




## Features

- 6 kA, 8/20  $\mu$ s surge capability
- Low clamping voltage under surge
- Bidirectional TVS
- UL Recognized 

## Applications

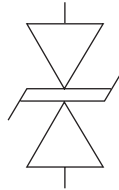
- AC line protection
- High power DC bus protection

# PTVS6-xxxC Series High Current TVS Diodes

### General Information

The PTVS6-xxxC range of high current bidirectional TVS diodes is designed for use in AC line protection and high power DC bus clamping applications. These devices offer bidirectional port protection from 380 volts to 430 volts.

The devices are RoHS\* and UL compliant while also meeting IEC 61000-4-5 8/20  $\mu$ s current surge requirements.



### Agency Approval

Description	
UL	File Number: Pending

### Absolute Maximum Ratings (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

Rating	Symbol	Value	Unit
Repetitive Standoff Voltage	$V_{WM}$	380 430	V
Peak Current Rating per 8/20 $\mu$ s IEC 61000-4-5	$I_{PPM}$	6	kA
Operating Junction Temperature Range	$T_J$	-40 to +125	°C
Storage Temperature Range	$T_S$	-55 to +150	°C
Lead Temperature, Soldering (10 s)		260	°C

### Electrical Characteristics (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_D$ Standby Current	$V_D = V_{WM}$			10	$\mu$ A
$V_{(BR)}$ Breakdown Voltage	$I_{BR} = 10$ mA	PTVS6-380C 401 PTVS6-430C 440	420 470	443 490	V
$V_C$ Clamping Voltage	$I_{PP} = 6$ kA	PTVS6-380C 480 PTVS6-430C 530	540 600		V
$V_{(BR)}$ Temperature Coefficient			0.1		%/°C
C Capacitance	F = 10 kHz, $V_d = 1$ Vrms	PTVS6-380C 1.1 PTVS6-430C 1.0	1.5 1.3		nF

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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.

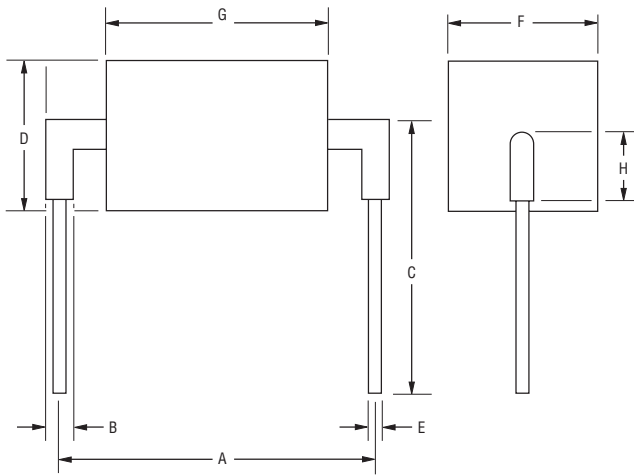
Customers should verify actual device performance in their specific applications.

# PTVS6-xxxC Series High Current TVS Diodes

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## Product Dimensions

The product is epoxy encapsulated per UL Class 94V-0 with Ag plated leads solderable per MIL-STD-750, Method 2026. The package dimensions and part marking are shown below.



Dimension	PTVS6-380C	PTVS6-430C
A	$\frac{24.15 \pm 0.72}{(0.950 \pm 0.028)}$	$\frac{24.15 \pm 0.72}{(0.950 \pm 0.028)}$
B	$\frac{2.40}{(0.094)}$ Typ.	$\frac{2.40}{(0.094)}$ Typ.
C	$\frac{15.0}{(0.59)}$ Min.	$\frac{15.0}{(0.59)}$ Min.
D	$\frac{13.5}{(0.53)}$ Max.	$\frac{13.5}{(0.53)}$ Max.
E	$\frac{1.25 \pm 0.05}{(0.049 \pm 0.002)}$	$\frac{1.25 \pm 0.05}{(0.049 \pm 0.002)}$
F	$\frac{13.5}{(0.53)}$ Max.	$\frac{13.5}{(0.53)}$ Max.
G	$\frac{16.0}{(0.63)}$ Max.	$\frac{16.0}{(0.63)}$ Max.
H	$\frac{6.60}{(0.26)}$ Max.	$\frac{6.60}{(0.26)}$ Max.

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

## Typical Part Marking

PTVS6-380C .....6380  
 PTVS6-430C .....6430

## How to Order

**PTVS 6 - xxx C**

Series \_\_\_\_\_  
 PTVS = PowerTVS High Current Diode

Peak Current Rating \_\_\_\_\_  
 6 = 6 kA

Repetitive Standoff Voltage \_\_\_\_\_  
 380 = 380 V  
 430 = 430 V

Suffix \_\_\_\_\_  
 C = Bidirectional Device

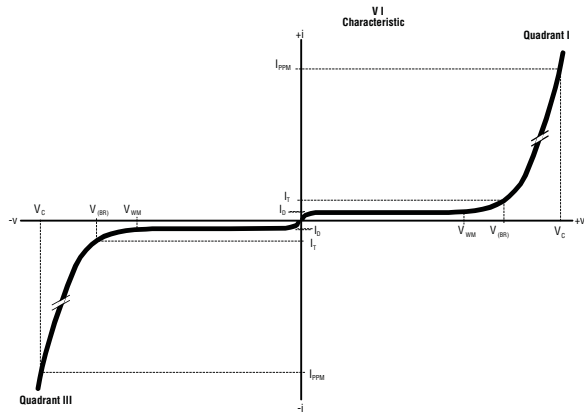
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# PTVS6-xxxC Series High Current TVS Diodes

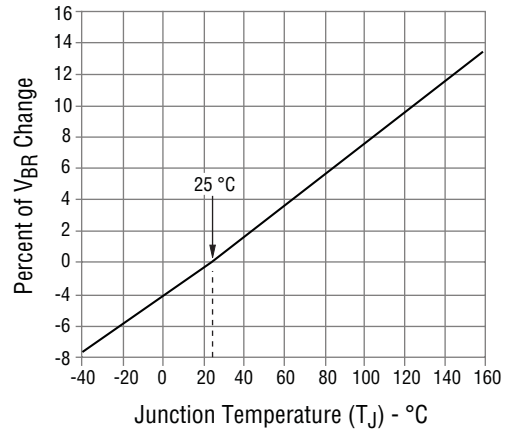
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## Performance Graphs

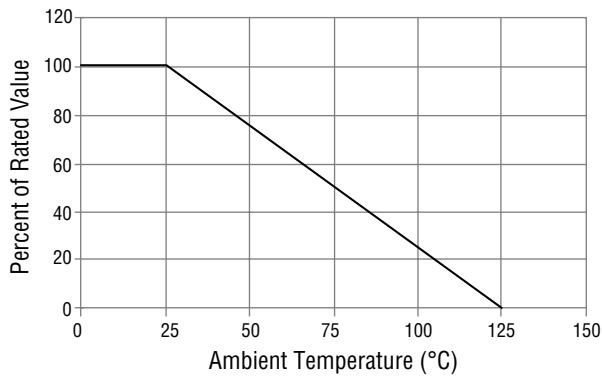
### V-I Characteristic



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

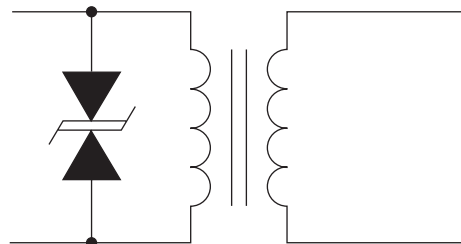


### Typical Peak Power Derating



## Application

A typical application for PowerTVS products includes AC power line primary protection.



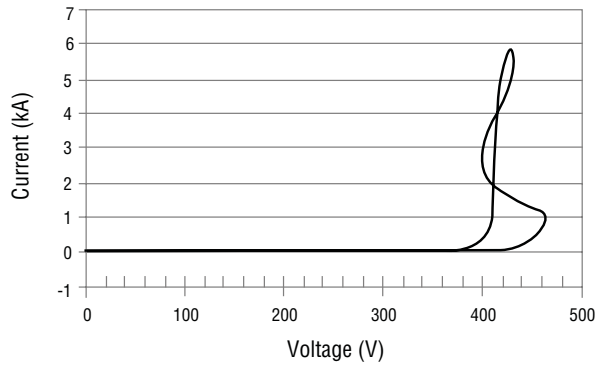
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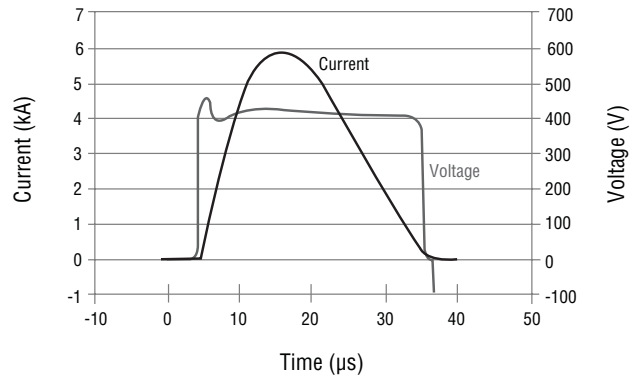
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## Performance Graphs (Continued)

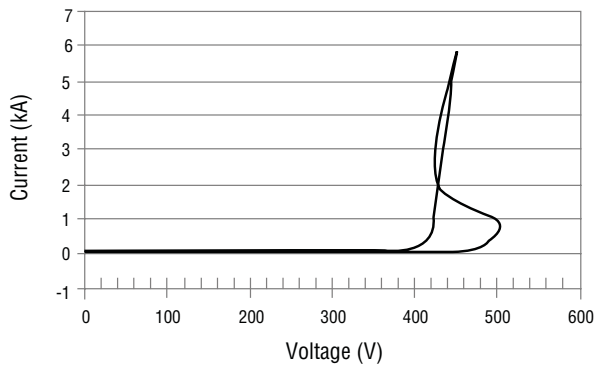
### Surge Response - PTVS6-380C



### Surge Response (1.2/50, 8/20 Surge) - PTVS6-380C



### Surge Response - PTVS6-430C



### Surge Response (1.2/50, 8/20 Surge) - PTVS6-430C

