Features

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

Applications

- AC line protection
- High power DC bus protection

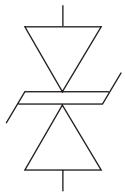
BOURNS®

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 μs current surge requirements.



Agency Approval

Description	
UL	File Number: E313168

Absolute Maximum Ratings (@ T_A = 25 °C Unless Otherwise Noted)

Rating		Symbol	Value	Unit
Repetitive Standoff Voltage	PTVS6-058C PTVS6-076C PTVS6-380C PTVS6-430C	V_{WM}	58 76 380 430	V
Peak Current Rating per 8/20 μs 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_A = 25 °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 mA	PTVS6-058C PTVS6-076C PTVS6-380C PTVS6-430C	64 85 401 440	66 92 420 470	70 95 443 490	V
V_C Clamping Voltage	I_{PP} = 6 kA	PTVS6-058C PTVS6-076C PTVS6-380C PTVS6-430C		95 120 480 530	110 140 540 600	V
$V_{(BR)}$ Temperature Coefficient				0.1		%/°C
C Capacitance	F = 10 kHz, V_d = 1 Vrms	PTVS6-058C PTVS6-076C PTVS6-380C PTVS6-430C		2.0 1.5 1.1 1.0	2.3 2.0 1.5 1.3	nF

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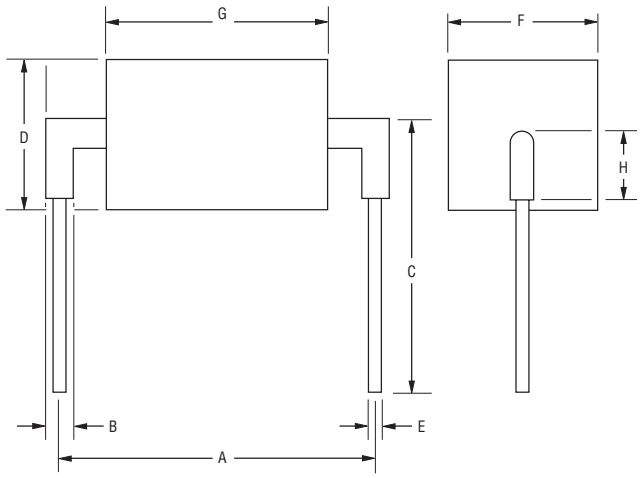
*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

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: MM (INCHES)

Typical Part Marking

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

How to Order

PTVS 6 - xxx C

Series
PTVS = Power TVS High Current Diode

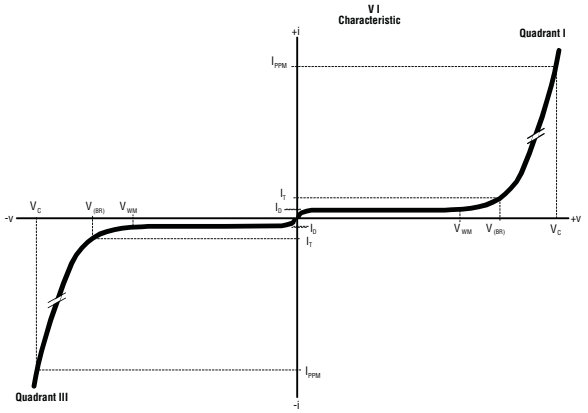
Peak Current Rating
6 = 6 kA

Repetitive Standoff Voltage
058 = 58 V
076 = 76 V
380 = 380 V
430 = 430 V

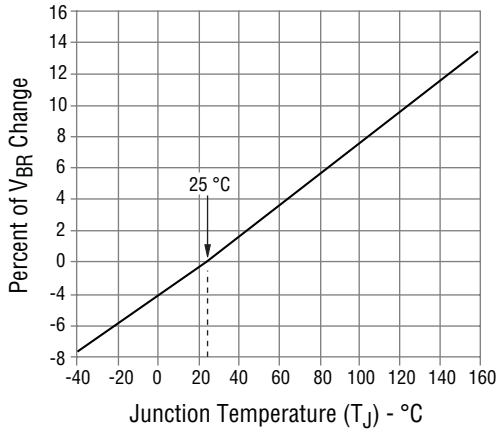
Suffix
C = Bidirectional Device

Performance Graphs

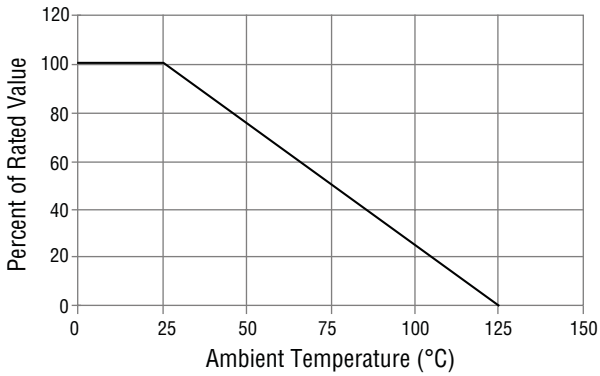
V-I Characteristic



Typical V_{BR} vs. Junction Temperature

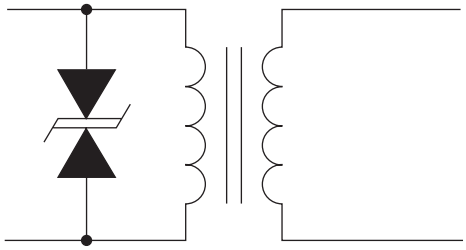


Typical Peak Power Derating



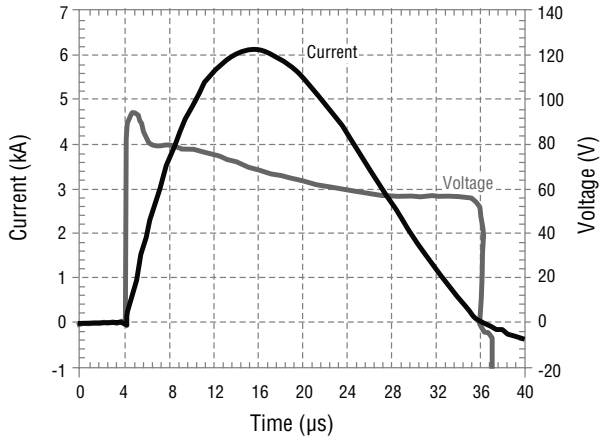
Application

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

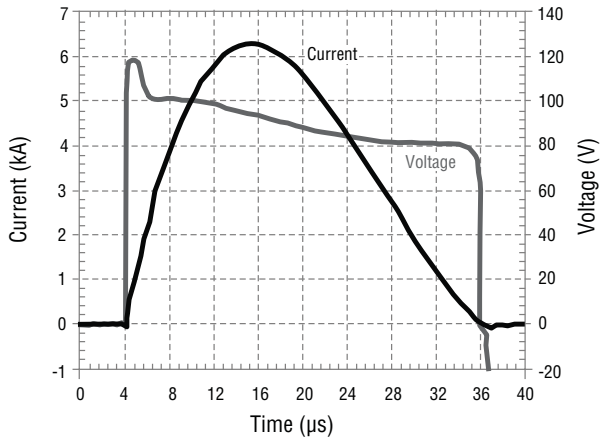


Performance Graphs (Continued)

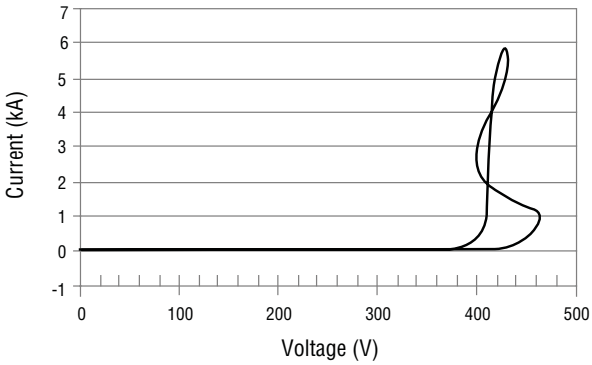
Surge Response (1.2/50, 8/20 Surge) - PTVS6-058C



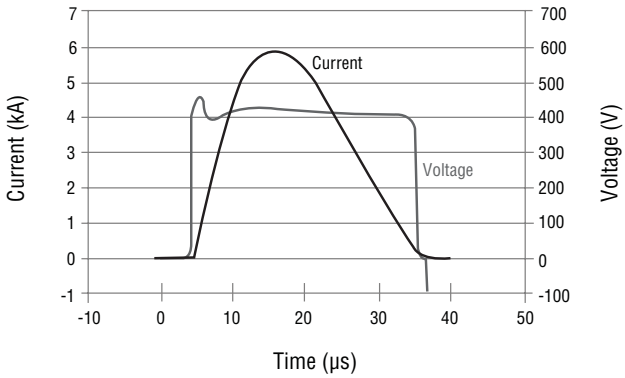
Surge Response (1.2/50, 8/20 Surge) - PTVS6-076C



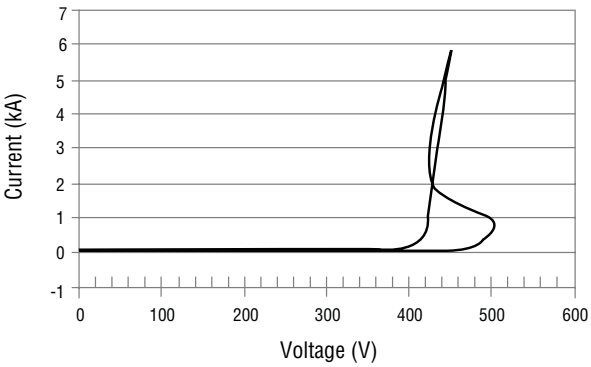
Surge Response - PTVS6-380C



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



Surge Response - PTVS6-430C



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