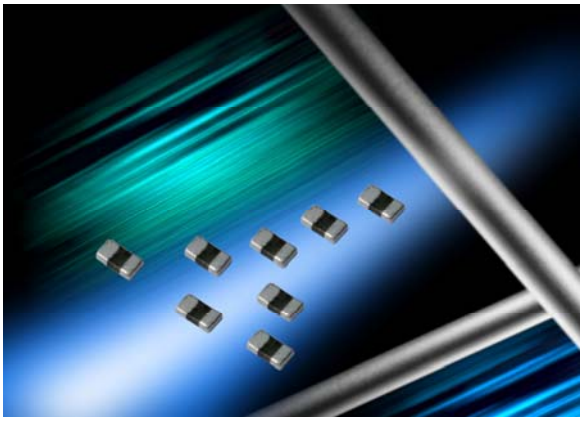
Miniature 0201 MultiLayer Varistor



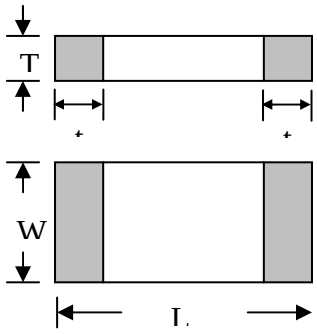
AVX 0201 Multi-Layer Varistors are designed for circuits where board space is a premium. 0201 MLV offer bi-directional ESD protection in the smallest package available. The added advantage is EMI/RFI attenuation. 0201 MLV can replace 2 diodes and the EMC capacitor for a one chip solution.

The miniature size and one chip solution team to offer designers the best in ESD protection and EMI filtering in one ultra compact device.

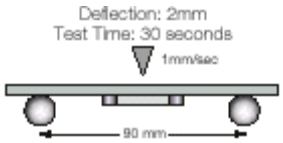
VC	**0201**	**05**	**T**	**330**	**W**	**P**
Chip Varistor	Case Size 0201	Working Voltage 05 = 5.6V	Energy Rating T = 0.01J	Capacitance 330 = 33pf	Packaging 10k reel	Termination P= Ni Barrier / 100% matte Sn plating

AVX Part Number	VW(DC)	VW(AC)	VB	VC	IVC	IL	ET	IP	Cap
VC020105T150WP	5.6	4.0	10.0 min - 15.6 max	35max	1	50	0.01	2	15pF ±30%
VC020105T330WP	5.6	4.0	10.0 min - 15.6 max	35max	1	50	0.01	4	33pF ±30%
VC020105T500WP	5.6	4.0	10.0 min - 15.6 max	35max	1	50	0.01	5	50pF ±30%
VC020105T101WP	5.6	4.0	10.0 min - 15.6 max	35max	1	50	0.01	5	100pF ±30%

V_W(DC)	DC Working Voltage [V]
V_W(AC)	AC Working Voltage [V]
V_B	Breakdown Votage [V @ 1mA_{DC}]
V_C	Clamping Votage [V @ I_{VC}]
I_{VC}	Test Current for V_C [A, 8x20µS]
I_L	Maximum leakage current at the working voltage [µA]
E_T	Transient Energy Rating [J, 10x1000µS]
I_P	Peak Current Rating [A, 8x20µS]
Cap	Capacitance [pF] @ 1KHz specified and 0.5V_{RMS}



Size (EIA)		**0201**
Length (L)	mm (in)	0.60 ±0.03 0.024 ±.001
Width (W)	mm (in)	0.30 ±0.03 0.011 ±0.001
Max Thickness (T)	mm (in)	0.3 0.012
Terminal (t)	mm (in)	0.15 ±0.05 0.006 ±0.002

No.	Item	Requirement	Test method
1	Operating Temp.	-55°C to +125° C	
2	Appearance/Dimensions	No visible damage Dimensions: see par. 6	Visual examination at 10% magnification Dimensions verification by class2 caliper
3	Clamping Voltage	In accordance with standard parts table 5	Apply an 8 x 20μs Current pulse to device terminals in accordance with table 5.
4	Peak Current	Breakdown voltage change shall not be more than ± 10%	a. Apply 1mA DC of each polarity to device terminals. Record polarity and magnitude of resultant voltage. b. Apply 8x20μS current pulse, peak value per standard parts table 5, to terminals with same polarity as Step a. c. Apply 1mA DC to terminals, same polarity as Steps (a) and (b). Record magnitude of resultant voltage.
5	Transient Energy	Breakdown voltage change shall not be more than ± 10%	(a) Apply 1mA DC of each polarity to device terminals. Record polarity and magnitude of resultant voltage. (b) Apply 10x1000μS current pulse of amplitude sufficient to generate the energy as specified in standard parts table 5, (calculated by $E=0.001\mathbf{33}V_p I_p$, where V_p is peak value of voltage and I_p is peak current)
6	ESD	Change in Vb < 30%	a. ReadVb b. 1k pulse at 8kV contact c. Read Vb
7	Solderability	The dipped surface shall be at least 95% covered with a new smooth solder coating.	Soak in eutectic solder bath of temperature at 230+/-5°C for 5sec.
8	Solder Heat Resistance	No mechanical damage. Forward Breakdown voltage change shall not be more than ± 10%	a. Read forward breakdown voltage. b. Soak in eutectic solder bath of temperature at 260+/-5°C. for 10+/-1sec. c. Natural cool down to +25°C d. Read forward breakdown voltage after 24+/-2 hours.
9	Humidity Life	Forward breakdown voltage change shall not be more than ± 10%	a. Read forward breakdown voltage. b. Leave device in chamber of +85+/-3°C, 85+/5% relative humidity for 1000± 5hours. c. Read forward breakdown voltage after 3-4 hours conditioning at 25+/-5°C
10	Life Test	Forward breakdown voltage change shall not be more than ± 10%	a. Read forward breakdown voltage. b. Apply 100% of working voltage at test temperature of 125+/-4°C for 1,000+48/-0hours. c. Read forward breakdown voltage after 24+/-2 hours conditioning at 25+/-5°C
11	Termination Strength	All components must stay in place.	a. Solder components onto substrate. b. Apply 500 grams lateral force across the body
12	Thermal Shock	Forward breakdown voltage change shall not be more than ± 10%	Step 1: -55°C ± 2°C for 30 ± 3 min Step 2: Room temp for ≤ 3 min Step 3: +125°C ± 2°C for 30 ± 3 min Step 4: Room temp for ≤ 3 min Repeat for 100 cycles and measure after 24hrs @ RT
13	Resistance to Flexure Stresses	Forward breakdown voltage change shall not be more than ± 10%	
14	Vibration	Forward breakdown voltage change shall not be more than ± 10%	Vibration frequency: 10 – 2000 Hz Max acceleration: 20 G Swing width: 1.5 mm Test time: X, Y, Z axis for 2 hours each, Total 6 hours in test