

NEW PRODUCT BRIEF

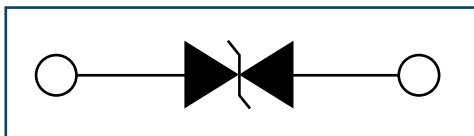


Bourns® Model PTVS20-015C-H Bidirectional Power Transient Voltage Suppressor (PTVS) Diode

INTRODUCTION

The Bourns® Model PTVS20-015C-H is a bidirectional Power Transient Voltage Suppressor (PTVS) Diode capable of handling 20 kA of surge current (8/20 μ s). With a repetitive standoff voltage (V_{WM}) of 15 V, this device is suitable for low voltage applications. Model PTVS20-015C-H is RoHS* compliant, halogen free** and UL recognized. It also meets IEC 61000-4-5 8/20 μ s current surge requirements. Model PTVS20-015C-H is a PTVS diode with the highest current carrying capability (20 kA per IEC 61000-4-5) in the smallest package (DFN, 17 x 15 x 2.5 mm)

DEVICE SYMBOL

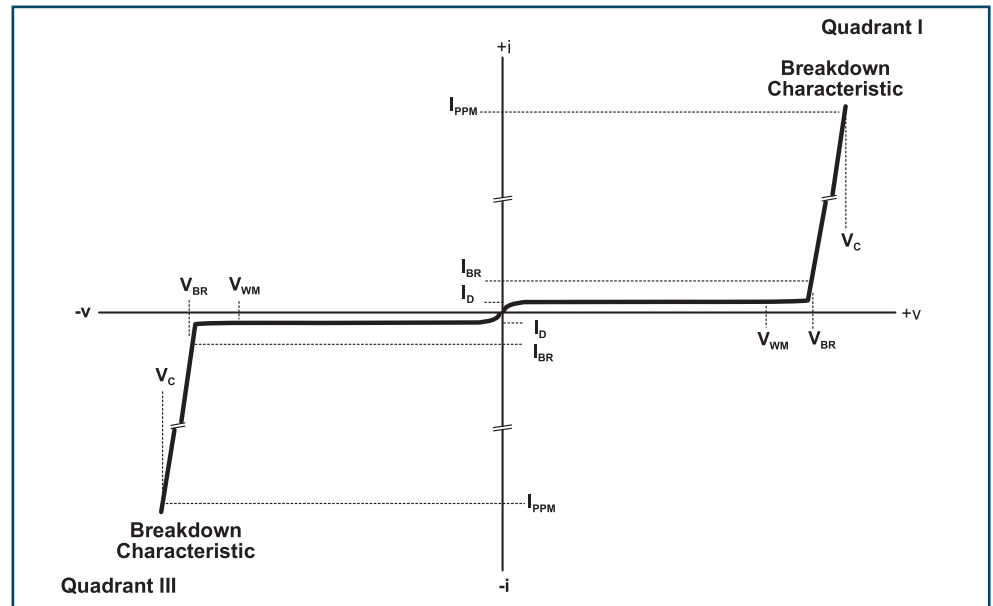


APPLICATIONS

Bourns' PTVS technology offers enhanced voltage protection and delivers extended long life for rated surges. Bourns® PTVS components can be connected in series and / or parallel to create a very high surge current protection.

The Bourns® Model PTVS20-015C-H is capable of handling 20 kA of surge current (8/20 μ s). In certain applications, these surges can be as high as 100 kA, 2/10 μ s. In order to meet this requirement, designers presently require four Model PTVS15 Series devices that can handle a 15 kA, 8/20 μ s surge (equivalent to a 60 kA, 8/20 μ s surge). This combination can also handle 100 kA, 2/10 μ s surge events as the shorter surge duration is easier to absorb. With the Bourns® Model PTVS20-015C-H, designers are able to reduce their Bill of Material (BOM) to three Model PTVS20-015C-H devices that can handle the same 15 kA 8/20 μ s surge (equivalent to a 60 kA 8/20 μ s surge). Equal current sharing between the three (or four) PTVS devices is achieved by adding resistance in series with each PTVS device.

TYPICAL VI CURVE



FEATURES AND BENEFITS

- 20 kA, 8/20 μ s capability under surge for high surge current protection
- Bidirectional TVS diode absorbs large pulses in both the positive and negative direction
- Low clamping voltage for enhanced protection
- Compact DFN package (17 x 15 x 2.5 mm)

MARKET TRENDS

Protection is required for high energy surge events on power lines. To meet this requirement, designers will often place a power line surge counter that continuously monitors surge arrestors on the sensor port. Applications that embed a surge counter frequently operate in remote locations. As maintenance calls can be costly in these locations, many designers would like a viable solution for replacing the MOV devices in their surge counters in existing applications. Designers will appreciate the increased reliability that PTVS technology provides compared to Metal Oxide Varistors (MOVs) and will benefit from the high surge current protection the Model PTVS20-015C-H delivers. Plus, the high reliability of the Model PTVS20-015C-H can reduce the total cost of ownership by helping to reduce remote location maintenance calls.

HOW TO ORDER

	PTVS 20 - 015 C - H
Series	PTVS = Power TVS High Current Diode
Peak Current Rating	20 = 20 kA
Repetitive Standoff Voltage	015 = 15 V_{WM} (Volts)
Suffix	C = Bidirectional Device
Package	DFN

*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.

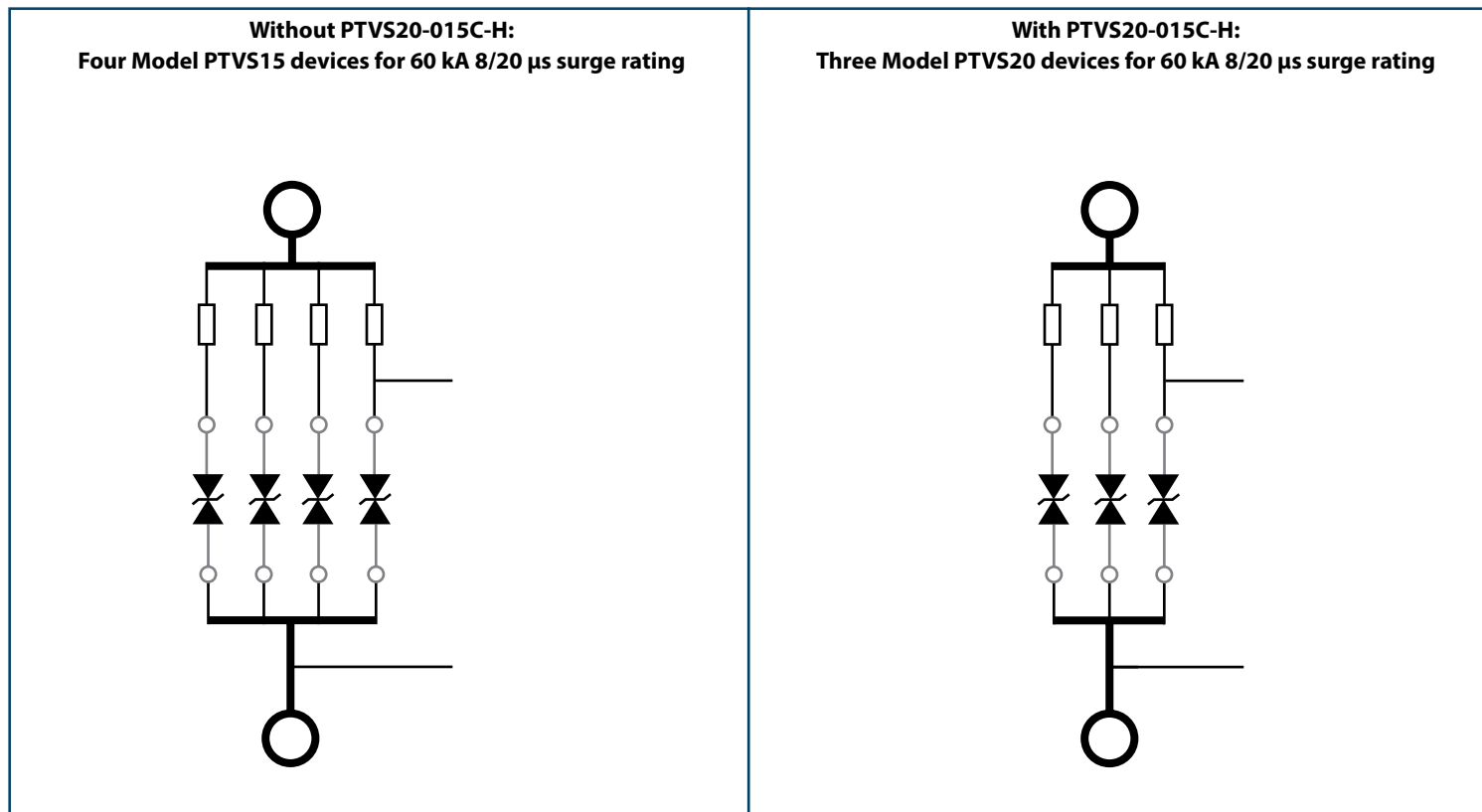


ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Test Conditions	Value	Units
Standby Current	I_D	@ 15 V	10 (max.)	μA
Breakdown Voltage	V_{BR}	@ 10 mA	16 to 19	V
Clamping Voltage*	V_C	@ 20 kA	26 (typ.)	V
Temp. Coefficient	V_{BR}	—	0.1 (typ.)	%/°C
Capacitance	C	F=10 kHz, $V_d = 1 V_{rms}$	38.7 (typ.)	nF

*8/20 μs current waveform per IEC 61000-4-5 measured at the peak surge current.

CIRCUIT DIAGRAM



Fewer components on each PCB and a simplified solder reflow production creates value for designers, production engineers, and consumers.

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