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

**NEW PRODUCT BRIEF**

High Current TVS 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 μs) 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_{WMI}) between 22 V and 86 V.

**FEATURES**

- 2 kA, 8/20 μs 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

**DEVICE SYMBOL**

![Device Symbol](image)

**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.

**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 μs 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.

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

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

## ELECTRICAL CHARACTERISTICS (@ $T_A = 25 \, ^\circ C$ Unless Otherwise Noted)

<table>
<thead>
<tr>
<th>Bidirectional Device</th>
<th>Breakdown Voltage $V_{BR}$ (V)</th>
<th>Standby Current $I_D = V_{WM}$ @ $I_{PPM}$</th>
<th>Typical Clamping Voltage$^{(1)}$ $V_C$ (V)</th>
<th>$V_{BR}$ Temperature Coefficient % / °C</th>
<th>Typical Capacitance $C$ (nF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model Number</td>
<td>Min.</td>
<td>Max.</td>
<td>$I_{BR}$ (mA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTVS2-022C-H</td>
<td>24</td>
<td>27</td>
<td>10</td>
<td>10</td>
<td>28</td>
</tr>
<tr>
<td>PTVS2-026C-H</td>
<td>28</td>
<td>32</td>
<td>10</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>PTVS2-029C-H</td>
<td>32</td>
<td>35</td>
<td>10</td>
<td>10</td>
<td>34</td>
</tr>
<tr>
<td>PTVS2-043C-H</td>
<td>48</td>
<td>53</td>
<td>10</td>
<td>10</td>
<td>56</td>
</tr>
<tr>
<td>PTVS2-058C-H</td>
<td>64</td>
<td>70</td>
<td>10</td>
<td>10</td>
<td>67</td>
</tr>
<tr>
<td>PTVS2-066C-H</td>
<td>72</td>
<td>80</td>
<td>10</td>
<td>10</td>
<td>86</td>
</tr>
<tr>
<td>PTVS2-076C-H</td>
<td>85</td>
<td>95</td>
<td>10</td>
<td>10</td>
<td>91</td>
</tr>
<tr>
<td>PTVS2-086C-H</td>
<td>96</td>
<td>105</td>
<td>10</td>
<td>10</td>
<td>99</td>
</tr>
</tbody>
</table>

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 VI CURVE](image)

## TYPICAL SURGE DERATING CURVE

![TYPICAL SURGE DERATING CURVE](image)

## PRODUCT DIMENSIONS

![PRODUCT DIMENSIONS](image)

## HOW TO ORDER

**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

`www.bourns.com`

 Americas: Tel +1-951 781-5500
Email americus@bourns.com

 Asia-Pacific: Tel +866-2-256 241 17
Email asiacus@bourns.com

EMEA: Tel +36 88 885 877
Email eurocus@bourns.com

COPYRIGHT © 2022 - BOURNS, INC. • 07/22 • e/ESD2226

“Bourns” is a registered trademark of Bourns, Inc. in the U.S. and other countries.