

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 | | 8/20μs | ESD | Energy 10/1000μs | Peak Current 8/20μs | |
| Test Condition | <20μA | | @1mA DC | 8/20μs | ESD | Energy 10/1000μs | Peak Current 8/20μs | @0.5V _{rms} , 1MHz |
| Units | Volts | Volts | | | | | | |
| 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, 8/20μs |
| 0.10 Joule | 2A, 8/20μs |

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



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| 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

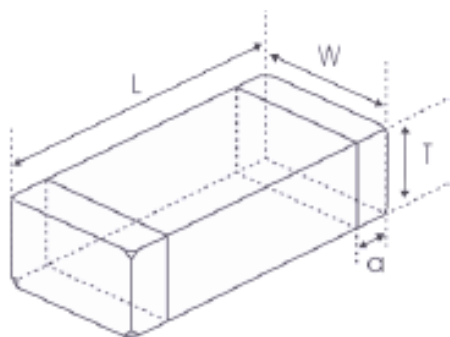
Tolerance

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

Packaging

T: Tape and Reel
(15kpcs / reel)

OUTLINE DIMENSION:



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

Recommended Land Pattern



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

Dimension: mm

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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:

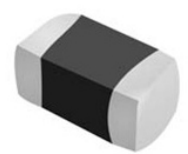


| | |
|-----------------------------|-------------------------------|
| Preheat Condition | 150 to 200 °C; 60 to 120 sec. |
| Allowed time above 217 °C | 60 to 90 sec. |
| Max temperature | 260 °C |
| Max time at max temperature | 10 sec. |
| Solder paste | Sn/3.0Ag/0.5Cu |
| Allowed Reflow time | 2x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

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TAPE & REEL:

T: 15,000pcs / reel



| A | B | P | T (max) |
|----------|----------|----------|---------|
| 0.40±0.1 | 0.70±0.1 | 2.0±0.05 | 0.55 |



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 a. The parts that are stored more than 6 months shall be checked solderability before use.

Dimension: mm

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- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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