

# Switches

Purpose of switch - allow / stop current

## Ideal Switch

- Instantaneous effect on current
- have  $V = 0V$  when conducting (on)
- No limit on  $V$  when not conducting (off)
- Doesn't wear out

Real switches - transistors

① BJT (npn)  
(pnp)

+ large current can be conducted

- slow to switch

② MosFETs (n-channel)  
(p-channel)

+ fast switch

- smaller current can be controlled

} 3 kinds of BJT, MosFET  
IGBT

See page 30 of text Book

Fig 2-14

1 Power

2 current

3 speed