GENERAL DESCRIPTION
AVX offers ultra-low capacitance ESD protection in the Sub 1pF range for use in circuits that are sensitive to capacitance. The Sub pF Varistor (SPV) is available in 0.8pF and 0.4pF capacitance values in a compact 0402 low profile package. SPV devices provide excellent response time to ESD strikes to protect sensitive circuits from over voltage conditions.

The development of new information processing technologies call for ever increasing digital system speeds. Higher speeds necessitate the use of ultra-low capacitance values in order to minimize signal distortion.

FEATURES
- High Reliability
- Capacitance < 1pF
- Bi-Directional protection
- Fastest response time to ESD strikes
- Multi-strike capability
- Low insertion loss
- Low profile 0402 case size

APPLICATIONS
- Antennas
- Optics
- HDMI
- RF circuits
- FlexRay
- Portable devices
- Analog sensors
- Any circuit sensitive to capacitance

HOW TO ORDER

<table>
<thead>
<tr>
<th>VC</th>
<th>H4</th>
<th>AG</th>
<th>10</th>
<th>0R8</th>
<th>M</th>
<th>A</th>
<th>T</th>
<th>W</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varistor Chip</td>
<td>Chip Size</td>
<td>Varistor Series</td>
<td>Working Voltage</td>
<td>Capacitance</td>
<td>Tolerance</td>
<td>N/A</td>
<td>Termination</td>
<td>Reel Size</td>
<td>Reel Quantity</td>
</tr>
<tr>
<td>H2 = 0201</td>
<td>H4 = Thin 0402</td>
<td>AntennaGuard</td>
<td>0.8pF</td>
<td>±20%</td>
<td>0.8</td>
<td>Ni/Sn</td>
<td>10k</td>
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<td></td>
</tr>
<tr>
<td>H4 = Thin 0402</td>
<td></td>
<td></td>
<td>0.7pF</td>
<td>±20%</td>
<td>0.7</td>
<td>Ni/Sn</td>
<td>10k</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.47pF</td>
<td>±20%</td>
<td>0.47</td>
<td>Ni/Sn</td>
<td>10k</td>
<td></td>
<td></td>
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</tbody>
</table>

ANTENNA GUARD CATALOG PART NUMBERS/ELECTRICAL VALUES

<table>
<thead>
<tr>
<th>AVX Part Number</th>
<th>Vw (DC)</th>
<th>VB</th>
<th>IL</th>
<th>Cap</th>
<th>Cap Tolerance</th>
<th>3db Freq (MHz)</th>
<th>Case Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCH4AG100R8MA</td>
<td>≤10</td>
<td>125</td>
<td>&lt;10 nA</td>
<td>0.8</td>
<td>±20%</td>
<td>5800</td>
<td>LP 0402</td>
</tr>
<tr>
<td>VCH4AG150R8MA</td>
<td>≤15</td>
<td>125</td>
<td>&lt;10 nA</td>
<td>0.8</td>
<td>±20%</td>
<td>5800</td>
<td>LP 0402</td>
</tr>
<tr>
<td>VCH4AG150R7MA</td>
<td>≤15</td>
<td>135</td>
<td>&lt;100 nA</td>
<td>0.47</td>
<td>±20%</td>
<td>6700</td>
<td>LP 0402</td>
</tr>
<tr>
<td>VCH2AG180R7MA</td>
<td>≤18</td>
<td>135</td>
<td>&lt;5μA</td>
<td>0.7</td>
<td>±20%</td>
<td>10800</td>
<td>0201</td>
</tr>
</tbody>
</table>

Vw (DC) DC Working Voltage (V)
VB Typical Breakdown Voltage (V @ 1mAcd)
IL Typical leakage current at the working voltage
Cap Typical capacitance (pF) @ frequency specified and 0.5Vrms
Freq Frequency at which capacitance is measured (M = 1MHz)
AntennaGuard/SPV
AVX Ultra-low Capacitance Multilayer Varistors
ESD Protection for any Circuit Sensitive to Capacitance

S21 Transmission Characteristics -SPV

V/I Curve - SPV

ESD Wave Absorption Characteristics

Size (EIA) | 0402
---|---
Length (L) | 1.00 ±0.10 (0.040 ± 0.004)
Width (W) | 0.50 ±0.10 (0.020 ±0.004)
Max Thickness (T) | 0.35 (0.014)
Terminal (t) | 0.25±0.15 (0.010±0.006)