



INF3410 — Fall 2015

Book Chapter 2: Processing and Layout (only mismatch is discussed)



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Content

Mismatch and Process Variation

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Mismatch and Process Variation

What you See Is Not What You Get

Structures as defined in the layout will show deviations from that definition

- ▶ from die to die (process variation)
- ▶ from device to device (mismatch)
 - ▶ position dependent
 - ▶ random

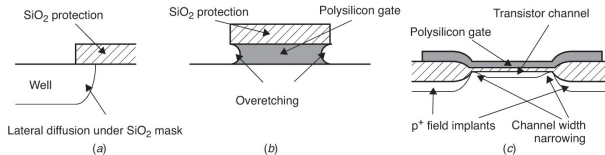
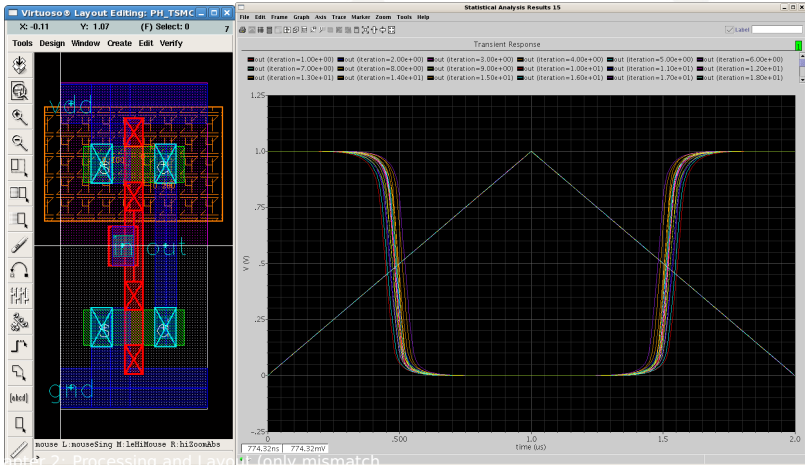


Figure 2.22
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Monte Carlo Simulation



Counter Measures

for inter-device matching

- ▶ large structures
- ▶ surrounding dummy structures
- ▶ for pairwise matching
 - ▶ entwined structures (fingers, common centroid)
 - ▶ use same orientation

for inter process variations

- ▶ use variation robust designs
- ▶ design with safety margin
- ▶ be in the center of the wafer

Common Centroid (1/2)

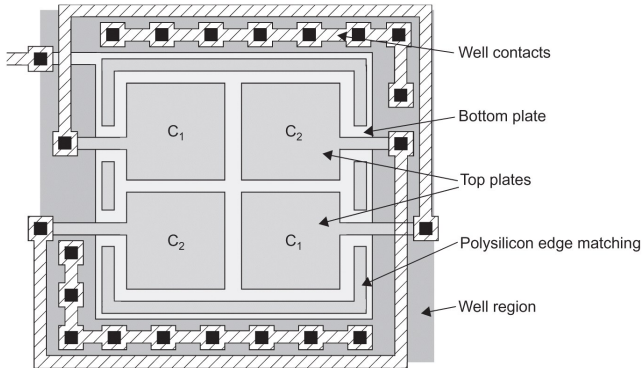


Figure 2.32
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Common Centroid (2/2)

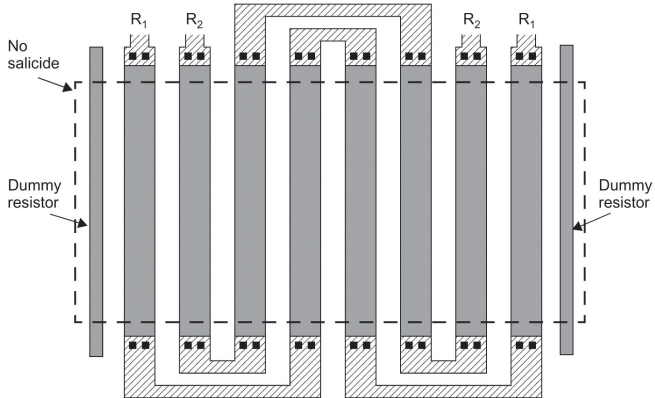


Figure 2.33
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