




Features

- 3 kA, 8/20 μ s 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 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	PTVS3-058C	58	V
	PTVS3-066C	66	
	PTVS3-076C	76	
	PTVS3-380C	380	
	PTVS3-430C	430	
Peak Current Rating per 8/20 μ s IEC 61000-4-5	I_{PPM}	3	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	$I_{BR} = 10\text{ mA}$	PTVS3-058C	64	66	70	V
		PTVS3-066C	72	77	82	
		PTVS3-076C	85	92	95	
		PTVS3-380C	401	420	443	
		PTVS3-430C	440	470	490	
V_C Clamping Voltage	$I_{PP} = 3\text{ kA}$	PTVS3-058C		85	100	V
		PTVS3-066C		100	120	
		PTVS3-076C		110	130	
		PTVS3-380C		510	570	
		PTVS3-430C		560	620	
$V_{(BR)}$ Temperature Coefficient			0.1		$\%/^\circ\text{C}$	
C Capacitance	F = 10 kHz, $V_d = 1\text{ Vrms}$	PTVS3-058C		2.0	2.3	nF
		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.

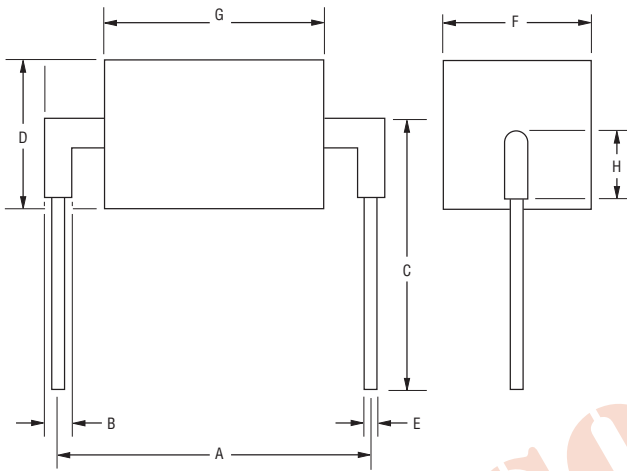
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

PTVS3-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.	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.				

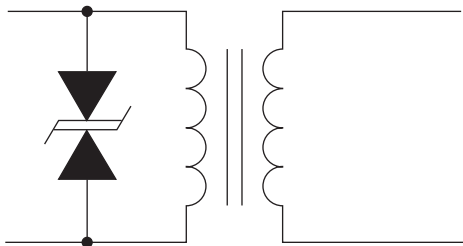
DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

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

Series	PTVS 3 - xxx C
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

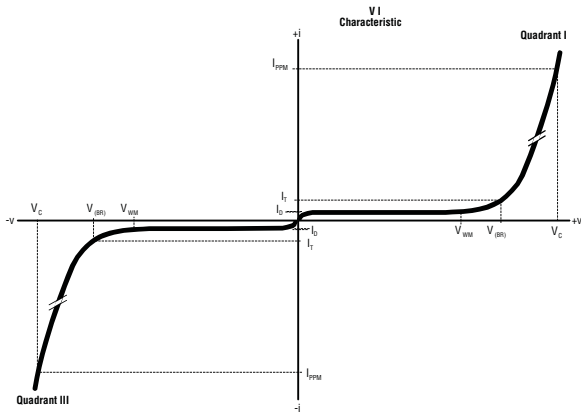
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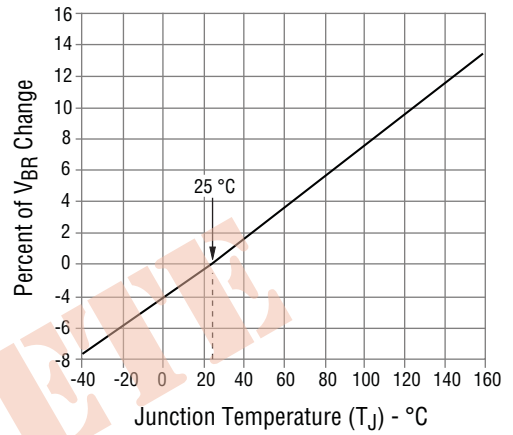
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Performance Graphs

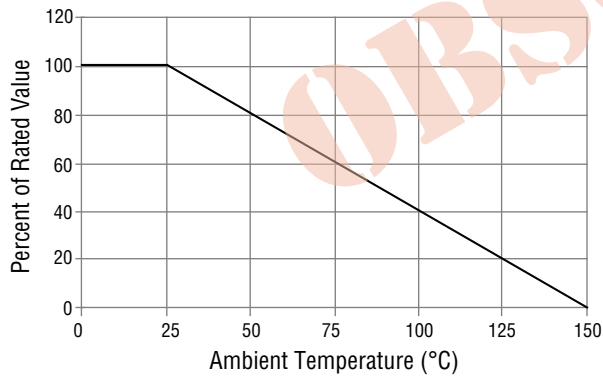
V-I Characteristic



Typical V_{BR} vs. Junction Temperature



Typical Peak Power Derating



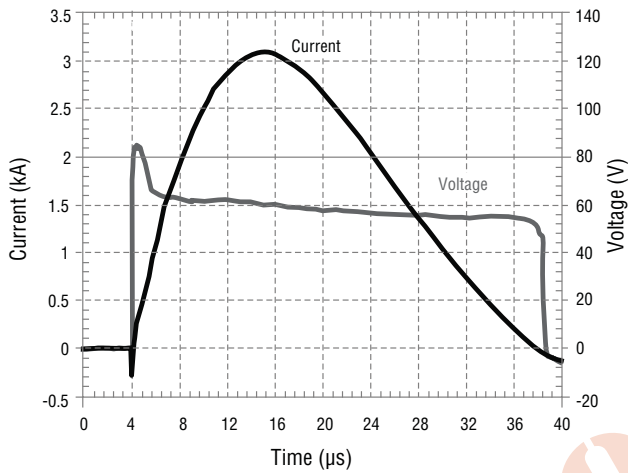
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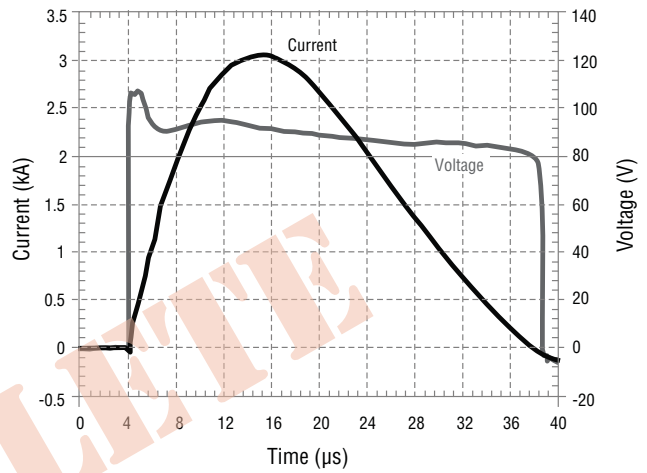
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Performance Graphs (Continued)

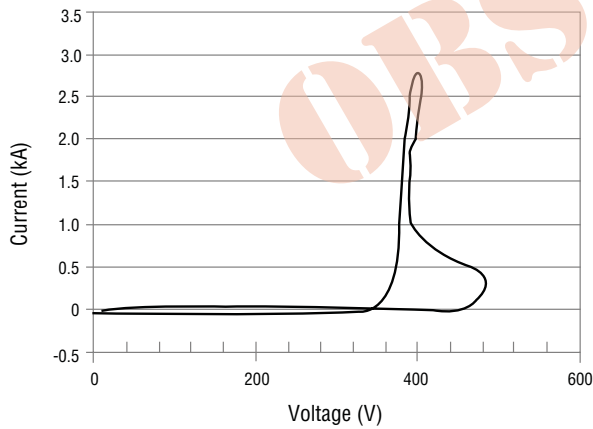
Surge Response (1.2/50, 8/20 Surge) - PTVS3-058C



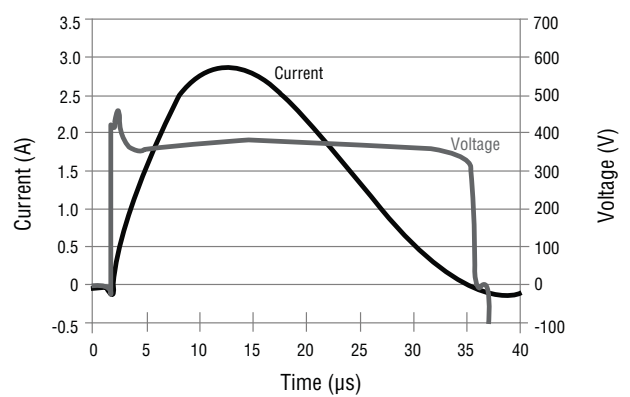
Surge Response (1.2/50, 8/20 Surge) - PTVS3-076C



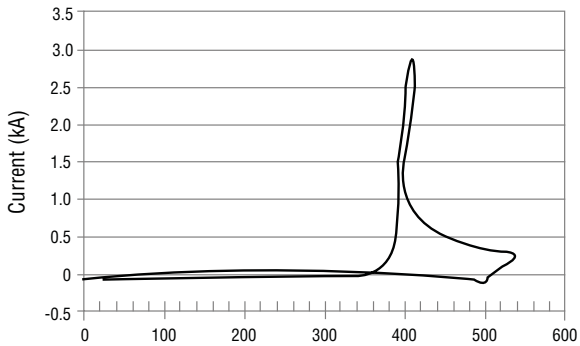
Surge Response - PTVS3-380C



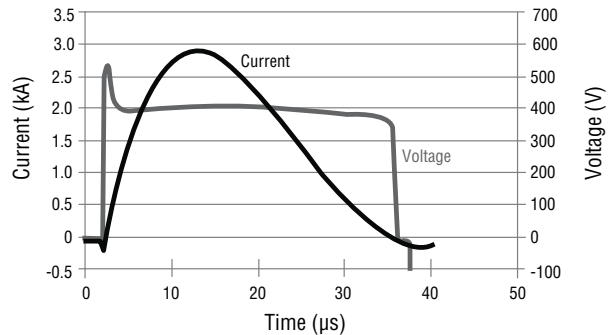
Surge Response (1.2/50, 8/20 Surge) - PTVS3-380C



Surge Response - PTVS3-430C



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



REV. 01/15

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