CAN BUS Varistor

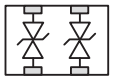
GENERAL DESCRIPTION

The CAN BUS 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.

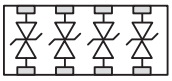
HOW TO ORDER

CAN	0001	D	P
Style	**Case Size**	**Packaging Code (Reel Size)**	**Termination**
Controlled Area Network Varistor Series	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.)	P = Ni/Sn Alloy (Plated)

0402, 0603 Discrete



0405 Array



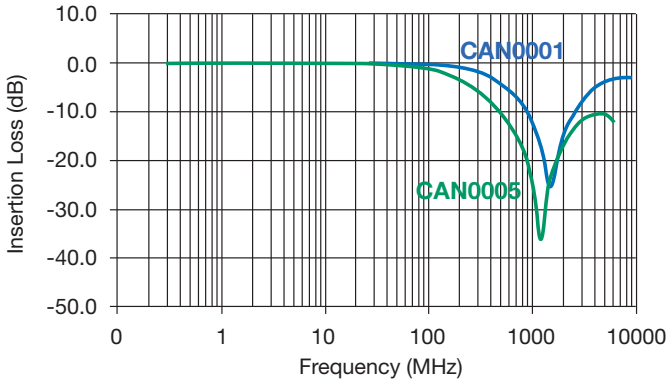
0612 Array

PERFORMANCE CHARACTERISTICS

AVX Part No.	V_W (DC)	V_W (AC)	V_B	I_L	E_T	I_P	Cap.	Case Size	Elements
CAN0001_ _	≤18	≤14	120	2	0.015	4	22	0603	1
CAN0002_ _	≤18	≤14	70	2	0.015	4	22	0405	2
CAN0004_ _	≤18	≤14	100	2	0.015	4	22	0612	4
CAN0005_ _	≤18	≤14	33	2	0.015	4	37	0402	1

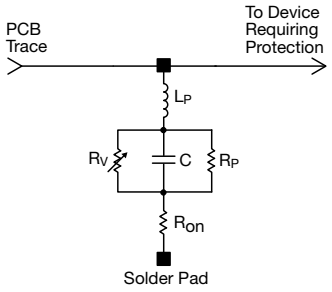
Termination Finish Code
Packaging Code

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	-55ºC to +125ºC



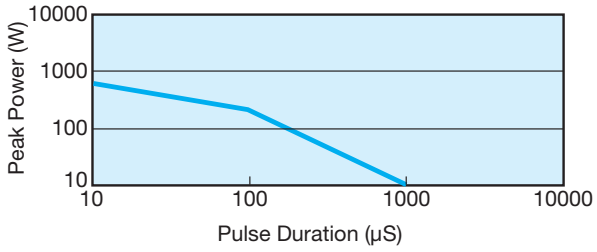
EQUIVALENT CIRCUIT MODEL

Discrete MLV Model



Where: R_V = Voltage Variable resistance (per VI curve)
R_p ≥ 10^{12} Ω
C = defined by voltage rating and energy level
R_{on} = turn on resistance
L_p = parallel body inductance

Typical Pulse Rating Curve



LEAD-FREE
LEAD-FREE COMPATIBLE COMPONENT

RoHS COMPLIANT