GENERAL DESCRIPTION
AVX Radial Leaded Multi-Layer Varistors are AEC-Q200 Qualified and are designed for durability in harsh environments or applications where leaded component is preferred. The MLV advantage is bi-directional transient voltage protection and EMI/RFI attenuation in the off state. This allows designers to combine the circuit protection and EMI/RFI attenuation function into a single highly reliable device.

GENERAL CHARACTERISTICS
- Operating Temperatures: -55ºC to +125ºC
- Working Voltage: 18-48Vdc

FEATURES
- AEC Q200 qualified
- ESD rated to 25kV (HBM ESD Level 6)
- EMI/RFI attenuation in off state
- Excellent current and energy handling

APPLICATIONS
- Harsh environment
- Inductive switching
- DC Motors
- Water pump
- Fuel pump
- Relays and more

HOW TO ORDER

<table>
<thead>
<tr>
<th>VR20</th>
<th>AVX Style</th>
<th>AS</th>
<th>Series</th>
<th>Voltage</th>
<th>F</th>
<th>Clamping Voltage</th>
<th>R</th>
<th>TR2</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>VW</td>
<td>18</td>
<td>18</td>
<td>18V</td>
<td>26 18V</td>
<td>F</td>
<td>0.7J</td>
<td>R</td>
<td>RoHS Compliant</td>
<td>Blank = Bulk</td>
</tr>
<tr>
<td>VW</td>
<td>26</td>
<td>26</td>
<td>26V</td>
<td>48 26V</td>
<td>H</td>
<td>1.2J</td>
<td>R</td>
<td>T&amp;R Standard 1</td>
<td>TR1 = T&amp;R Standard 1</td>
</tr>
<tr>
<td>VW</td>
<td>48</td>
<td>48</td>
<td>48V</td>
<td>26 48V</td>
<td>J</td>
<td>1.6J</td>
<td>R</td>
<td>T&amp;R Standard 2</td>
<td>TR2 = T&amp;R Standard 2</td>
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</tbody>
</table>

ELECTRICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>AVX Part Number</th>
<th>VW(DC)</th>
<th>VW(AC)</th>
<th>VB</th>
<th>Vc</th>
<th>Ic</th>
<th>Et</th>
<th>Ed</th>
<th>Ip</th>
<th>Cap</th>
<th>Freq</th>
<th>VJump</th>
<th>PDISS</th>
</tr>
</thead>
<tbody>
<tr>
<td>VR20AS18J390</td>
<td>18.0</td>
<td>13.0</td>
<td>25.5±10%</td>
<td>42</td>
<td>5</td>
<td>1.6</td>
<td>3</td>
<td>500</td>
<td>3100</td>
<td>K</td>
<td>27.5</td>
<td>0.030</td>
</tr>
<tr>
<td>VR20AS26F540</td>
<td>26.0</td>
<td>18.0</td>
<td>33.0±10%</td>
<td>54</td>
<td>1</td>
<td>0.7</td>
<td>1.5</td>
<td>200</td>
<td>600</td>
<td>K</td>
<td>27.5</td>
<td>0.008</td>
</tr>
<tr>
<td>VR20AS26H560</td>
<td>26.0</td>
<td>18.0</td>
<td>34.5±10%</td>
<td>60</td>
<td>5</td>
<td>1.2</td>
<td>3</td>
<td>300</td>
<td>1200</td>
<td>K</td>
<td>27.5</td>
<td>0.018</td>
</tr>
<tr>
<td>VR20AS48H101</td>
<td>48.0</td>
<td>34.0</td>
<td>62.0±10%</td>
<td>100</td>
<td>1</td>
<td>1.2</td>
<td>–</td>
<td>250</td>
<td>500</td>
<td>K</td>
<td>48</td>
<td>0.022</td>
</tr>
</tbody>
</table>

VW(DC) DC Working Voltage [V]
VW(AC) AC Working Voltage [V]
VB Typical Breakdown Voltage [V @ 1mA]
Vc Clamping Voltage [V @ Ic]
Ic Test Current for Vc
Il Maximum leakage current at the working voltage [μA]
Et Transient Energy Rating [J, 10x1000μS]
Ed Load Dump Energy (x10) [J]
Ip Peak Current Rating [A, 8x20μS]
Cap Typical capacitance [pF] @ frequency specified and 0.5V RMS
VJump Jump Start (V)
PDISS Power Dissipation (W)

PHYSICAL DIMENSIONS

<table>
<thead>
<tr>
<th>AVX Style</th>
<th>Width (W)</th>
<th>Height (H)</th>
<th>Thickness (T)</th>
<th>Lead Spacing</th>
<th>Lead Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>VR20</td>
<td>5.09 Max (0.220)</td>
<td>5.06 Max (0.200)</td>
<td>3.175 Max (0.125)</td>
<td>2.54</td>
<td>0.508 (0.020)</td>
</tr>
</tbody>
</table>

mm (inches)
Radial Leaded Automotive Varistors
Radial Leaded TransGuard®

TYPICAL PERFORMANCE CURVES
Typical Voltage Current Characteristics

0.630 (16.0) Min.

0.748 (19.0) Min.

TAPE & REEL PACKAGING OPTIONS

TR1
Tape & Reel Standard 1

TR2
Tape & Reel Standard 2

VR20AS18J390
VR20AS26F540
VR20AS26H560
VR20AS48H101