Bi-Directional 4.5V High Capacitance TVS

1 Features

- Working voltage: 4.5V
- SOD-323 Package
- 3200 Watts peak pulse power (tp=8/20us)
- Transient protection for data lines to
  - IEC 61000-4-2 (ESD) ±30kV (air)
    ±30kV (contact)
  - IEC 61000-4-5 (Surge) 160A (8/20us)
  - IEC61000-4-4(EFT)40A(5/50ns)
- Low leakage current
- Low clamping voltage
- Solid-state silicon-avalanche technology

2 Applications

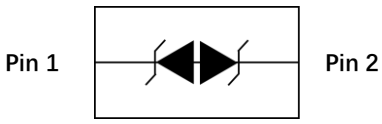
- End Equipment
  - Power lines
  - Personal digital assistants (PDA's)
  - Microprocessors based equipment
  - Notebooks, Desktops, and Servers
  - Cell phone Handsets and Accessories
  - Portable Electronics
  - Peripheral

3 Description

The SLVD34H5CB 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 SLVD34H5CB is in a SOD-323 package and will protect one bidirectional line. It may be used to provide ESD protection up to ±30kV (Contact and air discharge) according to IEC61000-4-2 , and withstand peak pulse current up to 70A (8/20μs) according to IEC61000-4-5.

4 Pin Configuration and Bottom View



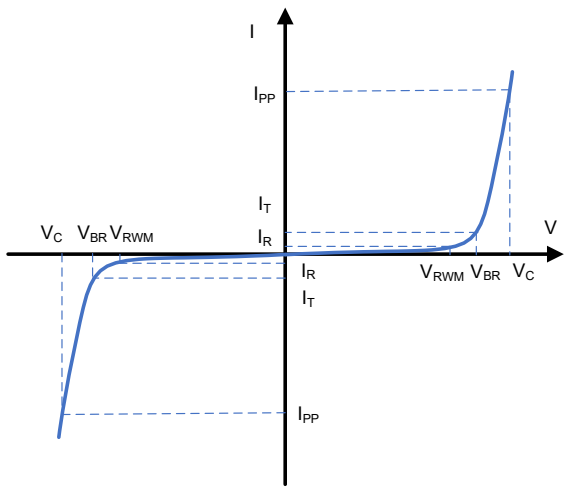


5 Device Information

PART NUMBER	PACKAGE	BODY SIZE (NOM)
SLVD34H5CB	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}



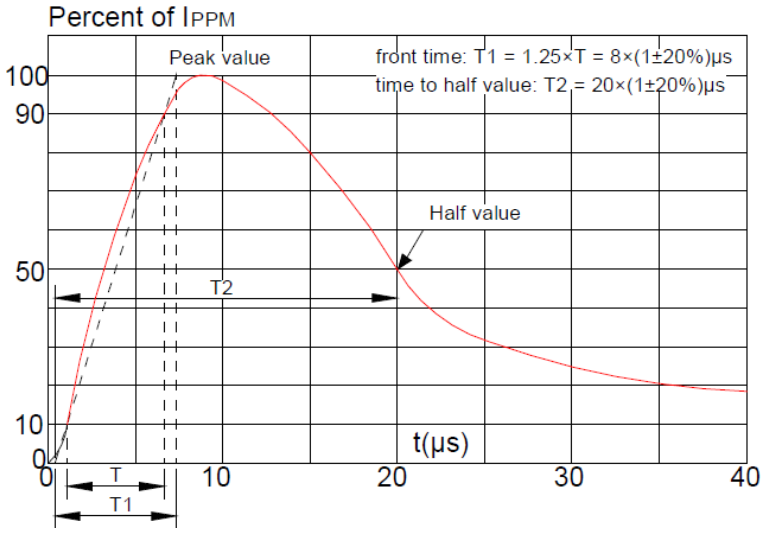
7 Absolute maximum Ratings @25℃

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp=8/20 μs)	P_{PP}	3200	W
Peak Pulse Current (tp=8/20 μs)	I_{PP}	160	A
Lead Soldering Temperature	T_L	260 (10 sec)	℃
Operating Temperature	T_J	-55 to 125	℃
Storage Temperature	T_{STG}	-55 to 150	℃
ESD Protection-Contact Discharge	V_{ESD}	±30	kV
ESD Protection-Air Discharge	V_{ESD}	±30	kV

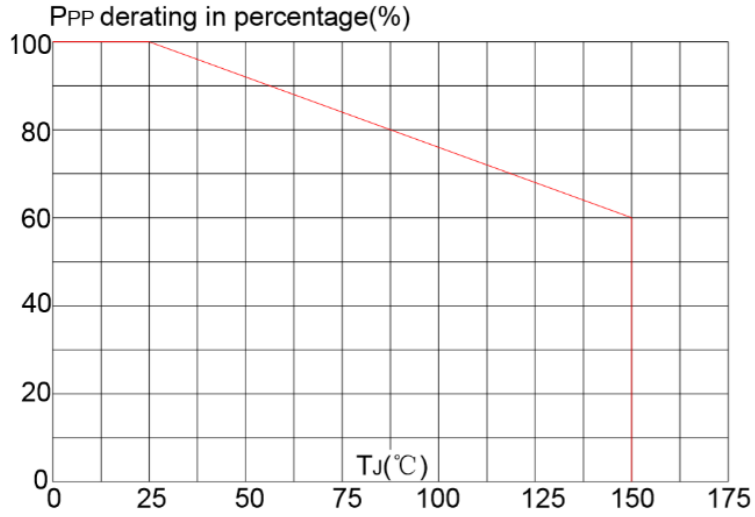
8 Electrical characteristics (@25℃ unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Peak Reverse Working Voltage	V_{RWM}				4.5	V
Breakdown Voltage	V_{BR}	I_t = 1mA	4.6	5.2	6.4	V
Reverse Leakage Current	I_R	V_{RWM} = 4.5V, T=25℃			1	μA
Clamping Voltage	V_C	IPP=50A, t_P = 8/20μs		8.5	11	V
Clamping Voltage	V_C	IPP=100A, t_P = 8/20μs		12	14	V
Clamping Voltage	V_C	IPP=160A, t_P = 8/20μs		17	20	V
Junction Capacitance	C_j	V_R=0V, f = 1MHz		300	500	pF

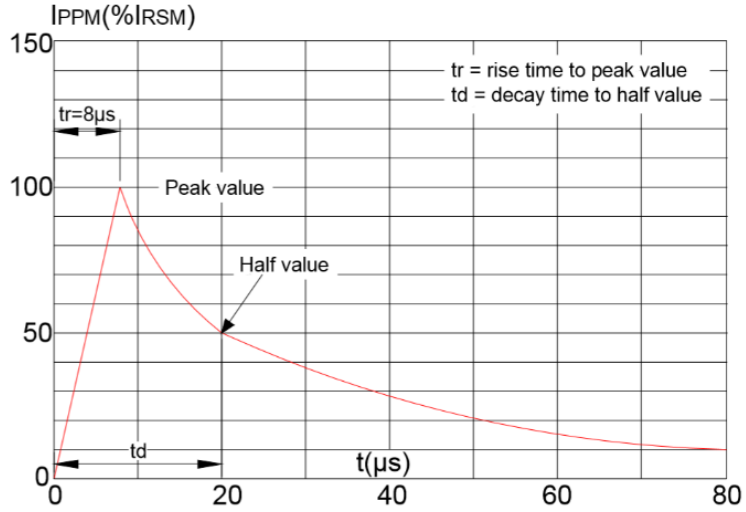
9 Typical Characteristics



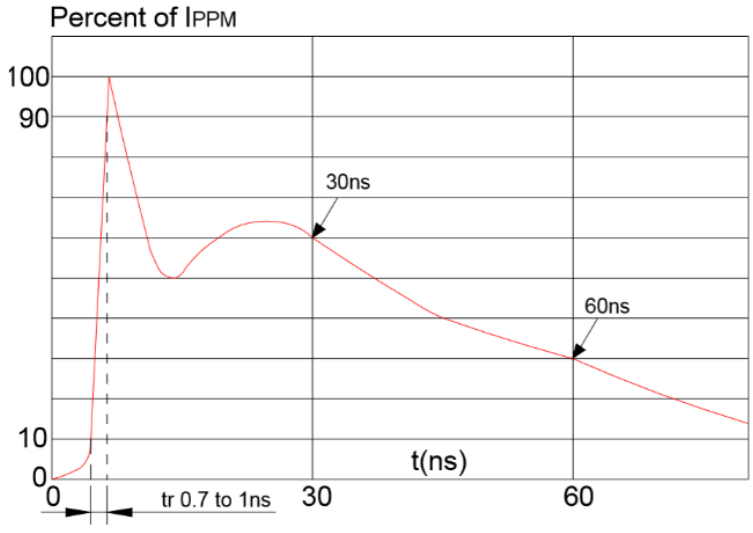
Pulse Waveform (8/20us)



Pulse Derating Curve

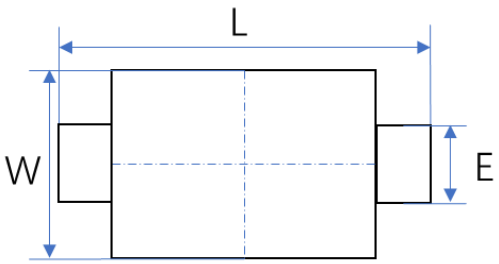


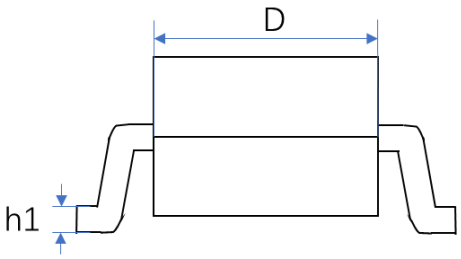
Pulse Waveform



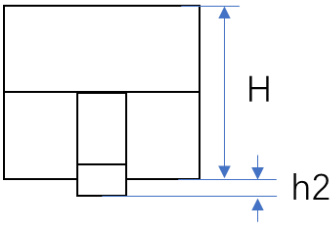
ESD Clamping(8kV Contact Discharge)

10 Product dimension

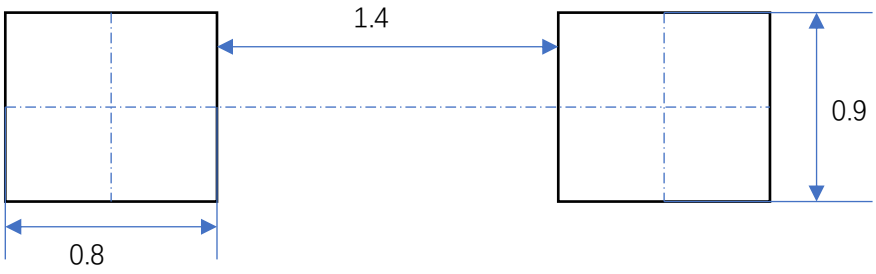




DIM	UNITS (mm)		
	MIN.	TYP.	MAX.
L	2.30		2.70
W	1.15		1.45
E	0.25		0.40
D	1.60		1.90
h1	0.09		0.18
H	0.80		1.00
h2	0.00		0.10



11 PCB Layout Footprints (Units: mm)



12 Ordering Information

Part Number	Packaging	Reel Size
SLVD34H5CB	3000/Tape & Reel	7 inch