

Varistors for Surge Protection



AMCV-SS1210

Request Samples



Check Inventory



3.2 x 2.5 x 2.5 mm
RoHS/RoHS II Compliant
MSL Level = 2

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)
- Green, meet RoHS requirements.

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

Electrical Specifications

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Volts/Amps		Rated Single Pulse Transient		
Test Condition	<30μA		@1mA DC	8/20μs		Energy 10/1000μs	Peak Current 8/20μs	Nominal Current 8/20μs
	DC	AC RMS						
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps	Amps
Symbol	VDC	VAC	VB	VC	IC	E _T	I _P	I _N
AMCV-SS1210-090-401	9	6.4	14.0 [12.0-16.0]	30	5.0	0.5	400	250
AMCV-SS1210-180-401	18	12.7	25.0 [22.0-28.0]	45	5.0	0.5	400	250
AMCV-SS1210-180-102	18	12.7	25.0 [22.0-28.0]	45	5.0	1.5	1000	700
AMCV-SS1210-220-401	22	15.6	30.0 [26.0-34.0]	50	5.0	0.5	400	250
AMCV-SS1210-300-301	30	21.3	42.0 [37.0-46.0]	70	5.0	0.5	300	200
AMCV-SS1210-300-401	30	21.3	42.0 [37.0-46.0]	70	5.0	0.5	400	250
AMCV-SS1210-300-102	30	21.3	42.0 [37.0-46.0]	70	5.0	2.0	1000	700
AMCV-SS1210-380-301	38	30.0	50.0 [46.0-54.0]	80	5.0	0.8	300	200
AMCV-SS1210-380-401	38	30.0	50.0 [46.0-54.0]	80	5.0	0.8	400	250
AMCV-SS1210-380-102	38	30.0	50.0 [46.0-54.0]	80	5.0	2.5	1000	700
AMCV-SS1210-420-301	42	32.0	53.0 [48.0-58.0]	100	5.0	0.8	300	200
AMCV-SS1210-480-301	48	34.1	60.0 [54.0-67.0]	110	5.0	0.8	300	200
AMCV-SS1210-480-102	48	34.1	60.0 [54.0-67.0]	110	5.0	3.0	1000	700
AMCV-SS1210-560-151	56	40.0	68.0 [61.0-75.0]	125	5.0	0.5	150	100
AMCV-SS1210-560-301	56	40.0	68.0 [61.0-75.0]	125	5.0	1.0	300	200
AMCV-SS1210-560-122	56	40.0	68.0 [61.0-75.0]	125	5.0	4.0	1200	800
AMCV-SS1210-600-301	60	46.0	76.0 [69.0-83.0]	130	5.0	1.0	300	200
AMCV-SS1210-600-801	60	46.0	76.0 [69.0-83.0]	130	5.0	4.0	800	500
AMCV-SS1210-600-122	60	46.0	76.0 [69.0-83.0]	130	5.0	4.0	1200	800



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REVISION Initial Release :
4/15/2026

ABRACON IS
ISO9001-2015
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Electrical Specifications Continued

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Volts/Amps		Rated Single Pulse Transient		
Test Condition	<20μA		@1mA DC	8/20μs		Energy 10/1000μs	Peak Current 8/20μs	Nominal Current 8/20μs
	DC	AC RMS						
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps	Amps
Symbol	VDC	VAC	VB	VC	IC	ET	IP	IN
AMCV-SS1210-650-201	65	50.0	82.0 [73.0-91.0]	135	5.0	1.4	200	120
AMCV-SS1210-650-301	65	50.0	82.0 [73.0-91.0]	135	5.0	1.6	300	200
AMCV-SS1210-650-601	65	50.0	82.0 [73.0-91.0]	135	5.0	2.0	600	400
AMCV-SS1210-650-801	65	50.0	82.0 [73.0-91.0]	135	5.0	2.0	800	500
AMCV-SS1210-650-102	65	50.0	82.0 [73.0-91.0]	135	5.0	4.0	1000	700
AMCV-SS1210-650-122	65	50.0	82.0 [73.0-91.0]	135	5.0	4.0	1200	800
AMCV-SS1210-850-201	85	60.0	100.0 [90.0-110.0]	165	5.0	0.7	200	140
AMCV-SS1210-850-401	85	60.0	100.0 [90.0-110.0]	165	5.0	1.6	400	250
AMCV-SS1210-850-152	85	60.0	100.0 [90.0-110.0]	165	5.0	4.0	1500	1000
AMCV-SS1210-101-201	100	75.0	120.0 [108.0-132.0]	200	5.0	1.0	200	140
AMCV-SS1210-101-102	100	75.0	120.0 [108.0-132.0]	200	5.0	5.0	1000	700

Operating Temperature: -55°C to +125°C

Storage: Temperature 10°C to +50°C, RH<60%, Max. Humidity <85% RH

Items	Test Methods and Remarks
Varistor Voltage at 1mA DC (VB)	Measuring current: 1mA DC, Duration: 0.2 to 2 sec
Capacitance (C)	Measure source: 1.0 VRMS, Test frequency: 1kHz.
Clamping Voltage (Vc)	Measuring source: 8/20us waveform

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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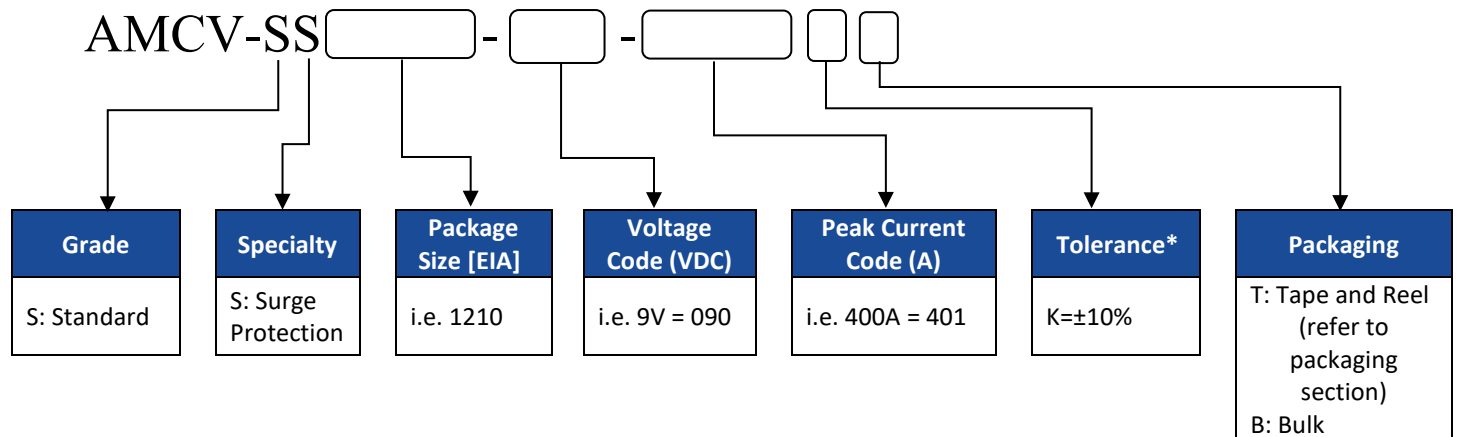


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Part Number Identification



* Tolerance refers to varistor voltage.

Part Marking

No Marking

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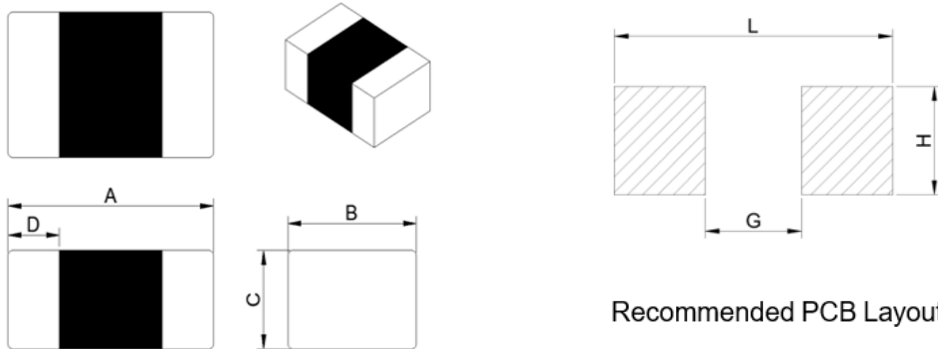


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Mechanical Specifications

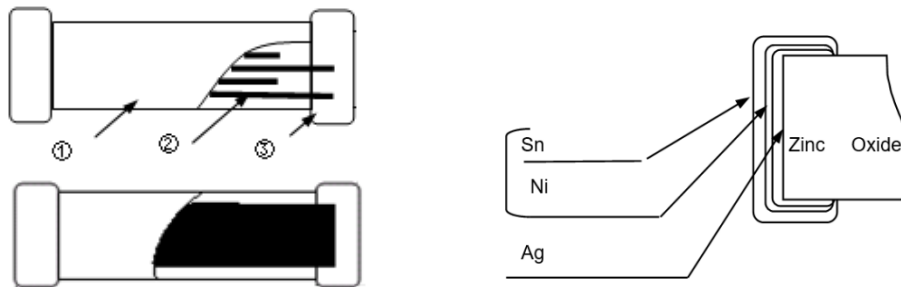


Recommended PCB Layout

Series	A	B	C	D	L (ref)	G (ref)	H (ref)
AMCV-SS1210	3.2±0.2	2.5±0.2	2.5 Max.	0.25~0.75	4.3 - 5.10	1.90 - 2.10	2.60 - 2.80

Dimensions: mm

Materials



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

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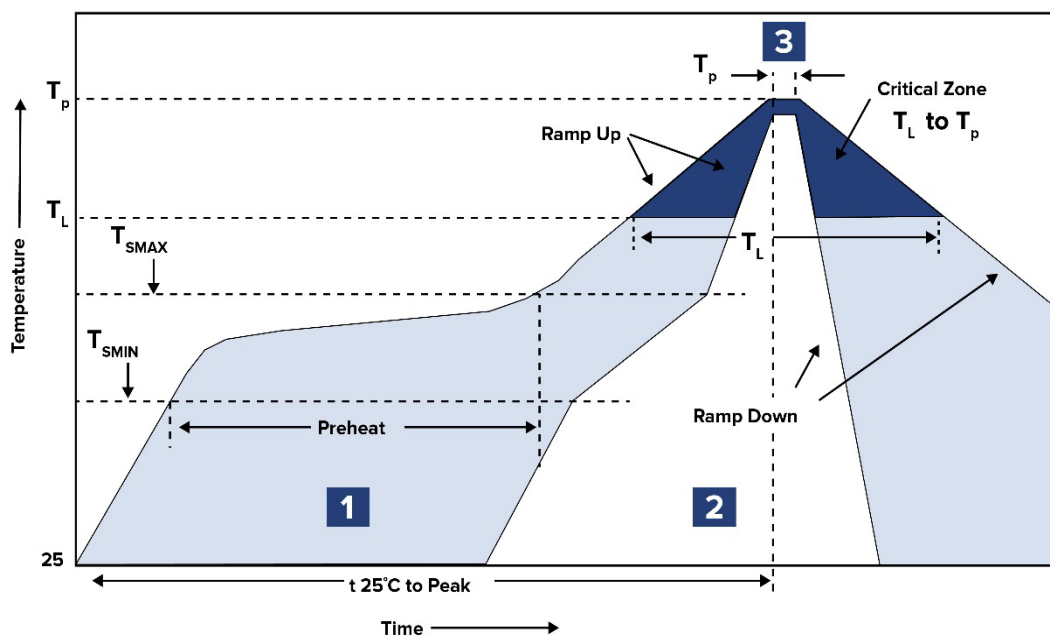


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Reflow Profile



Zone	Description	Temperature	Times
1	Preheat	$T_{SMIN} \sim T_{SMAX}$ 150°C ~ 200°C	60 ~ 120 sec.
2	Reflow	T_L ≥217°C	60 ~ 90 sec.
3	Peak heat	T_P 260°C Max.	10 sec. MAX

Ref Paste: Sn/3.0Ag/0.5Cu (Lead-Free)

Max ramp up rate:3°C/Sec

Max ramp down rate:6°C/Sec

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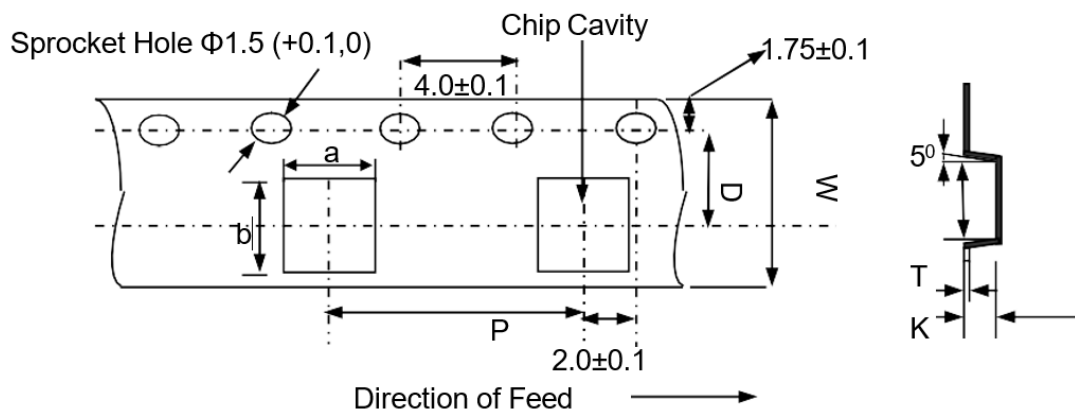
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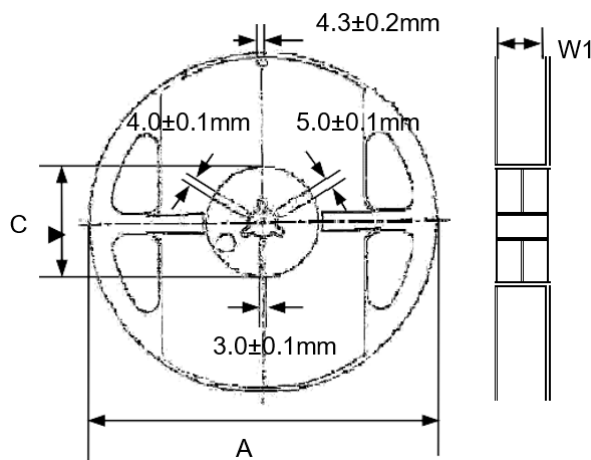
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Packaging

Tape & Reel: Refer to table on next page to determine pieces/reel



a	b	P	D	W	K	T
2.1±0.1	3.9±0.1	4.0±0.1	3.5±0.05	8.0±0.3	2.90	0.30



A	C	W1
178±2.0	58±2.0	8.4±1.5/-0.0

Dimensions: mm

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Pieces per Reel

Part Number	Reel Type	Quantity
AMCV-SS1210-090-401	Embossed Tape	2K
AMCV-SS1210-180-401	Embossed Tape	2K
AMCV-SS1210-180-102	Embossed Tape	2K
AMCV-SS1210-220-401	Embossed Tape	2K
AMCV-SS1210-300-301	Embossed Tape	2K
AMCV-SS1210-300-401	Embossed Tape	2K
AMCV-SS1210-300-102	Embossed Tape	2K
AMCV-SS1210-380-301	Embossed Tape	2K
AMCV-SS1210-380-401	Embossed Tape	2K
AMCV-SS1210-380-102	Embossed Tape	2K
AMCV-SS1210-420-301	Embossed Tape	2K
AMCV-SS1210-480-301	Embossed Tape	2K
AMCV-SS1210-480-102	Embossed Tape	1.5K
AMCV-SS1210-560-151	Embossed Tape	2K
AMCV-SS1210-560-301	Embossed Tape	2K
AMCV-SS1210-560-122	Embossed Tape	1.5K
AMCV-SS1210-600-301	Embossed Tape	2K
AMCV-SS1210-600-801	Embossed Tape	1.5K
AMCV-SS1210-600-122	Embossed Tape	1.5K
AMCV-SS1210-650-601	Embossed Tape	2K
AMCV-SS1210-650-301	Embossed Tape	2K
AMCV-SS1210-650-601	Embossed Tape	1.5K
AMCV-SS1210-650-801	Embossed Tape	1.5K
AMCV-SS1210-650-102	Embossed Tape	1.5K
AMCV-SS1210-650-122	Embossed Tape	1.5K
AMCV-SS1210-850-201	Embossed Tape	2K
AMCV-SS1210-850-401	Embossed Tape	1.5K
AMCV-SS1210-850-152	Embossed Tape	1.5K
AMCV-SS1210-101-201	Embossed Tape	2K
AMCV-SS1210-101-102	Embossed Tape	1.5K

ATTENTION: Abracon LLC's products are Commercial-Off-The-Shelf (COTS, which are designed, intended and validated for use in commercial, industrial and automotive applications. The customer is responsible for testing and verifying the performance of an Abracon solution to meet their system-level requirements.



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