



## Features

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

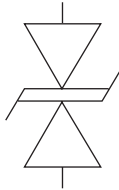
## Applications

- 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  $\mu$ s current surge requirements.

### Agency Approval

Description	
UL	File Number: <a href="#">E313168</a>

### 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 $\mu$ 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)

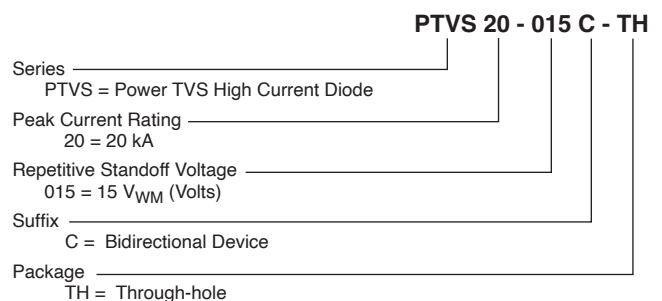
Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_D$ Standby Current	$V_D = V_{WM}$			10	$\mu\text{A}$
$V_{(BR)}$ Breakdown Voltage	$I_{BR} = 10\text{ mA}$	16		19	V
$V_C$ Clamping Voltage (1) per IEC 61000-4-5 (8/20 $\mu$ s current waveform)	$I_{PP} = 20\text{ kA}$		44		V
$V_{(BR)}$ Temperature Coefficient			0.1		$\%/\text{^\circ C}$
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



**WARNING Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

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

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

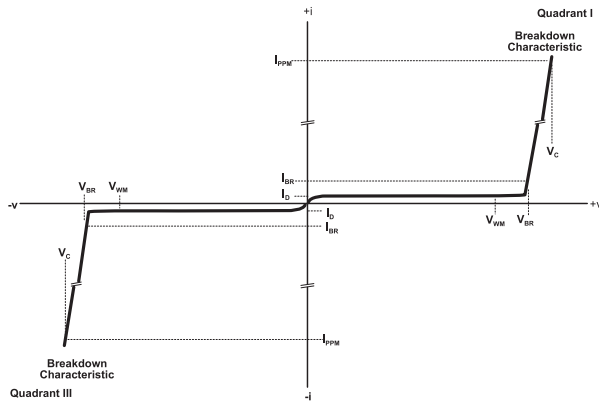
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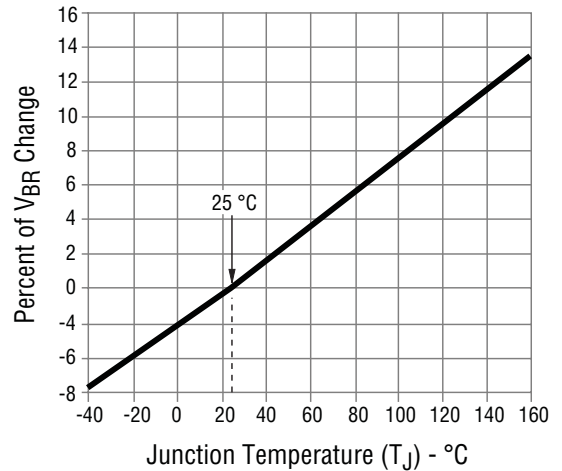
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## Performance Graphs

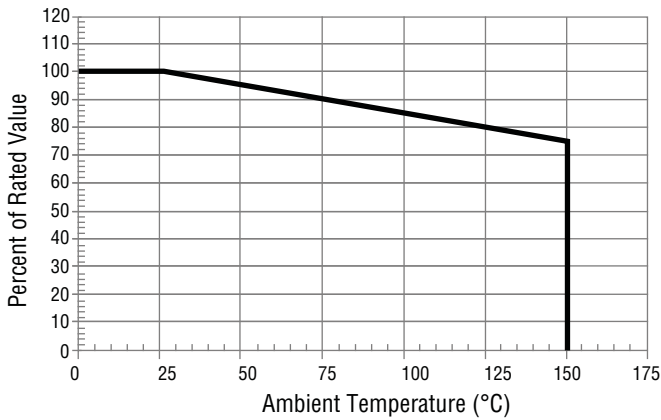
### V-I Characteristic



### Typical $V_{BR}$ vs. Junction Temperature

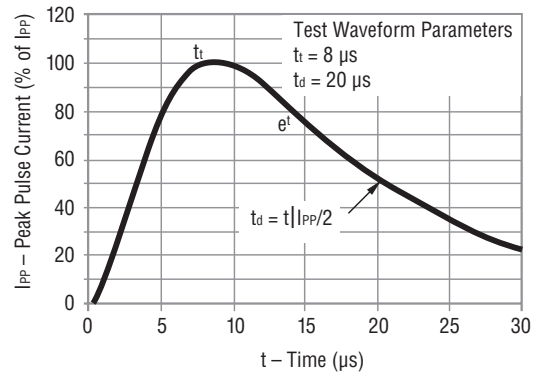


### Typical 8/20 $\mu s$ Surge Current Derating



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

### Current 8/20 $\mu s$ Waveform per IEC 61000-4-5



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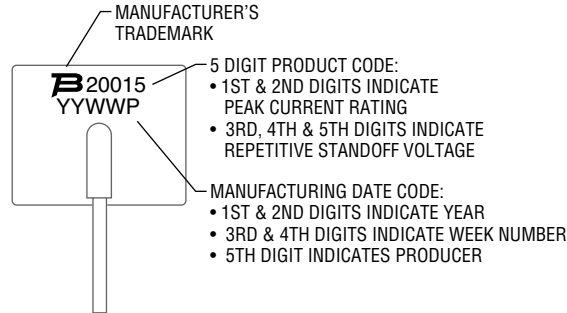
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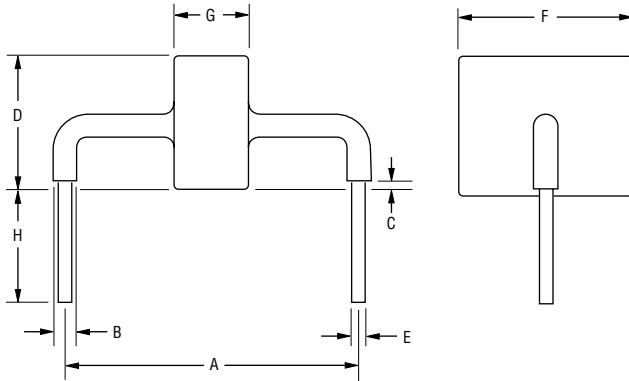
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## Typical Part Marking



## 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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