



Description

The PTVSHC2EN4V5B TVS diode is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebooks, and PDA's. It offers superior electrical characteristics and high surge capability. It is designed to protect sensitive electronic components which are connected to power lines, from over-stress caused by ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lighting. The PTVSHC2EN4V5B is in a DFN1610-2L package and will protect one bidirectional line. It may be used to provide ESD protection up to $\pm 30\text{kV}$ (Contact and air discharge) according to IEC61000-4-2, and withstand peak pulse current up to 160A (8/20 μs) according to IEC61000-4-5.

Features

- Transient protection for high-speed data lines
IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (Air)
 $\pm 30\text{kV}$ (Contact)
- Peak power dissipation: 3200W (8/20 μs)
- Working voltages : 4.5V
- Low leakage current
- Low clamping voltage
- Ultra-small package (1.6mmx1.0mmx0.5mm)
- Solid-state silicon-avalanche technology

Mechanical Data

- DFN1610-2L package
- Flammability Rating: UL 94V-0
- Packaging: Tape and Reel
- High temperature soldering guaranteed: 260°C/10s
- Reel size: 7 inch

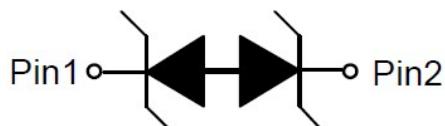
Ordering Information

- Device: PTVSHC2EN4V5B
- Package: DFN1610-2L
- Material: Halogen free and RoHS compliant
- Packing: Tape & Reel
- Quantity per reel: 3,000pcs

Applications

- Power lines
- Personal digital assistants (PDA's)
- Microprocessors based equipment
- Notebooks, Desktops, and Servers
- Cell phone Handsets and Accessories
- Portable Electronics
- Peripherals

Pin Configuration



Package Outline





Absolute Maximum Rating

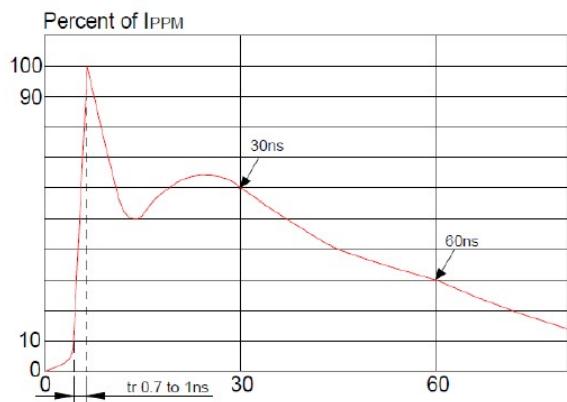
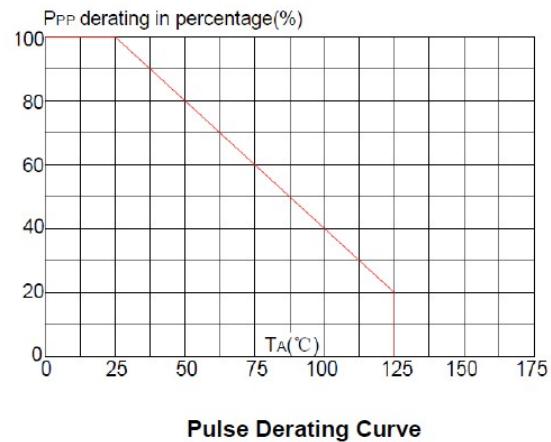
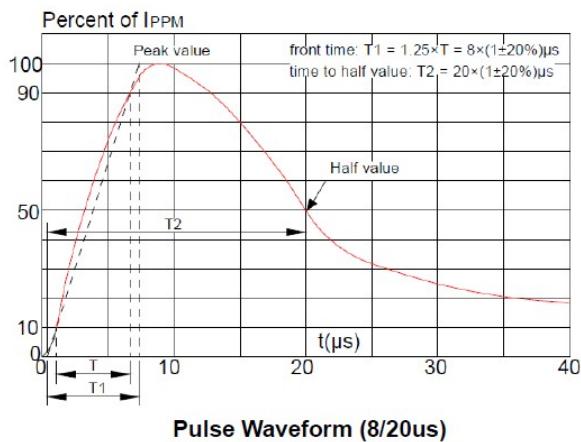
| Symbol | Parameter | Value | Units |
|------------------|--|------------|-------|
| V _{ESD} | ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact) | ±30 ±30 | kV |
| P _{PP} | Peak Pulse Power (8/20μs) | 3200 | W |
| T _{OPT} | Operating Temperature | -55~125 | °C |
| T _{STG} | Storage Temperature | -55~150 | °C |
| T _L | Lead Soldering Temperature | 260(10sec) | °C |

Electrical Characteristics (T_{amb}=25°C)

| Symbol | Parameter | Test Condition | Min | Typ | Max | Units |
|------------------|---------------------------|---|-----|-----|-----|-------|
| V _{RWM} | Reverse Working Voltage | | | | 4.5 | V |
| V _{BR} | Reverse Breakdown Voltage | I _T = 1mA | 4.6 | 5.2 | 6.4 | V |
| I _R | Reverse Leakage Current | V _{RWM} = 4.5V | | | 1 | uA |
| I _{PP} | Peak Pulse Current | t _p = 8/20μs | | | 160 | A |
| V _C | Clamping Voltage | I _{PP} = 50A, t _p = 8/20μs | | 8.5 | 11 | V |
| | | I _{PP} = 100A, t _p = 8/20μs | | 12 | 14 | V |
| | | I _{PP} = 160A, t _p = 8/20μs | | 17 | 20 | V |
| C _J | Junction Capacitance | V _R = 0V, f = 1MHz | 300 | 500 | | pF |

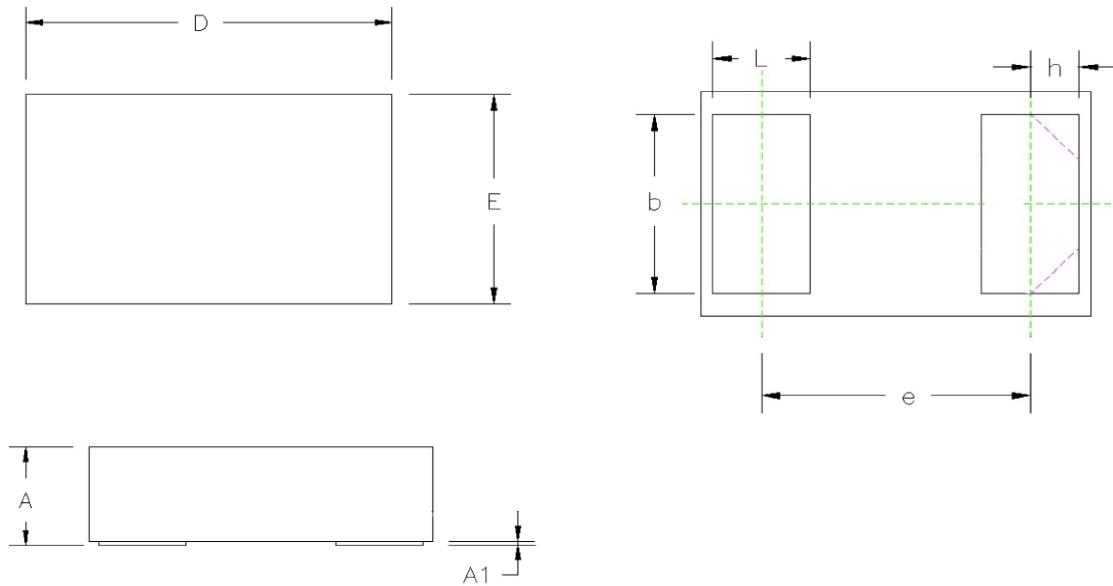


Electrical Characteristics Curve





Outline And Dimensions



| COMMON DIMENSION (mm) | | | |
|-----------------------|--------|------|------|
| REF | Min | Nom | Max |
| D | 1.55 | 1.60 | 1.65 |
| E | 0.95 | 1.00 | 1.05 |
| L | 0.35 | 0.40 | 0.45 |
| b | 0.75 | 0.80 | 0.85 |
| e | 1.1BSC | | |
| A | 0.45 | 0.50 | 0.55 |
| A1 | 0.00 | 0.02 | 0.05 |
| h | 0.15 | 0.20 | 0.25 |



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