

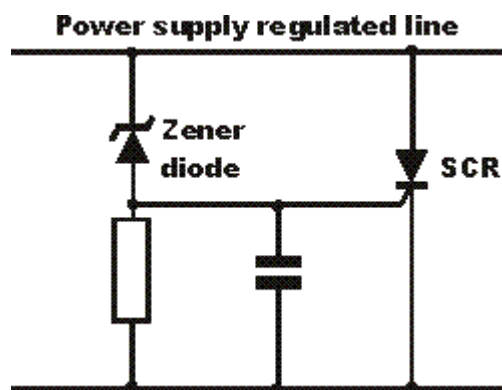
Surge protections circuits

http://www.electronics-radio.com/articles/electronic_components/scr/what-is-a-thyristor.php

Thyristor circuit

There are many thyristor circuits that are in common use. They can be used in many applications from AC control as in the case of motor or light dimmers to other circuits including power supply crowbar circuits.

The circuit below shows a power supply crowbar circuit. It can be used to protect circuitry within the main equipment from the effects of the failure of the series regulator in a power supply. If the series regulator fails short circuit, then high voltages can be applied on the power rail inside the equipment and this could result in serious damage to the overall equipment.



Thyristor overvoltage crowbar circuit

The SCR over voltage crowbar or protection circuit is connected between the output of the power supply and ground. The zener diode voltage is chosen to be slightly above that of the output rail. Typically a 5 volt rail may run with a 6.2 volt zener diode. When the zener diode voltage is reached, current will flow through the zener and trigger the silicon controlled rectifier or thyristor. This will then provide a short circuit to ground, thereby protecting the circuitry that is being supplied from any damage.