

## SMD 1812 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](http://www.vishay.com/doc?99912)



**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 1812 (M4532) 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	18.0 to 38.0	V
AC	14.0 to 30.0	V
Maximum clamping voltage at 5 A	48.0 to 88.0	V
Capacitance range (at 1 kHz)	2000 to 4500	pF
Maximum energy (10/1000 $\mu$ s)	2.3 to 4.2	J
Maximum peak current (8/20 $\mu$ s)	800	A
Operating temperature range	-55 to 85	$^{\circ}$ C
Weight	$\pm$ 0.115	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	MLV1812E3
	< 50 $\mu$ A	1 mA	5 A, 8/20 $\mu$ s	8/20 $\mu$ s	10/1000 $\mu$ s	1 kHz	
14.0	18.0	21.6 to 26.0	48.0	800	2.3	4500	1403T
17.0	22.0	24.3 to 29.7	52.0	800	2.7	4000	1703T
20.0	26.0	31.0 to 38.0	65.0	800	3.0	3000	2003T
25.0	30.0	37.0 to 46.0	78.0	800	3.7	2500	2503T
30.0	38.0	42.3 to 51.7	88.0	800	4.2	2000	3003T

### Notes

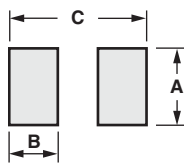
- Sinusoidal voltage assumed as normal operating condition.  
If a non-sinusoidal voltage is present, the crest voltage x 0.707 should be used for type selection.
- Breakdown voltage at a current of 1 mA, measured according to 4.5 of IEC 61051-1.
- Parts are not recommended for automotive applications.

**DIIMENSIONS** in millimeters



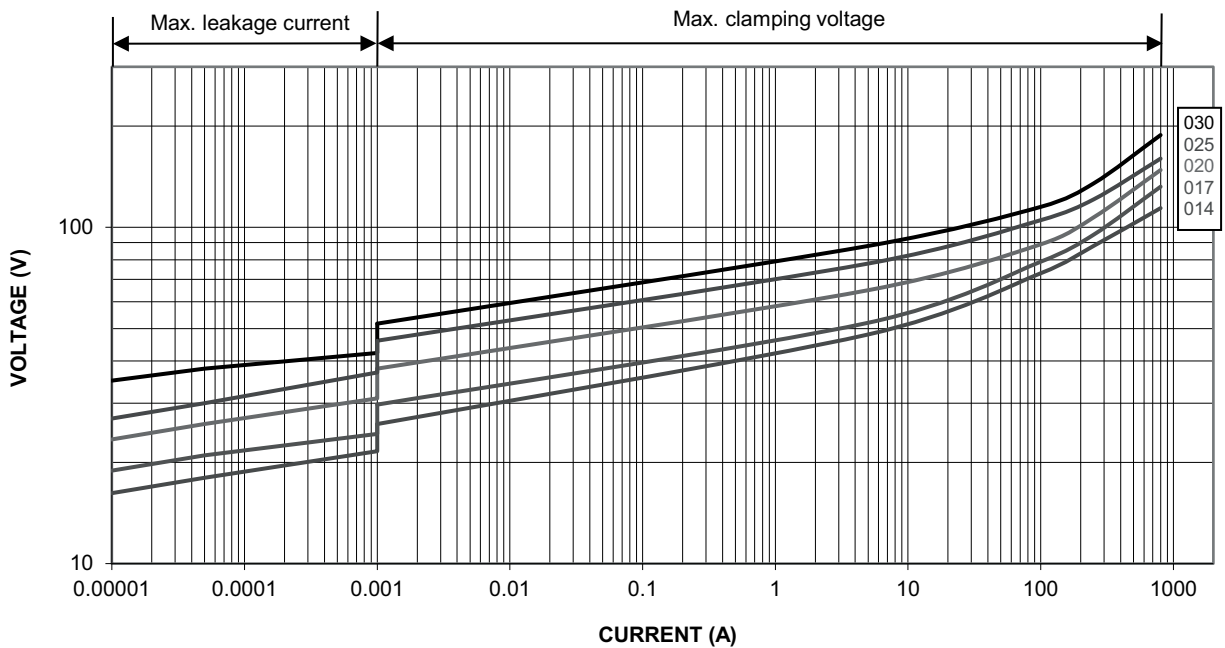
L <sub>1</sub>	W	T	L <sub>2</sub> and L <sub>3</sub>
4.5 ± 0.4	3.2 ± 0.4	2.5 max.	0.8 max.

**RECOMMENDED FOOTPRINT** in millimeters



A	B	C
3.4	1.2	5.4

**V/I CHARACTERISTICS**





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