



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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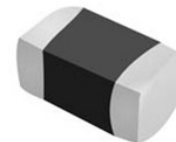
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# SMD Multilayer Chip Varistor

AMCV-0402LC

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	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 <sub>rms</sub> , 1MHz
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
AMCV-0402LC-140-C100	14.0	10.0	16.0-22.0	30	39	0.005	2	10
AMCV-0402LC-140-C120	14.0	10.0	16.0-22.0	30	39	0.005	2	12
AMCV-0402LC-180-C050	18.0	12.7	22.0-28.0	40	48	0.005	2	5
AMCV-0402LC-180-C100	18.0	12.7	22.0-28.0	40	48	0.005	2	10
AMCV-0402LC-260-C030	26.0	18.4	31.0-38.0	58	70	0.003	1	3
AMCV-0402LC-260-C100	26.0	18.4	31.0-38.0	58	70	0.005	2	10

\*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

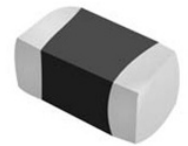
Items	Test Methods and Remarks
Varistor Voltage at 1mA DC (V <sub>B</sub> )	Measuring current: 1mA DC Duration: 0.2 to 2 sec
Capacitance (C)	Measure source: 0.5 V <sub>RMS</sub> Test frequency: 1MHz.
Leakage Current (I <sub>L</sub> )	Measuring voltage: Maximum DC working voltage
Clamping Voltage (V 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

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# SMD Multilayer Chip Varistor



1.0 x 0.5 x 0.5 mm

AMCV-0402LC

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## OPTIONS AND PART IDENTIFICATION:

AMCV-0402LC- - C   -

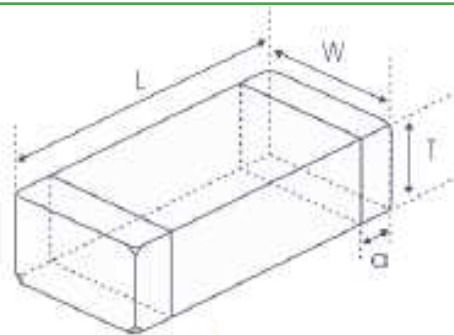
**Voltage Code**  
Please refer to the table above

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

**Tolerance**  
N=±30%  
Y=+100%, -50%  
G=+0%, -60%

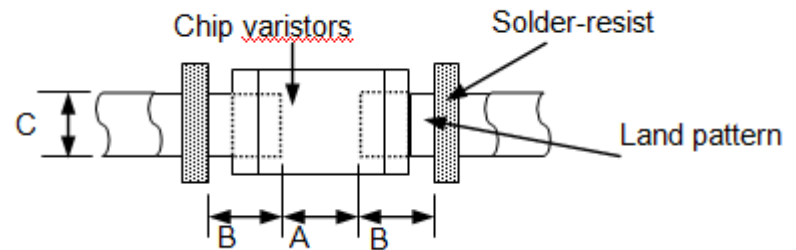
**Packaging**  
T: Tape and Reel  
(10kpcs / reel)

## OUTLINE DIMENSION:



L	W	T	a
1.0±0.15 [0.039±0.006]	0.5±0.15 [0.020±0.006]	0.5±0.15 [0.020±0.006]	0.25±0.1 [0.010±0.004]

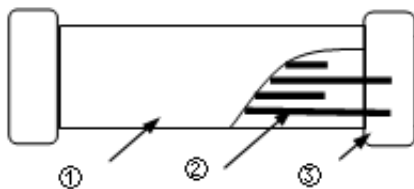
### Recommended Land Pattern



A	B	C
0.45~0.55	0.40~0.50	0.45~0.55

### Materials

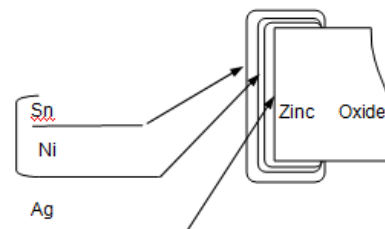
Side View



Top View

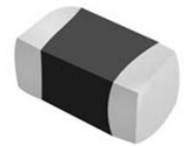


	Part Name	Material
1	Base Material	ZnO
2	Internal Conductor	Ag-Pd
3	Terminal Electrode	Ag (Inner layer) Ni-Sn (Outer layer)





# SMD Multilayer Chip Varistor

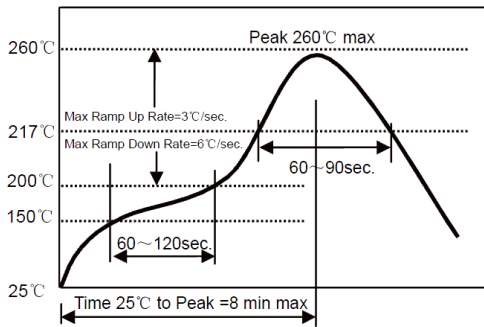


1.0 x 0.5 x 0.5 mm

AMCV-0402LC

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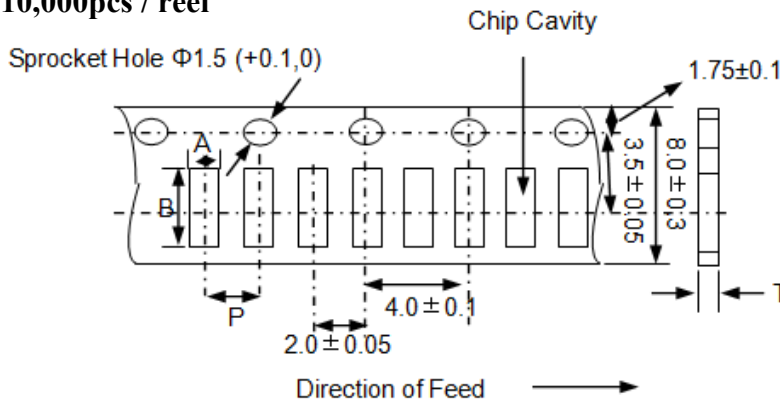
## REFLOW PROFILE:



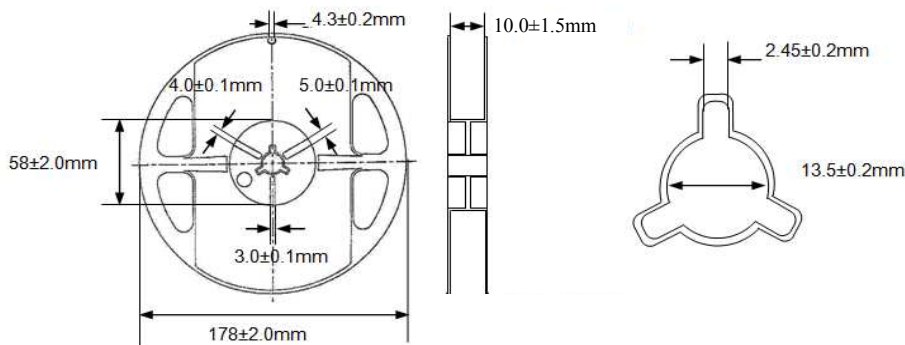
Preheat Condition	150 to 200 °C; 60 to 120 sec.
Allowed time above 217 °C	60 to 90 sec.
Max temperature	260 °C
Max time at max temperature	10 sec.
Solder paste	Sn/3.0Ag/0.5Cu
Allowed Reflow time	2x max.

## TAPE & REEL:

T: 10,000pcs / reel



A	B	P	T (max)
0.65±0.1	1.15±0.1	2.0±0.05	0.8



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

Dimension: mm

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