SCR TURN ON METHOD

(1) - By rising temperature [Thermal Triggering]

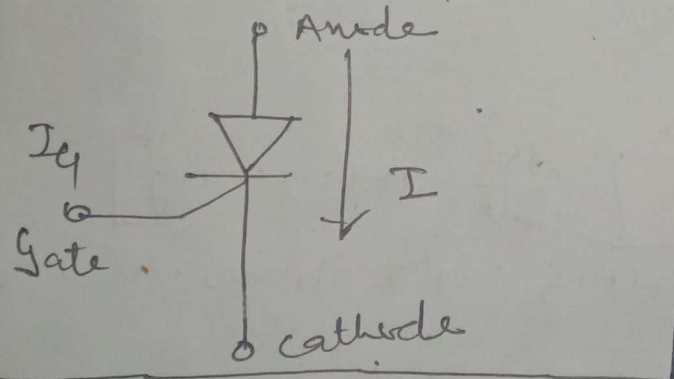
$$I_A = \frac{\alpha I_G + I_{CBO_1} + I_{CBO_2}}{[1 - (\alpha_1 + \alpha_2)]}$$

As we ↑ temperature $(\alpha_1 + \alpha_2) \to 1$, I_A current will increase and SCR will trigger.

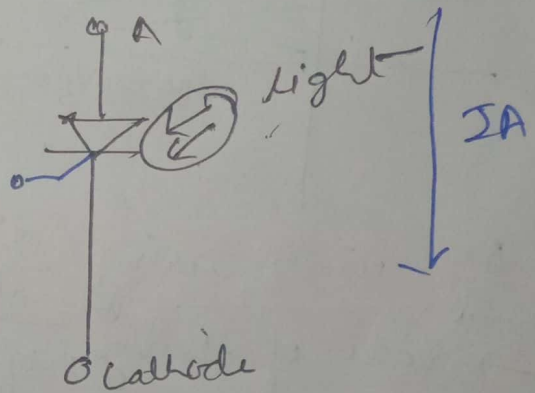
(2) By light triggering Method :- [Optical triggering]

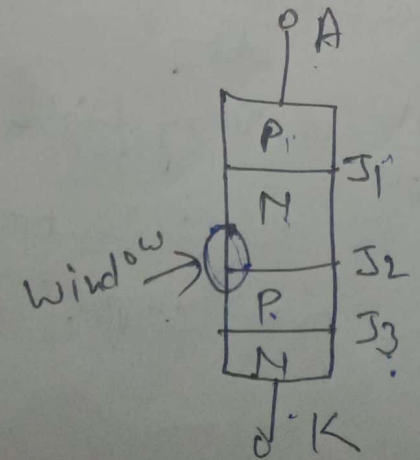
We discuss here about [LASCR] Light Activated SCR.

Normal SCR triggering



LASCR

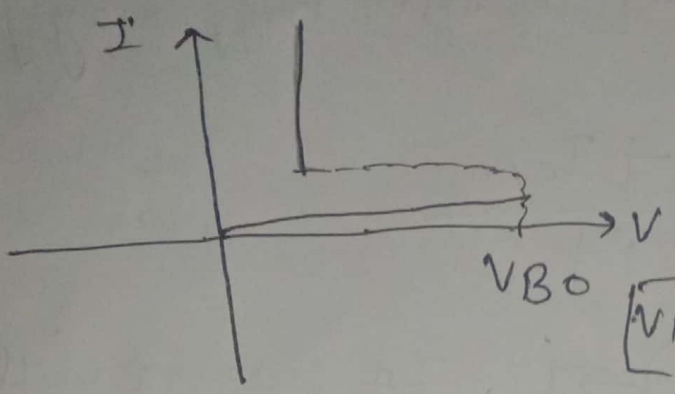




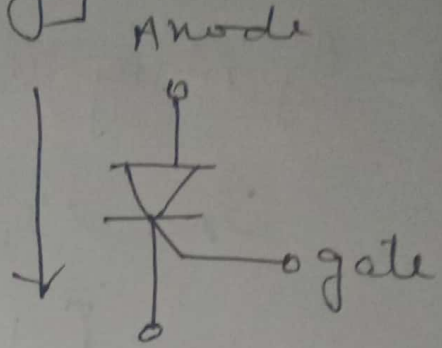
due to light coming from window at J_2 the EHPs are genrated and J_2 junction diminishes, current starts flowing from Anode to Cathode

③ By High Voltage :

[Forword voltage triggering]

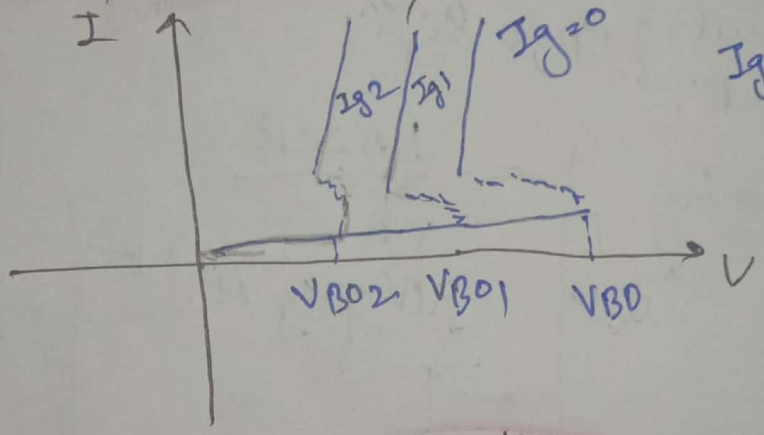


$V_{in} > V_{BO}$



Where V_{BO} – Forword Break over voltage.

④ By Gate Current :– [gate triggering]

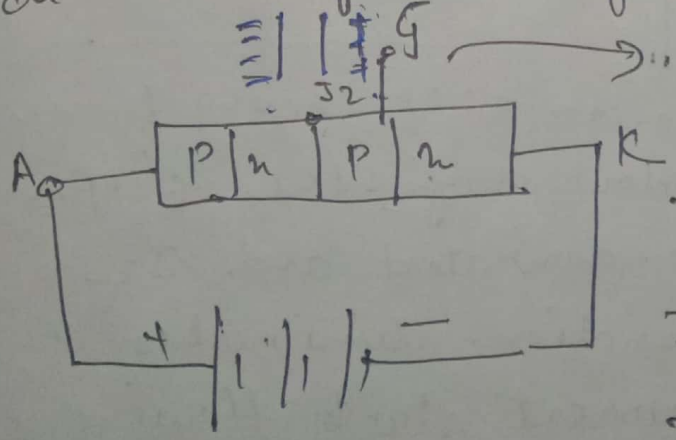


$I_{g2} > I_{g1} > I_{g0}$

$V_{BO} > V_{BO1} > V_{BO2}$

⑤ By increasing $\frac{dV}{dt}$ [$\frac{dV}{dt}$ triggering]

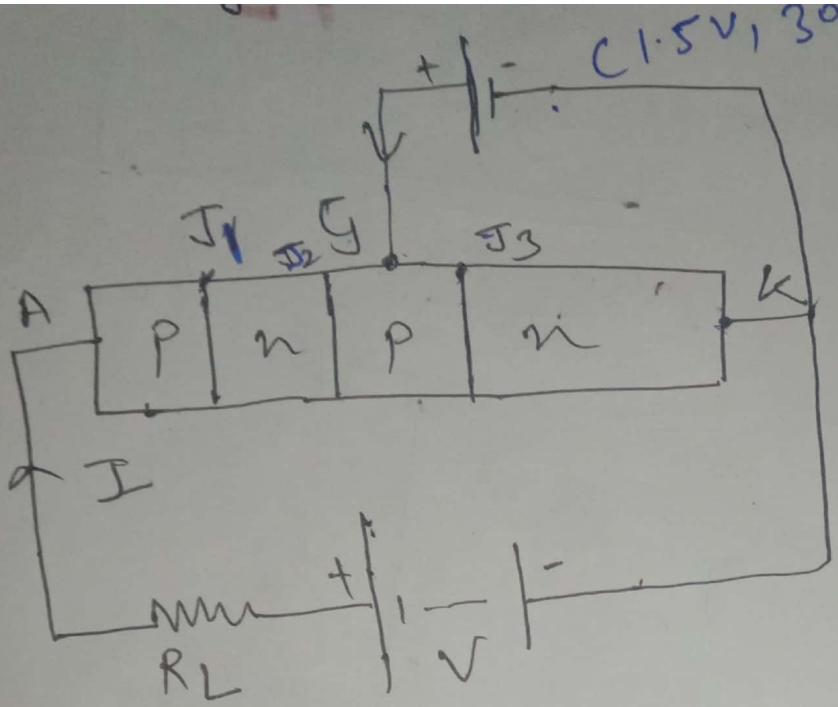
$\frac{dV}{dt}$ → rate of change of voltag WRT time.

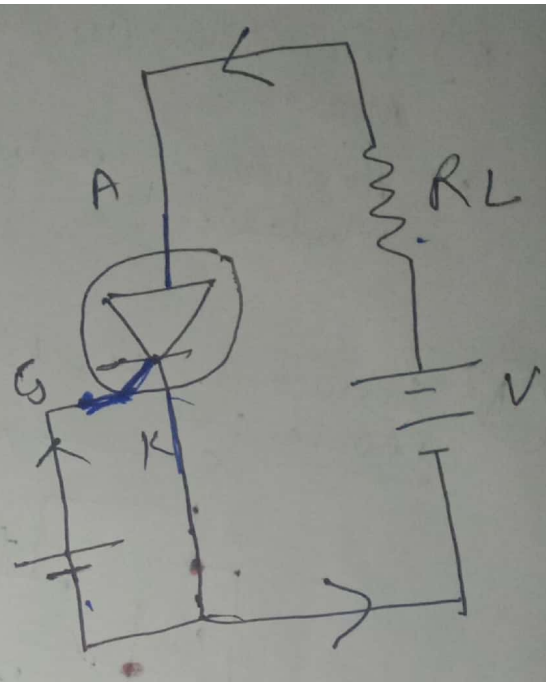


$I_c = C\frac{dV}{dt}$ $I_c \propto \frac{dV}{dt}$

$\frac{dV}{dt} \uparrow$

If $\frac{dV}{dt}$ is very high the I_c is sufficient to turn ON SCR.





NOTE :- By applying the voltage at Gate terminal SCR starts conducting heavily. (typically 1.5V, 30mA)

(2) To operate SCR Junction J1, J2 and J3 should be in FWd bias.

J1, J2, J3 } F.B.