PTVS3-xxxC-SH Series High Current TVS Diodes

Features
- 3 kA, 8/20 µs surge capability
- Low clamping voltage under surge
- Bidirectional TVS
- Surface mount package
- UL Recognized
- RoHS compliant*

Applications
- High power DC bus protection

General Information
The PTVS3-xxxC-SH range of high current bidirectional TVS diodes is designed for use in high power DC bus clamping applications. These devices offer bidirectional port protection and are available with standoff voltage ratings of 58 V and 76 V.

The devices are RoHS* compliant. They also meet IEC 61000-4-5 8/20 µs current surge requirements.

Absolute Maximum Ratings (@ TA = 25 °C Unless Otherwise Noted)

<table>
<thead>
<tr>
<th>Rating</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repetitive Standoff Voltage</td>
<td>PTVS3-058C-SH</td>
<td>VWM</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>PTVS3-076C-SH</td>
<td></td>
<td>76</td>
</tr>
<tr>
<td>Peak Current Rating per 8/20 µs</td>
<td>PTVS3-058C-SH</td>
<td>IPPM</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PTVS3-076C-SH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Junction Temperature Range</td>
<td>TJ</td>
<td>-55 to +125</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>TS</td>
<td>-55 to +150</td>
<td>°C</td>
</tr>
</tbody>
</table>

Electrical Characteristics (@ TA = 25 °C Unless Otherwise Noted)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID Standby Current</td>
<td>VD = VWM</td>
<td>6</td>
<td>10</td>
<td>µA</td>
<td></td>
</tr>
<tr>
<td>V(BR) Breakdown Voltage</td>
<td>VBR = 10 mA</td>
<td>64</td>
<td>67</td>
<td>90</td>
<td>V</td>
</tr>
<tr>
<td>Vc Clamping Voltage (1)</td>
<td>VPP = 3 kA</td>
<td>85</td>
<td>90</td>
<td>95</td>
<td>V</td>
</tr>
<tr>
<td>V(BR) Temperature Coefficient</td>
<td>F = 10 kHz, Vd = 1 Vrms</td>
<td>0.1</td>
<td></td>
<td></td>
<td>%/°C</td>
</tr>
<tr>
<td>Capacitance</td>
<td>PTVS3-058C-SH</td>
<td></td>
<td>1.7</td>
<td></td>
<td>nF</td>
</tr>
<tr>
<td></td>
<td>PTVS3-076C-SH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) Vc measured at the time which is coincident with the peak surge current.

Agency Approval

| Description                  | UL  | File Number: E313168 |

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WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

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Performance Graphs

V-I Characteristic

This graph shows the typical device surge current derating versus ambient temperature when subjected to the 8/20 µs current waveform per the IEC 61000-4-5 specification. This device is not intended for continuous operation at temperatures above 125 °C.

Typical VBR vs. Junction Temperature

Current 8/20 µs Waveform per IEC 61000-4-5

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Product Dimensions

This is an RoHS compliant product, with epoxy encapsulations meeting UL Class 94V-0. Ag plated leads meet solderability requirements of JESD22-B102. Package dimensions are shown below.

How to Order

PTVS = Power TVS
3 = 3 kA
High-Current Diode
058 = 58 V
076 = 76 V
C = Bidirectional Device
S = Surface Mount
H = High Temperature Series
R = Tape and Reel (400 pcs. per reel)

Application

A typical application for Power TVS products includes DC power line protection.

Recommended Printed Wiring Land Pattern Dimensions

Typical Part Marking

PTVS3-058C-SH ........................................ 3058
PTVS3-076C-SH ........................................ 3076

<table>
<thead>
<tr>
<th>Device</th>
<th>Dimension D</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTVS3-058C-SH</td>
<td>7.00 ± 0.50</td>
</tr>
<tr>
<td></td>
<td>(0.276 ± 0.020)</td>
</tr>
<tr>
<td>PTVS3-076C-SH</td>
<td>7.90 ± 0.50</td>
</tr>
<tr>
<td></td>
<td>(0.311 ± 0.020)</td>
</tr>
</tbody>
</table>
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