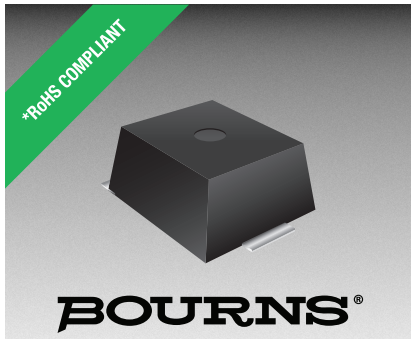




Features

- 1000 A 8/20 μ s surge capability
- Clamping voltage $\sim$ 340 V @ $I_{PP} = 1$ kA, 8/20 μ s
- Bidirectional TVS
- Surface mount
- Stable breakdown voltage over temperature, T_C of $V_{(BR)}$ $\sim$ 0.1 %/ $^{\circ}$ C

Applications

- High power DC bus protection

PTVS1-240C-M High Current TVS Diodes

General Information

The Bourns® Model PTVS1-240C-M is a high current bidirectional TVS diode designed for use in high power DC bus clamping applications. This device offers bidirectional port protection with a standoff voltage rating of 240 V. The devices are RoHS* compliant and are designed to meet IEC 61000-4-5 8/20 μ s, 10/350 μ s and 10/1000 μ s current surge requirements.



Additional Information

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Agency Recognition

Description	
UL	File Number: E215609

Absolute Maximum Ratings (@ $T_A = 25$ $^{\circ}$ C Unless Otherwise Noted)

Rating		Symbol	Value	Unit
Repetitive Standoff Voltage		V_{WM}	240	V
Peak Current Rating	per 8/20 μs IEC 61000-4-5	I_{PPM}	1000	A
	10/350 μs		200	
	10/1000 μs		100	
Operating Junction Temperature Range		T_J	-55 to +125	$^{\circ}C$
Storage Temperature Range		T_S	-55 to +150	$^{\circ}C$

Electrical Characteristics (@ $T_A = 25$ $^{\circ}$ C Unless Otherwise Noted)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_D Standby Current	$V_D = V_{WM}$			10	μ A
$V_{(BR)}$ Breakdown Voltage	$I_{BR} = 10$ mA	266		295	V
V_C Clamping Voltage (1)	$I_{PP} = 1$ kA, 8/20 μ s		340		V
	$I_{PP} = 100$ A, 10/1000 μ s		295		V
$V_{(BR)}$ Temperature Coefficient			0.1		%/ $^{\circ}$ C
C Capacitance	F = 10 kHz, $V_d = 1$ Vrms		0.95		nF

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

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www.bourns.com



WARNING Cancer and Reproductive Harm - 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.

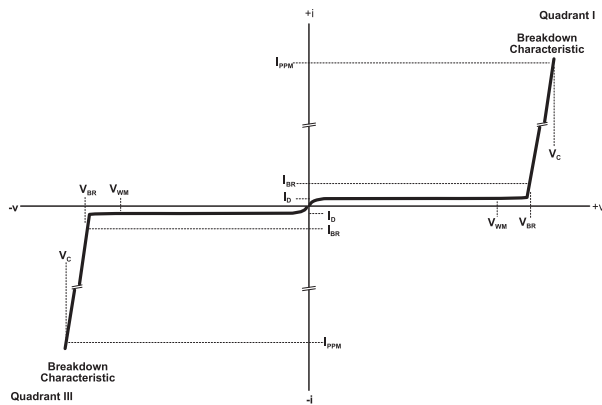
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PTVS1-240C-M High Current TVS Diodes

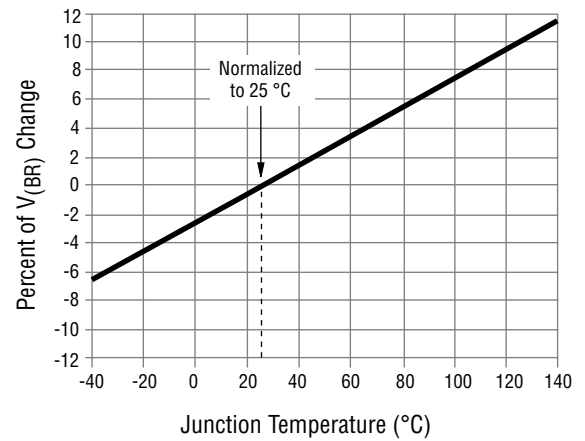
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Performance Graphs

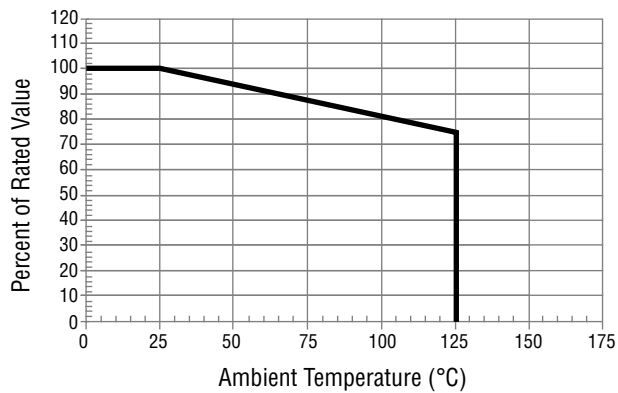
V-I Characteristic



Typical V_{BR} vs. Junction Temperature

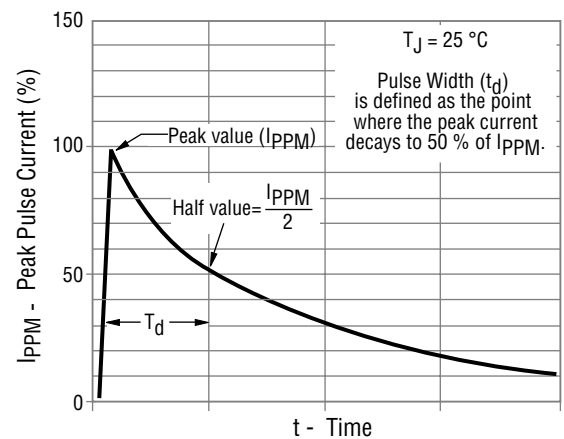


Typical 8/20 μ s Surge Current Derating



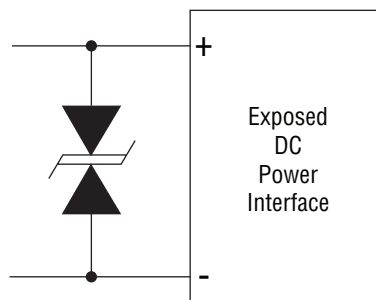
This graph shows the typical device surge current derating versus ambient temperature when subjected to the 8/20 μ s current waveform per the IEC 61000-4-5 specification. This device is not intended for continuous operation at temperatures above 125 °C.

Pulse Waveform



Application

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



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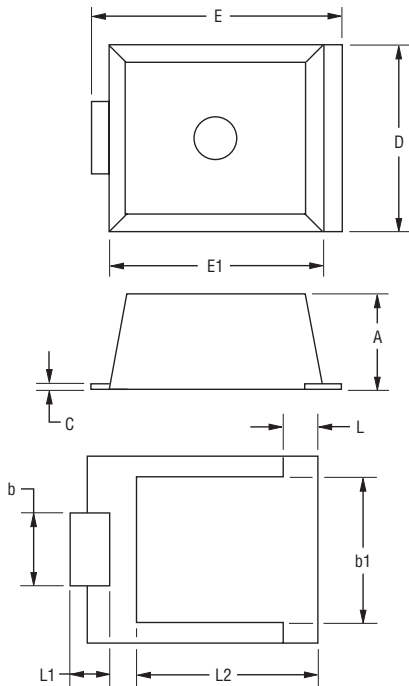
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PTVS1-240C-M High Current TVS Diodes

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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.

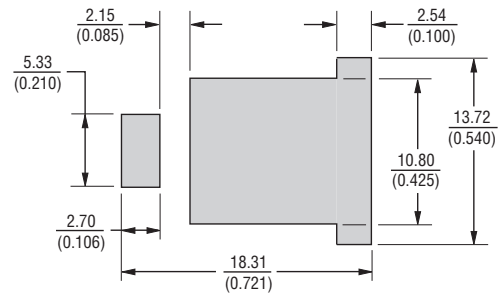


Dim.	Min.	Max.
A	$\frac{6.94}{(0.273)}$	$\frac{7.24}{(0.285)}$
b	$\frac{5.15}{(0.203)}$	$\frac{5.65}{(0.222)}$
b1	$\frac{10.55}{(0.415)}$	$\frac{11.05}{(0.435)}$
C	$\frac{0.37}{(0.015)}$	$\frac{0.45}{(0.018)}$
D	$\frac{13.45}{(0.530)}$	$\frac{14.60}{(0.575)}$
E	$\frac{17.85}{(0.703)}$	$\frac{18.72}{(0.737)}$
E1	$\frac{15.50}{(0.610)}$	$\frac{16.05}{(0.632)}$
L	$\frac{2.30}{(0.091)}$	$\frac{2.80}{(0.110)}$
L1	$\frac{2.50}{(0.098)}$	$\frac{2.90}{(0.114)}$
L2	$\frac{13.16}{(0.518)}$	$\frac{13.76}{(0.542)}$

Mold flash or protrusion shall not exceed 0.25 mm.

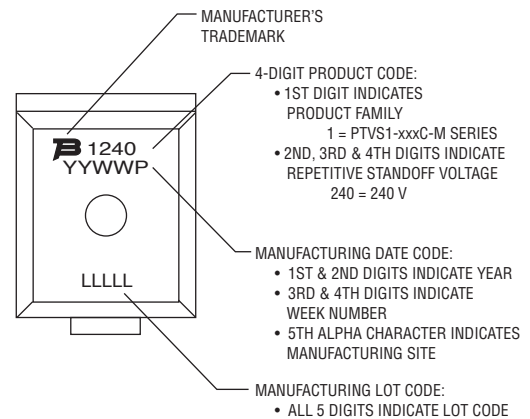
DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

Recommended Pad Layout



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

Typical Part Marking



How to Order

PTVS 1 - 240 C-M

Series _____
PTVS = Power TVS High Current Diode

Peak Current Rating _____
1 = 1 kA

Repetitive Standoff Voltage _____
240 = 240 V

Suffix _____
C = Bidirectional Device
M = Surface Mount

Environmental Specifications

Moisture Sensitivity Level 1
ESD Classification (HBM) 3B

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

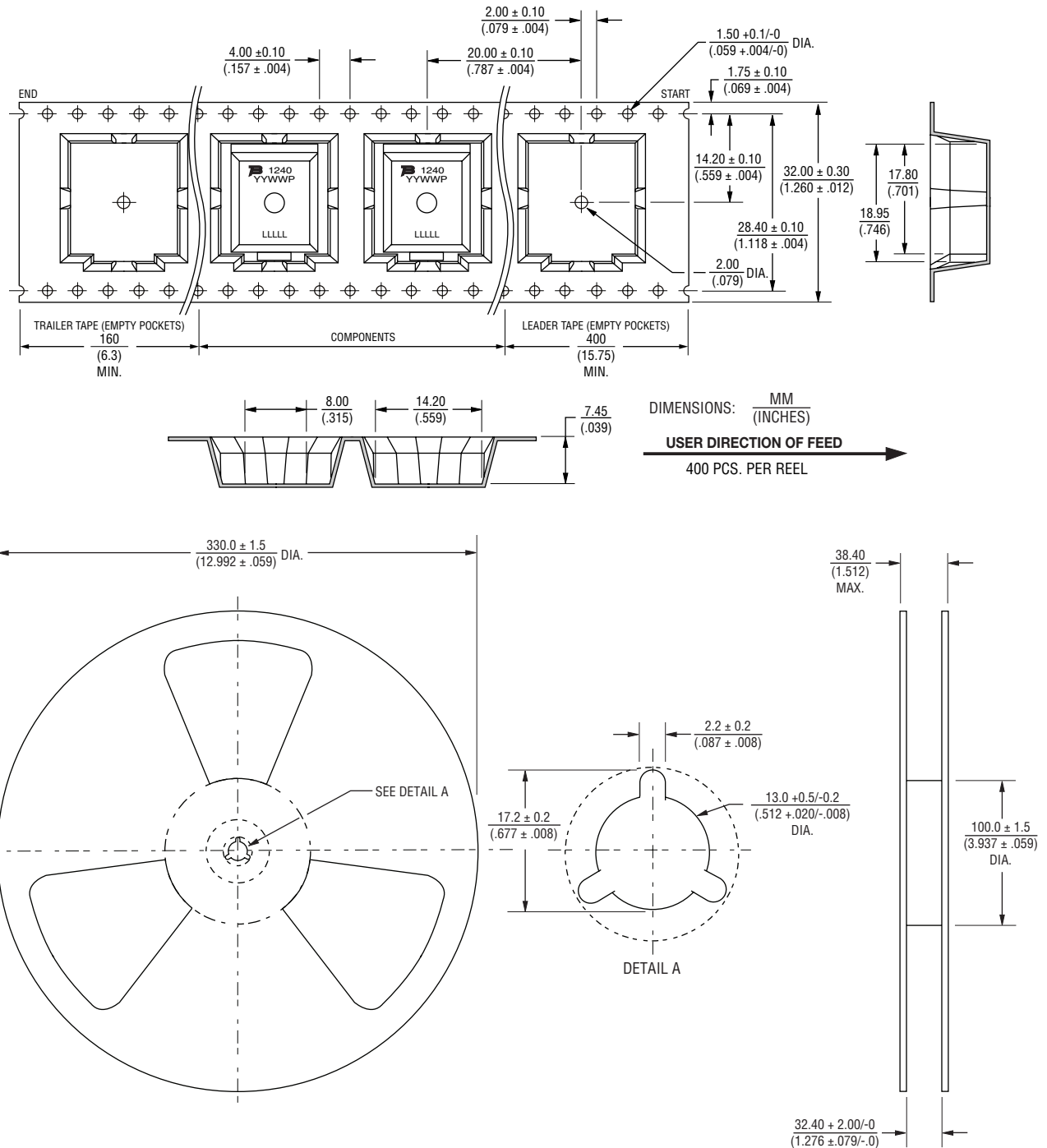
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PTVS1-240C-M High Current TVS Diodes

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Packaging Information

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



REV. 08/24

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