

# AVX Ceramic Transient Voltage Suppressors



This product is RoHS compliant.

## AVX MULTILAYER CERAMIC TRANSIENT VOLTAGE SUPPRESSORS

### ESD Protection for any Circuit Sensitive to Capacitance

The 0.8pF device is the first release in a planned series of "RF" MLV offerings, targeting <0.5pF capacitance. The multi-layer varistor (MLV) is a device that provides protection to sensitive circuits from over-voltage conditions caused by ESD, lightning, NEMP, inductive switching, etc. The sub 1pF surface mount MLV is available in a low profile 0402 case size with 0.8pF capacitance, and is designed to minimize signal distortion and maximize signal speed for sensitive circuits.

#### Features:

- High Reliability
- Capacitance: <1pF
- Bi-Directional protection
- Fastest response time to ESD strikes
- Multi-strike capability
- Low insertion loss
- Low profile 0402 case size

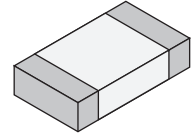
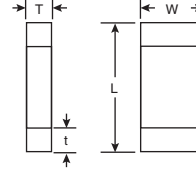
#### Applications:

- Antennas
- Optics
- HDMI
- RF circuits
- FlexRay
- Portable devices
- Analog sensors
- Any circuit sensitive to capacitance



DIMENSIONS: mm (in.)

Size	L	W	T	t
0402	1.00±0.10 (0.040±0.004)	0.50±0.10 (0.020±0.004)	0.35 (0.014)	0.25±0.15 (0.010±0.006)



For quantities of 20000 and up, call for quote.

MOUSER STOCK NO.	AVX Part Number	Vw(DC)	VB	IL	Capacitance (Max)	Tolerance	Price Each					
							1	50	100	500	1000	10000
581-VCH4AG150R4MATWA	VCH4AG150R4MATWA	<15	135	<100nA	.047pF	20%	.11	.10	.078	.064	.051	.043
581-VCH4AG100R8MATWA	VCH4AG100R8MATWA	<10	125	<10nA	0.8pF	20%	.14	.13	.103	.08	.067	.047
581-VCH4AG150R8MATWA	VCH4AG150R8MATWA	<15	125	<10nA	0.96pF	20%	.14	.13	.11	.08	.067	.05

## AVX TRANSGUARD™ SURFACE MOUNT CERAMIC TRANSIENT VOLTAGE SUPPRESSORS

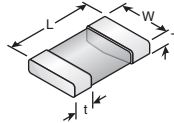
The AVX TransGuard™ Transient Voltage Suppressors (TVS) with unique high-energy multilayer construction represents state-of-the-art overvoltage circuit protection. Monolithic multilayer construction provides protection from voltage transients caused by ESD, lightning, Nuclear Explosion Magnetic Pulse (NEMP), inductive switching, etc. True surface mount product is provided in EIA industry standard packages.

TransGuard products are zinc oxide (ZnO) based ceramic semiconductor devices with non-linear voltage-current characteristics (bi-directional) similar to back-to-back zener diodes. They have the added advantage of greater current and energy handling capabilities as well as EMI/RFI attenuation. Devices are fabricated by ceramic sintering process that yields a structure of conductive ZnO grains surrounded by electrically insulating barriers, creating varistor-like behavior.

Marking  
All standard surface mount TransGuard chips are unmarked.

#### Features:

- Ni/Sn Alloy(Plated)
- Operation temp: -55°C to +125°C
- Meets IEC 1000 -4 specifications



DIMENSIONS: mm (in.)

Size	L	W	T	t
0201	.60±.03 (.024±.001)	.30±.011 (.024±.001)	.33 (.013)	.15±.006 (.024±.001)
0402	1.00±.10 (.040±.004)	.50±.020 (.024±.001)	.6 (.024)	.25±.010 (.024±.001)
0603	1.60±.15 (.063±.006)	.80±.031 (.031)	.9 (.035)	.35±.014 (.024±.001)
0805	2.01±.20 (.079±.008)	1.25±.049 (.024±.001)	1.02 (.04)	.71 max. (.028 max.)
1206	3.20±.20 (.126±.008)	1.60±.063 (.024±.001)	1.02 (.04)	.71 max. (.028 max.)
1210	3.20±.20 (.126±.008)	2.49±.098 (.126±.008)	1.70 (.067)	.71 max. (.028 max.)

For quantities of 1000 and up, call for quote.

MOUSER STOCK NO.	AVX Part Number	Case Size	Working Voltage (DC)	Working Voltage (AC)	Breakdown Voltage (V@ImA <sub>DC</sub> )	Clamping Voltage (V@I <sub>VC</sub> )	Test Current For Vc (A, 8x20µS)	Max. Leakage Current (mA)	Transient Energy Rating Joules (J)	Peak Current Rating (A)	Typical Cap (pF)	Freq.	Price Each			Qty per Reel	Price Per Piece
													1	100	500		
581-VC020105T150WP	VC020105T150WP	0201	5.6	4	10-15.6	35	1	5	0.01	1	15	-	.10	.072	.06	10000	.04
581-VC020105T330WP	VC020105T330WP	0201	5.6	4	10-15.6	35	1	5	0.01	1	33	-	.10	.072	.06	10000	.04
581-VC020105T500WP	VC020105T500WP	0201	5.6	4	10-15.6	35	1	50	0.01	5	50	-	.10	.072	.06	10000	.048
581-VC020105T101WP	VC020105T101WP	0201	5.6	4	10-15.6	35	1	50	0.01	5	100	-	.10	.072	.06	10000	.048
581-VC040205X150WP	VC040205X150WP	0402	5.6	4	8.5±20%	18	1	35	0.05	20	175	M	.32	.279	.248	10000	.22
581-VC040209X200WP	VC040209X200WP	0402	9	6.4	12.7±15%	22	1	25	0.05	20	175	M	.86	.57	.43	10000	.25
581-VC040214X300WP	VC040214X300WP	0402	14	10	18.5±12%	32	1	15	0.05	20	100	M	.43	.32	.26	10000	.23
581-VC040218X400WP	VC040218X400WP	0402	18	13	25.5±10%	42	1	10	0.05	20	65	M	.43	.32	.26	10000	.23
581-VC060303A100DP	VC060303A100DP	0603	3.3	2.3	5.0±20%	12	1	100	0.1	30	1450	K	.28	.24	.23	1000	.22
581-VC060305A150DP	VC060305A150DP	0603	5.6	4	8.5±20%	18	1	35	0.01	30	750	K	.28	.24	.23	1000	.22
581-VC060309A200DP	VC060309A200DP	0603	9	6.4	12.7±15%	22	1	25	0.1	30	550	K	.28	.24	.23	1000	.22
581-VC060314A300DP	VC060314A300DP	0603	14	10	18.5±12%	32	1	15	0.1	30	350	K	.28	.24	.23	1000	.22
581-VC060318A400DP	VC060318A400DP	0603	18	13	25.5±10%	42	1	10	0.1	30	150	K	.28	.24	.23	1000	.22
581-VC060326A580DP	VC060326A580DP	0603	26	18	34.5±10%	60	1	10	0.1	30	155	K	.28	.24	.23	1000	.22
581-VC060330A650DP	VC060330A650DP	0603	30	21	41.0±10%	67	1	10	0.1	30	125	K	.28	.24	.23	1000	.22
581-VC080503A100DP	VC080503A100DP	0805	3.3	2.3	5.0±20%	12	1	100	0.1	40	1400	K	.29	.25	.24	1000	.23
581-VC080503C100DP	VC080503C100DP	0805	3.3	2.3	5.0±20%	12	1	100	0.3	120	5000	K	.43	.38	.36	1000	.34
581-VC080505A150DP	VC080505A150DP	0805	5.6	4	8.5±20%	18	1	35	0.1	40	1100	K	.29	.25	.24	1000	.23
581-VC080505C150DP	VC080505C150DP	0805	5.6	4	8.5±20%	18	1	35	0.3	120	3000	K	.43	.38	.36	1000	.34
581-VC080509A200DP	VC080509A200DP	0805	9	6.4	12.7±15%	22	1	25	0.1	40	750	K	.29	.25	.24	1000	.23
581-VC080512A250DP	VC080512A250DP	0805	12	8.5	16±15%	27	1	25	0.1	40	525	K	.29	.25	.24	1000	.23
581-VC080514A300DP	VC080514A300DP	0805	14	10	18.5±12%	32	1	15	0.1	40	325	K	.29	.25	.24	1000	.23
581-VC080514C300DP	VC080514C300DP	0805	14	10	18.5±12%	32	1	15	0.3	120	900	K	.43	.38	.36	1000	.34
581-VC080518A400DP	VC080518A400DP	0805	18	13	25.5±10%	42	1	10	0.1	30	225	K	.29	.25	.24	1000	.23
581-VC080518C400DP	VC080518C400DP	0805	18	13	25.5±10%	42	1	10	0.3	100	550	K	.43	.38	.36	1000	.34
581-VC080526A580DP	VC080526A580DP	0805	26	18	34.5±10%	60	1	10	0.1	30	120	K	.28	.26	.24	1000	.23
581-VC080526C580DP	VC080526C580DP	0805	26	18	34.5±10%	60	1	10	0.3	100	250	K	.43	.38	.36	1000	.34
581-VC080530A650DP	VC080530A650DP	0805	30	21	41.0±10%	67	1	10	0.1	30	90	M	.29	.25	.24	1000	.23
581-VC120603A100DP	VC120603A100DP	1206	3.3	2.3	5.0±20%	12	1	100	0.1	40	1250	K	.36	.32	.30	1000	.29
581-VC120603D100DP	VC120603D100DP	1206	3.3	2.3	5.0±20%	12	1	35	0.4	150	4700	K	.47	.42	.40	1000	.38
581-VC120605A150DP	VC120605A150DP	1206	5.6	4	8.5±20%	18	1	35	0.1	40	1200	K	.36	.32	.30	1000	.29
581-VC120605D150DP	VC120605D150DP	1206	5.6	4	8.5±20%	18	1	35	0.1	150	3000	K	.48	.42	.40	1000	.38
581-VC120614A300DP	VC120614A300DP	1206	14	10	18.5±12%	32	1	15	0.01	40	600	K	.36	.32	.30	1000	.29
581-VC120614D300DP	VC120614D300DP	1206	14	10	18.5±12%	32	1	15	0.4	150	1050	K	.47	.42	.40	1000	.38
581-VC120618A400DP	VC120618A400DP	1206	18	13	25.5±10%	42	1	10	0.1	30	350	K	.36	.32	.30	1000	.29
581-VC120618D400DP	VC120618D400DP	1206	18	13	25.5±10%	42	1	10	0.4	150	900	K	.47	.42	.40	1000	.38
581-VC120626D580DP	VC120626D580DP	1206	26	18	34.5±10%	60	1	10	0.4	120	500	K	.47	.42	.40	1000	.38
581-VC120630D650DP	VC120630D650DP	1206	30	21	41.0±10%	67	1	10	0.4	120	400	K	.47	.42	.40	1000	.38
581-VC120648D101DP	VC120648D101DP	1206	48	34	62.0±10%	100	1	10	0.4	100	225	K	.52	.46	.44	1000	.41
581-VC13MA0160KBA	VC13MA0160KBA	1210	16	14	24.5±10%	40	2.5	25	1.6	400	1800	K	.71	.59	.53	2000	.40
581-VC121018J390DP	VC121018J390DP	1210	18	13	25.5±10%	42	5	10	1.5	500	3100	K	.72	.63	.59	1000	.57
581-VJ13MC0180KBA	VJ13MC0180KBA	1210	18	13	24.0±10%	45	10	25	1.5	500	3000	K	.72	.63	.59	2000	.54
581-VC121026H560DP	VC121026H560DP	1210	26	18	34.5±10%	60	5	10	1.2	300	2150	K	.72	.65	.58	1000	.51
581-VJ13MC0260KBA	VJ13MC0260KBA	1210	26	18	33.0±10%	62	10	25	1.2	300	1120	K	.79	.66	.59	2000	.45
581-VC121030G620DP	VC121030G620DP	1210	30	21	41.0±10%	67	5	10	0.9	220	1750	K	.69	.62	.55	1000	.48
581-VC121030H620DP	VC121030H620DP	1210	30	21	41.0±10%	67	5	10	1.2	280	1850	K	.87	.696	.613	1000	.576
581-VJ13MC0300KBA	VJ13MC0300KBA	1210	30	21	39.0±10%	73	10	25	0.9	220	1020	K	.79	.66	.59	2000	.47
581-VJ13PC0300KBA	VJ13PC0300KBA	1210	30	21	39.0±10%	73	10	25	1.2	280	1150	K	.79	.66	.59	2000	.45
581-VC121048G101DP	VC121048G101DP	1210	48	34	62.0±10%	100	5	10	0.9	220	450	K	.66	.58	.55	1000	.53
581-VC121048H101DP	VC121048H101DP	1210	48	34	62.0±10%	100	5	10	1.2	250	500	K	.69	.62	.60	1000	.56
581-VJ13MC0480KBA	VJ13MC0480KBA	1210	48	34	60.5±10%	110	10	25	0.9	220	800	K	.79	.72	.67	2000	.59
581-VJ13PC0480KBA	VJ13PC0480KBA	1210	48	34	60.5±10%	110	10	25	1.2	250	840	K	.79	.72	.66	2000	.55
581-VC121060J121DP	VC121060J121DP	1210	60	42	76.0±10%	120	5	10	1.5	250	400	K	.71	.64	.60	1000	.58
581-VJ13MC0600KBA	VJ13MC0600KBA	1210	60	42	76.0±10%	126	10	25	1.5	250	600						