

NEW PRODUCT BRIEF

Bourns® Bidirectional Power TVS Diode – PTVS2-xxxC-H Series

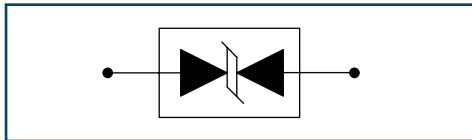
High Current PTVS Diodes in an Industry-First Surface Mount DFN Package



INTRODUCTION

Bourns is pleased to announce the new Model PTVS2-xxxC-H series bidirectional Power Transient Voltage Suppressor (PTVS) diodes, capable of handling 2 kA (8/20 μ s) surge current as per IEC 61000-4-5. As the world's first PTVS devices in a compact surface mount DFN package, eight RoHS-compliant* models are available with a maximum repetitive standoff voltage (V_{WM}) between 22 V and 86 V.

DEVICE SYMBOL



MARKET TRENDS

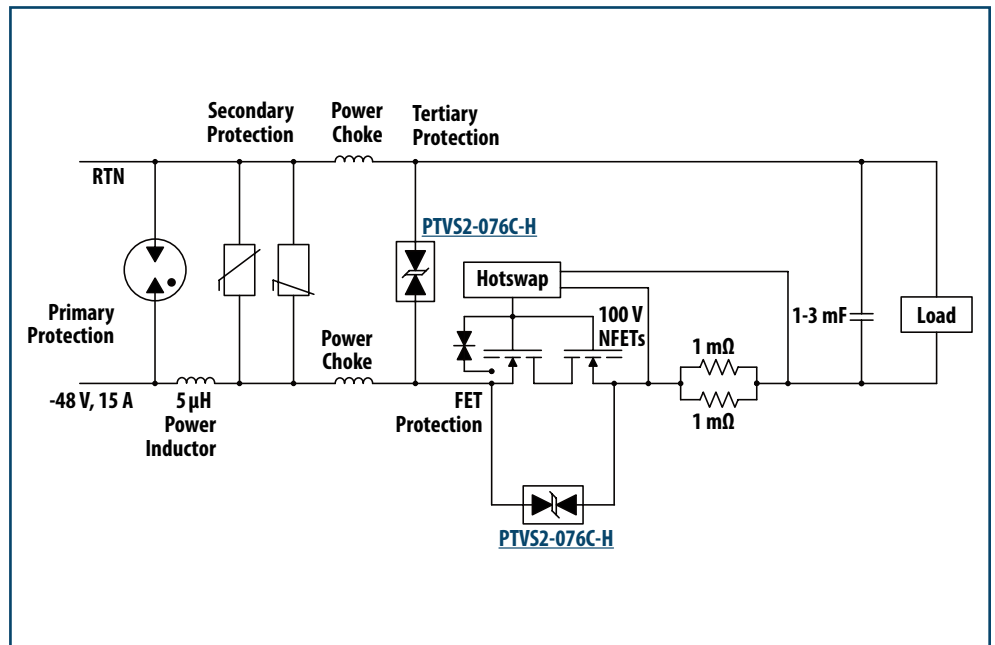
Reliable protection is increasingly required against high energy surge events in PoE ports, Remote Radio Units (RRUs), BaseBand Units (BBUs) and high-power DC bus applications. Bourns has designed its entire PTVS2-xxxC-H portfolio to meet or exceed IEC 61000-4-5 Level 4 (2 kV, 2 kA) requirements. This new PTVS series, in a DFN package, is engineered to satisfy customer needs for a cost-efficient and compact 2 kA option.

FEATURES

- 2 kA, 8/20 μ s surge-handling capability
- Surface mount DFN package
- Excellent performance over temperature

BENEFITS

- Low clamping voltage under surge
- Compact, space-saving protection solution
- Enhanced protection for sensitive equipment



Block diagram illustration of Bourns® Model PTVS2-076-C-H in a remote radio unit (RRU) application.

APPLICATIONS

Bourns® PTVS diodes are built using semiconductor technology, delivering enhanced surge protection and high reliability for rated surges compared to an equally-sized MOV. The block diagram shown above illustrates using Model PTVS2-076C-H in a Remote Radio Unit (RRU) application.

In the circuit above, Bourns® Model PTVS2-076C-H is able to withstand a 2 kA surge under 8/20 μ s conditions and has a maximum working voltage of 76 V. The compact 8 mm x 6 mm x 2.5 mm DFN package provides a space-saving option for today's dense board designs, and is capable of replacing larger legacy through-hole PTVS devices where space-saving and/or automated pick-and-place assembly is desired.

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

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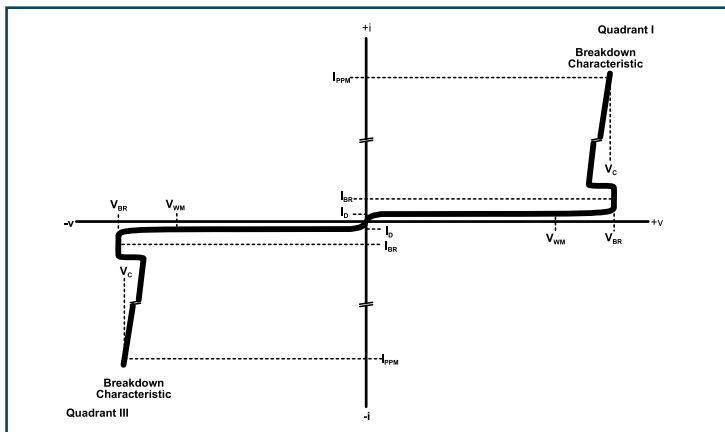
ELECTRICAL CHARACTERISTICS (@ T_A = 25 °C Unless Otherwise Noted)

Bidirectional Device	Breakdown Voltage V _{BR} (V)			Standby Current V _D = V _{WM} I _D (μA)	Typical Clamping Voltage ⁽¹⁾⁽²⁾ @ I _{PPM} V _C (V)	V _{BR} Temperature Coefficient % / °C	Typical Capacitance (f=10 kHz V _d = 1 V _{rms}) C (nF)
	Min.	Max.	@ I _{BR} (mA)				
PTVS2-022C-H	24	27	10	10	28	0.1	4.0
PTVS2-026C-H	28	32	10	10	30	0.1	3.0
PTVS2-029C-H	32	35	10	10	34	0.1	3.0
PTVS2-043C-H	48	53	10	10	56	0.1	2.0
PTVS2-058C-H	64	70	10	10	67	0.1	1.5
PTVS2-066C-H	72	80	10	10	86	0.1	1.3
PTVS2-076C-H	85	95	10	10	91	0.1	1.1
PTVS2-086C-H	96	105	10	10	99	0.1	1.0

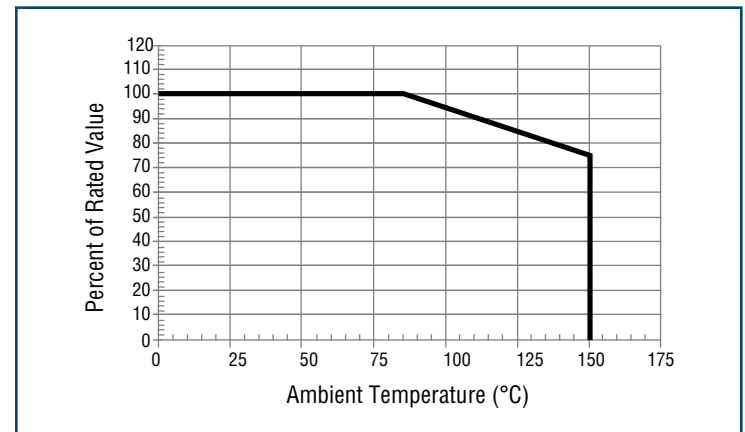
Notes: (1) 8/20 μs per IEC 61000-4-5.

(2) V_C measured at the time which is coincident with the peak surge current.

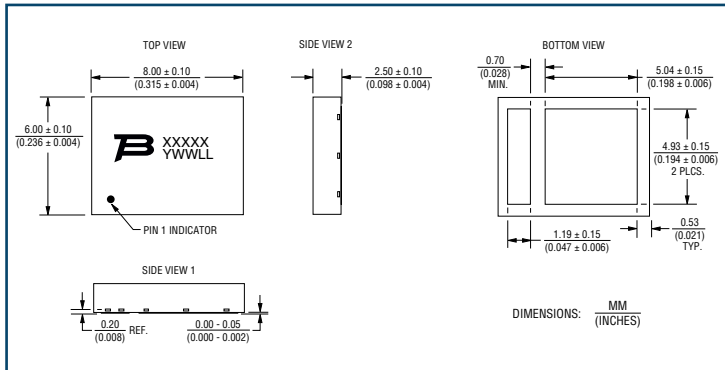
TYPICAL VI CURVE



TYPICAL SURGE DERATING CURVE



PRODUCT DIMENSIONS



HOW TO ORDER

PTVS 2 - xxx C - H

Series _____
 PTVS = Power TVS High Current Diode

Peak Current Rating _____
 2 = 2 kA

Repetitive Standoff Voltage _____
 022 - 086 = 22 - 86 V_{WM} (Volts)

Suffix _____
 C = Bidirectional Device

Package _____
 H = DFN Package

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