Surface-Mount PAR® Transient Voltage Suppressors Combines 5 kW High Surge Capability with + 185 °C Operating Junction Temperature in SMC (DO-214AB) Package

KEY BENEFITS
- SMC (DO-214AB) package
- High surge capability to 5 kW at 10/1000 µs – 233 % higher than conventional 1.5 kW devices in SMC package
- High operating junction temperature up to + 185 °C
- Low-stress, symmetric lead frame designs
- AEC-Q101 qualified
- 16 TVS devices with stand-off voltages from 10 V to 43 V
- Peak pulse power current from 72 A to 294.1 A @ 10 / 1000 µs
- Maximum clamping voltage from 17 V to 69.4 V
- Very fast response times
- Low incremental surge resistance
- RoHS-compliant

APPLICATIONS
- Telecom infrastructure DC power bus lightning surge protection
- Secondary protection of centralized load dump suppression powernet vehicle electronic units (circuits) (ISO7637-2:2011, Pulse 1, 2a, 3a, and 3b)

RESOURCES
- Datasheets: http://www.vishay.com/ppg?89432
- For technical questions, contact TVS@Vishay.com
- Material categorization: For definitions of compliance, please see http://www.vishay.com/doc?99912
Surface Mount PAR® Transient Voltage Suppressors
High Temperature Stability and High Reliability Conditions

FEATURES
- Junction passivation optimized design
- Passivated anisotropic rectifier technology
- TJ = 185 °C capability suitable for high reliability and automotive requirement
- Available in uni-directional polarity only
- 5000 W peak pulse power capability with a 10/1000 μs waveform
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

MECHANICAL DATA
Case: DO-214AB (SMCJ)
Molding compound meets UL 94 V-0 flammability rating
Base P/NHM3_X - halogen-free, RoHS-compliant and AEC-Q101 qualified ("_X" denotes revision code e.g. A, B, ....)
Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
HM3 suffix meets JESD 201 class 2 whisker test
Polarity: Color band denotes cathode end

TYPICAL APPLICATIONS
Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, automotive, and telecommunication.

MAXIMUM RATINGS (TA = 25 °C unless otherwise noted)

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>SYMBOL</th>
<th>VALUE</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak pulse power dissipation with a 10/1000 μs waveform (fig. 3)</td>
<td>P_{PPM} ((1))</td>
<td>5000</td>
<td>W</td>
</tr>
<tr>
<td>Peak power pulse current with a 10/1000 μs waveform (fig. 1)</td>
<td>I_{PPM} ((1))</td>
<td>See next table</td>
<td>A</td>
</tr>
<tr>
<td>Power dissipation on infinite heatsink, TJmax = 50 °C</td>
<td>P_D</td>
<td>6.5</td>
<td>W</td>
</tr>
<tr>
<td>Operating junction and storage temperature range</td>
<td>TJ, TSTG</td>
<td>-65 to +185</td>
<td>°C</td>
</tr>
</tbody>
</table>

Note
\((1)\) Non-repetitive current pulse, per fig. 3 and derated above TA = 25 °C per fig. 2

ORDERING INFORMATION (Example)

<table>
<thead>
<tr>
<th>PREFERRED P/N</th>
<th>UNIT WEIGHT (g)</th>
<th>PREFERRED PACKAGE CODE</th>
<th>BASE QUANTITY</th>
<th>DELIVERY MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>5KASMC10AHM3_A/H ((1))</td>
<td>0.257</td>
<td>H</td>
<td>850</td>
<td>7&quot; diameter plastic tape and reel</td>
</tr>
<tr>
<td>5KASMC10AHM3_AJ ((1))</td>
<td>0.257</td>
<td>I</td>
<td>3500</td>
<td>13&quot; diameter plastic tape and reel</td>
</tr>
</tbody>
</table>

Note
\((1)\) AEC-Q101 qualified