



Features

- 20 kA, 8/20 μ s surge capability
- Low clamping voltage under surge
- Bidirectional TVS
- RoHS compliant*

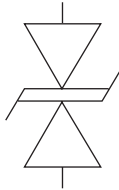
Applications

- High power DC bus protection

PTVS20-015C-TH High Current TVS Diode

General Information

The Model PTVS20-015C-TH high current bidirectional TVS diode is designed for use in high power DC bus clamping applications.



The device is RoHS* compliant and assists in meeting IEC 61000-4-5 8/20 μ s current surge requirements.

Agency Approval

Description	
UL	File Number: E313168

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}	15	V
Peak Current Rating per 8/20 μ s IEC 61000-4-5	I_{PPM}	20	kA
Operating Temperature Range	T_{OP}	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T_S	-55 to +150	$^\circ\text{C}$

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	$I_{BR} = 10\text{ mA}$	16		19	V
V_C Clamping Voltage (1) per IEC 61000-4-5 (8/20 μ s current waveform)	$I_{PP} = 20\text{ kA}$		44		V
$V_{(BR)}$ Temperature Coefficient			0.1		$\%/^\circ\text{C}$
C Capacitance	$F = 10\text{ kHz}$, $V_d = 1\text{ Vrms}$		38.7		nF

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

Environmental Specifications

Test	Standard
HTRB	MIL-STD-750, 1038
Temperature Cycling	JESD22-A104
High Temperature High Humidity Reverse Bias	JESD22-A101
UHASt	JESD22-A118
ESD (HBM)	ANSI-ESDA-JEDEC-JS-001-2017, Class 3B

How to Order

Series	PTVS 20 - 015 C - TH
PTVS = Power TVS High Current Diode	
Peak Current Rating	20 = 20 kA
Repetitive Standoff Voltage	015 = 15 V_{WM} (Volts)
Suffix	C = Bidirectional Device
Package	TH = Through-hole



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

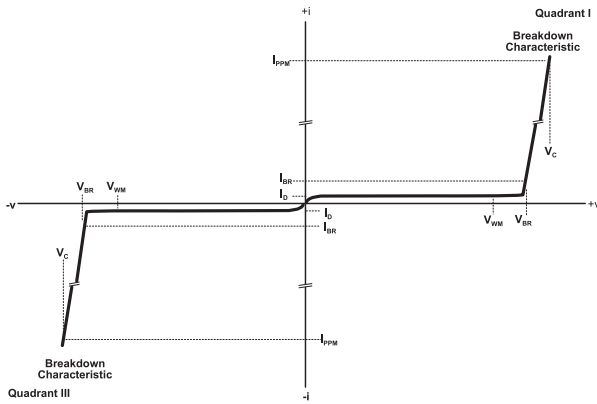
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PTVS20-015C-TH High Current TVS Diode

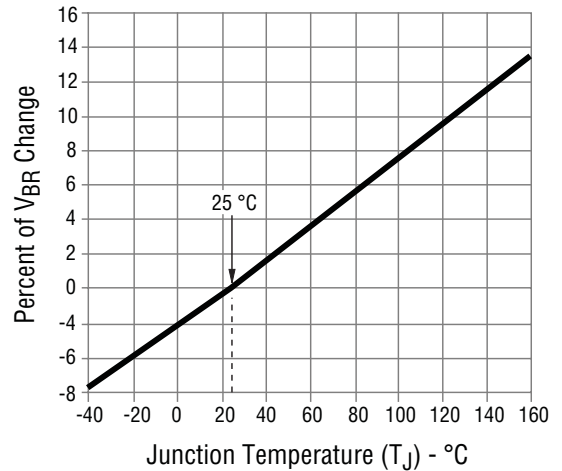
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Performance Graphs

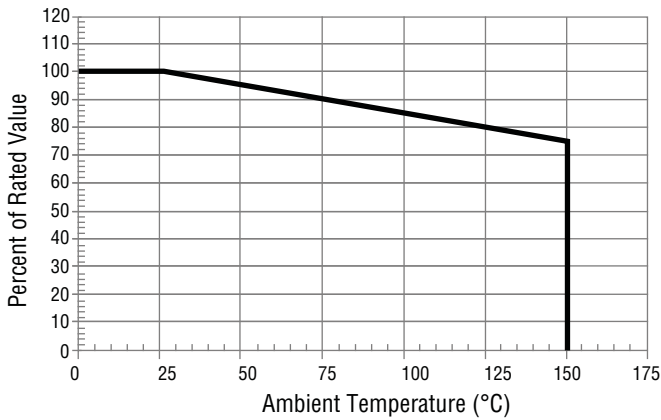
V-I Characteristic



Typical V_{BR} vs. Junction Temperature

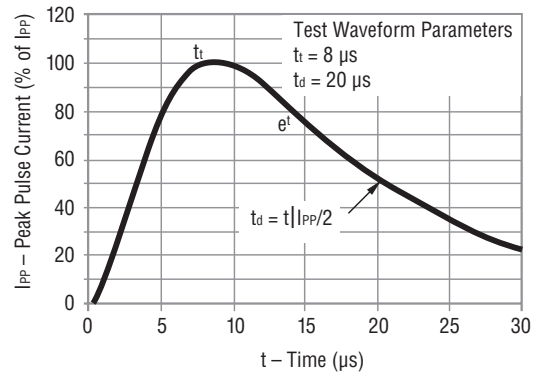


Typical 8/20 μ s Surge Current Derating



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



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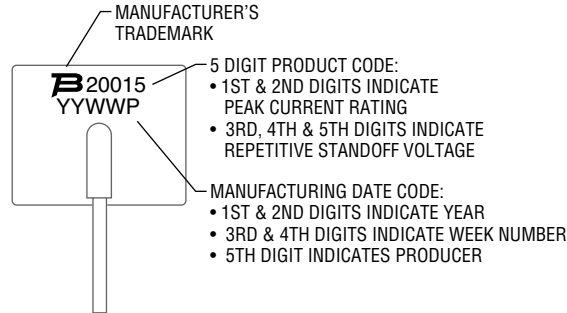
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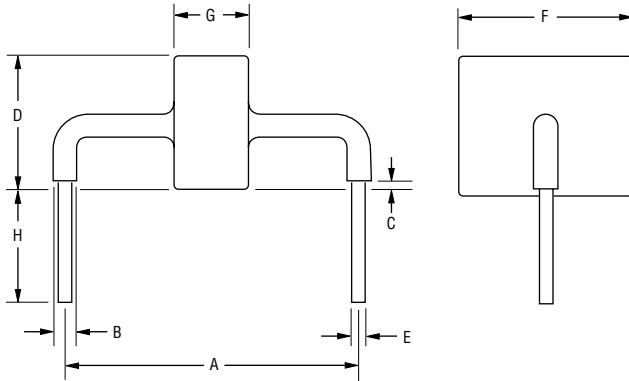
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Typical Part Marking



Product Dimensions

This is an RoHS compliant product, with epoxy encapsulations meeting UL Class 94V-0. Ag plated leads meet solderability requirements of JESD22-B102. Package dimensions are shown below.



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Dim.	PTVS20-015C-TH
A	$\frac{24.5 \pm 3.00}{(0.965 \pm 0.118)}$
B	$\frac{2.00 \pm 0.50}{(0.079 \pm 0.020)}$
C	$\frac{2.70 \pm 1.25}{(0.106 \pm 0.049)}$
D	$\frac{17.50}{(0.689)}$ Max.
E	$\frac{1.25 \pm 0.05}{(0.049 \pm 0.002)}$
F	$\frac{16.00}{(0.630)}$ Max.
G	$\frac{4.00}{(0.157)}$ Max.
H	$\frac{6.00 \pm 1.00}{(0.236 \pm 0.039)}$

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