Digital Systems

Introduction

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Exercise #1: what is the defect probability of a PCB

- ✓ Probability that a S cm^2 IC is defective after manufacturing with D% defect probability per cm^2: $P_1 = 1 - (1 - D/100)^S$
- ✓ Probability that a S cm^2 IC is defective and passes a T% coverage testing: $P_2 = (1 - T/100) \times P_1$
- ✓ Probability that a N ICs board is not defective if each IC is defective with probability P_2: $P_3 = (1 - P_2)^N$
- ✓ In our case ($S = 1.5, D = 10\%, T = 97\%, N = 10$): $P_3 \approx 0.957$, that is a 4.3% probability of board defect...

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