



MSP® Miniature Gas-tube Surge Protectors

2027 and 2029 Series

Joslyn MSP® gas-tube protectors are precision built surge and transient protection devices. Performance is repeatable over a long life period.

APPLICATION

The MSP® protects against overvoltages caused by switching surges, contact with foreign circuits, and lightning discharges, either induced or conducted. Fast response makes the MSP® particularly effective as protection against transients. It protects electronic circuits and associated components in telecommunication, computer, industrial control equipment, data logging, CRT displays, microwave, traffic control, and missile firing systems.

METHOD OF OPERATION

When a surge exceeds the breakdown voltage of the tube (surge sparkover voltage), the gap becomes intensively ionized, and conduction takes place within a fraction of a microsecond. The ionized protector becomes a short circuit and remains so until the volt-

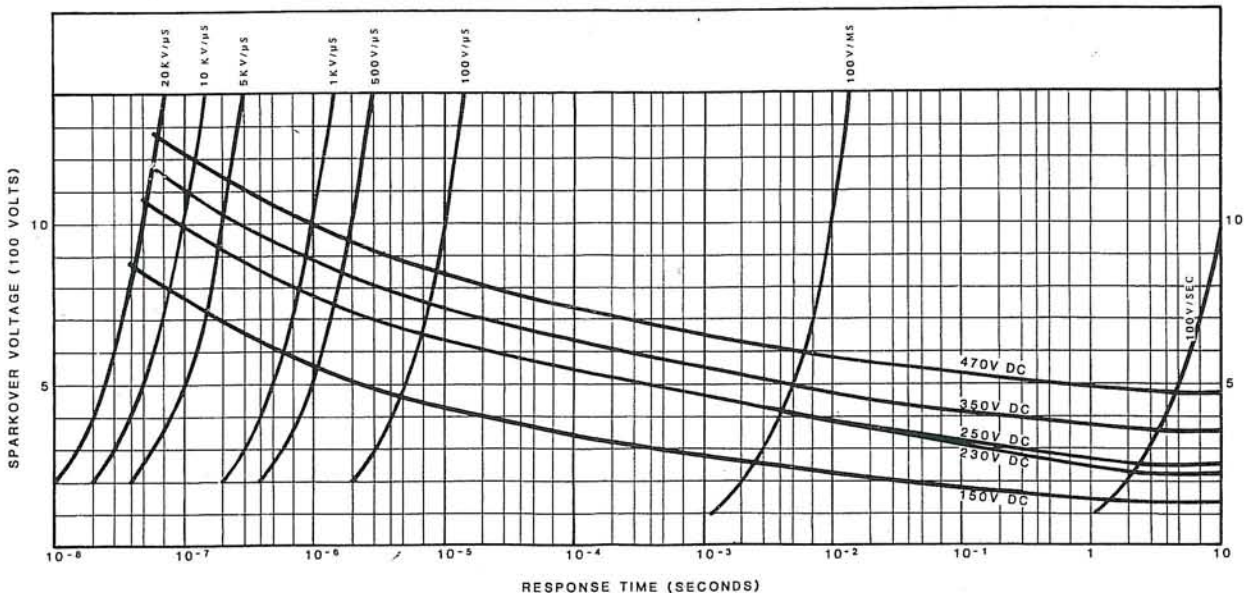
age returns to normal. Ionization and deionization are extremely fast due to the type of gas fill and physical configuration used.

CONSTRUCTION

The gas tubes are assembled under clean room conditions. Inspection in accordance with stringent quality assurance procedures ensures total reliability.

The special alloy metal electrodes of the gas tube are hermetically sealed at high temperature to a high-alumina ceramic body. This provides leak-proof dependability. The high-alumina ceramic is formulated for high insulation resistance and low dielectric loss. Symmetry of construction provides equal performance with either polarity of applied voltage.

JOSLYN MSP® SURGE SPARKOVER CHARACTERISTICS



*Covered by one or more of the following patents:

3,312,868	3,320,462	3,353,066	3,388,274	3,413,587	3,448,337	4,132,915
3,535,582	3,543,207	3,564,473	3,588,576	3,811,064	3,813,577	3,828,290

JOSLYN MSP® TECHNICAL DATA

P/N	Leads	Dimensions (See Figure)	DC Sparkover Voltage Line-to-Ground (Volts)	Maximum Impulse Sparkover Voltage At 100V/μsec Rate of Rise (Volts)	Maximum Impulse Sparkover Voltage At 1kV/μsec Rate of Rise (Volts)	Insulation Resistance		Surge Capability 8 x 20μsec Surge, 10 Operations (Amperes)	Surge Life 100 A 10 x 1000μsec Surge (Operations)	Surge Life 500 A 10 x 1000μsec Surge (Operations)	AC Discharge Current 50-60 Hz 10 Operations at 1 Second Duration at 3 Minute Intervals (Amperes rms)	Arc Voltage (Volts)	Glow Voltage (Volts)	Glow to Arc Transition Current (Amperes)	Capacitance (Picofarads)	Operating Temperature (Degrees C)
						@ 50 Vdc (Ohms)	@ 100 Vdc (Ohms)									
2027-09-A	No	A	90 ± 25%	≤400	≤800	10 ⁹	—	10,000	>1000	>500	10	<20	<100	<0.5	<1.0	-55 to +250
2027-09-B	Yes	B	90 ± 25%	≤400	≤800	10 ⁹	—	10,000	>1000	>500	10	<20	<100	<0.5	<2.0	-55 to +250
2027-15-A	No	A	150 ± 20%	≤400	≤650	10 ⁹	—	10,000	>1000	>500	10	<20	<100	<0.5	<1.0	-55 to +250
2027-15-B	Yes	B	150 ± 20%	≤400	≤650	10 ⁹	—	10,000	>1000	>500	10	<20	<100	<0.5	<2.0	-55 to +250
2027-23-A	No	A	230 ± 20%	≤600	≤850	—	10 ⁹	5,000	>1000	>500	10	<20	<100	<0.5	<1.0	-55 to +250
2027-23-B	Yes	B	230 ± 20%	≤600	≤850	—	10 ⁹	5,000	>1000	>500	10	<20	<100	<0.5	<2.0	-55 to +250
2027-25-A	No	A	250 ± 20%	≤600	≤850	—	10 ⁹	5,000	>1000	>500	10	<20	<100	<0.5	<1.0	-55 to +250
2027-25-B	Yes	B	250 ± 20%	≤600	≤850	—	10 ⁹	5,000	>1000	>500	10	<20	<100	<0.5	<2.0	-55 to +250
2027-35-A	No	A	350 ± 20%	≤750	≤900	—	10 ⁹	5,000	>1000	>500	10	<20	<100	<0.5	<1.0	-55 to +250
2027-35-B	Yes	B	350 ± 20%	≤750	≤900	—	10 ⁹	5,000	>1000	>500	10	<20	<100	<0.5	<2.0	-55 to +250
2029-23-A	No	A	230 ± 20%	≤700	≤900	—	10 ⁹	20,000	>1000	>500	20	<20	<100	<1.0	<1.0	-55 to +250
2029-23-B	Yes	B	230 ± 20%	≤700	≤900	—	10 ⁹	20,000	>1000	>500	20	<20	<100	<1.0	<2.0	-55 to +250
2029-25-A	No	A	250 ± 20%	≤700	≤900	—	10 ⁹	20,000	>1000	>500	20	<20	<100	<1.0	<1.0	-55 to +250
2029-25-B	Yes	B	250 ± 20%	≤700	≤900	—	10 ⁹	20,000	>1000	>500	20	<20	<100	<1.0	<2.0	-55 to +250
2029-35-A	No	A	350 ± 20%	≤700	≤900	—	10 ⁹	20,000	>1000	>500	20	<20	<100	<1.0	<1.0	-55 to +250
2029-35-B	Yes	B	350 ± 20%	≤700	≤900	—	10 ⁹	20,000	>1000	>500	20	<20	<100	<1.0	<2.0	-55 to +250
2029-47-A	No	A	470 ± 20%	≤900	≤1000	—	10 ⁹	20,000	>1000	>500	20	<20	<100	<1.0	<1.0	-55 to +250
2029-47-B	Yes	B	470 ± 20%	≤900	≤1000	—	10 ⁹	20,000	>1000	>500	20	<20	<100	<1.0	<2.0	-55 to +250

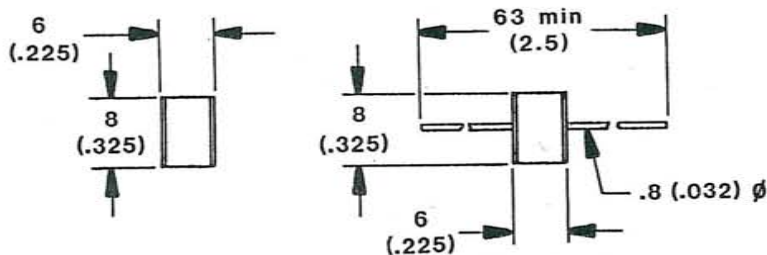


Figure A
Dimensions in mm (inches)

Figure B

The 2027 Series Protectors are also available without radioactive prompting. Their characteristics differ only slightly from those with radioactive prompting. The nonradioactive devices are designated by a "Y" in the part number, example 2027-35-BY.

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