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: 22, 26Vdc
- Case Size: 0603

FEAURES
- 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

<table>
<thead>
<tr>
<th>VCAC</th>
<th>0603</th>
<th>22</th>
<th>A</th>
<th>470</th>
<th>N</th>
<th>R</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varistor Chip</td>
<td>Size</td>
<td>Working Voltage</td>
<td>Energy Rating</td>
<td>Capacitance</td>
<td>Tolerance</td>
<td>Packaging</td>
<td>Termination</td>
</tr>
<tr>
<td>Automotive Capacitance</td>
<td></td>
<td>09 = 9V</td>
<td>0 = 0.05J</td>
<td>330 = 33pF</td>
<td>N = ±30%</td>
<td>R = 4k pcs</td>
<td>P = Ni Barrier/100% Sn (matte)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17 = 17V</td>
<td>A = 0.1J</td>
<td>380 = 38pF</td>
<td>M = ±20%</td>
<td>D = 7&quot; reel (1,000 pcs)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>22 = 22V</td>
<td>B = 0.2J</td>
<td>470 = 47pF</td>
<td></td>
<td>B = 0.2J</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>26 = 26V</td>
<td>C = 0.3J</td>
<td>820 = 82pF</td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 = 30V</td>
<td></td>
<td>102 = 1000pF</td>
<td></td>
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<td></td>
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</tbody>
</table>

0603 Discrete Dimensions

<table>
<thead>
<tr>
<th>Size (EIA)</th>
<th>Length (L)</th>
<th>Width (W)</th>
<th>Max Thickness (T)</th>
<th>Land Length (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0402</td>
<td>1.00±0.10 (0.040±0.004)</td>
<td>0.50±0.10 (0.020±0.004)</td>
<td>0.60</td>
<td>0.25±0.15 (0.010±0.008)</td>
</tr>
<tr>
<td>0603</td>
<td>1.60±0.15 (0.063±0.006)</td>
<td>0.80±0.15 (0.031±0.006)</td>
<td>0.90</td>
<td>0.35±0.15 (0.014±0.006)</td>
</tr>
</tbody>
</table>

AVX Part Number

Vw (DC) DC Working Voltage [V]
Vw (AC) AC Working Voltage [V]
Vb Breakdown Voltage [V @ 1mA]
Vc Clamping Voltage [V @ 1A]
Ic Maximum leakage current at the working voltage [µA]
E transient Energy Rating [J, 10x1000µS]
Ip Peak Current Rating [A, 8x20µS]
Cap Capacitance [pF] @ 1KHz specified and 0.5V RMS
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V-I Curve

S21

Insertion Loss (dB)

Frequency (MHz)