Features

- 3 kA, 8/20 µs surge capability
- Low clamping voltage under surge
- Bidirectional TVS
- Excellent performance over temperature
- UL Recognized (pending)

Applications

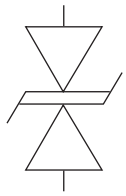
- AC line protection
- High power DC bus protection

PTVS3-xxxC-TH Series High Voltage, High Current TVS Diodes

General Information

The Model PTVS3-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 µs current surge requirements.



Absolute Maximum Ratings (@ T_A = 25 °C Unless Otherwise Noted)

Rating		Symbol	Value	Unit
Repetitive Standoff Voltage	PTVS3-380C-TH PTVS3-430C-TH	V_{WM}	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 +125	°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	PTVS3-380C-TH PTVS3-430C-TH	401 440	422 465	443 490	V
V_C Clamping Voltage (1)	I_{PP} = 10 kA	PTVS3-380C-TH PTVS3-430C-TH		520 580		V
$V_{(BR)}$ Temperature Coefficient				0.1		%/°C
C Capacitance	F = 10 kHz, V_d = 1 Vrms	PTVS3-380C-TH PTVS3-430C-TH		0.35 0.40		nF

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

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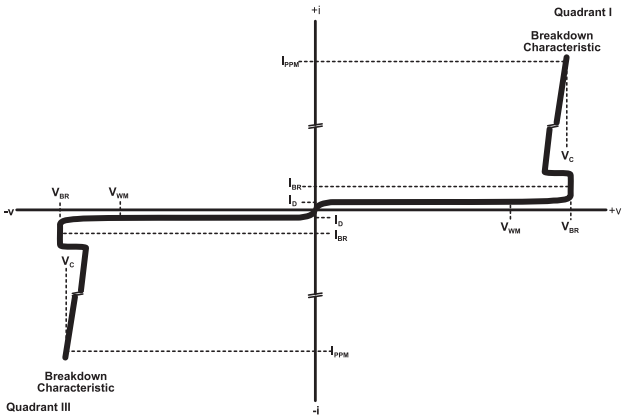
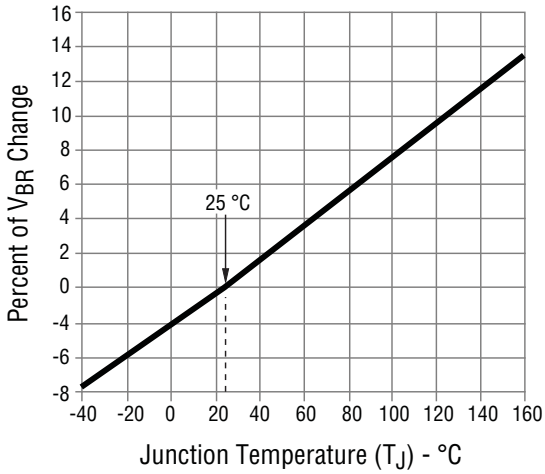
*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.
Specifications are subject to change without notice.
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
Users should verify actual device performance in their specific applications.

Performance Graphs

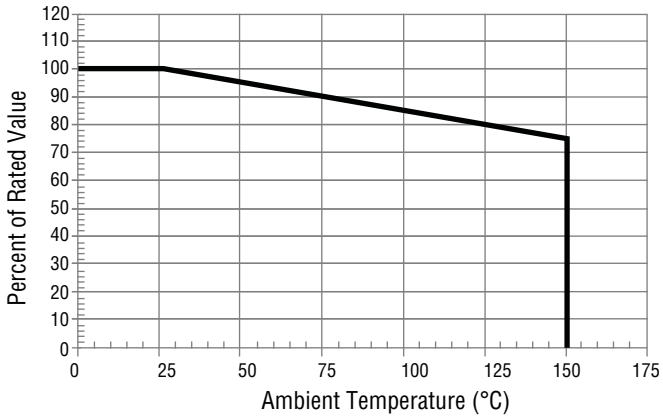
V-I Characteristic



Typical V_{BR} vs. Junction Temperature

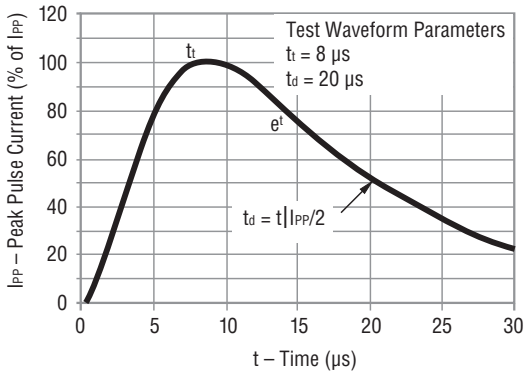


Typical Surge Current Derating

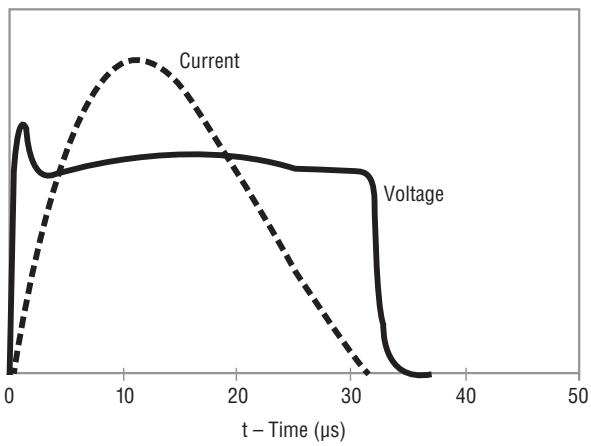


This graph shows the typical device surge current derating versus ambient temperature when subjected to the 8/20 µs current waveform per the IEC 61000-4-5 specification. This device is not intended for continuous operation at temperatures above 125 °C.

Current 8/20 µs Waveform per IEC 61000-4-5



Typical Waveform Under Surge



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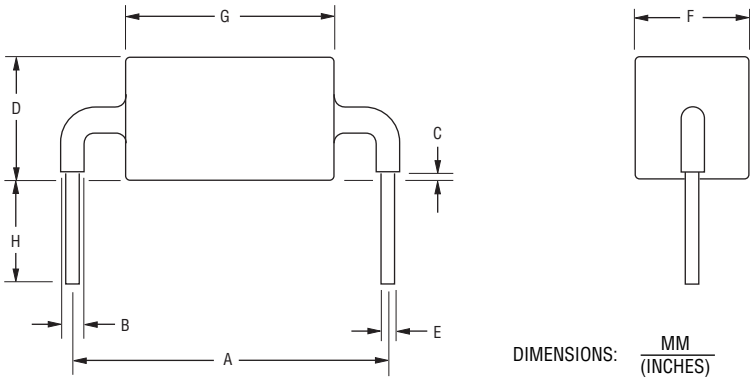
Product Dimensions

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:



DIMENSIONS: MM / (INCHES)

Dim.	PTVS3-380C-TH	PTVS3-430C-TH
A	24.15 ± 0.72 / (0.951 ± 0.028)	
B	2.40 ± 0.50 / (0.094 ± 0.020)	
C	1.75 ± 1.25 / (0.069 ± 0.049)	
D	10.80 / (0.425) Max.	
E	1.25 ± 0.05 / (0.049 ± 0.002)	
F	9.30 / (0.366) Max.	
G	16.50 / (0.650) Max.	
H	6.00 ± 1.00 / (0.236 ± 0.039)	

Typical Part Marking

PTVS3-380C-TH 3380
PTVS3-430C-TH 3430

How to Order

PTVS 3 - 380 C - T H

Series
PTVS = Power TVS High Current Diode

Peak Current Rating
3 = 3 kA

Repetitive Standoff Voltage
380 = 380 V
430 = 430 V

Suffix
C = Bidirectional Device

Package
T = Through-Hole

Temperature
H = High Temperature Series

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