



Features

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

Applications

- High power DC bus protection

PTVS6-xxxC-TH Series High Current TVS Diodes

General Information

The Model PTVS6-xxxC-TH Series high current bidirectional TVS diodes are designed for use in high power DC bus clamping applications. These devices offer bidirectional port protection and are available with standoff voltage ratings of 58 V and 76 V.

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



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

Rating	Symbol	Value	Unit
Repetitive Standoff Voltage	V_{WM}	58 76	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	$I_{BR} = 10\text{ mA}$	64 85	66 92	70 95	V
V_C Clamping Voltage (1) per IEC61000-4-5 (8/20 μ s current waveform)	$I_{PP} = 6\text{ kA}$			110 140	V
$V_{(BR)}$ Temperature Coefficient			0.1		%/ $^\circ\text{C}$
C Capacitance	$F = 10\text{ kHz}$, $V_d = 1\text{ V}_{rms}$		4.5 3.3		nF

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

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*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.

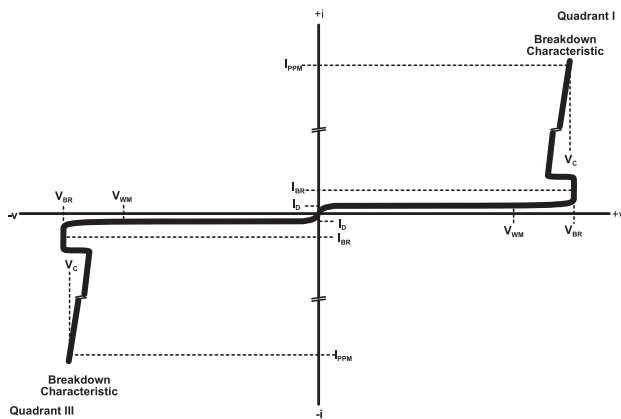
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

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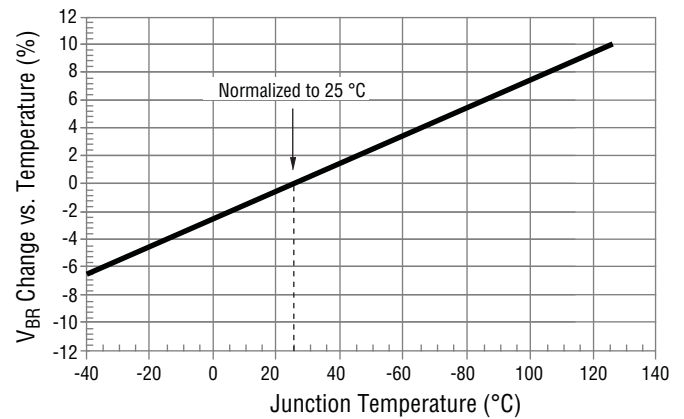
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Performance Graphs

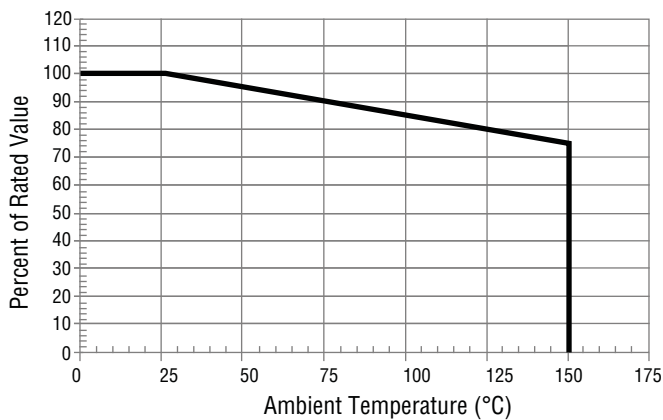
V-I Characteristic



Percentage V_{BR} Change vs. Junction Temperature



Typical Surge Current Derating



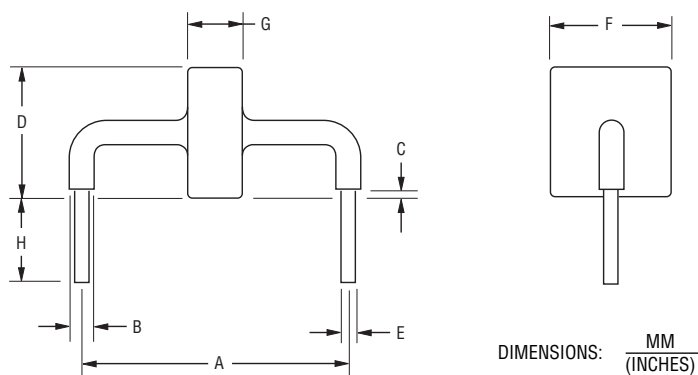
This graph shows the typical device surge current derating versus ambient temperature when subjected to the 8/20 μ s current waveform per the IEC 61000-4-5 specification. This device is not intended for continuous operation at temperatures above 125 °C.

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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.	PTVS6-058C-TH	PTVS6-076C-TH
A	24.15 ± 0.72 (0.951 $\pm$ 0.028)	
B	2.40 ± 0.50 (0.094 $\pm$ 0.020)	
C	1.75 ± 1.25 (0.069 $\pm$ 0.049)	
D	12.00 (0.472) Max.	
E	1.25 ± 0.05 (0.049 $\pm$ 0.002)	
F	11.50 (0.453) Max.	
G	5.00 (0.197) Max.	6.00 (0.236) Max.
H	6.00 ± 1.00 (0.236 $\pm$ 0.039)	

Typical Part Marking

PTVS6-058C-TH6058
PTVS6-076C-TH6076

How to Order

PTVS 6 - 076 C - T H

Series _____
PTVS = Power TVS High Current Diode

Peak Current Rating _____
6 = 6 kA

Repetitive Standoff Voltage _____
058 = 58 V
076 = 76 V

Suffix _____
C = Bidirectional Device

Package _____
T = Through-Hole

Temperature _____
H = High Temperature Series