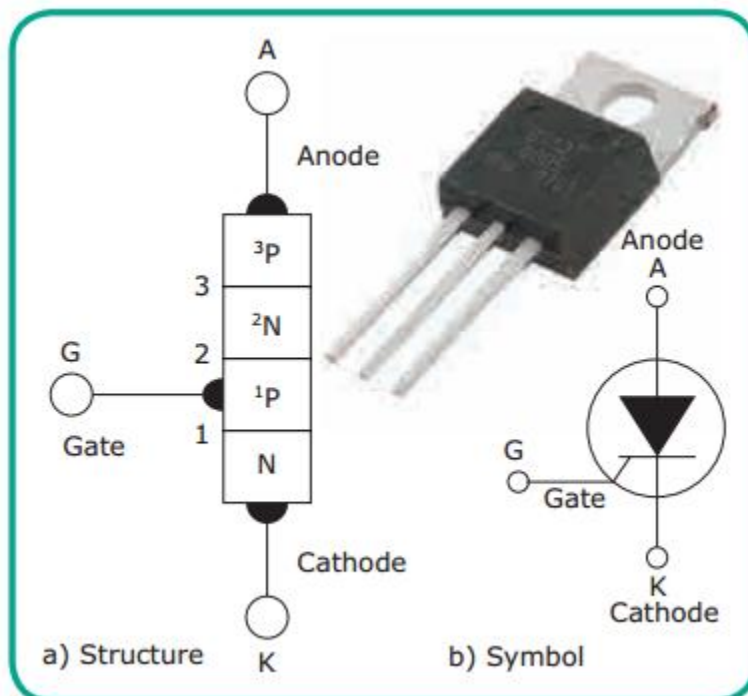


SILICON CONTROLLED RECTIFIER (SCR)

SCR is a three terminal and three junction semiconductor device acts as true electronic switch. It is a unidirectional device. It converts AC to DC and controls the amount of power fed to the load. It contains the features of a rectifier and transistor. SCR is widely used device in the Thyristor family, so it is commonly called as Thyristor.

Construction:

SCR consists of four semiconductor layers forming a PNPN structure as shown in the Figure. There are three junctions namely J_1 , J_2 , J_3 . SCR have three leads, they are anode (A), cathode (K) and gate (G). The end P-layer acts as anode, the end N-layer acts as cathode and the P-layer nearer to cathode acts as gate.

**SCR Structure and Symbol****Working Principle:**

In the normal operating conditions of SCR, the anode (A) is always kept at high positive potential with respect to cathode (K), and gate (G) is at small positive potential with respect to cathode. A load resistor (R_L) is connected in series with Anode (A). The working of SCR can be studied under the following two conditions.

Application of SCR

1. The SCR is used in the circuit of AC voltage stabilizer.
2. It can be used as switch.
3. It is used in inverters.
4. It is used with AC power control with solid relay.
5. It is used to control motor speed.
6. It is used in light dimmer control circuits.