



Features

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



Model PTVS6-058C and PTVS6-076C are currently available, but not recommended for new designs. The Model **PTVS6-xxxC-TH** Series is recommended.

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 μ 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}	58	V
		76	
		380	
		430	
		430	
Peak Current Rating per 8/20 μ 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	μA
$V_{(BR)}$ Breakdown Voltage	$I_{BR} = 10\text{ mA}$	PTVS6-058C	64	66	70	V
		PTVS6-076C	85	92	95	
		PTVS6-380C	401	420	443	
		PTVS6-430C	440	470	490	
		PTVS6-430C	440	470	490	
V_C Clamping Voltage	$I_{PP} = 6\text{ kA}$	PTVS6-058C		95	110	V
		PTVS6-076C		120	140	
		PTVS6-380C		480	540	
		PTVS6-430C		530	600	
		PTVS6-430C		530	600	
$V_{(BR)}$ Temperature Coefficient				0.1		$\%/^\circ\text{C}$
C Capacitance	F = 10 kHz, $V_d = 1\text{ Vrms}$	PTVS6-058C		2.0	2.3	nF
		PTVS6-076C		1.5	2.0	
		PTVS6-380C		1.1	1.5	
		PTVS6-430C		1.0	1.3	
		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.

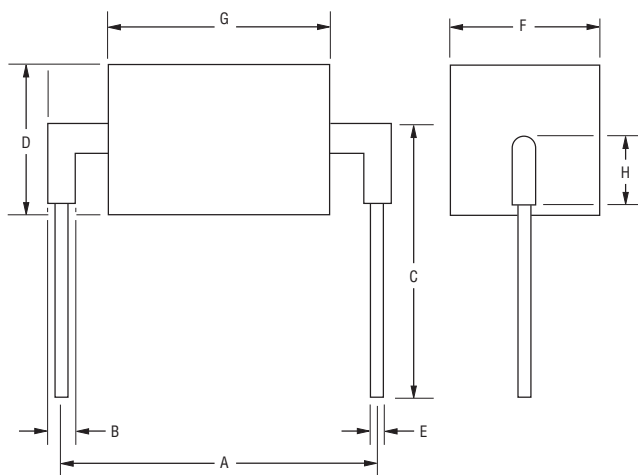
Users should verify actual device performance in their specific applications.

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	24.15 ± 0.72 (0.950 ± 0.028)		
B	2.40 (0.094) Typ.		
C	15.0 (0.59) Min.		
D	13.5 (0.53) Max.		
E	1.25 ± 0.05 (0.049 ± 0.002)		
F	13.5 (0.53) Max.		
G	5.0 (0.20) Max.	6.0 (0.24) Max.	16.0 (0.63) Max.
H	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

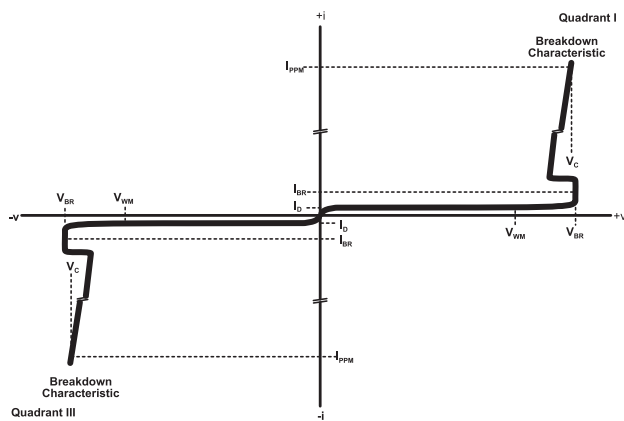
Series	PTVS 6 - xxx C
PTVS = Power TVS High Current Diode	
Peak Current Rating	6 = 6 kA
Repetitive Standoff Voltage	058 = 58 V 076 = 76 V 380 = 380 V 430 = 430 V
Suffix	C = Bidirectional Device

PTVS6-xxxC Series High Current TVS Diodes

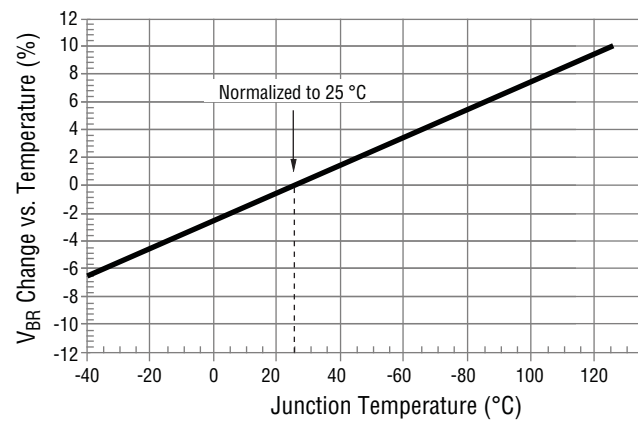
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Performance Graphs

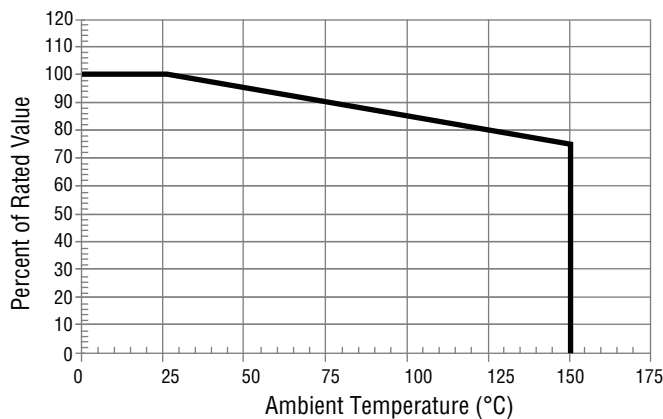
V-I Characteristic



Typical V_{BR} vs. Junction Temperature

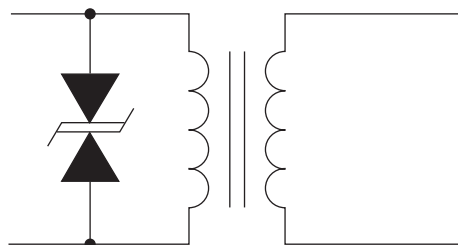


Typical Peak Power Derating



Application

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



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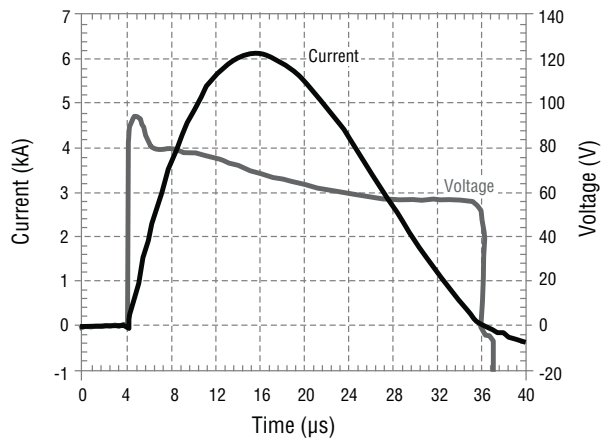
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PTVS6-xxxC Series High Current TVS Diodes

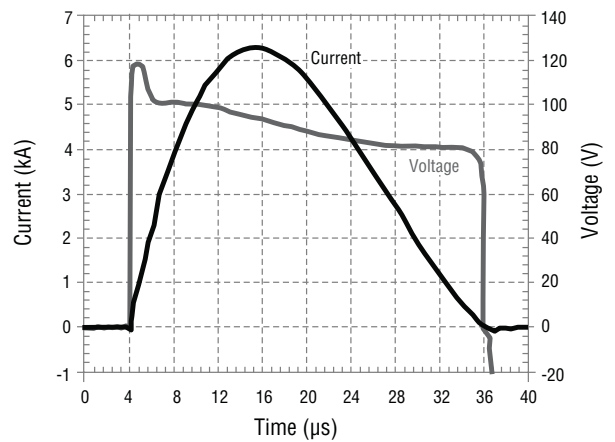
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Performance Graphs (Continued)

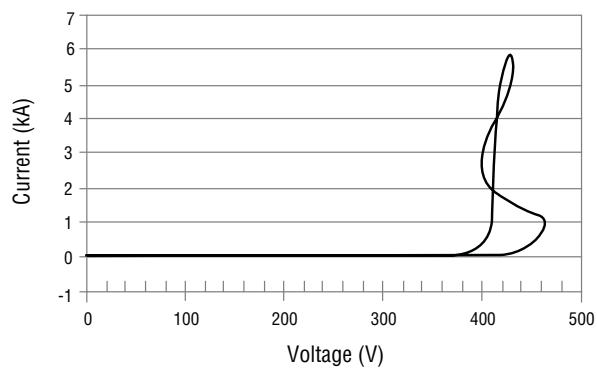
Surge Response (1.2/50, 8/20 Surge) - PTVS6-058C



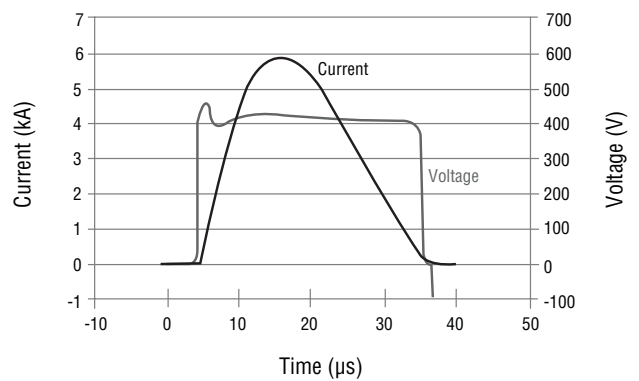
Surge Response (1.2/50, 8/20 Surge) - PTVS6-076C



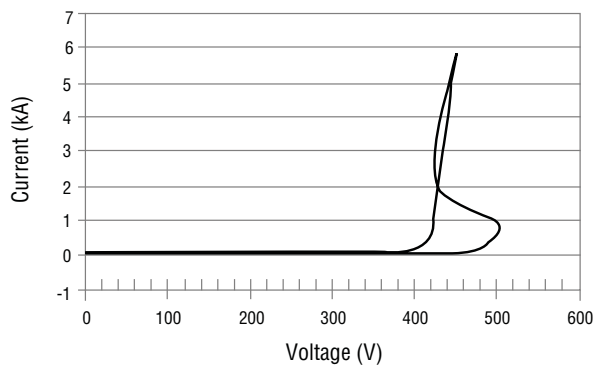
Surge Response - PTVS6-380C



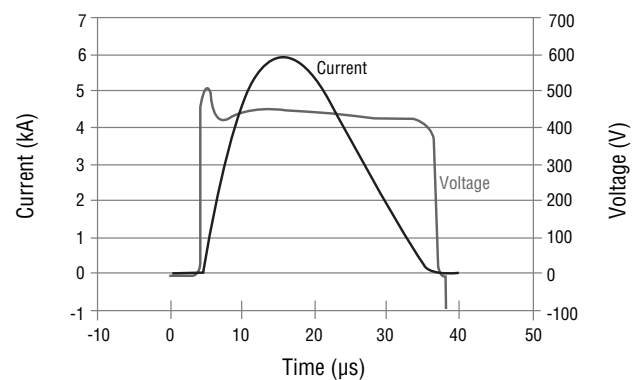
Surge Response (1.2/50, 8/20 Surge) - PTVS6-380C



Surge Response - PTVS6-430C



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



REV. 04/14

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