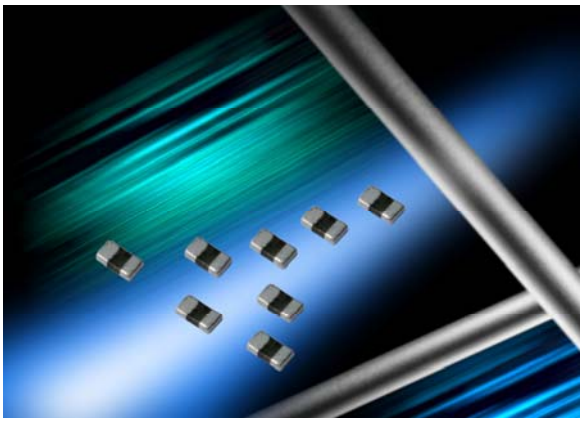
High Temperature Automotive MultiLayer Varistor



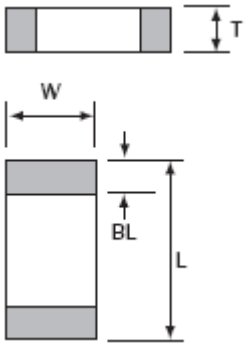
AVX High Temperature Multi-Layer Varistors are designed for underhood applications. Products have been tested, qualified, and specified to 150ºC. The MLV advantage is EMI/RFI attenuation in the off state. This allows designers the ability to combine the circuit protection and EMI/RFI attenuation function into a single highly reliable device.

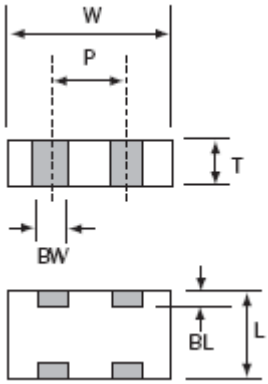
The CAN and AntennaGuard series are the first releases in a planned series to include higher voltages and a variety of case size. AEC Q200 data packages available.

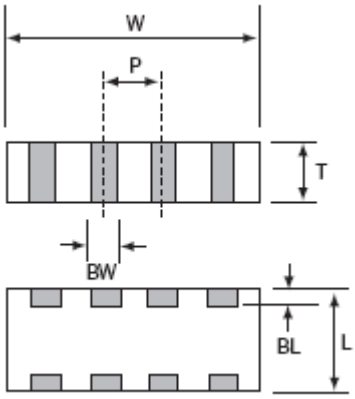
AVX Part No.	V_W (DC)	V_W (AC)	V_B	I_L	E_T	I_P	Cap.	Case Size	Elements
CANAT01_ _	≤ 18	≤14	120	10	0.015	4	22	0603	1
CANAT02_ _	≤ 18	≤14	70	10	0.015	4	22	0405	2
CANAT04_ _	≤ 18	≤14	100	10	0.015	4	22	0612	4

AVX Part N0.	V_W(DC)	V_W(AC)	I_L	Cap	Cap Tolerance	Case Size
VCAT06AG18120YAT_ _	≤ 18	≤ 14	10	12	+4, -2pF	0603

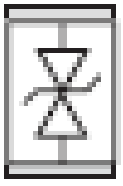
V_W(DC) DC Working Voltage [V]
V_W(AC) AC Working Voltage [V]
V_B Breakdown Votage [V @ $1mA_{DC}$]
V_C Clamping Votage [V @ I_{VC}]
I_{VC} Test Current for V_C [A, 8x20µS]
I_L Maximum leakage current at the working voltage [µA]
E_T Transient Energy Rating [J, 10x1000µS]
I_P Peak Current Rating [A, 8x20µS]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



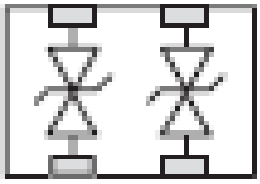




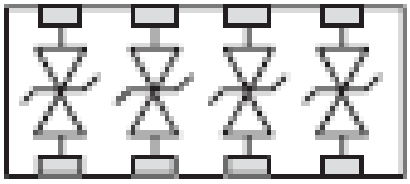
Size (EIA)	0603 Discrete	0405 - 2 Elements Array	0612 – 4 Elements Array
L	1.60±.15 (0.063±0.006)	1.00±0.15 (0.039±0.006)	1.60±0.20 (0.063±0.008)
W	0.80±0.15 (0.032±0.006)	1.37±0.15 (0.054±0.006)	3.20±0.20 (0.126±0.008)
T	0.90 Max (0.035 Max.)	0.66 Max (0.026 Max.)	1.22 Max (0.048 Max.)
BW	N/A	0.36±0.10 (0.014±0.004)	0.41±0.10 (0.016±0.004)
BL	0.35±0.15 (0.014±0.006)	0.20±0.10 (0.008±0.004)	0.18+0.25/–0.08 (0.007+.01/–.003)
P	N/A	0.64 REF (0.025 REF)	0.76 REF (0.030 REF)



0603
Discrete



0405
Array



0612
Array

No.	Item	Requirement	Test method
1	Operating Temp.	-55°C to +150° C	
2	Appearance/Dimensions	No visible damage Dimensions: see par. 6	Visual examination at 10% magnification Dimensions verification by class2 caliper
3	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.
4	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=0.0014Vp Ip, where Vp is peak value of voltage and Ip is peak current)
5	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.
6	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.
7	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 at 100% of working voltage for 1,000± 5hours. c. Read forward breakdown voltage after 3-4 hours conditioning at 25+/-5°C
8	Life Test	Forward breakdown voltage change shall not be more than ± 10% and IL spec is allowed to increase by one order of magnitude	a. Read forward breakdown voltage. b. Apply 100% of working voltage at test temperature of 150+/-4°C for 1,000+48/-0hours. c. Read forward breakdown voltage after 24+/-2 hours conditioning at 25+/-5°C
9	Termination Strength	All components must stay in place.	a. Solder components onto substrate. b. Apply 500 grams lateral force across the body of the component.