Features

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

Applications

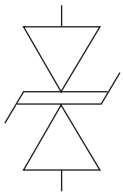
- AC line protection
- High power DC bus protection

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.



Additional Information

Click these links for more information:

PRODUCT SELECTOR | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

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} = 3 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

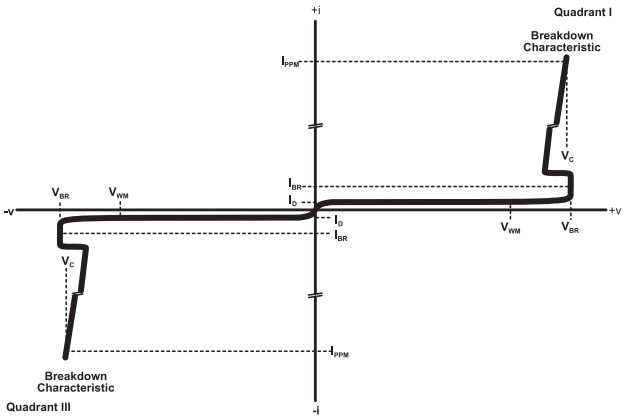
(1) V_C measured at the time which is coincident with the peak surge current.

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

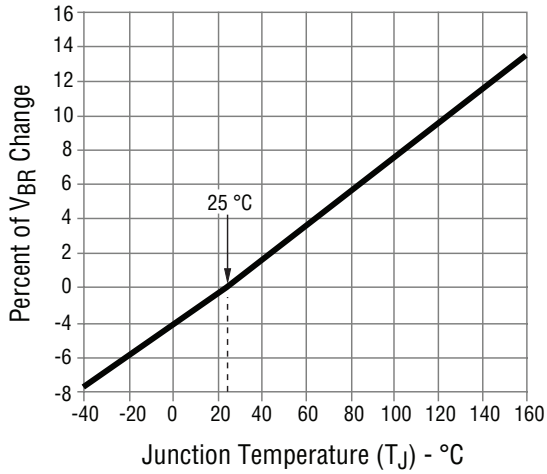
* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

Performance Graphs

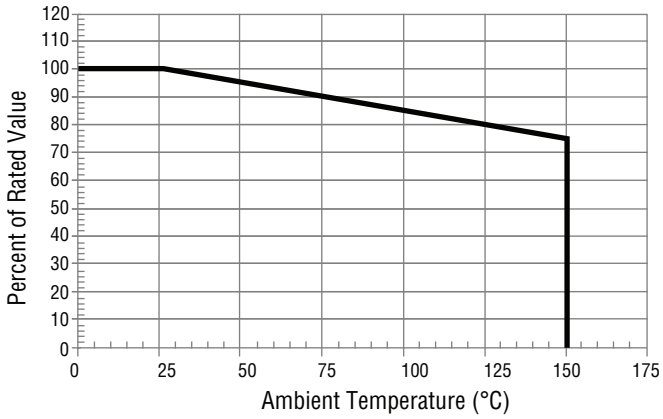
V-I Characteristic



Typical V_{BR} vs. Junction Temperature

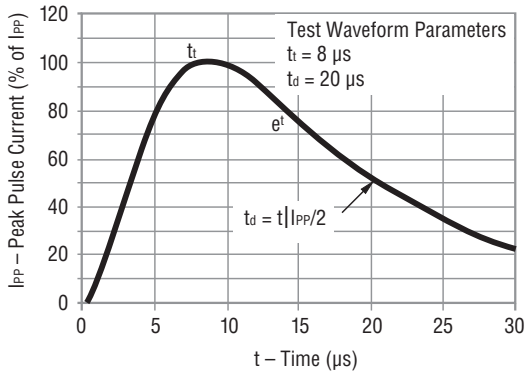


Typical Surge Current Derating

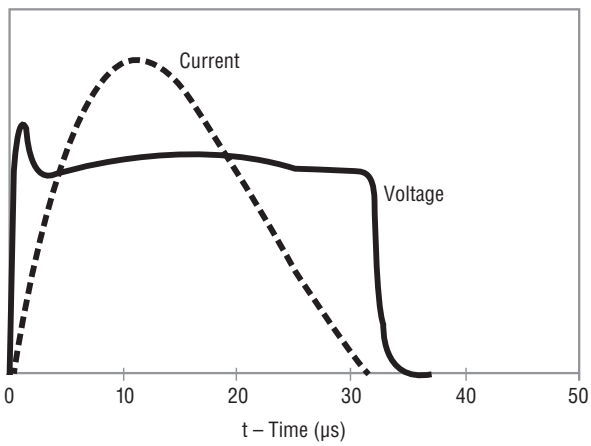


This graph shows the typical device surge current derating versus ambient temperature when subjected to the 8/20 µs current waveform per the IEC 61000-4-5 specification. This device is not intended for continuous operation at temperatures above 125 °C.

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

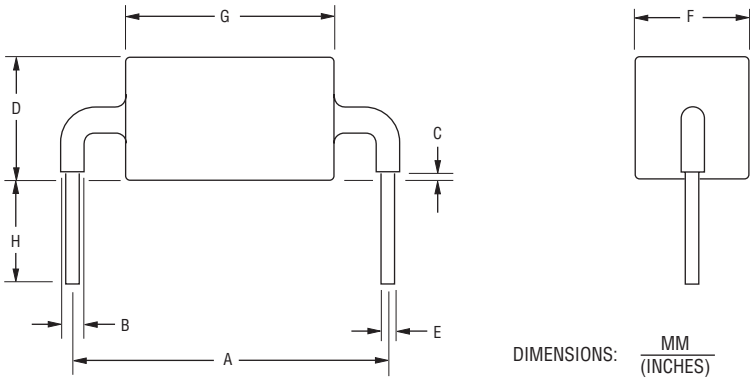


Typical Waveform Under Surge



Product Dimensions

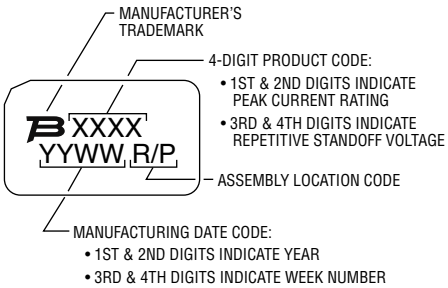
Epoxy encapsulation materials conform to UL 94V-0. Silver plated lead finish conforms to the solderability requirements of JESD22-B102, Pb free solder. Package dimensions are shown below:



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



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

REV. 05/24

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