



## Features

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



These models are obsolete and not recommended for new designs. Model **PTVS6-058C-TH** and **PTVS6-076C-TH** are possible alternatives.

## 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 58 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: E313168

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

Rating	Symbol	Value	Unit
Repetitive Standoff Voltage	$V_{WM}$	PTVS6-058C	58
		PTVS6-076C	76
		PTVS6-380C	380
		PTVS6-430C	430
Peak Current Rating per 8/20 $\mu$ s IEC 61000-4-5	$I_{PPM}$	6	kA
Operating Junction Temperature Range	$T_J$	-55 to +150	$^\circ\text{C}$
Storage Temperature Range	$T_S$	-55 to +150	$^\circ\text{C}$
Lead Temperature, Soldering (10 s)		260	$^\circ\text{C}$

### 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	64	66	70
		PTVS6-076C	85	92	95
		PTVS6-380C	401	420	443
		PTVS6-430C	440	470	490
$V_C$ Clamping Voltage	$I_{PP} = 6\text{ kA}$	PTVS6-058C		95	110
		PTVS6-076C		120	140
		PTVS6-380C		480	540
		PTVS6-430C		530	600
$V_{(BR)}$ Temperature Coefficient			0.1		$\%/\text{C}$
C Capacitance	F = 10 kHz, $V_d = 1\text{ Vrms}$	PTVS6-058C		2.0	2.3
		PTVS6-076C		1.5	2.0
		PTVS6-380C		1.1	1.5
		PTVS6-430C		1.0	1.3

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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.

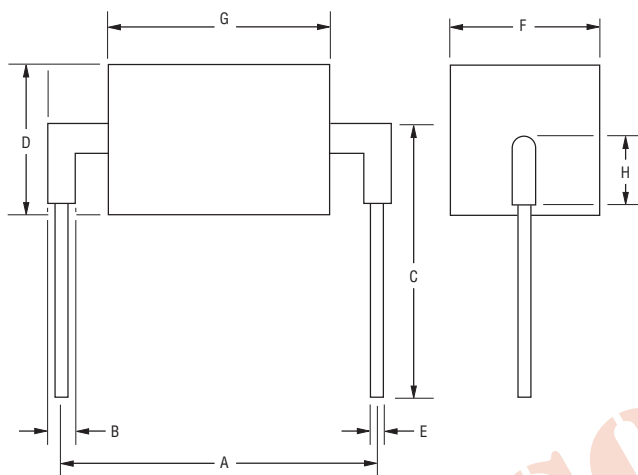
Users should verify actual device performance in their specific applications.

# 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.



Dim.	PTVS6-058C	PTVS6-076C	PTVS6-380C PTVS6-430C
A	$\frac{24.15 \pm 0.72}{(0.950 \pm 0.028)}$		
B	$\frac{2.40}{(0.094)}$ Typ.		
C	$\frac{15.0}{(0.59)}$ Min.		
D	$\frac{13.5}{(0.53)}$ Max.		
E	$\frac{1.25 \pm 0.05}{(0.049 \pm 0.002)}$		
F	$\frac{13.5}{(0.53)}$ Max.		
G	$\frac{5.0}{(0.20)}$ Max.	$\frac{6.0}{(0.24)}$ Max.	$\frac{16.0}{(0.63)}$ Max.
H	$\frac{6.60}{(0.26)}$ Max.		

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

## Typical Part Marking

PTVS6-058C .....	6058
PTVS6-076C .....	6076
PTVS6-380C .....	6380
PTVS6-430C .....	6430

## How to Order

Series	PTVS 6 - xxx C
PTVS = Power TVS High Current Diode	
Peak Current Rating	6 = 6 kA
Repetitive Standoff Voltage	
058 = 58 V	
076 = 76 V	
380 = 380 V	
430 = 430 V	
Suffix	C = Bidirectional Device

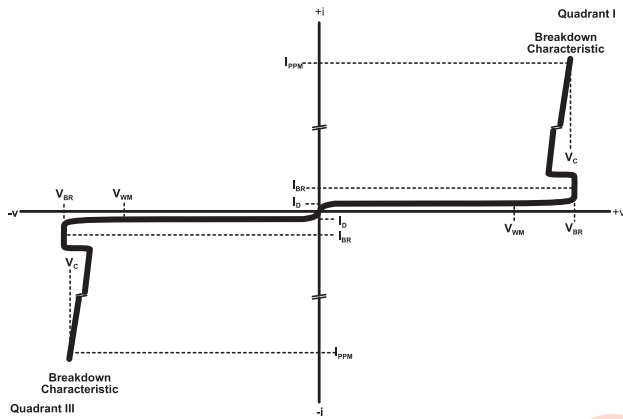
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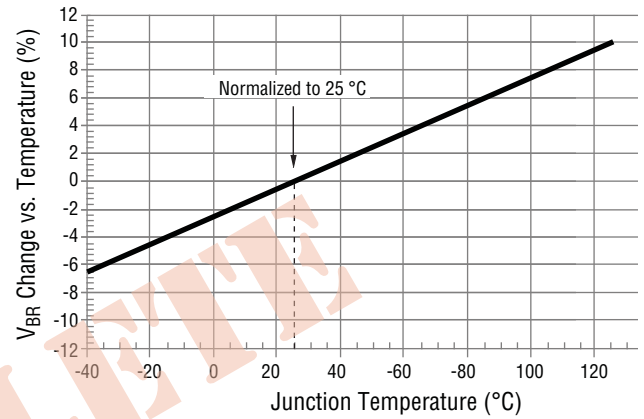
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## Performance Graphs

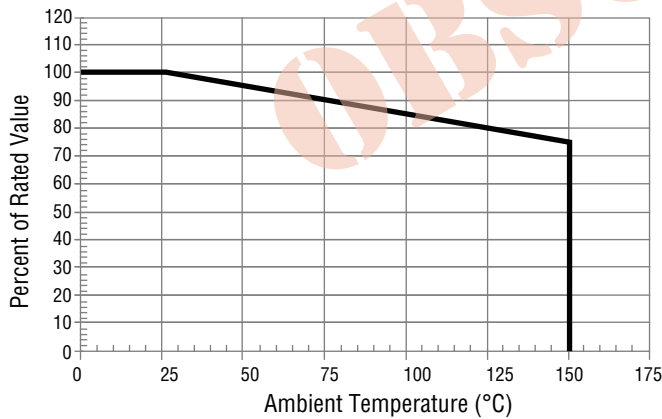
### V-I Characteristic



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

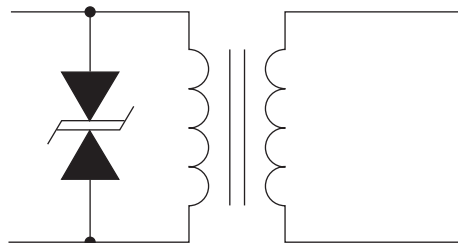


### Typical Peak Power Derating



## Application

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



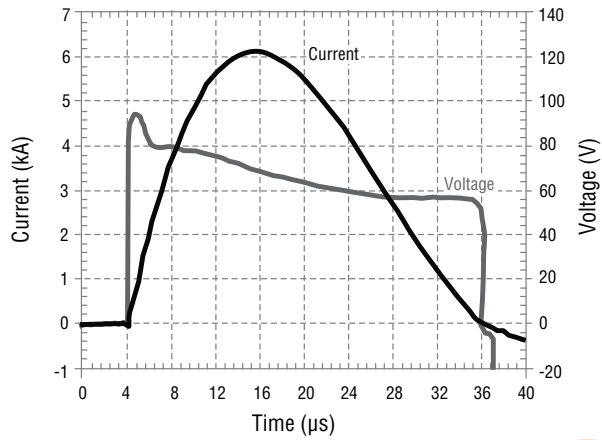
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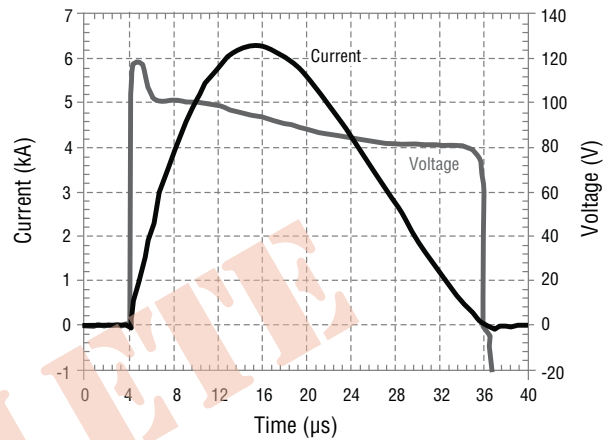
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## Performance Graphs (Continued)

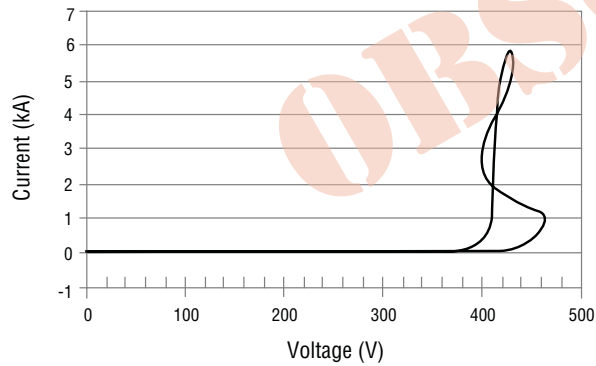
Surge Response (1.2/50, 8/20 Surge) - PTVS6-058C



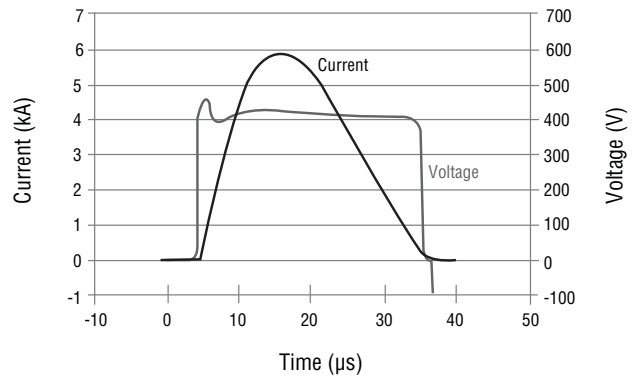
Surge Response (1.2/50, 8/20 Surge) - PTVS6-076C



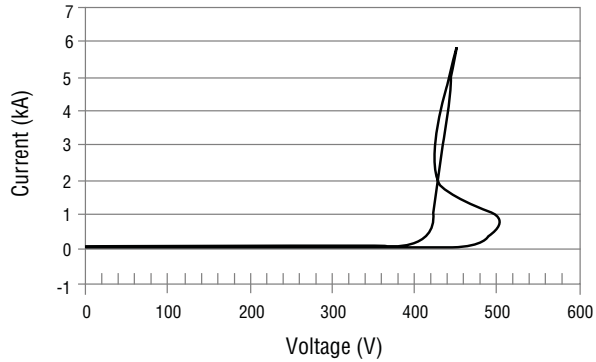
Surge Response - PTVS6-380C



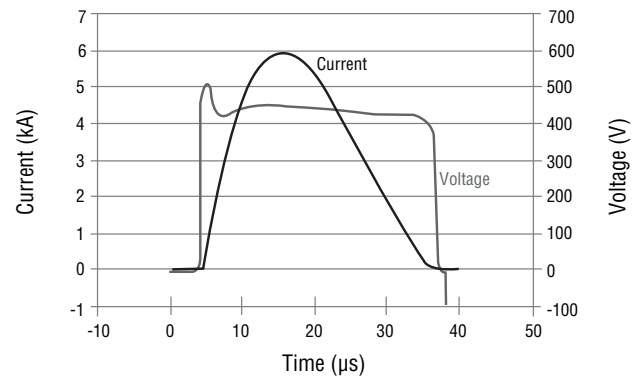
Surge Response (1.2/50, 8/20 Surge) - PTVS6-380C



Surge Response - PTVS6-430C



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



REV. 01/15

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