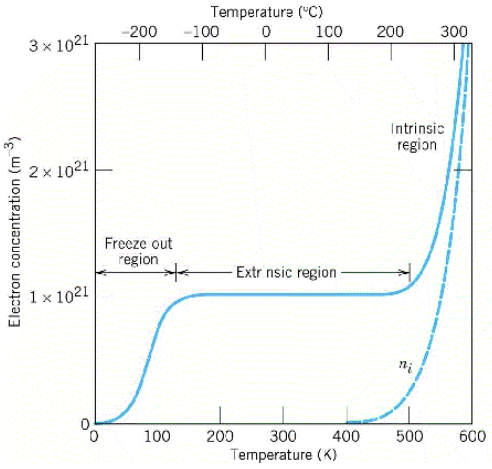
Chapter 18 Electrical properties

- ☐ The temperature variation of conductivity and carrier concentration
- ☐ Semiconductor devices

Temperature dependence of electric conductivity

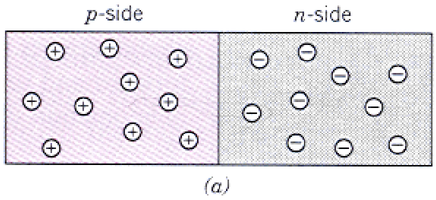


Intrinsic silicon and boron-doped silicon

Semiconductor devices

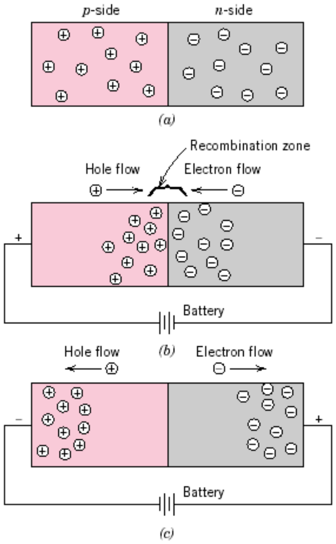
- Advantages of SC devices

- A rectifier(diode):



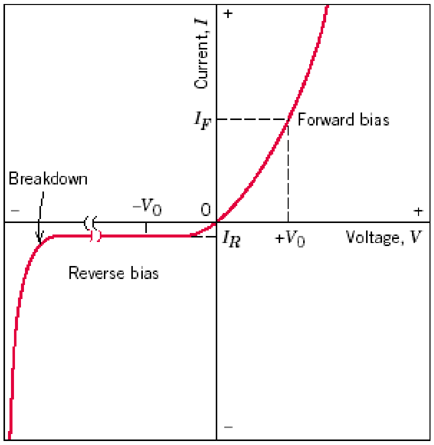
(*a*)

Semiconductor devices



Semiconductor devices (*continue*)

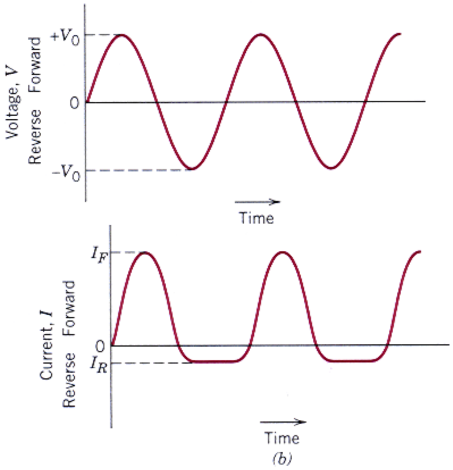
- ☐ Current-voltage characteristics of a p-n junction for forward and reverse bias



The current-voltage characteristics of a p-n junction for forward and reverse biases

---

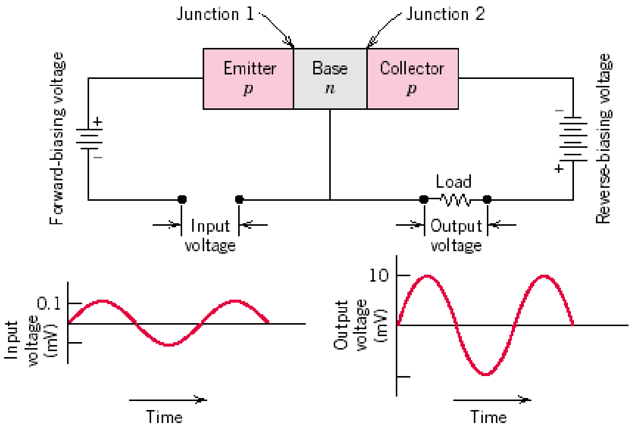
Semiconductor devices(*continue*)

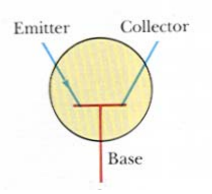


Voltage versus time for the input to a p-n rectifying junction

Semiconductor devices (*continue*)

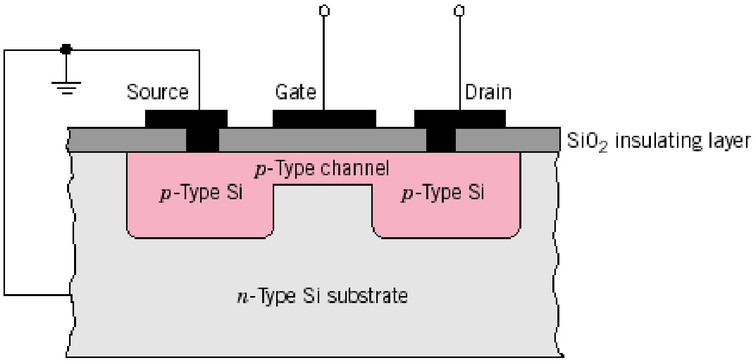
- p-n-p transistor





Semiconductor devices (*continue*)

- Metal-oxide-semiconductor field-effect transistor(MOSFET)



Schematic cross-sectional view of MOSFET transistor

Summary