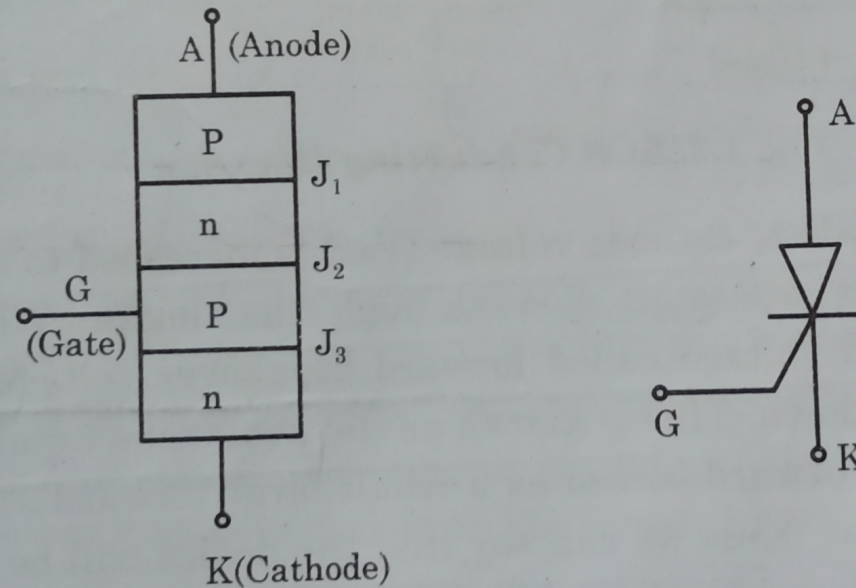


1.2 SILICON CONTROLLED RECTIFIER (SCR)

A four layers $p-n-p-n$ semi conductor device which consists of three terminals; anode, cathode and gate is called SCR.

1.2.1 CONSTRUCTION OF SCR

SCR are four-layer ($p-n-p-n$) semi conductor device with three terminals; anode, cathode and gate. Fig. 1.1 (a) and 1.1 (b) shows the construction and symbol of Thyristor or SCR.



(a) Construction View

(b) Symbol

Fig. 1.1. (a) Construction View of SCR (b) Symbol of SCR

The terminal connected to outer p region is called Anode (A) and the terminal connected to outer n region is called Cathode (K). The contact welded to the P-region in between is so called Gate (G). Basically for large current rating applications, SCR needs better cooling ; this is achieved by mounting them onto heat sinks.

SCR is a unidirectional device like diode means it blocks the current flow from cathode to anode. The symbol of SCR is similiar to the diode with an additional gate terminal as shown in figure 1.1 (b).

SCR Applications

- ① SCR is used in AC voltage stabilizers.
- ② SCR is used as a switch.
- ③ SCR is used in choppers.
- ④ SCR is used in inverters.
- ⑤ SCR is used for power control.
- ⑥ SCR is used for DC circuit breaker.
- ⑦ SCR is used in battery charger.
- ⑧ SCR is used to adjust light dimmer.
- ⑨ SCR is used to control motor speed.