



Features

- 10 kA, 8/20 μ s surge capability
- 1 kA, 10/350 μ s surge capability
- Low clamping voltage under surge
- Bidirectional TVS
- Surface mount package

Applications

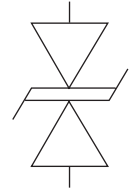
- High power DC bus protection

PTVS10-086C-M High Current TVS Diode

General Information

The Bourns® Model PTVS10-086C-M high current bidirectional TVS diode is designed for use in high power DC bus clamping applications.

The device is RoHS* compliant and is designed to meet 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}	86	V
Peak Current Rating per 8/20 μ s IEC 61000-4-5	I_{PPM}	10	kA
Peak Current Rating per 10/350 μ s	I_{PPM}	1	kA
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	μA
$V_{(BR)}$ Breakdown Voltage	$I_{BR} = 10\text{ mA}$	96	101	107	V
V_C Clamping Voltage ¹	$I_{PP} = 10\text{ kA}$ (8/20 μ s waveshape)			157	V
$V_{(BR)}$ Temperature Coefficient			0.1		%/ $^\circ\text{C}$
C Capacitance	$F = 10\text{ kHz}$, $V_d = 1\text{ Vrms}$		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

*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.

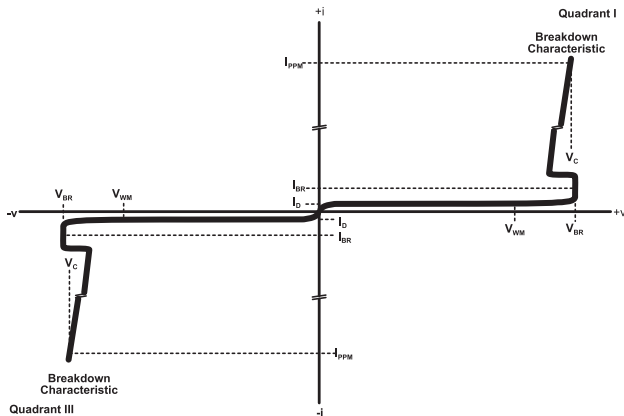
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PTVS10-086C-M High Current TVS Diodes

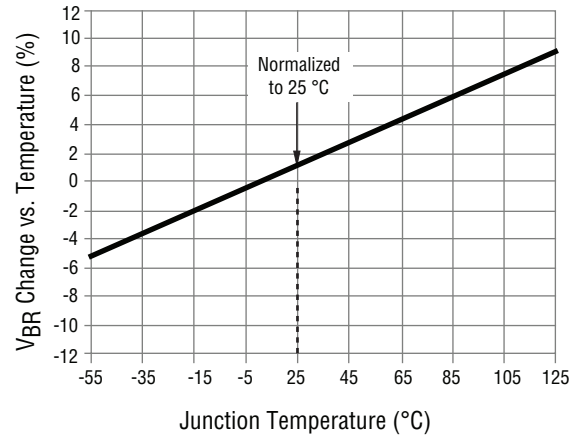
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Performance Graphs

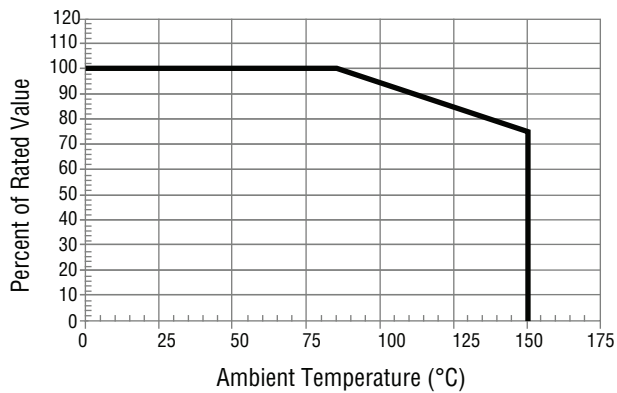
V-I Characteristic



Typical V_{BR} vs. Junction Temperature

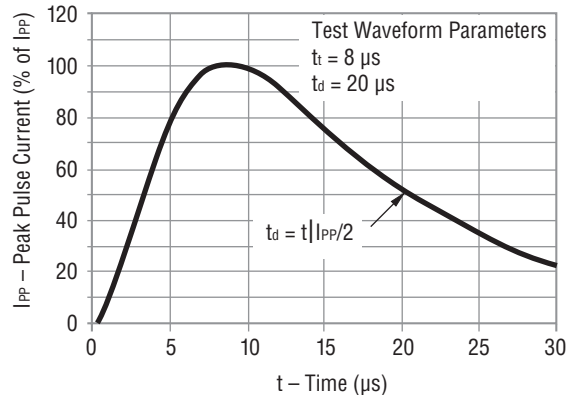


Typical Surge Current Derating



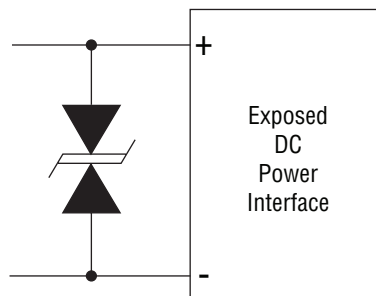
This graph shows the typical device surge current derating versus ambient temperature when subjected to the 8/20 μ s current waveform per the IEC 61000-4-5 specification. This device is not intended for continuous operation at temperatures above 125 °C.

Current 8/20 μ s Waveform per IEC 61000-4-5



Application

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



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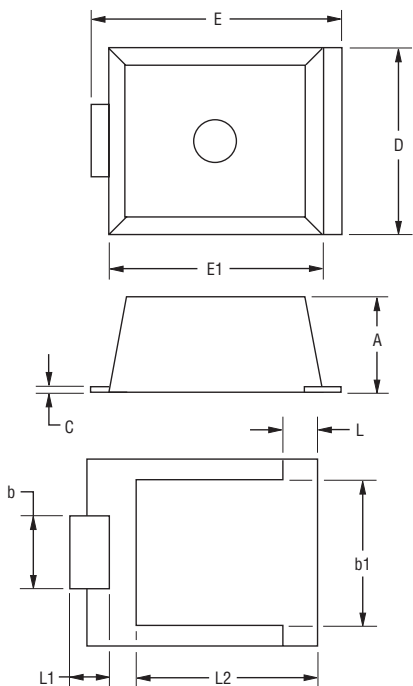
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PTVS10-086C-M High Current TVS Diodes

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Product Dimensions

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

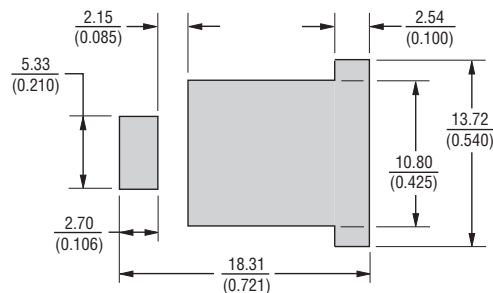


Dim.	Min.	Max.
A	6.94 (0.273)	7.24 (0.285)
b	5.15 (0.203)	5.65 (0.222)
b1	10.55 (0.415)	11.05 (0.435)
C	0.37 (0.015)	0.45 (0.018)
D	13.45 (0.530)	14.60 (0.575)
E	17.85 (0.703)	18.72 (0.737)
E1	15.50 (0.610)	16.05 (0.632)
L	2.30 (0.091)	2.80 (0.110)
L1	2.50 (0.098)	2.90 (0.114)
L2	13.16 (0.518)	13.76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

PTVS10-086C-M 10086

How to Order

Series **PTVS 10 - 086 C-M**
 PTVS = Power TVS High Current Diode
 Peak Current Rating **10 = 10 kA**
 Repetitive Standoff Voltage **086 = 86 V**
 Suffix **C = Bidirectional Device**
M = Surface Mount

Environmental Specifications

Moisture Sensitivity Level 1
 ESD Classification (HBM) 3B

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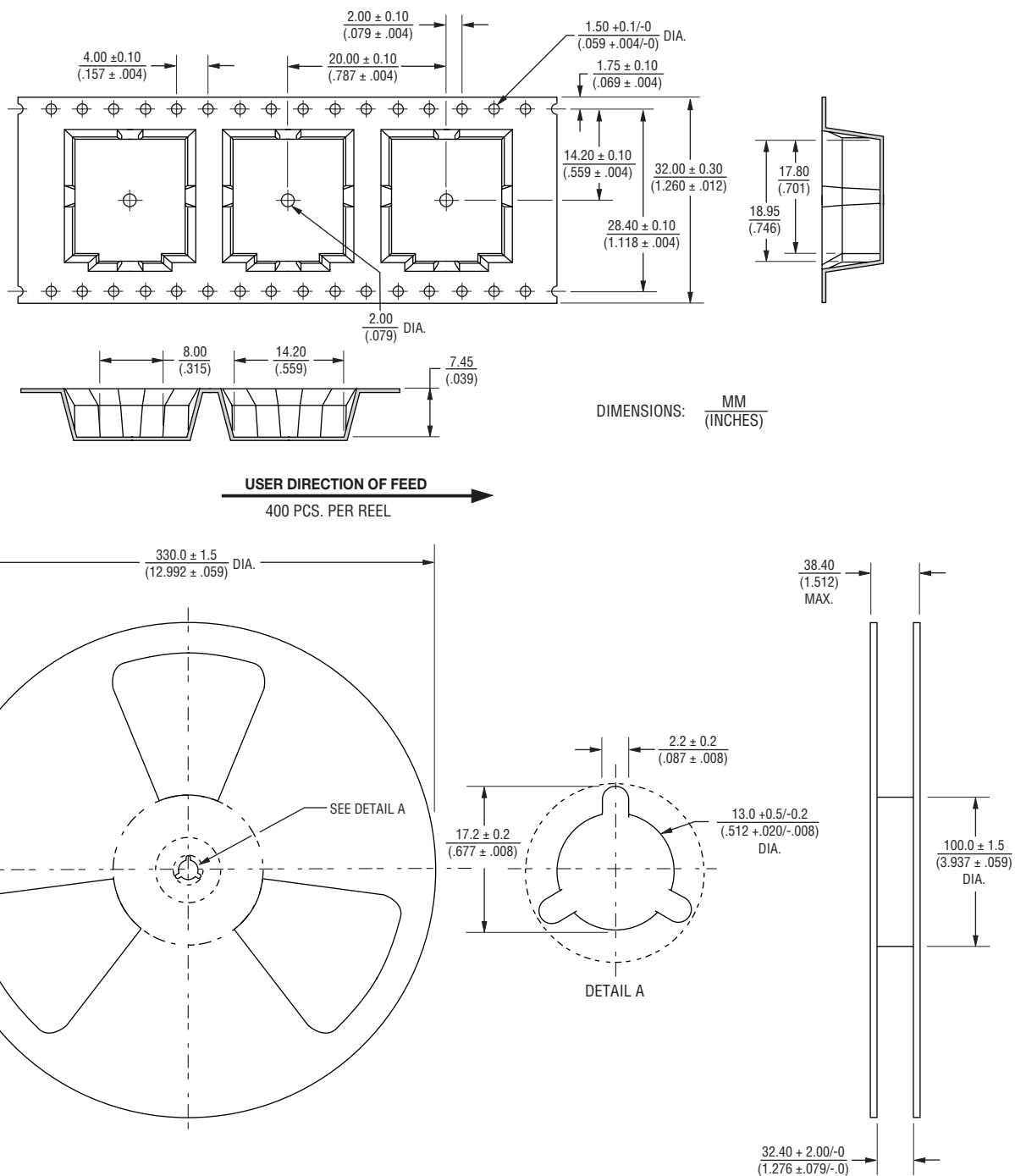
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Packaging Information

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



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