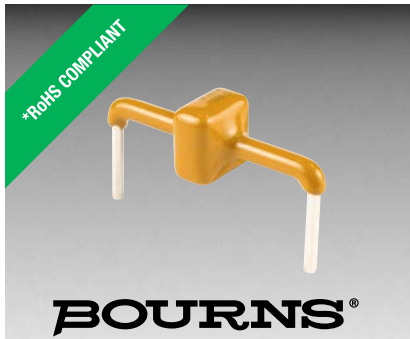




## Features

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

## Applications

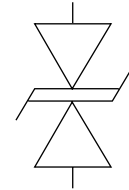
- High power DC bus protection

# 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  $\mu$ 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 $\mu$ 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   | $\mu\text{A}$       |
| $V_{(BR)}$ Breakdown Voltage                                                           | $I_{BR} = 10\text{ mA}$              | 16   |      | 19   | V                   |
| $V_C$ Clamping Voltage <sup>(1)</sup> per IEC61000-4-5 (8/20 $\mu$ s current waveform) | $I_{PP} = 3\text{ kA}$               |      | 28   |      | V                   |
| $V_{(BR)}$ Temperature Coefficient                                                     |                                      |      | 0.1  |      | $\%/^\circ\text{C}$ |
| C Capacitance                                                                          | F = 10 kHz,<br>$V_d = 1\text{ Vrms}$ |      | 7.5  |      | nF                  |

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

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

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

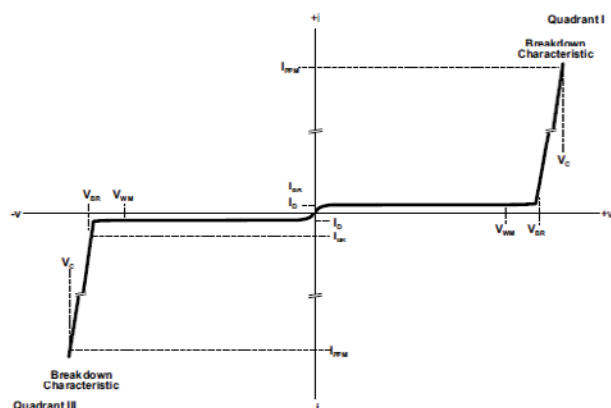
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# Model PTVS3-015C-TH High Current TVS Diode

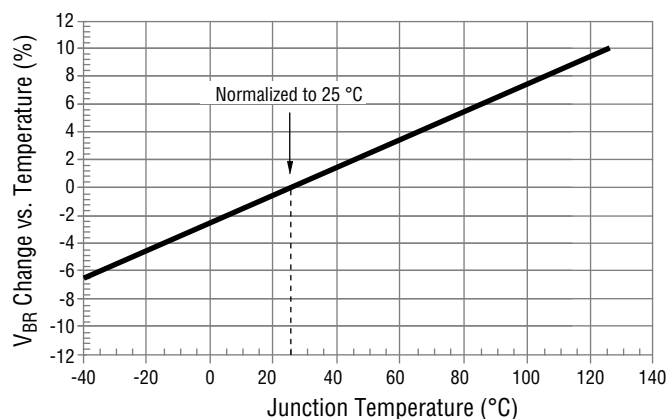
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## Performance Graphs

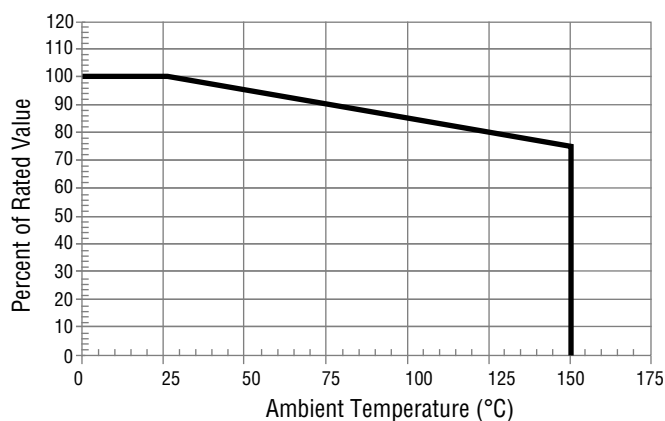
### V-I Characteristic



### 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  $\mu\text{s}$  current waveform per the IEC 61000-4-5 specification. This device is not intended for continuous operation at temperatures above  $125^{\circ}\text{C}$ .*

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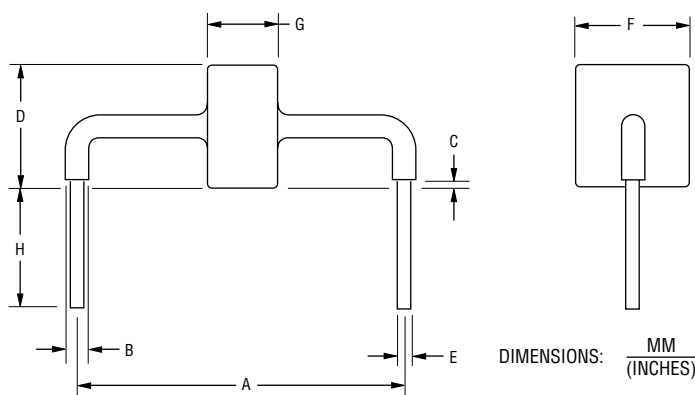
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# Model PTVS3-015C-TH High Current TVS Diode

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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    | $24.15 \pm 0.72$<br>(0.951 $\pm$ 0.028) |
| B    | $2.40 \pm 0.50$<br>(0.094 $\pm$ 0.020)  |
| C    | $1.75 \pm 1.25$<br>(0.069 $\pm$ 0.049)  |
| D    | $10.80$<br>(0.425) Max.                 |
| E    | $1.25 \pm 0.05$<br>(0.049 $\pm$ 0.002)  |
| F    | $9.30$<br>(0.366) Max.                  |
| G    | $4.00$<br>(0.157) Max.                  |
| H    | $6.00 \pm 1.00$<br>(0.236 $\pm$ 0.039)  |

## Typical Part Marking

PTVS3-015C-TH .....3015

## How to Order

**PTVS 3 - 015 C - T H**

Series \_\_\_\_\_  
PTVS = Power TVS High Current Diode

Peak Current Rating \_\_\_\_\_  
3 = 3 kA

Repetitive Standoff Voltage \_\_\_\_\_  
015 = 15 V

Suffix \_\_\_\_\_  
C = Bidirectional Device

Package \_\_\_\_\_  
T = Through-Hole

Temperature \_\_\_\_\_  
H = High Temperature Series

REV. 03/19

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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