

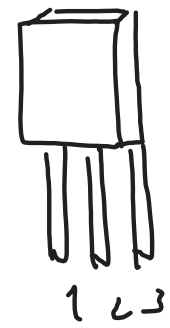
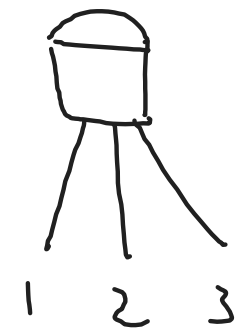
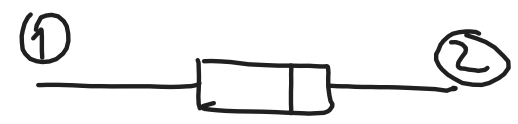
ECE 246

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TRANZISTORS

Diodes have 2 terminals

Tranzistors have 3 terminals

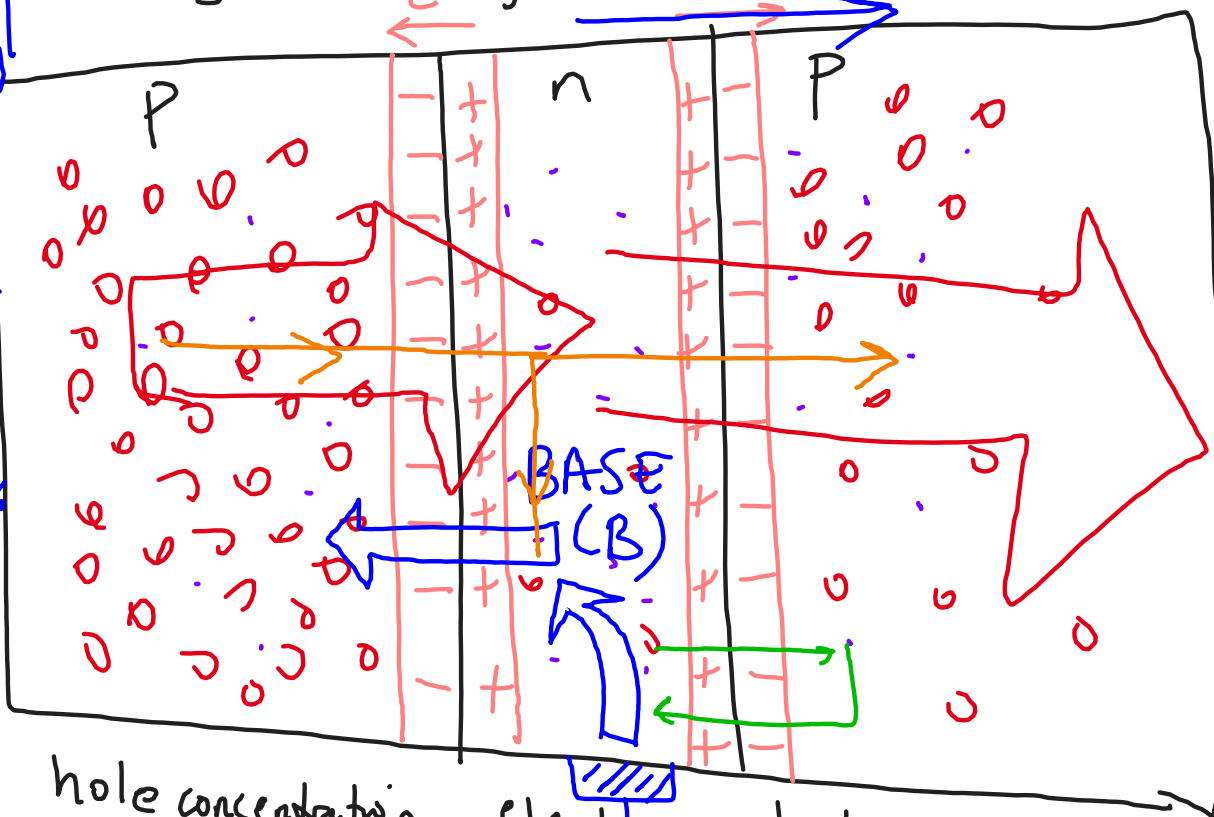


Surface mount device (SMD)

EMITTER (E)
heavily doped

COLLECTOR (C)
lightly doped

$$I_E = I_B + I_C$$



hole concentration is very high

electron concentration is low

hole concentration is low



Carrier concentration profiles:
 10^{-10} 10^{-9}
 10^{-10} 10^{-9}
 10^{-30} 10^{-24} cm⁻³
 $I_C \sim 10^{24}$ Atoms/cm³

