SMD 2220 Multilayer Varistor

FEATURES

- Surface mount multilayer surge suppressor
- Inherent bidirectional clamping
- Excellent energy/volume ratio
- Suitable for reflow soldering
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free
e3
RoHS COMPLIANT
HALOGEN FREE

APPLICATIONS

Over-voltage and transient voltage protection:

- Data lines and I/O port protection
- Protection against ESD transients
- On-board protection of IC's and transistors
- Modem protection
- LCD protection

DESCRIPTION

Size 2220 (M5750) multilayer chip varistor with NiSn terminations.

PACKAGING

Available in 12 mm embossed carrier tape, component pitch 8 mm on 180 mm reels containing 1000 pieces.

QUICK REFERENCE DATA

PARAMETER	VALUE	UNIT
Maximum continuous voltage		
DC	5.6 to 85.0	V
AC	4.0 to 60.0	V
Maximum clamping voltage at 10 A	19.0 to 165	V
Capacitance range (at 1 kHz)	800 to 20 000	pF
Maximum energy (10/1000 µs)	1.4 to 12	J
Maximum peak current (8/20 µs)	800 to 1200	A
Operating temperature range	-55 to 85	°C
Weight	± 0.240	g

ELECTRICAL DATA AND ORDERING INFORMATION

WORKING VOLTAGE		BREAKDOWN VOLTAGE	CLAMPING VOLTAGE	MAX. PEAK CURRENT	MAXIMUM ENERGY	CAPACITANCE	PART NUMBER
V_{RMS}	V_{DC}	V_b	V_C	I_p	E_t	C	SAP
V	V	V	V	A	J	pF	MLV2220E3
	< 50 µA	1 mA	10 A, 8/20 µs	8/20 µs	10/1000 µs	1 kHz	
4.0	5.6	7.0 to 10.0	19.0	1200	1.4	20 000	0403T
14.0	18.0	22.0 to 27.0	52.0	1200	5.8	15 000	1403T
25.0	30.0	37.0 to 46.0	68.0	1200	9.6	5000	2503T
30.0	38.0	42.3 to 51.7	77.0	1200	12.0	4000	3003T
50.0	65.0	73.8 to 90.2	135.0	800	5.6	1000	5003T
60.0	85.0	90.0 to 110.0	165.0	800	6.8	800	6003T

Notes

- Sinusoidal voltage assumed as normal operating condition.
  If a non-sinusoidal voltage is present, the crest voltage x 0.707 should be used for type selection.
- Breakdown voltage at a current of 1 mA, measured according to 4.5 of IEC 61051-1.
- Parts are not recommended for automotive applications.

For technical questions, contact: nlr@vishay.com
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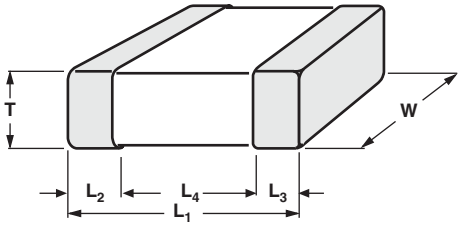
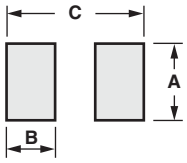
DIMENSIONS in millimeters



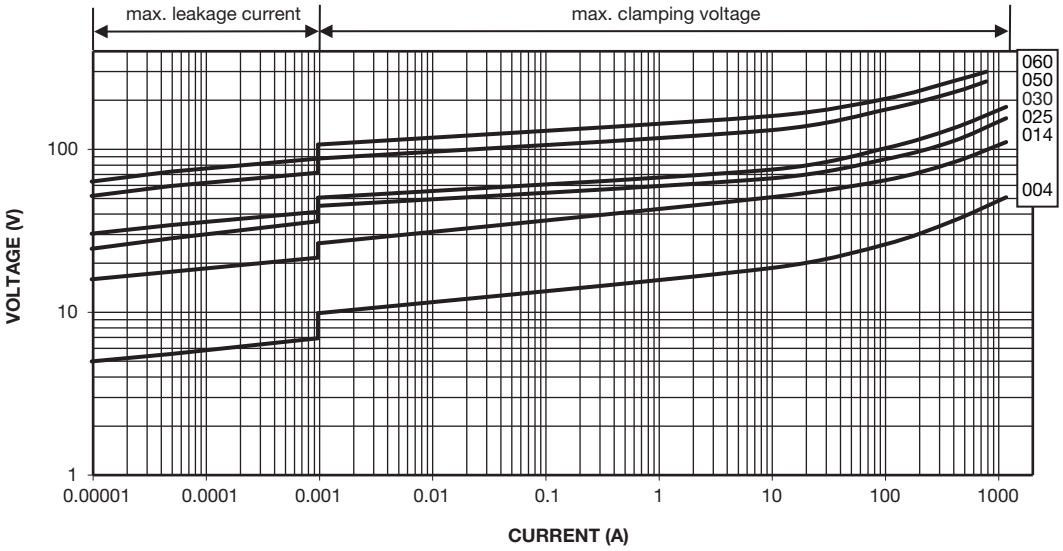
L_1	W	T	L_2 and L_3
5.7 ± 0.4	5.0 ± 0.5	2.5 max.	0.8 max.

RECOMMENDED FOOTPRINT in millimeters



A	B	C
5.2	1.2	6.4

V/I CHARACTERISTICS



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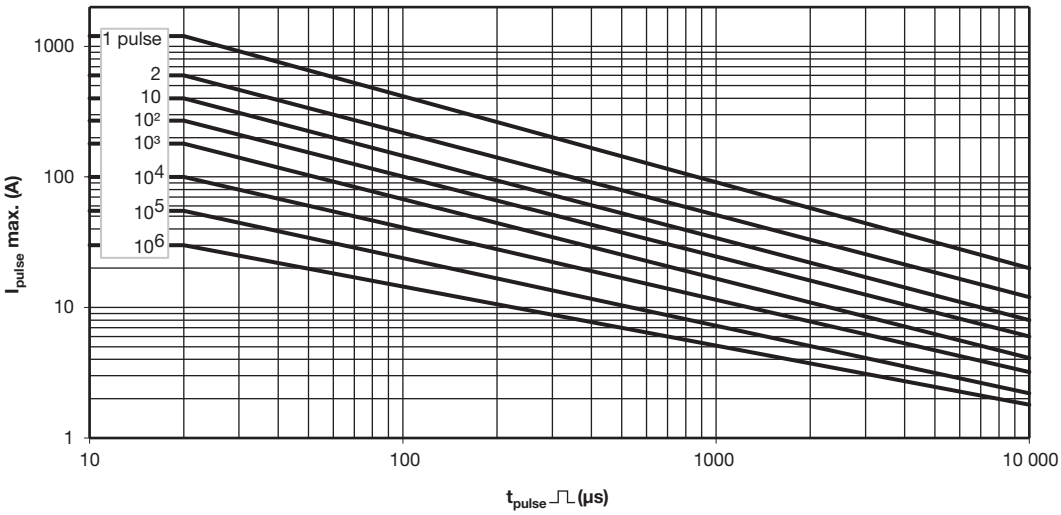
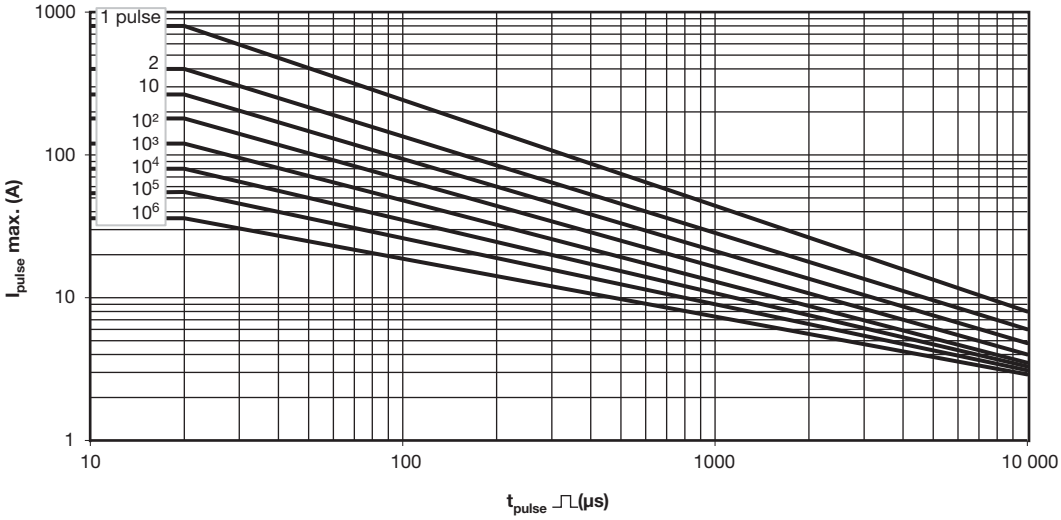
PULSE DERATING 4 V_{RMS} TO 30 V_{RMS}



PULSE DERATING 50 V_{RMS} TO 60 V_{RMS}



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