di/dt Rating

Critical rate of rise of on-state current. It is the rate at which anode current increases and must be less than rate at which conduction area increases.

To prevent damage to SCR by high di/dt value, small inductance is added in series with device. Vaue of required inductance is

$$L \geq \frac{V_p}{(di/dt)_{max}}$$

dv/dt Rating

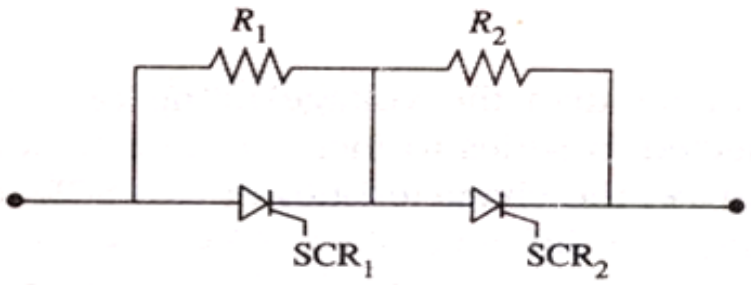
Maximum rise time of a voltage pulse that can be applied to the SCR in the off state without causing it to fire. Unscheduled firing due to high value of dv/dt can be prevented by using RC snubber circuit.

Series and Parallel SCR Connections

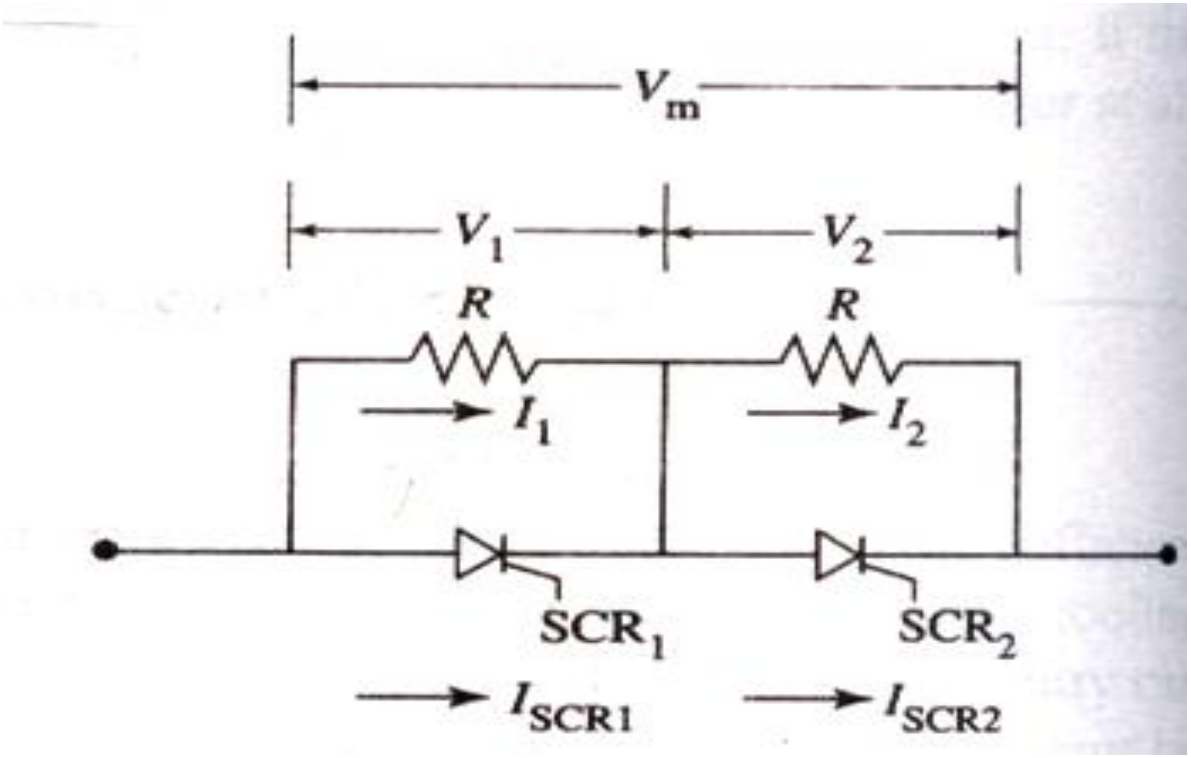
SCRs are connected in series and parallel to extend voltage and current ratings.

For high-voltage, high-current applications, series-parallel combinations of SCRs are used.

- **Resistance equalization**

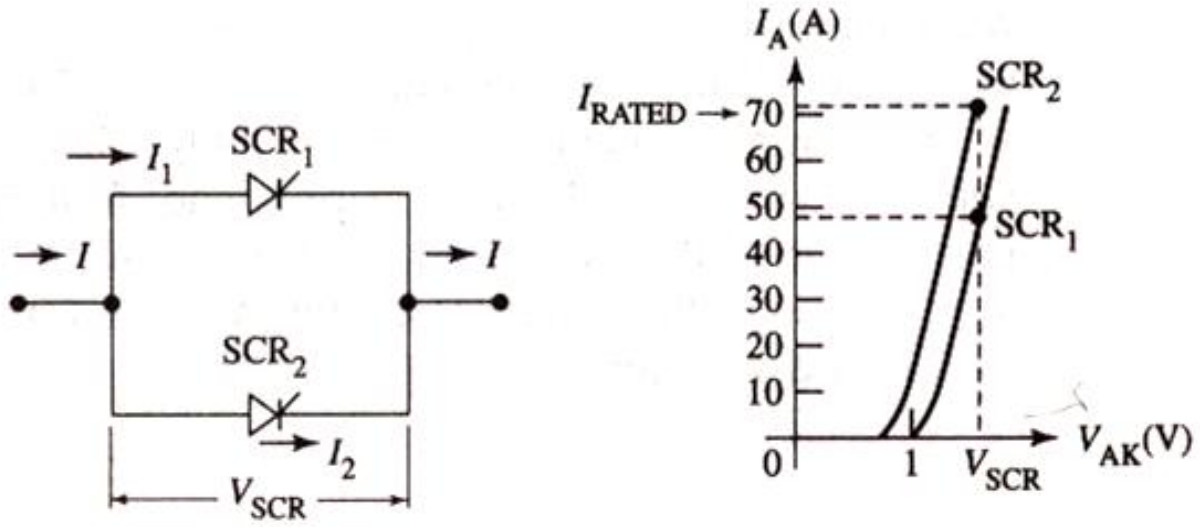


- **Voltage equalization**



SCRs In Parallel

- Unequal current sharing between two SCRs is shown:



- Total rated current of parallel connection is I_1+I_2, not $2I_2$.