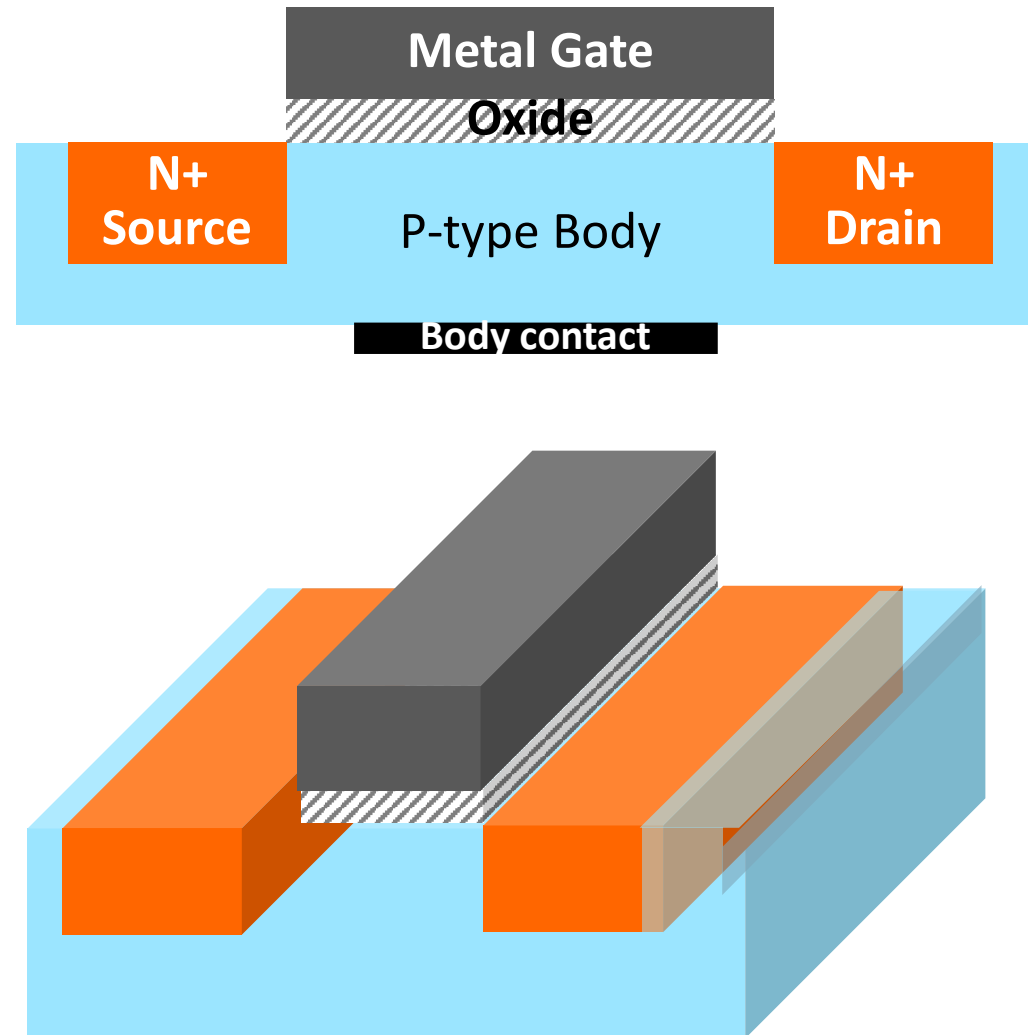


Integrated Circuit Layout Basic

Hanwool Jeong

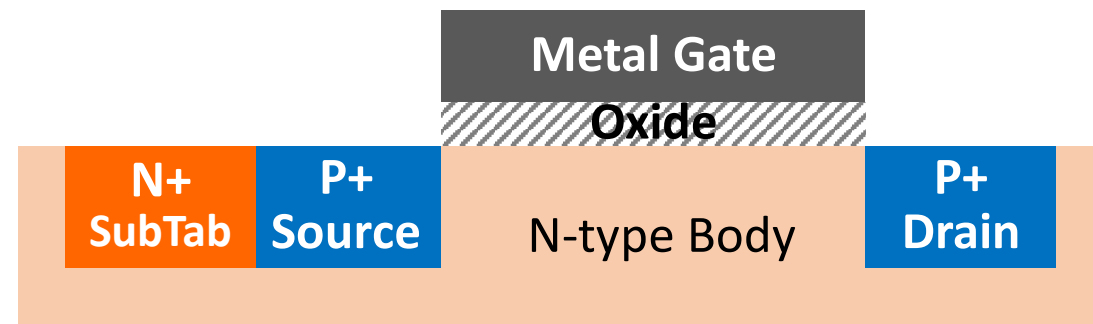
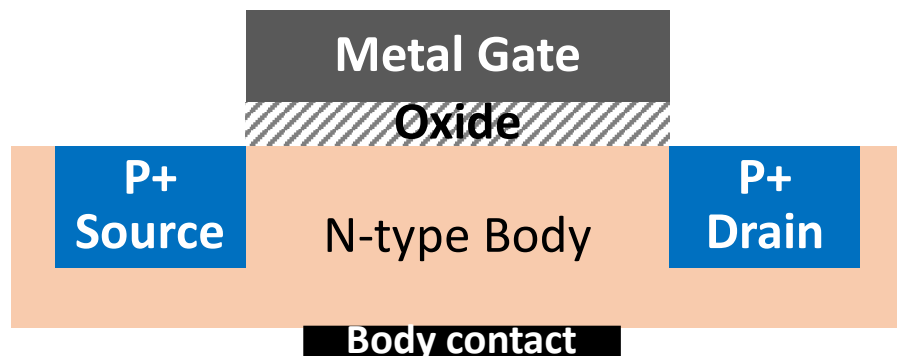
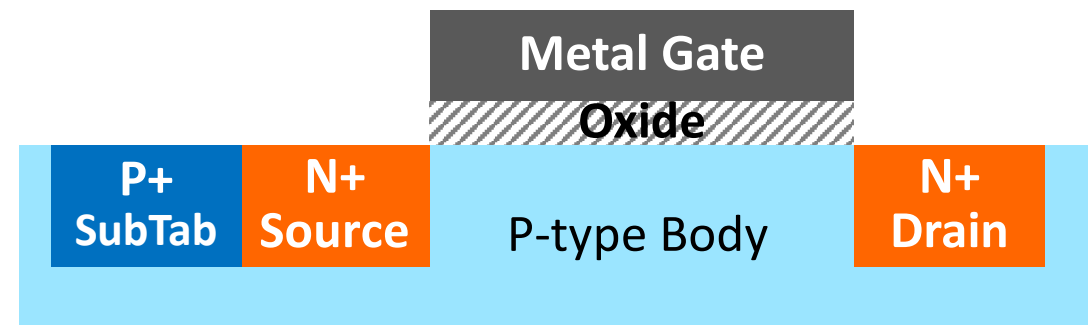
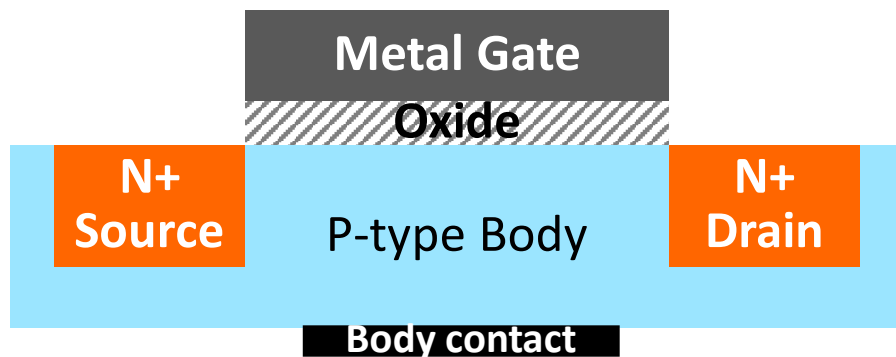
hwjeong@kw.ac.kr

Revisit NMOSFET Structure



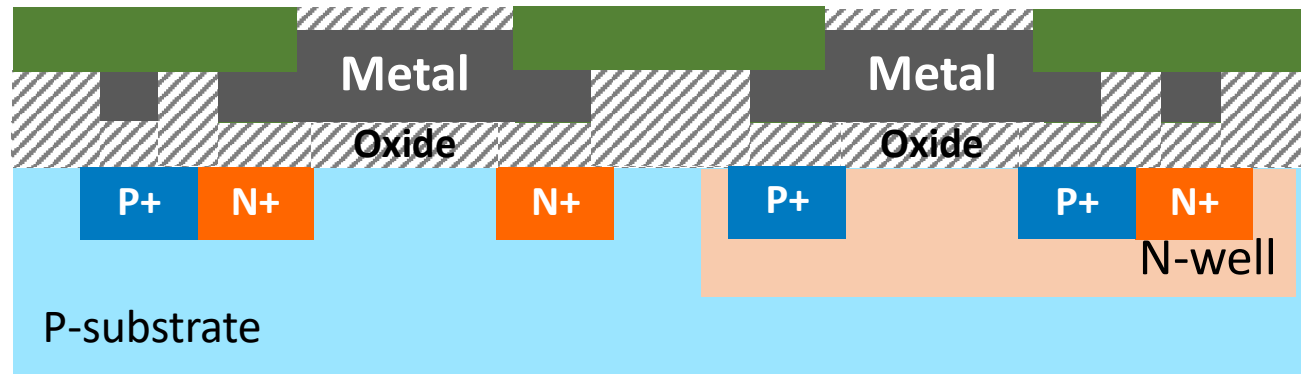
NMOSFET & PMOSFET

- Body bias is performed through substrate tab.



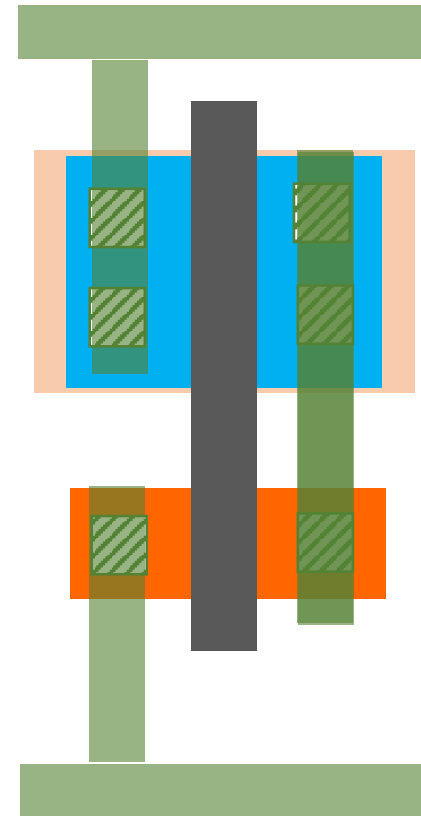
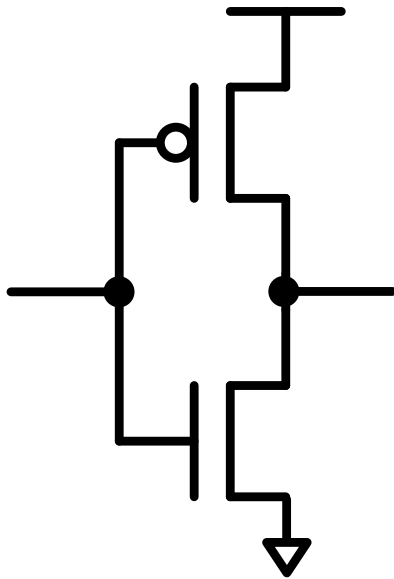
How Would Process Look Like?

- How can nMOSFET and pMOSFET get together? → N-well
- How can distant be connected? → Metal layer interconnect



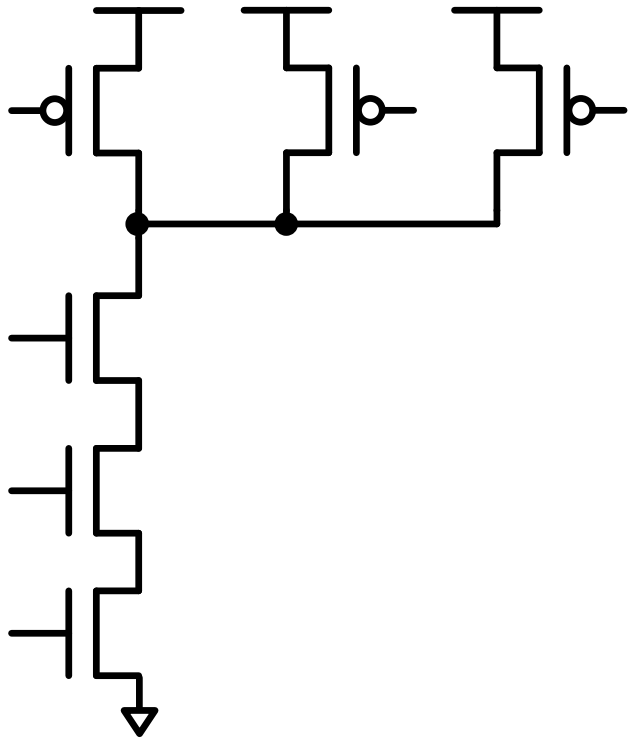
How Would Inverter Look Like?

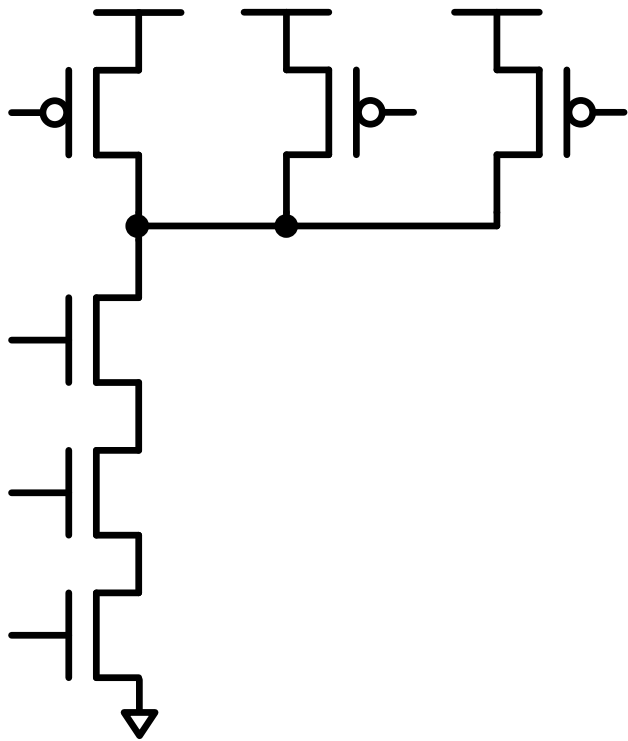
- We will see the top view.
- Assume that body tab is omitted.



Naïve Drawing 3-input NAND Layout

- If you consider each transistor separately, the resultant layout will be very inefficient.





3-input NAND Layout

- See how diffusions can be shared.
- Compare the parasitic cap in pull-down and pull-up networks

