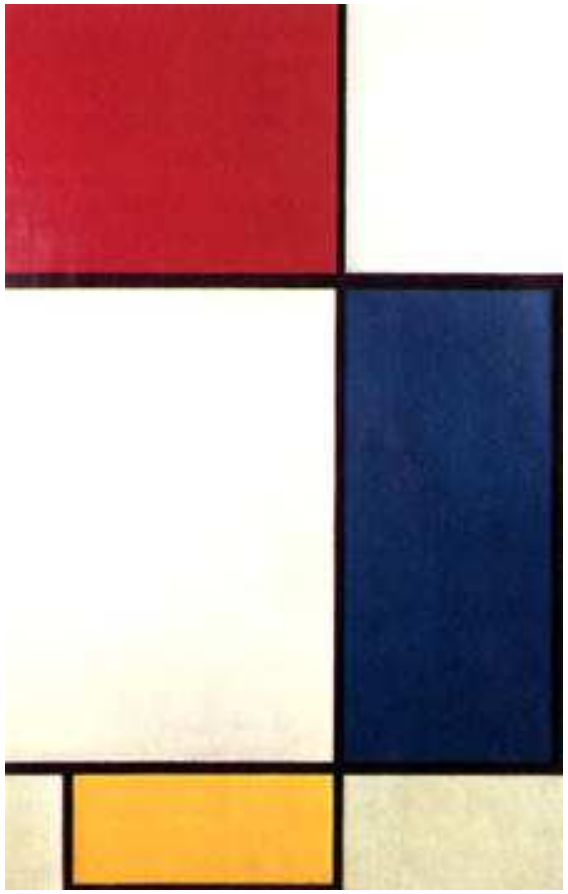
Design Rules

Jan M. Rabaey



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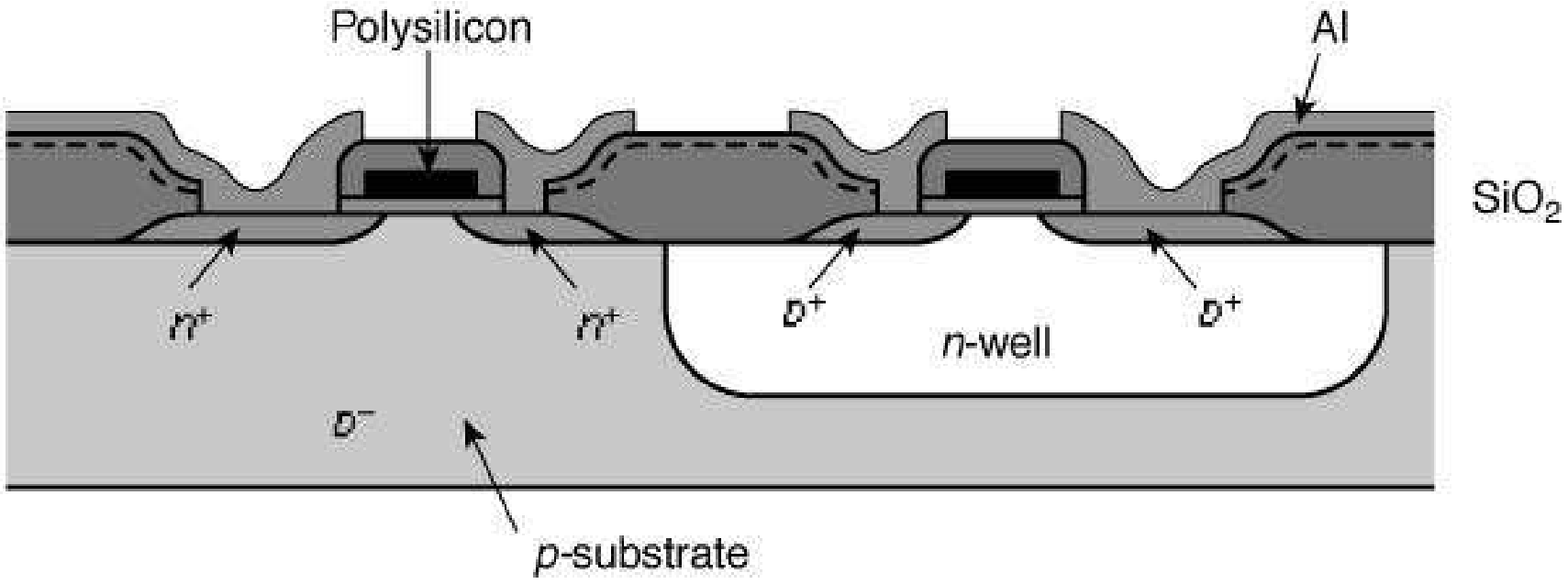
Cross-Section of CMOS Technology



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Design Rules

- Interface between designer and process engineer
- Guidelines for constructing process masks
- Unit dimension: Minimum line width
  - » scalable design rules: lambda parameter
  - » absolute dimensions (micron rules)

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CMOS Process Layers

Layer	Color	Representation
Well (p,n)	Yellow	
Active Area (n+,p+)	Green	
Select (p+,n+)	Green	
Polysilicon	Red	
Metal1	Blue	
Metal2	Magenta	
Contact To Poly	Black	
Contact To Diffusion	Black	
Via	Black	

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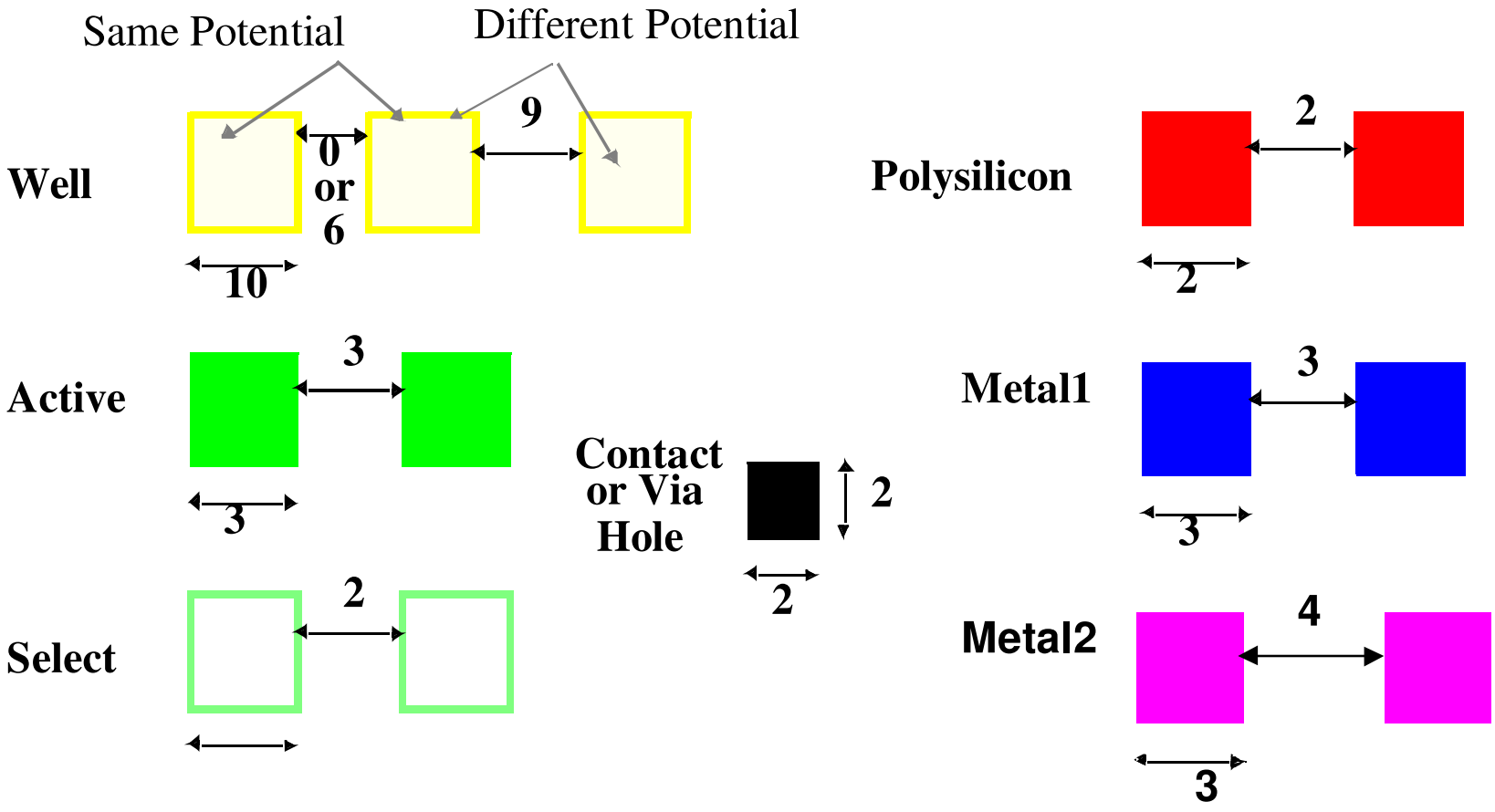
Intra-Layer Design Rules



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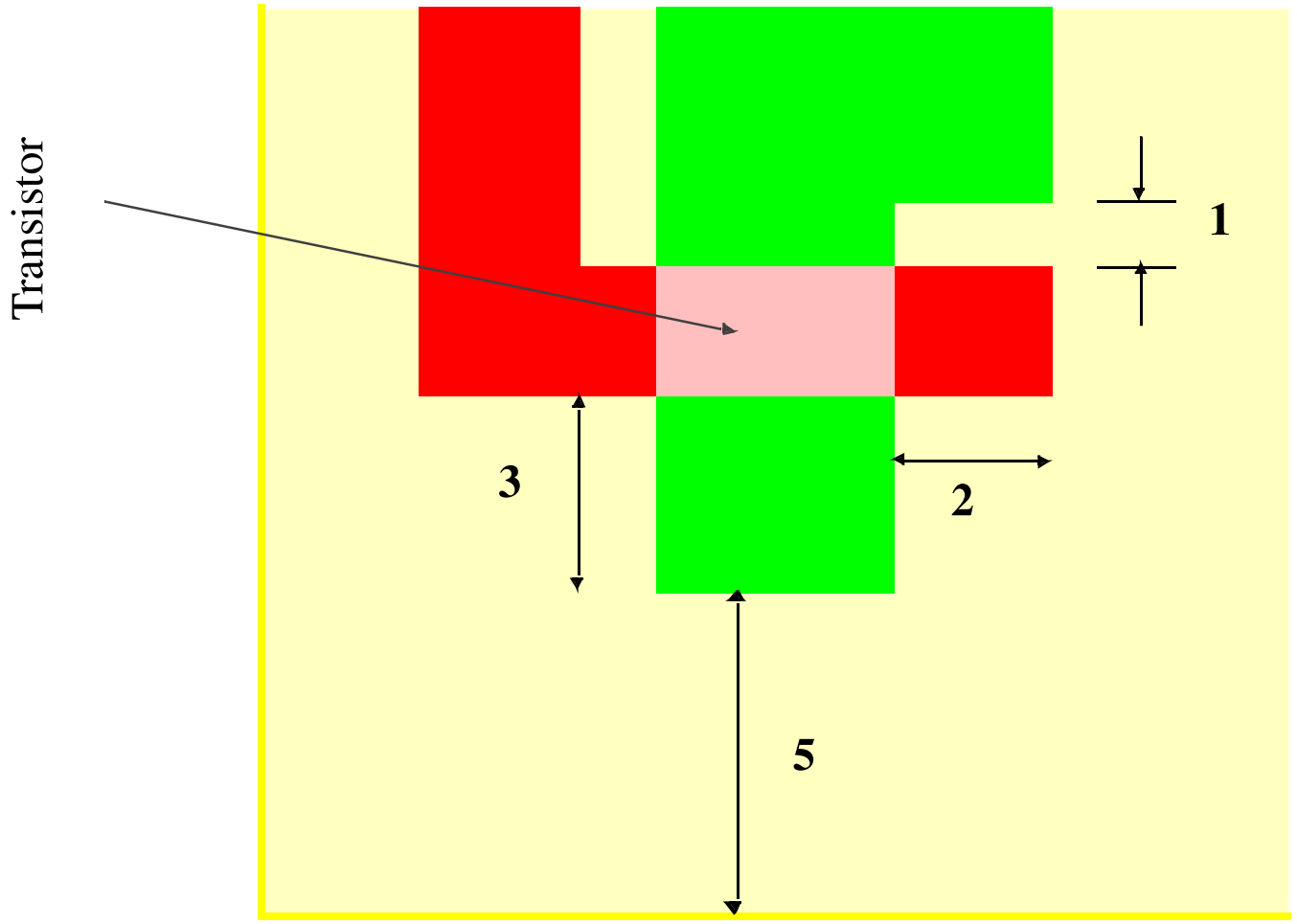
Transistor Layout



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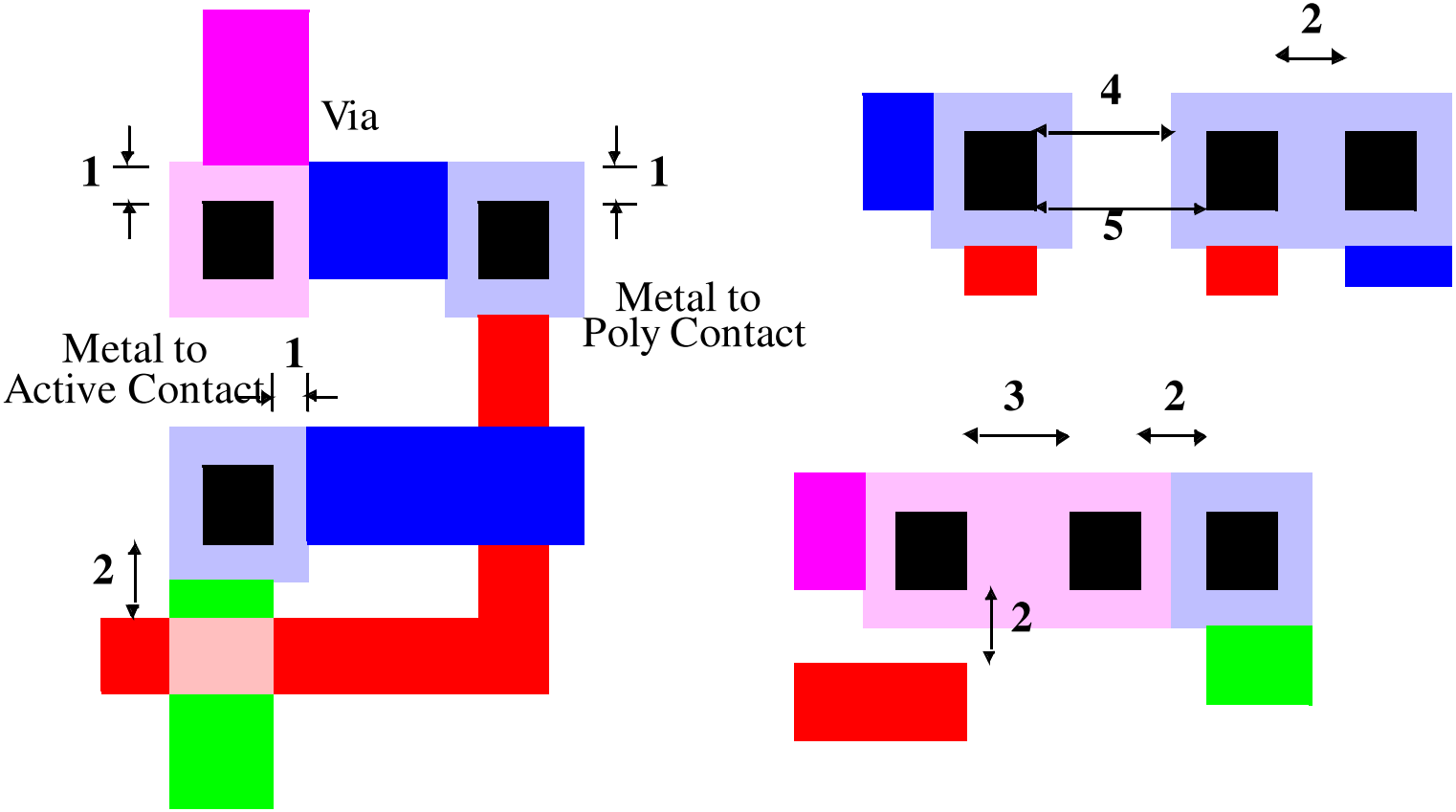
Via's and Contacts



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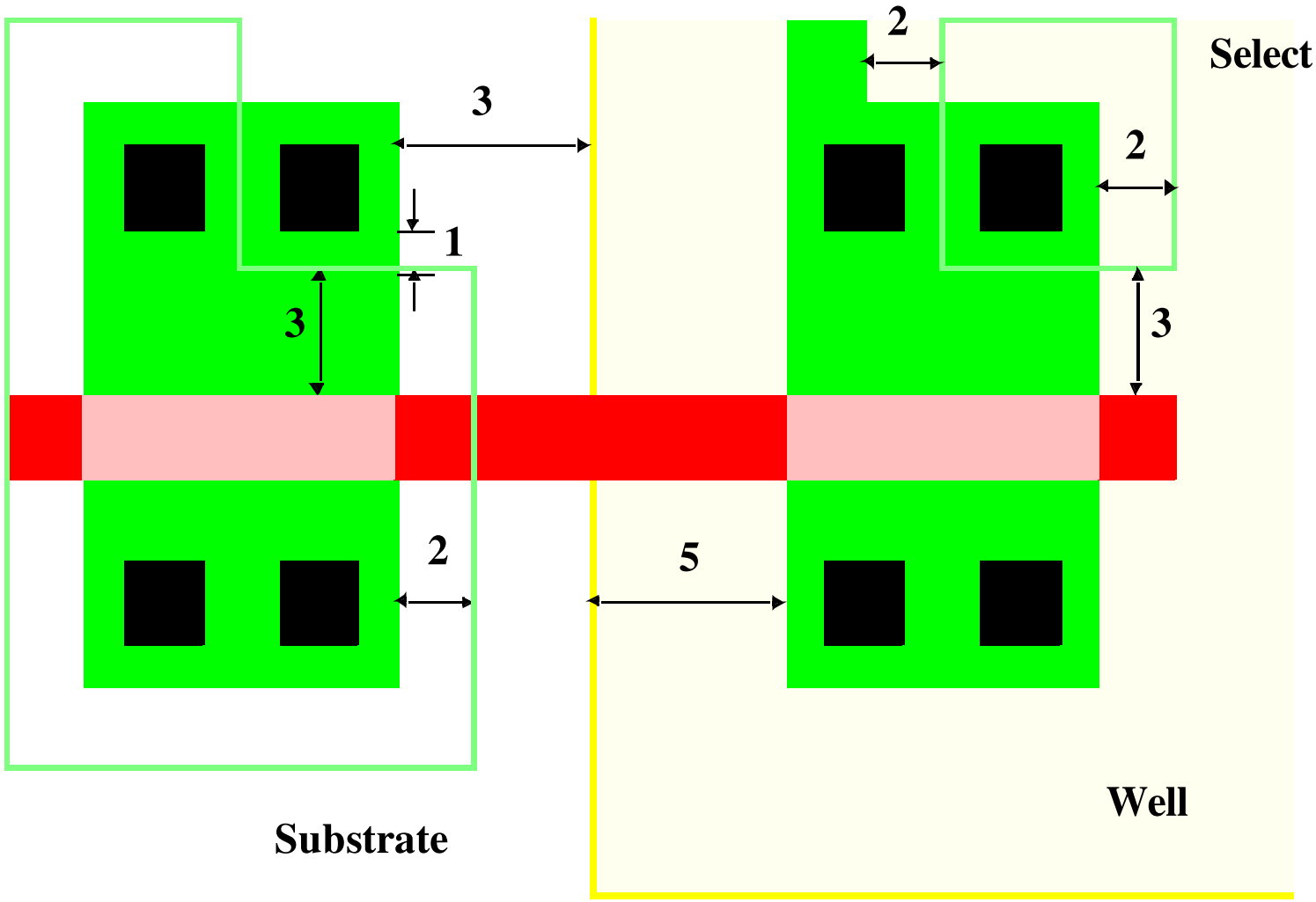
Select Layer



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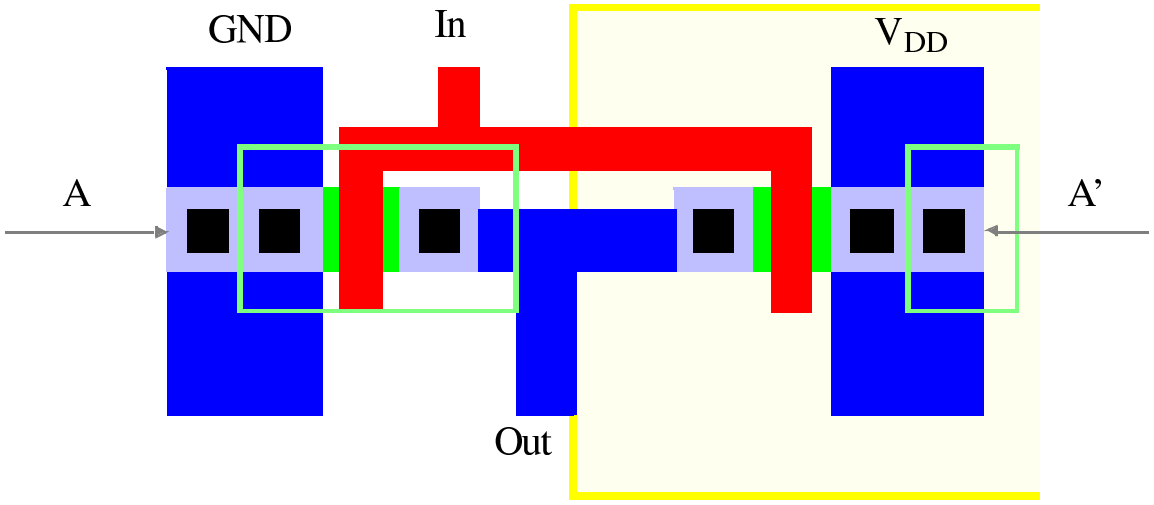
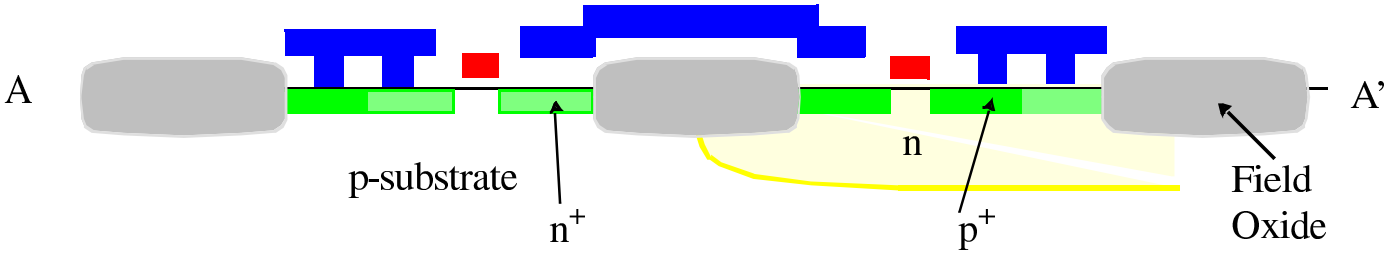
CMOS Inverter Layout



(a) Layout



(b) Cross-Section along A-A'

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