
STICK DIAGRAMS

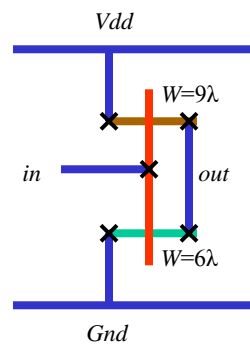
Stick Diagrams

- Dimensionless layout sketches
- Only topology is important
- Two primary uses
 - Useful intermediate step
 - Transistor schematic is the first step
 - Layout is the last step
 - Final layout generated automatically by “compaction” program
 - Not widely used; a topic of research
- Use colored pens or pencils whose colors match magic layer colors



Inverter Stick Diagram

- Diagram here uses magic standard color scheme
- Label all nodes
- Transistor widths (W) often shown—with varying units
 - Often in λ in this class
 - Also nm or μm
 - Sometimes as a unit-less ratio—this stick diagram could also say the PMOS is 1.5x wider than the NMOS (saying “1” and “1.5” instead of “ 6λ ” and “ 9λ ”)

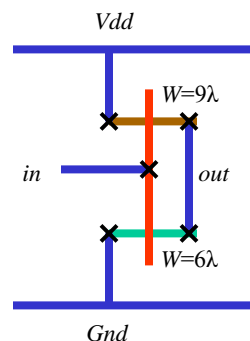
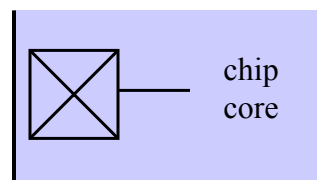


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Stick Diagrams

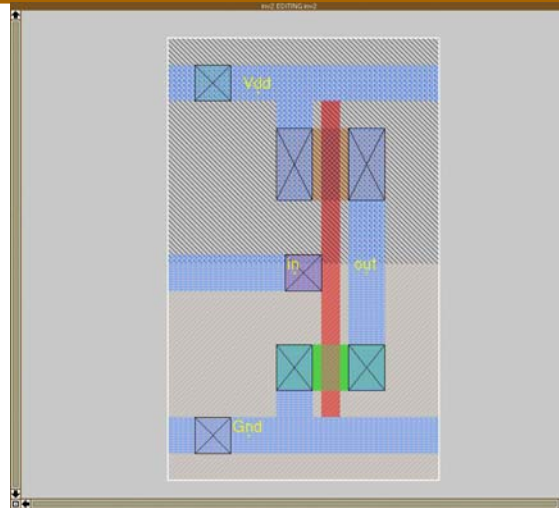
- Can also draw contacts with an “X”
- Do not confuse this “X” with the chip I/O and power pads on the edge of chip shown with a box with an “X”



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Magic Layout for the Inverter in the Stick Diagram



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Source: Omar Sattari 29