Features
- 10 kA, 8/20 µs surge capability
- Low clamping voltage under surge
- Bidirectional TVS
- Surface mount package
- Excellent performance over temperature

Applications
- High power DC bus protection

General Information
The PTVS10-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>VWM</td>
<td>58</td>
<td>V</td>
</tr>
<tr>
<td></td>
<td></td>
<td>76</td>
<td>V</td>
</tr>
<tr>
<td>Peak Current Rating per 8/20 µs IEC 61000-4-5</td>
<td>IPPM</td>
<td>10</td>
<td>kA</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>I_D Standby Current</td>
<td>VD = VWM</td>
<td>10</td>
<td>µA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V(BR) Breakdown Voltage</td>
<td>I_B = 10 mA</td>
<td>64</td>
<td>67</td>
<td>70</td>
<td>V</td>
</tr>
<tr>
<td></td>
<td>PTVS10-058C-SH</td>
<td>85</td>
<td>90</td>
<td>95</td>
<td>V</td>
</tr>
<tr>
<td></td>
<td>PTVS10-076C-SH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V_C Clamping Voltage (1)</td>
<td>IPP = 10 kA</td>
<td>70</td>
<td>90</td>
<td>110</td>
<td>V</td>
</tr>
<tr>
<td></td>
<td>PTVS10-058C-SH</td>
<td>85</td>
<td>90</td>
<td>140</td>
<td>V</td>
</tr>
<tr>
<td></td>
<td>PTVS10-076C-SH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V(BR) Temperature Coefficient</td>
<td>F = 10 kHz,</td>
<td>0.1</td>
<td>%/°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>V_d = 1 Vrms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C Capacitance</td>
<td></td>
<td>8</td>
<td>6</td>
<td></td>
<td>nF</td>
</tr>
</tbody>
</table>

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

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PTVS10-xxxC-SH Series High Current TVS Diodes

Product Dimensions

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

Recommended Printed Wiring Land Pattern Dimensions

Application

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

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**Device** | **Dimension D**
--- | ---
PTVS10-058C-SH | 11.00 Max. (0.433)
PTVS10-076C-SH | 12.00 Max. (0.472)

**Recommended Printed Wiring Land Pattern Dimensions**

**Typical Part Marking**

PTVS10-058C-SH ... 10058
PTVS10-076C-SH ... 10076

**How to Order**

PTVS 10 - xxx C - S H

- **Series**
  - PTVS = Power TVS High Current Diode
- **Peak Current Rating**
  - 10 = 10 kA
- **Repetitive Standoff Voltage**
  - 058 = 58 V
  - 076 = 76 V
- **Suffix**
  - C = Bidirectional Device
  - S = Surface Mount
  - H = High Temperature Series

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PTVS10-xxxC-SH Series High Current TVS Diodes

Performance Graphs

V-I Characteristic

Typical VBR vs. Junction Temperature

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 Surge Current Derating

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

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