

SMD Multilayer Chip Varistor

AMCV-0201

RoHS
Compliant



0.6 x 0.3 x 0.3mm

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 | Max. Clamping Voltage | | Rated Single Pulse Transient | | Typical Capacitance |
|--------------------|----------------------|------------------|------------------|------------------------------|------------------------------|------------------------------|---------------------------|-----------------------------|
| | DC | AC RMS | | 8/20 μ s | ESD | Energy 10/1000 μ s | Peak Current 8/20 μ s | |
| Test Condition | <20 μ A | | @1mA DC | | | | | @0.5V _{rms} , 1MHz |
| Units | Volts | Volts | Volts | Volts | Volts | Joules | Amps | pF |
| Symbol | V _{WDC} | V _{WAC} | V _B | V _C ^{*1} | V _C ^{*2} | E _T | I _P | C |
| ACMV-0201-5R5-C150 | 5.5 | 4.0 | 10.0-14.0 | 18 | 23 | 0.005 | 1 | 15 |
| ACMV-0201-5R5-C220 | 5.5 | 4.0 | 10.0-14.0 | 18 | 23 | 0.005 | 1 | 22 |
| ACMV-0201-5R5-C330 | 5.5 | 4.0 | 10.0-14.0 | 18 | 23 | 0.01 | 3 | 33 |
| ACMV-0201-5R5-C400 | 5.5 | 4.0 | 10.0-14.0 | 18 | 23 | 0.01 | 5 | 40 |
| ACMV-0201-5R5-C500 | 5.5 | 4.0 | 10.0-14.0 | 18 | 23 | 0.01 | 5 | 50 |
| ACMV-0201-090-C150 | 9.0 | 6.4 | 11.0-16.0 | 20 | 26 | 0.005 | 1 | 15 |
| ACMV-0201-090-C220 | 9.0 | 6.4 | 11.0-16.0 | 20 | 26 | 0.005 | 1 | 22 |
| ACMV-0201-090-C330 | 9.0 | 6.4 | 11.0-16.0 | 20 | 26 | 0.01 | 3 | 33 |
| ACMV-0201-090-C400 | 9.0 | 6.4 | 11.0-16.0 | 20 | 26 | 0.01 | 5 | 40 |
| ACMV-0201-090-C500 | 9.0 | 6.4 | 11.0-16.0 | 20 | 26 | 0.01 | 5 | 50 |
| ACMV-0201-140-C150 | 14.0 | 10.0 | 16.0-22.0 | 30 | 39 | 0.005 | 1 | 15 |

*1: V_C, Maximum peak voltage across the varistor measured at a specified pulse current and waveform.
 Energy Rating Pulse & Waveform
 0.00-0.05 Joule 1A, 8/20 μ s
 0.10 Joule 2A, 8/20 μ s

*2: V_C, 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 \pm 15°C
- Relative Humidity: 65 \pm 20%
- Air Pressure: 86 kPa to 106 kPa

SMD Multilayer Chip Varistor



0.6 x 0.3 x 0.3mm

AMCV-0201

RoHS
Compliant

| 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: 0.5 V_{RMS} Test frequency: 1MHz. |
| Leakage Current (I_L) | Measuring voltage: Maximum DC working voltage |
| Clamping Voltage (V_C) | Measuring source: 8/20us waveform, ESD waveform |

OPTIONS AND PART IDENTIFICATION:

AMCV-0201- - C -

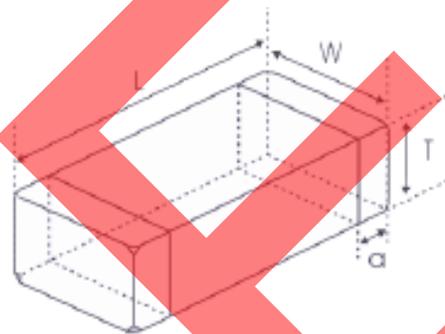
| Voltage Code |
|---------------------------------|
| Please refer to the table above |

| Capacitance Code |
|---------------------------------|
| Please refer to the table above |

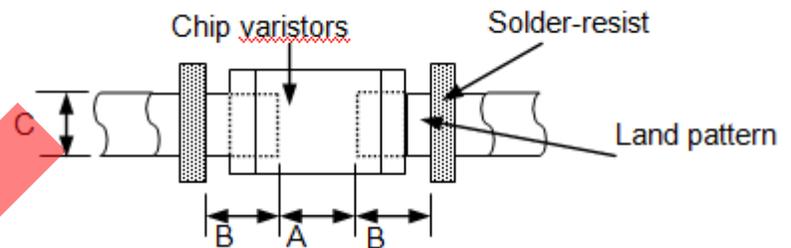
| Tolerance |
|-----------------------|
| N= $\pm 30\%$ |
| Y= $+100\%$, -50% |
| G= $+0\%$, -60% |

| Packaging |
|-------------------------------------|
| T: Tape and Reel (15kpcs / reel) |

OUTLINE DIMENSION:



Recommended Land Pattern



| L | W | T |
|----------------|----------------|----------------|
| 0.6 \pm 0.05 | 0.3 \pm 0.05 | 0.3 \pm 0.05 |

| A | B | C |
|-----------|-----------|-----------|
| 0.20~0.30 | 0.20~0.30 | 0.30~0.35 |

Dimension: mm

SMD Multilayer Chip Varistor



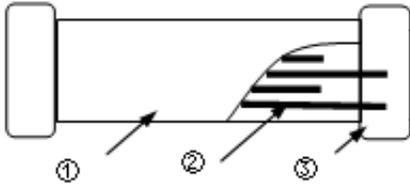
0.6 x 0.3 x 0.3mm

AMCV-0201

RoHS
Compliant

Materials

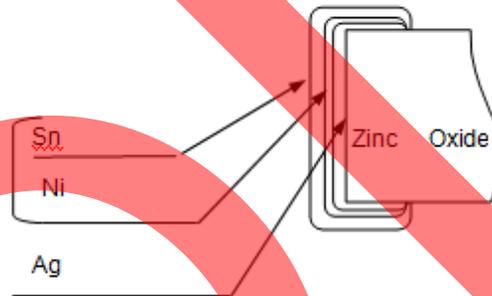
Side View



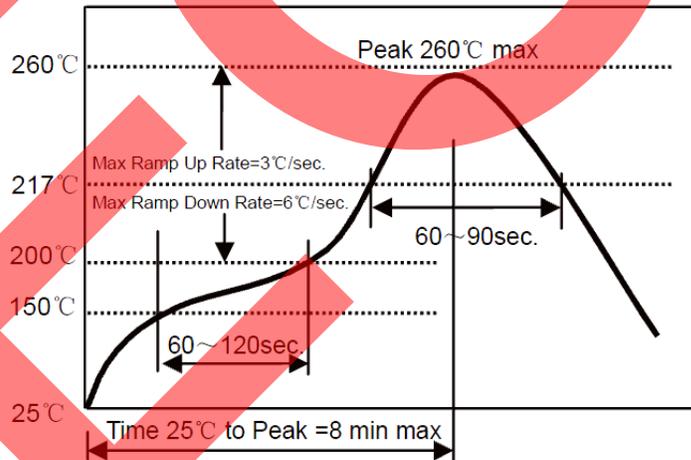
Top View



| | 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. |

SMD Multilayer Chip Varistor

AMCV-0201

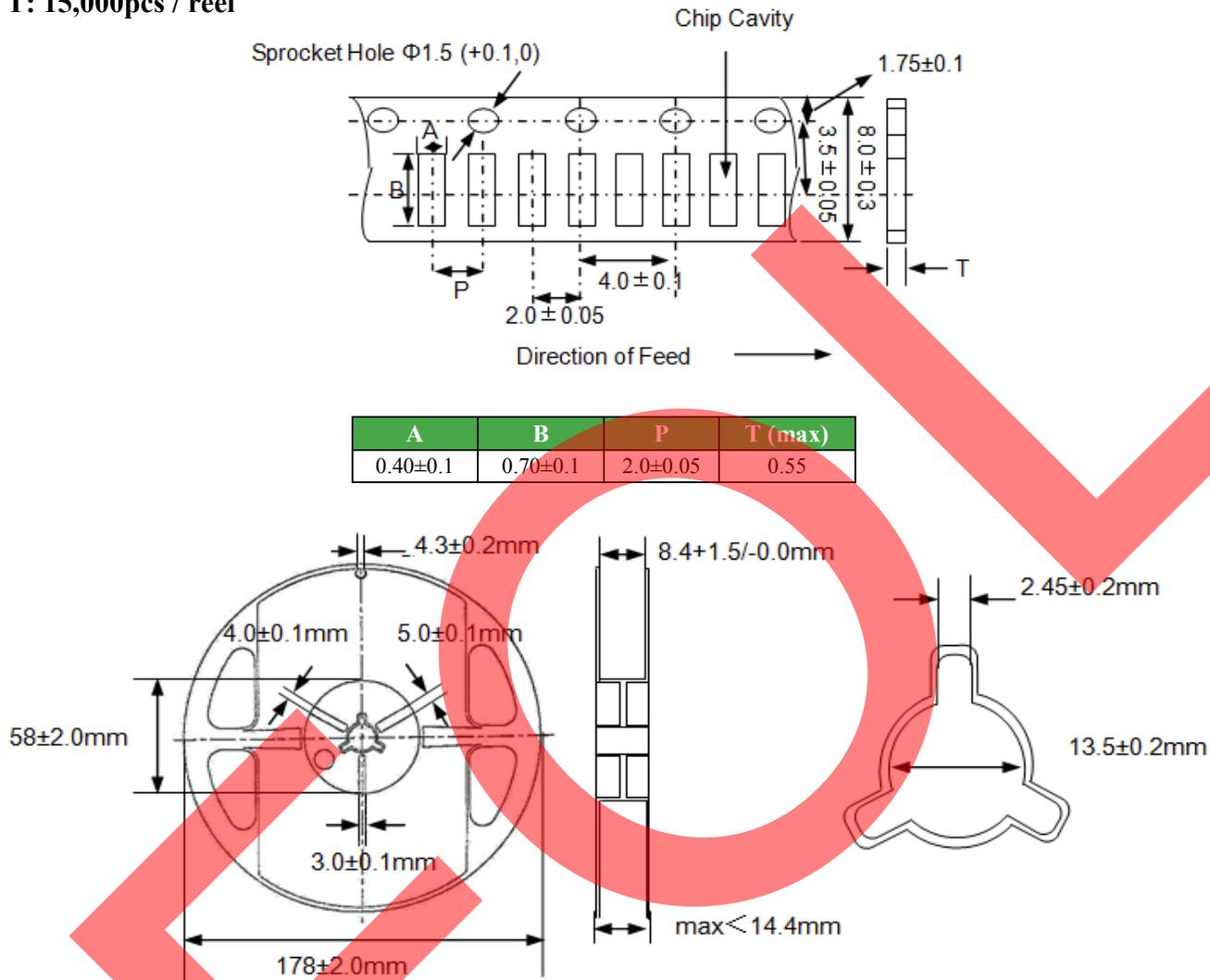
RoHS
Compliant



0.6 x 0.3 x 0.3mm

TAPE & REEL:

T: 15,000pcs / 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 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 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

ATTENTION: Abracon Corporation's products are COTS – Commercial-Off-The-Shelf products; suitable for Commercial, Industrial and, where designated, Automotive Applications. Abracon's products are not specifically designed for Military, Aviation, Aerospace, Life-dependant Medical applications or any application requiring high reliability where component failure could result in loss of life and/or property. For applications requiring high reliability and/or presenting an extreme operating environment, written consent and authorization from Abracon Corporation is required. Please contact Abracon Corporation for more information.

ABRACON IS
ISO 9001:2008
CERTIFIED



Visit www.abracon.com for Terms & Conditions of Sale **Revised: 11.30.12**
30332 Esperanza, Rancho Santa Margarita, California 92688
tel 949-546-8000 | fax 949-546-8001 | www.abracon.com