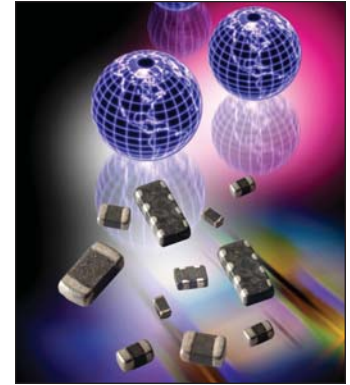


GENERAL DESCRIPTION

The CAN BUS and FlexRay varistor is a zinc oxide (ZnO) based ceramic semiconductor device with non-linear voltage-current characteristics (bi-directional) similar to back-to-back Zener diodes and an EMC capacitor in parallel (see equivalent circuit model). They have the added advantage of greater current and energy handling capabilities as well as EMI/RFI attenuation. Devices are fabricated by a ceramic sintering process that yields a structure of conductive ZnO grains surrounded by electrically insulating barriers, creating varistor like behavior.



HOW TO ORDER

CAN	0001	D	P	
Style	Case Size	Packaging Code (Reel Size)	Termination	
CAN = CAN BUS FLX = FlexRay	0001 = 0603 Discrete 0002 = 0405 2-Element 0004 = 0612 4-Element 0005 = 0402 Discrete	D = 7" reel (1,000 pcs.) R = 7" reel (4,000 pcs.) T = 13" reel (10,000 pcs.) W = 7" reel (10,000 pcs.) 0402 and 0201 only	P = Ni/Sn Alloy (Plated)	

PERFORM

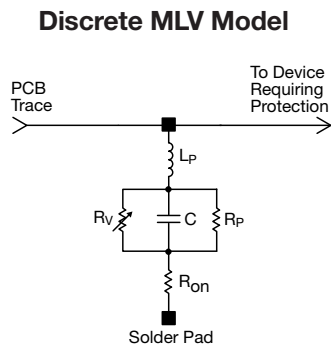
AVX PN	V _W (DC)	V _W (AC)	V _B	V _C	I _{VC}	I _L	E _T	I _P	Cap	Freq	V _{Jump}	P _{Diss Max}	Case	Elements
CAN0001 __	≤ 18	≤ 14	120	225	1	2	0.015	4	22 Max	M	27.5	0.003	0603	1
CAN0002 __	≤ 18	≤ 14	70	145	1	2	0.015	4	22 Max	M	27.5	0.003	0405	2
CAN0004 __	≤ 18	≤ 14	100	180	1	2	0.015	4	22 Max	M	27.5	0.003	0612	4
CAN0005 __	≤ 18	≤ 14	33	55	1	2	0.05	10	37 Max	M	27.5	0.01	0402	1
FLX0005 __	≤ 18	≤ 14	26	45	1	5	0.02	4	17 Max	M	27.5	0.004	0402	1

Termination Finish Code
Packaging Code

V_W(DC) DC Working Voltage (V)
 V_W(AC) AC Working Voltage (V)
 V_B Typical Breakdown Voltage (V @ 1mA_{DC})
 V_C Clamping Voltage (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 Maximum Capacitance (pF) @ 1 MHz and 0.5Vrms
 Temp Range -55°C to +125°C

EQUIVALENT CIRCUIT MODEL



Where: R_v = Voltage Variable resistance (per VI curve)
 R_p ≥ 10¹² Ω
 C = defined by voltage rating and energy level
 R_{on} = turn on resistance
 L_p = parallel body inductance



Typical Pulse Rating Curve



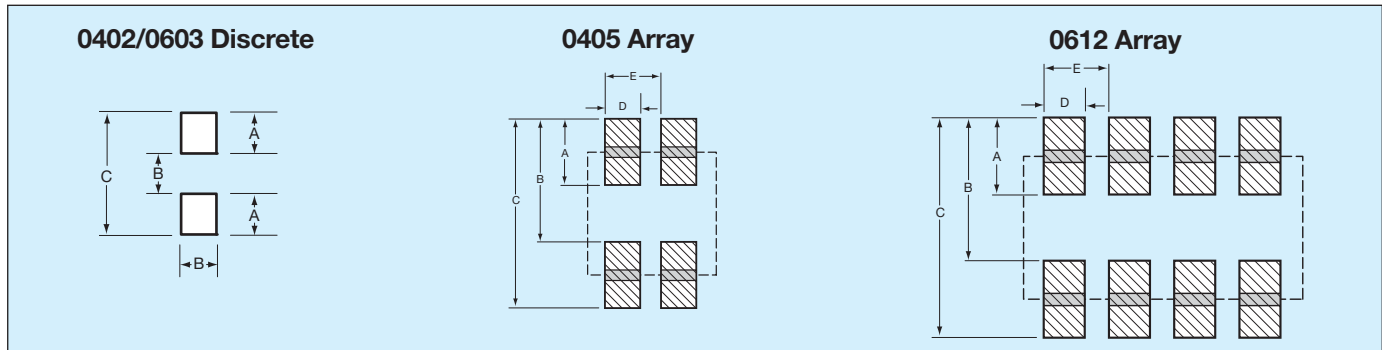
PHYSICAL DIMENSIONS

mm (inches)

	0402 Discrete	0603 Discrete	0405 Array	0612 Array
Length	1.00 ±0.10 (0.040 ±0.004)	1.60 ±0.15 (0.063 ±0.006)	1.00 ±0.15 (0.039 ±0.006)	1.60 ±0.20 (0.063 ±0.008)
Width	0.50 ±0.10 (0.020 ±0.004)	0.80 ±0.15 (0.032 ±0.006)	1.37 ±0.15 (0.054 ±0.006)	3.20 ±0.20 (0.126 ±0.008)
Thickness	0.60 Max. (0.024 Max.)	0.90 Max. (0.035 Max.)	0.66 Max. (0.026 Max.)	1.22 Max. (0.048 Max.)
Term Band Width	0.25 ±0.15 (0.010 ±0.006)	0.35 ±0.15 (0.014 ±0.006)	0.36 ±0.10 (0.014 ±0.004)	0.41 ±0.10 (0.016 ±0.010)

SOLDER PAD DIMENSIONS

mm (inches)



APPLICATION

AVX CAN BUS and FlexRay varistors offer significant advantages in general areas of a typical CAN or FlexRay network as shown on the right. Some of the advantages over diodes include:

- space savings
- higher ESD capability @ 25kV contact
- higher in rush current (4A) 8 x 20µS
- FIT rate ≤0.1 failures (per billion hours)

	A	B	C	D	E
0402 Discrete	0.61 (0.024)	0.51 (0.020)	1.70 (0.067)	-	-
0603 Discrete	0.89 (0.035)	0.76 (0.030)	2.54 (0.100)	-	-
0405 Array	0.46 (0.018)	0.74 (0.029)	0.12 (0.0047)	0.38 (0.015)	0.64 (0.025)
0612 Array	0.89 (0.035)	1.65 (0.065)	2.54 (0.100)	0.46 (0.018)	0.76 (0.030)

