



Features

- 6 kA, 8/20 μ s surge capability
- Low clamping voltage under surge
- Bidirectional TVS
- Excellent performance over temperature

Applications

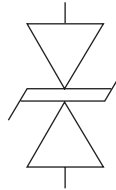
- AC line protection
- High power DC bus protection

PTVS6-xxxC-TH Series High Voltage, High Current TVS Diodes

General Information

The Model PTVS6-xxxC-TH high voltage, bidirectional TVS diode series is designed for use in AC line and high power DC bus clamping applications.

The devices are RoHS* compliant. They also meet IEC 61000-4-5 8/20 μ s current surge requirements.



Additional Information

Click these links for more information:



Absolute Maximum Ratings (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Rating	Symbol	Value	Unit
Repetitive Standoff Voltage	V_{WM}	380 430	V
Peak Current Rating per 8/20 μ s IEC 61000-4-5	I_{PPM}	6	kA
Operating Junction Temperature Range	T_J	-55 to +125	$^\circ\text{C}$
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	$I_{BR} = 10\text{ mA}$	401 440	422 465	443 490	V
V_C Clamping Voltage (1)	$I_{PP} = 6\text{ kA}$		520 580		V
$V_{(BR)}$ Temperature Coefficient			0.1		$\%/^\circ\text{C}$
C Capacitance	$F = 10\text{ kHz}$, $V_d = 1\text{ V}_{rms}$		0.65 0.70		nF

(1) V_C measured at the time which is coincident with the peak surge current.

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WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

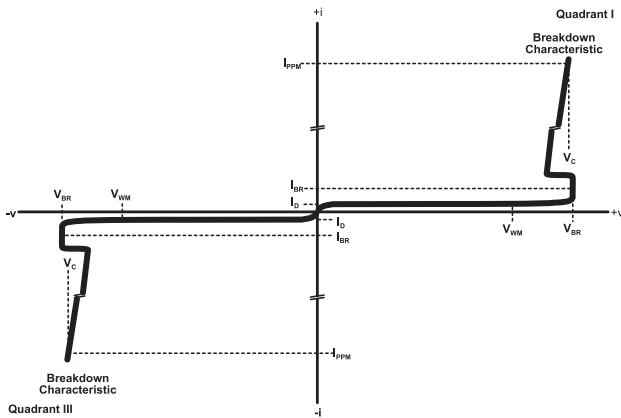
Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

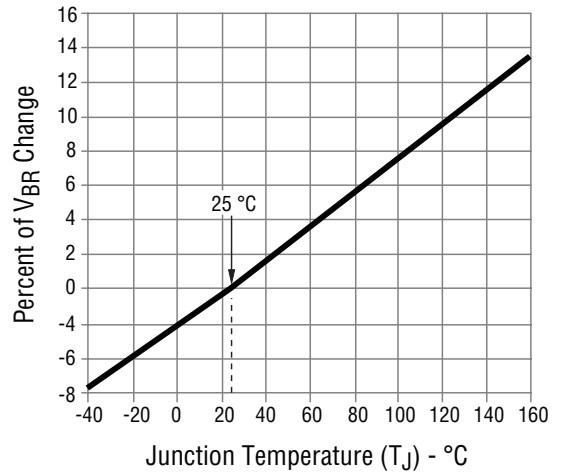
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Performance Graphs

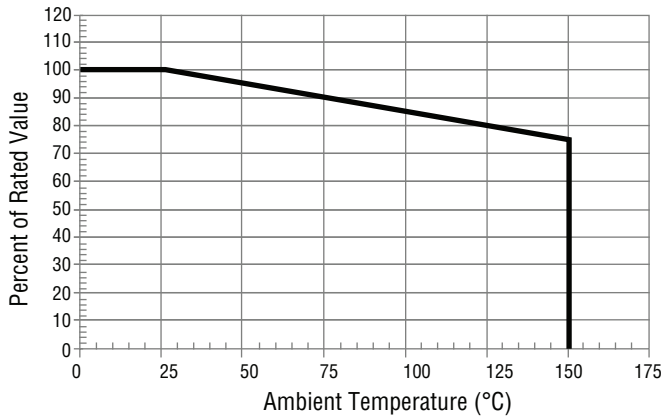
V-I Characteristic



Typical V_{BR} vs. Junction Temperature

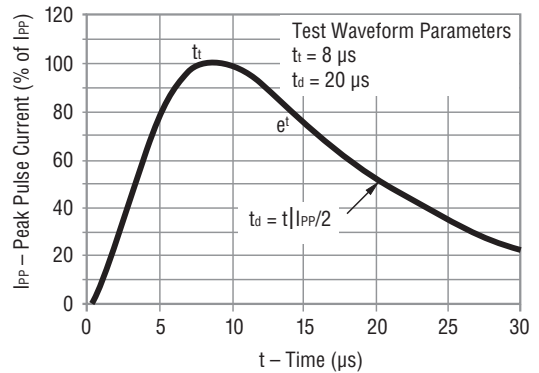


Typical Surge Current Derating

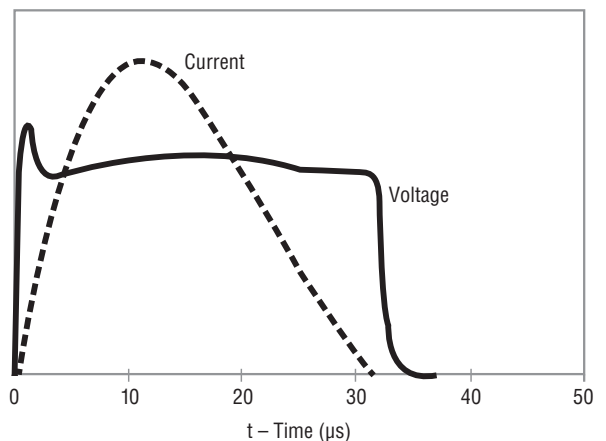


This graph shows the typical device surge current derating versus ambient temperature when subjected to the 8/20 μ s current waveform per the IEC 61000-4-5 specification. This device is not intended for continuous operation at temperatures above 125 °C.

Current 8/20 μ s Waveform per IEC 61000-4-5



Typical Waveform Under Surge



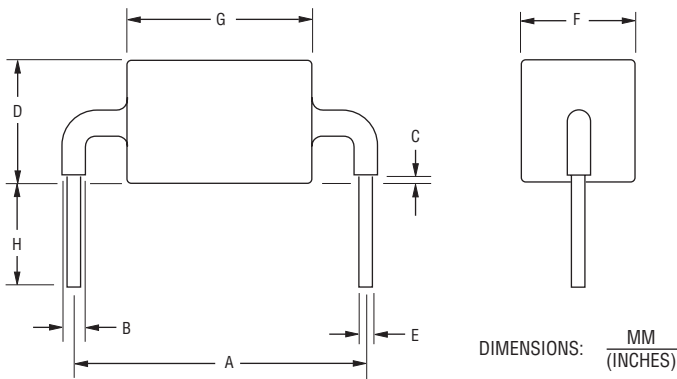
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PTVS6-xxxC-TH Series High Voltage, High Current TVS Diodes



Product Dimensions

Epoxy encapsulation materials conform to UL 94V-0. Silver plated lead finish conforms to the solderability requirements of JESD22-B102, Pb free solder. Package dimensions are shown below:

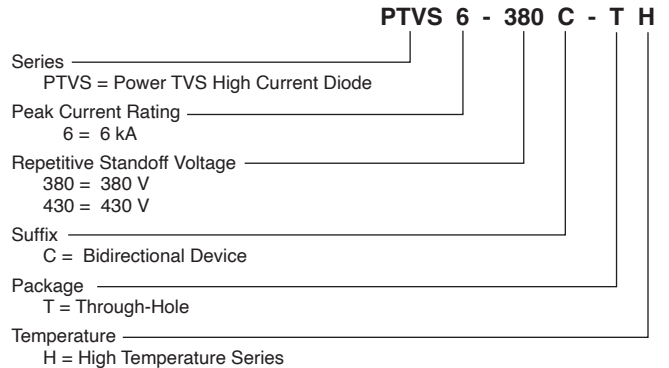


Dim.	PTVS6-380C-TH	PTVS6-430C-TH
A	$\frac{24.15 \pm 0.72}{(0.951 \pm 0.028)}$	
B	$\frac{2.40 \pm 0.50}{(0.094 \pm 0.020)}$	
C	$\frac{1.75 \pm 1.25}{(0.069 \pm 0.049)}$	
D	$\frac{12.00}{(0.472)}$ Max.	
E	$\frac{1.25 \pm 0.05}{(0.049 \pm 0.002)}$	
F	$\frac{11.50}{(0.453)}$ Max.	
G	$\frac{16.50}{(0.650)}$ Max.	
H	$\frac{6.00 \pm 1.00}{(0.236 \pm 0.039)}$	

Typical Part Marking

PTVS6-380C-TH6380
 PTVS6-430C-TH6430

How to Order



REV. 09/21

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