

# SMD Multilayer Chip Varistor

AMCV-0805

RoHS  
Compliant



1.0 x 0.5 x 0.5 mm

## FEATURES:

- SMD type, small size suitable for high density mounting
- Excellent clamping ratio and strong capability of voltage surge suppression
- Excellent solderability (Ni, Sn plating)

## APPLICATIONS:

- Transient voltage protection and voltage surge suppression for LED lighting
- Suitable for LCD-TV, STB, Switch, Router, PLC, Security System, smart meters, mobile phones
- Suppressing Induced / switching over-voltage caused by lightning and power
- Protecting DC-DC Module, I/O ports, IC driver

## STANDARD SPECIFICATIONS:

**Operating Temperature:** -55°C ~ +125°C

**Storage Temperature:** -10°C ~ +40°C and RH 70% (Max.)

| Part Number        | Max. Working Voltage |                  | Varistor Voltage<br>@1mA DC | Max. Clamping Voltage        |                              | Rated Single Pulse Transient |                     | Typical Capacitance<br>@0.5V <sub>rms</sub> , 1MHz |
|--------------------|----------------------|------------------|-----------------------------|------------------------------|------------------------------|------------------------------|---------------------|--|
|                    | DC                   | AC RMS           |                             | 8/20μs                       | ESD                          | Energy 10/1000μs             | Peak Current 8/20μs |  |
| Units              | Volts                | Volts            | Volts                       | Volts                        | Volts                        | Joules                       | Amps                | pF   |
| Symbol             | V <sub>WDC</sub>     | V <sub>WAC</sub> | V <sub>B</sub>              | V <sub>C</sub> <sup>*1</sup> | V <sub>C</sub> <sup>*2</sup> | E <sub>T</sub>               | I <sub>P</sub>      | C  |
| ACMV-0805-5R5-C180 | 5.5                  | 4.0              | 10.0-14.0                   | 18                           | 23                           | 0.005                        | 3                   | 18   |
| ACMV-0805-180-C101 | 18.0                 | 12.7             | 22.0-28.0                   | 40                           | 48                           | 0.05                         | 20                  | 100  |
| ACMV-0805-260-C800 | 26.0                 | 18.4             | 31.0-38.0                   | 58                           | 70                           | 0.05                         | 20                  | 80   |
| ACMV-0805-300-C500 | 30.0                 | 21.3             | 37.0-46.0                   | 65                           | 78                           | 0.05                         | 15                  | 50   |

\*1: V<sub>c</sub>, Maximum peak voltage across the varistor measured at a specified pulse current and waveform.

| Energy Rating   | Pulse & Waveform |
|-----------------|------------------|
| 0.00-0.05 Joule | 1A, 8/20μs       |
| 0.10 Joule      | 2A, 8/20μs       |
| 0.20-0.50 Joule | 5A, 8/20μs       |

\*2: V<sub>c</sub>, Maximum peak voltage across the varistor measured at 30ns after initiation of pulse on IEC61000-4-2 30A/8KV.

## Test Conditions

Unless otherwise specified, the standard atmospheric conditions for measurement/test as:

- Ambient Temperature: 20±15°C
- Relative Humidity: 65±20%
- Air Pressure: 86 kPa to 106 kPa

| Items  | Test Methods and Remarks                                      |
|--|---|
| Varistor Voltage at 1mA DC (V <sub>B</sub> ) | Measuring current: 1mA DC<br>Duration: 0.2 to 2 sec           |
| Capacitance (C)                              | Measure source: 0.5 V <sub>RMS</sub><br>Test frequency: 1MHz. |
| Leakage Current (I <sub>L</sub> )            | Measuring voltage: Maximum DC working voltage                 |
| Clamping Voltage (V <sub>c</sub> )           | Measuring source: 8/20us waveform, ESD waveform               |

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## OPTIONS AND PART IDENTIFICATION:

AMCV-0805- - C -

**Voltage Code**  
Please refer to the table above

**Capacitance Code**  
Please refer to the table above

**Tolerance**  
N=±30%

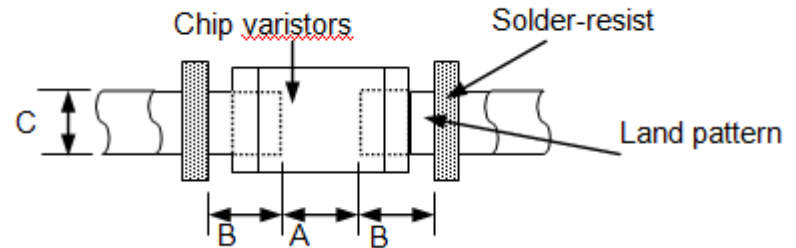
**Packaging**  
T: Tape and Reel  
(4kpcs / reel)

## OUTLINE DIMENSION:



| L       | W        | T        | a       |
|---------|----------|----------|---------|
| 2.0±0.2 | 1.25±0.2 | 0.85±0.2 | 0.5±0.3 |

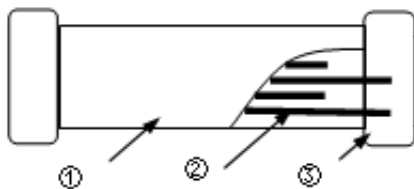
### Recommended Land Pattern



| A         | B         | C         |
|-----------|-----------|-----------|
| 0.80~1.20 | 0.80~1.20 | 0.90~1.60 |

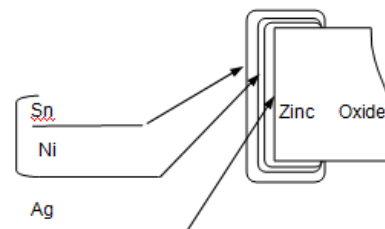
### Materials

Side View



|   | Part Name          | Material                                |
|---|--------------------|---|
| 1 | Base Material      | ZnO                                     |
| 2 | Internal Conductor | Ag-Pd                                   |
| 3 | Terminal Electrode | Ag (Inner layer)<br>Ni-Sn (Outer layer) |

Top View



Dimension: mm

# SMD Multilayer Chip Varistor

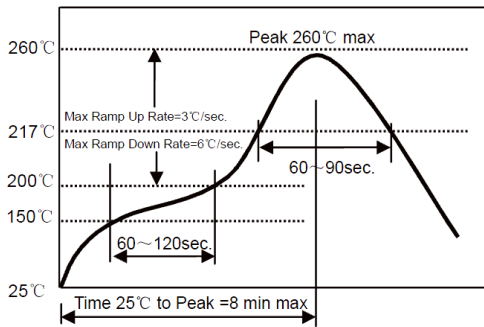


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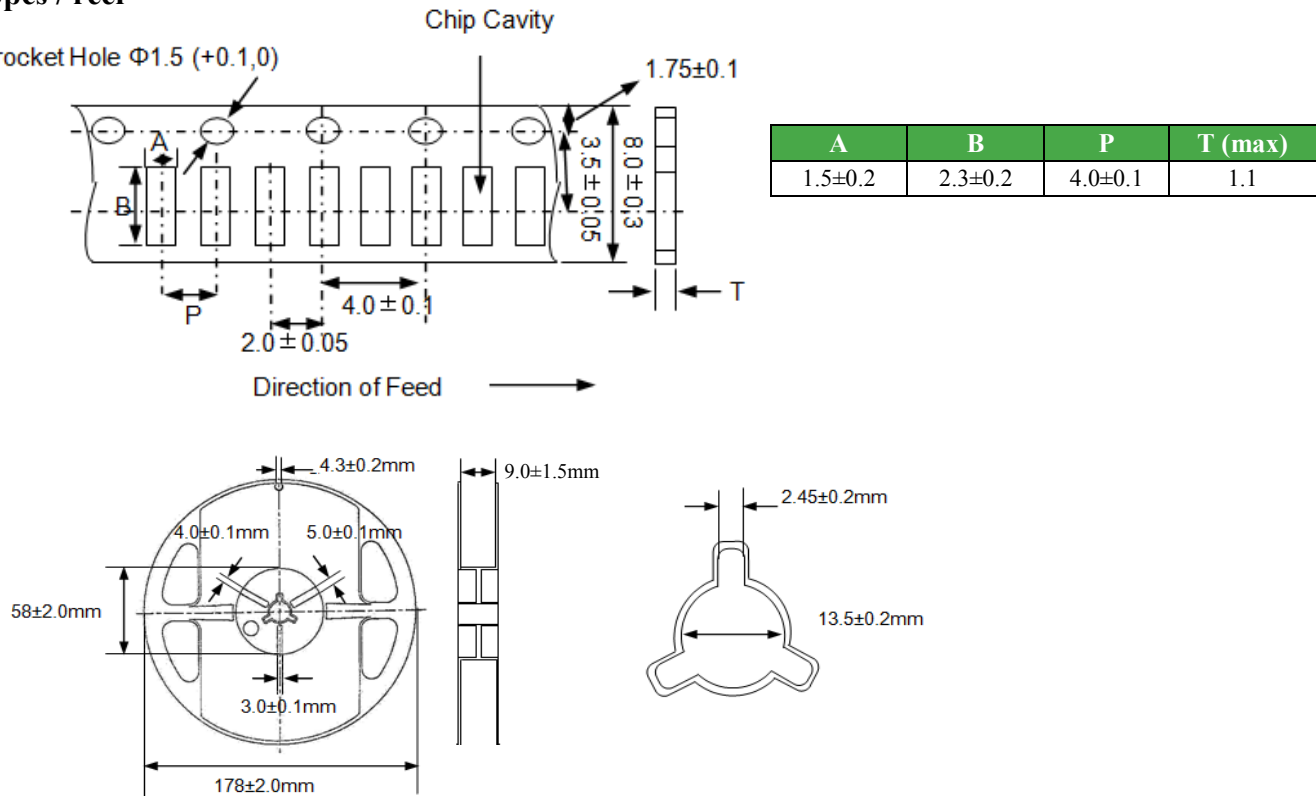
## REFLOW PROFILE:



|                             |                               |
|-----------------------------|-------------------------------|
| Preheat Condition           | 150 to 200 °C; 60 to 120 sec. |
| Allowed time above 217 °C   | 60 to 90 sec.                 |
| Max temperature             | 260 °C                        |
| Max time at max temperature | 10 sec.                       |
| Solder paste                | Sn/3.0Ag/0.5Cu                |
| Allowed Reflow time         | 2x max.                       |

## TAPE & REEL:

T: 4,000pcs / reel



### Storage Conditions

- The solderability of the external electrode may be deteriorated if packages are stored where they are exposed to high humidity. Package must be stored at 40°C or less and 70% RH or less.
- The solderability of the external electrode may be deteriorated if packages are stored where they are exposed to dust of harmful gas (e.g. HCl, sulfurous gas of H<sub>2</sub>S).
- Packaging material may be deformed if package are stored where they are exposed to heat of direct sunlight.
- Solderability shall be guaranteed for 6 months from the date of delivery on condition that they are stored at the environment specified in a. The parts that are stored more than 6 months shall be checked solderability before use.

**Dimension: mm**

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