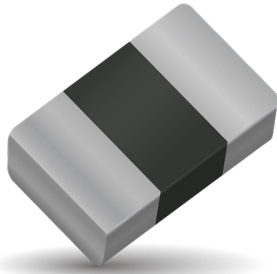


Controlled Capacitance Multilayer Varistor



GENERAL DESCRIPTION

The Controlled Capacitance TransGuard is an application specific bi-directional transient voltage suppressor developed for use in mixed signal environments. The Controlled Cap MLV has three purposes: 1) reduce emissions from a high speed ASIC, 2) prevent induced E fields from conducting into the IC, and 3) clamp transient voltages. By controlling capacitance of the MLV, the center frequency and 20db range for filtering purposes can be targeted. A Controlled Cap MLV can greatly improve overall system EMC performance and reduce system size.

GENERAL CHARACTERISTICS

- Operating Temperature: -55°C to +125°C
- Working Voltage: 9 - 30Vdc
- Case Size: 0402, 0603

FEATURES

- Single Chip Solution
- Targeted EMI/RFI Filtering
- 20dB Range for filtering purposes
- Improves system EMC performance
- Very fast response to ESD
- 25kV ESD

APPLICATIONS

- EMI TVS Module Control
- High Speed ASICS
- Mixed Signal Environment
- Sensors and more

HOW TO ORDER

| | | | | | | | |
|---|----------------------------------|---|---|---|--|--|--|
| VCAC | 0603 | 22 | A | 470 | N | R | P |
| Varistor Chip Automotive Capacitance | Chip Size 0402 0603 | Working Voltage 09 = 9V 17 = 17V 22 = 22V 26 = 26V 30 = 30V | Energy Rating X = 0.05J A = 0.1J B = 0.2J C = 0.3J | Capacitance 15 = 15pF 330 = 33pF 380 = 38pF 470 = 47pF 820 = 82pF 102 = 1000pF | Tolerance N = ±30% M = ±20% | Packaging R = 4k pcs 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 only) | Termination P = Ni Barrier/ 100% Sn (matte) |



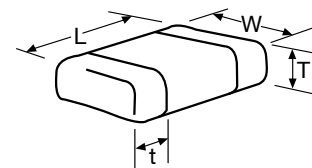
| AVX Part Number | VW (DC) | VW (AC) | VB | VC | IL | ET | IP | Cap | Cap Tolerance | Case Size |
|-----------------|---------|---------|----------|----|----|------|-----|------|---------------|-----------|
| VCAC060309B102N | 9.0 | 6.4 | 12.7±15% | 22 | 25 | 0.2 | 120 | 1000 | ±30% | 0603 |
| VCAC060317X150N | 17 | 12 | 27±20% | 52 | 10 | 0.05 | 2 | 15 | ±30% | 0603 |
| VCAC060317X330M | 17 | 12 | 27±20% | 52 | 10 | 0.05 | 2 | 33 | ±20% | 0603 |
| VCAC060322A470N | 22 | 17 | 32.5±25% | 50 | 10 | 0.1 | 30 | 47 | 30% | 0603 |
| VCAC060326C820M | 26 | 20 | 36.0±15% | 67 | 10 | 0.3 | 30 | 82 | 20% | 0603 |
| VCAC040230X380N | 30 | 21 | 41±10% | 67 | 5 | 0.05 | 10 | 38 | ±30% | 0402 |

| | | | |
|--------|-------------------------------|-------|---|
| VW(DC) | DC Working Voltage [V] | I_L | Maximum leakage current at the working voltage, 25°C [µA] |
| VW(AC) | AC Working Voltage [V] | E_T | Transient Energy Rating [J, 10x1000µS] |
| VB | Breakdown Voltage [V @ 1mADC] | I_p | Peak Current Rating [A, 8x20µS] |
| VC | Clamping Voltage [V @ 1A] | Cap | Capacitance [pF] @ 1KHz specified and 0.5VRMS, 25°C |

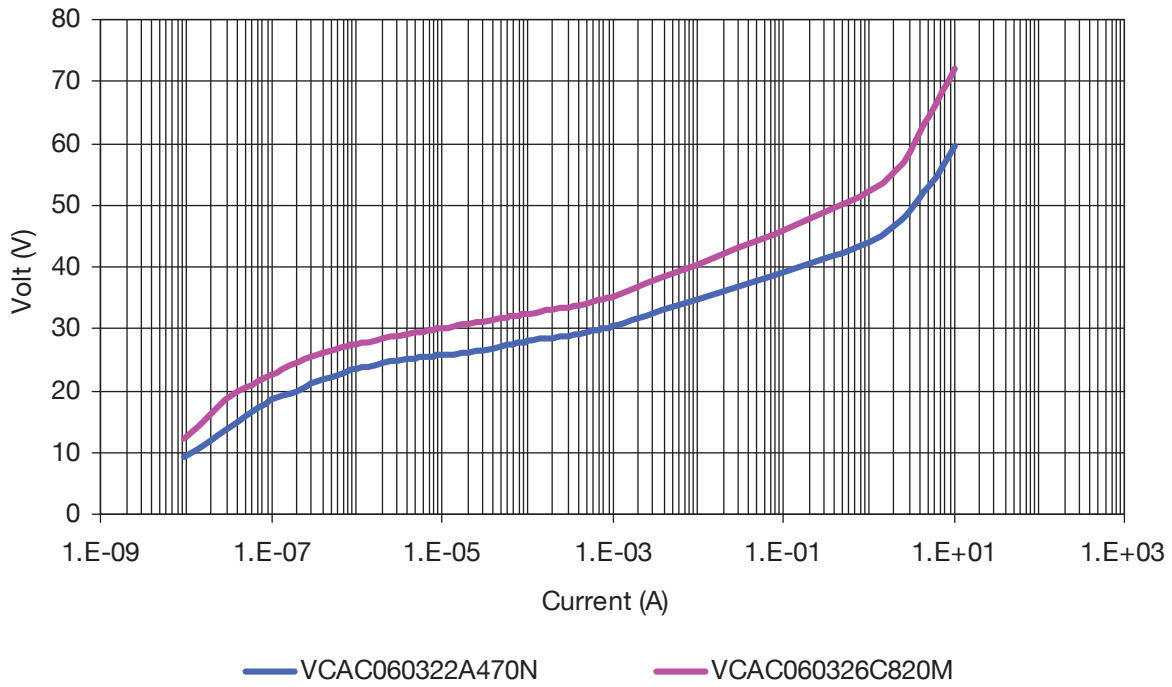
0603 DISCRETE DIMENSIONS

mm (inches)

| Size (EIA) | Length (L) | Width (W) | Max Thickness (T) | Land Length (t) |
|------------|----------------------------|----------------------------|-------------------|----------------------------|
| 0402 | 1.00±0.10 (0.040±0.004) | 0.50±0.10 (0.020±0.004) | 0.60 (0.024) | 0.25±0.15 (0.010±0.006) |
| 0603 | 1.60±0.15 (0.063±0.006) | 0.80±0.15 (0.031±0.006) | 0.90 (0.035) | 0.35±0.15 (0.014±0.006) |



V-I Curve



S21

