



Features

- 3 kA, 8/20 μ s surge capability
- Low clamping voltage under surge
- Bidirectional TVS
- Surface mount package

Applications

- High power DC bus protection

PTVS3-xxxC-SH Series High Current TVS Diodes

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 μ s current surge requirements.



Absolute Maximum Ratings (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

| Rating | | Symbol | Value | Unit |
|--|--------------------------------|-----------|-------------|------------------|
| Repetitive Standoff Voltage | PTVS3-058C-SH PTVS3-076C-SH | V_{WM} | 58 76 | V |
| Peak Current Rating per 8/20 μ s IEC 61000-4-5 | | I_{PPM} | 3 | kA |
| Operating Junction Temperature Range | | T_J | -55 to +125 | $^\circ\text{C}$ |
| Storage Temperature Range | | T_S | -55 to +150 | $^\circ\text{C}$ |

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

| Parameter | Test Conditions | | Min. | Typ. | Max. | Unit |
|------------------------------------|---|--------------------------------|----------|------------|------------|---------------------|
| I_D Standby Current | $V_D = V_{WM}$ | | | | 10 | μA |
| $V_{(BR)}$ Breakdown Voltage | $I_{BR} = 10\text{ mA}$ | PTVS3-058C-SH PTVS3-076C-SH | 64 85 | 67 90 | 70 95 | V |
| V_C Clamping Voltage (1) | $I_{PP} = 3\text{ kA}$ | PTVS3-058C-SH PTVS3-076C-SH | | | 110 140 | V |
| $V_{(BR)}$ Temperature Coefficient | | | | 0.1 | | $\%/^\circ\text{C}$ |
| C Capacitance | F = 10 kHz, $V_d = 1\text{ V}_{rms}$ | PTVS3-058C-SH PTVS3-076C-SH | | 2.3 1.7 | | nF |

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

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*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

Specifications are subject to change without notice.

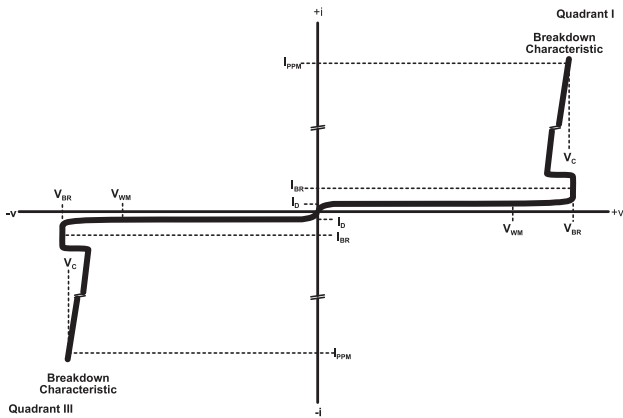
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

PTVS3-xxxC-SH Series High Current TVS Diodes

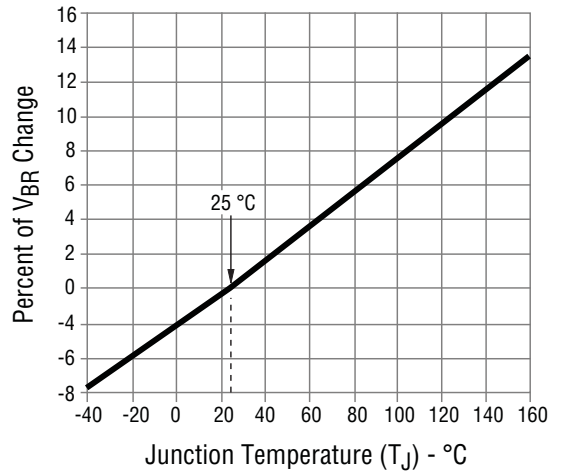


Performance Graphs

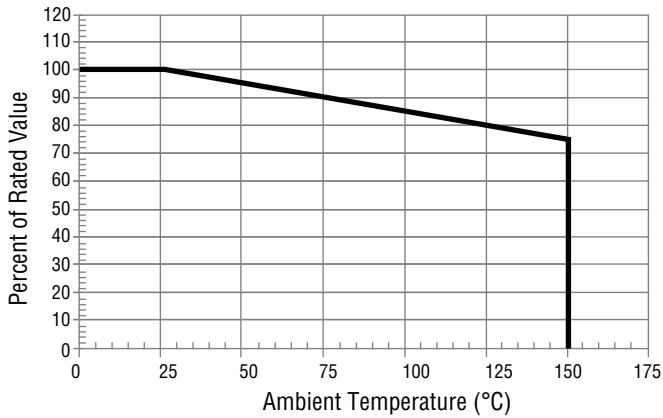
V-I Characteristic



Typical V_{BR} vs. Junction Temperature

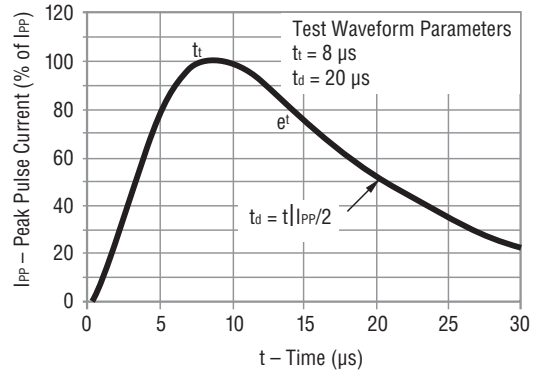


Typical Surge Current Derating



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

Current 8/20 μ s Waveform per IEC 61000-4-5



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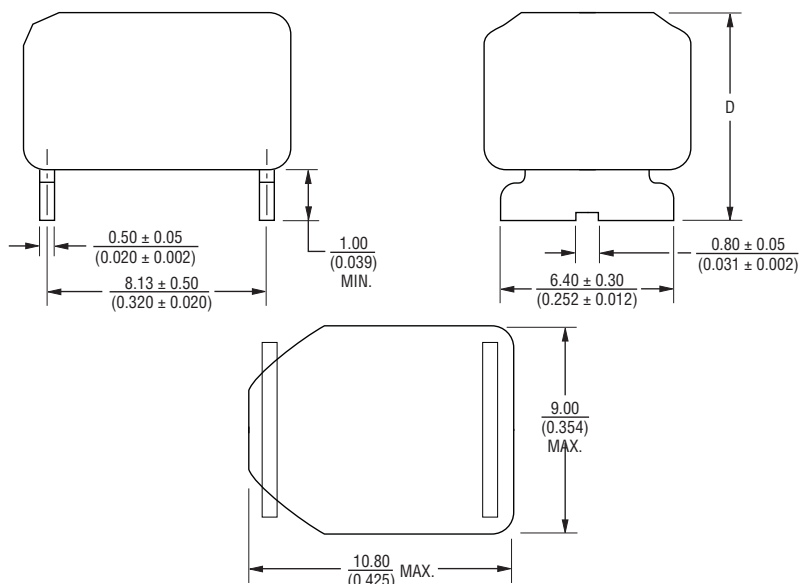
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PTVS3-xxxC-SH Series High Current TVS Diodes



Product Dimensions

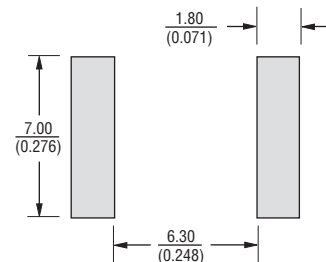
This is a Pb free product, with epoxy encapsulations meeting UL Class 94V-0. Ag plated leads meet solderability requirements of JESD22-B102. Package dimensions are shown below.



| Device | Dimension D |
|---------------|---|
| PTVS3-058C-SH | $\frac{7.00 \pm 0.50}{(0.276 \pm 0.020)}$ |
| PTVS3-076C-SH | $\frac{7.90 \pm 0.50}{(0.311 \pm 0.020)}$ |

DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Recommended Printed Wiring Land Pattern Dimensions



Typical Part Marking

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

How to Order

PTVS 3 - xxx C - S H

Series _____
PTVS = Power TVS High Current Diode

Peak Current Rating _____
3 = 3 kA

Repetitive Standoff Voltage _____
058 = 58 V
076 = 76 V

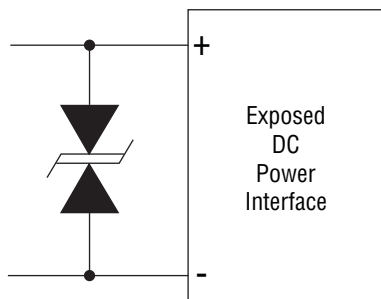
Suffix _____
C = Bidirectional Device

Package _____
S = Surface Mount

Temperature _____
H = High Temperature Series

Application

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



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[PTVS3-076C-SH](#) [PTVS3-058C-SH](#)