

Uni-Directional 12V High Capacitance TVS

1 Features

- Working voltage: 12V
- SOD-323 Package
- 1500 Watts peak pulse power ($t_p=8/20\mu s$)
- Transient protection for data lines to
 - IEC 61000-4-2 (ESD) $\pm 30kV$ (air)
 - $\pm 30kV$ (contact)
 - IEC 61000-4-5 (Surge) 55A (8/20 μs)
 - IEC61000-4-4(EFT)40A(5/50ns)
- Low leakage current
- Low clamping voltage
- Solid-state silicon-avalanche technology

2 Applications

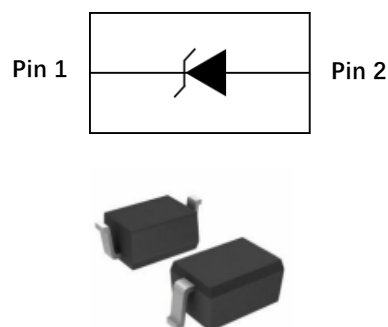
- End Equipment
 - Power lines
 - Personal digital assistants (PDA's)
 - Microprocessors based equipment
 - Notebooks, Desktops, and Servers
 - Cell phone Handsets and Accessories
 - Portable Electronics
 - Peripheral

3 Description

The SLVD312HCU 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 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 Lightning.

The SLVD312HCU is in a SOD-323 package and will protect one bidirectional line. It may be used to provide ESD protection up to $\pm 30kV$ (Contact and air discharge) according to IEC61000-4-2, and withstand peak pulse current up to 55A (8/20 μs) according to IEC61000-4-5.

4 Pin Configuration and Bottom View

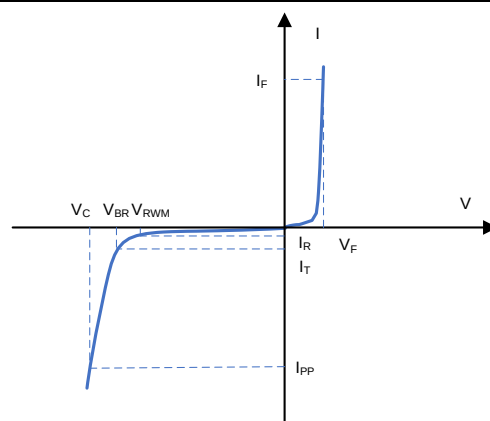


5 Device Information

PART NUMBER	PACKAGE	BODY SIZE (NOM)
SLVD312HCU	SOD-323	2.50 mm x 1.30mm

6 Electronics Parameter

Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Maximum Reverse Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_F	Forward Voltage @ I_F
I_F	Forward Current



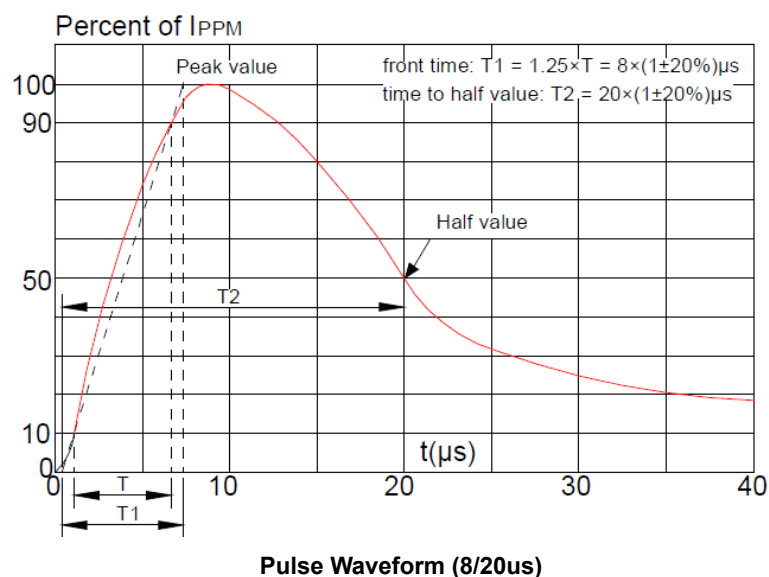
7 Absolute maximum Ratings @25°C

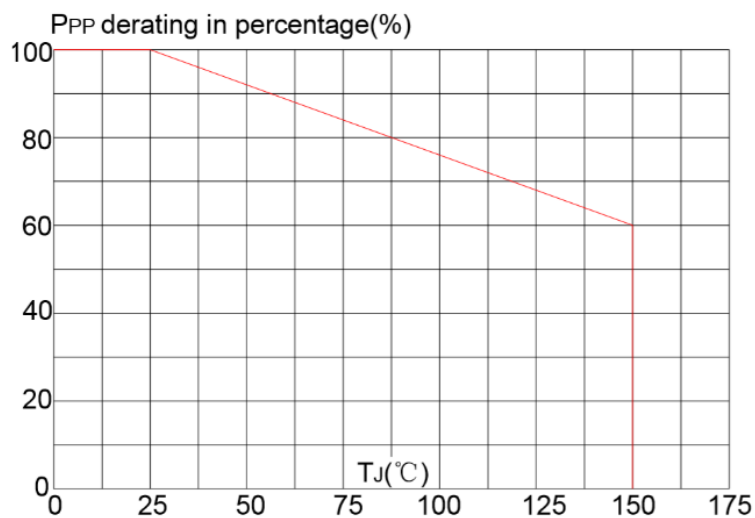
RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power ($t_p=8/20 \mu s$)	P_{PP}	1500	W
Peak Pulse Current ($t_p=8/20 \mu s$)	I_{PP}	55	A
Lead Soldering Temperature	T_L	260 (10 sec)	°C
Operating Temperature	T_J	-55 to 125	°C
Storage Temperature	T_{STG}	-55 to 150	°C
ESD Protection-Contact Discharge	V_{ESD}	± 30	kV
ESD Protection-Air Discharge	V_{ESD}	± 30	kV

8 Electrical characteristics (@25°C unless otherwise specified)

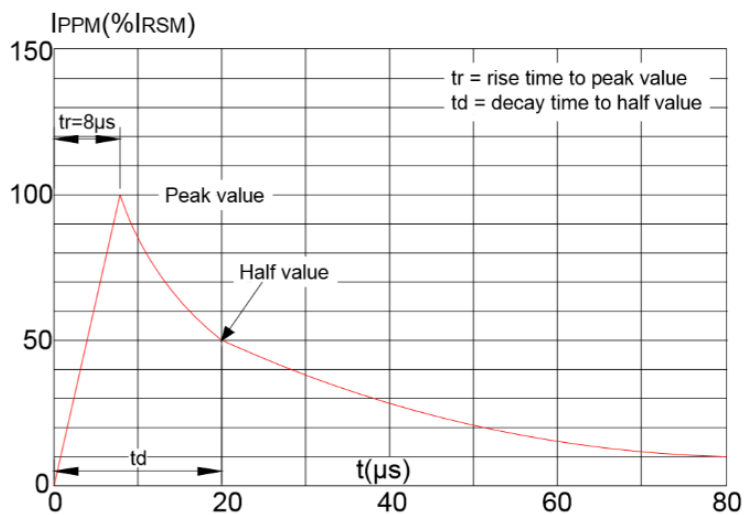
PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Peak Reverse Working Voltage	V_{RWM}				12	V
Breakdown Voltage	V_{BR}	$I_t = 1mA$	13.5			V
Reverse Leakage Current	I_R	$V_{RWM} = 12V, T=25^\circ C$			1	μA
Clamping Voltage	V_C	$I_{PP} = 30A, t_p = 8/20\mu s$		18	19	V
Clamping Voltage	V_C	$I_{PP} = 40A, t_p = 8/20\mu s$		22	24	V
Clamping Voltage	V_C	$I_{PP} = 55A, t_p = 8/20\mu s$		27	28	V
Junction Capacitance	C_j	$V_R=0V, f = 1MHz$		350	450	pF

9 Typical Characteristics

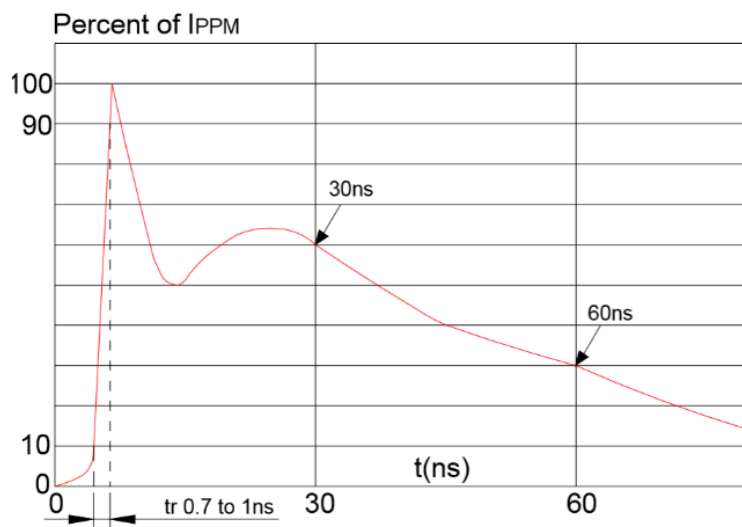




Pulse Derating Curve

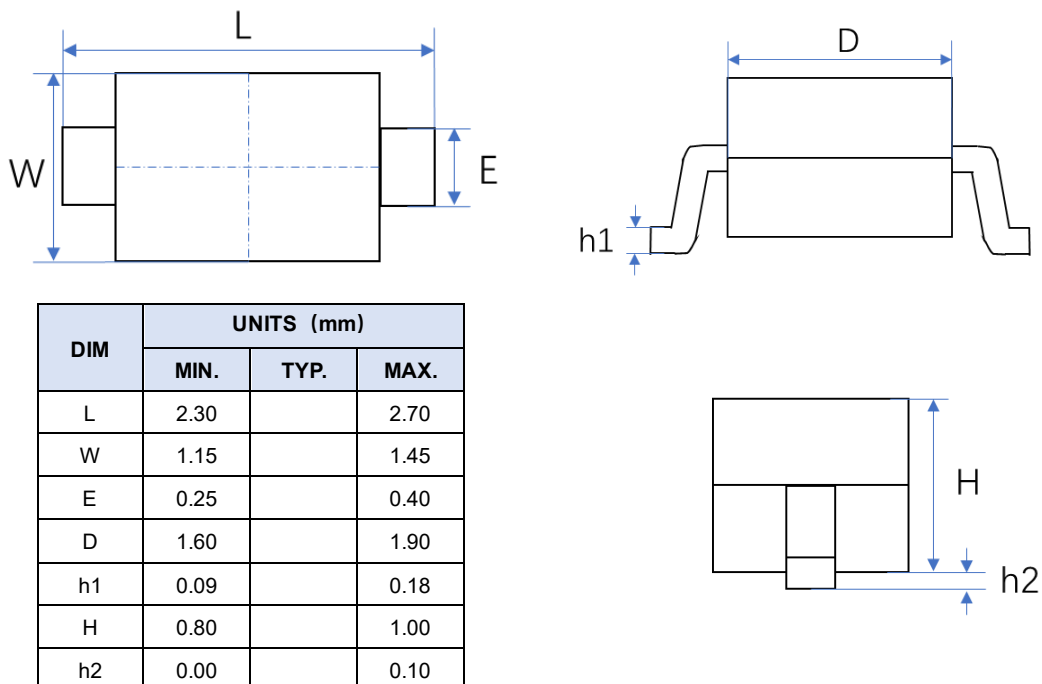


Pulse Waveform

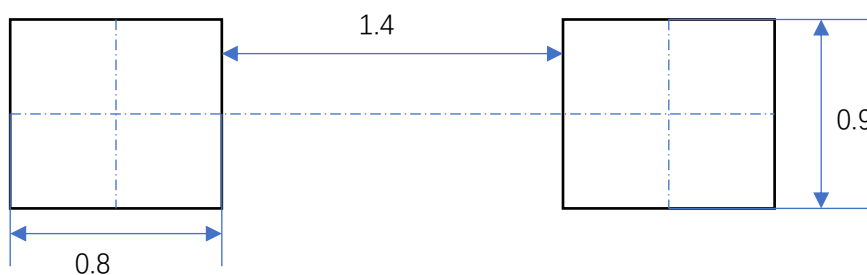


ESD Clamping

10 Product dimension



11 PCB Layout Footprints (Units: mm)



12 Ordering Information

Part Number	Packaging	Reel Size
SLVD312HCU	3000/Tape & Reel	7 inch