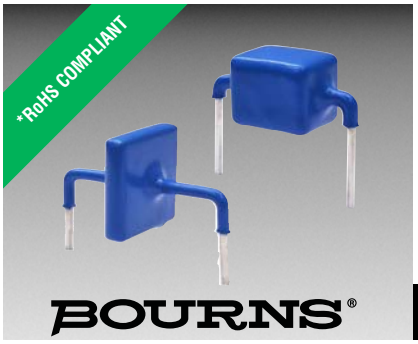


Features

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

These models are obsolete and not recommended for new designs. Model PTVS3-058C-TH and PTVS3-076C-TH are possible alternatives.

Applications

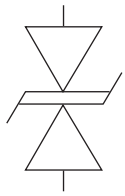
- AC line protection
- High power DC bus protection

PTVS3-xxxC Series High Current TVS Diodes

General Information

The PTVS3-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	PTVS3-058C PTVS3-066C PTVS3-076C PTVS3-380C PTVS3-430C	V_{WM}	58 66 76 380 430	V
Peak Current Rating per 8/20 μs IEC 61000-4-5		I_{PPM}	3	kA
Operating Junction Temperature Range		T_J	-55 to +150	°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)

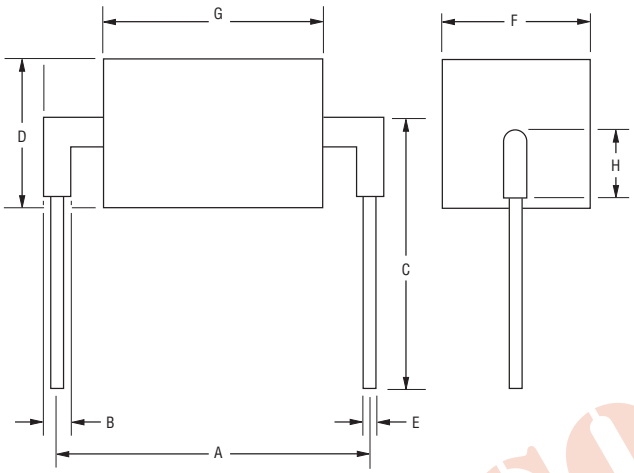
Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_D Standby Current	$V_D = V_{WM}$				10	µA
$V_{(BR)}$ Breakdown Voltage	I_{BR} = 10 mA	PTVS3-058C PTVS3-066C PTVS3-076C PTVS3-380C PTVS3-430C	64 72 85 401 440	66 77 92 420 470	70 82 95 443 490	V
V_C Clamping Voltage	I_{PP} = 3 kA	PTVS3-058C PTVS3-066C PTVS3-076C PTVS3-380C PTVS3-430C		85 100 110 510 560	100 120 130 570 620	V
$V_{(BR)}$ Temperature Coefficient				0.1		%/°C
C Capacitance	F = 10 kHz, V_d = 1 Vrms	PTVS3-058C PTVS3-066C PTVS3-076C PTVS3-380C PTVS3-430C		2.0 1.7 1.5 0.7 0.6	2.3 2.2 2.0 1.2 1.0	nF

*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.

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.	PTVS3-058C	PTVS3-066C	PTVS3-076C	PTVS3-380C	PTVS3-430C
A	24.15 ± 0.72 (0.950 ± 0.028)				
B	2.40 (0.094) Typ.				
C	15.0 (0.59) Min.				
D	10.5 (0.413) Max.				
E	1.25 ± 0.05 (0.049 ± 0.002)				
F	10.5 (0.413) Max.				
G	5.0 (0.20) Max.	5.0 (0.20) Max.	6.0 (0.24) Max.	17.0 (0.67) Max.	17.0 (0.67) Max.
H	6.60 (0.26) Max.				

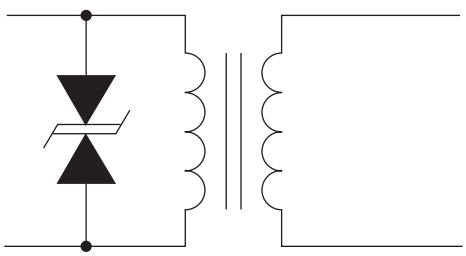
DIMENSIONS: MM (INCHES)

Typical Part Marking

PTVS3-058C 3058
PTVS3-066C 3066
PTVS3-076C 3076
PTVS3-380C 3380
PTVS3-430C 3430

Application

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



How to Order

PTVS 3 - xxx C

Series
PTVS = Power TVS High Current Diode

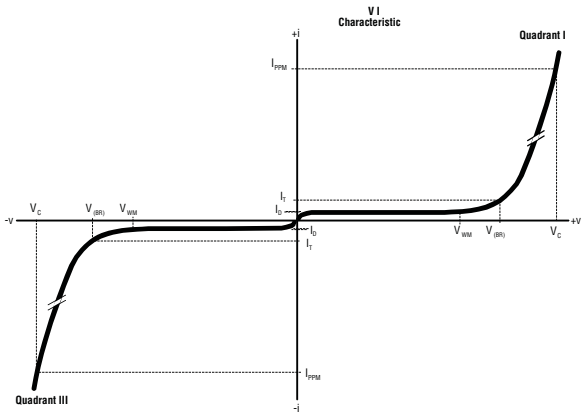
Peak Current Rating
3 = 3 kA

Repetitive Standoff Voltage
058 = 58 V
066 = 66 V
076 = 76 V
380 = 380 V
430 = 430 V

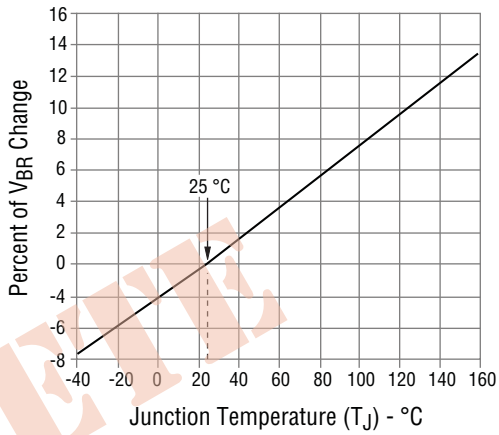
Suffix
C = Bidirectional Device

Performance Graphs

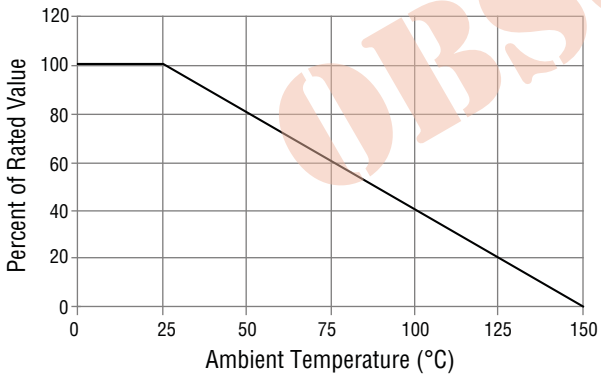
V-I Characteristic



Typical V_{BR} vs. Junction Temperature

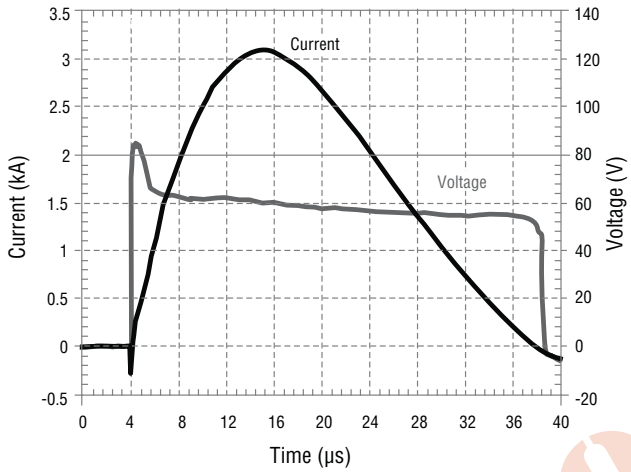


Typical Peak Power Derating

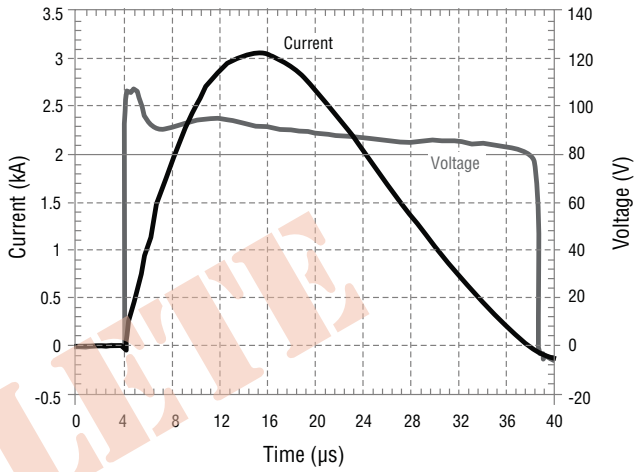


Performance Graphs (Continued)

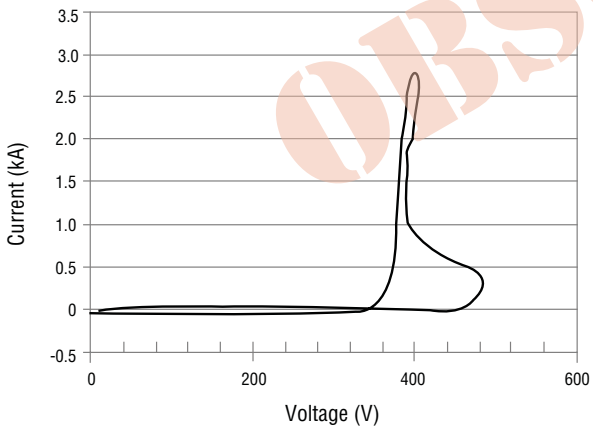
Surge Response (1.2/50, 8/20 Surge) - PTVS3-058C



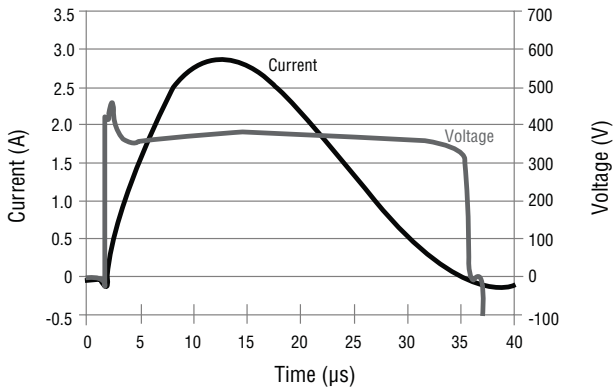
Surge Response (1.2/50, 8/20 Surge) - PTVS3-076C



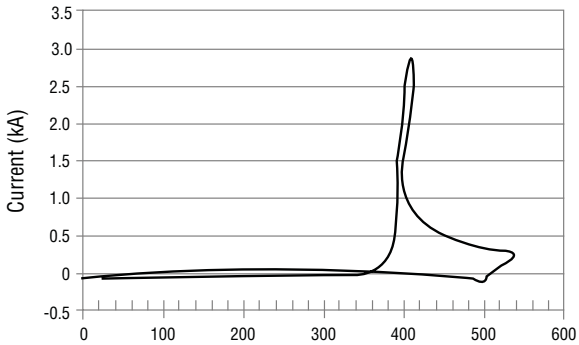
Surge Response - PTVS3-380C



Surge Response (1.2/50, 8/20 Surge) - PTVS3-380C



Surge Response - PTVS3-430C



Surge Response (1.2/50, 8/20 Surge) - PTVS3-430C