PTVSHC3D7VU

Single Line Uni-directional Transient Voltage Suppressor

Description

The PTVSHC 3D7VU TVS diode is designed to replace multilayer varistors (MLVs) in portable appl ications such as cell phones, notebooks, and PDA's. It offers superior electrical characteristics such as low clamping voltage, low leakage current 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 PTVSHC3D7VU is in a SOD-323 package and will protect one unidirectional line. It may be used to provide ESD protection up to ±30kV (Contact and air discharge) according to IEC61000-4-2, and used to protect USB voltage bus pin (8/20 us) according to IEC61000-4-5.

Features

- Transien tprotectio n for high-speed data lines
  IE C 61000-4-2 (ESD) ±30kV (Con tact)
  ±30kV (Air)
- Peak power dissipati on : 2625W (8/20μs)
- Working voltages : 7V
- Low leakage current
- Lo w clamping voltage
- Solid-state silicon-avalanche technology

Machanical Data

- SOD-323 package
- Flammability Rating : UL 94V-0
- High temperature soldering guaranteed:
  260℃/10s
- Packaging : Tap e and Re el
- Ree l size : 7 inch

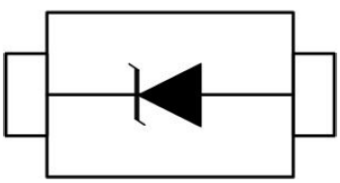
Ordering Information

- Device: PTVSHC3D7VU
- Package: SOD-323
- 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

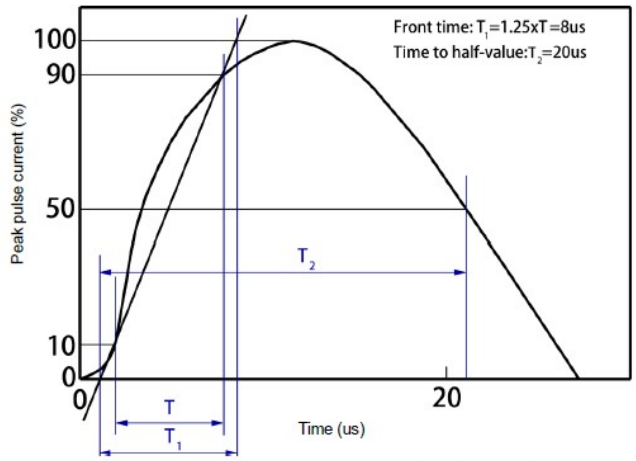
Absolute Maximum Rating

Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Contact) ESD per IEC 61000-4-2 (Air)	±30 ±30	kV
P_{PP}	Peak Pulse Power (8/20μs)	2625	W
T_{OPT}	Operating Temperature	-55~125	°C
T_{STG}	Storage Temperature	-55~150	°C
T_L	Lead Soldering Temperature	260(10sec)	°C

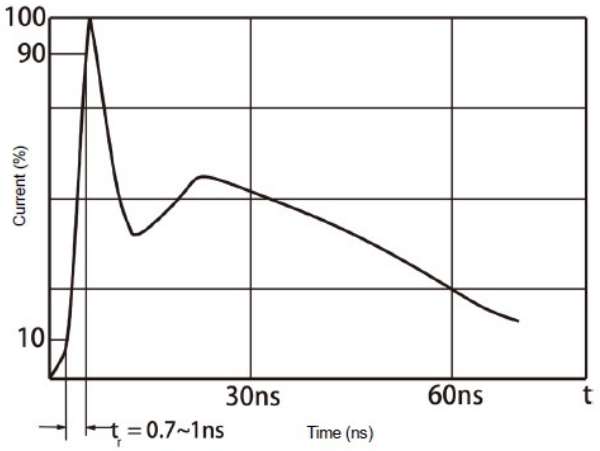
Electrical Characteristics (Tamb=25°C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				7.0	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA	7.5	8.0	9.0	V
I_R	Reverse Leakage Current	V_{RWM} = 7V			1	uA
I_{PP}	Peak Pulse Current	t_p = 8/20μs			105	A
V_C	Clamping Voltage	I_{PP} = 70 A, t_p = 8/20μs		17	19	V
		I_{PP} = 105 A, t_p = 8/20μs		20	25	V
C_J	Junction Capacitance	V_R = 0V, f = 1MHz		600	700	pF

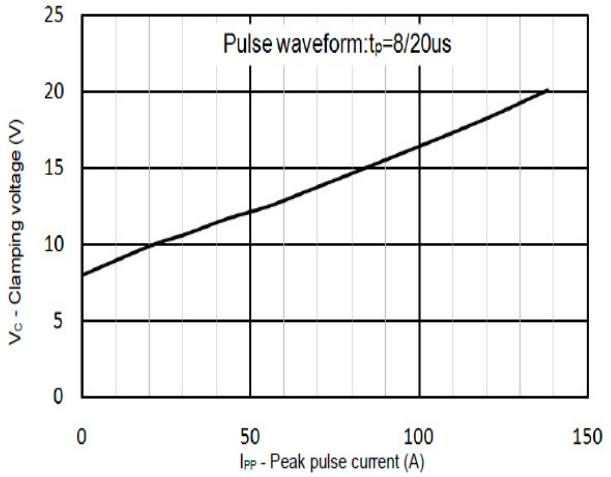
Electrical Characteristics Curve



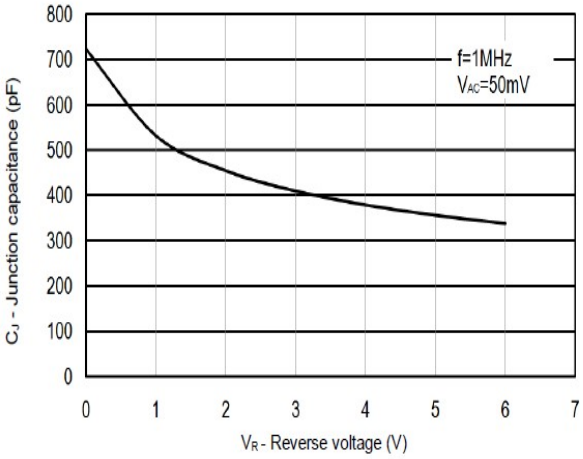
8/20 us waveform per IEC61000-4-5



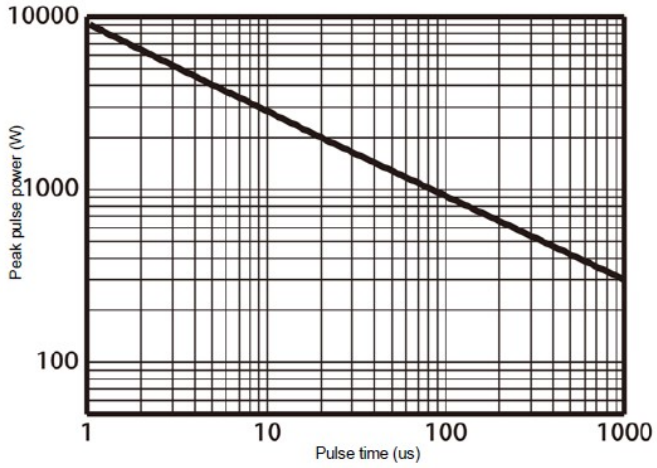
Contact discharge current waveform per IEC61000-4-2



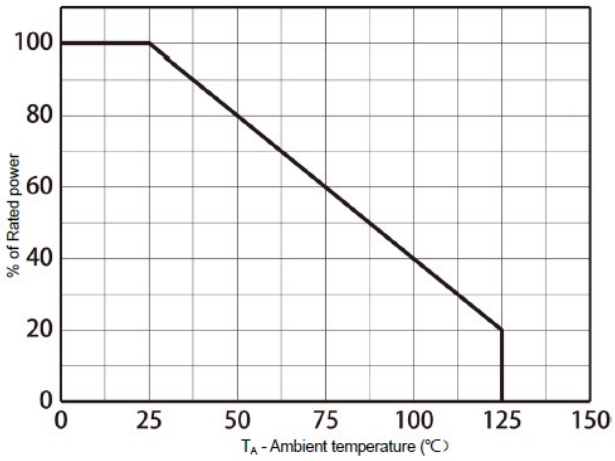
Clamping voltage vs. Peak pulse current



Capacitance vs. Reverse voltage

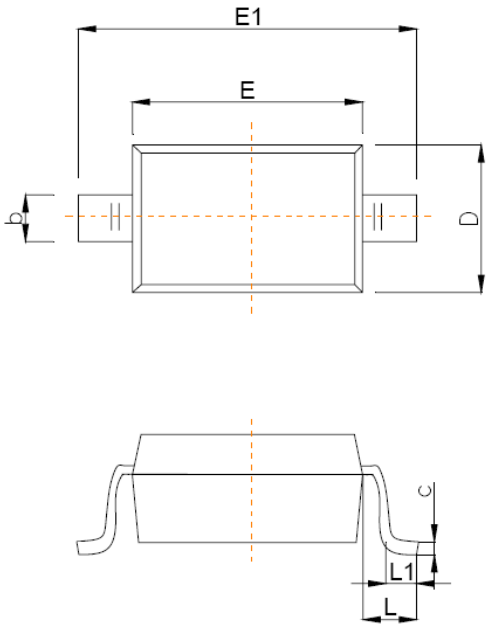


Non-repetitive peak pulse power vs. Pulse time

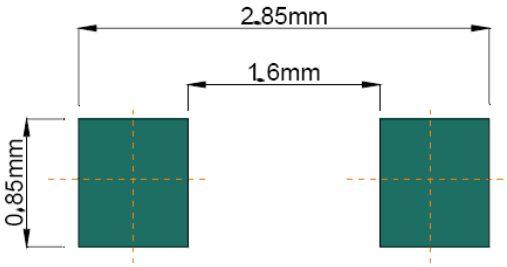


Power derating vs. Ambient temperature

SOD-323 Package Outline Dimensions



Symbol	Dimensions In Millimeters	
	Min	Max
A		1.00
A1	0.000	0.100
A2	0.800	0.900
b	0.250	0.350
c	0.080	0.150
D	1.200	1.400
E	1.600	1.800
E1	2.500	2.700
e	1.800	2.040
L	0.475 REF	
L1	0.250	0.400
θ	0°	8°



Recommended Pad outline

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