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

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.

**APPLICATIONS**
- Antennas, RF circuits
- Optics
- HDMI, Firewire, Thunderbolt
- High speed communication bus
- GPS
- Camera link
- Sensors
- Touch screen interfaces
- Circuits sensitive to capacitance

**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
- AEC-Q 200 Qualified

**GENERAL CHARACTERISTICS**
- Operating Temperature: -55°C to +125°C
- Working Voltage: 16Vdc
- Case Size: 0402 low profile
- Capacitance < 1pF

**GENERAL DESCRIPTION**

**HOW TO ORDER**

**ANTENNAGUARD CATALOG PART NUMBERS/ELECTRICAL VALUES**

<table>
<thead>
<tr>
<th>AVX Part Number</th>
<th>$V_W$(DC)</th>
<th>$V_B$</th>
<th>$I_L$</th>
<th>Cap</th>
<th>Cap Tolerance</th>
<th>3db Freq (MHz)</th>
<th>Case Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCASHAG160R8MA</td>
<td>≤16</td>
<td>125</td>
<td>1</td>
<td>0.8</td>
<td>±20%</td>
<td>5800</td>
<td>LP 0402</td>
</tr>
</tbody>
</table>

$V_W$(DC) DC Working Voltage (V)

$V_B$ Typical Breakdown Voltage ($V @ 1mA_{dc}$)

$I_L$ Typical leakage current at the working voltage

Cap Typical capacitance (pF) @ frequency specified and 0.5V$_{RMS}$

Freq Frequency at which capacitance is measured (M = 1MHz)
Automotive Sub pF AG Series
AVX Ultra-low Capacitance Automotive Varistor for
ESD Protection for Automotive Circuits Sensitive to Capacitance

S21 Transmission Characteristics -SPV

V/I Curve - SPV

DIMENSIONS

<table>
<thead>
<tr>
<th>Size (EIA)</th>
<th>0402</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (L)</td>
<td>1.00 ±0.10 (0.040 ± 0.004)</td>
</tr>
<tr>
<td>Width (W)</td>
<td>0.50 ±0.10 (0.020 ±0.004)</td>
</tr>
<tr>
<td>Max Thickness (T)</td>
<td>0.35 (0.014)</td>
</tr>
<tr>
<td>Terminal (t)</td>
<td>0.25±0.15 (0.010±0.006)</td>
</tr>
</tbody>
</table>
Automotive Sub pF AG Series
AVX Ultra-low Capacitance Automotive Varistor for ESD Protection for Automotive Circuits Sensitive to Capacitance

EYE DIAGRAM - USB-HS (480MHZ) TEST

EYE DIAGRAM - PCI-E (2.5GHZ) TEST