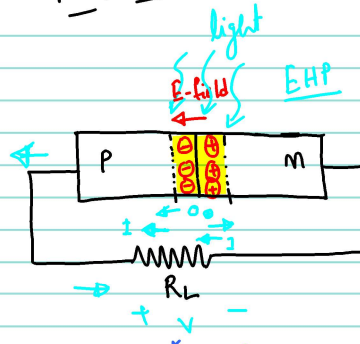


Other types of diodes:

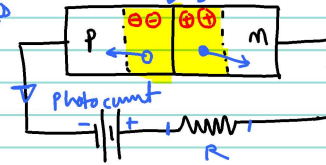
① Solar Cell:

Made up of $\text{Si} \rightarrow$
Cost, Efficiency low

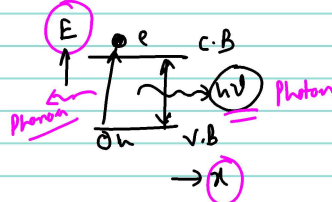
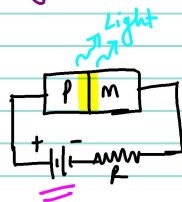
Compound Semiconductor
Solar cells, GaAs



② Photo diode: / Photodetectors

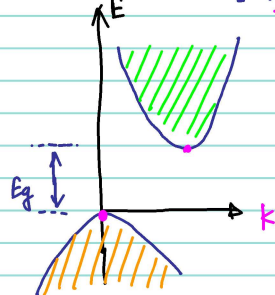
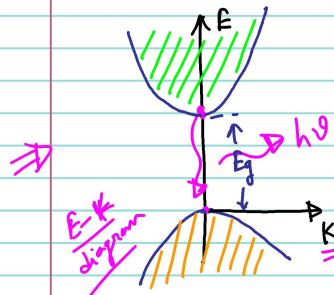


③ Light Emitting Diode (LED):

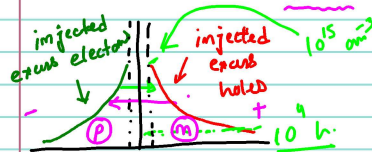
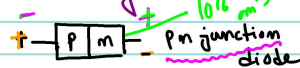


Direct Bandgap
Semiconductor [e.g. GaAs]
GaP
Imp

Indirect Bandgap
Semiconductor [e.g. Si]

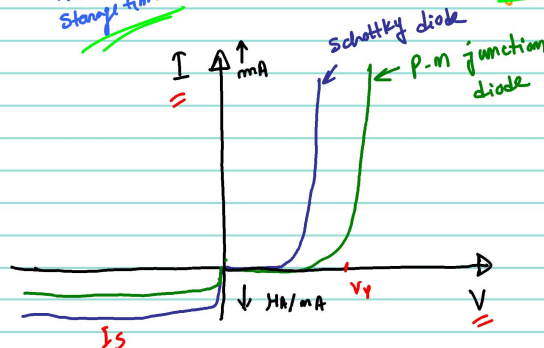


① Schottky diode:



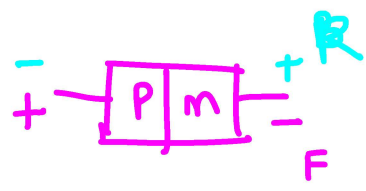
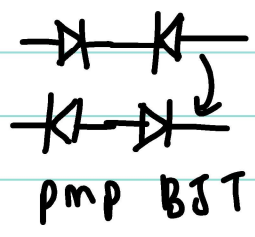
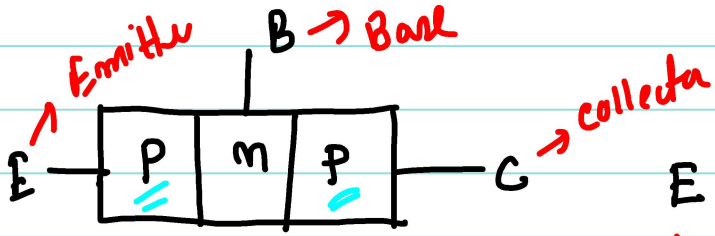
• Current flows due to the flow of majority carriers

• No minority carrier storage
→ Higher speed

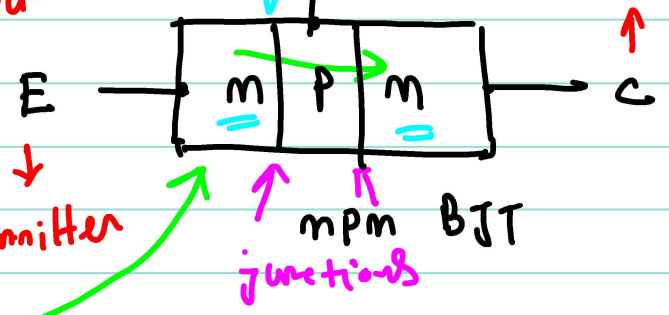


Bipolar Junction Transistor (BJT)

electrons and holes

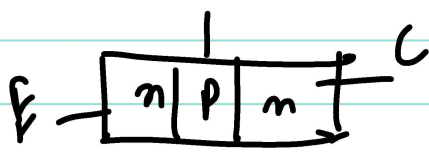
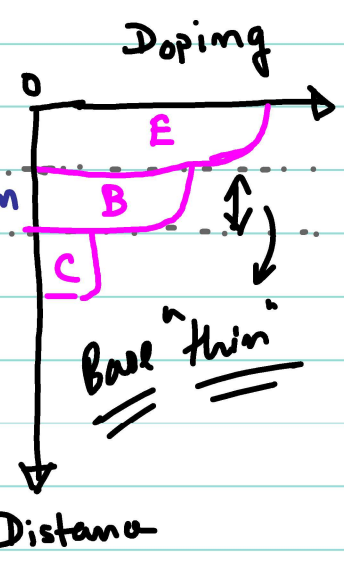
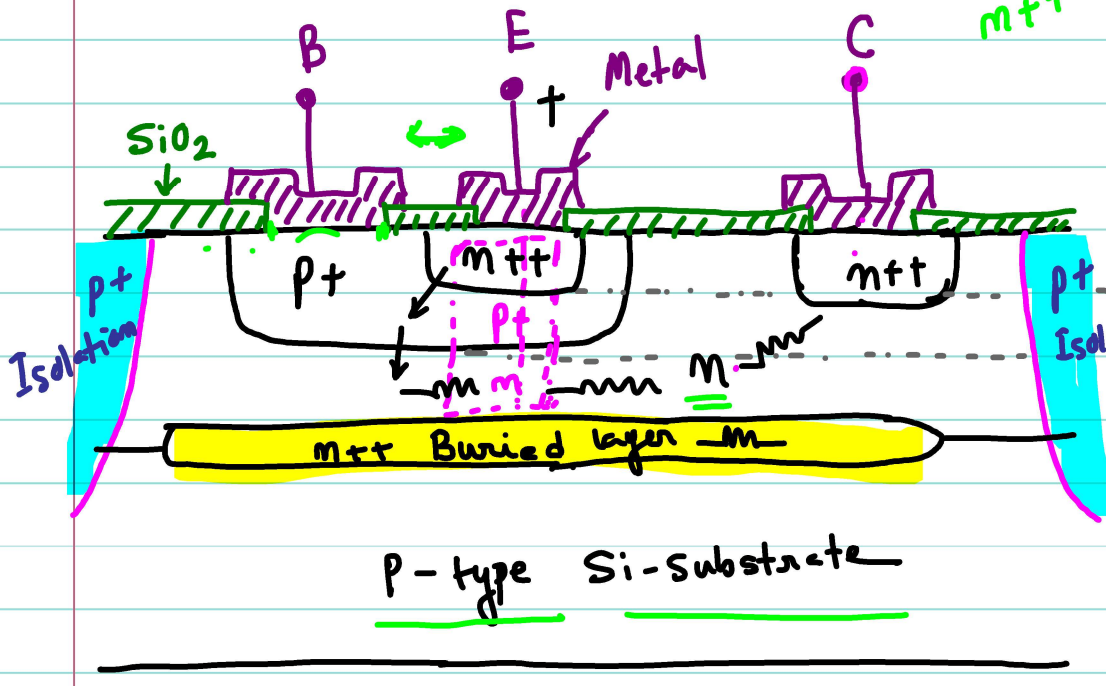


4 modes depending on p-n biasing of junctions
 B → Base
 R/F → Reverse Forward
 Collector



npm BJT

doping
 $m+t > m+t > m$



not electrically symmetric

Bipolar Junction Transistor Circuit Symbols

