



## Features

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

## Applications

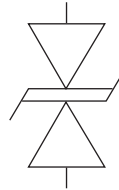
- AC line protection
- High power DC bus protection

# 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  $\mu$ s current surge requirements.



### Agency Approval

Description	
UL	File Number: E313168

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

Rating	Symbol	Value	Unit
Repetitive Standoff Voltage	V <sub>WM</sub>	PTVS3-058C	58
		PTVS3-066C	66
		PTVS3-076C	76
		PTVS3-380C	380
		PTVS3-430C	430
Peak Current Rating per 8/20 $\mu$ s IEC 61000-4-5	I <sub>PPM</sub>	3	kA
Operating Junction Temperature Range	T <sub>J</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>S</sub>	-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 <sub>D</sub> Standby Current	V <sub>D</sub> = V <sub>WM</sub>			10	$\mu$ A
V <sub>(BR)</sub> Breakdown Voltage	I <sub>BR</sub> = 10 mA	PTVS3-058C	64	66	70
		PTVS3-066C	72	77	82
		PTVS3-076C	85	92	95
		PTVS3-380C	401	420	443
		PTVS3-430C	440	470	490
V <sub>C</sub> Clamping Voltage	I <sub>PP</sub> = 3 kA	PTVS3-058C		85	100
		PTVS3-066C		100	120
		PTVS3-076C		110	130
		PTVS3-380C		510	570
		PTVS3-430C		560	620
V <sub>(BR)</sub> Temperature Coefficient			0.1		%/°C
C Capacitance	F = 10 kHz, V <sub>d</sub> = 1 Vrms	PTVS3-058C		2.0	2.3
		PTVS3-066C		1.7	2.2
		PTVS3-076C		1.5	2.0
		PTVS3-380C		0.7	1.2
		PTVS3-430C		0.6	1.0

\*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.

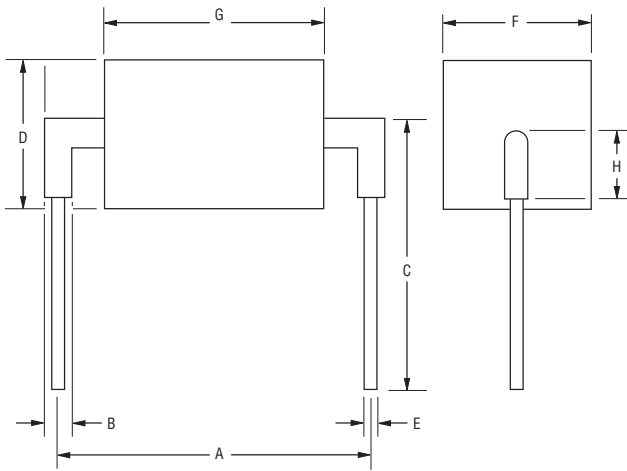
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

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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.	PTVS3-058C	PTVS3-066C	PTVS3-076C	PTVS3-380C	PTVS3-430C
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	$\frac{10.5}{(0.413)}$ Max.				
E	$\frac{1.25 \pm 0.05}{(0.049 \pm 0.002)}$				
F	$\frac{10.5}{(0.413)}$ Max.				
G	$\frac{5.0}{(0.20)}$ Max.	$\frac{5.0}{(0.20)}$ Max.	$\frac{6.0}{(0.24)}$ Max.	$\frac{17.0}{(0.67)}$ Max.	$\frac{17.0}{(0.67)}$ Max.
H	$\frac{6.60}{(0.26)}$ Max.				

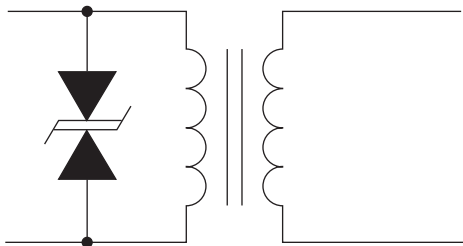
DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

## Typical Part Marking

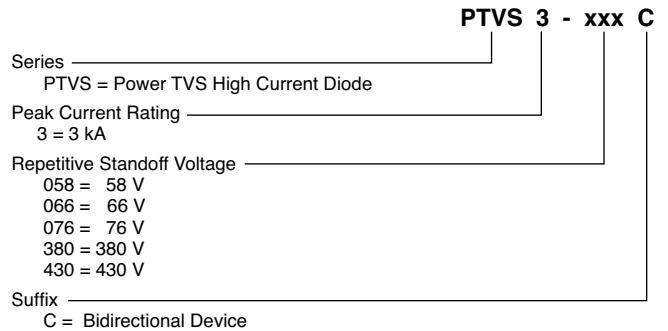
PTVS3-058C .....	3058
PTVS3-066C .....	3066
PTVS3-076C .....	3076
PTVS3-380C .....	3380
PTVS3-430C .....	3430

## Application

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



## How to Order



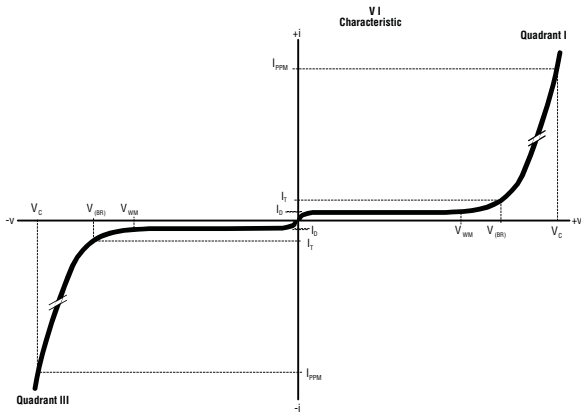
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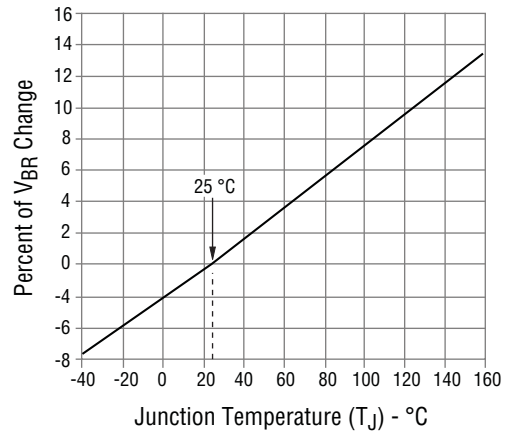
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## Performance Graphs

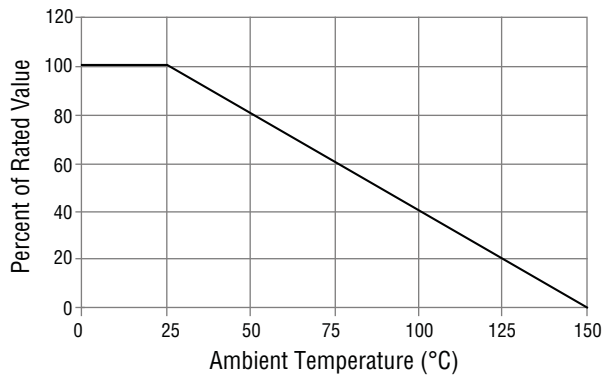
### V-I Characteristic



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



### Typical Peak Power Derating



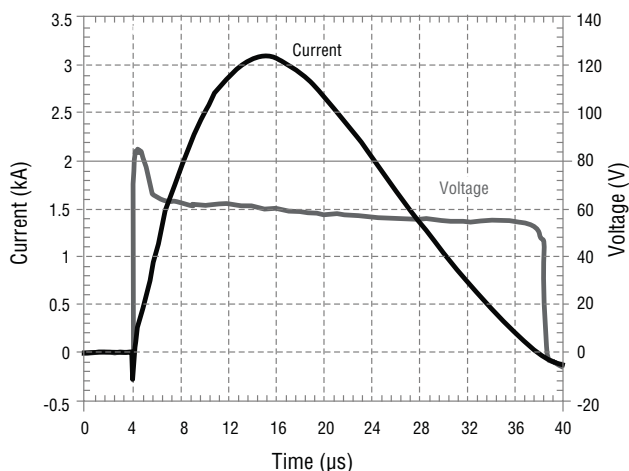
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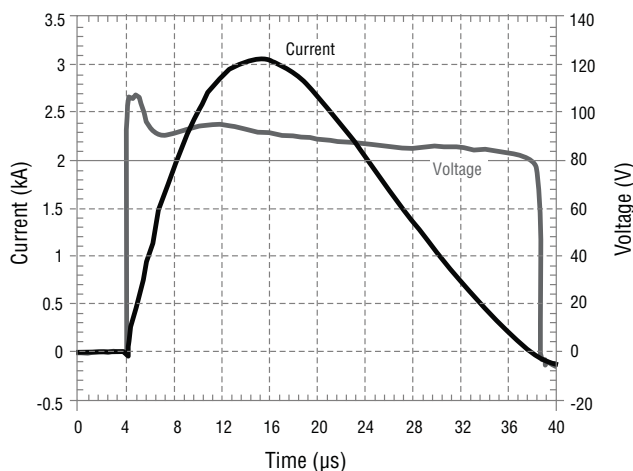


## Performance Graphs (Continued)

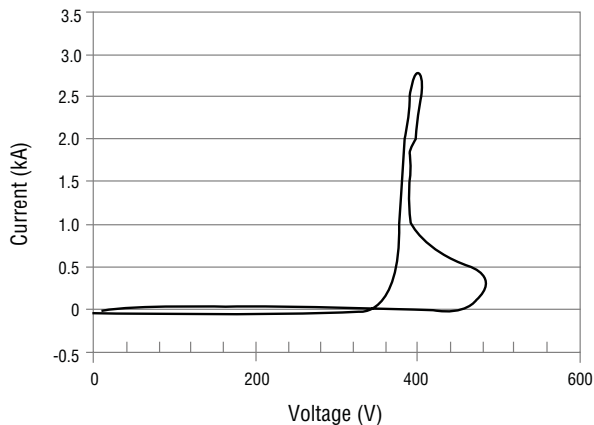
### Surge Response (1.2/50, 8/20 Surge) - PTVS3-058C



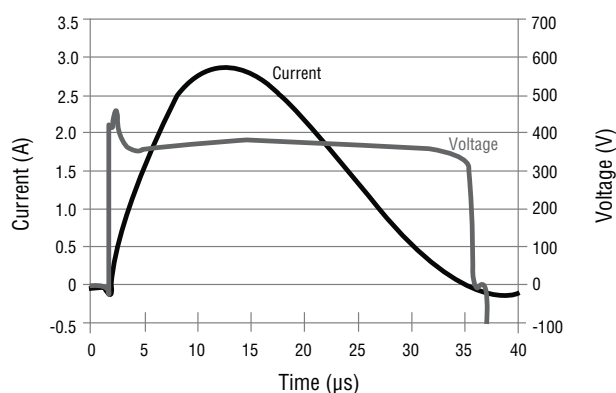
### Surge Response (1.2/50, 8/20 Surge) - PTVS3-076C



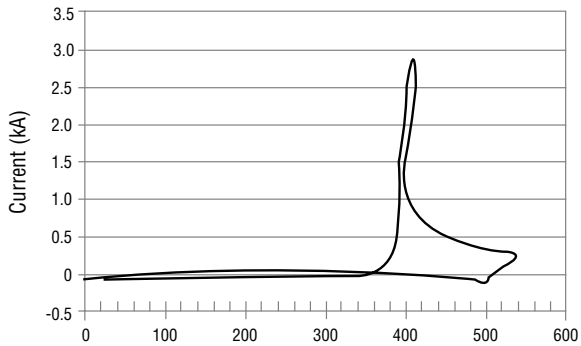
### Surge Response - PTVS3-380C



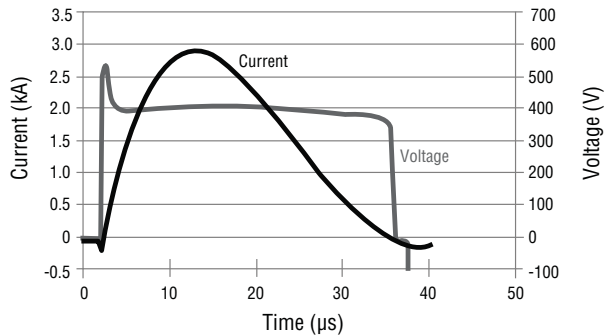
### Surge Response (1.2/50, 8/20 Surge) - PTVS3-380C



### Surge Response - PTVS3-430C



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



REV. 10/13

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