SMD 0402 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 0402 (1005M) multilayer chip varistor with NiSn terminations.

PACKAGING

Available in 8 mm paper tape, component pitch 4 mm on 180 mm reels containing 10 000 pieces.

QUICK REFERENCE DATA		
PARAMETER	**VALUE**	**UNIT**
Maximum continuous voltage		
DC	5.6 to 18.0	V
AC	4.0 to 14.0	V
Maximum clamping voltage at 1 A	15.5 to 40	V
Capacitance range (at 1 MHz)	90 to 360	pF
Maximum energy (10/1000 µs)	0.05	J
Maximum peak current	20	A
Operating temperature range	-55 to 125	°C
Weight	± 0.0015	g

ELECTRICAL DATA AND ORDERING INFORMATION

WORKING VOLTAGE		BREAKDOWN VOLTAGE	MAXIMUM CLAMPING VOLTAGE	TYPICAL CAPACITANCE	PART NUMBER
V_{RMS}	V_{DC}	V_b	V_C	C	SAP
V	V	V	V	pF	MLV0402E3
	< 10 µA	1 mA	1 A, 8/20 µs	1 MHz	
4.0	5.6	7.1 to 9.3	15.5	360	0403T
7.0	9.0	11.0 to 14.0	20.0	230	0703T
11.0	14.0	16.0 to 20.0	30.0	120	1103T
14.0	18.0	23.0 to 28.0	40.0	90	1403T

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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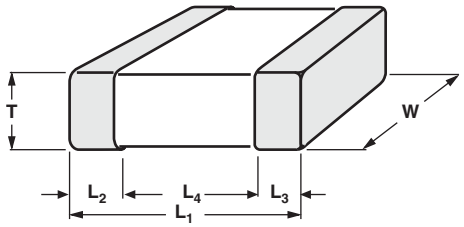
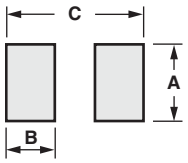
DIMENSIONS in millimeters



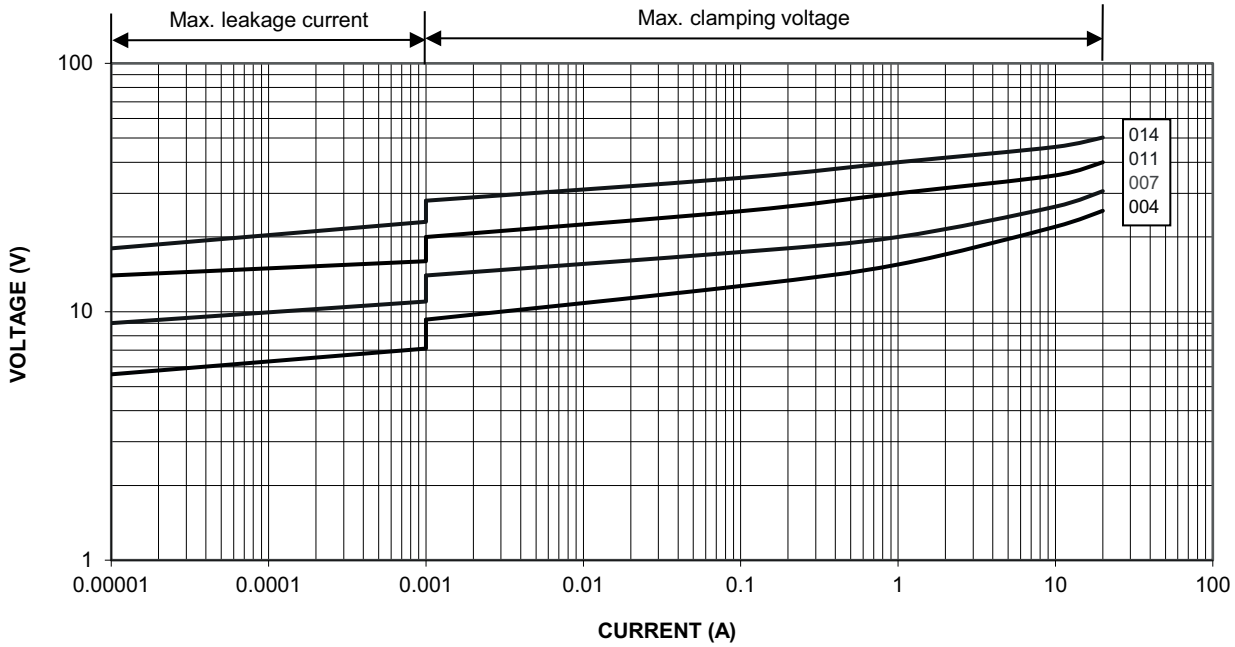
L_1	W	T	L_2 and L_3
1.0 ± 0.1	0.5 ± 0.1	0.6 max.	0.25 ± 0.15

RECOMMENDED FOOTPRINT in millimeters



A	B	C
0.7	0.7	2.0

V/I CHARACTERISTICS



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