



## Features

- 10 kA, 8/20  $\mu$ s surge capability
- 800 A, 10/350  $\mu$ s surge capability
- Low clamping voltage under surge
- Bidirectional TVS
- Surface mount package
- Excellent overtemperature performance

## Applications

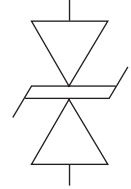
- High power DC bus protection

# PTVS10-xxxC-M Series High Current TVS Diodes

## General Information

Bourns® Model PTVS10-xxxC-M high current bidirectional TVS diodes are designed for use in high power DC bus clamping applications. These devices offer bidirectional port protection and are available with standoff voltage ratings of 66 V and 76 V.

The devices are RoHS\* compliant and are designed to meet 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                        | PTVS10-066C-M<br>PTVS10-076C-M | $V_{WM}$  | 66<br>76    | V                |
| Peak Current Rating per 8/20 $\mu$ s IEC 61000-4-5 |                                | $I_{PPM}$ | 10          | kA               |
| Peak Current Rating per 10/350 $\mu$ s             |                                | $I_{PPM}$ | 800         | A                |
| Operating Junction Temperature Range               |                                | $T_J$     | -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       | $I_{BR} = 10\text{ mA}$                 | PTVS10-066C-M<br>PTVS10-076C-M | 72<br>85 | 76<br>90   | 80<br>95   | V                   |
| $V_C$ Clamping Voltage (1)         | $I_{PP} = 10\text{ kA}$                 | PTVS10-066C-M<br>PTVS10-076C-M |          |            | 120<br>135 | V                   |
| $V_{(BR)}$ Temperature Coefficient |   |                                |          | 0.1        |            | $\%/^\circ\text{C}$ |
| C Capacitance                      | F = 10 kHz,<br>$V_d = 1\text{ V}_{rms}$ | PTVS10-066C-M<br>PTVS10-076C-M |          | 6.7<br>5.5 |            | nF                  |

Note: (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)**

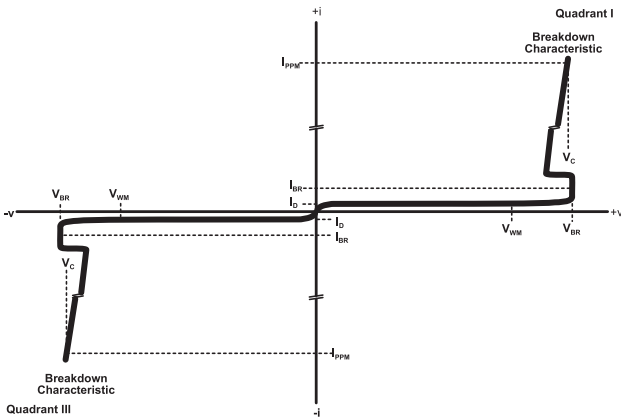
\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011. Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

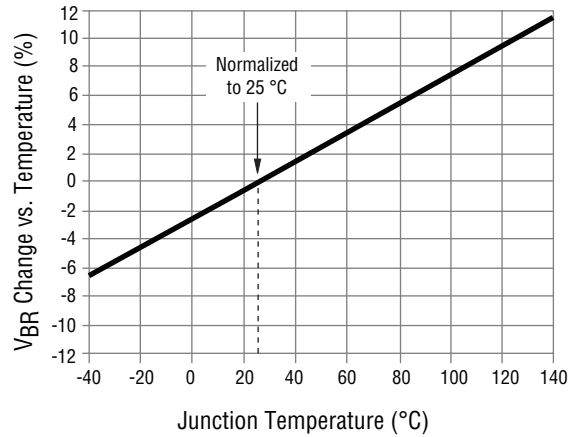
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## Performance Graphs

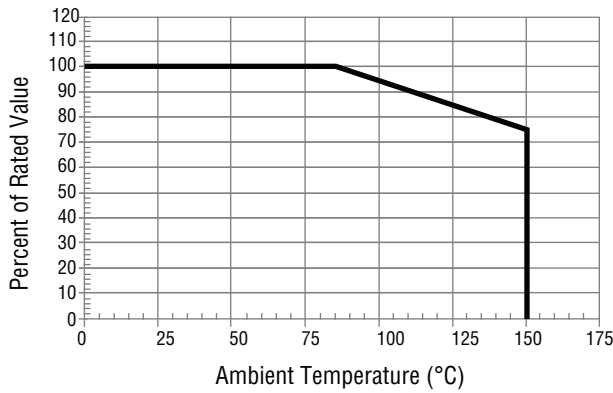
### V-I Characteristic



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

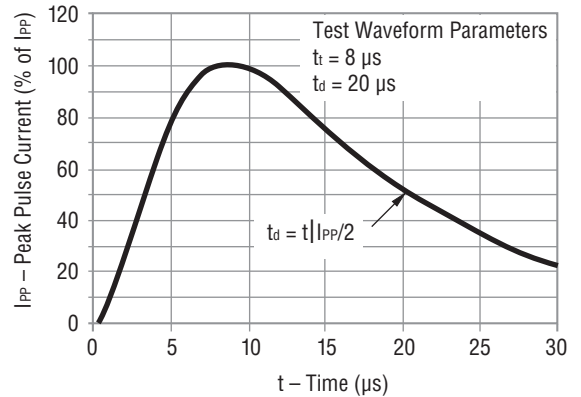


### Typical Surge Current Derating



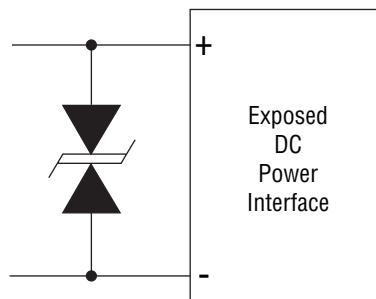
This graph shows the typical device surge current derating versus ambient temperature when subjected to the 8/20  $\mu$ s current waveform per the IEC 61000-4-5 specification. This device is not intended for continuous operation at temperatures above 125  $^{\circ}$ C.

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



## Application

A typical application for Power TVS products includes DC power line protection.



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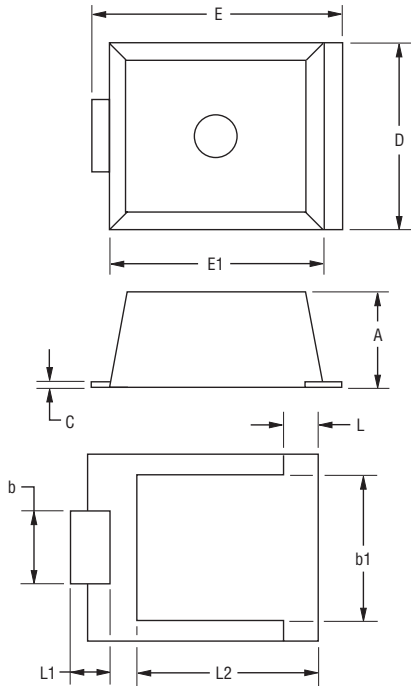
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# PTVS10-xxxC-M Series High Current TVS Diodes



## Product Dimensions

This is an RoHS compliant\*, molded package with 100 % Sn on the terminations, and a flammability rating of UL 94-V-0.

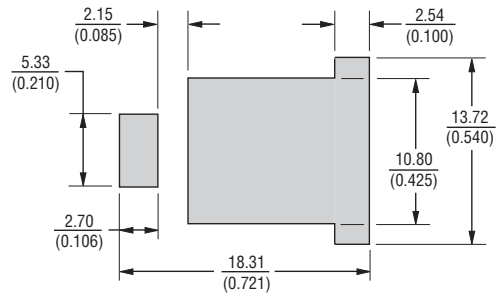


| Dim. | Min.             | Max.             |
|------|------------------|------------------|
| A    | 6.94<br>(0.273)  | 7.24<br>(0.285)  |
| b    | 5.15<br>(0.203)  | 5.65<br>(0.222)  |
| b1   | 10.55<br>(0.415) | 11.05<br>(0.435) |
| C    | 0.37<br>(0.015)  | 0.45<br>(0.018)  |
| D    | 13.45<br>(0.530) | 14.60<br>(0.575) |
| E    | 17.85<br>(0.703) | 18.72<br>(0.737) |
| E1   | 15.50<br>(0.610) | 16.05<br>(0.632) |
| L    | 2.30<br>(0.091)  | 2.80<br>(0.110)  |
| L1   | 2.50<br>(0.098)  | 2.90<br>(0.114)  |
| L2   | 13.16<br>(0.518) | 13.76<br>(0.518) |

Mold flash or protrusion shall not exceed 0.25 mm.

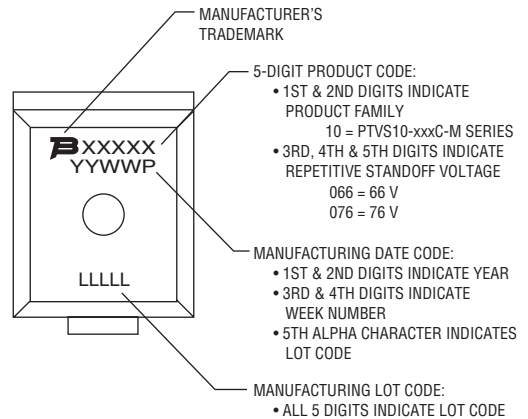
DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

## Recommended Pad Layout

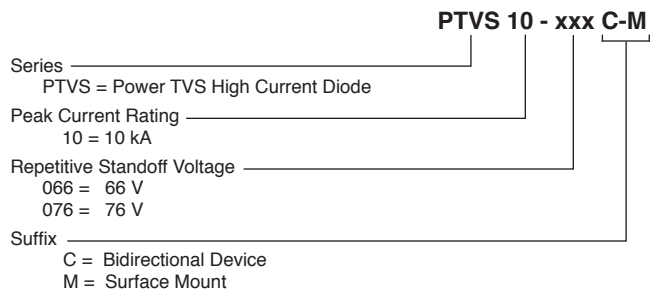


DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

## Typical Part Marking



## How to Order



## Environmental Specifications

Moisture Sensitivity Level.....1  
ESD Classification (HBM).....3B

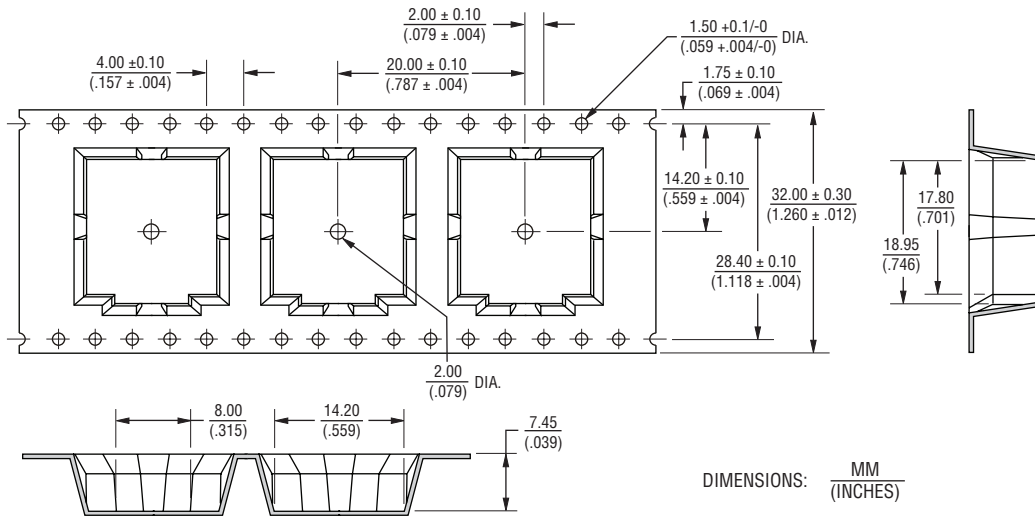
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# PTVS10-xxxC-M Series High Current TVS Diodes

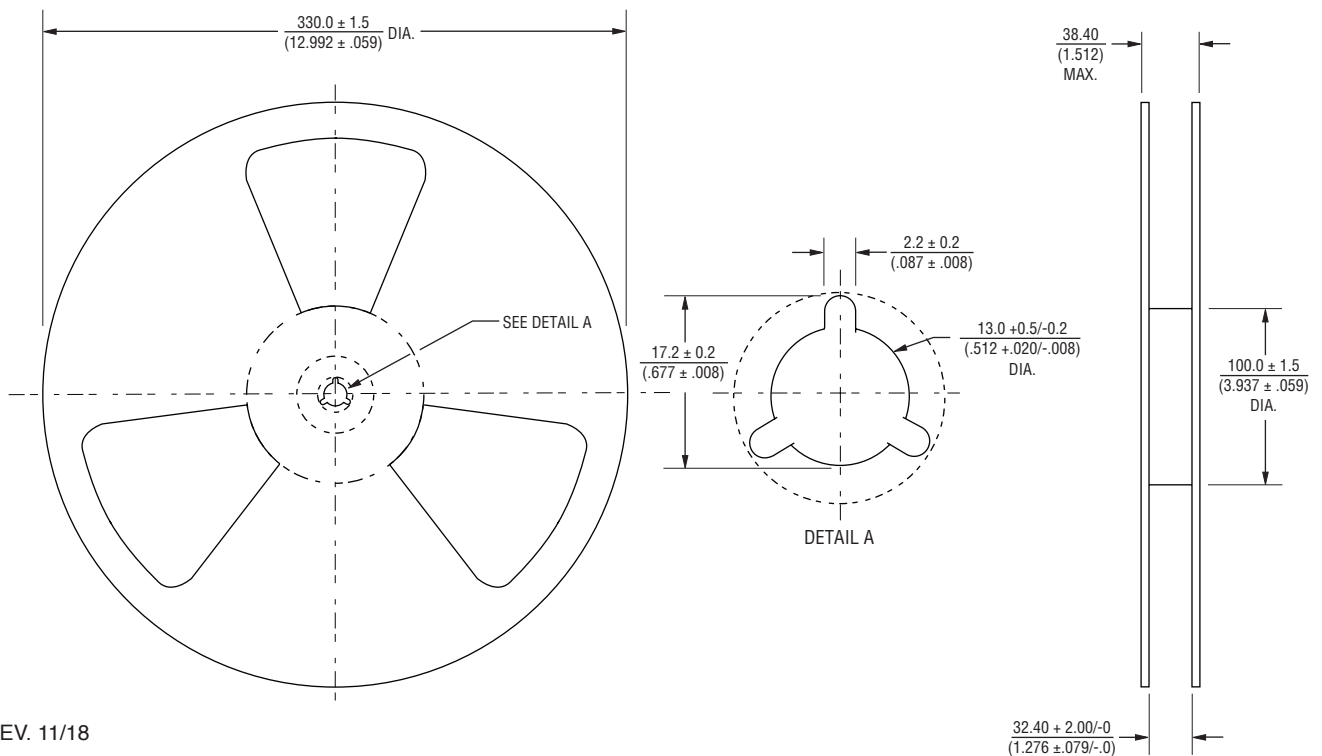
**BOURNS®**

## Packaging Information

The product will be dispensed in tape and reel format (see diagram below).



**USER DIRECTION OF FEED** →  
400 PCS. PER REEL



REV. 11/18

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