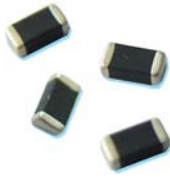
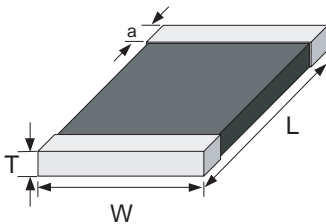


## ESD Series SMD

This product is not recommended for new designs. Please refer to Littelfuse series MLE.



### Dimensions



## Multilayer Ceramic Transient Voltage Suppressors for ESD Protection

### Features

- Thin layer, high precise techniques
- Lead free
- Bi-directional clamping
- Ultra low capacity
- Available with Nickel/Tin end termination

### Applications

Circuit board and ESD, EFT

Protection of:

- USB ports
- Keyboards
- Cellular Phones
- IEEE ports
- PDA/Handheld
- Sensors

### WebLinks

Further info see:

[www.wickmann.com](http://www.wickmann.com)

Further technical info see technical varistor file:

[www.wickmann.com/download/techvaristor.pdf](http://www.wickmann.com/download/techvaristor.pdf)

## Specifications

### Packaging

|               |           |               |
|---------------|-----------|---------------|
| Tape and Reel |           |               |
| T 7 inch reel | 0402      | (10.000 pcs.) |
|               | 0603      | (4.000 pcs.)  |
|               | 0805-1206 | (3.000 pcs.)  |

### Material

|            |  |
|------------|--|
| Body:      | Ceramic (ZnO)  |
| Terminals: | Ni/Sn plated (code "P")<br>Ag/Pt/Pd non plated (code "N" on request) |

### Operating Temperature

-55 to +125°C

### Solderability

acc. to IEC 60068-2-58  
235°C, 2s

### Soldering Heat Resistance

260°C, 10 sec. (IEC 60068-2-58)  
280°C, 5 sec. (IEC 60068-2-58)

### Temperature coefficient (αV) of clamping voltage (Vc) @ specified test current

<0.01%/°C

### Standards

IEC 61000-4-2  
MIL-STD-883C

| Maximum Ratings (125°C) |           |                            |   |   |                                       |  | Specifications (25°C)                    |                          |                 |  |
|-------------------------|-----------|----------------------------|---|---|---------------------------------------|--|--|--------------------------|-----------------|--|
| Type                    | Packaging | max. cont. working voltage | max. non-repetitive surge current (8/20 μs) | max. non-repetitive surge energy (10/1000 μs) | max. ESD clamping voltage 8kV contact | max. clamping voltage at spec. current (8/20 μs) | nominal voltage at 1mA (DC) test current | typ. capacitance at 1MHz | typ. inductance |  |
|                         |           | $V_{M(DC)}$ (V)            | $I_{TM}$ (A)                                | $W_{TM}$ (J)                                  | $V_c$ (note 2)                        | $V_c$ (V) $V_c$ (V)                              | $V_{N(DC)min.}$ (V) $V_{N(DC)max.}$ (V)  | $C_{typ.}$ (pF)          | $L_{typ.}$ (nH) |  |
| WE0402ML180L            |           | 18,0                       | 15  | 0,03  | 120                                   | 50 1A  | 22 28                                    | 30                       | 1,0             |  |
| WE0402ML180A            |           | 18,0                       | 15  | 0,03  | 120                                   | 50 1A  | 22 28                                    | 40                       | 1,0             |  |
| WE0603ML180L            |           | 18,0                       | 20  | 0,05  | 120                                   | 50 1A  | 22 28                                    | 40                       | 1,0             |  |
| WE0603ML180A            |           | 18,0                       | 20  | 0,05  | 120                                   | 50 2A  | 22 28                                    | 100                      | 1,0             |  |
| WE0805ML180L            |           | 18,0                       | 30  | 0,10  | 100                                   | 50 2A  | 22 28                                    | 100                      | 1,0             |  |
| WE0805ML180A            |           | 18,0                       | 30  | 0,10  | 100                                   | 50 5A  | 22 28                                    | 500                      | 1,0             |  |
| WE1206ML180L            |           | 18,0                       | 30  | 0,10  | 80                                    | 50 5A  | 22 28                                    | 500                      | 1,0             |  |
| WE1206ML180A            |           | 18,0                       | 30  | 0,10  | 80                                    | 50 10A   | 22 28                                    | 800                      | 1,0             |  |

| Maximum Leakage $V_{M(DC)}$ |              |              |              |              |              |              |              |              |
|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                             | WE0402ML180L | WE0402ML180A | WE0603ML180L | WE0603ML180A | WE0805ML180L | WE0805ML180A | WE1206ML180L | WE1206ML180A |
|                             | μA           | μA           | μA           | μA           | μA           | μA           | μA           | μA           |
| 3.5V                        | 0.08         | 0.08         | 0.08         | 0.08         | 0.15         | 0.15         | 0.3          | 0.3          |
| 5.5V                        | 0.2          | 0.2          | 0.2          | 0.2          | 0.3          | 0.3          | 0.8          | 0.8          |
| 15V                         | 1.5          | 1.5          | 3.0          | 3.0          | 3.0          | 3.0          | 3.0          | 3.0          |
| 18V                         | 6.0          | 6.0          | 15.0         | 15.0         | 15.0         | 15.0         | 15.0         | 15.0         |

Note 1: For applications of 18V<sub>M(DC)</sub> or less higher voltages. Please contact WICKMANN for availability.

Note 2: Maximum ESD clamping voltage tested with IEC 61000-4-2 Human Body Model discharge test circuit and direct discharge to device terminals

Note 3: Capacitance may be customized, please contact WICKMANN for availability.

### Order Information

| Qty. | Order-Number | Type        | Terminal Code | Packaging |
|------|--------------|-------------|---------------|-----------|
|      |              | WE0402ML180 | L             | P         |
|      |              |             |               | T         |

Specifications are subject to change without notice

## ESD Series SMD

