



## Features

- 6 kA, 8/20  $\mu$ s surge capability
- Low clamping voltage under surge
- Bidirectional TVS
- Surface mount package

## Applications

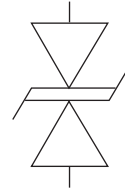
- High power DC bus protection

# PTVS6-xxxC-SH Series High Current TVS Diodes

## General Information

The PTVS6-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.



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

| Rating   |                                | Symbol    | Value       | Unit             |
|--|--------------------------------|-----------|-------------|------------------|
| Repetitive Standoff Voltage                        | PTVS6-058C-SH<br>PTVS6-076C-SH | $V_{WM}$  | 58<br>76    | V                |
| Peak Current Rating per 8/20 $\mu$ s IEC 61000-4-5 |                                | $I_{PPM}$ | 6           | 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       | $I_{BR} = 10\text{ mA}$                           | PTVS6-058C-SH<br>PTVS6-076C-SH | 64<br>85 | 67<br>90   | 70<br>95   | V                   |
| $V_C$ Clamping Voltage (1)         | $I_{PP} = 3\text{ kA}$                            | PTVS6-058C-SH<br>PTVS6-076C-SH |          |            | 110<br>140 | V                   |
| $V_{(BR)}$ Temperature Coefficient |   |                                |          | 0.1        |            | $\%/^\circ\text{C}$ |
| C Capacitance                      | $F = 10\text{ kHz}$ ,<br>$V_d = 1\text{ V}_{rms}$ | PTVS6-058C-SH<br>PTVS6-076C-SH |          | 4.5<br>3.3 |            | nF                  |

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

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**WARNING Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)**

\*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.

Users should verify actual device performance in their specific applications.

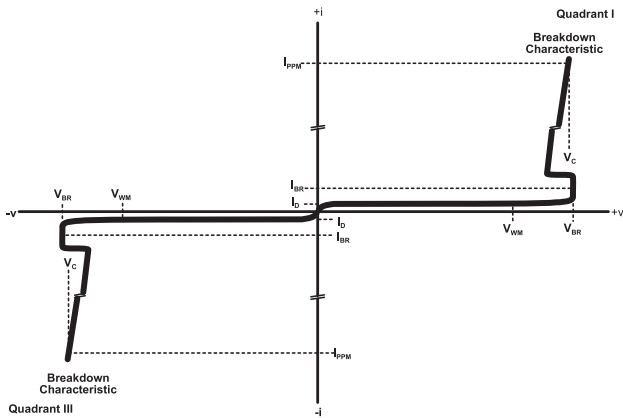
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# PTVS6-xxxC-SH Series High Current TVS Diodes

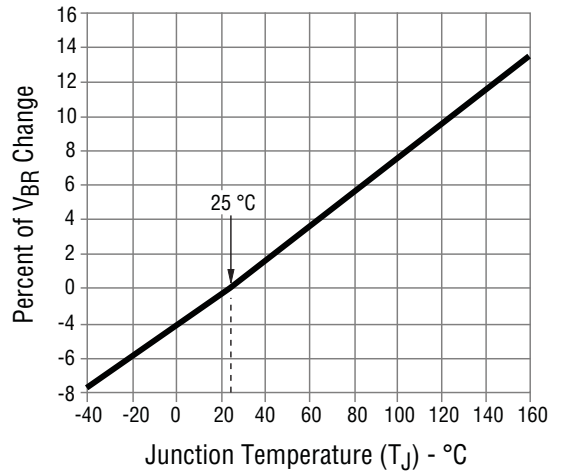


## Performance Graphs

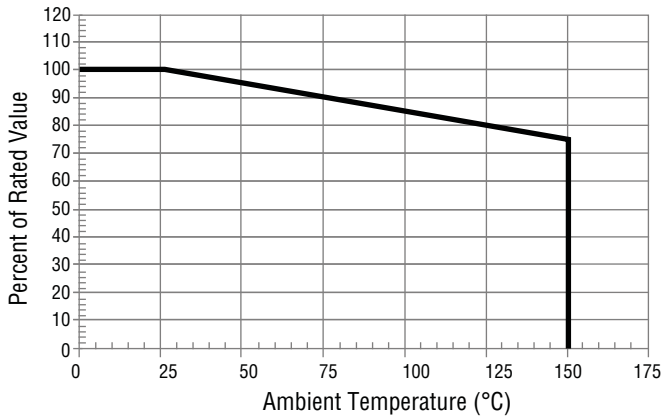
### V-I Characteristic



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

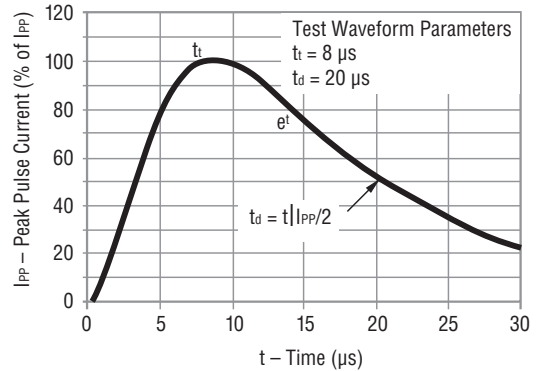


### Typical Surge Current Derating



This graph shows the typical device surge current derating versus ambient temperature when subjected to the 8/20  $\mu\text{s}$  current waveform per the IEC 61000-4-5 specification. This device is not intended for continuous operation at temperatures above  $125^\circ\text{C}$ .

### Current 8/20 $\mu\text{s}$ Waveform per IEC 61000-4-5



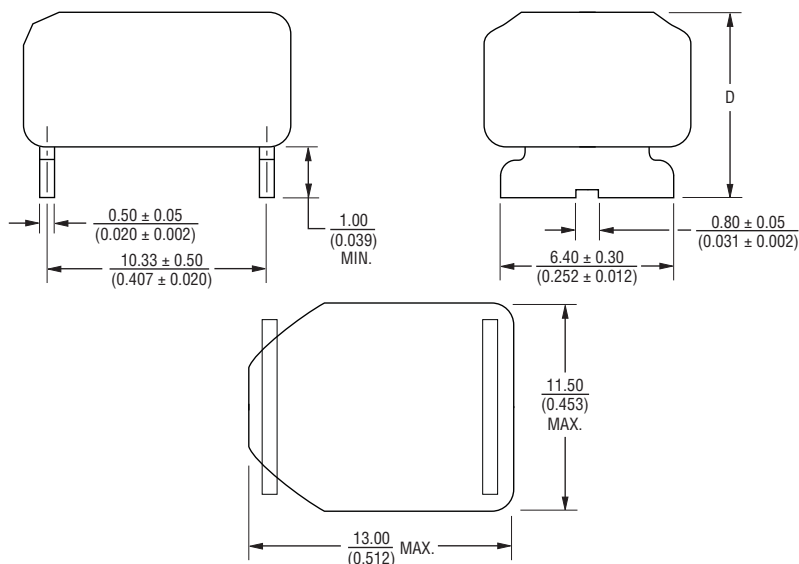
Specifications are subject to change without notice. Users should verify actual device performance in their specific applications.

# PTVS6-xxxC-SH Series High Current TVS Diodes



## Product Dimensions

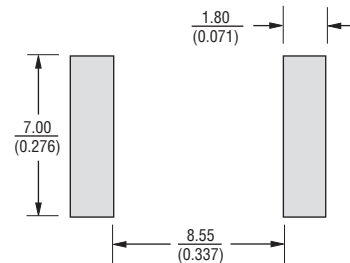
This is a Pb free product, with epoxy encapsulations meeting UL Class 94V-0. Ag plated leads meet solderability requirements of JESD22-B102. Package dimensions are shown below.



| Device        | Dimension D                               |
|---------------|---|
| PTVS6-058C-SH | $\frac{7.00 \pm 0.50}{(0.276 \pm 0.020)}$ |
| PTVS6-076C-SH | $\frac{7.90 \pm 0.50}{(0.311 \pm 0.020)}$ |

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

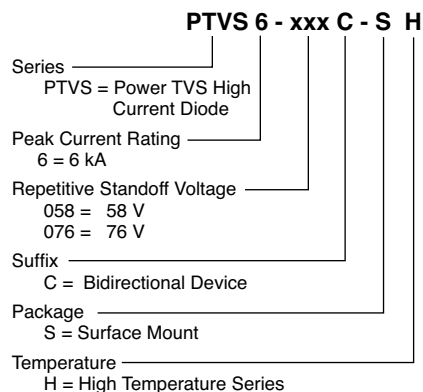
## Recommended Printed Wiring Land Pattern Dimensions



## Typical Part Marking

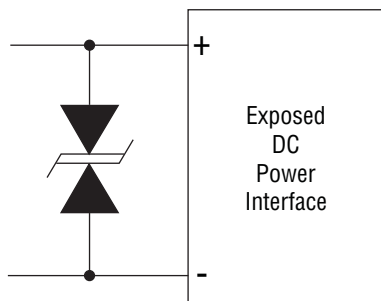
PTVS6-058C-SH ..... 6058  
PTVS6-076C-SH ..... 6076

## How to Order



## Application

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



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