METAL OXIDE VARISTOR, TRANSZORB

V130LA1, V39ZA1, V47ZA1, 1.5KE56CA, 1.5KE220CA-TP

DESCRIPTION

Metal Oxide Varistor (MOV) and **Transzorb Voltage Transient Suppressors** reduce high voltage spikes that could damage or confuse sensitive electronic circuits. Voltage spikes often will cause digital logic circuits to select an incorrect logic state or lock up entirely.

V130LA1, V39ZA1, V47ZA1

1.5KE56CA, 1N4004

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CAUSES OF VOLTAGE SPIKES

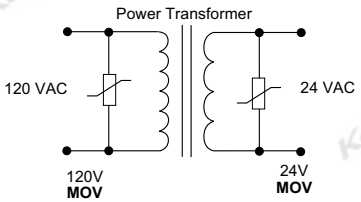
Voltage spikes appear in the user's circuit in three main ways:

1. Voltage spikes come in on the power distribution bus and are coupled to the user's circuits by the winding-to-winding capacitance of the user's power transformers.
2. Voltage spikes are generated in the power transformer secondary when the power transformer primary is turned off and the transformer's magnetic field collapses.
3. Voltage spikes are generated within the user's circuits when an inductive load is switched off and the load's magnetic field collapses. Voltage noise is also generated at the switched contacts and is radiated to the wires leading to the user's microprocessor.

OPERATION

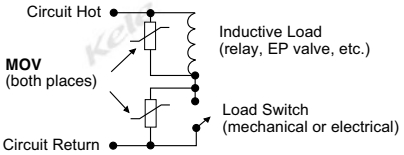
When a voltage at or below the suppressor's nominal voltage is applied, the suppressor acts essentially like an open circuit. When a high-voltage spike appears across the suppressor the suppressor conducts or turns on, shunting the excess energy to the circuit return path, thereby reducing the amplitude of the voltage spike. When the voltage spike subsides, the suppressor reverts back to its open circuit state. **MOV** suppressors are bi-directional and can be used to protect both AC and DC circuits. They provide a somewhat soft clamping action in that the amplitude of the reduced voltage spike rises noticeably with the amount of energy contained in the spike. **Transzorb** suppressors come in unidirectional and bi-directional versions. The uni-directional versions are polarity-sensitive and can only be used in DC applications. The bi-directional versions may be used in both AC and DC circuits just like the **MOV. Transzorbs** have a faster response time and a much harder clamping action than **MOVs** because voltage spikes are clipped at a more consistent level independent of their energy content. The **Transzorb** sold by Kele is a bi-directional version.
Note: Kele carries the varistors and transzorbs most often specified by the BAS manufacturers. They are general-purpose in nature and should cover most applications at the recommended voltage.

WIRING



Suppresses external voltage spikes coming from the power distribution bus and the spikes from switching the power transformer off.

Transformer Installation



Reduces mechanical switch arcs and electronic switch over-voltage breakdown. MOV voltage should match load circuit voltage.

Coil and Switch Installation

AGENCY APPROVALS

V130LA/V39ZA1/V47ZA1	**UL-recognized component, File #E197475**
1.5KE56CA	**UL-recognized component, File #E331408**
1.5KE220CA-TP	**No UL File # Available**
1N4004	**No UL File # Available**

ORDERING INFORMATION

MODEL	DESCRIPTION
V130LA1	130 VAC/175 VDC varistor voltage transient suppressor
V39ZA1	25 VAC/31 VDC varistor voltage transient suppressor
V47ZA1	30 VAC/38 VDC varistor voltage transient suppressor
1.5KE56CA	24 VAC/VDC transzorb voltage transient suppressor
1.5KE220CA-TP	120 VAC Bi-directional transzorb voltage transient suppressor
1N4004	Diode, 1A, 400 PIV, DO-41, 10 Pack