AVX Antenna PowerGuard products are an ultra low capacitance extension of reliable AntennaGuard range with new voltage, capacitance and energy ratings. Designed for use in RF circuits, sensors, high-speed lines, optic circuits and capacitance sensitive applications.

The ability to handle larger transients makes the Antenna PowerGuard series useful in applications where capacitance sensitive circuit needs to be protected against higher energy and AEC-Q200 qualification allows for use in automotive applications.

These low capacitance values have low insertion loss, low leakage current and unsurpassed reliability compared to diode options. These advantages combined with size advantages and bi-directional protection make the Antenna PowerGuard the right choice for automotive and general applications, that are sensitive to capacitance.

**GENERAL CHARACTERISTICS**
- Operating Temperature: -55°C to +125°C
- Case Size: 0402, 0603
- Working Voltage: 18 - 70Vdc
- Capacitance: 1.5 - 3.3pF
- Energy: 0.02 - 0.04J
- Peak Current: 1 - 3A

**FEATURES**
- AEC-Q200 Qualified
- 25kV ESD rating
- Meet 48Vdc Jump Start requirements
- Multi-strike capability
- Sub 1nS response to ESD strike

**APPLICATIONS**
- RF Circuit
- Sensors
- Antennas
- Data lines
- Radars
- Bluetooth
- Ethernet (IEEE 802.3bw and IEEE 802.3bp)

**PHYSICAL DIMENSIONS:** mm (inches)

<table>
<thead>
<tr>
<th>Size (EIA)</th>
<th>Length (L)</th>
<th>Width (W)</th>
<th>Max Thickness (T)</th>
<th>Land Length (l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0402</td>
<td>1.00±0.10</td>
<td>0.50±0.10</td>
<td>0.60</td>
<td>0.25±0.15</td>
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<tr>
<td>0603</td>
<td>1.60±0.15</td>
<td>0.80±0.15</td>
<td>0.90</td>
<td>0.35±0.15</td>
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</table>

**ELECTRICAL CHARACTERISTICS**

<table>
<thead>
<tr>
<th>AVX Part Number</th>
<th>Vw (DC)</th>
<th>Vw (AC)</th>
<th>Vc</th>
<th>Iv</th>
<th>Ez</th>
<th>Ip</th>
<th>Cap</th>
<th>Cap</th>
<th>V JUMP</th>
<th>Case</th>
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<tbody>
<tr>
<td>VCAS04AP181R5DAT</td>
<td>18</td>
<td>13</td>
<td>150-210</td>
<td>350</td>
<td>0.1</td>
<td>0.02</td>
<td>1</td>
<td>1.5</td>
<td>±0.5pF</td>
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<td>13</td>
<td>80-140</td>
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<td>0.02</td>
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<tr>
<td>VCAS06AP182R0LAT</td>
<td>18</td>
<td>13</td>
<td>150-200</td>
<td>350</td>
<td>0.1</td>
<td>0.03</td>
<td>2</td>
<td>2.0</td>
<td>±1.0pF</td>
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<tr>
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<td>17</td>
<td>90-150</td>
<td>240</td>
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<td>0.04</td>
<td>3</td>
<td>3.3</td>
<td>±1.0pF</td>
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<tr>
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<td>21</td>
<td>150-210</td>
<td>350</td>
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<td>0.02</td>
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<td>±0.5pF</td>
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<td>21</td>
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<tr>
<td>VCAS06AP303R3LAT</td>
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<td>21</td>
<td>90-150</td>
<td>240</td>
<td>0.1</td>
<td>0.04</td>
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<td>0.02</td>
<td>1</td>
<td>1.5</td>
<td>±0.5pF</td>
<td>48</td>
</tr>
</tbody>
</table>

Vw (DC) DC Working Voltage [V] VB
Vw (AC) AC Working Voltage [V]
Vb Breakdown Voltage [V @ 1mA]
Vc Clamping Voltage [V @ 1mA]
Ib Maximum leakage current at the working voltage [μA]
Ez Transient Energy Rating [J, 10x1000μS]
Ib Peak Current Rating [A, 8x20μS]
Cap Capacitance [pF] @ 1MHz specified and 0.5V rms
Cap Tol Capacitance tolerance (pF) from Typ value
V JUMP Jump Start (V, 5min)
Antenna PowerGuard
AVX Low Capacitance Varistors
ESD Protection for Circuits Sensitive to Capacitance

V/I CHARACTERISTICS

S21 CHARACTERISTICS

VCA04AP: 18 Vdc

VCA04AP: 30 Vdc

VCA04AP: 70 Vdc

VCA06AP: 18-24 Vdc

VCA06AP: 30 Vdc

VCAC06AP: 30 Vdc
Antenna PowerGuard
AVX Low Capacitance Varistors
ESD Protection for Circuits Sensitive to Capacitance

ESD CHARACTERISTIC