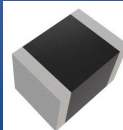


Varistors for Surge Protection



AMCV-SS1812

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

Features

- MLV (multi-layer varistor) construction for fast response.
- 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

- DC Power rail protection.
- Protection for industrial sensors and I/O.
- Relay and solenoid inductive coil surge suppression.
- Low power DC motor drives.
- Communication equipment like wired ethernet interfaces and wireless RF power modules.
- Battery powered and energy storage systems.
- Embedded microcontroller I/O protection.

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-SS1812-090-801	9	6.4	14.0 [12.0-16.0]	30	5.0	0.5	800	500
AMCV-SS1812-180-801	18	12.7	25.0 [22.0-28.0]	45	5.0	0.5	800	500
AMCV-SS1812-180-202	18	12.7	25.0 [22.0-28.0]	45	5.0	1.3	2000	1200
AMCV-SS1812-260-142	26	18.4	35.0 [31.0-38.0]	60	5.0	1.0	1400	1000
AMCV-SS1812-300-801	30	21.3	42.0 [37.0-46.0]	70	5.0	0.7	800	500
AMCV-SS1812-300-152	30	21.3	42.0 [37.0-46.0]	70	5.0	1.0	1500	1000
AMCV-SS1812-300-202	30	21.3	42.0 [37.0-46.0]	70	5.0	2.0	2000	1200
AMCV-SS1812-380-801	38	30.0	50.0 [46.0-54.0]	80	5.0	1.0	800	500
AMCV-SS1812-380-202	38	30.0	50.0 [46.0-54.0]	80	5.0	2.5	2000	1200
AMCV-SS1812-420-601	42	32.0	53.0 [48.0-58.0]	100	5.0	1.0	600	400
AMCV-SS1812-480-601	48	34.1	60.0 [54.0-67.0]	110	5.0	1.1	600	400
AMCV-SS1812-480-202	48	34.1	60.0 [54.0-67.0]	110	5.0	3.0	2000	1200
AMCV-SS1812-560-601	56	40.0	68.0 [61.0-75.0]	125	5.0	1.1	600	400
AMCV-SS1812-560-202	56	40.0	68.0 [61.0-75.0]	125	5.0	3.5	2000	1200
AMCV-SS1812-600-601	60	46.0	76.0 [69.0-83.0]	130	5.0	1.1	600	400
AMCV-SS1812-600-202	60	46.0	76.0 [69.0-83.0]	130	5.0	3.0	2000	1200
AMCV-SS1812-650-601	65	50.0	82.0 [73.0-91.0]	135	5.0	1.5	600	400
AMCV-SS1812-650-202	65	50.0	82.0 [73.0-91.0]	135	5.0	5.0	2000	1200
AMCV-SS1812-650-302	65	50.0	82.0 [73.0-91.0]	135	5.0	7.5	3000	1800

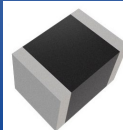


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REVISION Initial Release :
5/4/2026

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Varistors for Surge Protection



AMCV-SS1812

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

Electrical Specifications Continued

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Volts/Amps		Rated Single Pulse Transient		
Test Condition	<20 μ A		@1mA DC	8/20 μ s		Energy 10/1000 μ s	Peak Current 8/20 μ s	Nominal Current 8/20 μ s
	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-SS1812-750-501	75	55.0	94.0 [85.0-103.0]	160	5.0	2.0	500	300
AMCV-SS1812-850-501	85	60.0	100.0 [90.0-110.0]	165	5.0	2.0	500	300
AMCV-SS1812-850-152	85	60.0	100.0 [90.0-110.0]	165	5.0	7.0	1500	1000
AMCV-SS1812-101-501	100	75.0	120.0 [108.0-132.0]	200	5.0	2.0	500	300
AMCV-SS1812-101-152	100	75.0	120.0 [108.0-132.0]	200	5.0	7.0	1500	1000
AMCV-SS1812-121-801	125	95.0	150.0 [135.0-165.0]	260	5.0	0.5	800	500
AMCV-SS1812-151-501	150	115	180.0 [162.0-198.0]	325	5.0	0.5	500	300

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 $\pm$ 15°C
- Relative Humidity: 65 $\pm$ 20%
- Air Pressure: 86 kPa to 106 kPa

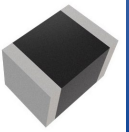


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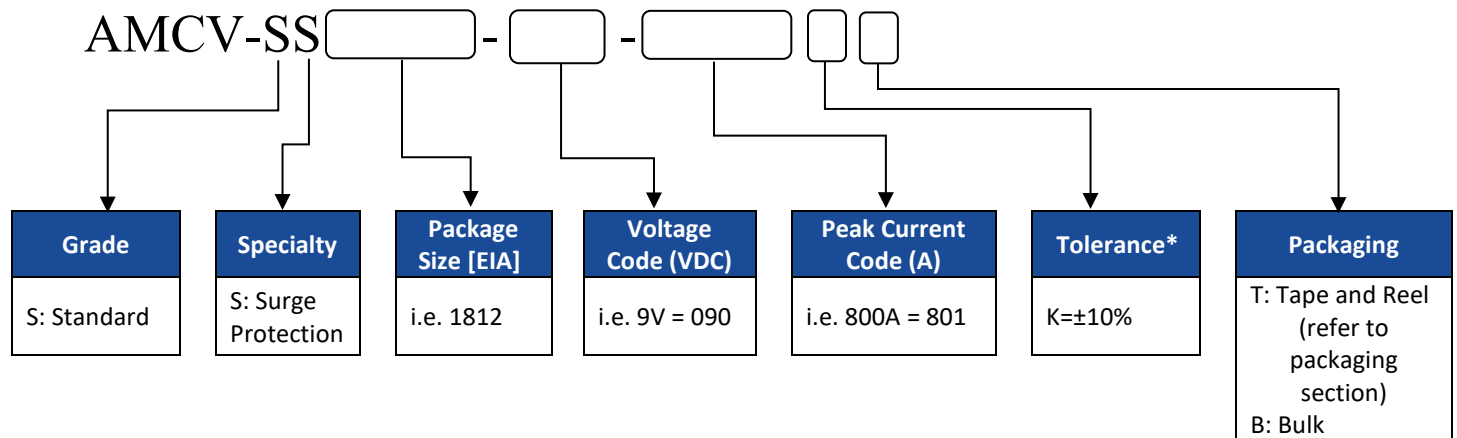


Check Inventory



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

Part Number Identification

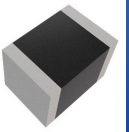


* Tolerance refers to varistor voltage.

Part Marking

No Marking

Varistors for Surge Protection



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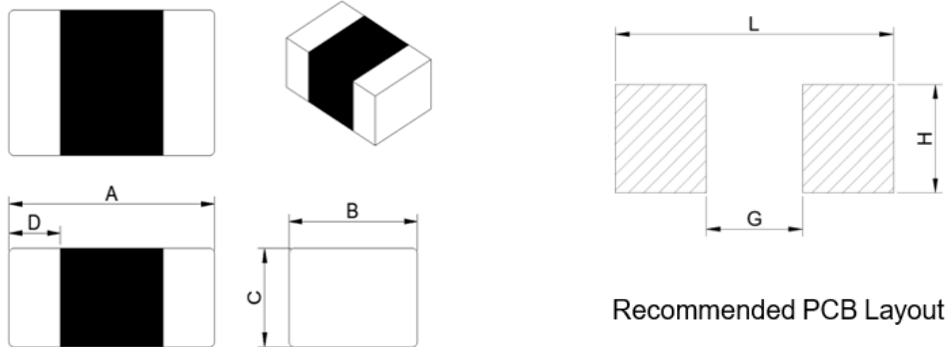


Check Inventory



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

Mechanical Specifications

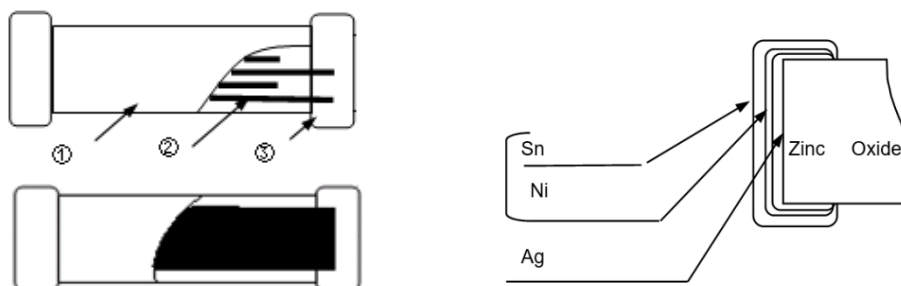


Recommended PCB Layout

Series	A	B	C	D	L (ref)	G (ref)	H (ref)
AMCV-SS1812	4.5±0.4	3.2±0.3	3.2 Max.	0.25~1.0	5.80 - 6.6	2.8 - 3.0	3.3 - 3.6

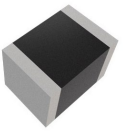
Dimensions: mm

Materials



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

Varistors for Surge Protection



AMCV-SS1812

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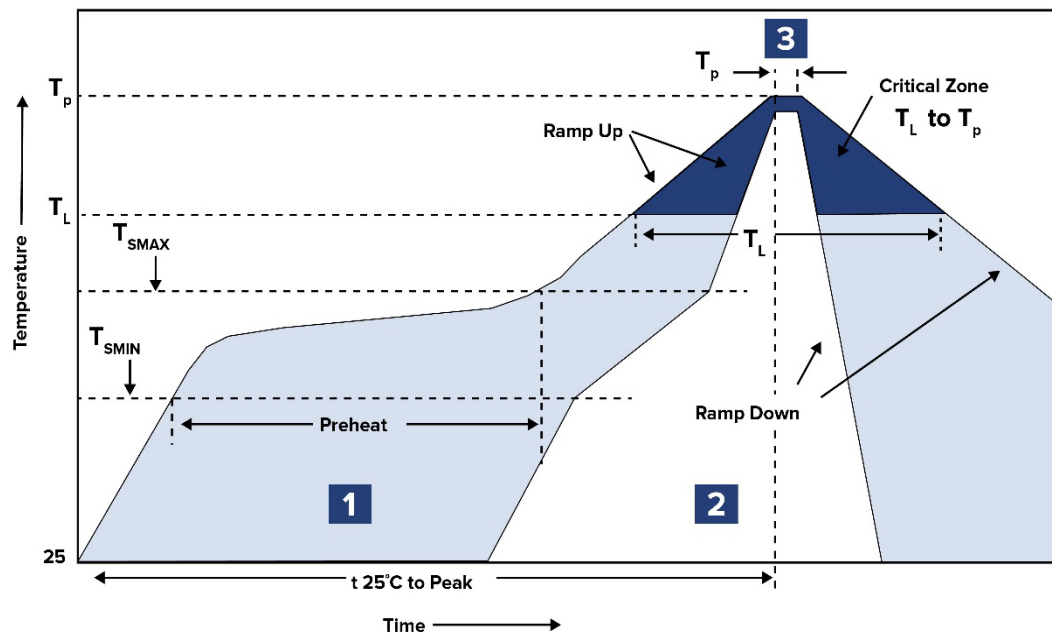


Check Inventory



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

Reflow Profile



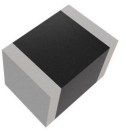
Zone	Description	Temperature	Times
1	Preheat	$T_{SMIN} \sim T_{SMAX}$ $150^{\circ}C \sim 200^{\circ}C$	60 ~ 120 sec.
2	Reflow	T_L $\geq 217^{\circ}C$	60 ~ 90 sec.
3	Peak heat	T_P $260^{\circ}C \text{ Max.}$	10 sec. MAX

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

Max ramp up rate: $3^{\circ}C/Sec$

Max ramp down rate: $6^{\circ}C/Sec$

Varistors for Surge Protection



AMCV-SS1812

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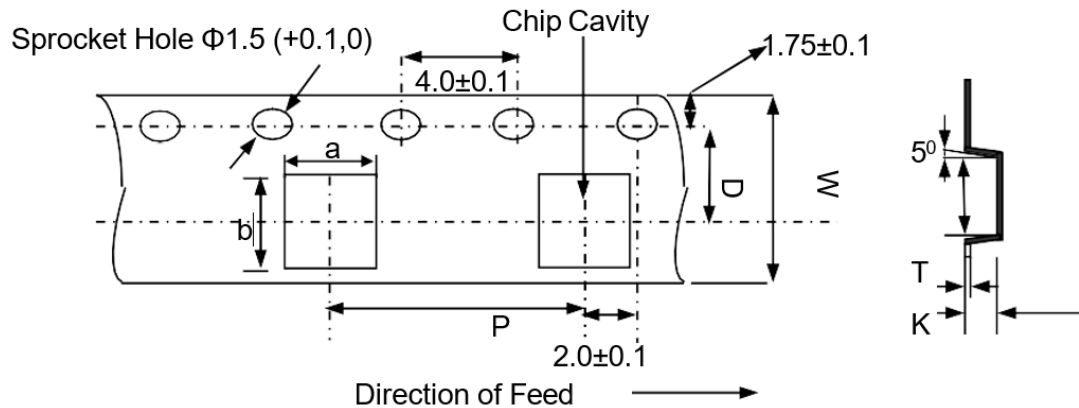
Check Inventory



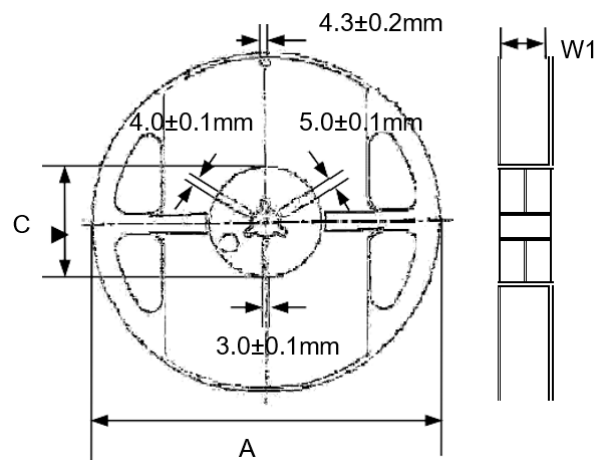
4.5 x 3.2 x 3.2 mm
RoHS/RoHS II Compliant
MSL Level = 2

Packaging

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



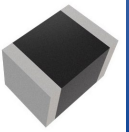
a	b	P	D	W	K	T
3.80	5.20	8.0	5.50	12.0	3.80	0.33



A	C	W1
330	100	12.4+2.0/-0.0

Dimensions: mm

Varistors for Surge Protection



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

Pieces per Reel

Part Number	Reel Type	Quantity
AMCV-SS1812-090-801	Embossed Tape	4K
AMCV-SS1812-180-801	Embossed Tape	4K
AMCV-SS1812-180-202	Embossed Tape	4K
AMCV-SS1812-260-142	Embossed Tape	4K
AMCV-SS1812-300-801	Embossed Tape	4K
AMCV-SS1812-300-152	Embossed Tape	4K
AMCV-SS1812-300-202	Embossed Tape	4K
AMCV-SS1812-380-801	Embossed Tape	4K
AMCV-SS1812-380-202	Embossed Tape	4K
AMCV-SS1812-420-601	Embossed Tape	4K
AMCV-SS1812-480-601	Embossed Tape	4K
AMCV-SS1812-480-202	Embossed Tape	2K
AMCV-SS1812-560-601	Embossed Tape	4K
AMCV-SS1812-560-202	Embossed Tape	2K
AMCV-SS1812-600-601	Embossed Tape	4K
AMCV-SS1812-600-202	Embossed Tape	2K
AMCV-SS1812-650-601	Embossed Tape	4K
AMCV-SS1812-650-202	Embossed Tape	2K
AMCV-SS1812-650-302	Embossed Tape	2K
AMCV-SS1812-750-501	Embossed Tape	4K
AMCV-SS1812-850-501	Embossed Tape	4K
AMCV-SS1812-850-152	Embossed Tape	4K
AMCV-SS1812-101-501	Embossed Tape	4K
AMCV-SS1812-101-152	Embossed Tape	2K
AMCV-SS1812-121-801	Embossed Tape	2K
AMCV-SS1812-151-501	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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