

Varistors for Surge Protection



AMCV-SS2220

Request Samples



Check Inventory



5.9 x 5.1 x 3.2 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-SS2220-090-122	9	6.4	14.0 [12.0-16.0]	30	10.0	1.5	1200	800
AMCV-SS2220-180-122	18	12.7	25.0 [22.0-28.0]	45	10.0	1.5	1200	800
AMCV-SS2220-180-302	18	12.7	25.0 [22.0-28.0]	45	10.0	4.0	3000	2000
AMCV-SS2220-300-122	30	21.3	42.0 [37.0-46.0]	70	10.0	2.6	1200	800
AMCV-SS2220-300-302	30	21.3	42.0 [37.0-46.0]	70	10.0	7.0	3000	2000
AMCV-SS2220-330-122	33	23.4	44.0 [39.0-49.0]	75	10.0	2.6	1200	800
AMCV-SS2220-380-122	38	30.0	50.0 [46.0-54.0]	80	10.0	2.6	1200	800
AMCV-SS2220-380-302	38	30.0	50.0 [46.0-54.0]	80	10.0	8.0	3000	2000
AMCV-SS2220-380-502	38	30.0	50.0 [46.0-54.0]	80	10.0	10.0	5000	3000
AMCV-SS2220-480-901	48	34.1	60.0 [54.0-67.0]	110	10.0	3.0	900	600
AMCV-SS2220-480-102	48	34.1	60.0 [54.0-67.0]	110	10.0	3.0	1000	700
AMCV-SS2220-480-302	48	34.1	60.0 [54.0-67.0]	110	10.0	10.0	3000	2000
AMCV-SS2220-560-901	56	40.0	68.0 [61.0-75.0]	125	10.0	3.0	900	600
AMCV-SS2220-560-502	56	40.0	68.0 [61.0-75.0]	125	10.0	17.0	5000	3000
AMCV-SS2220-600-901	60	46.0	76.0 [69.0-83.0]	130	10.0	2.7	900	600
AMCV-SS2220-600-502	60	46.0	76.0 [69.0-83.0]	130	10.0	15.0	5000	3000
AMCV-SS2220-650-801	65	50.0	82.0 [73.0-91.0]	135	10.0	3.0	800	500
AMCV-SS2220-650-901	65	50.0	82.0 [73.0-91.0]	135	10.0	3.0	900	600
AMCV-SS2220-650-152	65	50.0	82.0 [73.0-91.0]	135	10.0	5.0	1500	1000



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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	E _T	I _P	I _N
AMCV-SS2220-650-202	65	50.0	82.0 [73.0-91.0]	135	10.0	7.5	2000	1200
AMCV-SS2220-650-302	65	50.0	82.0 [73.0-91.0]	135	10.0	10.0	3000	2000
AMCV-SS2220-650-502	65	50.0	82.0 [73.0-91.0]	135	10.0	18.0	5000	3000
AMCV-SS2220-850-801	85	60.0	100.0 [90.0-110.0]	165	10.0	4.0	800	500
AMCV-SS2220-850-252	85	60.0	100.0 [90.0-110.0]	165	10.0	10.0	2500	1500
AMCV-SS2220-850-452	85	60.0	100.0 [90.0-110.0]	165	10.0	21.0	4500	3000
AMCV-SS2220-101-801	100	75.0	120.0 [108.0-132.0]	200	10.0	4.0	800	500
AMCV-SS2220-101-302	100	75.0	120.0 [108.0-132.0]	200	10.0	10.0	3000	2000
AMCV-SS2220-101-402	100	75.0	120.0 [108.0-132.0]	200	10.0	21.0	4000	2500
AMCV-SS2220-121-202	125	95.0	150.0 [135.0-165.0]	260	5.0	12.0	2000	1200
AMCV-SS2220-151-152	150	115	180.0 [162.0-198.0]	325	5.0	12.0	1500	1000

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 (V _B)	Measuring current: 1mA DC, Duration: 0.2 to 2 sec
Capacitance (C)	Measure source: 1.0 V _{RMS} , Test frequency: 1kHz.
Clamping Voltage (V _c)	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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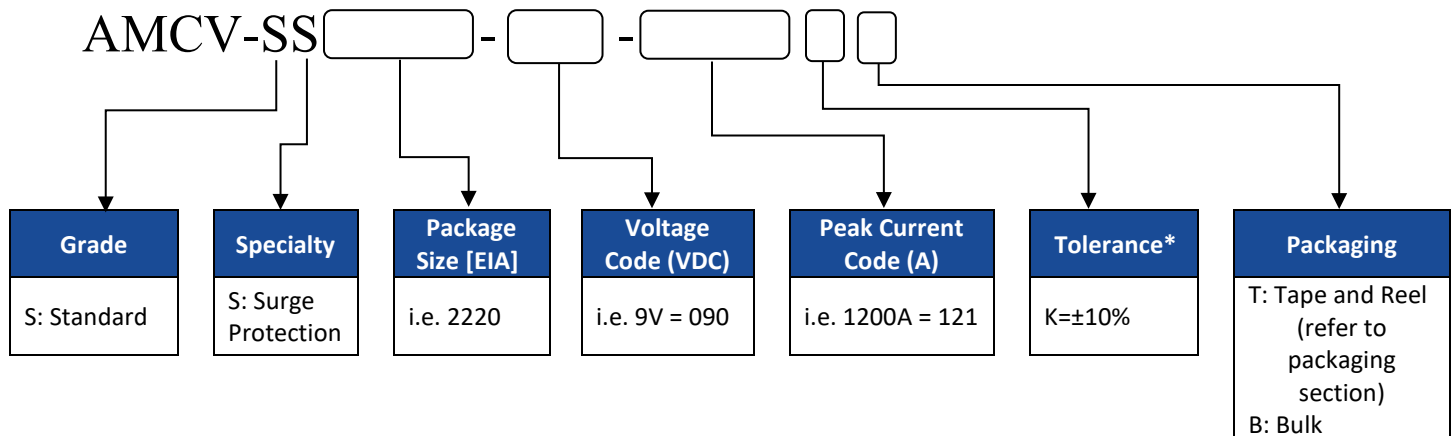


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Part Number Identification



* Tolerance refers to varistor voltage.

Part Marking

No Marking



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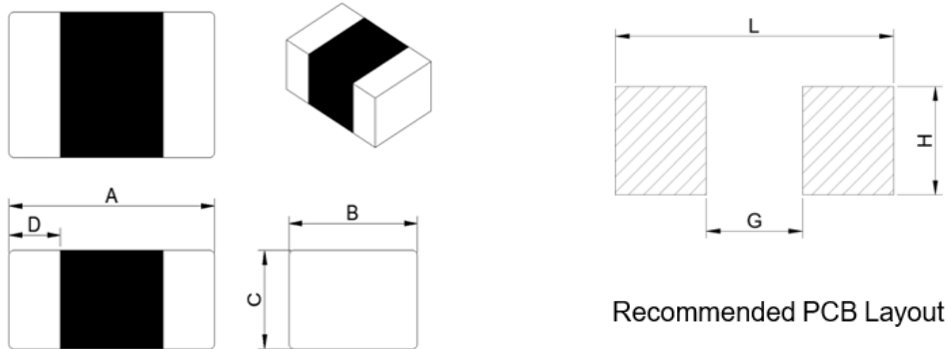


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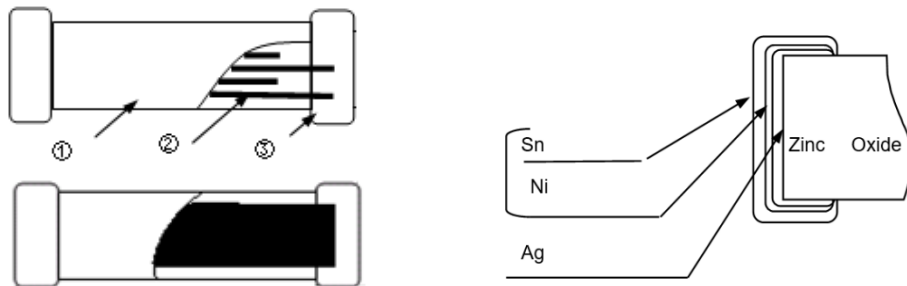
Mechanical Specifications



Series	A	B	C	D	L (ref)	G (ref)	H (ref)
AMCV-SS2220	5.9±0.2	5.1±0.2	3.2 Max.	0.25~1.3	7.6 - 8.2	4.0 – 4.2	5.2 – 5.5

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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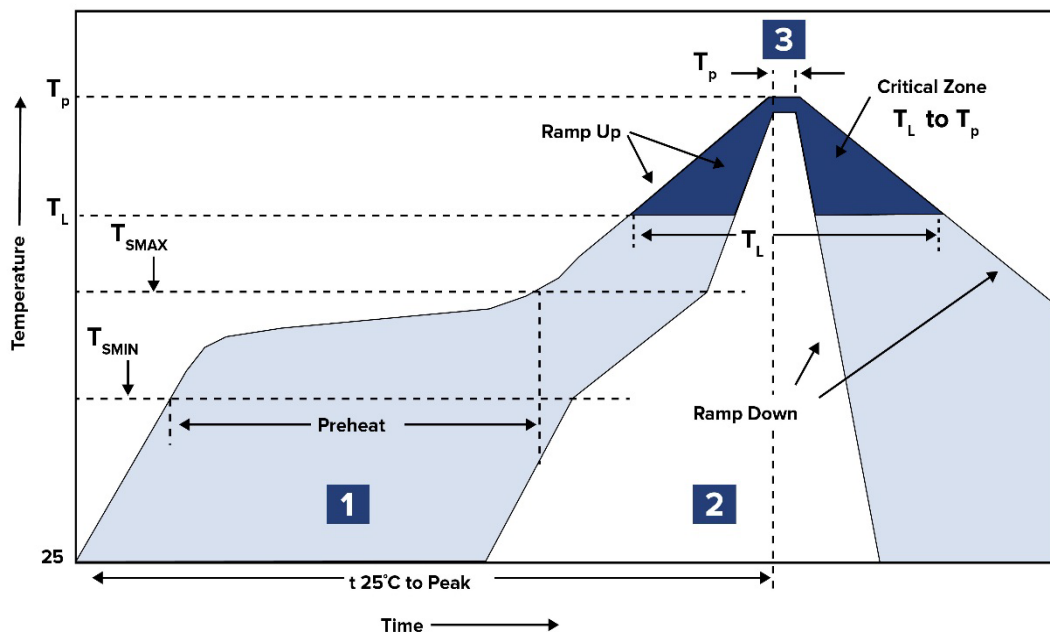


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Reflow Profile



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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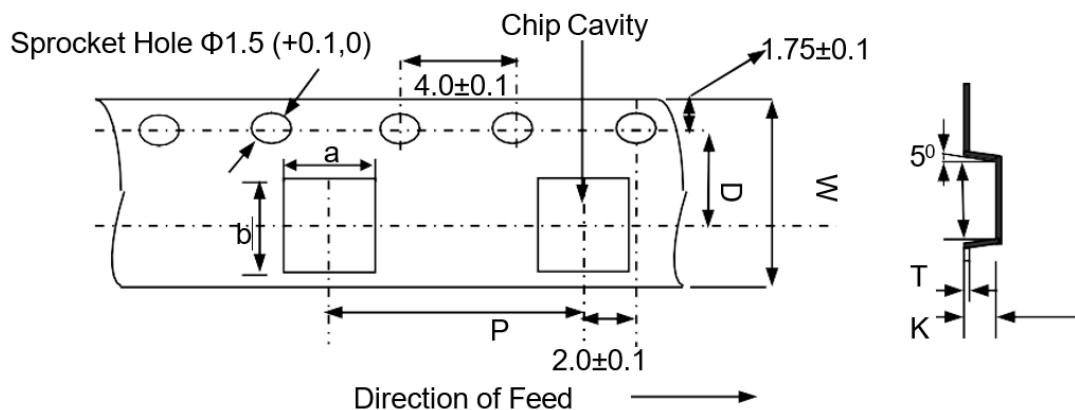
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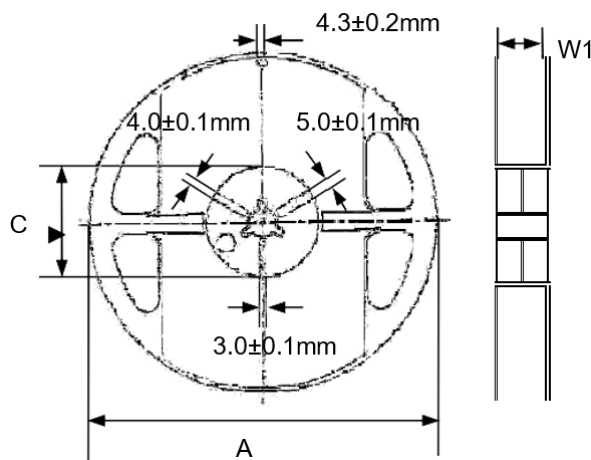
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RoHS/RoHS II Compliant
 MSL Level = 2

Packaging

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



a	b	P	D	W	K	T
5.4	6.1	4.0 ± 0.1	5.5	12.0	2.90	0.40



A	C	W1
330	100	$12.4 + 1.5 / - 0.0$

Dimensions: mm



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Pieces per Reel

Part Number	Reel Type	Quantity
AMCV-SS2220-090-122	Embossed Tape	3K
AMCV-SS2220-180-122	Embossed Tape	3K
AMCV-SS2220-180-302	Embossed Tape	3K
AMCV-SS2220-300-122	Embossed Tape	3K
AMCV-SS2220-300-302	Embossed Tape	3K
AMCV-SS2220-330-122	Embossed Tape	3K
AMCV-SS2220-380-122	Embossed Tape	3K
AMCV-SS2220-380-302	Embossed Tape	2K
AMCV-SS2220-380-502	Embossed Tape	2K
AMCV-SS2220-480-901	Embossed Tape	2K
AMCV-SS2220-480-102	Embossed Tape	3K
AMCV-SS2220-480-302	Embossed Tape	3K
AMCV-SS2220-560-901	Embossed Tape	2K
AMCV-SS2220-560-502	Embossed Tape	3K
AMCV-SS2220-600-901	Embossed Tape	2K
AMCV-SS2220-600-502	Embossed Tape	3K
AMCV-SS2220-650-801	Embossed Tape	2K
AMCV-SS2220-650-901	Embossed Tape	3K
AMCV-SS2220-650-152	Embossed Tape	3K
AMCV-SS2220-650-202	Embossed Tape	3K
AMCV-SS2220-650-302	Embossed Tape	2K
AMCV-SS2220-650-502	Embossed Tape	2K
AMCV-SS2220-850-801	Embossed Tape	2K
AMCV-SS2220-850-252	Embossed Tape	2K
AMCV-SS2220-850-452	Embossed Tape	3K
AMCV-SS2220-101-801	Embossed Tape	2K
AMCV-SS2220-101-302	Embossed Tape	2K
AMCV-SS2220-101-402	Embossed Tape	3K
AMCV-SS2220-121-202	Embossed Tape	2K
AMCV-SS2220-151-152	Embossed Tape	2K

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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