

SMD Multilayer Chip Varistor

AMCV-1812H

RoHS
Compliant



4.5 x 3.2 x 2.5mm

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 ~ +85°C

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

| Part Number | Max. Working Voltage | | Varistor Voltage | Max. Clamping Voltage | | Rated Single Pulse Transient | | Typical Capacitance |
|----------------|----------------------|------------------|---------------------|-----------------------|----------------|------------------------------|---------------------|---------------------------|
| | DC | AC RMS | | 8/20μs | ESD | Energy 10/1000μs | Peak Current 8/20μs | |
| Test Condition | <20μA | | @1mA DC | 8/20μs | ESD | Energy 10/1000μs | Peak Current 8/20μs | @1V _{rms} , 1kHz |
| Units | Volts | Volts | | | | | | |
| Symbol | V _{WDC} | V _{WAC} | V _B | V _C | I _C | E _T | I _P | C _P |
| AMCV-1812H-5R5 | 5.5 | 4.0 | 12.0 [10.0-14.0] | 18 | 5.0 | 1.0 | 800 | 5500 |
| AMCV-1812H-090 | 9 | 6.4 | 14.0 [12.0-16.0] | 20 | 5.0 | 1.2 | 800 | 4800 |
| AMCV-1812H-120 | 12 | 8.5 | 16.0 [13.0-19.0] | 25 | 5.0 | 1.5 | 800 | 4200 |
| AMCV-1812H-140 | 14 | 10.0 | 19.0 [16.0-22.0] | 30 | 5.0 | 1.9 | 800 | 3800 |
| AMCV-1812H-180 | 18 | 12.7 | 25.0 [22.0-28.0] | 40 | 5.0 | 2.3 | 800 | 3200 |
| AMCV-1812H-220 | 22 | 15.6 | 30.0 [26.0-34.0] | 45 | 5.0 | 2.5 | 800 | 2400 |
| AMCV-1812H-260 | 26 | 18.4 | 35.0 [31.0-38.0] | 58 | 5.0 | 3.0 | 800 | 2000 |
| AMCV-1812H-300 | 30 | 21.3 | 42.0 [37.0-46.0] | 65 | 5.0 | 3.7 | 800 | 1500 |
| AMCV-1812H-380 | 38 | 30.0 | 50.0 [46.0-54.0] | 75 | 5.0 | 4.2 | 800 | 1100 |
| AMCV-1812H-480 | 48 | 34.1 | 60.0 [54.0-67.0] | 100 | 5.0 | 4.0 | 600 | 900 |
| AMCV-1812H-560 | 56 | 40.0 | 68.0 [61.0-75.0] | 120 | 5.0 | 4.3 | 600 | 800 |
| AMCV-1812H-600 | 60 | 46.0 | 76.0 [69.0-83.0] | 130 | 5.0 | 4.3 | 600 | 600 |
| AMCV-1812H-650 | 65 | 50.0 | 82.0 [73.0-91.0] | 140 | 5.0 | 4.0 | 600 | 500 |
| AMCV-1812H-750 | 75 | 55.0 | 94.0 [85.0-103.0] | 160 | 5.0 | 4.0 | 600 | 400 |
| AMCV-1812H-850 | 85 | 60.0 | 100.0 [90.0-110.0] | 170 | 5.0 | 4.0 | 600 | 300 |
| AMCV-1812H-101 | 100 | 75.0 | 120.0 [108.0-132.0] | 200 | 5.0 | 4.0 | 600 | 200 |

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 _B) | Measuring current: 1mA DC Duration: 0.2 to 2 sec |
| Capacitance (C) | Measure source: 1.0 V _{RMS} Test frequency: 1kHz. |
| Clamping Voltage (V _C) | Measuring source: 8/20us waveform |

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OPTIONS AND PART IDENTIFICATION:

AMCV-1812H--

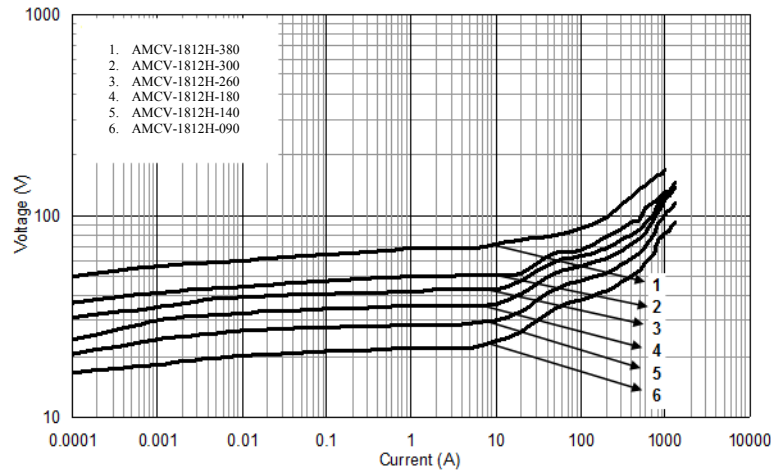
Voltage Code

Please refer to the table above

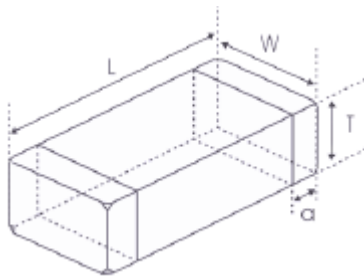
Packaging

T: Tape and Reel
(2kpcs / reel)

V/I CHARACTERISTICS



OUTLINE DIMENSION:



| L | W | T | a |
|----------|----------|---------|----------|
| 4.5±0.40 | 3.2±0.30 | 2.5Max. | 0.25~1.0 |

Recommended Land Pattern



| A | B | C |
|---------|---------|---------|
| 2.8~3.0 | 1.5~1.8 | 3.3~3.6 |

Dimension: mm

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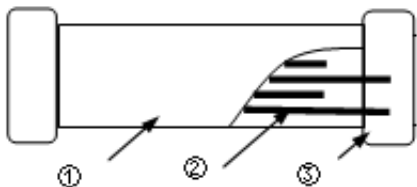
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Materials

Side View



Top View



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



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. |

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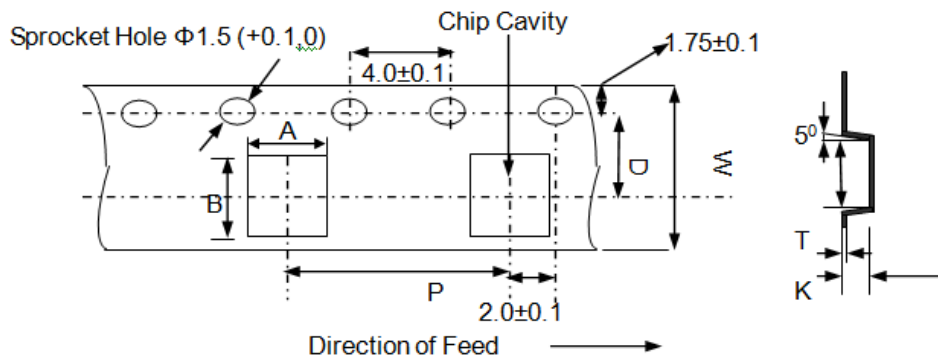
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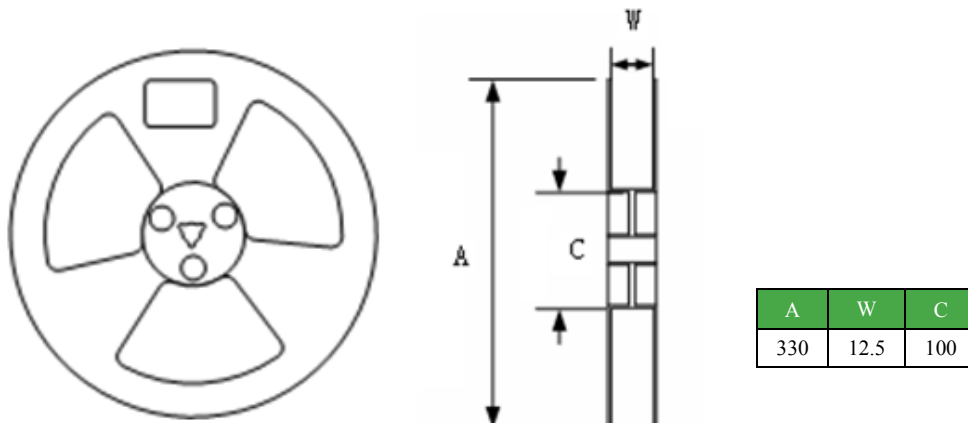
4.5 x 3.2 x 2.5mm

TAPE & REEL:

T: 2,000pcs / reel



| W | A | B | D | P | K max | T max |
|------|------|------|------|-----|-------|-------|
| 12.0 | 3.50 | 4.80 | 5.50 | 8.0 | 2.7 | 0.33 |



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 or harmful gas (e.g. HCl, sulfurous gas of H₂S).
- Packaging material may be deformed if packages are stored where they are exposed to heat or 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 1.3. The parts that are stored more than 6 months shall be checked solderability before use.

Dimension: mm

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