.556*C	0.073 + 0.179*Tr + 1.223*C	0.042 + 0.175*Tr + 0.825*C
NR3LLX8	B-Z	B_Z (fall)	0.012 + 0.283*Tr + 0.401*C	0.032 + 0.327*Tr + 0.832*C	0.014 + 0.303*Tr + 0.559*C
NR3LLX8	B-Z	B_Z (rise)	0.018 + 0.213*Tr + 0.564*C	0.048 + 0.218*Tr + 1.235*C	0.027 + 0.218*Tr + 0.836*C
NR3LLX8	C-Z	C_Z (fall)	0.002 + 0.269*Tr + 0.409*C	0.009 + 0.312*Tr + 0.848*C	-0.001 + 0.290*Tr + 0.571*C
NR3LLX8	C-Z	C_Z (rise)	0.004 + 0.258*Tr + 0.571*C	0.011 + 0.260*Tr + 1.243*C	0.003 + 0.259*Tr + 0.846*C

Average Leakage Power

picoWatts

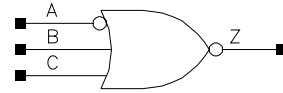
Cell	bc_1.32V_25C	bc_1.32V_125C
NR3LL	3089.550	52119.300
NR3LLP	4210.870	81867.500
NR3LLX4	6943.220	144700.000
NR3LLX6	11104.100	226137.000
NR3LLX8	13886.900	289403.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
NR3LL	Z(max)	0.009 + 0.007*Tr
NR3LLP	Z(max)	0.016 + 0.015*Tr
NR3LLX4	Z(max)	0.032 + 0.029*Tr
NR3LLX6	Z(max)	0.047 + 0.045*Tr
NR3LLX8	Z(max)	0.062 + 0.060*Tr

NR3ALL
NR3ALLP
NR3ALLX4
NR3ALLX6
NR3ALLX8



Function: Function = 3 Input NOR, A Input Inverted

Boolean Expression: $Z = \overline{A + B + C}$

Physical Dimensions

Property	NR3ALL	NR3ALLP	NR3ALLX4	NR3ALLX6	NR3ALLX8
Area(um ²)	12.103	12.103	16.138	24.206	32.275

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR3ALL	C Input Cap.	0.0022	0.0020	0.0021
NR3ALL	A Input Cap.	0.0015	0.0012	0.0013
NR3ALL	Z Max Load	0.160	0.160	0.160
NR3ALL	B Input Cap.	0.0025	0.0023	0.0024
NR3ALLP	C Input Cap.	0.0039	0.0037	0.0038
NR3ALLP	A Input Cap.	0.0021	0.0018	0.0019
NR3ALLP	Z Max Load	0.320	0.320	0.320
NR3ALLP	B Input Cap.	0.0044	0.0041	0.0042
NR3ALLX4	C Input Cap.	0.0076	0.0071	0.0073
NR3ALLX4	A Input Cap.	0.0037	0.0032	0.0033
NR3ALLX4	Z Max Load	0.640	0.640	0.640
NR3ALLX4	B Input Cap.	0.0090	0.0084	0.0086
NR3ALLX6	B Input Cap.	0.0131	0.0121	0.0125
NR3ALLX6	Z Max Load	0.960	0.960	0.960
NR3ALLX6	C Input Cap.	0.0116	0.0108	0.0111
NR3ALLX6	A Input Cap.	0.0051	0.0044	0.0046
NR3ALLX8	Z Max Load	1.280	1.280	1.280
NR3ALLX8	B Input Cap.	0.0175	0.0164	0.0168

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR3ALLX8	C Input Cap.	0.0153	0.0143	0.0147
NR3ALLX8	A Input Cap.	0.0064	0.0056	0.0058

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR3ALL	A-Z	A_Z (fall)	0.082 + 0.273*Tr + 2.743*C	0.192 + 0.284*Tr + 6.520*C	0.123 + 0.277*Tr + 3.976*C
NR3ALL	A-Z	A_Z (rise)	0.072 + 0.164*Tr + 4.465*C	0.176 + 0.211*Tr + 9.964*C	0.110 + 0.183*Tr + 6.630*C
NR3ALL	B-Z	B_Z (fall)	0.013 + 0.281*Tr + 2.947*C	0.041 + 0.333*Tr + 6.769*C	0.017 + 0.306*Tr + 4.302*C
NR3ALL	B-Z	B_Z (rise)	0.025 + 0.238*Tr + 4.562*C	0.064 + 0.241*Tr + 10.160*C	0.037 + 0.242*Tr + 6.819*C
NR3ALL	C-Z	C_Z (fall)	0.005 + 0.271*Tr + 2.990*C	0.020 + 0.322*Tr + 6.848*C	0.004 + 0.296*Tr + 4.366*C
NR3ALL	C-Z	C_Z (rise)	0.011 + 0.286*Tr + 4.594*C	0.027 + 0.287*Tr + 10.189*C	0.014 + 0.288*Tr + 6.864*C
NR3ALLP	A-Z	A_Z (fall)	0.075 + 0.258*Tr + 1.450*C	0.171 + 0.270*Tr + 3.199*C	0.111 + 0.263*Tr + 2.029*C
NR3ALLP	A-Z	A_Z (rise)	0.064 + 0.172*Tr + 2.166*C	0.151 + 0.210*Tr + 4.766*C	0.096 + 0.188*Tr + 3.190*C
NR3ALLP	B-Z	B_Z (fall)	0.009 + 0.290*Tr + 1.559*C	0.031 + 0.336*Tr + 3.353*C	0.011 + 0.312*Tr + 2.210*C
NR3ALLP	B-Z	B_Z (rise)	0.018 + 0.224*Tr + 2.242*C	0.049 + 0.227*Tr + 4.915*C	0.026 + 0.228*Tr + 3.324*C
NR3ALLP	C-Z	C_Z (fall)	0.000 + 0.278*Tr + 1.589*C	0.008 + 0.323*Tr + 3.409*C	-0.004 + 0.301*Tr + 2.252*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR3ALLP	C-Z	C_Z (rise)	0.004 + 0.270*Tr + 2.266*C	0.012 + 0.271*Tr + 4.941*C	0.003 + 0.272*Tr + 3.359*C
NR3ALLX4	A-Z	A_Z (fall)	0.076 + 0.249*Tr + 0.744*C	0.168 + 0.264*Tr + 1.575*C	0.111 + 0.255*Tr + 1.020*C
NR3ALLX4	A-Z	A_Z (rise)	0.064 + 0.186*Tr + 1.084*C	0.150 + 0.222*Tr + 2.384*C	0.096 + 0.201*Tr + 1.596*C
NR3ALLX4	B-Z	B_Z (fall)	0.012 + 0.287*Tr + 0.797*C	0.033 + 0.332*Tr + 1.656*C	0.015 + 0.308*Tr + 1.111*C
NR3ALLX4	B-Z	B_Z (rise)	0.018 + 0.218*Tr + 1.124*C	0.049 + 0.222*Tr + 2.462*C	0.027 + 0.222*Tr + 1.667*C
NR3ALLX4	C-Z	C_Z (fall)	0.003 + 0.274*Tr + 0.813*C	0.011 + 0.318*Tr + 1.685*C	0.001 + 0.295*Tr + 1.134*C
NR3ALLX4	C-Z	C_Z (rise)	0.005 + 0.263*Tr + 1.137*C	0.013 + 0.266*Tr + 2.476*C	0.005 + 0.265*Tr + 1.685*C
NR3ALLX6	A-Z	A_Z (fall)	0.071 + 0.241*Tr + 0.492*C	0.159 + 0.254*Tr + 1.058*C	0.104 + 0.245*Tr + 0.680*C
NR3ALLX6	A-Z	A_Z (rise)	0.062 + 0.188*Tr + 0.723*C	0.145 + 0.220*Tr + 1.589*C	0.093 + 0.201*Tr + 1.064*C
NR3ALLX6	B-Z	B_Z (fall)	0.011 + 0.282*Tr + 0.530*C	0.032 + 0.326*Tr + 1.114*C	0.013 + 0.303*Tr + 0.744*C
NR3ALLX6	B-Z	B_Z (rise)	0.017 + 0.215*Tr + 0.751*C	0.048 + 0.217*Tr + 1.645*C	0.026 + 0.219*Tr + 1.114*C
NR3ALLX6	C-Z	C_Z (fall)	0.001 + 0.269*Tr + 0.541*C	0.009 + 0.312*Tr + 1.135*C	-0.002 + 0.289*Tr + 0.760*C
NR3ALLX6	C-Z	C_Z (rise)	0.004 + 0.258*Tr + 0.760*C	0.012 + 0.259*Tr + 1.654*C	0.003 + 0.259*Tr + 1.126*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR3ALLX8	A-Z	A_Z (fall)	0.070 + 0.238*Tr + 0.372*C	0.154 + 0.250*Tr + 0.788*C	0.101 + 0.242*Tr + 0.511*C
NR3ALLX8	A-Z	A_Z (rise)	0.061 + 0.188*Tr + 0.542*C	0.141 + 0.219*Tr + 1.192*C	0.091 + 0.200*Tr + 0.798*C
NR3ALLX8	B-Z	B_Z (fall)	0.012 + 0.283*Tr + 0.401*C	0.032 + 0.327*Tr + 0.832*C	0.014 + 0.303*Tr + 0.559*C
NR3ALLX8	B-Z	B_Z (rise)	0.017 + 0.214*Tr + 0.564*C	0.047 + 0.218*Tr + 1.236*C	0.026 + 0.218*Tr + 0.836*C
NR3ALLX8	C-Z	C_Z (fall)	0.002 + 0.269*Tr + 0.409*C	0.009 + 0.312*Tr + 0.848*C	-0.001 + 0.290*Tr + 0.571*C
NR3ALLX8	C-Z	C_Z (rise)	0.004 + 0.258*Tr + 0.571*C	0.011 + 0.260*Tr + 1.243*C	0.003 + 0.259*Tr + 0.846*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
NR3ALL	3658.970	63419.200
NR3ALLP	4983.250	99420.800
NR3ALLX4	8236.030	175982.000
NR3ALLX6	12946.700	271635.000
NR3ALLX8	16364.100	351407.000

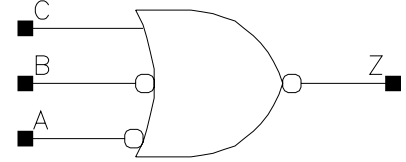
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
NR3ALL	Z(max)	0.016 + 0.005*Tr
NR3ALLP	Z(max)	0.027 + 0.009*Tr
NR3ALLX4	Z(max)	0.052 + 0.016*Tr
NR3ALLX6	Z(max)	0.076 + 0.024*Tr
NR3ALLX8	Z(max)	0.100 + 0.033*Tr

NR3ABLL
NR3ABLLP
NR3ABLLX4
NR3ABLLX6
NR3ABLLX8

Function: Function = 3 input NOR ,A and B inverted inputs



Truth Table

A	B	C	Z
-	0	-	0
0	-	-	0
-	-	1	0
1	1	0	1

Physical Dimensions

Property	NR3ABLL	NR3ABLLP	NR3ABLLX4	NR3ABLLX6	NR3ABLLX8
Area(um2)	10.086	12.103	16.138	24.206	30.258

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR3ABLL	B Input Cap.	0.0017	0.0014	0.0015
NR3ABLL	Z Max Load	0.160	0.160	0.160
NR3ABLL	C Input Cap.	0.0024	0.0021	0.0022
NR3ABLL	A Input Cap.	0.0020	0.0016	0.0018
NR3ABLLP	B Input Cap.	0.0032	0.0026	0.0027
NR3ABLLP	Z Max Load	0.320	0.320	0.320
NR3ABLLP	C Input Cap.	0.0044	0.0041	0.0042
NR3ABLLP	A Input Cap.	0.0033	0.0028	0.0030
NR3ABLLX4	C Input Cap.	0.0086	0.0079	0.0082
NR3ABLLX4	A Input Cap.	0.0061	0.0053	0.0055
NR3ABLLX4	B Input Cap.	0.0058	0.0049	0.0051
NR3ABLLX4	Z Max Load	0.640	0.640	0.640

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR3ABLLX6	C Input Cap.	0.0131	0.0122	0.0125
NR3ABLLX6	A Input Cap.	0.0092	0.0079	0.0083
NR3ABLLX6	Z Max Load	0.960	0.960	0.960
NR3ABLLX6	B Input Cap.	0.0088	0.0074	0.0077
NR3ABLLX8	B Input Cap.	0.0115	0.0097	0.0101
NR3ABLLX8	Z Max Load	1.280	1.280	1.280
NR3ABLLX8	C Input Cap.	0.0173	0.0160	0.0165
NR3ABLLX8	A Input Cap.	0.0119	0.0103	0.0107

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR3ABLL	A-Z	A_Z (fall)	0.073 + 0.283*Tr + 1.941*C	0.166 + 0.299*Tr + 4.397*C	0.109 + 0.288*Tr + 2.753*C
NR3ABLL	A-Z	A_Z (rise)	0.057 + 0.145*Tr + 3.035*C	0.142 + 0.180*Tr + 6.627*C	0.087 + 0.161*Tr + 4.459*C
NR3ABLL	B-Z	B_Z (fall)	0.067 + 0.270*Tr + 1.939*C	0.153 + 0.286*Tr + 4.391*C	0.100 + 0.276*Tr + 2.751*C
NR3ABLL	B-Z	B_Z (rise)	0.055 + 0.162*Tr + 3.034*C	0.138 + 0.200*Tr + 6.627*C	0.085 + 0.177*Tr + 4.456*C
NR3ABLL	C-Z	C_Z (fall)	-0.002 + 0.255*Tr + 2.260*C	0.002 + 0.304*Tr + 4.913*C	-0.007 + 0.278*Tr + 3.266*C
NR3ABLL	C-Z	C_Z (rise)	0.004 + 0.284*Tr + 3.244*C	0.013 + 0.290*Tr + 7.007*C	0.004 + 0.288*Tr + 4.819*C
NR3ABLLP	A-Z	A_Z (fall)	0.065 + 0.264*Tr + 1.028*C	0.146 + 0.280*Tr + 2.213*C	0.096 + 0.269*Tr + 1.422*C
NR3ABLLP	A-Z	A_Z (rise)	0.051 + 0.153*Tr + 1.475*C	0.128 + 0.184*Tr + 3.175*C	0.079 + 0.168*Tr + 2.149*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR3ABLLP	B-Z	B_Z (fall)	0.060 + 0.251*Tr + 1.028*C	0.134 + 0.266*Tr + 2.211*C	0.088 + 0.256*Tr + 1.422*C
NR3ABLLP	B-Z	B_Z (rise)	0.050 + 0.169*Tr + 1.475*C	0.124 + 0.203*Tr + 3.174*C	0.077 + 0.182*Tr + 2.148*C
NR3ABLLP	C-Z	C_Z (fall)	-0.006 + 0.263*Tr + 1.202*C	-0.007 + 0.306*Tr + 2.509*C	-0.014 + 0.284*Tr + 1.704*C
NR3ABLLP	C-Z	C_Z (rise)	-0.002 + 0.271*Tr + 1.610*C	0.001 + 0.276*Tr + 3.423*C	-0.005 + 0.274*Tr + 2.375*C
NR3ABLLX4	A-Z	A_Z (fall)	0.063 + 0.259*Tr + 0.514*C	0.142 + 0.275*Tr + 1.107*C	0.094 + 0.264*Tr + 0.712*C
NR3ABLLX4	A-Z	A_Z (rise)	0.050 + 0.157*Tr + 0.738*C	0.124 + 0.185*Tr + 1.589*C	0.077 + 0.170*Tr + 1.075*C
NR3ABLLX4	B-Z	B_Z (fall)	0.058 + 0.246*Tr + 0.514*C	0.130 + 0.261*Tr + 1.106*C	0.086 + 0.251*Tr + 0.712*C
NR3ABLLX4	B-Z	B_Z (rise)	0.049 + 0.173*Tr + 0.738*C	0.120 + 0.204*Tr + 1.588*C	0.075 + 0.185*Tr + 1.075*C
NR3ABLLX4	C-Z	C_Z (fall)	-0.003 + 0.252*Tr + 0.602*C	-0.001 + 0.296*Tr + 1.259*C	-0.008 + 0.272*Tr + 0.855*C
NR3ABLLX4	C-Z	C_Z (rise)	0.001 + 0.263*Tr + 0.807*C	0.005 + 0.269*Tr + 1.716*C	-0.001 + 0.266*Tr + 1.191*C
NR3ABLLX6	A-Z	A_Z (fall)	0.062 + 0.258*Tr + 0.348*C	0.138 + 0.273*Tr + 0.736*C	0.091 + 0.263*Tr + 0.478*C
NR3ABLLX6	A-Z	A_Z (rise)	0.049 + 0.155*Tr + 0.492*C	0.122 + 0.185*Tr + 1.059*C	0.076 + 0.169*Tr + 0.717*C
NR3ABLLX6	B-Z	B_Z (fall)	0.057 + 0.244*Tr + 0.348*C	0.127 + 0.258*Tr + 0.736*C	0.084 + 0.249*Tr + 0.477*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR3ABLLX6	B-Z	B_Z (rise)	0.048 + 0.171*Tr + 0.492*C	0.118 + 0.203*Tr + 1.059*C	0.073 + 0.184*Tr + 0.717*C
NR3ABLLX6	C-Z	C_Z (fall)	-0.005 + 0.252*Tr + 0.409*C	-0.004 + 0.292*Tr + 0.843*C	-0.010 + 0.271*Tr + 0.577*C
NR3ABLLX6	C-Z	C_Z (rise)	-0.001 + 0.258*Tr + 0.541*C	0.003 + 0.263*Tr + 1.149*C	-0.004 + 0.261*Tr + 0.798*C
NR3ABLLX8	A-Z	A_Z (fall)	0.061 + 0.257*Tr + 0.259*C	0.137 + 0.272*Tr + 0.550*C	0.090 + 0.262*Tr + 0.356*C
NR3ABLLX8	A-Z	A_Z (rise)	0.049 + 0.155*Tr + 0.369*C	0.120 + 0.183*Tr + 0.795*C	0.075 + 0.168*Tr + 0.538*C
NR3ABLLX8	B-Z	B_Z (fall)	0.056 + 0.243*Tr + 0.259*C	0.125 + 0.258*Tr + 0.550*C	0.083 + 0.248*Tr + 0.356*C
NR3ABLLX8	B-Z	B_Z (rise)	0.048 + 0.171*Tr + 0.369*C	0.117 + 0.201*Tr + 0.795*C	0.073 + 0.182*Tr + 0.538*C
NR3ABLLX8	C-Z	C_Z (fall)	-0.003 + 0.250*Tr + 0.305*C	-0.002 + 0.291*Tr + 0.631*C	-0.009 + 0.268*Tr + 0.431*C
NR3ABLLX8	C-Z	C_Z (rise)	0.000 + 0.258*Tr + 0.406*C	0.004 + 0.264*Tr + 0.863*C	-0.002 + 0.261*Tr + 0.599*C

Average Leakage Power

picoWatts

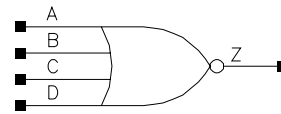
Cell	bc_1.32V_25C	bc_1.32V_125C
NR3ABLL	3470.080	67574.800
NR3ABLLP	5456.530	116599.000
NR3ABLLX4	10587.600	228312.000
NR3ABLLX6	15079.800	331948.000
NR3ABLLX8	20246.700	444418.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
NR3ABLL	Z(max)	$0.014 + 0.007 * Tr$
NR3ABLLP	Z(max)	$0.025 + 0.013 * Tr$
NR3ABLLX4	Z(max)	$0.048 + 0.026 * Tr$
NR3ABLLX6	Z(max)	$0.070 + 0.040 * Tr$
NR3ABLLX8	Z(max)	$0.093 + 0.053 * Tr$

NR4LL
NR4LLP
NR4LLX4
NR4LLX6
NR4LLX8



Function: Function = 4 Input NOR

Boolean Expression: $Z = \overline{(A+B+C+D)}$

Physical Dimensions

Property	NR4LL	NR4LLP	NR4LLX4	NR4LLX6	NR4LLX8
Area(um2)	10.086	12.103	18.155	26.224	34.292

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4LL	Z Max Load	0.160	0.160	0.160
NR4LL	D Input Cap.	0.0022	0.0020	0.0021
NR4LL	B Input Cap.	0.0025	0.0022	0.0024
NR4LL	C Input Cap.	0.0024	0.0022	0.0023
NR4LL	A Input Cap.	0.0026	0.0023	0.0024
NR4LLP	B Input Cap.	0.0043	0.0040	0.0041
NR4LLP	C Input Cap.	0.0040	0.0038	0.0039
NR4LLP	A Input Cap.	0.0043	0.0040	0.0041
NR4LLP	Z Max Load	0.320	0.320	0.320
NR4LLP	D Input Cap.	0.0037	0.0034	0.0035
NR4LLX4	D Input Cap.	0.0071	0.0067	0.0069
NR4LLX4	B Input Cap.	0.0086	0.0079	0.0082
NR4LLX4	C Input Cap.	0.0082	0.0077	0.0079
NR4LLX4	A Input Cap.	0.0086	0.0080	0.0082
NR4LLX4	Z Max Load	0.640	0.640	0.640
NR4LLX6	A Input Cap.	0.0131	0.0121	0.0125
NR4LLX6	D Input Cap.	0.0109	0.0102	0.0105
NR4LLX6	B Input Cap.	0.0127	0.0116	0.0120
NR4LLX6	Z Max Load	0.960	0.960	0.960
NR4LLX6	C Input Cap.	0.0121	0.0113	0.0116

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4LLX8	C Input Cap.	0.0162	0.0152	0.0156
NR4LLX8	A Input Cap.	0.0173	0.0160	0.0165
NR4LLX8	Z Max Load	1.280	1.280	1.280
NR4LLX8	D Input Cap.	0.0144	0.0135	0.0139
NR4LLX8	B Input Cap.	0.0171	0.0156	0.0161

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4LL	A-Z	A_Z (fall)	0.031 + 0.304*Tr + 3.521*C	0.091 + 0.356*Tr + 8.504*C	0.046 + 0.329*Tr + 5.206*C
NR4LL	A-Z	A_Z (rise)	0.052 + 0.161*Tr + 5.929*C	0.137 + 0.180*Tr + 13.444*C	0.083 + 0.174*Tr + 8.899*C
NR4LL	B-Z	B_Z (fall)	0.027 + 0.296*Tr + 3.527*C	0.079 + 0.349*Tr + 8.496*C	0.040 + 0.322*Tr + 5.218*C
NR4LL	B-Z	B_Z (rise)	0.049 + 0.200*Tr + 5.954*C	0.122 + 0.206*Tr + 13.474*C	0.075 + 0.207*Tr + 8.932*C
NR4LL	C-Z	C_Z (fall)	0.020 + 0.288*Tr + 3.550*C	0.059 + 0.341*Tr + 8.529*C	0.028 + 0.314*Tr + 5.256*C
NR4LL	C-Z	C_Z (rise)	0.033 + 0.246*Tr + 5.965*C	0.083 + 0.243*Tr + 13.491*C	0.050 + 0.247*Tr + 8.955*C
NR4LL	D-Z	D_Z (fall)	0.010 + 0.279*Tr + 3.591*C	0.033 + 0.331*Tr + 8.606*C	0.012 + 0.304*Tr + 5.314*C
NR4LL	D-Z	D_Z (rise)	0.014 + 0.288*Tr + 5.970*C	0.030 + 0.285*Tr + 13.467*C	0.018 + 0.288*Tr + 8.958*C
NR4LLP	A-Z	A_Z (fall)	0.030 + 0.314*Tr + 1.902*C	0.082 + 0.362*Tr + 4.221*C	0.043 + 0.338*Tr + 2.707*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4LLP	A-Z	A_Z (rise)	0.046 + 0.148*Tr + 2.890*C	0.123 + 0.170*Tr + 6.453*C	0.073 + 0.162*Tr + 4.301*C
NR4LLP	B-Z	B_Z (fall)	0.025 + 0.306*Tr + 1.907*C	0.069 + 0.355*Tr + 4.214*C	0.035 + 0.330*Tr + 2.712*C
NR4LLP	B-Z	B_Z (rise)	0.041 + 0.186*Tr + 2.908*C	0.105 + 0.193*Tr + 6.479*C	0.064 + 0.194*Tr + 4.330*C
NR4LLP	C-Z	C_Z (fall)	0.017 + 0.298*Tr + 1.921*C	0.049 + 0.345*Tr + 4.234*C	0.022 + 0.321*Tr + 2.735*C
NR4LLP	C-Z	C_Z (rise)	0.024 + 0.230*Tr + 2.923*C	0.065 + 0.228*Tr + 6.502*C	0.037 + 0.232*Tr + 4.354*C
NR4LLP	D-Z	D_Z (fall)	0.005 + 0.286*Tr + 1.949*C	0.021 + 0.332*Tr + 4.290*C	0.004 + 0.310*Tr + 2.776*C
NR4LLP	D-Z	D_Z (rise)	0.005 + 0.270*Tr + 2.931*C	0.013 + 0.267*Tr + 6.499*C	0.006 + 0.270*Tr + 4.362*C
NR4LLX4	A-Z	A_Z (fall)	0.033 + 0.318*Tr + 0.988*C	0.080 + 0.364*Tr + 2.095*C	0.045 + 0.340*Tr + 1.376*C
NR4LLX4	A-Z	A_Z (rise)	0.045 + 0.145*Tr + 1.447*C	0.121 + 0.168*Tr + 3.231*C	0.072 + 0.159*Tr + 2.155*C
NR4LLX4	B-Z	B_Z (fall)	0.028 + 0.309*Tr + 0.991*C	0.069 + 0.356*Tr + 2.093*C	0.038 + 0.331*Tr + 1.378*C
NR4LLX4	B-Z	B_Z (rise)	0.041 + 0.182*Tr + 1.458*C	0.105 + 0.192*Tr + 3.243*C	0.064 + 0.190*Tr + 2.169*C
NR4LLX4	C-Z	C_Z (fall)	0.019 + 0.299*Tr + 0.998*C	0.048 + 0.345*Tr + 2.104*C	0.025 + 0.320*Tr + 1.390*C
NR4LLX4	C-Z	C_Z (rise)	0.022 + 0.224*Tr + 1.466*C	0.061 + 0.224*Tr + 3.256*C	0.035 + 0.226*Tr + 2.182*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4LLX4	D-Z	D_Z (fall)	0.007 + 0.286*Tr + 1.013*C	0.021 + 0.331*Tr + 2.132*C	0.007 + 0.308*Tr + 1.413*C
NR4LLX4	D-Z	D_Z (rise)	0.004 + 0.263*Tr + 1.470*C	0.011 + 0.262*Tr + 3.254*C	0.004 + 0.264*Tr + 2.188*C
NR4LLX6	A-Z	A_Z (fall)	0.032 + 0.311*Tr + 0.652*C	0.080 + 0.359*Tr + 1.404*C	0.044 + 0.334*Tr + 0.916*C
NR4LLX6	A-Z	A_Z (rise)	0.045 + 0.143*Tr + 0.965*C	0.120 + 0.164*Tr + 2.155*C	0.071 + 0.157*Tr + 1.437*C
NR4LLX6	B-Z	B_Z (fall)	0.027 + 0.302*Tr + 0.654*C	0.069 + 0.350*Tr + 1.403*C	0.037 + 0.325*Tr + 0.917*C
NR4LLX6	B-Z	B_Z (rise)	0.041 + 0.179*Tr + 0.972*C	0.104 + 0.187*Tr + 2.164*C	0.063 + 0.187*Tr + 1.448*C
NR4LLX6	C-Z	C_Z (fall)	0.018 + 0.292*Tr + 0.660*C	0.049 + 0.339*Tr + 1.410*C	0.024 + 0.314*Tr + 0.926*C
NR4LLX6	C-Z	C_Z (rise)	0.023 + 0.221*Tr + 0.978*C	0.062 + 0.219*Tr + 2.174*C	0.035 + 0.222*Tr + 1.457*C
NR4LLX6	D-Z	D_Z (fall)	0.006 + 0.279*Tr + 0.670*C	0.021 + 0.324*Tr + 1.431*C	0.006 + 0.301*Tr + 0.941*C
NR4LLX6	D-Z	D_Z (rise)	0.005 + 0.258*Tr + 0.981*C	0.012 + 0.257*Tr + 2.173*C	0.005 + 0.259*Tr + 1.460*C
NR4LLX8	A-Z	A_Z (fall)	0.032 + 0.315*Tr + 0.496*C	0.079 + 0.361*Tr + 1.050*C	0.044 + 0.336*Tr + 0.690*C
NR4LLX8	A-Z	A_Z (rise)	0.045 + 0.142*Tr + 0.725*C	0.120 + 0.165*Tr + 1.617*C	0.071 + 0.157*Tr + 1.079*C
NR4LLX8	B-Z	B_Z (fall)	0.027 + 0.305*Tr + 0.497*C	0.068 + 0.352*Tr + 1.050*C	0.037 + 0.327*Tr + 0.692*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4LLX8	B-Z	B_Z (rise)	0.041 + 0.178*Tr + 0.730*C	0.104 + 0.188*Tr + 1.625*C	0.063 + 0.186*Tr + 1.087*C
NR4LLX8	C-Z	C_Z (fall)	0.018 + 0.294*Tr + 0.501*C	0.048 + 0.340*Tr + 1.056*C	0.024 + 0.316*Tr + 0.698*C
NR4LLX8	C-Z	C_Z (rise)	0.022 + 0.220*Tr + 0.735*C	0.060 + 0.219*Tr + 1.632*C	0.034 + 0.222*Tr + 1.094*C
NR4LLX8	D-Z	D_Z (fall)	0.007 + 0.281*Tr + 0.509*C	0.020 + 0.325*Tr + 1.071*C	0.006 + 0.303*Tr + 0.711*C
NR4LLX8	D-Z	D_Z (rise)	0.004 + 0.258*Tr + 0.737*C	0.010 + 0.257*Tr + 1.632*C	0.004 + 0.258*Tr + 1.097*C

Average Leakage Power

picoWatts

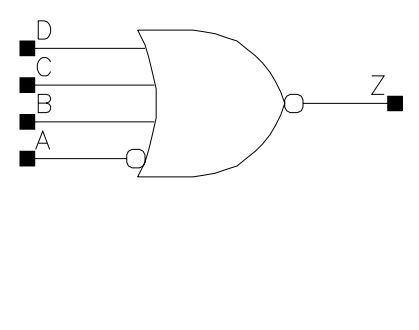
Cell	bc_1.32V_25C	bc_1.32V_125C
NR4LL	3951.930	61640.000
NR4LLP	4818.080	89503.000
NR4LLX4	7457.540	151600.000
NR4LLX6	12186.100	240352.000
NR4LLX8	14915.600	303195.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
NR4LL	Z(max)	0.012 + 0.005*Tr
NR4LLP	Z(max)	0.022 + 0.010*Tr
NR4LLX4	Z(max)	0.042 + 0.020*Tr
NR4LLX6	Z(max)	0.062 + 0.032*Tr
NR4LLX8	Z(max)	0.082 + 0.042*Tr

NR4ALL
NR4ALLP
NR4ALLX4
NR4ALLX6
NR4ALLX8



Function: Function = 4 Input NOR, A Input Inverted

Truth Table

A	B	C	D	Z
-	1	-	-	0
-	-	-	1	0
0	-	-	-	0
-	-	1	-	0
1	0	0	0	1

Physical Dimensions

Property	NR4ALL	NR4ALLP	NR4ALLX4	NR4ALLX6	NR4ALLX8
Area(um ²)	12.103	14.120	22.189	28.241	38.327

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ALL	C Input Cap.	0.0024	0.0022	0.0023
NR4ALL	Z Max Load	0.160	0.160	0.160
NR4ALL	A Input Cap.	0.0015	0.0012	0.0013
NR4ALL	D Input Cap.	0.0022	0.0020	0.0021
NR4ALL	B Input Cap.	0.0025	0.0023	0.0024
NR4ALLP	C Input Cap.	0.0041	0.0039	0.0040
NR4ALLP	Z Max Load	0.320	0.320	0.320
NR4ALLP	A Input Cap.	0.0022	0.0018	0.0019
NR4ALLP	D Input Cap.	0.0037	0.0034	0.0035
NR4ALLP	B Input Cap.	0.0043	0.0039	0.0040
NR4ALLX4	B Input Cap.	0.0087	0.0080	0.0082

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ALLX4	C Input Cap.	0.0082	0.0077	0.0080
NR4ALLX4	Z Max Load	0.640	0.640	0.640
NR4ALLX4	A Input Cap.	0.0034	0.0028	0.0030
NR4ALLX4	D Input Cap.	0.0072	0.0067	0.0069
NR4ALLX6	D Input Cap.	0.0107	0.0101	0.0104
NR4ALLX6	Z Max Load	0.960	0.960	0.960
NR4ALLX6	B Input Cap.	0.0124	0.0115	0.0118
NR4ALLX6	C Input Cap.	0.0120	0.0113	0.0116
NR4ALLX6	A Input Cap.	0.0052	0.0044	0.0046
NR4ALLX8	Z Max Load	1.280	1.280	1.280
NR4ALLX8	A Input Cap.	0.0065	0.0056	0.0058
NR4ALLX8	D Input Cap.	0.0144	0.0135	0.0139
NR4ALLX8	B Input Cap.	0.0170	0.0157	0.0162
NR4ALLX8	C Input Cap.	0.0162	0.0152	0.0157

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ALL	A-Z	A_Z (fall)	0.097 + 0.279*Tr + 3.407*C	0.236 + 0.291*Tr + 8.440*C	0.147 + 0.284*Tr + 5.031*C
NR4ALL	A-Z	A_Z (rise)	0.091 + 0.157*Tr + 5.909*C	0.224 + 0.203*Tr + 13.364*C	0.141 + 0.177*Tr + 8.830*C
NR4ALL	B-Z	B_Z (fall)	0.028 + 0.296*Tr + 3.527*C	0.080 + 0.349*Tr + 8.495*C	0.040 + 0.322*Tr + 5.215*C
NR4ALL	B-Z	B_Z (rise)	0.047 + 0.201*Tr + 5.946*C	0.122 + 0.207*Tr + 13.467*C	0.073 + 0.207*Tr + 8.927*C
NR4ALL	C-Z	C_Z (fall)	0.020 + 0.288*Tr + 3.548*C	0.059 + 0.342*Tr + 8.524*C	0.028 + 0.314*Tr + 5.253*C
NR4ALL	C-Z	C_Z (rise)	0.033 + 0.247*Tr + 5.961*C	0.083 + 0.244*Tr + 13.479*C	0.050 + 0.248*Tr + 8.952*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ALL	D-Z	D_Z (fall)	0.010 + 0.279*Tr + 3.588*C	0.034 + 0.332*Tr + 8.603*C	0.013 + 0.305*Tr + 5.310*C
NR4ALL	D-Z	D_Z (rise)	0.015 + 0.288*Tr + 5.966*C	0.032 + 0.285*Tr + 13.465*C	0.019 + 0.288*Tr + 8.954*C
NR4ALLP	A-Z	A_Z (fall)	0.087 + 0.258*Tr + 1.847*C	0.202 + 0.270*Tr + 4.172*C	0.129 + 0.262*Tr + 2.612*C
NR4ALLP	A-Z	A_Z (rise)	0.081 + 0.171*Tr + 2.863*C	0.194 + 0.210*Tr + 6.385*C	0.123 + 0.188*Tr + 4.244*C
NR4ALLP	B-Z	B_Z (fall)	0.025 + 0.306*Tr + 1.907*C	0.069 + 0.355*Tr + 4.213*C	0.035 + 0.330*Tr + 2.712*C
NR4ALLP	B-Z	B_Z (rise)	0.038 + 0.187*Tr + 2.906*C	0.104 + 0.193*Tr + 6.479*C	0.060 + 0.193*Tr + 4.328*C
NR4ALLP	C-Z	C_Z (fall)	0.017 + 0.298*Tr + 1.922*C	0.049 + 0.345*Tr + 4.234*C	0.022 + 0.321*Tr + 2.735*C
NR4ALLP	C-Z	C_Z (rise)	0.024 + 0.230*Tr + 2.922*C	0.065 + 0.228*Tr + 6.503*C	0.036 + 0.232*Tr + 4.353*C
NR4ALLP	D-Z	D_Z (fall)	0.005 + 0.286*Tr + 1.949*C	0.021 + 0.332*Tr + 4.290*C	0.004 + 0.310*Tr + 2.776*C
NR4ALLP	D-Z	D_Z (rise)	0.005 + 0.270*Tr + 2.931*C	0.013 + 0.267*Tr + 6.499*C	0.006 + 0.270*Tr + 4.361*C
NR4ALLX4	A-Z	A_Z (fall)	0.084 + 0.245*Tr + 0.962*C	0.189 + 0.258*Tr + 2.069*C	0.122 + 0.250*Tr + 1.329*C
NR4ALLX4	A-Z	A_Z (rise)	0.077 + 0.183*Tr + 1.432*C	0.185 + 0.217*Tr + 3.192*C	0.118 + 0.197*Tr + 2.122*C
NR4ALLX4	B-Z	B_Z (fall)	0.028 + 0.309*Tr + 0.990*C	0.069 + 0.355*Tr + 2.094*C	0.038 + 0.331*Tr + 1.377*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ALLX4	B-Z	B_Z (rise)	0.038 + 0.182*Tr + 1.457*C	0.103 + 0.191*Tr + 3.243*C	0.060 + 0.190*Tr + 2.169*C
NR4ALLX4	C-Z	C_Z (fall)	0.019 + 0.299*Tr + 0.998*C	0.048 + 0.345*Tr + 2.104*C	0.025 + 0.320*Tr + 1.390*C
NR4ALLX4	C-Z	C_Z (rise)	0.023 + 0.224*Tr + 1.466*C	0.061 + 0.224*Tr + 3.257*C	0.035 + 0.226*Tr + 2.182*C
NR4ALLX4	D-Z	D_Z (fall)	0.008 + 0.286*Tr + 1.012*C	0.021 + 0.331*Tr + 2.132*C	0.007 + 0.309*Tr + 1.412*C
NR4ALLX4	D-Z	D_Z (rise)	0.005 + 0.263*Tr + 1.470*C	0.011 + 0.262*Tr + 3.255*C	0.005 + 0.264*Tr + 2.188*C
NR4ALLX6	A-Z	A_Z (fall)	0.084 + 0.241*Tr + 0.646*C	0.188 + 0.255*Tr + 1.359*C	0.122 + 0.246*Tr + 0.883*C
NR4ALLX6	A-Z	A_Z (rise)	0.079 + 0.188*Tr + 0.955*C	0.187 + 0.221*Tr + 2.129*C	0.119 + 0.201*Tr + 1.415*C
NR4ALLX6	B-Z	B_Z (fall)	0.027 + 0.305*Tr + 0.666*C	0.067 + 0.350*Tr + 1.379*C	0.037 + 0.327*Tr + 0.917*C
NR4ALLX6	B-Z	B_Z (rise)	0.038 + 0.178*Tr + 0.972*C	0.103 + 0.187*Tr + 2.164*C	0.059 + 0.186*Tr + 1.447*C
NR4ALLX6	C-Z	C_Z (fall)	0.019 + 0.294*Tr + 0.671*C	0.048 + 0.339*Tr + 1.385*C	0.024 + 0.316*Tr + 0.926*C
NR4ALLX6	C-Z	C_Z (rise)	0.023 + 0.219*Tr + 0.979*C	0.063 + 0.219*Tr + 2.173*C	0.035 + 0.222*Tr + 1.457*C
NR4ALLX6	D-Z	D_Z (fall)	0.007 + 0.282*Tr + 0.681*C	0.020 + 0.324*Tr + 1.405*C	0.006 + 0.303*Tr + 0.941*C
NR4ALLX6	D-Z	D_Z (rise)	0.005 + 0.257*Tr + 0.982*C	0.014 + 0.257*Tr + 2.173*C	0.005 + 0.258*Tr + 1.461*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ALLX8	A-Z	A_Z (fall)	0.082 + 0.238*Tr + 0.482*C	0.184 + 0.251*Tr + 1.034*C	0.119 + 0.243*Tr + 0.665*C
NR4ALLX8	A-Z	A_Z (rise)	0.077 + 0.188*Tr + 0.716*C	0.182 + 0.219*Tr + 1.597*C	0.117 + 0.201*Tr + 1.061*C
NR4ALLX8	B-Z	B_Z (fall)	0.027 + 0.305*Tr + 0.497*C	0.068 + 0.351*Tr + 1.050*C	0.037 + 0.327*Tr + 0.692*C
NR4ALLX8	B-Z	B_Z (rise)	0.037 + 0.179*Tr + 0.730*C	0.102 + 0.187*Tr + 1.625*C	0.059 + 0.186*Tr + 1.087*C
NR4ALLX8	C-Z	C_Z (fall)	0.018 + 0.294*Tr + 0.501*C	0.047 + 0.340*Tr + 1.055*C	0.024 + 0.316*Tr + 0.698*C
NR4ALLX8	C-Z	C_Z (rise)	0.022 + 0.220*Tr + 0.735*C	0.060 + 0.219*Tr + 1.632*C	0.034 + 0.222*Tr + 1.094*C
NR4ALLX8	D-Z	D_Z (fall)	0.007 + 0.281*Tr + 0.509*C	0.019 + 0.325*Tr + 1.071*C	0.006 + 0.303*Tr + 0.711*C
NR4ALLX8	D-Z	D_Z (rise)	0.004 + 0.258*Tr + 0.737*C	0.011 + 0.256*Tr + 1.632*C	0.004 + 0.258*Tr + 1.098*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
NR4ALL	4454.460	72349.200
NR4ALLP	5537.120	106473.000
NR4ALLX4	8691.600	182280.000
NR4ALLX6	12043.900	260001.000
NR4ALLX8	17317.300	364596.000

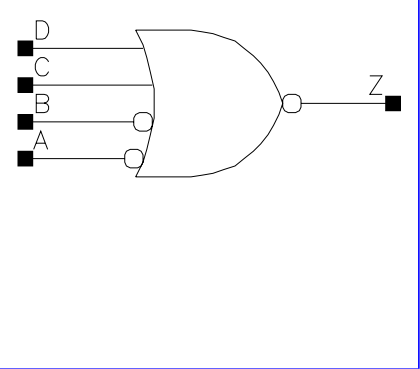
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
NR4ALL	Z(max)	$0.019 + 0.005 * Tr$
NR4ALLP	Z(max)	$0.032 + 0.008 * Tr$
NR4ALLX4	Z(max)	$0.061 + 0.016 * Tr$
NR4ALLX6	Z(max)	$0.092 + 0.023 * Tr$
NR4ALLX8	Z(max)	$0.120 + 0.031 * Tr$

NR4ABLL
NR4ABLLP
NR4ABLLX4
NR4ABLLX6
NR4ABLLX8

Function: Function = 4 Input NOR ,A and B Inputs Inverted ,8x Drive



Truth Table

A	B	C	D	Z
-	-	1	-	0
-	0	-	-	0
-	-	-	1	0
0	-	-	-	0
1	1	0	0	1

Physical Dimensions

Property	NR4ABLL	NR4ABLLP	NR4ABLLX4	NR4ABLLX6	NR4ABLLX8
Area(um ²)	12.103	14.120	22.189	32.275	40.344

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ABLL	D Input Cap.	0.0024	0.0022	0.0023
NR4ABLL	Z Max Load	0.160	0.160	0.160
NR4ABLL	B Input Cap.	0.0017	0.0014	0.0015
NR4ABLL	C Input Cap.	0.0026	0.0023	0.0024
NR4ABLL	A Input Cap.	0.0020	0.0016	0.0017
NR4ABLLP	C Input Cap.	0.0044	0.0041	0.0042
NR4ABLLP	A Input Cap.	0.0034	0.0028	0.0030
NR4ABLLP	D Input Cap.	0.0039	0.0037	0.0038
NR4ABLLP	Z Max Load	0.320	0.320	0.320
NR4ABLLP	B Input Cap.	0.0031	0.0026	0.0027

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ABLLX4	Z Max Load	0.640	0.640	0.640
NR4ABLLX4	B Input Cap.	0.0060	0.0050	0.0052
NR4ABLLX4	C Input Cap.	0.0089	0.0083	0.0086
NR4ABLLX4	A Input Cap.	0.0059	0.0051	0.0054
NR4ABLLX4	D Input Cap.	0.0076	0.0071	0.0073
NR4ABLLX6	D Input Cap.	0.0116	0.0108	0.0111
NR4ABLLX6	B Input Cap.	0.0081	0.0068	0.0071
NR4ABLLX6	C Input Cap.	0.0130	0.0121	0.0125
NR4ABLLX6	Z Max Load	0.960	0.960	0.960
NR4ABLLX6	A Input Cap.	0.0086	0.0075	0.0078
NR4ABLLX8	C Input Cap.	0.0175	0.0164	0.0168
NR4ABLLX8	A Input Cap.	0.0122	0.0106	0.0111
NR4ABLLX8	D Input Cap.	0.0153	0.0143	0.0147
NR4ABLLX8	Z Max Load	1.280	1.280	1.280
NR4ABLLX8	B Input Cap.	0.0117	0.0098	0.0103

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ABLL	A-Z	A_Z (fall)	0.082 + 0.281*Tr + 2.743*C	0.193 + 0.298*Tr + 6.514*C	0.123 + 0.287*Tr + 3.976*C
NR4ABLL	A-Z	A_Z (rise)	0.069 + 0.140*Tr + 4.463*C	0.173 + 0.176*Tr + 9.965*C	0.107 + 0.158*Tr + 6.631*C
NR4ABLL	B-Z	B_Z (fall)	0.076 + 0.269*Tr + 2.742*C	0.180 + 0.284*Tr + 6.515*C	0.114 + 0.274*Tr + 3.974*C
NR4ABLL	B-Z	B_Z (rise)	0.067 + 0.156*Tr + 4.463*C	0.169 + 0.196*Tr + 9.969*C	0.104 + 0.173*Tr + 6.628*C
NR4ABLL	C-Z	C_Z (fall)	0.012 + 0.281*Tr + 2.950*C	0.039 + 0.332*Tr + 6.775*C	0.016 + 0.305*Tr + 4.307*C
NR4ABLL	C-Z	C_Z (rise)	0.023 + 0.238*Tr + 4.563*C	0.060 + 0.241*Tr + 10.167*C	0.035 + 0.242*Tr + 6.822*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ABLL	D-Z	D_Z (fall)	0.004 + 0.270*Tr + 2.995*C	0.018 + 0.321*Tr + 6.859*C	0.003 + 0.295*Tr + 4.372*C
NR4ABLL	D-Z	D_Z (rise)	0.010 + 0.286*Tr + 4.597*C	0.025 + 0.286*Tr + 10.197*C	0.013 + 0.287*Tr + 6.870*C
NR4ABLLP	A-Z	A_Z (fall)	0.074 + 0.262*Tr + 1.449*C	0.170 + 0.278*Tr + 3.198*C	0.110 + 0.267*Tr + 2.029*C
NR4ABLLP	A-Z	A_Z (rise)	0.063 + 0.148*Tr + 2.166*C	0.157 + 0.179*Tr + 4.768*C	0.097 + 0.164*Tr + 3.188*C
NR4ABLLP	B-Z	B_Z (fall)	0.068 + 0.249*Tr + 1.450*C	0.157 + 0.263*Tr + 3.198*C	0.101 + 0.254*Tr + 2.028*C
NR4ABLLP	B-Z	B_Z (rise)	0.060 + 0.163*Tr + 2.167*C	0.152 + 0.198*Tr + 4.766*C	0.094 + 0.177*Tr + 3.189*C
NR4ABLLP	C-Z	C_Z (fall)	0.009 + 0.290*Tr + 1.560*C	0.031 + 0.336*Tr + 3.353*C	0.010 + 0.312*Tr + 2.210*C
NR4ABLLP	C-Z	C_Z (rise)	0.017 + 0.224*Tr + 2.241*C	0.048 + 0.227*Tr + 4.915*C	0.026 + 0.228*Tr + 3.324*C
NR4ABLLP	D-Z	D_Z (fall)	0.000 + 0.278*Tr + 1.589*C	0.008 + 0.323*Tr + 3.409*C	-0.004 + 0.301*Tr + 2.252*C
NR4ABLLP	D-Z	D_Z (rise)	0.003 + 0.270*Tr + 2.265*C	0.012 + 0.270*Tr + 4.942*C	0.003 + 0.271*Tr + 3.360*C
NR4ABLLX4	A-Z	A_Z (fall)	0.072 + 0.256*Tr + 0.744*C	0.162 + 0.272*Tr + 1.576*C	0.106 + 0.261*Tr + 1.020*C
NR4ABLLX4	A-Z	A_Z (rise)	0.061 + 0.151*Tr + 1.083*C	0.152 + 0.180*Tr + 2.384*C	0.095 + 0.165*Tr + 1.595*C
NR4ABLLX4	B-Z	B_Z (fall)	0.066 + 0.242*Tr + 0.744*C	0.150 + 0.256*Tr + 1.576*C	0.098 + 0.247*Tr + 1.021*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ABLLX4	B-Z	B_Z (rise)	0.059 + 0.166*Tr + 1.084*C	0.148 + 0.197*Tr + 2.385*C	0.091 + 0.178*Tr + 1.596*C
NR4ABLLX4	C-Z	C_Z (fall)	0.012 + 0.287*Tr + 0.798*C	0.033 + 0.332*Tr + 1.656*C	0.015 + 0.308*Tr + 1.111*C
NR4ABLLX4	C-Z	C_Z (rise)	0.018 + 0.218*Tr + 1.124*C	0.049 + 0.222*Tr + 2.462*C	0.027 + 0.222*Tr + 1.666*C
NR4ABLLX4	D-Z	D_Z (fall)	0.003 + 0.274*Tr + 0.813*C	0.011 + 0.318*Tr + 1.685*C	0.001 + 0.295*Tr + 1.134*C
NR4ABLLX4	D-Z	D_Z (rise)	0.004 + 0.263*Tr + 1.136*C	0.012 + 0.266*Tr + 2.476*C	0.004 + 0.265*Tr + 1.685*C
NR4ABLLX6	A-Z	A_Z (fall)	0.072 + 0.255*Tr + 0.492*C	0.163 + 0.269*Tr + 1.057*C	0.106 + 0.259*Tr + 0.680*C
NR4ABLLX6	A-Z	A_Z (rise)	0.062 + 0.154*Tr + 0.722*C	0.154 + 0.185*Tr + 1.590*C	0.096 + 0.169*Tr + 1.064*C
NR4ABLLX6	B-Z	B_Z (fall)	0.067 + 0.241*Tr + 0.492*C	0.151 + 0.254*Tr + 1.058*C	0.098 + 0.246*Tr + 0.680*C
NR4ABLLX6	B-Z	B_Z (rise)	0.059 + 0.169*Tr + 0.723*C	0.150 + 0.203*Tr + 1.590*C	0.092 + 0.183*Tr + 1.064*C
NR4ABLLX6	C-Z	C_Z (fall)	0.011 + 0.283*Tr + 0.530*C	0.032 + 0.327*Tr + 1.114*C	0.013 + 0.303*Tr + 0.744*C
NR4ABLLX6	C-Z	C_Z (rise)	0.018 + 0.215*Tr + 0.751*C	0.049 + 0.218*Tr + 1.644*C	0.026 + 0.219*Tr + 1.114*C
NR4ABLLX6	D-Z	D_Z (fall)	0.002 + 0.269*Tr + 0.541*C	0.010 + 0.312*Tr + 1.134*C	-0.001 + 0.290*Tr + 0.760*C
NR4ABLLX6	D-Z	D_Z (rise)	0.004 + 0.258*Tr + 0.759*C	0.013 + 0.260*Tr + 1.654*C	0.004 + 0.259*Tr + 1.126*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ABLLX8	A-Z	A_Z (fall)	0.070 + 0.255*Tr + 0.372*C	0.158 + 0.270*Tr + 0.788*C	0.103 + 0.259*Tr + 0.511*C
NR4ABLLX8	A-Z	A_Z (rise)	0.060 + 0.150*Tr + 0.542*C	0.149 + 0.179*Tr + 1.192*C	0.093 + 0.164*Tr + 0.797*C
NR4ABLLX8	B-Z	B_Z (fall)	0.065 + 0.241*Tr + 0.372*C	0.146 + 0.254*Tr + 0.789*C	0.095 + 0.245*Tr + 0.511*C
NR4ABLLX8	B-Z	B_Z (rise)	0.057 + 0.165*Tr + 0.542*C	0.145 + 0.196*Tr + 1.192*C	0.089 + 0.177*Tr + 0.798*C
NR4ABLLX8	C-Z	C_Z (fall)	0.012 + 0.283*Tr + 0.401*C	0.032 + 0.327*Tr + 0.832*C	0.014 + 0.303*Tr + 0.559*C
NR4ABLLX8	C-Z	C_Z (rise)	0.017 + 0.214*Tr + 0.564*C	0.048 + 0.218*Tr + 1.235*C	0.026 + 0.218*Tr + 0.836*C
NR4ABLLX8	D-Z	D_Z (fall)	0.002 + 0.269*Tr + 0.409*C	0.009 + 0.312*Tr + 0.848*C	-0.001 + 0.290*Tr + 0.571*C
NR4ABLLX8	D-Z	D_Z (rise)	0.004 + 0.258*Tr + 0.571*C	0.011 + 0.260*Tr + 1.243*C	0.003 + 0.259*Tr + 0.846*C

Average Leakage Power

picoWatts

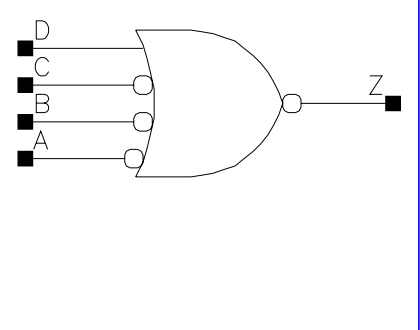
Cell	bc_1.32V_25C	bc_1.32V_125C
NR4ABLL	4102.250	75120.400
NR4ABLLP	5950.200	123951.000
NR4ABLLX4	10159.500	224780.000
NR4ABLLX6	15746.400	340749.000
NR4ABLLX8	20319.000	449560.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
NR4ABLL	Z(max)	$0.017 + 0.006 * Tr$
NR4ABLLP	Z(max)	$0.030 + 0.013 * Tr$
NR4ABLLX4	Z(max)	$0.058 + 0.025 * Tr$
NR4ABLLX6	Z(max)	$0.085 + 0.035 * Tr$
NR4ABLLX8	Z(max)	$0.113 + 0.050 * Tr$

NR4ABCLL
NR4ABCLLP
NR4ABCLLX4
NR4ABCLLX6
NR4ABCLLX8



Function: Function = 4 Input NOR ,A , B and C Inputs Inverted

Truth Table

A	B	C	D	Z
-	0	-	-	0
-	-	0	-	0
-	-	-	1	0
0	-	-	-	0
1	1	1	0	1

Physical Dimensions

Property	NR4ABCLL	NR4ABCLLP	NR4ABCLLX 4	NR4ABCLLX 6	NR4ABCLLX 8
Area(um2)	12.103	14.120	18.155	24.206	32.275

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ABCLL	B Input Cap.	0.0018	0.0015	0.0016
NR4ABCLL	Z Max Load	0.160	0.160	0.160
NR4ABCLL	C Input Cap.	0.0019	0.0016	0.0016
NR4ABCLL	A Input Cap.	0.0018	0.0015	0.0016
NR4ABCLL	D Input Cap.	0.0023	0.0021	0.0022
NR4ABCLLP	C Input Cap.	0.0027	0.0023	0.0024
NR4ABCLLP	A Input Cap.	0.0028	0.0024	0.0026
NR4ABCLLP	D Input Cap.	0.0045	0.0042	0.0043
NR4ABCLLP	B Input Cap.	0.0028	0.0024	0.0026
NR4ABCLLP	Z Max Load	0.320	0.320	0.320

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ABCLLX4	A Input Cap.	0.0052	0.0046	0.0048
NR4ABCLLX4	D Input Cap.	0.0086	0.0079	0.0082
NR4ABCLLX4	B Input Cap.	0.0051	0.0045	0.0046
NR4ABCLLX4	Z Max Load	0.640	0.640	0.640
NR4ABCLLX4	C Input Cap.	0.0049	0.0042	0.0044
NR4ABCLLX6	C Input Cap.	0.0073	0.0063	0.0066
NR4ABCLLX6	A Input Cap.	0.0081	0.0072	0.0075
NR4ABCLLX6	Z Max Load	0.960	0.960	0.960
NR4ABCLLX6	D Input Cap.	0.0131	0.0122	0.0125
NR4ABCLLX6	B Input Cap.	0.0079	0.0069	0.0072
NR4ABCLLX8	B Input Cap.	0.0100	0.0088	0.0091
NR4ABCLLX8	Z Max Load	1.280	1.280	1.280
NR4ABCLLX8	C Input Cap.	0.0095	0.0081	0.0084
NR4ABCLLX8	A Input Cap.	0.0104	0.0092	0.0095
NR4ABCLLX8	D Input Cap.	0.0174	0.0161	0.0166

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ABCLL	A-Z	A_Z (fall)	0.097 + 0.316*Tr + 2.067*C	0.225 + 0.340*Tr + 4.721*C	0.146 + 0.325*Tr + 2.946*C
NR4ABCLL	A-Z	A_Z (rise)	0.069 + 0.133*Tr + 3.065*C	0.186 + 0.166*Tr + 6.703*C	0.110 + 0.151*Tr + 4.505*C
NR4ABCLL	B-Z	B_Z (fall)	0.091 + 0.305*Tr + 2.064*C	0.212 + 0.329*Tr + 4.712*C	0.137 + 0.314*Tr + 2.942*C
NR4ABCLL	B-Z	B_Z (rise)	0.068 + 0.155*Tr + 3.067*C	0.180 + 0.191*Tr + 6.707*C	0.107 + 0.172*Tr + 4.507*C
NR4ABCLL	C-Z	C_Z (fall)	0.084 + 0.292*Tr + 2.063*C	0.197 + 0.316*Tr + 4.699*C	0.127 + 0.302*Tr + 2.937*C
NR4ABCLL	C-Z	C_Z (rise)	0.066 + 0.167*Tr + 3.066*C	0.173 + 0.207*Tr + 6.707*C	0.104 + 0.183*Tr + 4.506*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ABCLL	D-Z	D_Z (fall)	-0.001 + 0.259*Tr + 2.355*C	0.005 + 0.307*Tr + 5.154*C	-0.005 + 0.282*Tr + 3.408*C
NR4ABCLL	D-Z	D_Z (rise)	0.005 + 0.284*Tr + 3.272*C	0.014 + 0.290*Tr + 7.070*C	0.005 + 0.288*Tr + 4.860*C
NR4ABCLLP	A-Z	A_Z (fall)	0.086 + 0.298*Tr + 1.037*C	0.193 + 0.321*Tr + 2.236*C	0.127 + 0.306*Tr + 1.437*C
NR4ABCLLP	A-Z	A_Z (rise)	0.064 + 0.140*Tr + 1.478*C	0.168 + 0.170*Tr + 3.185*C	0.101 + 0.156*Tr + 2.154*C
NR4ABCLLP	B-Z	B_Z (fall)	0.080 + 0.286*Tr + 1.035*C	0.181 + 0.309*Tr + 2.229*C	0.119 + 0.295*Tr + 1.434*C
NR4ABCLLP	B-Z	B_Z (rise)	0.062 + 0.162*Tr + 1.477*C	0.162 + 0.194*Tr + 3.186*C	0.097 + 0.177*Tr + 2.153*C
NR4ABCLLP	C-Z	C_Z (fall)	0.074 + 0.274*Tr + 1.034*C	0.165 + 0.295*Tr + 2.225*C	0.109 + 0.282*Tr + 1.432*C
NR4ABCLLP	C-Z	C_Z (rise)	0.059 + 0.174*Tr + 1.477*C	0.153 + 0.210*Tr + 3.183*C	0.093 + 0.188*Tr + 2.152*C
NR4ABCLLP	D-Z	D_Z (fall)	-0.006 + 0.263*Tr + 1.201*C	-0.006 + 0.306*Tr + 2.508*C	-0.013 + 0.284*Tr + 1.704*C
NR4ABCLLP	D-Z	D_Z (rise)	-0.002 + 0.271*Tr + 1.610*C	0.001 + 0.277*Tr + 3.421*C	-0.005 + 0.275*Tr + 2.374*C
NR4ABCLLX4	A-Z	A_Z (fall)	0.082 + 0.292*Tr + 0.518*C	0.183 + 0.315*Tr + 1.118*C	0.121 + 0.300*Tr + 0.718*C
NR4ABCLLX4	A-Z	A_Z (rise)	0.062 + 0.142*Tr + 0.739*C	0.161 + 0.170*Tr + 1.593*C	0.097 + 0.157*Tr + 1.077*C
NR4ABCLLX4	B-Z	B_Z (fall)	0.077 + 0.280*Tr + 0.517*C	0.171 + 0.302*Tr + 1.114*C	0.113 + 0.288*Tr + 0.717*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ABCLLX4	B-Z	B_Z (rise)	0.059 + 0.164*Tr + 0.740*C	0.154 + 0.193*Tr + 1.593*C	0.093 + 0.177*Tr + 1.077*C
NR4ABCLLX4	C-Z	C_Z (fall)	0.070 + 0.267*Tr + 0.517*C	0.155 + 0.288*Tr + 1.112*C	0.103 + 0.275*Tr + 0.716*C
NR4ABCLLX4	C-Z	C_Z (rise)	0.057 + 0.176*Tr + 0.739*C	0.143 + 0.208*Tr + 1.593*C	0.088 + 0.188*Tr + 1.077*C
NR4ABCLLX4	D-Z	D_Z (fall)	-0.003 + 0.252*Tr + 0.602*C	-0.001 + 0.296*Tr + 1.259*C	-0.008 + 0.272*Tr + 0.855*C
NR4ABCLLX4	D-Z	D_Z (rise)	0.001 + 0.263*Tr + 0.807*C	0.005 + 0.269*Tr + 1.716*C	-0.001 + 0.266*Tr + 1.190*C
NR4ABCLLX6	A-Z	A_Z (fall)	0.079 + 0.287*Tr + 0.351*C	0.174 + 0.307*Tr + 0.743*C	0.116 + 0.294*Tr + 0.481*C
NR4ABCLLX6	A-Z	A_Z (rise)	0.060 + 0.142*Tr + 0.493*C	0.158 + 0.170*Tr + 1.062*C	0.094 + 0.157*Tr + 0.718*C
NR4ABCLLX6	B-Z	B_Z (fall)	0.074 + 0.274*Tr + 0.350*C	0.163 + 0.294*Tr + 0.740*C	0.108 + 0.282*Tr + 0.480*C
NR4ABCLLX6	B-Z	B_Z (rise)	0.058 + 0.163*Tr + 0.493*C	0.152 + 0.194*Tr + 1.062*C	0.091 + 0.177*Tr + 0.719*C
NR4ABCLLX6	C-Z	C_Z (fall)	0.067 + 0.262*Tr + 0.350*C	0.148 + 0.280*Tr + 0.739*C	0.098 + 0.269*Tr + 0.480*C
NR4ABCLLX6	C-Z	C_Z (rise)	0.055 + 0.175*Tr + 0.493*C	0.141 + 0.209*Tr + 1.062*C	0.086 + 0.189*Tr + 0.718*C
NR4ABCLLX6	D-Z	D_Z (fall)	-0.005 + 0.252*Tr + 0.409*C	-0.004 + 0.292*Tr + 0.843*C	-0.011 + 0.271*Tr + 0.577*C
NR4ABCLLX6	D-Z	D_Z (rise)	-0.001 + 0.258*Tr + 0.541*C	0.002 + 0.263*Tr + 1.149*C	-0.004 + 0.261*Tr + 0.798*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
NR4ABCLLX8	A-Z	A_Z (fall)	0.080 + 0.290*Tr + 0.261*C	0.178 + 0.313*Tr + 0.556*C	0.118 + 0.298*Tr + 0.360*C
NR4ABCLLX8	A-Z	A_Z (rise)	0.060 + 0.140*Tr + 0.370*C	0.157 + 0.168*Tr + 0.797*C	0.094 + 0.155*Tr + 0.539*C
NR4ABCLLX8	B-Z	B_Z (fall)	0.075 + 0.278*Tr + 0.261*C	0.166 + 0.300*Tr + 0.554*C	0.110 + 0.286*Tr + 0.359*C
NR4ABCLLX8	B-Z	B_Z (rise)	0.058 + 0.162*Tr + 0.370*C	0.149 + 0.191*Tr + 0.797*C	0.090 + 0.175*Tr + 0.539*C
NR4ABCLLX8	C-Z	C_Z (fall)	0.068 + 0.265*Tr + 0.261*C	0.150 + 0.285*Tr + 0.553*C	0.100 + 0.273*Tr + 0.358*C
NR4ABCLLX8	C-Z	C_Z (rise)	0.055 + 0.174*Tr + 0.370*C	0.139 + 0.205*Tr + 0.797*C	0.085 + 0.186*Tr + 0.539*C
NR4ABCLLX8	D-Z	D_Z (fall)	-0.003 + 0.250*Tr + 0.306*C	-0.002 + 0.291*Tr + 0.631*C	-0.009 + 0.268*Tr + 0.431*C
NR4ABCLLX8	D-Z	D_Z (rise)	0.000 + 0.258*Tr + 0.406*C	0.003 + 0.264*Tr + 0.863*C	-0.003 + 0.261*Tr + 0.598*C

Average Leakage Power

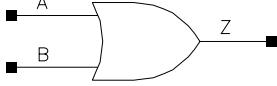
picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
NR4ABCLL	3541.640	69237.600
NR4ABCLLP	5569.640	119335.000
NR4ABCLLX4	10774.300	232941.000
NR4ABCLLX6	15299.600	337436.000
NR4ABCLLX8	20601.500	453172.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
NR4ABCLL	Z(max)	$0.016 + 0.005 * Tr$
NR4ABCLLP	Z(max)	$0.027 + 0.011 * Tr$
NR4ABCLLX4	Z(max)	$0.052 + 0.021 * Tr$
NR4ABCLLX6	Z(max)	$0.075 + 0.032 * Tr$
NR4ABCLLX8	Z(max)	$0.101 + 0.043 * Tr$

<p>OR2LL OR2LLP OR2LLX4 OR2LLX6 OR2LLX8</p> <p>Function: Function = 2 Input OR</p> <p>Boolean Expression: $Z = A+B$</p>	
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Physical Dimensions

Property	OR2LL	OR2LLP	OR2LLX4	OR2LLX6	OR2LLX8
Area(um ²)	10.086	10.086	12.103	18.155	22.189

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR2LL	A Input Cap.	0.0018	0.0015	0.0016
OR2LL	Z Max Load	0.160	0.160	0.160
OR2LL	B Input Cap.	0.0016	0.0013	0.0014
OR2LLP	A Input Cap.	0.0031	0.0027	0.0028
OR2LLP	Z Max Load	0.320	0.320	0.320
OR2LLP	B Input Cap.	0.0028	0.0024	0.0025
OR2LLX4	Z Max Load	0.640	0.640	0.640
OR2LLX4	B Input Cap.	0.0052	0.0045	0.0047
OR2LLX4	A Input Cap.	0.0056	0.0049	0.0051
OR2LLX6	A Input Cap.	0.0084	0.0074	0.0077
OR2LLX6	Z Max Load	0.960	0.960	0.960
OR2LLX6	B Input Cap.	0.0077	0.0066	0.0069
OR2LLX8	A Input Cap.	0.0112	0.0099	0.0103
OR2LLX8	Z Max Load	1.280	1.280	1.280
OR2LLX8	B Input Cap.	0.0102	0.0087	0.0091

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR2LL	A-Z	A_Z (fall)	0.078 + 0.227*Tr + 1.256*C	0.185 + 0.230*Tr + 2.737*C	0.119 + 0.229*Tr + 1.760*C
OR2LL	A-Z	A_Z (rise)	0.061 + 0.216*Tr + 1.618*C	0.148 + 0.270*Tr + 3.419*C	0.091 + 0.236*Tr + 2.329*C
OR2LL	B-Z	B_Z (fall)	0.075 + 0.270*Tr + 1.247*C	0.168 + 0.274*Tr + 2.718*C	0.111 + 0.270*Tr + 1.746*C
OR2LL	B-Z	B_Z (rise)	0.055 + 0.195*Tr + 1.619*C	0.130 + 0.250*Tr + 3.411*C	0.081 + 0.217*Tr + 2.328*C
OR2LLP	A-Z	A_Z (fall)	0.065 + 0.206*Tr + 0.633*C	0.152 + 0.213*Tr + 1.329*C	0.099 + 0.210*Tr + 0.870*C
OR2LLP	A-Z	A_Z (rise)	0.054 + 0.226*Tr + 0.791*C	0.125 + 0.271*Tr + 1.643*C	0.079 + 0.242*Tr + 1.127*C
OR2LLP	B-Z	B_Z (fall)	0.063 + 0.245*Tr + 0.628*C	0.140 + 0.250*Tr + 1.318*C	0.093 + 0.245*Tr + 0.863*C
OR2LLP	B-Z	B_Z (rise)	0.048 + 0.203*Tr + 0.792*C	0.108 + 0.249*Tr + 1.639*C	0.070 + 0.221*Tr + 1.127*C
OR2LLX4	A-Z	A_Z (fall)	0.062 + 0.194*Tr + 0.316*C	0.145 + 0.202*Tr + 0.662*C	0.094 + 0.198*Tr + 0.434*C
OR2LLX4	A-Z	A_Z (rise)	0.054 + 0.238*Tr + 0.396*C	0.121 + 0.279*Tr + 0.822*C	0.078 + 0.252*Tr + 0.564*C
OR2LLX4	B-Z	B_Z (fall)	0.061 + 0.231*Tr + 0.313*C	0.134 + 0.236*Tr + 0.657*C	0.090 + 0.231*Tr + 0.430*C
OR2LLX4	B-Z	B_Z (rise)	0.048 + 0.215*Tr + 0.396*C	0.106 + 0.256*Tr + 0.820*C	0.069 + 0.231*Tr + 0.565*C
OR2LLX6	A-Z	A_Z (fall)	0.060 + 0.193*Tr + 0.210*C	0.140 + 0.202*Tr + 0.441*C	0.091 + 0.198*Tr + 0.289*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR2LLX6	A-Z	A_Z (rise)	0.053 + 0.236*Tr + 0.264*C	0.116 + 0.274*Tr + 0.548*C	0.076 + 0.249*Tr + 0.376*C
OR2LLX6	B-Z	B_Z (fall)	0.059 + 0.229*Tr + 0.209*C	0.130 + 0.236*Tr + 0.438*C	0.087 + 0.230*Tr + 0.287*C
OR2LLX6	B-Z	B_Z (rise)	0.047 + 0.213*Tr + 0.264*C	0.101 + 0.251*Tr + 0.547*C	0.067 + 0.227*Tr + 0.376*C
OR2LLX8	A-Z	A_Z (fall)	0.060 + 0.192*Tr + 0.158*C	0.138 + 0.199*Tr + 0.331*C	0.090 + 0.196*Tr + 0.217*C
OR2LLX8	A-Z	A_Z (rise)	0.052 + 0.235*Tr + 0.198*C	0.116 + 0.276*Tr + 0.412*C	0.075 + 0.249*Tr + 0.283*C
OR2LLX8	B-Z	B_Z (fall)	0.058 + 0.228*Tr + 0.157*C	0.128 + 0.233*Tr + 0.329*C	0.086 + 0.228*Tr + 0.215*C
OR2LLX8	B-Z	B_Z (rise)	0.046 + 0.212*Tr + 0.199*C	0.101 + 0.252*Tr + 0.411*C	0.066 + 0.227*Tr + 0.283*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
OR2LL	3781.230	66770.200
OR2LLP	5476.050	111024.000
OR2LLX4	9837.380	208380.000
OR2LLX6	14233.000	304695.000
OR2LLX8	19675.000	416765.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

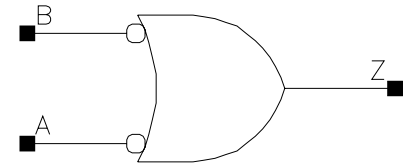
Cell	Cycle on pin	nom_1.20V_25C
OR2LL	Z(max)	0.013 + 0.007*Tr
OR2LLP	Z(max)	0.022 + 0.015*Tr
OR2LLX4	Z(max)	0.042 + 0.031*Tr

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
OR2LLX6	Z(max)	$0.062 + 0.047 * Tr$
OR2LLX8	Z(max)	$0.081 + 0.064 * Tr$

OR2ABLLP
OR2ABLLX4
OR2ABLLX6
OR2ABLLX8



Function: Function = 2 Input OR , A and B Inputs Inverted

Truth Table

A	B	Z
1	1	0
0	-	1
-	0	1

Physical Dimensions

Property	OR2ABLLP	OR2ABLLX4	OR2ABLLX6	OR2ABLLX8
Area(um ²)	10.086	14.120	18.155	20.172

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR2ABLLP	Z Max Load	0.320	0.320	0.320
OR2ABLLP	B Input Cap.	0.0019	0.0015	0.0017
OR2ABLLP	A Input Cap.	0.0018	0.0015	0.0016
OR2ABLLX4	A Input Cap.	0.0034	0.0029	0.0030
OR2ABLLX4	Z Max Load	0.640	0.640	0.640
OR2ABLLX4	B Input Cap.	0.0032	0.0027	0.0028
OR2ABLLX6	A Input Cap.	0.0046	0.0040	0.0042
OR2ABLLX6	Z Max Load	0.960	0.960	0.960
OR2ABLLX6	B Input Cap.	0.0049	0.0041	0.0043
OR2ABLLX8	A Input Cap.	0.0059	0.0052	0.0054
OR2ABLLX8	Z Max Load	1.280	1.280	1.280
OR2ABLLX8	B Input Cap.	0.0062	0.0052	0.0054

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR2ABLLP	A-Z	A_Z (fall)	0.088 + 0.146*Tr + 0.613*C	0.209 + 0.181*Tr + 1.278*C	0.133 + 0.163*Tr + 0.836*C
OR2ABLLP	A-Z	A_Z (rise)	0.086 + 0.271*Tr + 0.787*C	0.198 + 0.282*Tr + 1.621*C	0.129 + 0.274*Tr + 1.115*C
OR2ABLLP	B-Z	B_Z (fall)	0.089 + 0.162*Tr + 0.613*C	0.209 + 0.199*Tr + 1.279*C	0.133 + 0.177*Tr + 0.836*C
OR2ABLLP	B-Z	B_Z (rise)	0.082 + 0.256*Tr + 0.786*C	0.189 + 0.266*Tr + 1.623*C	0.122 + 0.259*Tr + 1.115*C
OR2ABLLX4	A-Z	A_Z (fall)	0.082 + 0.154*Tr + 0.305*C	0.192 + 0.187*Tr + 0.635*C	0.123 + 0.169*Tr + 0.415*C
OR2ABLLX4	A-Z	A_Z (rise)	0.081 + 0.257*Tr + 0.393*C	0.183 + 0.270*Tr + 0.810*C	0.120 + 0.261*Tr + 0.558*C
OR2ABLLX4	B-Z	B_Z (fall)	0.081 + 0.170*Tr + 0.305*C	0.188 + 0.203*Tr + 0.635*C	0.121 + 0.183*Tr + 0.415*C
OR2ABLLX4	B-Z	B_Z (rise)	0.076 + 0.242*Tr + 0.393*C	0.170 + 0.254*Tr + 0.810*C	0.111 + 0.246*Tr + 0.558*C
OR2ABLLX6	A-Z	A_Z (fall)	0.078 + 0.154*Tr + 0.204*C	0.182 + 0.184*Tr + 0.424*C	0.117 + 0.168*Tr + 0.278*C
OR2ABLLX6	A-Z	A_Z (rise)	0.077 + 0.248*Tr + 0.263*C	0.173 + 0.260*Tr + 0.541*C	0.113 + 0.251*Tr + 0.372*C
OR2ABLLX6	B-Z	B_Z (fall)	0.078 + 0.168*Tr + 0.204*C	0.180 + 0.200*Tr + 0.424*C	0.116 + 0.180*Tr + 0.278*C
OR2ABLLX6	B-Z	B_Z (rise)	0.073 + 0.233*Tr + 0.263*C	0.163 + 0.243*Tr + 0.541*C	0.106 + 0.236*Tr + 0.373*C
OR2ABLLX8	A-Z	A_Z (fall)	0.078 + 0.155*Tr + 0.153*C	0.179 + 0.184*Tr + 0.318*C	0.115 + 0.168*Tr + 0.208*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR2ABLLX8	A-Z	A_Z (rise)	0.077 + 0.249*Tr + 0.197*C	0.172 + 0.262*Tr + 0.406*C	0.113 + 0.252*Tr + 0.279*C
OR2ABLLX8	B-Z	B_Z (fall)	0.077 + 0.170*Tr + 0.153*C	0.176 + 0.200*Tr + 0.318*C	0.114 + 0.181*Tr + 0.208*C
OR2ABLLX8	B-Z	B_Z (rise)	0.072 + 0.233*Tr + 0.197*C	0.161 + 0.245*Tr + 0.406*C	0.105 + 0.237*Tr + 0.280*C

Average Leakage Power

picoWatts

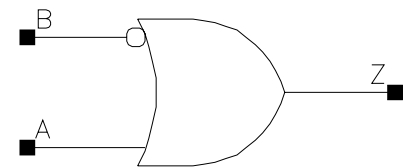
Cell	bc_1.32V_25C	bc_1.32V_125C
OR2ABLLP	5536.650	113798.000
OR2ABLLX4	9891.050	211868.000
OR2ABLLX6	14357.200	311205.000
OR2ABLLX8	18878.800	411670.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
OR2ABLLP	Z(max)	0.027 + 0.008*Tr
OR2ABLLX4	Z(max)	0.046 + 0.015*Tr
OR2ABLLX6	Z(max)	0.069 + 0.022*Tr
OR2ABLLX8	Z(max)	0.090 + 0.029*Tr

OR2BLL
OR2BLLP
OR2BLLX4
OR2BLLX6
OR2BLLX8



Function: Function = 2 Input OR, B Input Inverted

Truth Table

A	B	Z
0	1	0
-	0	1
1	-	1

Physical Dimensions

Property	OR2BLL	OR2BLLP	OR2BLLX4	OR2BLLX6	OR2BLLX8
Area(um2)	12.103	12.103	14.120	20.172	24.206

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR2BLL	A Input Cap.	0.0017	0.0014	0.0015
OR2BLL	Z Max Load	0.160	0.160	0.160
OR2BLL	B Input Cap.	0.0016	0.0013	0.0014
OR2BLLP	A Input Cap.	0.0030	0.0026	0.0027
OR2BLLP	Z Max Load	0.320	0.320	0.320
OR2BLLP	B Input Cap.	0.0016	0.0013	0.0014
OR2BLLX4	A Input Cap.	0.0056	0.0049	0.0051
OR2BLLX4	Z Max Load	0.640	0.640	0.640
OR2BLLX4	B Input Cap.	0.0020	0.0016	0.0018
OR2BLLX6	A Input Cap.	0.0083	0.0074	0.0077
OR2BLLX6	Z Max Load	0.960	0.960	0.960
OR2BLLX6	B Input Cap.	0.0028	0.0024	0.0025
OR2BLLX8	A Input Cap.	0.0112	0.0099	0.0103
OR2BLLX8	Z Max Load	1.280	1.280	1.280

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR2BLLX8	B Input Cap.	0.0035	0.0030	0.0031

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR2BLL	A-Z	A_Z (fall)	0.079 + 0.226*Tr + 1.255*C	0.189 + 0.230*Tr + 2.737*C	0.122 + 0.228*Tr + 1.759*C
OR2BLL	A-Z	A_Z (rise)	0.061 + 0.216*Tr + 1.617*C	0.149 + 0.271*Tr + 3.420*C	0.092 + 0.236*Tr + 2.328*C
OR2BLL	B-Z	B_Z (fall)	0.100 + 0.153*Tr + 1.236*C	0.238 + 0.198*Tr + 2.688*C	0.152 + 0.171*Tr + 1.723*C
OR2BLL	B-Z	B_Z (rise)	0.092 + 0.269*Tr + 1.613*C	0.224 + 0.278*Tr + 3.382*C	0.140 + 0.271*Tr + 2.310*C
OR2BLLP	A-Z	A_Z (fall)	0.066 + 0.204*Tr + 0.632*C	0.157 + 0.209*Tr + 1.328*C	0.101 + 0.207*Tr + 0.870*C
OR2BLLP	A-Z	A_Z (rise)	0.055 + 0.228*Tr + 0.791*C	0.127 + 0.273*Tr + 1.643*C	0.081 + 0.244*Tr + 1.128*C
OR2BLLP	B-Z	B_Z (fall)	0.092 + 0.167*Tr + 0.622*C	0.214 + 0.213*Tr + 1.301*C	0.137 + 0.185*Tr + 0.850*C
OR2BLLP	B-Z	B_Z (rise)	0.097 + 0.281*Tr + 0.786*C	0.224 + 0.293*Tr + 1.622*C	0.145 + 0.285*Tr + 1.115*C
OR2BLLX4	A-Z	A_Z (fall)	0.065 + 0.191*Tr + 0.316*C	0.152 + 0.198*Tr + 0.664*C	0.098 + 0.195*Tr + 0.435*C
OR2BLLX4	A-Z	A_Z (rise)	0.056 + 0.243*Tr + 0.397*C	0.126 + 0.286*Tr + 0.824*C	0.081 + 0.258*Tr + 0.565*C
OR2BLLX4	B-Z	B_Z (fall)	0.091 + 0.187*Tr + 0.311*C	0.207 + 0.228*Tr + 0.650*C	0.134 + 0.203*Tr + 0.425*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR2BLLX4	B-Z	B_Z (rise)	0.098 + 0.269*Tr + 0.394*C	0.219 + 0.283*Tr + 0.813*C	0.144 + 0.274*Tr + 0.559*C
OR2BLLX6	A-Z	A_Z (fall)	0.062 + 0.191*Tr + 0.211*C	0.145 + 0.199*Tr + 0.442*C	0.094 + 0.196*Tr + 0.290*C
OR2BLLX6	A-Z	A_Z (rise)	0.053 + 0.237*Tr + 0.264*C	0.117 + 0.276*Tr + 0.548*C	0.076 + 0.250*Tr + 0.376*C
OR2BLLX6	B-Z	B_Z (fall)	0.086 + 0.190*Tr + 0.207*C	0.194 + 0.227*Tr + 0.433*C	0.127 + 0.205*Tr + 0.283*C
OR2BLLX6	B-Z	B_Z (rise)	0.091 + 0.258*Tr + 0.262*C	0.199 + 0.270*Tr + 0.541*C	0.132 + 0.262*Tr + 0.372*C
OR2BLLX8	A-Z	A_Z (fall)	0.062 + 0.191*Tr + 0.158*C	0.144 + 0.197*Tr + 0.332*C	0.093 + 0.194*Tr + 0.218*C
OR2BLLX8	A-Z	A_Z (rise)	0.052 + 0.236*Tr + 0.199*C	0.117 + 0.277*Tr + 0.412*C	0.075 + 0.250*Tr + 0.283*C
OR2BLLX8	B-Z	B_Z (fall)	0.084 + 0.193*Tr + 0.156*C	0.188 + 0.228*Tr + 0.325*C	0.124 + 0.207*Tr + 0.212*C
OR2BLLX8	B-Z	B_Z (rise)	0.088 + 0.252*Tr + 0.197*C	0.193 + 0.265*Tr + 0.406*C	0.128 + 0.257*Tr + 0.279*C

Average Leakage Power

picoWatts

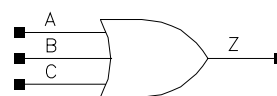
Cell	bc_1.32V_25C	bc_1.32V_125C
OR2BLL	4451.900	78729.500
OR2BLLP	6139.920	123235.000
OR2BLLX4	10539.700	223205.000
OR2BLLX6	15314.800	328968.000
OR2BLLX8	21085.500	449252.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
OR2BLL	Z(max)	$0.017 + 0.005 \cdot Tr$
OR2BLLP	Z(max)	$0.023 + 0.015 \cdot Tr$
OR2BLLX4	Z(max)	$0.042 + 0.030 \cdot Tr$
OR2BLLX6	Z(max)	$0.062 + 0.046 \cdot Tr$
OR2BLLX8	Z(max)	$0.082 + 0.065 \cdot Tr$

OR3LL
OR3LLP
OR3LLX4
OR3LLX6
OR3LLX8



Function: Function = 3 Input OR

Boolean Expression: $Z = A+B+C$

Physical Dimensions

Property	OR3LL	OR3LLP	OR3LLX4	OR3LLX6	OR3LLX8
Area(um2)	12.103	12.103	16.138	22.189	24.206

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3LL	A Input Cap.	0.0020	0.0017	0.0018
OR3LL	Z Max Load	0.160	0.160	0.160
OR3LL	B Input Cap.	0.0019	0.0017	0.0018
OR3LL	C Input Cap.	0.0018	0.0015	0.0016
OR3LLP	A Input Cap.	0.0034	0.0030	0.0031
OR3LLP	Z Max Load	0.320	0.320	0.320
OR3LLP	B Input Cap.	0.0033	0.0029	0.0030
OR3LLP	C Input Cap.	0.0031	0.0027	0.0028
OR3LLX4	A Input Cap.	0.0049	0.0043	0.0045
OR3LLX4	Z Max Load	0.640	0.640	0.640
OR3LLX4	B Input Cap.	0.0046	0.0041	0.0043
OR3LLX4	C Input Cap.	0.0044	0.0038	0.0040
OR3LLX6	C Input Cap.	0.0067	0.0059	0.0061
OR3LLX6	A Input Cap.	0.0078	0.0070	0.0073
OR3LLX6	B Input Cap.	0.0073	0.0065	0.0068
OR3LLX6	Z Max Load	0.960	0.960	0.960
OR3LLX8	B Input Cap.	0.0092	0.0083	0.0086
OR3LLX8	C Input Cap.	0.0084	0.0074	0.0076
OR3LLX8	A Input Cap.	0.0098	0.0088	0.0091
OR3LLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3LL	A-Z	A_Z (fall)	0.098 + 0.192*Tr + 1.307*C	0.243 + 0.196*Tr + 2.860*C	0.153 + 0.195*Tr + 1.840*C
OR3LL	A-Z	A_Z (rise)	0.075 + 0.249*Tr + 1.627*C	0.188 + 0.310*Tr + 3.473*C	0.114 + 0.271*Tr + 2.349*C
OR3LL	B-Z	B_Z (fall)	0.094 + 0.234*Tr + 1.303*C	0.222 + 0.234*Tr + 2.855*C	0.144 + 0.233*Tr + 1.833*C
OR3LL	B-Z	B_Z (rise)	0.069 + 0.230*Tr + 1.625*C	0.170 + 0.293*Tr + 3.449*C	0.104 + 0.254*Tr + 2.342*C
OR3LL	C-Z	C_Z (fall)	0.084 + 0.268*Tr + 1.292*C	0.191 + 0.267*Tr + 2.831*C	0.126 + 0.265*Tr + 1.816*C
OR3LL	C-Z	C_Z (rise)	0.061 + 0.209*Tr + 1.624*C	0.147 + 0.271*Tr + 3.436*C	0.091 + 0.234*Tr + 2.339*C
OR3LLP	A-Z	A_Z (fall)	0.084 + 0.174*Tr + 0.657*C	0.206 + 0.182*Tr + 1.388*C	0.130 + 0.179*Tr + 0.908*C
OR3LLP	A-Z	A_Z (rise)	0.069 + 0.261*Tr + 0.796*C	0.163 + 0.314*Tr + 1.668*C	0.102 + 0.280*Tr + 1.139*C
OR3LLP	B-Z	B_Z (fall)	0.080 + 0.212*Tr + 0.655*C	0.187 + 0.215*Tr + 1.385*C	0.122 + 0.213*Tr + 0.905*C
OR3LLP	B-Z	B_Z (rise)	0.063 + 0.241*Tr + 0.795*C	0.146 + 0.295*Tr + 1.656*C	0.093 + 0.261*Tr + 1.134*C
OR3LLP	C-Z	C_Z (fall)	0.071 + 0.241*Tr + 0.648*C	0.158 + 0.242*Tr + 1.370*C	0.105 + 0.240*Tr + 0.894*C
OR3LLP	C-Z	C_Z (rise)	0.055 + 0.218*Tr + 0.795*C	0.124 + 0.269*Tr + 1.650*C	0.079 + 0.238*Tr + 1.133*C
OR3LLX4	A-Z	A_Z (fall)	0.091 + 0.170*Tr + 0.332*C	0.220 + 0.181*Tr + 0.703*C	0.140 + 0.176*Tr + 0.460*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3LLX4	A-Z	A_Z (rise)	0.076 + 0.277*Tr + 0.401*C	0.173 + 0.328*Tr + 0.841*C	0.110 + 0.295*Tr + 0.573*C
OR3LLX4	B-Z	B_Z (fall)	0.087 + 0.209*Tr + 0.332*C	0.203 + 0.213*Tr + 0.703*C	0.132 + 0.211*Tr + 0.459*C
OR3LLX4	B-Z	B_Z (rise)	0.070 + 0.258*Tr + 0.400*C	0.157 + 0.310*Tr + 0.834*C	0.100 + 0.278*Tr + 0.571*C
OR3LLX4	C-Z	C_Z (fall)	0.078 + 0.240*Tr + 0.329*C	0.171 + 0.244*Tr + 0.696*C	0.115 + 0.240*Tr + 0.454*C
OR3LLX4	C-Z	C_Z (rise)	0.060 + 0.237*Tr + 0.399*C	0.133 + 0.286*Tr + 0.831*C	0.086 + 0.256*Tr + 0.570*C
OR3LLX6	A-Z	A_Z (fall)	0.088 + 0.169*Tr + 0.222*C	0.213 + 0.181*Tr + 0.469*C	0.136 + 0.176*Tr + 0.307*C
OR3LLX6	A-Z	A_Z (rise)	0.074 + 0.277*Tr + 0.267*C	0.165 + 0.324*Tr + 0.560*C	0.107 + 0.294*Tr + 0.382*C
OR3LLX6	B-Z	B_Z (fall)	0.085 + 0.208*Tr + 0.221*C	0.196 + 0.214*Tr + 0.468*C	0.128 + 0.210*Tr + 0.306*C
OR3LLX6	B-Z	B_Z (rise)	0.068 + 0.258*Tr + 0.266*C	0.150 + 0.306*Tr + 0.556*C	0.097 + 0.276*Tr + 0.381*C
OR3LLX6	C-Z	C_Z (fall)	0.076 + 0.238*Tr + 0.219*C	0.168 + 0.243*Tr + 0.463*C	0.112 + 0.238*Tr + 0.303*C
OR3LLX6	C-Z	C_Z (rise)	0.059 + 0.237*Tr + 0.266*C	0.128 + 0.282*Tr + 0.553*C	0.084 + 0.255*Tr + 0.380*C
OR3LLX8	A-Z	A_Z (fall)	0.089 + 0.168*Tr + 0.167*C	0.213 + 0.179*Tr + 0.353*C	0.136 + 0.174*Tr + 0.231*C
OR3LLX8	A-Z	A_Z (rise)	0.074 + 0.277*Tr + 0.201*C	0.162 + 0.323*Tr + 0.420*C	0.105 + 0.294*Tr + 0.287*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3LLX8	B-Z	B_Z (fall)	0.085 + 0.207*Tr + 0.166*C	0.196 + 0.213*Tr + 0.352*C	0.129 + 0.209*Tr + 0.230*C
OR3LLX8	B-Z	B_Z (rise)	0.068 + 0.259*Tr + 0.200*C	0.147 + 0.305*Tr + 0.417*C	0.096 + 0.276*Tr + 0.286*C
OR3LLX8	C-Z	C_Z (fall)	0.077 + 0.238*Tr + 0.165*C	0.169 + 0.243*Tr + 0.349*C	0.113 + 0.238*Tr + 0.228*C
OR3LLX8	C-Z	C_Z (rise)	0.059 + 0.238*Tr + 0.200*C	0.126 + 0.282*Tr + 0.416*C	0.083 + 0.255*Tr + 0.285*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
OR3LL	4770.620	80425.000
OR3LLP	6431.170	126895.000
OR3LLX4	10382.300	215557.000
OR3LLX6	14754.800	311953.000
OR3LLX8	19181.300	409205.000

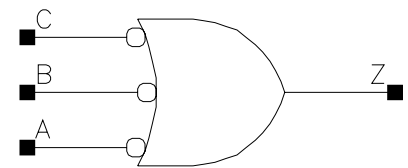
Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
OR3LL	Z(max)	0.017 + 0.007*Tr
OR3LLP	Z(max)	0.028 + 0.014*Tr
OR3LLX4	Z(max)	0.052 + 0.025*Tr
OR3LLX6	Z(max)	0.077 + 0.038*Tr
OR3LLX8	Z(max)	0.101 + 0.051*Tr

OR3ABCLLP
OR3ABCLLX4
OR3ABCLLX6
OR3ABCLLX8

Function: Function = 3 Input OR , A, B and C Inputs Inverted



Truth Table

A	B	C	Z
1	1	1	0
-	0	-	1
-	-	0	1
0	-	-	1

Physical Dimensions

Property	OR3ABCLLP	OR3ABCLLX4	OR3ABCLLX6	OR3ABCLLX8
Area(um2)	12.103	16.138	20.172	22.189

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3ABCLLP	Z Max Load	0.320	0.320	0.320
OR3ABCLLP	C Input Cap.	0.0016	0.0013	0.0014
OR3ABCLLP	A Input Cap.	0.0016	0.0014	0.0015
OR3ABCLLP	B Input Cap.	0.0015	0.0013	0.0014
OR3ABCLLX4	C Input Cap.	0.0027	0.0022	0.0024
OR3ABCLLX4	A Input Cap.	0.0029	0.0024	0.0026
OR3ABCLLX4	B Input Cap.	0.0028	0.0023	0.0025
OR3ABCLLX4	Z Max Load	0.640	0.640	0.640
OR3ABCLLX6	B Input Cap.	0.0041	0.0035	0.0037
OR3ABCLLX6	C Input Cap.	0.0042	0.0034	0.0036
OR3ABCLLX6	A Input Cap.	0.0041	0.0035	0.0037
OR3ABCLLX6	Z Max Load	0.960	0.960	0.960
OR3ABCLLX8	B Input Cap.	0.0051	0.0044	0.0046
OR3ABCLLX8	Z Max Load	1.280	1.280	1.280

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3ABCLLX8	C Input Cap.	0.0052	0.0043	0.0045
OR3ABCLLX8	A Input Cap.	0.0051	0.0044	0.0047

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3ABCLLP	A-Z	A_Z (fall)	0.102 + 0.137*Tr + 0.613*C	0.257 + 0.170*Tr + 1.280*C	0.157 + 0.154*Tr + 0.836*C
OR3ABCLLP	A-Z	A_Z (rise)	0.106 + 0.304*Tr + 0.786*C	0.246 + 0.324*Tr + 1.624*C	0.159 + 0.311*Tr + 1.114*C
OR3ABCLLP	B-Z	B_Z (fall)	0.101 + 0.158*Tr + 0.613*C	0.252 + 0.194*Tr + 1.281*C	0.156 + 0.174*Tr + 0.837*C
OR3ABCLLP	B-Z	B_Z (rise)	0.101 + 0.291*Tr + 0.786*C	0.234 + 0.311*Tr + 1.625*C	0.151 + 0.299*Tr + 1.115*C
OR3ABCLLP	C-Z	C_Z (fall)	0.100 + 0.169*Tr + 0.613*C	0.246 + 0.208*Tr + 1.280*C	0.153 + 0.185*Tr + 0.837*C
OR3ABCLLP	C-Z	C_Z (rise)	0.095 + 0.277*Tr + 0.786*C	0.222 + 0.296*Tr + 1.622*C	0.143 + 0.284*Tr + 1.115*C
OR3ABCLLX 4	A-Z	A_Z (fall)	0.097 + 0.143*Tr + 0.305*C	0.241 + 0.175*Tr + 0.636*C	0.148 + 0.160*Tr + 0.416*C
OR3ABCLLX 4	A-Z	A_Z (rise)	0.102 + 0.291*Tr + 0.393*C	0.230 + 0.313*Tr + 0.811*C	0.150 + 0.299*Tr + 0.558*C
OR3ABCLLX 4	B-Z	B_Z (fall)	0.095 + 0.165*Tr + 0.305*C	0.234 + 0.198*Tr + 0.636*C	0.145 + 0.180*Tr + 0.416*C
OR3ABCLLX 4	B-Z	B_Z (rise)	0.096 + 0.279*Tr + 0.393*C	0.217 + 0.300*Tr + 0.811*C	0.142 + 0.286*Tr + 0.557*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3ABCLLX 4	C-Z	C_Z (fall)	0.093 + 0.176*Tr + 0.305*C	0.224 + 0.212*Tr + 0.636*C	0.140 + 0.190*Tr + 0.416*C
OR3ABCLLX 4	C-Z	C_Z (rise)	0.089 + 0.265*Tr + 0.393*C	0.202 + 0.284*Tr + 0.810*C	0.132 + 0.272*Tr + 0.558*C
OR3ABCLLX 6	A-Z	A_Z (fall)	0.092 + 0.146*Tr + 0.204*C	0.226 + 0.175*Tr + 0.425*C	0.140 + 0.161*Tr + 0.278*C
OR3ABCLLX 6	A-Z	A_Z (rise)	0.093 + 0.276*Tr + 0.262*C	0.208 + 0.295*Tr + 0.541*C	0.137 + 0.282*Tr + 0.372*C
OR3ABCLLX 6	B-Z	B_Z (fall)	0.091 + 0.167*Tr + 0.204*C	0.220 + 0.198*Tr + 0.425*C	0.137 + 0.181*Tr + 0.278*C
OR3ABCLLX 6	B-Z	B_Z (rise)	0.088 + 0.263*Tr + 0.263*C	0.198 + 0.281*Tr + 0.541*C	0.130 + 0.269*Tr + 0.372*C
OR3ABCLLX 6	C-Z	C_Z (fall)	0.088 + 0.178*Tr + 0.204*C	0.210 + 0.211*Tr + 0.425*C	0.133 + 0.190*Tr + 0.278*C
OR3ABCLLX 6	C-Z	C_Z (rise)	0.082 + 0.248*Tr + 0.262*C	0.184 + 0.265*Tr + 0.541*C	0.121 + 0.255*Tr + 0.372*C
OR3ABCLLX 8	A-Z	A_Z (fall)	0.090 + 0.141*Tr + 0.153*C	0.218 + 0.170*Tr + 0.318*C	0.136 + 0.156*Tr + 0.208*C
OR3ABCLLX 8	A-Z	A_Z (rise)	0.094 + 0.282*Tr + 0.197*C	0.209 + 0.302*Tr + 0.406*C	0.138 + 0.289*Tr + 0.279*C
OR3ABCLLX 8	B-Z	B_Z (fall)	0.088 + 0.162*Tr + 0.153*C	0.212 + 0.191*Tr + 0.318*C	0.133 + 0.175*Tr + 0.208*C
OR3ABCLLX 8	B-Z	B_Z (rise)	0.089 + 0.268*Tr + 0.197*C	0.198 + 0.288*Tr + 0.406*C	0.130 + 0.275*Tr + 0.279*C
OR3ABCLLX 8	C-Z	C_Z (fall)	0.085 + 0.172*Tr + 0.153*C	0.202 + 0.203*Tr + 0.318*C	0.128 + 0.184*Tr + 0.208*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3ABCLLX 8	C-Z	C_Z (rise)	0.082 + 0.254*Tr + 0.197*C	0.183 + 0.271*Tr + 0.406*C	0.120 + 0.260*Tr + 0.279*C

Average Leakage Power

picoWatts

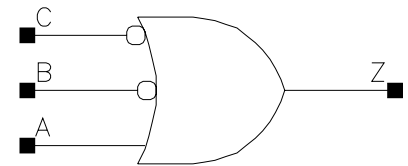
Cell	bc_1.32V_25C	bc_1.32V_125C
OR3ABCLLP	5568.500	115180.000
OR3ABCLLX4	9946.420	214037.000
OR3ABCLLX6	14542.000	317103.000
OR3ABCLLX8	18990.500	415743.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
OR3ABCLLP	Z(max)	0.027 + 0.006*Tr
OR3ABCLLX4	Z(max)	0.049 + 0.012*Tr
OR3ABCLLX6	Z(max)	0.073 + 0.018*Tr
OR3ABCLLX8	Z(max)	0.094 + 0.023*Tr

OR3BCLL
OR3BCLLP
OR3BCLLX4
OR3BCLLX6
OR3BCLLX8



Function: Function = 3 Input OR ,B and C Inputs Inverted

Truth Table

A	B	C	Z
0	1	1	0
-	0	-	1
-	-	0	1
1	-	-	1

Physical Dimensions

Property	OR3BCLL	OR3BCLLP	OR3BCLLX4	OR3BCLLX6	OR3BCLLX8
Area(um ²)	14.120	14.120	16.138	22.189	26.224

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3BCLL	A Input Cap.	0.0017	0.0014	0.0015
OR3BCLL	B Input Cap.	0.0012	0.0010	0.0011
OR3BCLL	C Input Cap.	0.0013	0.0010	0.0011
OR3BCLL	Z Max Load	0.160	0.160	0.160
OR3BCLLP	B Input Cap.	0.0019	0.0015	0.0016
OR3BCLLP	C Input Cap.	0.0020	0.0016	0.0017
OR3BCLLP	Z Max Load	0.320	0.320	0.320
OR3BCLLP	A Input Cap.	0.0030	0.0025	0.0027
OR3BCLLX4	C Input Cap.	0.0033	0.0028	0.0030
OR3BCLLX4	Z Max Load	0.640	0.640	0.640
OR3BCLLX4	A Input Cap.	0.0052	0.0045	0.0047
OR3BCLLX4	B Input Cap.	0.0032	0.0027	0.0028
OR3BCLLX6	B Input Cap.	0.0045	0.0038	0.0040

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3BCLLX6	C Input Cap.	0.0047	0.0040	0.0042
OR3BCLLX6	A Input Cap.	0.0078	0.0067	0.0069
OR3BCLLX6	Z Max Load	0.960	0.960	0.960
OR3BCLLX8	B Input Cap.	0.0059	0.0050	0.0053
OR3BCLLX8	C Input Cap.	0.0062	0.0053	0.0055
OR3BCLLX8	Z Max Load	1.280	1.280	1.280
OR3BCLLX8	A Input Cap.	0.0102	0.0087	0.0091

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3BCLL	A-Z	A_Z (fall)	0.073 + 0.266*Tr + 1.240*C	0.163 + 0.270*Tr + 2.700*C	0.108 + 0.266*Tr + 1.735*C
OR3BCLL	A-Z	A_Z (rise)	0.053 + 0.191*Tr + 1.617*C	0.125 + 0.244*Tr + 3.404*C	0.079 + 0.212*Tr + 2.323*C
OR3BCLL	B-Z	B_Z (fall)	0.111 + 0.155*Tr + 1.227*C	0.274 + 0.200*Tr + 2.670*C	0.171 + 0.173*Tr + 1.711*C
OR3BCLL	B-Z	B_Z (rise)	0.108 + 0.294*Tr + 1.613*C	0.267 + 0.314*Tr + 3.387*C	0.166 + 0.302*Tr + 2.311*C
OR3BCLL	C-Z	C_Z (fall)	0.113 + 0.135*Tr + 1.227*C	0.281 + 0.175*Tr + 2.669*C	0.174 + 0.154*Tr + 1.711*C
OR3BCLL	C-Z	C_Z (rise)	0.116 + 0.305*Tr + 1.613*C	0.285 + 0.325*Tr + 3.388*C	0.178 + 0.312*Tr + 2.310*C
OR3BCLLP	A-Z	A_Z (fall)	0.063 + 0.244*Tr + 0.628*C	0.141 + 0.249*Tr + 1.318*C	0.094 + 0.244*Tr + 0.863*C
OR3BCLLP	A-Z	A_Z (rise)	0.048 + 0.202*Tr + 0.792*C	0.109 + 0.248*Tr + 1.639*C	0.070 + 0.221*Tr + 1.127*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3BCLLP	B-Z	B_Z (fall)	0.097 + 0.165*Tr + 0.621*C	0.235 + 0.205*Tr + 1.300*C	0.148 + 0.181*Tr + 0.849*C
OR3BCLLP	B-Z	B_Z (rise)	0.098 + 0.273*Tr + 0.787*C	0.227 + 0.289*Tr + 1.627*C	0.146 + 0.278*Tr + 1.117*C
OR3BCLLP	C-Z	C_Z (fall)	0.099 + 0.147*Tr + 0.621*C	0.240 + 0.183*Tr + 1.300*C	0.151 + 0.164*Tr + 0.849*C
OR3BCLLP	C-Z	C_Z (rise)	0.104 + 0.285*Tr + 0.788*C	0.242 + 0.301*Tr + 1.628*C	0.156 + 0.290*Tr + 1.117*C
OR3BCLLX4	A-Z	A_Z (fall)	0.060 + 0.230*Tr + 0.313*C	0.133 + 0.235*Tr + 0.657*C	0.089 + 0.230*Tr + 0.430*C
OR3BCLLX4	A-Z	A_Z (rise)	0.048 + 0.214*Tr + 0.396*C	0.105 + 0.255*Tr + 0.819*C	0.068 + 0.230*Tr + 0.564*C
OR3BCLLX4	B-Z	B_Z (fall)	0.093 + 0.174*Tr + 0.310*C	0.221 + 0.209*Tr + 0.647*C	0.140 + 0.188*Tr + 0.423*C
OR3BCLLX4	B-Z	B_Z (rise)	0.094 + 0.256*Tr + 0.394*C	0.212 + 0.272*Tr + 0.814*C	0.138 + 0.262*Tr + 0.559*C
OR3BCLLX4	C-Z	C_Z (fall)	0.094 + 0.157*Tr + 0.310*C	0.224 + 0.189*Tr + 0.647*C	0.142 + 0.172*Tr + 0.423*C
OR3BCLLX4	C-Z	C_Z (rise)	0.098 + 0.269*Tr + 0.394*C	0.223 + 0.286*Tr + 0.814*C	0.145 + 0.275*Tr + 0.559*C
OR3BCLLX6	A-Z	A_Z (fall)	0.059 + 0.229*Tr + 0.209*C	0.130 + 0.236*Tr + 0.438*C	0.087 + 0.230*Tr + 0.287*C
OR3BCLLX6	A-Z	A_Z (rise)	0.047 + 0.213*Tr + 0.265*C	0.102 + 0.252*Tr + 0.547*C	0.067 + 0.228*Tr + 0.376*C
OR3BCLLX6	B-Z	B_Z (fall)	0.089 + 0.175*Tr + 0.207*C	0.212 + 0.208*Tr + 0.432*C	0.135 + 0.188*Tr + 0.282*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3BCLLX6	B-Z	B_Z (rise)	0.089 + 0.249*Tr + 0.263*C	0.200 + 0.263*Tr + 0.543*C	0.130 + 0.254*Tr + 0.373*C
OR3BCLLX6	C-Z	C_Z (fall)	0.091 + 0.158*Tr + 0.207*C	0.216 + 0.188*Tr + 0.432*C	0.137 + 0.173*Tr + 0.282*C
OR3BCLLX6	C-Z	C_Z (rise)	0.095 + 0.262*Tr + 0.263*C	0.212 + 0.277*Tr + 0.543*C	0.138 + 0.267*Tr + 0.373*C
OR3BCLLX8	A-Z	A_Z (fall)	0.059 + 0.229*Tr + 0.157*C	0.129 + 0.233*Tr + 0.329*C	0.086 + 0.229*Tr + 0.216*C
OR3BCLLX8	A-Z	A_Z (rise)	0.046 + 0.213*Tr + 0.199*C	0.102 + 0.253*Tr + 0.411*C	0.066 + 0.228*Tr + 0.283*C
OR3BCLLX8	B-Z	B_Z (fall)	0.089 + 0.176*Tr + 0.155*C	0.210 + 0.207*Tr + 0.325*C	0.134 + 0.188*Tr + 0.212*C
OR3BCLLX8	B-Z	B_Z (rise)	0.089 + 0.248*Tr + 0.197*C	0.200 + 0.263*Tr + 0.408*C	0.130 + 0.253*Tr + 0.280*C
OR3BCLLX8	C-Z	C_Z (fall)	0.091 + 0.159*Tr + 0.155*C	0.214 + 0.187*Tr + 0.325*C	0.136 + 0.172*Tr + 0.212*C
OR3BCLLX8	C-Z	C_Z (rise)	0.094 + 0.261*Tr + 0.197*C	0.212 + 0.277*Tr + 0.408*C	0.138 + 0.266*Tr + 0.280*C

Average Leakage Power

picoWatts

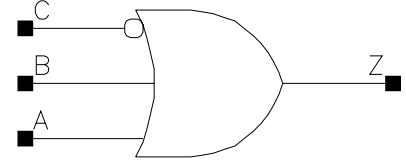
Cell	bc_1.32V_25C	bc_1.32V_125C
OR3BCLL	4598.680	82735.200
OR3BCLLP	6555.720	134367.000
OR3BCLLX4	11627.500	250122.000
OR3BCLLX6	16743.300	364653.000
OR3BCLLX8	22930.000	495362.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
OR3BCLL	Z(max)	$0.019 + 0.004 * Tr$
OR3BCLLP	Z(max)	$0.031 + 0.007 * Tr$
OR3BCLLX4	Z(max)	$0.058 + 0.014 * Tr$
OR3BCLLX6	Z(max)	$0.085 + 0.020 * Tr$
OR3BCLLX8	Z(max)	$0.114 + 0.027 * Tr$

OR3CLL
OR3CLLP
OR3CLLX4
OR3CLLX6
OR3CLLX8



Function: Function = 3 Input OR, C Input Inverted

Truth Table

A	B	C	Z
0	0	1	0
-	-	0	1
1	-	-	1
-	1	-	1

Physical Dimensions

Property	OR3CLL	OR3CLLP	OR3CLLX4	OR3CLLX6	OR3CLLX8
Area(um2)	16.138	16.138	18.155	24.206	26.224

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3CLL	C Input Cap.	0.0013	0.0011	0.0012
OR3CLL	A Input Cap.	0.0020	0.0018	0.0019
OR3CLL	Z Max Load	0.160	0.160	0.160
OR3CLL	B Input Cap.	0.0020	0.0018	0.0019
OR3CLLP	Z Max Load	0.320	0.320	0.320
OR3CLLP	B Input Cap.	0.0027	0.0024	0.0025
OR3CLLP	C Input Cap.	0.0013	0.0011	0.0012
OR3CLLP	A Input Cap.	0.0027	0.0024	0.0026
OR3CLLX4	A Input Cap.	0.0049	0.0044	0.0046
OR3CLLX4	Z Max Load	0.640	0.640	0.640
OR3CLLX4	B Input Cap.	0.0047	0.0042	0.0044
OR3CLLX4	C Input Cap.	0.0022	0.0018	0.0019

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3CLLX6	C Input Cap.	0.0027	0.0023	0.0024
OR3CLLX6	Z Max Load	0.960	0.960	0.960
OR3CLLX6	A Input Cap.	0.0079	0.0071	0.0073
OR3CLLX6	B Input Cap.	0.0073	0.0065	0.0068
OR3CLLX8	Z Max Load	1.280	1.280	1.280
OR3CLLX8	B Input Cap.	0.0097	0.0087	0.0090
OR3CLLX8	C Input Cap.	0.0035	0.0030	0.0031
OR3CLLX8	A Input Cap.	0.0086	0.0076	0.0079

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3CLL	A-Z	A_Z (fall)	0.100 + 0.193*Tr + 1.315*C	0.248 + 0.197*Tr + 2.881*C	0.156 + 0.196*Tr + 1.853*C
OR3CLL	A-Z	A_Z (rise)	0.075 + 0.252*Tr + 1.631*C	0.189 + 0.314*Tr + 3.484*C	0.114 + 0.275*Tr + 2.355*C
OR3CLL	B-Z	B_Z (fall)	0.097 + 0.234*Tr + 1.313*C	0.232 + 0.234*Tr + 2.879*C	0.149 + 0.233*Tr + 1.849*C
OR3CLL	B-Z	B_Z (rise)	0.070 + 0.233*Tr + 1.629*C	0.174 + 0.297*Tr + 3.464*C	0.106 + 0.258*Tr + 2.349*C
OR3CLL	C-Z	C_Z (fall)	0.119 + 0.170*Tr + 1.293*C	0.284 + 0.217*Tr + 2.832*C	0.181 + 0.188*Tr + 1.813*C
OR3CLL	C-Z	C_Z (rise)	0.108 + 0.274*Tr + 1.616*C	0.264 + 0.285*Tr + 3.416*C	0.164 + 0.278*Tr + 2.321*C
OR3CLLP	A-Z	A_Z (fall)	0.099 + 0.184*Tr + 0.674*C	0.242 + 0.192*Tr + 1.429*C	0.153 + 0.188*Tr + 0.934*C
OR3CLLP	A-Z	A_Z (rise)	0.077 + 0.266*Tr + 0.802*C	0.183 + 0.323*Tr + 1.691*C	0.114 + 0.287*Tr + 1.149*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3CLLP	B-Z	B_Z (fall)	0.096 + 0.225*Tr + 0.673*C	0.226 + 0.227*Tr + 1.428*C	0.146 + 0.226*Tr + 0.933*C
OR3CLLP	B-Z	B_Z (rise)	0.071 + 0.248*Tr + 0.801*C	0.168 + 0.306*Tr + 1.680*C	0.105 + 0.270*Tr + 1.146*C
OR3CLLP	C-Z	C_Z (fall)	0.120 + 0.178*Tr + 0.663*C	0.282 + 0.227*Tr + 1.403*C	0.180 + 0.197*Tr + 0.915*C
OR3CLLP	C-Z	C_Z (rise)	0.117 + 0.284*Tr + 0.793*C	0.275 + 0.298*Tr + 1.653*C	0.176 + 0.289*Tr + 1.129*C
OR3CLLX4	A-Z	A_Z (fall)	0.091 + 0.168*Tr + 0.332*C	0.221 + 0.177*Tr + 0.702*C	0.140 + 0.173*Tr + 0.459*C
OR3CLLX4	A-Z	A_Z (rise)	0.075 + 0.276*Tr + 0.400*C	0.171 + 0.326*Tr + 0.839*C	0.109 + 0.294*Tr + 0.572*C
OR3CLLX4	B-Z	B_Z (fall)	0.087 + 0.207*Tr + 0.331*C	0.203 + 0.210*Tr + 0.701*C	0.132 + 0.208*Tr + 0.458*C
OR3CLLX4	B-Z	B_Z (rise)	0.068 + 0.257*Tr + 0.399*C	0.154 + 0.308*Tr + 0.834*C	0.099 + 0.276*Tr + 0.570*C
OR3CLLX4	C-Z	C_Z (fall)	0.104 + 0.181*Tr + 0.326*C	0.237 + 0.220*Tr + 0.688*C	0.154 + 0.196*Tr + 0.448*C
OR3CLLX4	C-Z	C_Z (rise)	0.106 + 0.267*Tr + 0.396*C	0.238 + 0.280*Tr + 0.820*C	0.156 + 0.271*Tr + 0.562*C
OR3CLLX6	A-Z	A_Z (fall)	0.090 + 0.167*Tr + 0.222*C	0.218 + 0.178*Tr + 0.469*C	0.138 + 0.174*Tr + 0.307*C
OR3CLLX6	A-Z	A_Z (rise)	0.074 + 0.277*Tr + 0.267*C	0.166 + 0.324*Tr + 0.560*C	0.107 + 0.293*Tr + 0.382*C
OR3CLLX6	B-Z	B_Z (fall)	0.086 + 0.206*Tr + 0.221*C	0.199 + 0.211*Tr + 0.468*C	0.130 + 0.208*Tr + 0.306*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR3CLLX6	B-Z	B_Z (rise)	0.068 + 0.258*Tr + 0.267*C	0.149 + 0.306*Tr + 0.556*C	0.097 + 0.276*Tr + 0.381*C
OR3CLLX6	C-Z	C_Z (fall)	0.100 + 0.184*Tr + 0.218*C	0.226 + 0.219*Tr + 0.460*C	0.147 + 0.197*Tr + 0.300*C
OR3CLLX6	C-Z	C_Z (rise)	0.101 + 0.256*Tr + 0.264*C	0.222 + 0.268*Tr + 0.547*C	0.146 + 0.260*Tr + 0.375*C
OR3CLLX8	A-Z	A_Z (fall)	0.075 + 0.234*Tr + 0.164*C	0.165 + 0.239*Tr + 0.347*C	0.110 + 0.234*Tr + 0.227*C
OR3CLLX8	A-Z	A_Z (rise)	0.059 + 0.240*Tr + 0.200*C	0.126 + 0.283*Tr + 0.416*C	0.083 + 0.256*Tr + 0.285*C
OR3CLLX8	B-Z	B_Z (fall)	0.084 + 0.204*Tr + 0.166*C	0.193 + 0.210*Tr + 0.351*C	0.126 + 0.207*Tr + 0.230*C
OR3CLLX8	B-Z	B_Z (rise)	0.068 + 0.260*Tr + 0.200*C	0.148 + 0.307*Tr + 0.417*C	0.097 + 0.277*Tr + 0.286*C
OR3CLLX8	C-Z	C_Z (fall)	0.118 + 0.189*Tr + 0.163*C	0.277 + 0.226*Tr + 0.344*C	0.178 + 0.204*Tr + 0.224*C
OR3CLLX8	C-Z	C_Z (rise)	0.120 + 0.255*Tr + 0.200*C	0.267 + 0.269*Tr + 0.417*C	0.174 + 0.260*Tr + 0.285*C

Average Leakage Power

picoWatts

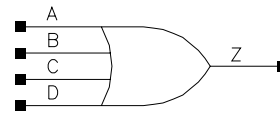
Cell	bc_1.32V_25C	bc_1.32V_125C
OR3CLL	5342.180	91781.700
OR3CLLP	6744.980	130337.000
OR3CLLX4	11154.800	233108.000
OR3CLLX6	15778.300	336213.000
OR3CLLX8	20578.500	443248.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
OR3CLL	Z(max)	$0.020 + 0.005 * Tr$
OR3CLLP	Z(max)	$0.028 + 0.012 * Tr$
OR3CLLX4	Z(max)	$0.051 + 0.025 * Tr$
OR3CLLX6	Z(max)	$0.077 + 0.038 * Tr$
OR3CLLX8	Z(max)	$0.125 + 0.018 * Tr$

OR4LL
OR4LLP
OR4LLX4
OR4LLX6
OR4LLX8



Function: Function = 4 Input OR

Boolean Expression: $Z = A+B+C+D$

Physical Dimensions

Property	OR4LL	OR4LLP	OR4LLX4	OR4LLX6	OR4LLX8
Area(um2)	14.120	14.120	18.155	24.206	28.241

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4LL	A Input Cap.	0.0023	0.0020	0.0021
OR4LL	D Input Cap.	0.0020	0.0017	0.0018
OR4LL	B Input Cap.	0.0022	0.0019	0.0020
OR4LL	C Input Cap.	0.0021	0.0018	0.0019
OR4LL	Z Max Load	0.160	0.160	0.160
OR4LLP	A Input Cap.	0.0026	0.0023	0.0024
OR4LLP	D Input Cap.	0.0022	0.0019	0.0021
OR4LLP	B Input Cap.	0.0025	0.0022	0.0023
OR4LLP	C Input Cap.	0.0024	0.0021	0.0022
OR4LLP	Z Max Load	0.320	0.320	0.320
OR4LLX4	C Input Cap.	0.0043	0.0038	0.0040
OR4LLX4	Z Max Load	0.640	0.640	0.640
OR4LLX4	A Input Cap.	0.0046	0.0041	0.0042
OR4LLX4	D Input Cap.	0.0041	0.0036	0.0037
OR4LLX4	B Input Cap.	0.0044	0.0039	0.0040
OR4LLX6	C Input Cap.	0.0070	0.0064	0.0066
OR4LLX6	A Input Cap.	0.0077	0.0070	0.0072
OR4LLX6	D Input Cap.	0.0062	0.0056	0.0057
OR4LLX6	Z Max Load	0.960	0.960	0.960
OR4LLX6	B Input Cap.	0.0071	0.0064	0.0067

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4LLX8	D Input Cap.	0.0080	0.0072	0.0074
OR4LLX8	B Input Cap.	0.0095	0.0086	0.0089
OR4LLX8	C Input Cap.	0.0086	0.0079	0.0081
OR4LLX8	Z Max Load	1.280	1.280	1.280
OR4LLX8	A Input Cap.	0.0098	0.0089	0.0092

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4LL	A-Z	A_Z (fall)	0.121 + 0.167*Tr + 1.358*C	0.304 + 0.178*Tr + 2.988*C	0.189 + 0.173*Tr + 1.919*C
OR4LL	A-Z	A_Z (rise)	0.089 + 0.275*Tr + 1.643*C	0.230 + 0.341*Tr + 3.540*C	0.136 + 0.300*Tr + 2.376*C
OR4LL	B-Z	B_Z (fall)	0.116 + 0.200*Tr + 1.356*C	0.284 + 0.202*Tr + 2.990*C	0.181 + 0.201*Tr + 1.918*C
OR4LL	B-Z	B_Z (rise)	0.084 + 0.259*Tr + 1.633*C	0.212 + 0.327*Tr + 3.497*C	0.127 + 0.285*Tr + 2.359*C
OR4LL	C-Z	C_Z (fall)	0.102 + 0.236*Tr + 1.352*C	0.248 + 0.231*Tr + 2.983*C	0.158 + 0.233*Tr + 1.911*C
OR4LL	C-Z	C_Z (rise)	0.076 + 0.241*Tr + 1.629*C	0.189 + 0.309*Tr + 3.471*C	0.115 + 0.267*Tr + 2.350*C
OR4LL	D-Z	D_Z (fall)	0.087 + 0.264*Tr + 1.337*C	0.199 + 0.261*Tr + 2.949*C	0.131 + 0.261*Tr + 1.885*C
OR4LL	D-Z	D_Z (rise)	0.066 + 0.219*Tr + 1.627*C	0.159 + 0.284*Tr + 3.452*C	0.098 + 0.245*Tr + 2.344*C
OR4LLP	A-Z	A_Z (fall)	0.132 + 0.166*Tr + 0.710*C	0.325 + 0.180*Tr + 1.519*C	0.204 + 0.173*Tr + 0.991*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4LLP	A-Z	A_Z (rise)	0.097 + 0.288*Tr + 0.812*C	0.240 + 0.350*Tr + 1.738*C	0.145 + 0.312*Tr + 1.169*C
OR4LLP	B-Z	B_Z (fall)	0.127 + 0.201*Tr + 0.709*C	0.305 + 0.206*Tr + 1.519*C	0.196 + 0.204*Tr + 0.990*C
OR4LLP	B-Z	B_Z (rise)	0.090 + 0.273*Tr + 0.807*C	0.221 + 0.338*Tr + 1.717*C	0.135 + 0.298*Tr + 1.160*C
OR4LLP	C-Z	C_Z (fall)	0.113 + 0.239*Tr + 0.707*C	0.269 + 0.237*Tr + 1.516*C	0.173 + 0.237*Tr + 0.987*C
OR4LLP	C-Z	C_Z (rise)	0.083 + 0.257*Tr + 0.805*C	0.199 + 0.321*Tr + 1.704*C	0.123 + 0.282*Tr + 1.155*C
OR4LLP	D-Z	D_Z (fall)	0.098 + 0.270*Tr + 0.700*C	0.220 + 0.269*Tr + 1.499*C	0.146 + 0.267*Tr + 0.974*C
OR4LLP	D-Z	D_Z (rise)	0.072 + 0.237*Tr + 0.803*C	0.169 + 0.299*Tr + 1.693*C	0.106 + 0.261*Tr + 1.151*C
OR4LLX4	A-Z	A_Z (fall)	0.123 + 0.153*Tr + 0.351*C	0.301 + 0.170*Tr + 0.750*C	0.190 + 0.162*Tr + 0.489*C
OR4LLX4	A-Z	A_Z (rise)	0.098 + 0.304*Tr + 0.406*C	0.228 + 0.360*Tr + 0.865*C	0.142 + 0.326*Tr + 0.584*C
OR4LLX4	B-Z	B_Z (fall)	0.120 + 0.186*Tr + 0.351*C	0.285 + 0.193*Tr + 0.751*C	0.184 + 0.190*Tr + 0.489*C
OR4LLX4	B-Z	B_Z (rise)	0.092 + 0.289*Tr + 0.404*C	0.211 + 0.347*Tr + 0.854*C	0.133 + 0.311*Tr + 0.579*C
OR4LLX4	C-Z	C_Z (fall)	0.106 + 0.221*Tr + 0.350*C	0.250 + 0.221*Tr + 0.749*C	0.162 + 0.221*Tr + 0.488*C
OR4LLX4	C-Z	C_Z (rise)	0.083 + 0.272*Tr + 0.403*C	0.188 + 0.329*Tr + 0.846*C	0.120 + 0.294*Tr + 0.576*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4LLX4	D-Z	D_Z (fall)	0.091 + 0.250*Tr + 0.346*C	0.202 + 0.250*Tr + 0.739*C	0.135 + 0.248*Tr + 0.481*C
OR4LLX4	D-Z	D_Z (rise)	0.071 + 0.251*Tr + 0.402*C	0.158 + 0.305*Tr + 0.842*C	0.102 + 0.272*Tr + 0.575*C
OR4LLX6	A-Z	A_Z (fall)	0.120 + 0.151*Tr + 0.234*C	0.294 + 0.169*Tr + 0.500*C	0.186 + 0.161*Tr + 0.327*C
OR4LLX6	A-Z	A_Z (rise)	0.097 + 0.305*Tr + 0.271*C	0.217 + 0.358*Tr + 0.575*C	0.138 + 0.325*Tr + 0.389*C
OR4LLX6	B-Z	B_Z (fall)	0.117 + 0.184*Tr + 0.234*C	0.276 + 0.193*Tr + 0.501*C	0.178 + 0.190*Tr + 0.327*C
OR4LLX6	B-Z	B_Z (rise)	0.090 + 0.291*Tr + 0.269*C	0.200 + 0.344*Tr + 0.569*C	0.129 + 0.311*Tr + 0.386*C
OR4LLX6	C-Z	C_Z (fall)	0.104 + 0.219*Tr + 0.234*C	0.243 + 0.221*Tr + 0.499*C	0.157 + 0.220*Tr + 0.325*C
OR4LLX6	C-Z	C_Z (rise)	0.082 + 0.274*Tr + 0.269*C	0.180 + 0.327*Tr + 0.564*C	0.116 + 0.294*Tr + 0.385*C
OR4LLX6	D-Z	D_Z (fall)	0.089 + 0.247*Tr + 0.231*C	0.197 + 0.250*Tr + 0.493*C	0.132 + 0.246*Tr + 0.321*C
OR4LLX6	D-Z	D_Z (rise)	0.070 + 0.253*Tr + 0.268*C	0.151 + 0.304*Tr + 0.561*C	0.099 + 0.273*Tr + 0.384*C
OR4LLX8	A-Z	A_Z (fall)	0.118 + 0.148*Tr + 0.175*C	0.288 + 0.166*Tr + 0.374*C	0.182 + 0.158*Tr + 0.244*C
OR4LLX8	A-Z	A_Z (rise)	0.097 + 0.310*Tr + 0.204*C	0.216 + 0.361*Tr + 0.432*C	0.138 + 0.329*Tr + 0.292*C
OR4LLX8	B-Z	B_Z (fall)	0.115 + 0.180*Tr + 0.175*C	0.272 + 0.189*Tr + 0.375*C	0.176 + 0.185*Tr + 0.244*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4LLX8	B-Z	B_Z (rise)	0.091 + 0.295*Tr + 0.202*C	0.200 + 0.347*Tr + 0.427*C	0.129 + 0.314*Tr + 0.290*C
OR4LLX8	C-Z	C_Z (fall)	0.102 + 0.215*Tr + 0.175*C	0.238 + 0.217*Tr + 0.374*C	0.154 + 0.215*Tr + 0.243*C
OR4LLX8	C-Z	C_Z (rise)	0.082 + 0.278*Tr + 0.202*C	0.178 + 0.329*Tr + 0.424*C	0.116 + 0.297*Tr + 0.289*C
OR4LLX8	D-Z	D_Z (fall)	0.087 + 0.242*Tr + 0.173*C	0.192 + 0.245*Tr + 0.369*C	0.129 + 0.241*Tr + 0.240*C
OR4LLX8	D-Z	D_Z (rise)	0.070 + 0.257*Tr + 0.201*C	0.149 + 0.305*Tr + 0.421*C	0.098 + 0.275*Tr + 0.288*C

Average Leakage Power

picoWatts

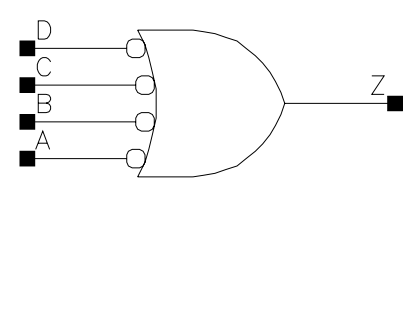
Cell	bc_1.32V_25C	bc_1.32V_125C
OR4LL	5746.230	94529.800
OR4LLP	7038.420	128721.000
OR4LLX4	10990.000	223390.000
OR4LLX6	15290.400	319121.000
OR4LLX8	19801.100	419151.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
OR4LL	Z(max)	0.021 + 0.006*Tr
OR4LLP	Z(max)	0.033 + 0.010*Tr
OR4LLX4	Z(max)	0.062 + 0.021*Tr
OR4LLX6	Z(max)	0.091 + 0.031*Tr
OR4LLX8	Z(max)	0.121 + 0.042*Tr

OR4ABCDLLP
OR4ABCDLLX4
OR4ABCDLLX6
OR4ABCDLLX8



Function: Function = 4 Input OR, A, B, C and D Inputs Inverted

Truth Table

A	B	C	D	Z
1	1	1	1	0
-	-	-	0	1
-	-	0	-	1
-	0	-	-	1
0	-	-	-	1

Physical Dimensions

Property	OR4ABCDLLP	OR4ABCDLLX4	OR4ABCDLLX6	OR4ABCDLLX8
Area(um ²)	18.155	20.172	22.189	24.206

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4ABCDLLP	C Input Cap.	0.0015	0.0012	0.0013
OR4ABCDLLP	A Input Cap.	0.0016	0.0013	0.0014
OR4ABCDLLP	D Input Cap.	0.0015	0.0012	0.0013
OR4ABCDLLP	Z Max Load	0.320	0.320	0.320
OR4ABCDLLP	B Input Cap.	0.0015	0.0013	0.0014
OR4ABCDLLX4	D Input Cap.	0.0025	0.0021	0.0022
OR4ABCDLLX4	Z Max Load	0.640	0.640	0.640
OR4ABCDLLX4	B Input Cap.	0.0025	0.0022	0.0023
OR4ABCDLLX4	C Input Cap.	0.0025	0.0022	0.0023
OR4ABCDLLX4	A Input Cap.	0.0027	0.0022	0.0024
OR4ABCDLLX6	Z Max Load	0.960	0.960	0.960

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4ABCDLLX6	A Input Cap.	0.0037	0.0032	0.0034
OR4ABCDLLX6	D Input Cap.	0.0036	0.0030	0.0032
OR4ABCDLLX6	B Input Cap.	0.0036	0.0031	0.0032
OR4ABCDLLX6	C Input Cap.	0.0036	0.0031	0.0032
OR4ABCDLLX8	C Input Cap.	0.0045	0.0040	0.0041
OR4ABCDLLX8	A Input Cap.	0.0047	0.0041	0.0043
OR4ABCDLLX8	D Input Cap.	0.0044	0.0037	0.0039
OR4ABCDLLX8	Z Max Load	1.280	1.280	1.280
OR4ABCDLLX8	B Input Cap.	0.0046	0.0040	0.0042

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4ABCDLL P	A-Z	A_Z (fall)	0.123 + 0.125*Tr + 0.616*C	0.322 + 0.154*Tr + 1.289*C	0.193 + 0.142*Tr + 0.842*C
OR4ABCDLL P	A-Z	A_Z (rise)	0.138 + 0.336*Tr + 0.787*C	0.325 + 0.361*Tr + 1.627*C	0.210 + 0.347*Tr + 1.118*C
OR4ABCDLL P	B-Z	B_Z (fall)	0.119 + 0.146*Tr + 0.616*C	0.310 + 0.176*Tr + 1.288*C	0.187 + 0.162*Tr + 0.842*C
OR4ABCDLL P	B-Z	B_Z (rise)	0.130 + 0.327*Tr + 0.787*C	0.305 + 0.352*Tr + 1.626*C	0.196 + 0.337*Tr + 1.116*C
OR4ABCDLL P	C-Z	C_Z (fall)	0.117 + 0.163*Tr + 0.616*C	0.297 + 0.197*Tr + 1.288*C	0.181 + 0.178*Tr + 0.841*C
OR4ABCDLL P	C-Z	C_Z (rise)	0.121 + 0.315*Tr + 0.787*C	0.285 + 0.341*Tr + 1.628*C	0.184 + 0.326*Tr + 1.116*C
OR4ABCDLL P	D-Z	D_Z (fall)	0.112 + 0.173*Tr + 0.615*C	0.279 + 0.210*Tr + 1.288*C	0.172 + 0.187*Tr + 0.841*C
OR4ABCDLL P	D-Z	D_Z (rise)	0.112 + 0.302*Tr + 0.786*C	0.262 + 0.327*Tr + 1.626*C	0.169 + 0.313*Tr + 1.116*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4ABCDLL X4	A-Z	A_Z (fall)	0.111 + 0.131*Tr + 0.306*C	0.285 + 0.159*Tr + 0.639*C	0.173 + 0.147*Tr + 0.418*C
OR4ABCDLL X4	A-Z	A_Z (rise)	0.122 + 0.317*Tr + 0.393*C	0.274 + 0.341*Tr + 0.813*C	0.180 + 0.326*Tr + 0.559*C
OR4ABCDLL X4	B-Z	B_Z (fall)	0.108 + 0.150*Tr + 0.306*C	0.274 + 0.179*Tr + 0.639*C	0.167 + 0.165*Tr + 0.418*C
OR4ABCDLL X4	B-Z	B_Z (rise)	0.114 + 0.306*Tr + 0.393*C	0.258 + 0.330*Tr + 0.811*C	0.169 + 0.315*Tr + 0.558*C
OR4ABCDLL X4	C-Z	C_Z (fall)	0.105 + 0.166*Tr + 0.306*C	0.261 + 0.197*Tr + 0.639*C	0.161 + 0.180*Tr + 0.418*C
OR4ABCDLL X4	C-Z	C_Z (rise)	0.107 + 0.293*Tr + 0.394*C	0.241 + 0.317*Tr + 0.811*C	0.158 + 0.303*Tr + 0.558*C
OR4ABCDLL X4	D-Z	D_Z (fall)	0.100 + 0.174*Tr + 0.306*C	0.243 + 0.209*Tr + 0.639*C	0.152 + 0.188*Tr + 0.418*C
OR4ABCDLL X4	D-Z	D_Z (rise)	0.098 + 0.280*Tr + 0.393*C	0.220 + 0.300*Tr + 0.812*C	0.144 + 0.288*Tr + 0.558*C
OR4ABCDLL X6	A-Z	A_Z (fall)	0.106 + 0.132*Tr + 0.204*C	0.271 + 0.159*Tr + 0.425*C	0.164 + 0.148*Tr + 0.278*C
OR4ABCDLL X6	A-Z	A_Z (rise)	0.116 + 0.310*Tr + 0.263*C	0.259 + 0.335*Tr + 0.541*C	0.171 + 0.319*Tr + 0.372*C
OR4ABCDLL X6	B-Z	B_Z (fall)	0.103 + 0.151*Tr + 0.204*C	0.261 + 0.178*Tr + 0.425*C	0.159 + 0.165*Tr + 0.278*C
OR4ABCDLL X6	B-Z	B_Z (rise)	0.109 + 0.299*Tr + 0.262*C	0.244 + 0.323*Tr + 0.541*C	0.161 + 0.308*Tr + 0.372*C
OR4ABCDLL X6	C-Z	C_Z (fall)	0.100 + 0.167*Tr + 0.204*C	0.248 + 0.197*Tr + 0.425*C	0.153 + 0.180*Tr + 0.278*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4ABCDLL X6	C-Z	C_Z (rise)	0.102 + 0.286*Tr + 0.263*C	0.228 + 0.309*Tr + 0.541*C	0.150 + 0.295*Tr + 0.372*C
OR4ABCDLL X6	D-Z	D_Z (fall)	0.095 + 0.175*Tr + 0.204*C	0.229 + 0.207*Tr + 0.425*C	0.144 + 0.187*Tr + 0.278*C
OR4ABCDLL X6	D-Z	D_Z (rise)	0.093 + 0.271*Tr + 0.262*C	0.208 + 0.292*Tr + 0.541*C	0.137 + 0.280*Tr + 0.372*C
OR4ABCDLL X8	A-Z	A_Z (fall)	0.103 + 0.132*Tr + 0.153*C	0.262 + 0.159*Tr + 0.319*C	0.159 + 0.147*Tr + 0.208*C
OR4ABCDLL X8	A-Z	A_Z (rise)	0.114 + 0.309*Tr + 0.197*C	0.251 + 0.334*Tr + 0.406*C	0.166 + 0.319*Tr + 0.279*C
OR4ABCDLL X8	B-Z	B_Z (fall)	0.100 + 0.150*Tr + 0.153*C	0.254 + 0.177*Tr + 0.319*C	0.155 + 0.164*Tr + 0.208*C
OR4ABCDLL X8	B-Z	B_Z (rise)	0.108 + 0.298*Tr + 0.197*C	0.239 + 0.323*Tr + 0.406*C	0.158 + 0.307*Tr + 0.279*C
OR4ABCDLL X8	C-Z	C_Z (fall)	0.097 + 0.166*Tr + 0.153*C	0.240 + 0.195*Tr + 0.319*C	0.148 + 0.179*Tr + 0.208*C
OR4ABCDLL X8	C-Z	C_Z (rise)	0.100 + 0.285*Tr + 0.197*C	0.222 + 0.308*Tr + 0.406*C	0.147 + 0.294*Tr + 0.279*C
OR4ABCDLL X8	D-Z	D_Z (fall)	0.092 + 0.174*Tr + 0.153*C	0.222 + 0.206*Tr + 0.319*C	0.139 + 0.186*Tr + 0.208*C
OR4ABCDLL X8	D-Z	D_Z (rise)	0.091 + 0.270*Tr + 0.197*C	0.203 + 0.291*Tr + 0.406*C	0.133 + 0.279*Tr + 0.279*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
OR4ABCDLLP	5567.890	115442.000
OR4ABCDLLX4	9976.450	215214.000
OR4ABCDLLX6	14484.400	315970.000

Average Leakage Power

picoWatts

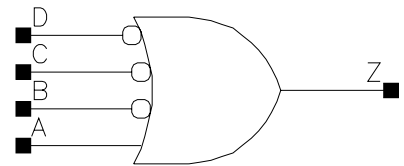
Cell	bc_1.32V_25C	bc_1.32V_125C
OR4ABCDLLX8	19057.600	418136.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
OR4ABCDLLP	Z(max)	$0.029 + 0.005 \cdot Tr$
OR4ABCDLLX4	Z(max)	$0.052 + 0.010 \cdot Tr$
OR4ABCDLLX6	Z(max)	$0.076 + 0.015 \cdot Tr$
OR4ABCDLLX8	Z(max)	$0.098 + 0.020 \cdot Tr$

OR4BCDLL
OR4BCDLLP
OR4BCDLLX4
OR4BCDLLX6
OR4BCDLLX8



Function: Function = 4 Input OR ,B, C and D Inputs Inverted

Truth Table

A	B	C	D	Z
0	1	1	1	0
1	-	-	-	1
-	0	-	-	1
-	-	0	-	1
-	-	-	0	1

Physical Dimensions

Property	OR4BCDLL	OR4BCDLLP	OR4BCDLLX 4	OR4BCDLLX 6	OR4BCDLLX 8
Area(um ²)	16.138	18.155	18.155	24.206	28.241

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4BCDLL	C Input Cap.	0.0011	0.0009	0.0010
OR4BCDLL	A Input Cap.	0.0015	0.0013	0.0013
OR4BCDLL	D Input Cap.	0.0011	0.0009	0.0009
OR4BCDLL	B Input Cap.	0.0010	0.0008	0.0009
OR4BCDLL	Z Max Load	0.160	0.160	0.160
OR4BCDLLP	C Input Cap.	0.0017	0.0014	0.0015
OR4BCDLLP	A Input Cap.	0.0029	0.0024	0.0026
OR4BCDLLP	D Input Cap.	0.0017	0.0014	0.0015
OR4BCDLLP	B Input Cap.	0.0017	0.0014	0.0015
OR4BCDLLP	Z Max Load	0.320	0.320	0.320
OR4BCDLLX4	B Input Cap.	0.0027	0.0022	0.0024

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4BCDLLX4	Z Max Load	0.640	0.640	0.640
OR4BCDLLX4	C Input Cap.	0.0028	0.0024	0.0026
OR4BCDLLX4	A Input Cap.	0.0054	0.0047	0.0049
OR4BCDLLX4	D Input Cap.	0.0027	0.0024	0.0025
OR4BCDLLX6	Z Max Load	0.960	0.960	0.960
OR4BCDLLX6	D Input Cap.	0.0040	0.0034	0.0036
OR4BCDLLX6	B Input Cap.	0.0038	0.0033	0.0034
OR4BCDLLX6	C Input Cap.	0.0038	0.0033	0.0035
OR4BCDLLX6	A Input Cap.	0.0077	0.0066	0.0069
OR4BCDLLX8	C Input Cap.	0.0051	0.0045	0.0046
OR4BCDLLX8	A Input Cap.	0.0101	0.0087	0.0091
OR4BCDLLX8	D Input Cap.	0.0052	0.0046	0.0048
OR4BCDLLX8	B Input Cap.	0.0049	0.0042	0.0044
OR4BCDLLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4BCDLL	A-Z	A_Z (fall)	$0.075 + 0.269 \cdot Tr + 1.245 \cdot C$	$0.170 + 0.273 \cdot Tr + 2.713 \cdot C$	$0.112 + 0.268 \cdot Tr + 1.743 \cdot C$
OR4BCDLL	A-Z	A_Z (rise)	$0.055 + 0.193 \cdot Tr + 1.618 \cdot C$	$0.131 + 0.249 \cdot Tr + 3.408 \cdot C$	$0.082 + 0.215 \cdot Tr + 2.327 \cdot C$
OR4BCDLL	B-Z	B_Z (fall)	$0.130 + 0.165 \cdot Tr + 1.233 \cdot C$	$0.337 + 0.207 \cdot Tr + 2.687 \cdot C$	$0.204 + 0.182 \cdot Tr + 1.720 \cdot C$
OR4BCDLL	B-Z	B_Z (rise)	$0.138 + 0.323 \cdot Tr + 1.612 \cdot C$	$0.372 + 0.364 \cdot Tr + 3.398 \cdot C$	$0.221 + 0.341 \cdot Tr + 2.312 \cdot C$
OR4BCDLL	C-Z	C_Z (fall)	$0.131 + 0.150 \cdot Tr + 1.233 \cdot C$	$0.342 + 0.188 \cdot Tr + 2.686 \cdot C$	$0.206 + 0.167 \cdot Tr + 1.720 \cdot C$

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4BCDLL	C-Z	C_Z (rise)	0.144 + 0.335*Tr + 1.610*C	0.388 + 0.374*Tr + 3.398*C	0.230 + 0.352*Tr + 2.312*C
OR4BCDLL	D-Z	D_Z (fall)	0.131 + 0.125*Tr + 1.232*C	0.349 + 0.158*Tr + 2.685*C	0.208 + 0.142*Tr + 1.720*C
OR4BCDLL	D-Z	D_Z (rise)	0.151 + 0.344*Tr + 1.611*C	0.408 + 0.382*Tr + 3.400*C	0.242 + 0.361*Tr + 2.311*C
OR4BCDLLP	A-Z	A_Z (fall)	0.062 + 0.242*Tr + 0.627*C	0.138 + 0.247*Tr + 1.316*C	0.092 + 0.242*Tr + 0.861*C
OR4BCDLLP	A-Z	A_Z (rise)	0.048 + 0.203*Tr + 0.792*C	0.109 + 0.249*Tr + 1.639*C	0.070 + 0.222*Tr + 1.127*C
OR4BCDLLP	B-Z	B_Z (fall)	0.108 + 0.172*Tr + 0.621*C	0.270 + 0.212*Tr + 1.300*C	0.167 + 0.188*Tr + 0.849*C
OR4BCDLLP	B-Z	B_Z (rise)	0.116 + 0.295*Tr + 0.788*C	0.272 + 0.318*Tr + 1.629*C	0.175 + 0.305*Tr + 1.118*C
OR4BCDLLP	C-Z	C_Z (fall)	0.110 + 0.158*Tr + 0.621*C	0.278 + 0.195*Tr + 1.301*C	0.171 + 0.175*Tr + 0.849*C
OR4BCDLLP	C-Z	C_Z (rise)	0.123 + 0.308*Tr + 0.788*C	0.287 + 0.331*Tr + 1.629*C	0.185 + 0.317*Tr + 1.118*C
OR4BCDLLP	D-Z	D_Z (fall)	0.111 + 0.135*Tr + 0.621*C	0.286 + 0.168*Tr + 1.301*C	0.173 + 0.153*Tr + 0.849*C
OR4BCDLLP	D-Z	D_Z (rise)	0.130 + 0.318*Tr + 0.788*C	0.303 + 0.342*Tr + 1.629*C	0.195 + 0.328*Tr + 1.118*C
OR4BCDLLX 4	A-Z	A_Z (fall)	0.061 + 0.232*Tr + 0.314*C	0.134 + 0.238*Tr + 0.658*C	0.090 + 0.232*Tr + 0.431*C
OR4BCDLLX 4	A-Z	A_Z (rise)	0.047 + 0.212*Tr + 0.396*C	0.104 + 0.253*Tr + 0.820*C	0.068 + 0.228*Tr + 0.564*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4BCDLLX 4	B-Z	B_Z (fall)	0.104 + 0.182*Tr + 0.311*C	0.256 + 0.218*Tr + 0.650*C	0.160 + 0.196*Tr + 0.425*C
OR4BCDLLX 4	B-Z	B_Z (rise)	0.110 + 0.281*Tr + 0.395*C	0.248 + 0.302*Tr + 0.815*C	0.161 + 0.289*Tr + 0.560*C
OR4BCDLLX 4	C-Z	C_Z (fall)	0.106 + 0.168*Tr + 0.311*C	0.265 + 0.201*Tr + 0.650*C	0.164 + 0.183*Tr + 0.425*C
OR4BCDLLX 4	C-Z	C_Z (rise)	0.116 + 0.293*Tr + 0.394*C	0.262 + 0.316*Tr + 0.815*C	0.171 + 0.301*Tr + 0.560*C
OR4BCDLLX 4	D-Z	D_Z (fall)	0.107 + 0.145*Tr + 0.310*C	0.271 + 0.176*Tr + 0.650*C	0.166 + 0.161*Tr + 0.424*C
OR4BCDLLX 4	D-Z	D_Z (rise)	0.121 + 0.304*Tr + 0.395*C	0.274 + 0.327*Tr + 0.815*C	0.179 + 0.313*Tr + 0.560*C
OR4BCDLLX 6	A-Z	A_Z (fall)	0.059 + 0.229*Tr + 0.209*C	0.129 + 0.236*Tr + 0.438*C	0.086 + 0.230*Tr + 0.287*C
OR4BCDLLX 6	A-Z	A_Z (rise)	0.047 + 0.213*Tr + 0.264*C	0.101 + 0.251*Tr + 0.547*C	0.067 + 0.228*Tr + 0.376*C
OR4BCDLLX 6	B-Z	B_Z (fall)	0.099 + 0.181*Tr + 0.207*C	0.242 + 0.216*Tr + 0.433*C	0.151 + 0.194*Tr + 0.283*C
OR4BCDLLX 6	B-Z	B_Z (rise)	0.104 + 0.273*Tr + 0.263*C	0.232 + 0.294*Tr + 0.543*C	0.152 + 0.281*Tr + 0.373*C
OR4BCDLLX 6	C-Z	C_Z (fall)	0.102 + 0.168*Tr + 0.207*C	0.252 + 0.199*Tr + 0.433*C	0.156 + 0.182*Tr + 0.283*C
OR4BCDLLX 6	C-Z	C_Z (rise)	0.111 + 0.286*Tr + 0.263*C	0.247 + 0.308*Tr + 0.543*C	0.162 + 0.294*Tr + 0.373*C
OR4BCDLLX 6	D-Z	D_Z (fall)	0.103 + 0.145*Tr + 0.207*C	0.260 + 0.174*Tr + 0.433*C	0.159 + 0.161*Tr + 0.283*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4BCDLLX 6	D-Z	D_Z (rise)	0.117 + 0.297*Tr + 0.263*C	0.261 + 0.320*Tr + 0.543*C	0.171 + 0.305*Tr + 0.373*C
OR4BCDLLX 8	A-Z	A_Z (fall)	0.059 + 0.229*Tr + 0.157*C	0.129 + 0.234*Tr + 0.329*C	0.086 + 0.229*Tr + 0.216*C
OR4BCDLLX 8	A-Z	A_Z (rise)	0.046 + 0.213*Tr + 0.199*C	0.102 + 0.253*Tr + 0.411*C	0.067 + 0.228*Tr + 0.283*C
OR4BCDLLX 8	B-Z	B_Z (fall)	0.097 + 0.179*Tr + 0.155*C	0.235 + 0.211*Tr + 0.325*C	0.148 + 0.191*Tr + 0.212*C
OR4BCDLLX 8	B-Z	B_Z (rise)	0.101 + 0.270*Tr + 0.197*C	0.227 + 0.290*Tr + 0.408*C	0.148 + 0.277*Tr + 0.280*C
OR4BCDLLX 8	C-Z	C_Z (fall)	0.100 + 0.166*Tr + 0.155*C	0.245 + 0.195*Tr + 0.325*C	0.153 + 0.179*Tr + 0.213*C
OR4BCDLLX 8	C-Z	C_Z (rise)	0.108 + 0.282*Tr + 0.197*C	0.242 + 0.304*Tr + 0.408*C	0.158 + 0.290*Tr + 0.280*C
OR4BCDLLX 8	D-Z	D_Z (fall)	0.101 + 0.144*Tr + 0.155*C	0.253 + 0.171*Tr + 0.325*C	0.156 + 0.158*Tr + 0.213*C
OR4BCDLLX 8	D-Z	D_Z (rise)	0.114 + 0.294*Tr + 0.198*C	0.255 + 0.316*Tr + 0.408*C	0.167 + 0.302*Tr + 0.280*C

Average Leakage Power

picoWatts

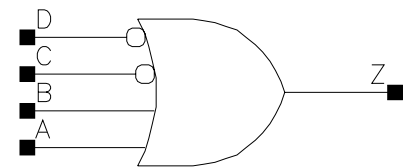
Cell	bc_1.32V_25C	bc_1.32V_125C
OR4BCDLL	4672.260	83607.500
OR4BCDLLP	6676.580	137302.000
OR4BCDLLX4	11791.600	253896.000
OR4BCDLLX6	16902.000	368519.000
OR4BCDLLX8	23116.200	499990.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
OR4BCDLL	Z(max)	$0.020 + 0.003 * Tr$
OR4BCDLLP	Z(max)	$0.033 + 0.006 * Tr$
OR4BCDLLX4	Z(max)	$0.061 + 0.011 * Tr$
OR4BCDLLX6	Z(max)	$0.089 + 0.017 * Tr$
OR4BCDLLX8	Z(max)	$0.118 + 0.022 * Tr$

OR4CDLL
OR4CDLLP
OR4CDLLX4
OR4CDLLX6
OR4CDLLX8



Function: Function = 4 Input OR ,C and D Inputs Inverted

Truth Table

A	B	C	D	Z
0	0	1	1	0
1	-	-	-	1
-	-	-	0	1
-	-	0	-	1
-	1	-	-	1

Physical Dimensions

Property	OR4CDLL	OR4CDLLP	OR4CDLLX4	OR4CDLLX6	OR4CDLLX8
Area(um ²)	16.138	18.155	18.155	26.224	30.258

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4CDLL	A Input Cap.	0.0018	0.0016	0.0017
OR4CDLL	Z Max Load	0.160	0.160	0.160
OR4CDLL	D Input Cap.	0.0013	0.0011	0.0011
OR4CDLL	B Input Cap.	0.0020	0.0018	0.0019
OR4CDLL	C Input Cap.	0.0011	0.0009	0.0010
OR4CDLLP	A Input Cap.	0.0025	0.0022	0.0023
OR4CDLLP	Z Max Load	0.320	0.320	0.320
OR4CDLLP	D Input Cap.	0.0018	0.0015	0.0016
OR4CDLLP	B Input Cap.	0.0027	0.0024	0.0025
OR4CDLLP	C Input Cap.	0.0018	0.0014	0.0015
OR4CDLLX4	A Input Cap.	0.0045	0.0039	0.0041
OR4CDLLX4	Z Max Load	0.640	0.640	0.640

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4CDLLX4	D Input Cap.	0.0033	0.0028	0.0029
OR4CDLLX4	B Input Cap.	0.0048	0.0043	0.0044
OR4CDLLX4	C Input Cap.	0.0032	0.0027	0.0028
OR4CDLLX6	C Input Cap.	0.0045	0.0038	0.0040
OR4CDLLX6	A Input Cap.	0.0066	0.0058	0.0060
OR4CDLLX6	D Input Cap.	0.0047	0.0040	0.0042
OR4CDLLX6	B Input Cap.	0.0074	0.0066	0.0069
OR4CDLLX6	Z Max Load	0.960	0.960	0.960
OR4CDLLX8	B Input Cap.	0.0097	0.0087	0.0090
OR4CDLLX8	C Input Cap.	0.0059	0.0049	0.0052
OR4CDLLX8	A Input Cap.	0.0085	0.0075	0.0078
OR4CDLLX8	Z Max Load	1.280	1.280	1.280
OR4CDLLX8	D Input Cap.	0.0059	0.0051	0.0053

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4CDLL	A-Z	A_Z (fall)	0.084 + 0.268*Tr + 1.293*C	0.191 + 0.267*Tr + 2.834*C	0.126 + 0.265*Tr + 1.818*C
OR4CDLL	A-Z	A_Z (rise)	0.061 + 0.209*Tr + 1.625*C	0.147 + 0.271*Tr + 3.436*C	0.091 + 0.234*Tr + 2.339*C
OR4CDLL	B-Z	B_Z (fall)	0.094 + 0.233*Tr + 1.304*C	0.224 + 0.233*Tr + 2.857*C	0.145 + 0.233*Tr + 1.836*C
OR4CDLL	B-Z	B_Z (rise)	0.070 + 0.229*Tr + 1.625*C	0.171 + 0.293*Tr + 3.454*C	0.104 + 0.254*Tr + 2.343*C
OR4CDLL	C-Z	C_Z (fall)	0.137 + 0.148*Tr + 1.283*C	0.342 + 0.191*Tr + 2.808*C	0.212 + 0.166*Tr + 1.798*C
OR4CDLL	C-Z	C_Z (rise)	0.133 + 0.302*Tr + 1.624*C	0.339 + 0.325*Tr + 3.451*C	0.205 + 0.310*Tr + 2.335*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4CDLL	D-Z	D_Z (fall)	0.137 + 0.129*Tr + 1.282*C	0.344 + 0.167*Tr + 2.808*C	0.213 + 0.148*Tr + 1.797*C
OR4CDLL	D-Z	D_Z (rise)	0.139 + 0.314*Tr + 1.624*C	0.354 + 0.336*Tr + 3.450*C	0.215 + 0.321*Tr + 2.336*C
OR4CDLLP	A-Z	A_Z (fall)	0.083 + 0.258*Tr + 0.664*C	0.186 + 0.261*Tr + 1.407*C	0.123 + 0.257*Tr + 0.918*C
OR4CDLLP	A-Z	A_Z (rise)	0.062 + 0.225*Tr + 0.799*C	0.142 + 0.281*Tr + 1.668*C	0.090 + 0.247*Tr + 1.141*C
OR4CDLLP	B-Z	B_Z (fall)	0.093 + 0.225*Tr + 0.670*C	0.218 + 0.228*Tr + 1.419*C	0.141 + 0.225*Tr + 0.928*C
OR4CDLLP	B-Z	B_Z (rise)	0.071 + 0.245*Tr + 0.800*C	0.166 + 0.303*Tr + 1.676*C	0.104 + 0.267*Tr + 1.144*C
OR4CDLLP	C-Z	C_Z (fall)	0.128 + 0.156*Tr + 0.659*C	0.312 + 0.195*Tr + 1.393*C	0.196 + 0.172*Tr + 0.908*C
OR4CDLLP	C-Z	C_Z (rise)	0.120 + 0.270*Tr + 0.797*C	0.287 + 0.284*Tr + 1.673*C	0.180 + 0.275*Tr + 1.137*C
OR4CDLLP	D-Z	D_Z (fall)	0.129 + 0.139*Tr + 0.659*C	0.315 + 0.176*Tr + 1.393*C	0.197 + 0.157*Tr + 0.908*C
OR4CDLLP	D-Z	D_Z (rise)	0.125 + 0.283*Tr + 0.798*C	0.299 + 0.298*Tr + 1.673*C	0.188 + 0.288*Tr + 1.137*C
OR4CDLLX4	A-Z	A_Z (fall)	0.077 + 0.239*Tr + 0.327*C	0.171 + 0.242*Tr + 0.693*C	0.114 + 0.238*Tr + 0.452*C
OR4CDLLX4	A-Z	A_Z (rise)	0.060 + 0.236*Tr + 0.399*C	0.132 + 0.284*Tr + 0.830*C	0.086 + 0.254*Tr + 0.569*C
OR4CDLLX4	B-Z	B_Z (fall)	0.086 + 0.209*Tr + 0.330*C	0.198 + 0.213*Tr + 0.699*C	0.130 + 0.210*Tr + 0.457*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4CDLLX4	B-Z	B_Z (rise)	0.068 + 0.257*Tr + 0.399*C	0.154 + 0.308*Tr + 0.833*C	0.099 + 0.276*Tr + 0.570*C
OR4CDLLX4	C-Z	C_Z (fall)	0.119 + 0.167*Tr + 0.325*C	0.287 + 0.202*Tr + 0.686*C	0.181 + 0.181*Tr + 0.447*C
OR4CDLLX4	C-Z	C_Z (rise)	0.114 + 0.254*Tr + 0.398*C	0.264 + 0.269*Tr + 0.832*C	0.168 + 0.259*Tr + 0.568*C
OR4CDLLX4	D-Z	D_Z (fall)	0.119 + 0.151*Tr + 0.325*C	0.289 + 0.184*Tr + 0.686*C	0.182 + 0.167*Tr + 0.447*C
OR4CDLLX4	D-Z	D_Z (rise)	0.119 + 0.267*Tr + 0.398*C	0.275 + 0.283*Tr + 0.832*C	0.175 + 0.272*Tr + 0.568*C
OR4CDLLX6	A-Z	A_Z (fall)	0.075 + 0.238*Tr + 0.219*C	0.167 + 0.243*Tr + 0.463*C	0.111 + 0.238*Tr + 0.302*C
OR4CDLLX6	A-Z	A_Z (rise)	0.059 + 0.237*Tr + 0.266*C	0.127 + 0.282*Tr + 0.553*C	0.084 + 0.254*Tr + 0.379*C
OR4CDLLX6	B-Z	B_Z (fall)	0.085 + 0.207*Tr + 0.221*C	0.195 + 0.213*Tr + 0.468*C	0.128 + 0.210*Tr + 0.306*C
OR4CDLLX6	B-Z	B_Z (rise)	0.068 + 0.258*Tr + 0.266*C	0.150 + 0.305*Tr + 0.555*C	0.097 + 0.275*Tr + 0.380*C
OR4CDLLX6	C-Z	C_Z (fall)	0.116 + 0.169*Tr + 0.217*C	0.279 + 0.203*Tr + 0.458*C	0.176 + 0.183*Tr + 0.299*C
OR4CDLLX6	C-Z	C_Z (rise)	0.111 + 0.247*Tr + 0.266*C	0.250 + 0.262*Tr + 0.555*C	0.161 + 0.252*Tr + 0.379*C
OR4CDLLX6	D-Z	D_Z (fall)	0.116 + 0.153*Tr + 0.217*C	0.282 + 0.184*Tr + 0.459*C	0.178 + 0.168*Tr + 0.299*C
OR4CDLLX6	D-Z	D_Z (rise)	0.116 + 0.260*Tr + 0.266*C	0.263 + 0.276*Tr + 0.555*C	0.169 + 0.265*Tr + 0.379*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4CDLLX8	A-Z	A_Z (fall)	0.074 + 0.233*Tr + 0.164*C	0.164 + 0.238*Tr + 0.347*C	0.110 + 0.233*Tr + 0.227*C
OR4CDLLX8	A-Z	A_Z (rise)	0.059 + 0.241*Tr + 0.200*C	0.126 + 0.284*Tr + 0.416*C	0.083 + 0.257*Tr + 0.285*C
OR4CDLLX8	B-Z	B_Z (fall)	0.083 + 0.203*Tr + 0.166*C	0.192 + 0.209*Tr + 0.351*C	0.126 + 0.206*Tr + 0.229*C
OR4CDLLX8	B-Z	B_Z (rise)	0.068 + 0.262*Tr + 0.200*C	0.149 + 0.308*Tr + 0.418*C	0.097 + 0.279*Tr + 0.286*C
OR4CDLLX8	C-Z	C_Z (fall)	0.116 + 0.171*Tr + 0.163*C	0.278 + 0.203*Tr + 0.344*C	0.176 + 0.184*Tr + 0.224*C
OR4CDLLX8	C-Z	C_Z (rise)	0.113 + 0.248*Tr + 0.200*C	0.255 + 0.264*Tr + 0.417*C	0.164 + 0.254*Tr + 0.285*C
OR4CDLLX8	D-Z	D_Z (fall)	0.116 + 0.154*Tr + 0.163*C	0.280 + 0.185*Tr + 0.344*C	0.177 + 0.169*Tr + 0.224*C
OR4CDLLX8	D-Z	D_Z (rise)	0.118 + 0.262*Tr + 0.200*C	0.266 + 0.278*Tr + 0.417*C	0.172 + 0.267*Tr + 0.285*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
OR4CDLL	5485.700	94489.200
OR4CDLLP	7188.250	142035.000
OR4CDLLX4	12121.600	257639.000
OR4CDLLX6	17233.500	373082.000
OR4CDLLX8	22442.400	490854.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

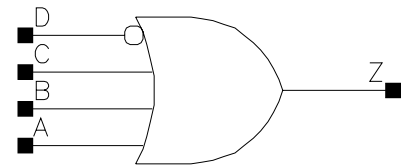
Cell	Cycle on pin	nom_1.20V_25C
OR4CDLL	Z(max)	0.022 + 0.004*Tr

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
OR4CDLLP	Z(max)	$0.036 + 0.007 * Tr$
OR4CDLLX4	Z(max)	$0.066 + 0.013 * Tr$
OR4CDLLX6	Z(max)	$0.099 + 0.019 * Tr$
OR4CDLLX8	Z(max)	$0.131 + 0.025 * Tr$

OR4DLL
OR4DLLP
OR4DLLX4
OR4DLLX6
OR4DLLX8



Function: Function = 4 Input OR, D Input Inverted

Truth Table

A	B	C	D	Z
0	0	0	1	0
1	-	-	-	1
-	-	1	-	1
-	1	-	-	1
-	-	-	0	1

Physical Dimensions

Property	OR4DLL	OR4DLLP	OR4DLLX4	OR4DLLX6	OR4DLLX8
Area(um ²)	16.138	16.138	18.155	26.224	30.258

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4DLL	C Input Cap.	0.0022	0.0020	0.0021
OR4DLL	Z Max Load	0.160	0.160	0.160
OR4DLL	A Input Cap.	0.0022	0.0019	0.0020
OR4DLL	D Input Cap.	0.0014	0.0011	0.0012
OR4DLL	B Input Cap.	0.0022	0.0020	0.0021
OR4DLLP	D Input Cap.	0.0015	0.0012	0.0013
OR4DLLP	B Input Cap.	0.0025	0.0022	0.0023
OR4DLLP	C Input Cap.	0.0025	0.0022	0.0024
OR4DLLP	Z Max Load	0.320	0.320	0.320
OR4DLLP	A Input Cap.	0.0025	0.0022	0.0022
OR4DLLX4	C Input Cap.	0.0045	0.0040	0.0042
OR4DLLX4	Z Max Load	0.640	0.640	0.640

Capacitance

picoFarads

Cell	Property	Best 1.32V -40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4DLLX4	A Input Cap.	0.0041	0.0036	0.0038
OR4DLLX4	D Input Cap.	0.0020	0.0016	0.0018
OR4DLLX4	B Input Cap.	0.0044	0.0039	0.0041
OR4DLLX6	D Input Cap.	0.0029	0.0024	0.0025
OR4DLLX6	Z Max Load	0.960	0.960	0.960
OR4DLLX6	B Input Cap.	0.0067	0.0060	0.0062
OR4DLLX6	C Input Cap.	0.0071	0.0065	0.0067
OR4DLLX6	A Input Cap.	0.0061	0.0054	0.0056
OR4DLLX8	A Input Cap.	0.0080	0.0072	0.0074
OR4DLLX8	D Input Cap.	0.0036	0.0031	0.0032
OR4DLLX8	B Input Cap.	0.0087	0.0079	0.0082
OR4DLLX8	C Input Cap.	0.0091	0.0083	0.0086
OR4DLLX8	Z Max Load	1.280	1.280	1.280

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4DLL	A-Z	A_Z (fall)	0.083 + 0.258*Tr + 1.322*C	0.190 + 0.253*Tr + 2.911*C	0.125 + 0.253*Tr + 1.862*C
OR4DLL	A-Z	A_Z (rise)	0.063 + 0.214*Tr + 1.626*C	0.152 + 0.278*Tr + 3.441*C	0.094 + 0.239*Tr + 2.341*C
OR4DLL	B-Z	B_Z (fall)	0.096 + 0.232*Tr + 1.337*C	0.231 + 0.227*Tr + 2.943*C	0.148 + 0.228*Tr + 1.887*C
OR4DLL	B-Z	B_Z (rise)	0.072 + 0.237*Tr + 1.626*C	0.178 + 0.304*Tr + 3.459*C	0.108 + 0.263*Tr + 2.344*C
OR4DLL	C-Z	C_Z (fall)	0.105 + 0.200*Tr + 1.341*C	0.262 + 0.199*Tr + 2.951*C	0.164 + 0.200*Tr + 1.895*C
OR4DLL	C-Z	C_Z (rise)	0.079 + 0.256*Tr + 1.630*C	0.200 + 0.323*Tr + 3.483*C	0.120 + 0.281*Tr + 2.353*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4DLL	D-Z	D_Z (fall)	0.143 + 0.161*Tr + 1.317*C	0.355 + 0.209*Tr + 2.897*C	0.221 + 0.180*Tr + 1.852*C
OR4DLL	D-Z	D_Z (rise)	0.130 + 0.272*Tr + 1.637*C	0.331 + 0.283*Tr + 3.512*C	0.199 + 0.276*Tr + 2.360*C
OR4DLLP	A-Z	A_Z (fall)	0.097 + 0.266*Tr + 0.696*C	0.218 + 0.265*Tr + 1.489*C	0.145 + 0.264*Tr + 0.968*C
OR4DLLP	A-Z	A_Z (rise)	0.071 + 0.233*Tr + 0.803*C	0.166 + 0.295*Tr + 1.689*C	0.104 + 0.258*Tr + 1.150*C
OR4DLLP	B-Z	B_Z (fall)	0.111 + 0.237*Tr + 0.703*C	0.260 + 0.235*Tr + 1.504*C	0.169 + 0.235*Tr + 0.980*C
OR4DLLP	B-Z	B_Z (rise)	0.080 + 0.254*Tr + 0.804*C	0.192 + 0.318*Tr + 1.699*C	0.119 + 0.279*Tr + 1.154*C
OR4DLLP	C-Z	C_Z (fall)	0.120 + 0.203*Tr + 0.705*C	0.292 + 0.205*Tr + 1.507*C	0.185 + 0.204*Tr + 0.983*C
OR4DLLP	C-Z	C_Z (rise)	0.088 + 0.271*Tr + 0.806*C	0.214 + 0.335*Tr + 1.711*C	0.131 + 0.295*Tr + 1.158*C
OR4DLLP	D-Z	D_Z (fall)	0.157 + 0.157*Tr + 0.695*C	0.383 + 0.204*Tr + 1.483*C	0.241 + 0.176*Tr + 0.964*C
OR4DLLP	D-Z	D_Z (rise)	0.144 + 0.280*Tr + 0.807*C	0.357 + 0.293*Tr + 1.723*C	0.218 + 0.285*Tr + 1.158*C
OR4DLLX4	A-Z	A_Z (fall)	0.090 + 0.248*Tr + 0.344*C	0.198 + 0.249*Tr + 0.735*C	0.133 + 0.246*Tr + 0.478*C
OR4DLLX4	A-Z	A_Z (rise)	0.070 + 0.249*Tr + 0.401*C	0.155 + 0.303*Tr + 0.840*C	0.100 + 0.270*Tr + 0.574*C
OR4DLLX4	B-Z	B_Z (fall)	0.105 + 0.219*Tr + 0.348*C	0.244 + 0.220*Tr + 0.745*C	0.159 + 0.219*Tr + 0.485*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4DLLX4	B-Z	B_Z (rise)	0.081 + 0.270*Tr + 0.402*C	0.184 + 0.327*Tr + 0.845*C	0.117 + 0.292*Tr + 0.576*C
OR4DLLX4	C-Z	C_Z (fall)	0.114 + 0.187*Tr + 0.349*C	0.277 + 0.191*Tr + 0.747*C	0.176 + 0.190*Tr + 0.487*C
OR4DLLX4	C-Z	C_Z (rise)	0.090 + 0.287*Tr + 0.403*C	0.207 + 0.344*Tr + 0.852*C	0.130 + 0.309*Tr + 0.578*C
OR4DLLX4	D-Z	D_Z (fall)	0.150 + 0.174*Tr + 0.344*C	0.361 + 0.216*Tr + 0.733*C	0.229 + 0.192*Tr + 0.477*C
OR4DLLX4	D-Z	D_Z (rise)	0.145 + 0.265*Tr + 0.404*C	0.340 + 0.279*Tr + 0.859*C	0.214 + 0.270*Tr + 0.579*C
OR4DLLX6	A-Z	A_Z (fall)	0.088 + 0.244*Tr + 0.230*C	0.194 + 0.247*Tr + 0.491*C	0.130 + 0.244*Tr + 0.320*C
OR4DLLX6	A-Z	A_Z (rise)	0.070 + 0.254*Tr + 0.268*C	0.152 + 0.304*Tr + 0.561*C	0.099 + 0.273*Tr + 0.383*C
OR4DLLX6	B-Z	B_Z (fall)	0.103 + 0.216*Tr + 0.233*C	0.239 + 0.219*Tr + 0.498*C	0.156 + 0.217*Tr + 0.324*C
OR4DLLX6	B-Z	B_Z (rise)	0.082 + 0.275*Tr + 0.269*C	0.180 + 0.328*Tr + 0.564*C	0.117 + 0.295*Tr + 0.385*C
OR4DLLX6	C-Z	C_Z (fall)	0.112 + 0.185*Tr + 0.234*C	0.271 + 0.192*Tr + 0.499*C	0.173 + 0.189*Tr + 0.326*C
OR4DLLX6	C-Z	C_Z (rise)	0.091 + 0.292*Tr + 0.269*C	0.202 + 0.346*Tr + 0.569*C	0.130 + 0.312*Tr + 0.386*C
OR4DLLX6	D-Z	D_Z (fall)	0.149 + 0.182*Tr + 0.230*C	0.355 + 0.221*Tr + 0.490*C	0.225 + 0.198*Tr + 0.319*C
OR4DLLX6	D-Z	D_Z (rise)	0.146 + 0.257*Tr + 0.270*C	0.332 + 0.271*Tr + 0.573*C	0.212 + 0.262*Tr + 0.387*C

Propagation Delay

nanoSeconds, as a function of C (load in pF) and Tr (input transition time in nS)

Cell	Path	Event	Best 1.32V - 40C	Worst 1.08V 125C	Nominal 1.2V 25C
OR4DLLX8	A-Z	A_Z (fall)	0.087 + 0.241*Tr + 0.172*C	0.192 + 0.244*Tr + 0.368*C	0.129 + 0.241*Tr + 0.240*C
OR4DLLX8	A-Z	A_Z (rise)	0.069 + 0.256*Tr + 0.201*C	0.149 + 0.305*Tr + 0.421*C	0.098 + 0.275*Tr + 0.288*C
OR4DLLX8	B-Z	B_Z (fall)	0.103 + 0.213*Tr + 0.175*C	0.238 + 0.216*Tr + 0.373*C	0.155 + 0.214*Tr + 0.243*C
OR4DLLX8	B-Z	B_Z (rise)	0.081 + 0.277*Tr + 0.202*C	0.178 + 0.329*Tr + 0.423*C	0.115 + 0.296*Tr + 0.289*C
OR4DLLX8	C-Z	C_Z (fall)	0.111 + 0.182*Tr + 0.175*C	0.269 + 0.189*Tr + 0.374*C	0.171 + 0.186*Tr + 0.244*C
OR4DLLX8	C-Z	C_Z (rise)	0.090 + 0.294*Tr + 0.202*C	0.199 + 0.346*Tr + 0.427*C	0.128 + 0.314*Tr + 0.290*C
OR4DLLX8	D-Z	D_Z (fall)	0.147 + 0.186*Tr + 0.172*C	0.350 + 0.224*Tr + 0.368*C	0.222 + 0.202*Tr + 0.239*C
OR4DLLX8	D-Z	D_Z (rise)	0.144 + 0.253*Tr + 0.203*C	0.324 + 0.268*Tr + 0.430*C	0.208 + 0.258*Tr + 0.290*C

Average Leakage Power

picoWatts

Cell	bc_1.32V_25C	bc_1.32V_125C
OR4DLL	6258.080	105307.000
OR4DLLP	7541.010	139431.000
OR4DLLX4	11709.100	240354.000
OR4DLLX6	16218.200	342001.000
OR4DLLX8	21034.500	449831.000

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
OR4DLL	Z(max)	0.026 + 0.005*Tr

Internal Energy at minimum output load

uW/MHz as a function of Tr (input transition time in nS)

Cell	Cycle on pin	nom_1.20V_25C
OR4DLLP	Z(max)	$0.038 + 0.005 * Tr$
OR4DLLX4	Z(max)	$0.073 + 0.009 * Tr$
OR4DLLX6	Z(max)	$0.109 + 0.012 * Tr$
OR4DLLX8	Z(max)	$0.144 + 0.016 * Tr$