

## SMD 1206 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 1206 (M3216) multilayer chip varistor with NiSn terminations.

### PACKAGING

Available in 8 mm embossed carrier tape, component pitch 4 mm on 180 mm reels containing 3000 pieces.

### QUICK REFERENCE DATA

| PARAMETER                              | VALUE         | UNIT         |
|--|---------------|--------------|
| Maximum continuous voltage<br>DC       | 5.6 to 65.0   | V            |
| AC                                     | 4.0 to 45.0   | V            |
| Maximum clamping voltage<br>at 1 A     | 22.0 to 135.0 | V            |
| Capacitance range<br>(at 1 kHz)        | 240 to 1500   | pF           |
| Maximum energy<br>(10/1000 $\mu$ s)    | 0.5 to 1.1    | J            |
| Maximum peak current<br>(8/20 $\mu$ s) | 100 to 200    | A            |
| Operating temperature range            | -55 to 85     | $^{\circ}$ C |
| Weight                                 | $\pm$ 0.025   | 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          | MLV1206E3   |
|                 | < 50 $\mu$ A | 1 mA              | 1 A, 8/20 $\mu$ s | 8/20 $\mu$ s      | 10/1000 $\mu$ s | 1 kHz       |             |
| 4.0             | 5.6          | 7.0 to 10.0       | 22.0              | 150               | 1.0             | 3000        | 0403T       |
| 11.0            | 14.0         | 16.2 to 19.8      | 37.0              | 200               | 0.5             | 800         | 1103T       |
| 14.0            | 18.0         | 21.6 to 26.0      | 48.0              | 200               | 1.0             | 1300        | 1403T       |
| 20.0            | 26.0         | 31.0 to 38.0      | 62.0              | 200               | 1.0             | 900         | 2003T       |
| 25.0            | 30.0         | 37.0 to 46.0      | 73.0              | 200               | 1.0             | 550         | 2503T       |
| 30.0            | 38.0         | 42.3 to 51.7      | 88.0              | 200               | 1.1             | 500         | 3003T       |
| 35.0            | 45.0         | 50.4 to 61.6      | 95.0              | 180               | 0.8             | 550         | 3503T       |
| 40.0            | 56.0         | 61.0 to 77.0      | 120.0             | 180               | 1.0             | 380         | 4003T       |
| 45.0            | 65.0         | 73.8 to 90.2      | 135.0             | 100               | 0.6             | 240         | 4503T       |

### 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.

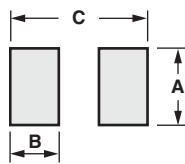


**DIIMENSIONS** in millimeters



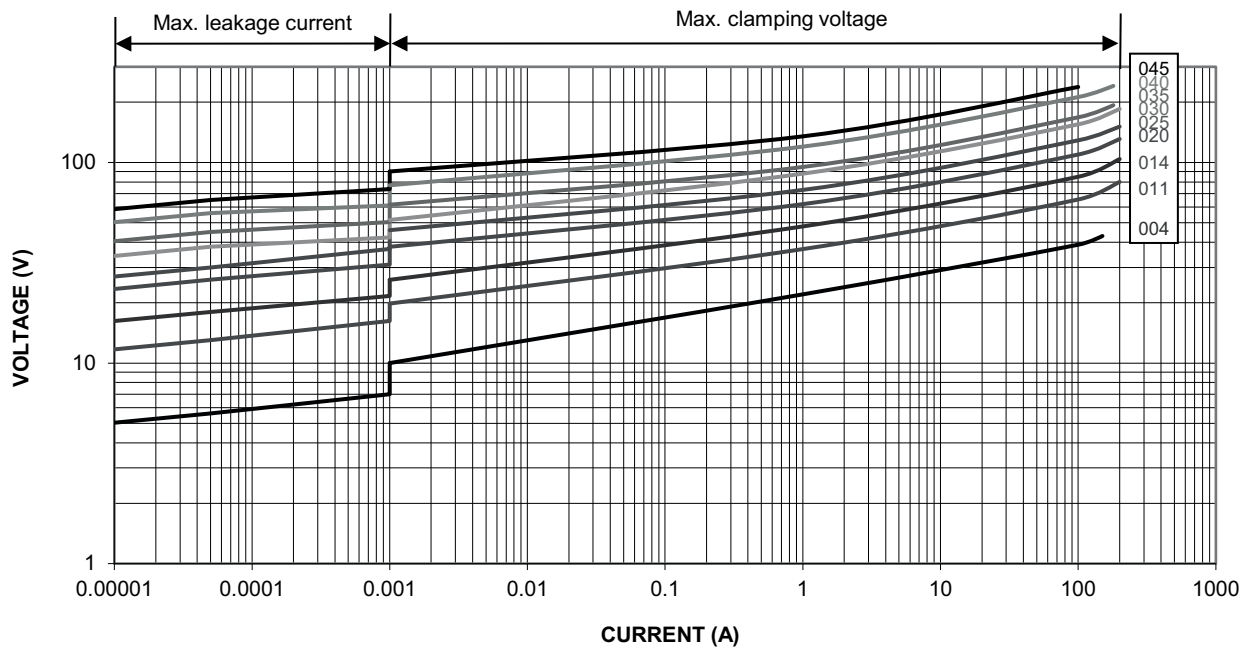
| L <sub>1</sub> | W         | T        | L <sub>2</sub> and L <sub>3</sub> |
|----------------|-----------|----------|-----------------------------------|
| 3.2 ± 0.2      | 1.6 ± 0.2 | 1.8 max. | 0.71 max.                         |

**RECOMMENDED FOOTPRINT** in millimeters



| A   | B   | C   |
|-----|-----|-----|
| 1.8 | 1.2 | 3.9 |

**V/I CHARACTERISTICS**





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