

Features

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

Applications

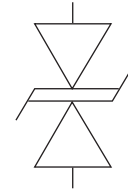
- High power DC bus protection

Model PTVS3-015C-TH High Current TVS Diode

General Information

The Model PTVS3-015C-TH high current bidirectional TVS diode is designed for use in high power DC bus clamping applications. This device offers bidirectional port protection.

The device is RoHS* compliant and halogen free**. It also meets IEC 61000-4-5 8/20 μ s current surge requirements.



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}	3	kA
Operating Junction Temperature Range	T_J	-40 to +125	$^\circ\text{C}$
Storage Temperature Range	T_S	-55 to +150	$^\circ\text{C}$
Lead Temperature, Soldering (10 s)		260	$^\circ\text{C}$

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	17.5	19	V
V_C Clamping Voltage (1) per IEC61000-4-5 (8/20 μ s current waveform)	$I_{PP} = 3\text{ kA}$		28		V
$V_{(BR)}$ Temperature Coefficient			0.1		$\%/^\circ\text{C}$
C Capacitance	$F = 10\text{ kHz}$, $V_d = 1\text{ Vrms}$		7.5		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.

**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.

Specifications are subject to change without notice.

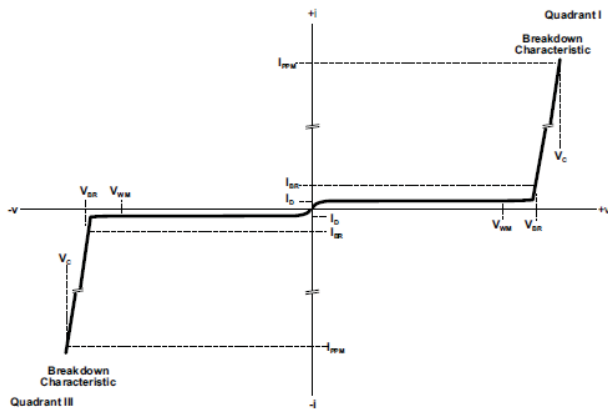
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

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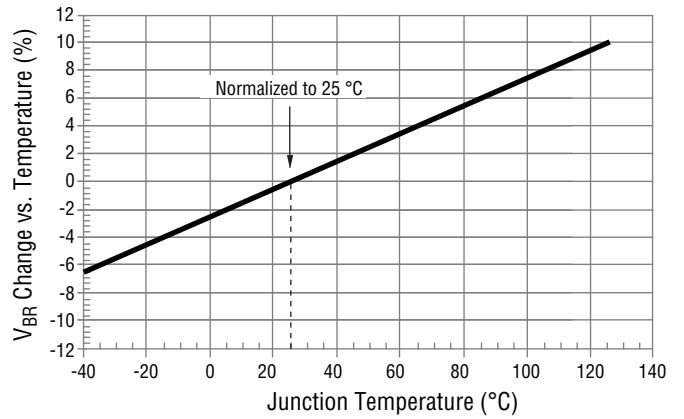
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Performance Graphs

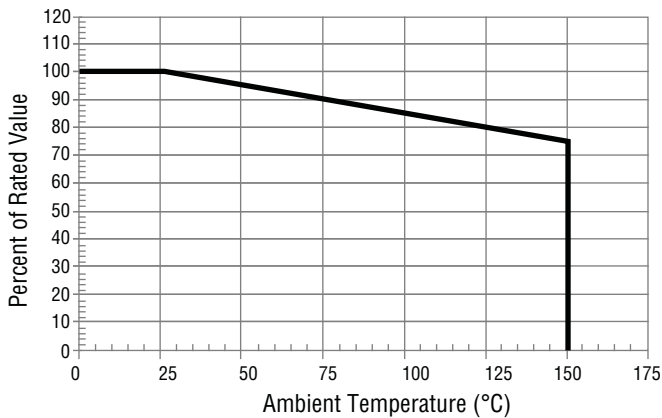
V-I Characteristic



Percentage V_{BR} Change vs. Junction Temperature



Typical Surge Current Derating



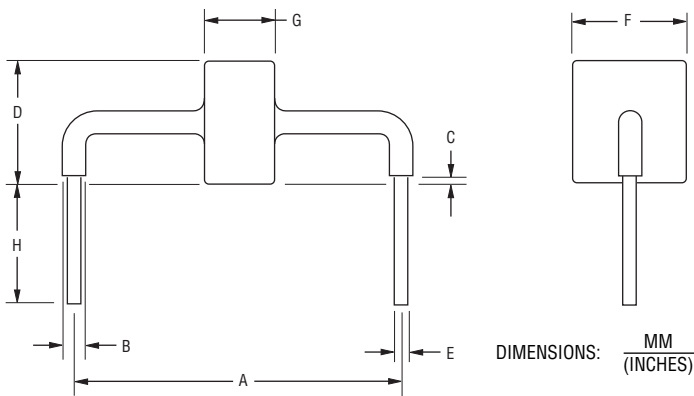
This graph shows the typical device surge current derating versus ambient temperature when subjected to the 8/20 μ s current waveform per the IEC 61000-4-5 specification. This device is not intended for continuous operation at temperatures above 125 °C.

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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:

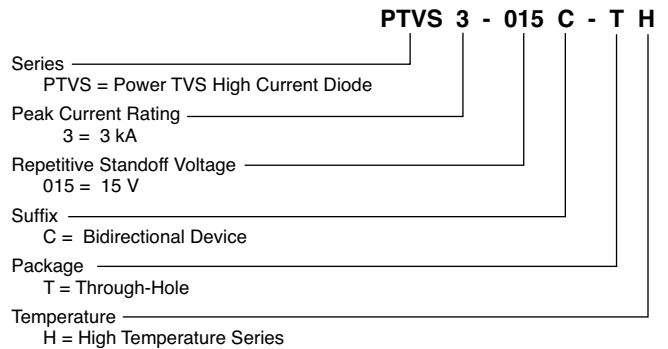


Dim.	PTVS3-015C-TH
A	$\frac{24.15 \pm 0.72}{(0.951 \pm 0.028)}$
B	$\frac{2.40 \pm 0.50}{(0.094 \pm 0.020)}$
C	$\frac{1.75 \pm 1.25}{(0.069 \pm 0.049)}$
D	$\frac{10.80}{(0.425)}$ Max.
E	$\frac{1.25 \pm 0.05}{(0.049 \pm 0.002)}$
F	$\frac{9.30}{(0.366)}$ Max.
G	$\frac{4.00}{(0.157)}$ Max.
H	$\frac{6.00 \pm 1.00}{(0.236 \pm 0.039)}$

Typical Part Marking

PTVS3-015C-TH3015

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