

#### **Features**

- 6 kA, 8/20 µs surge capability
- Low clamping voltage under surge
- Bidirectional TVS
- Excellent performance over temperature

# **Applications**

- AC line protection
- High power DC bus protection

# PTVS6-xxxC-TH Series High Voltage, High Current TVS Diodes

#### **General Information**

The Model PTVS6-xxxC-TH high voltage, bidirectional TVS diode series is designed for use in AC line and high power DC bus clamping applications.

The devices are RoHS\* compliant. They also meet IEC 61000-4-5 8/20  $\mu s$  current surge requirements.



#### **Additional Information**

Click these links for more information:









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## Absolute Maximum Ratings (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

Rating		Symbol	Value	Unit
Repetitive Standoff Voltage	PTVS6-380C-TH PTVS6-430C-TH	V <sub>WM</sub>	380 430	V
Peak Current Rating per 8/20 µs IEC 61000-4-5		I <sub>PPM</sub>	6	kA
Operating Junction Temperature Range		T <sub>J</sub>	-55 to +125	°C
Storage Temperature Range		T <sub>S</sub>	-55 to +150	°C
Lead Temperature, Soldering (10 s)			260	°C

## Electrical Characteristics (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

Paran	neter	Test	Conditions	Min.	Тур.	Max.	Unit
I <sub>D</sub>	Standby Current	$V_D = V_{WM}$				10	μΑ
V <sub>(BR)</sub>	Breakdown Voltage	I <sub>BR</sub> = 10 mA	PTVS6-380C-TH PTVS6-430C-TH	401 440	422 465	443 490	V
V <sub>C</sub>	Clamping Voltage (1)	I <sub>PP</sub> = 6 kA	PTVS6-380C-TH PTVS6-430C-TH		520 580		V
V <sub>(BR)</sub>	Temperature Coefficient				0.1		%/°C
С	Capacitance	F = 10  kHz, $V_d = 1 \text{ Vrms}$	PTVS6-380C-TH PTVS6-430C-TH		0.65 0.70		nF

 $<sup>^{(1)}</sup>$   $V_C$  measured at the time which is coincident with the peak surge current.

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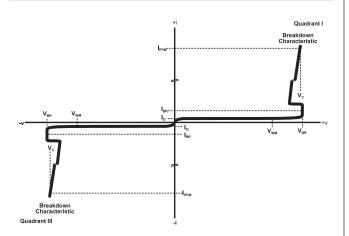
www.bourns.com



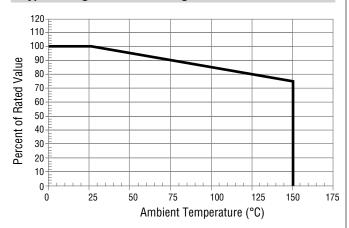
WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

#### **Performance Graphs**

#### **V-I Characteristic**

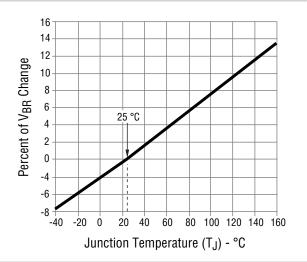


#### **Typical Surge Current Derating**

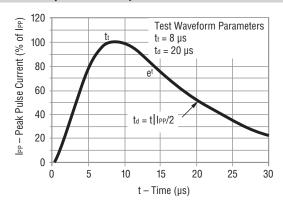


This graph shows the typical device surge current derating versus ambient temperature when subjected to the 8/20  $\mu$ s current waveform per the IEC 61000-4-5 specification. This device is not intended for continuous operation at temperatures above 125 °C.

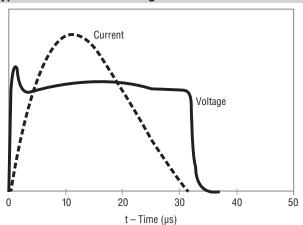
## Typical V<sub>BR</sub> vs. Junction Temperature



#### Current 8/20 µs Waveform per IEC 61000-4-5



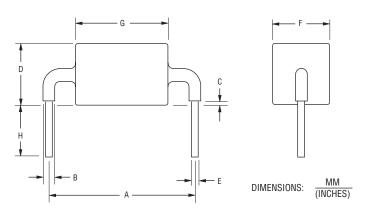
## **Typical Waveform Under Surge**



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#### **Product Dimensions**

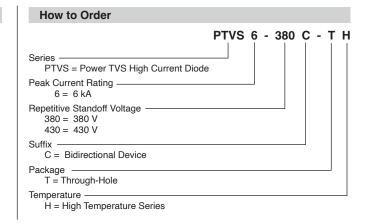
Epoxy encapsulation materials conform to UL 94V-0. Silver plated lead finish conforms to the solderability requirements of JESD22-B102, Pb free solder. Package dimensions are shown below:



Dim.	PTVS6-380C-TH	PTVS6-430C-TH			
Α	24.15 :	± 0.72			
A	$\overline{(0.951 \pm 0.028)}$				
В	2.40 ±	0.50			
В	(0.094 ±	0.020)			
С	1.75 ±	± 1.25_			
	(0.069 ±	0.049)			
D	12.00	· Max.			
	(0.472)	iviax.			
E	1.25 ±	± 0.05			
	(0.049 ±	0.002)			
F	11.50	- Max.			
Г	(0.453)	iviax.			
G	16.50	- Max.			
	(0.650)	IVIAA.			
Н	6.00	± 1.00			
	(0.236 ±	0.039)			

# **Typical Part Marking**

PTVS6-380C-TH	6380
PTVS6-430C-TH	6430



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