



## Features

- 3 kA, 8/20  $\mu$ s surge capability
- Low clamping voltage under surge
- Bidirectional TVS
- Surface mount package
- UL Recognized 
- RoHS compliant\*

## 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  $\mu$ s current surge requirements.



### Agency Approval

Description	
UL	File Number: E313168

### 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 $\mu$ 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	$\mu\text{A}$
$V_{(BR)}$ 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, $V_d = 1\text{ Vrms}$	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.

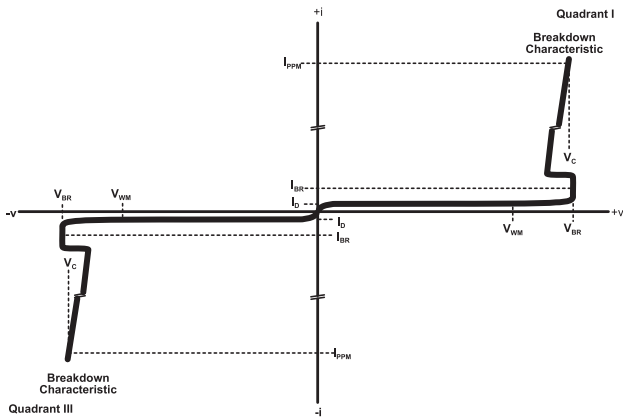
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

# PTVS3-xxxC-SH Series High Current TVS Diodes

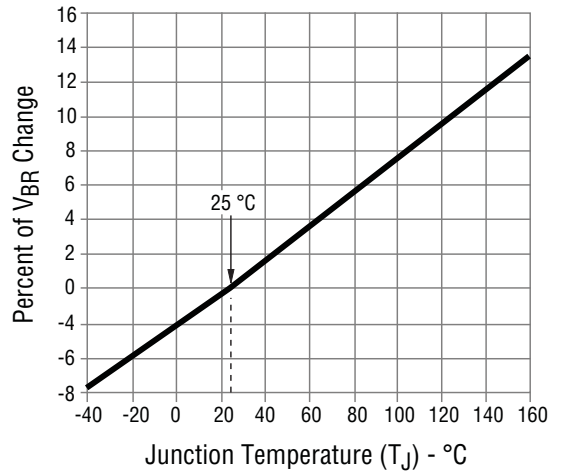


## Performance Graphs

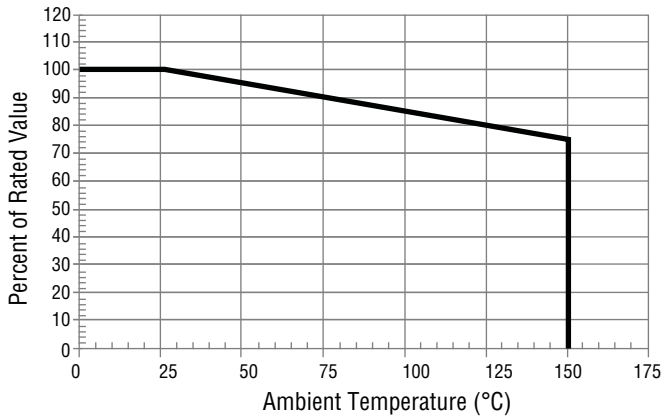
### V-I Characteristic



### Typical $V_{BR}$ vs. Junction Temperature

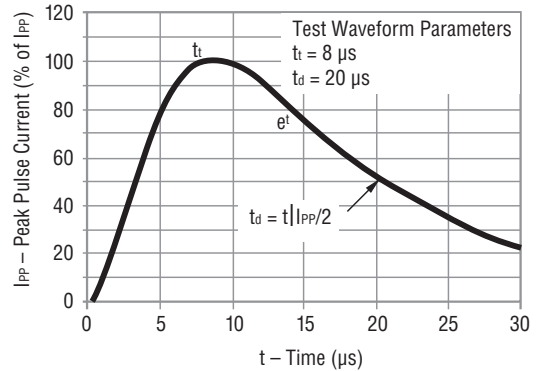


### Typical Surge Current Derating



This graph shows the typical device surge current derating versus ambient temperature when subjected to the 8/20  $\mu$ 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 $\mu$ s Waveform per IEC 61000-4-5



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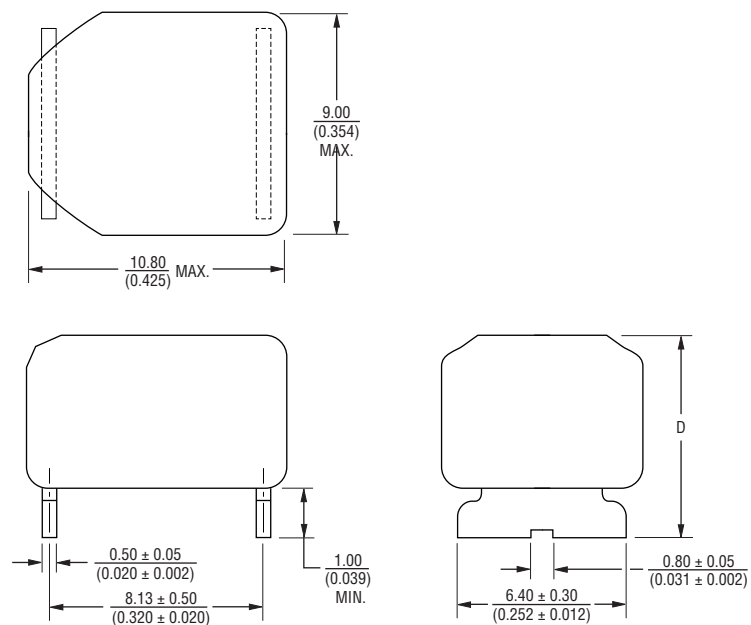
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# PTVS3-xxxC-SH Series High Current TVS Diodes



## Product Dimensions

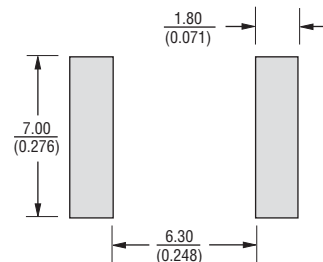
This is an RoHS compliant product, with epoxy encapsulations meeting UL Class 94V-0. Ag plated leads meet solderability requirements of JESD22-B102. Package dimensions are shown below.



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

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

## 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 - R**

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

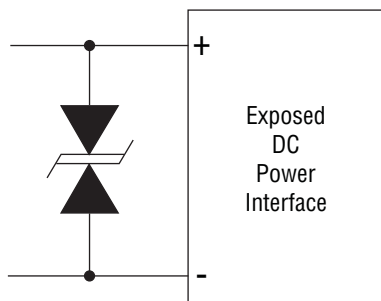
Package \_\_\_\_\_  
S = Surface Mount

Temperature \_\_\_\_\_  
H = High Temperature Series

Packaging Option \_\_\_\_\_  
(Blank) = Tray Packaging  
R = Tape and Reel (400 pcs. per reel)

## Application

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



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