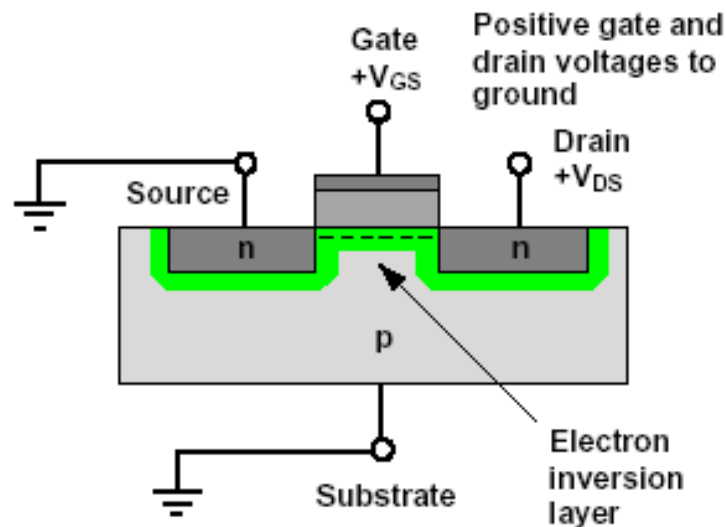


BJT transistors



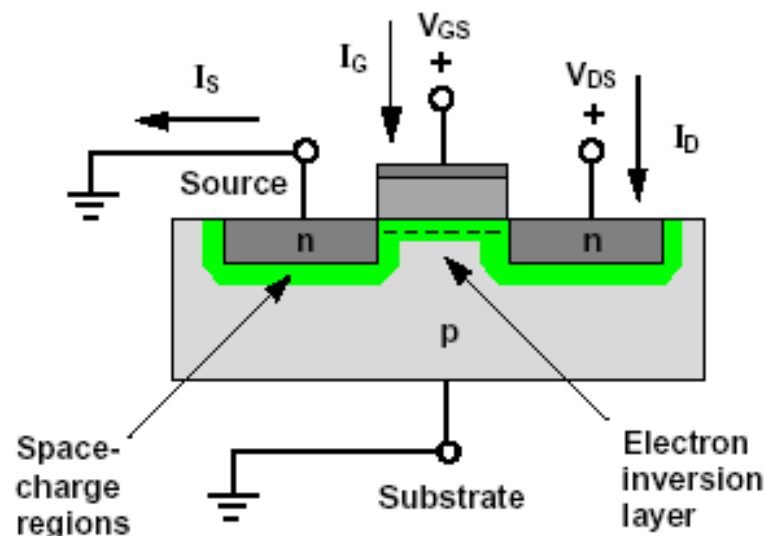
N-Channel MOSFET

- **Enhancement mode** — voltage must be applied to gate to “turn-on” the transistor



N-Channel MOSFET

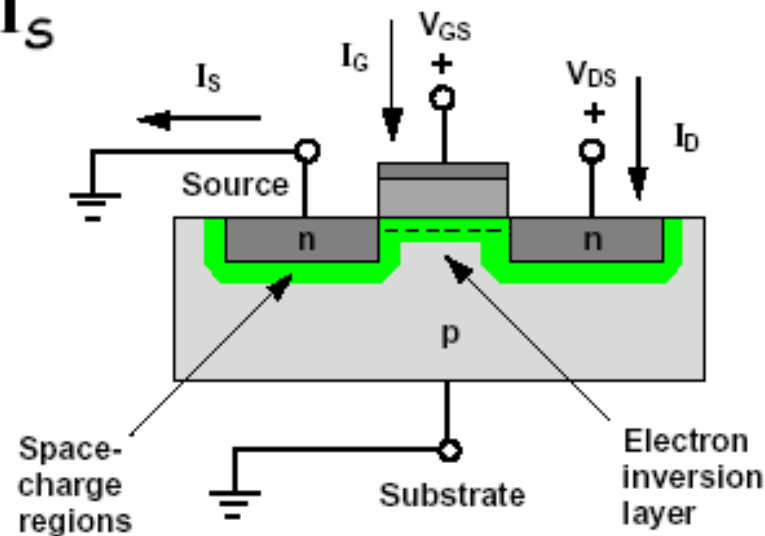
- Threshold (V_{TN}) — The gate voltage required to “turn-on” the transistor



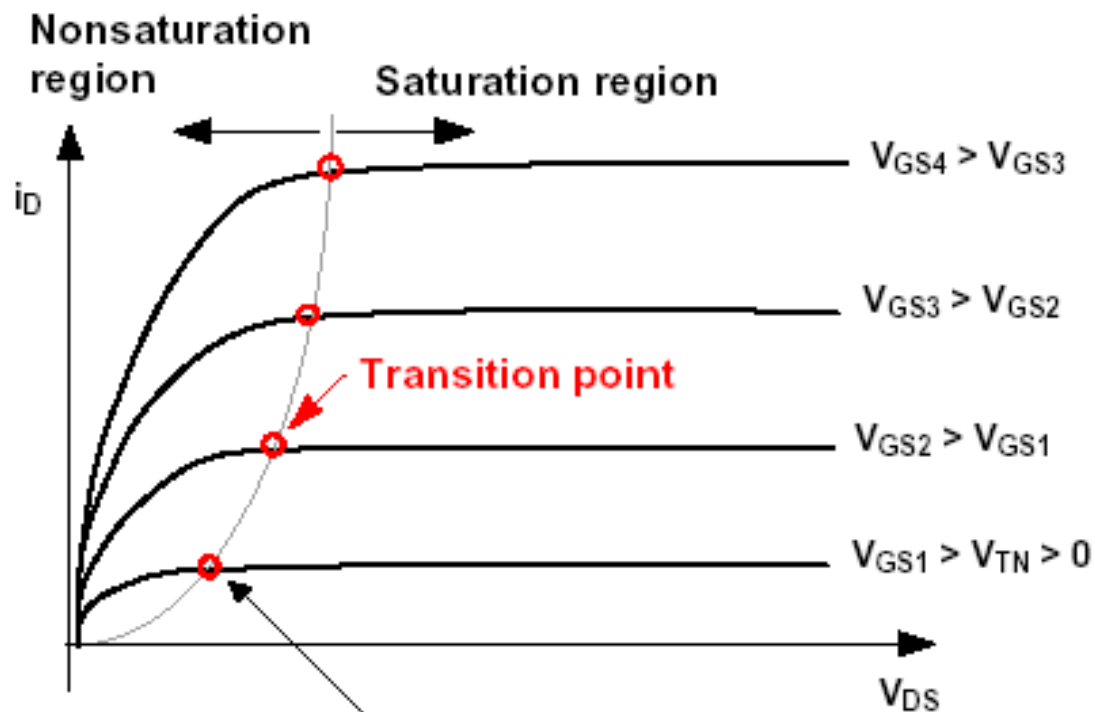
- Minority carriers (electrons) concentrated — connect **n** drain to **n** source

N-Channel MOSFET Currents

- Gate-to-substrate resistance approaches infinite
- Gate current: $I_G = 0$
- $I_D = I_S$



N-Channel MOSFET Characteristics



$$V_{DS(sat)} = V_{GS} - V_{TN}$$