

# SMD Multilayer Chip Varistor

AMCV-1210H

RoHS  
Compliant



3.2x2.5x1.7mm

## 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

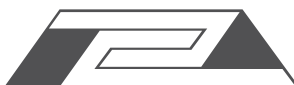
**Storage Temperature:** -10°C ~ +40°C and RH 70% (Max.)

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		Typical Capacitance
Test Condition	<20μA		@1mA DC	8/20μs	ESD	Energy 10/1000μs	Peak Current 8/20μs	@1V <sub>rms</sub> , 1kHz
	DC	AC RMS						
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps	pF
Symbol	V <sub>WDC</sub>	V <sub>WAC</sub>	V <sub>B</sub>	V <sub>C</sub>	I <sub>C</sub>	E <sub>T</sub>	I <sub>P</sub>	C <sub>P</sub>
AMCV-1210H-5R5	5.5	4.0	12.0 [10.0-14.0]	18	5.0	0.7	400	3500
AMCV-1210H-090	9	6.4	14.0 [12.0-16.0]	20	5.0	0.9	400	2800
AMCV-1210H-120	12	8.5	16.0 [13.0-19.0]	25	5.0	1.0	400	2000
AMCV-1210H-140	14	10.0	19.0 [16.0-22.0]	30	5.0	1.2	400	1800
AMCV-1210H-180	18	12.7	25.0 [22.0-28.0]	40	5.0	1.5	400	1400
AMCV-1210H-220	22	15.6	30.0 [26.0-34.0]	45	5.0	1.7	400	1100
AMCV-1210H-260	26	18.4	35.0 [31.0-38.0]	58	5.0	1.9	400	900
AMCV-1210H-300	30	21.3	42.0 [37.0-46.0]	65	5.0	1.7	300	800
AMCV-1210H-380	38	30.0	50.0 [46.0-54.0]	75	5.0	2.0	300	700
AMCV-1210H-480	48	34.1	60.0 [54.0-67.0]	100	5.0	2.0	300	600
AMCV-1210H-560	56	40.0	68.0 [61.0-75.0]	120	5.0	2.3	300	500
AMCV-1210H-600	60	46.0	76.0 [69.0-83.0]	130	5.0	2.3	300	450
AMCV-1210H-650	65	50.0	82.0 [73.0-91.0]	140	5.0	2.0	300	350
AMCV-1210H-750	75	55.0	94.0 [85.0-103.0]	160	5.0	2.0	300	300
AMCV-1210H-850	85	60.0	100.0 [90.0-110.0]	170	5.0	2.0	300	250
AMCV-1210H-101	100	75.0	120.0 [108.0-132.0]	200	5.0	2.0	300	150

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: 1.0 V <sub>RMS</sub> Test frequency: 1kHz.
Clamping Voltage (V <sub>C</sub> )	Measuring source: 8/20us waveform



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## OPTIONS AND PART IDENTIFICATION:

AMCV-1210H- - 

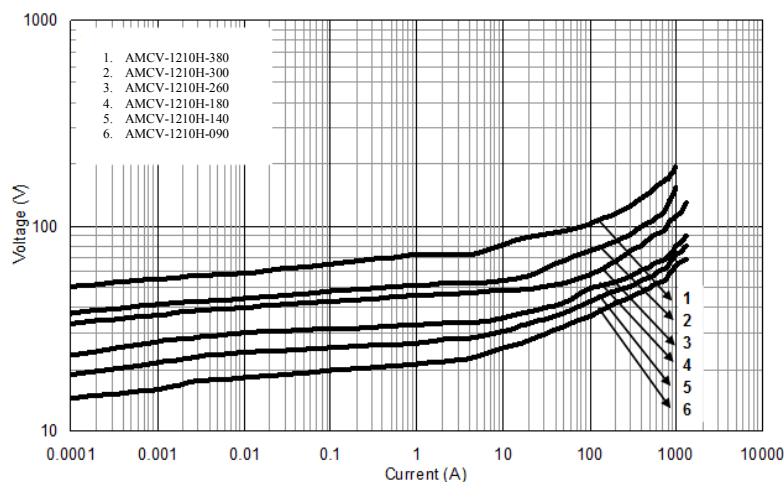
### Voltage Code

Please refer to the table above

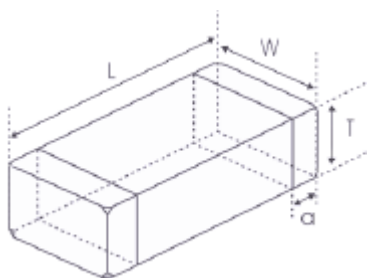
### Packaging

T: Tape and Reel  
(2kpcs / reel)

## V/I CHARACTERISTICS

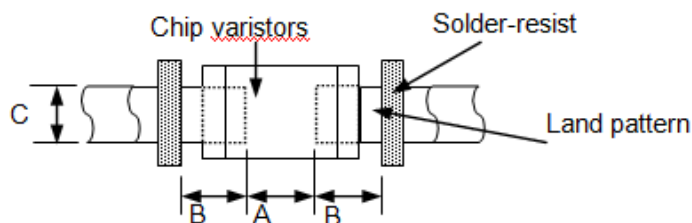


## OUTLINE DIMENSION:



L	W	T	a
3.2±0.3	2.5±0.25	1.7Max.	0.25~0.75

### Recommended Land Pattern



A	B	C
1.9~2.1	1.2~1.5	2.6~2.8

Dimension: mm



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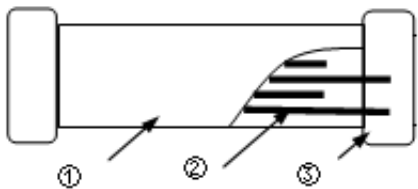
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3.2x2.5x1.7mm

## Materials

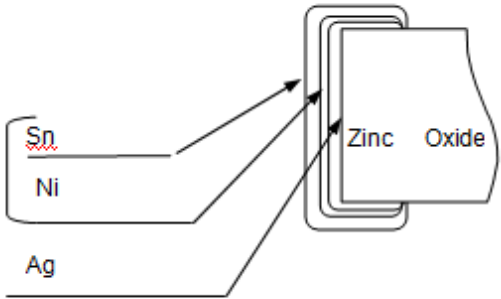
Side View



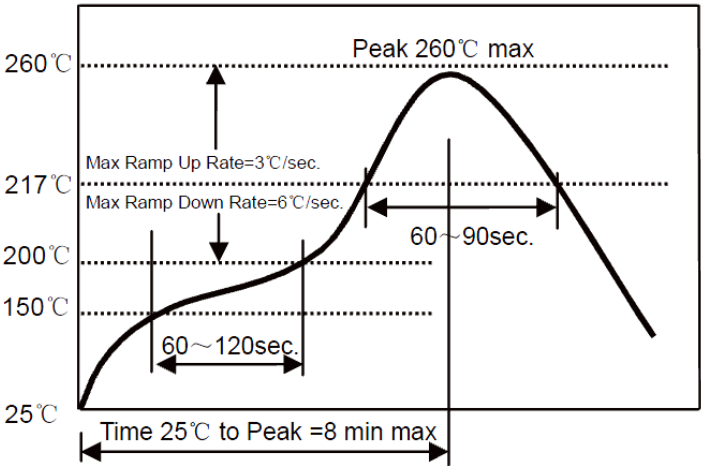
Top View



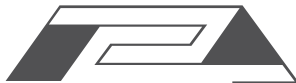
	Part Name	Material
1	Base Material	ZnO
2	Internal Conductor	Ag-Pd
3	Terminal Electrode	Ag (Inner layer) Ni-Sn (Outer layer)



## 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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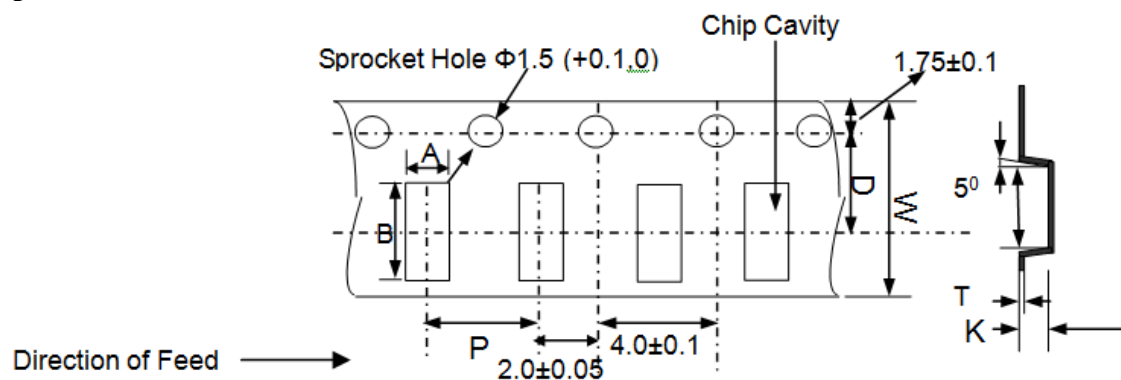
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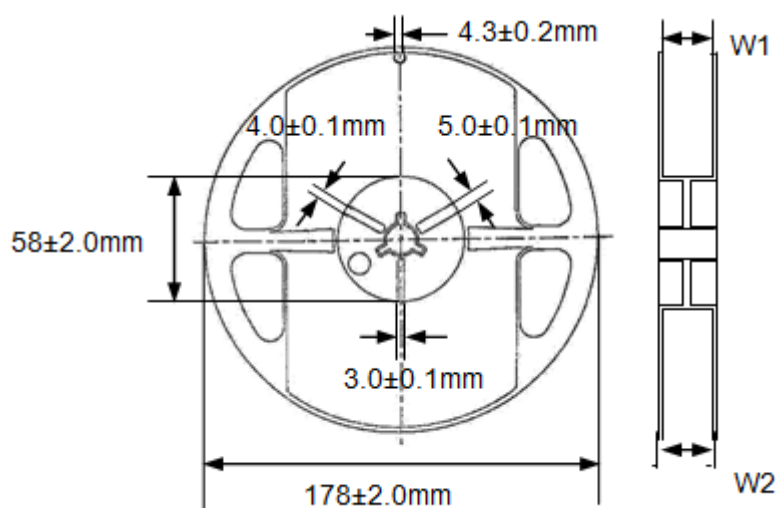
3.2x2.5x1.7mm

## TAPE & REEL:

T: 2,000pcs / reel



W	A	B	D	P	K max	T max
8.0	2.75	3.45	3.50	4.0	1.80	0.33



W1	W2
$10.0 \pm 0.5$	$12.5 \pm 0.5$

## 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  $40^\circ\text{C}$  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  $\text{H}_2\text{S}$ ).
- Packaging material may be deformed if package 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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