Standard MOV Varistor
Square, 15mm

RoHS Compliant

Description

Metal Oxide Varistor (MOV) as one nonlinear resistance element is mainly made of zinc oxide (ZnO), which has very high surge capacity and big nonlinear coefficient. Below the threshold voltage, its resistance is very high, nearly no current flows through, but above the threshold voltage, the resistance reduces sharply, huge current can be discharged. Due to this characteristic, varistor as a protection component in electronic and electrical equipment can absorb abnormal over-voltage and lightning surge.

Varistor is with High Surge Current Density, Low Clamping Voltage, and Good Surge Capacity. It can also be customized as required.

Approvals

UL1449 4th Edition
TUV EN 61051-1:2008
IEC 61051-1:2007
IEC 61051-2:1991
IEC 61051-2-2:1991

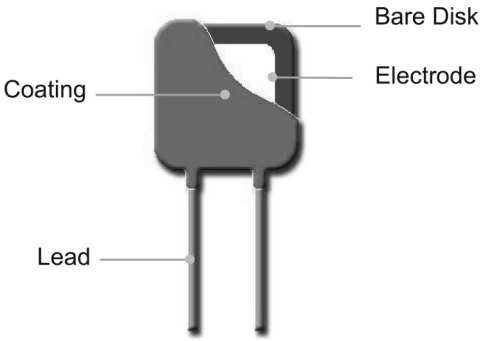
Applications

- Power Supplies
- Home Electrical Appliances
- Industrial Devices
- Surge Protectors
- Telecom Devices

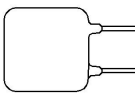
Features

- Epoxy Resin Coating
- Silicone Resin Coating
- Low Leakage Current
- Bidirectional and Symmetrical V/I Characteristics
- Operating Temperature Range
  Low Temperature: -40 °C
  High Temperature: +85°C

Product Structure



Lead Types

Lead Types		Codes
	Straight Lead	A

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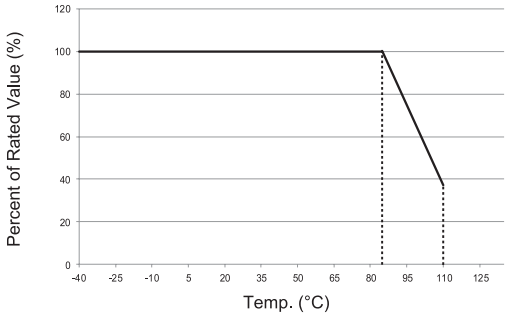
Temp. Derating Curve



For Normal Temp. Series

Note:
When ambient Temp. exceeds 85°C, the peak surge current and energy rating should be reduced as shown in the left curve.

General Technical Data

Item	Value	Unit
Operating Temperature	-40 to +85	°C
Storage Temperature	-40 to +125	°C
Voltage Proof	≥2500	Vac
Insulation Resistance	≥100	MΩ

Item	Description
V_N	**Nominal Varistor Voltage** Voltage, at specified D.C. current used as a reference point in the component characteristics.
I_L	**Leakage Current** Measuring at 75% of varistor voltage.
UCT	**Upper Category Temp.** Max. ambient temp. for which a varistor has been designed to operate continuously.
UCT	**Lower Category Temp.** Minimum ambient temp. at which a varistor has been designed to operate continuously.
Max. Peak Current	**Max. Peak Current** Max. current per pulse, which may be passed by a varistor at an ambient temp. of 25°C, for a given number of pulses.
V_C	**Clamping Voltage** Peak voltage developed across the varistor terminations under standard atmospheric conditions, when passing an 8/20 µs class current pulse.
Voltage Proof	**Voltage Proof** Max. peak voltage, which may be applied under continuous operating conditions between the varistor terminations and any conducting mounting surface (Applicable only to insulated varistors).
C_V	**Capacitance** Capacitance across the MOV measured at a specified frequency and voltage.
V_{ac}	**Max. Continuous a.c. Voltage** Max. a.c. r.m.s. voltage of a substantially sinusoidal waveform (less than 5% total harmonic distortion) which can be applied to the component under continuous operating conditions at 25°C.
V_{dc}	**Max. Continuous d.c. Voltage** Max. d.c. voltage (with less than 5% ripple) which can be applied to the component under continuous operating conditions at an ambient temp. of 25°C.

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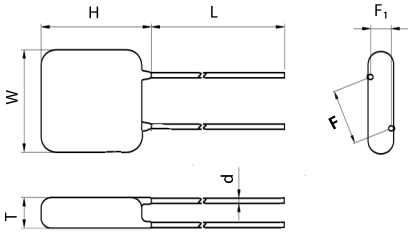
multicomp PRO

Dimensions

Part Number	L (Min.)	W (Max.)	H (Max.)	T (Max.)	d	F	F_1	A (Max.)
MPV15S820KNK	20	17	20	4.8	1 ±0	10 ±0.6	1.3 - 2.8	22.5
MPV15S241KNK				5.2			1.7 - 3.4	
MPV15S271KNK				5.4			1.8 - 3.5	
MPV15S391KNK				6.1			2.2 - 4.2	
MPV15S431KNK				6.4			2.5 - 4.5	
MPV15S471KNK				6.6			2.7 - 4.7	
MPV15S511KNK				6.8			2.9 - 4.9	
MPV15S621KNK				7.5			3.5 - 5.5	
MPV15S681KNK				7.8			3.9 - 5.9	

Diagram



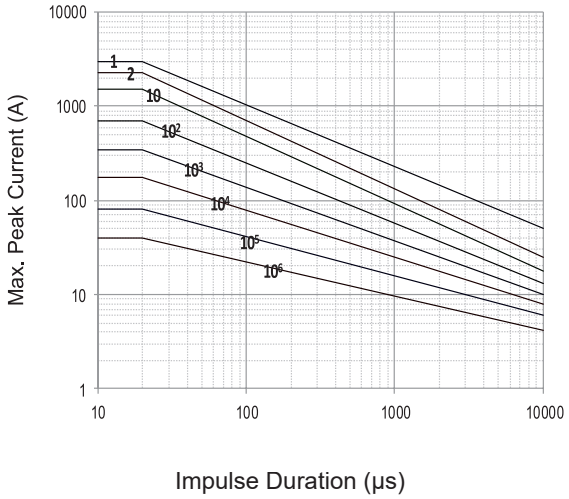
Straight Lead

Specification Table

Part Number	Max. Continuous Operating Voltage		Varistor Voltage @1 mA DC		Clamping Voltage (Max.)		Max. Discharge Current (8/20 µs)		Max. Energy (10/1000 µs)	Typical Capacitance (For reference only) @1 kHz
	Vac	V_{dc}	Min.	Max.	V_C	I_P	I_n	I_{max}	I_{max}	(pF)
	(V)	(V)	(V)	(V)	(V)	(V)	(kA)		(J)	
MPV15S820KNK	50	65	74	90	135	75	5	10	43	4000
MPV15S241KNK	150	200	216	264	395				134	1350
MPV15S271KNK	175	225	243	297	455				158	1200
MPV15S391KNK	250	320	351	429	650				224	800
MPV15S431KNK	275	350	387	473	710				248	750
MPV15S471KNK	300	385	423	517	775				280	680
MPV15S511KNK	320	415	459	561	845				300	630
MPV15S621KNK	385	505	558	682	1025				310	530
MPV15S681KNK	420	560	612	748	1120				320	500

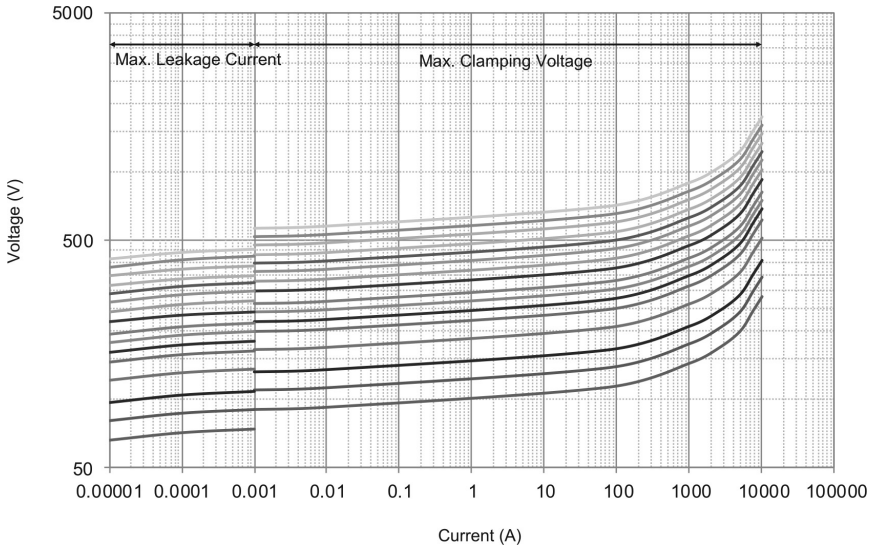
Performance Curve

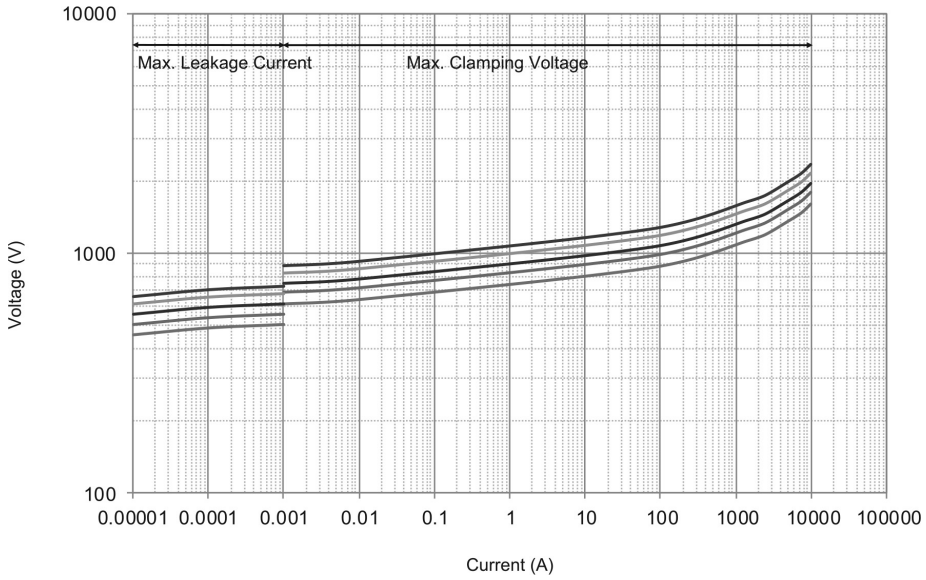
Max. Peak Current Derating Curves



Note: 1, 2, 10, 10^2, 10^3, 10^4, 10^5, 10^6 Stand for Repetitions.

Voltage-Current Characteristic Curves





Part Number Table

Description	Part Number
Varistor, MOV, 50V AC, Disc 15mm	MPV15S820KNK
Varistor, MOV, 150V AC, Disc 15mm	MPV15S241KNK
Varistor, MOV, 175V AC, Disc 15mm	MPV15S271KNK
Varistor, MOV, 250V AC, Disc 15mm	MPV15S391KNK
Varistor, MOV, 275V AC, Disc 15mm	MPV15S431KNK
Varistor, MOV, 300V AC, Disc 15mm	MPV15S471KNK
Varistor, MOV, 320V AC, Disc 15mm	MPV15S511KNK
Varistor, MOV, 385V AC, Disc 15mm	MPV15S621KNK
Varistor, MOV, 420V AC, Disc 15mm	MPV15S681KNK