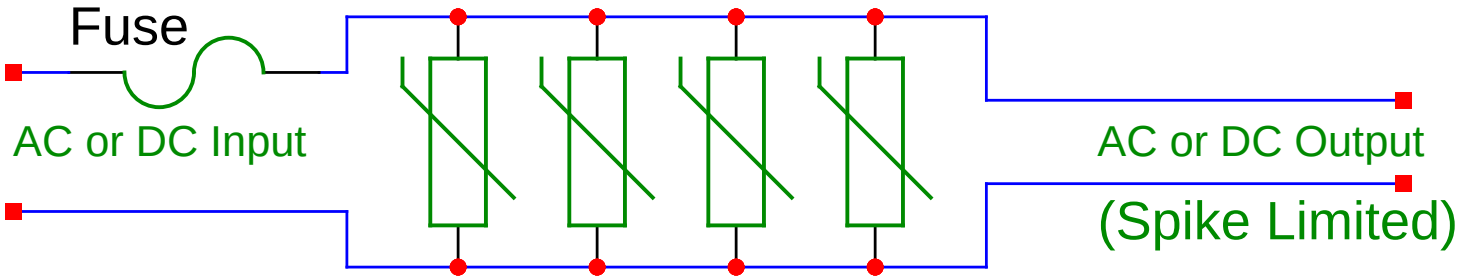
2007-07-09

Surge Suppression / Transient Voltage Suppression



Metal Oxide Varistors (MOV's) are resisters that do not conduct much until a threshold voltage is reached. Afterwards, they have very little resistance and will shunt the excess energy away protecting the circuit. Keep in mind that AC voltages are 1.414 times higher than they are listed in the "average" way. Because of this, most AC MOV sizing is a dozen or so volts above that calculated number. DC voltage is just a number of volts above the desired maximum input. Do not size the MOV too small as it will just shunt energy and waste it. MOV's under high current loads get very hot and may rupture if they are not thermally limited versions. MOV's also have a limited life span and will eventually burn out like a light bulb. A number of MOV's can be placed in parallel for added and even higher protection. It is a very good idea to add a fuse on the input line before the MOV's. A properly sized fuse will blow before one of the MOV's explode. Zener diodes can also be used in the same was as a MOV. Just make sure to observe the zener voltage and polarity.

.