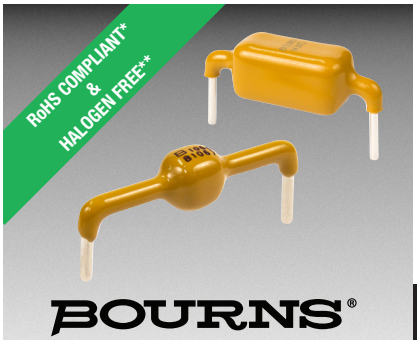


Features

- 1 kA, 8/20 µs surge capability
- Low clamping voltage under surge
- Bidirectional TVS
- Excellent performance over temperature
- RoHS compliant* and halogen free**

Applications

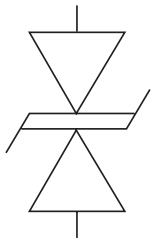
- AC line protection
- Protection of power supplies used in exposed and harsh environments
- SPDs and dongles

PTVS1-xxxC-TH High Voltage, High Current TVS Diodes

General Information

The Model PTVS1-xxxC-TH high voltage, bidirectional TVS diodes are designed for use in AC line and high power DC bus clamping applications. These devices offer bidirectional port protection and are available with standoff voltage ratings of 66 V, 190 V and 380 V.

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 | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

Agency Recognition

Description	
UL	File Number: E215609

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

Rating		Symbol	Value	Unit
Repetitive Standoff Voltage	PTVS1-066C-TH PTVS1-190C-TH PTVS1-380C-TH	V_{WM}	66 190 380	V
Peak Current Rating per 8/20 µs IEC 61000-4-5		I_{PPM}	1	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	PTVS1-066C-TH PTVS1-190C-TH PTVS1-380C-TH	71 200 401	75 206 422	80 222 443	V
V_C	Clamping Voltage (1)	I_{PP} = 1 kA	PTVS1-066C-TH PTVS1-190C-TH PTVS1-380C-TH		86 227 520		V
$V_{(BR)}$	Temperature Coefficient				0.1		%/°C
C	Capacitance	F = 10 kHz, V_d = 1 Vrms	PTVS1-066C-TH PTVS1-190C-TH PTVS1-380C-TH		0.744 0.274 0.12		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

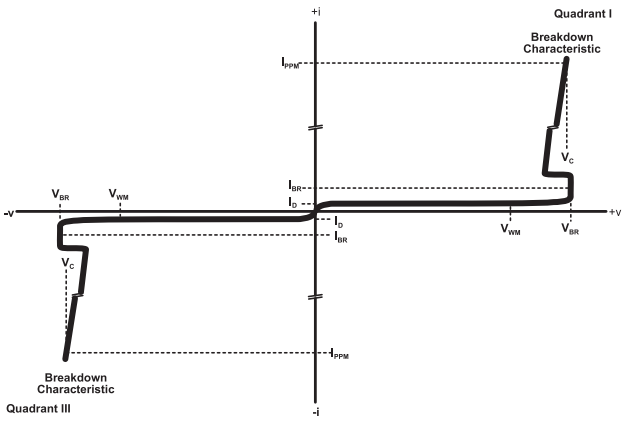
* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

** Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

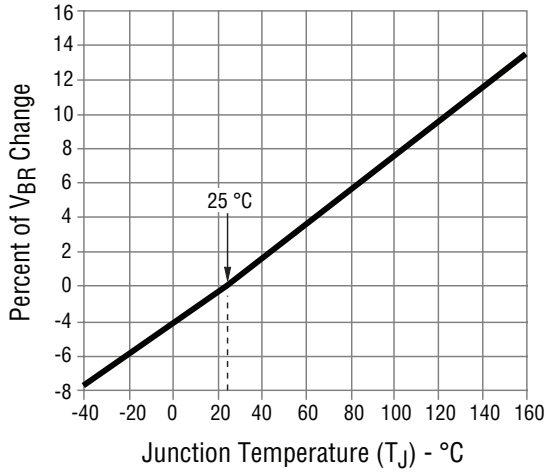
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Performance Graphs

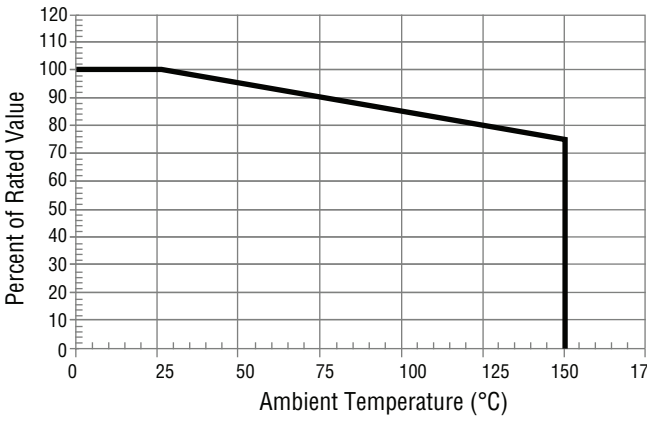
V-I Characteristic



Typical V_{BR} vs. Junction Temperature

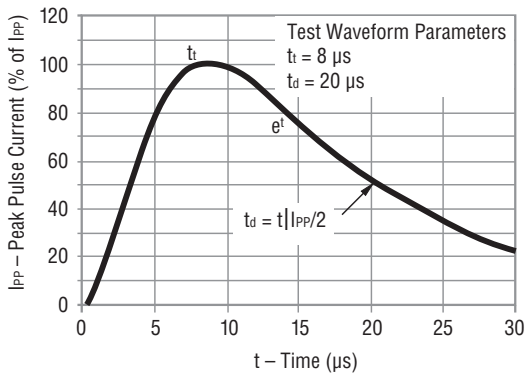


Typical Surge Current Derating

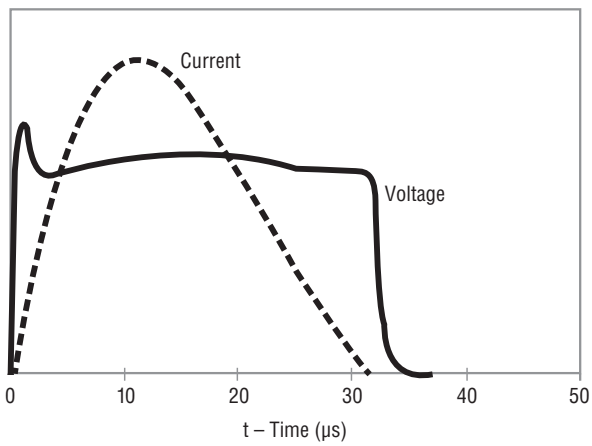


This graph shows the typical device surge current derating versus ambient temperature when subjected to the 8/20 µs current waveform per the IEC 61000-4-5 specification. This device is not intended for continuous operation at temperatures above 125 °C.

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



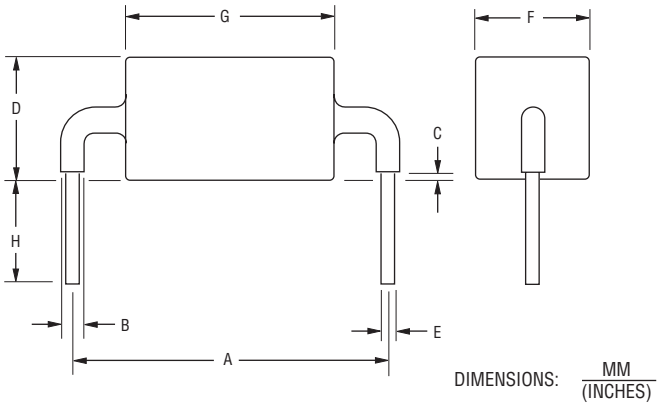
Typical Waveform Under Surge



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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:



Dim.	PTVS1-066C-TH	PTVS1-190C-TH	PTVS1-380C-TH
A	24.15 ± 0.72 (0.951 ± 0.028)		
B	2.40 ± 0.50 (0.094 ± 0.020)		2.00 ± 0.50 (0.079 ± 0.020)
C	1.75 ± 1.25 (0.069 ± 0.049)		0.50 ± 0.50 (0.020 ± 0.020)
D	8.50 (0.335) Max.		8.00 (0.315) Max.
E	1.25 ± 0.05 (0.049 ± 0.002)		
F	7.00 (0.276) Max.		8.00 (0.315) Max.
G	6.00 (0.236) Max.	10.00 (0.394) Max.	14.50 (0.571) Max.
H	6.00 ± 1.00 (0.236 ± 0.039)		

Typical Part Marking

PTVS1-066C-TH 1066
PTVS1-190C-TH 1190
PTVS1-380C-TH 1380

Environmental Specifications

ESD Classification (HBM)..... 3B

How to Order

PTVS 1 - xxx C - T H L

Series
PTVS = Power TVS High Current Diode

Peak Current Rating
1 = 1 kA

Repetitive Standoff Voltage
066 = 66 V
190 = 190 V
380 = 380 V

Suffix
C = Bidirectional Device

Package
T = Through-Hole

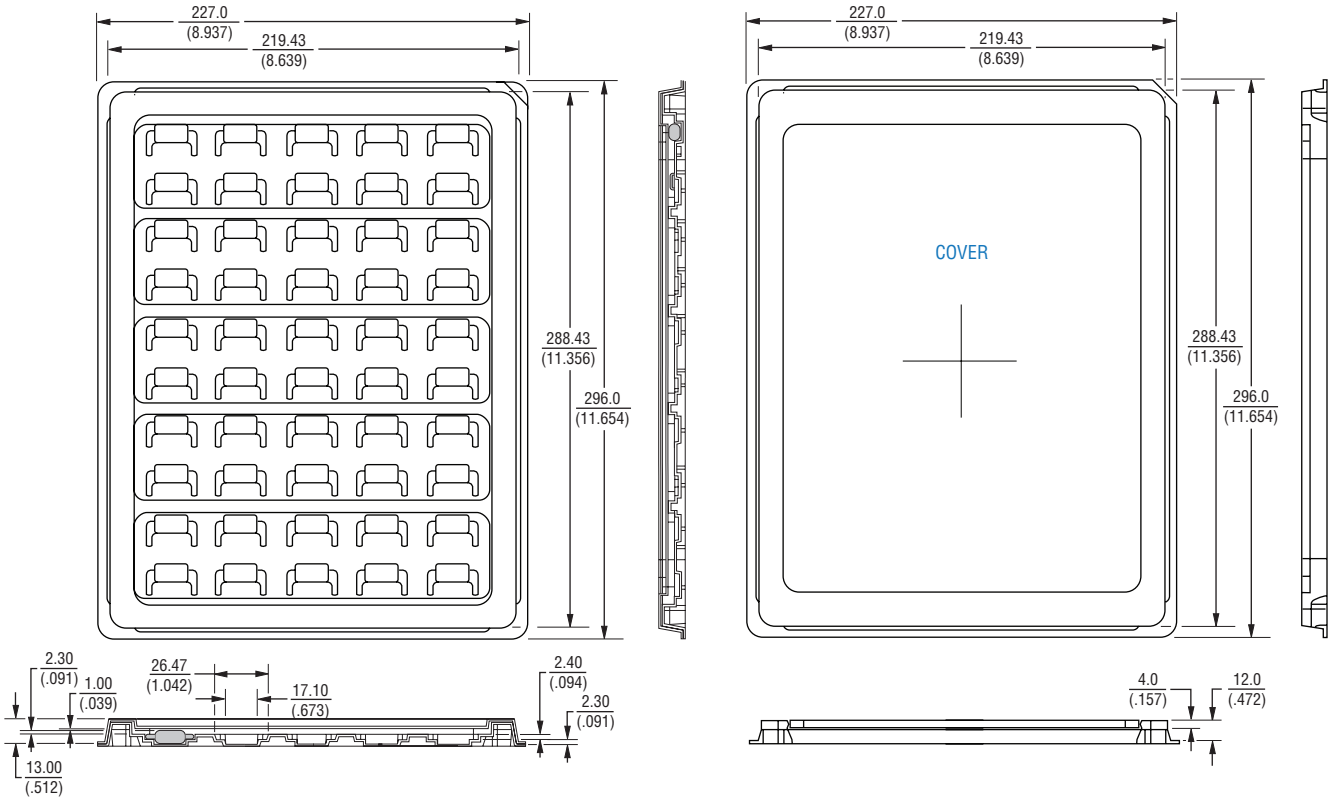
Temperature
H = High Temperature Series

Packaging
Blank = 5 pcs./tray
L = 50 pcs./tray

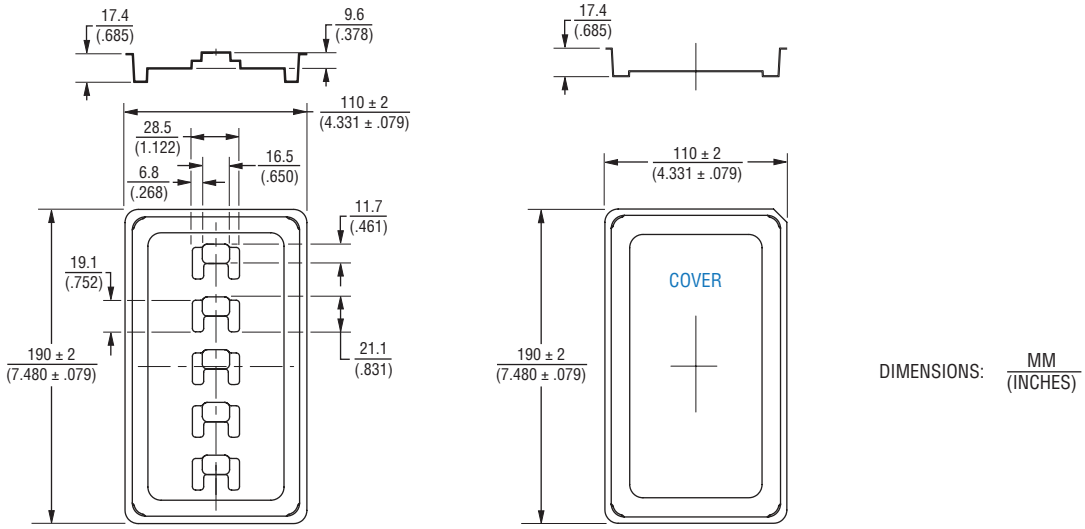
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Packaging Information

The Model PTVS1-xxxC-THL is packaged in a 296 mm x 227 mm x 13 mm tray, 50 pcs. per tray.



The Model PTVS1-xxxC-TH is packaged in a 190 mm x 110 mm x 17.4 mm tray, 5 pcs. per tray.



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