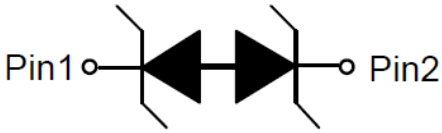
Description

The XT3D4V5B 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 Lighting.

The XT3D4V5B 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 160A (8/20μs) according to IEC61000-4-5.

http//:www.xihangsemi.com

SOD-323



Circuit Diagram

Marking

Features

- Working voltage: 4.5V
- SOD323 Package
- 3200 Watts peak pulse power (t_p=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

Order Information

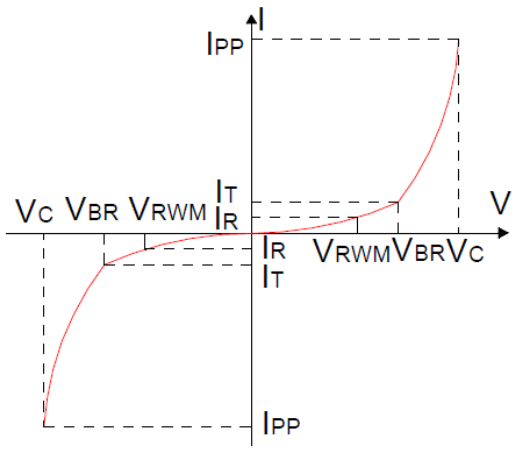
Device	Package	Shipping
XT3D4V5B	SOD-323	3000/Tape&Reel

Applications

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

Definitions of electrical characteristics

Symbol	Parameter
V_{RWM}	Reverse Stand-off Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Reverse Breakdown Voltage @ I_T
I_R	Reverse Breakdown Current
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}



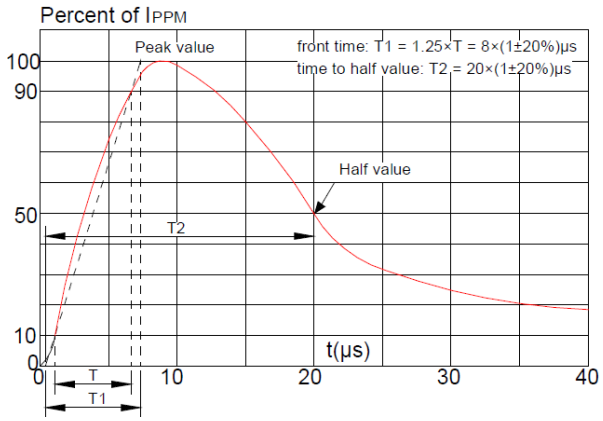
Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (t_P = 8/20μS)	P_{PK}	3200	W
Peak Pulse Currentr (t_P = 8/20μS)	I_{pp}	160	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±30	kV
ESD according to IEC61000-4-2 contact discharge		±30	kV
Lead Soldering Temperature	T_L	260 (10 sec)	℃
Operating Temperature	T_{OP}	-55 to +125	℃
Storage Temperature	T_{STG}	-55 to +150	℃

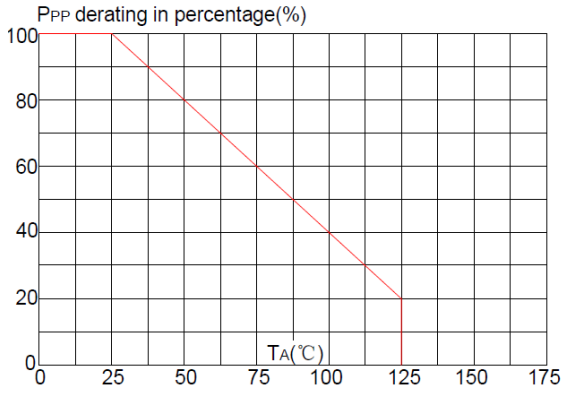
Electrical Characteristics (Ta=25℃, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				4.5	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	4.6	5.2	6.4	V
Reverse Leakage Current	I_R	V_{RWM} =4.5V			1	μA
Clamping Voltage	V_C	I_{PP}=50A t_P = 8/20μs		8.5	11	V
Clamping Voltage	V_C	I_{PP}=100A t_P = 8/20μs		12	14	V
Clamping Voltage	V_C	I_{PP}=160A t_P = 8/20μs		17	20	V
Junction Capacitance	C_j	V_R=0V f = 1MHz		300	500	pF

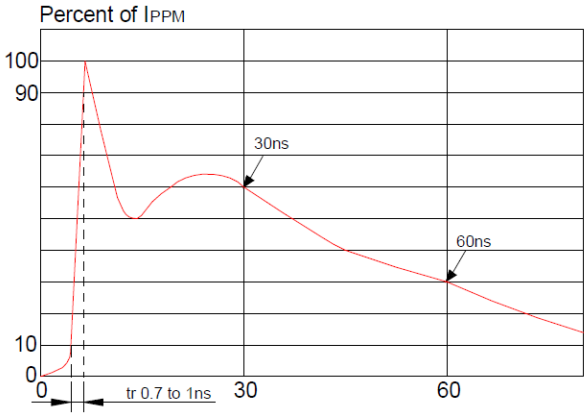
Typical Characteristics (Ta=25℃, unless otherwise noted)



Pulse Waveform (8/20us)

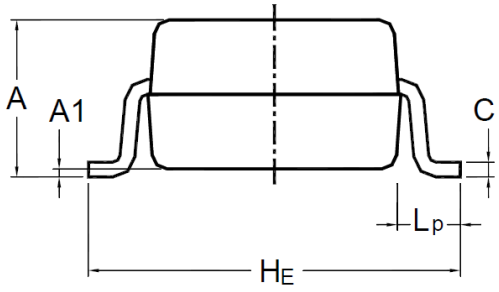


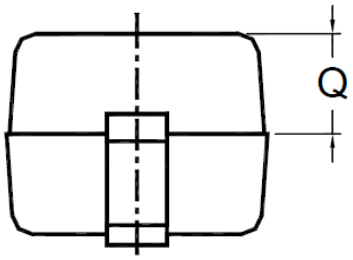
Pulse Derating Curve

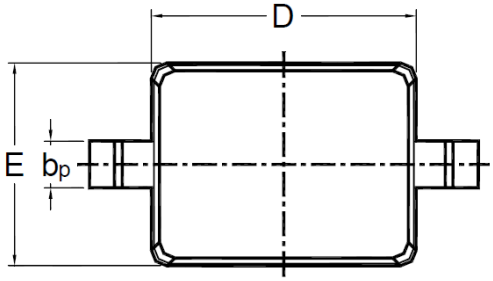


ESD Clamping(8kV Contact Discharge)

Package Outline Dimensions (SOD323）

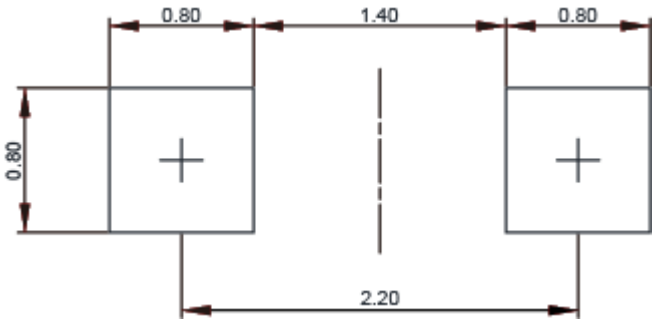






Dim	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.031	0.043	0.8	1.0
A_1	0.000	0.004	0	0.1
b_p	0.010	0.016	0.25	0.4
C	0.000	0.006	0	0.15
D	0.063	0.071	1.6	1.8
E	0.045	0.053	1.15	1.35
H_E	0.091	0.110	2.3	2.8
L_P	0.004	0.020	0.1	0.5
Q	0.012	0.020	0.3	0.5

Recommend Land Pattern (Unit: mm)



Note:
This recommended land pattern is for reference purpose only.

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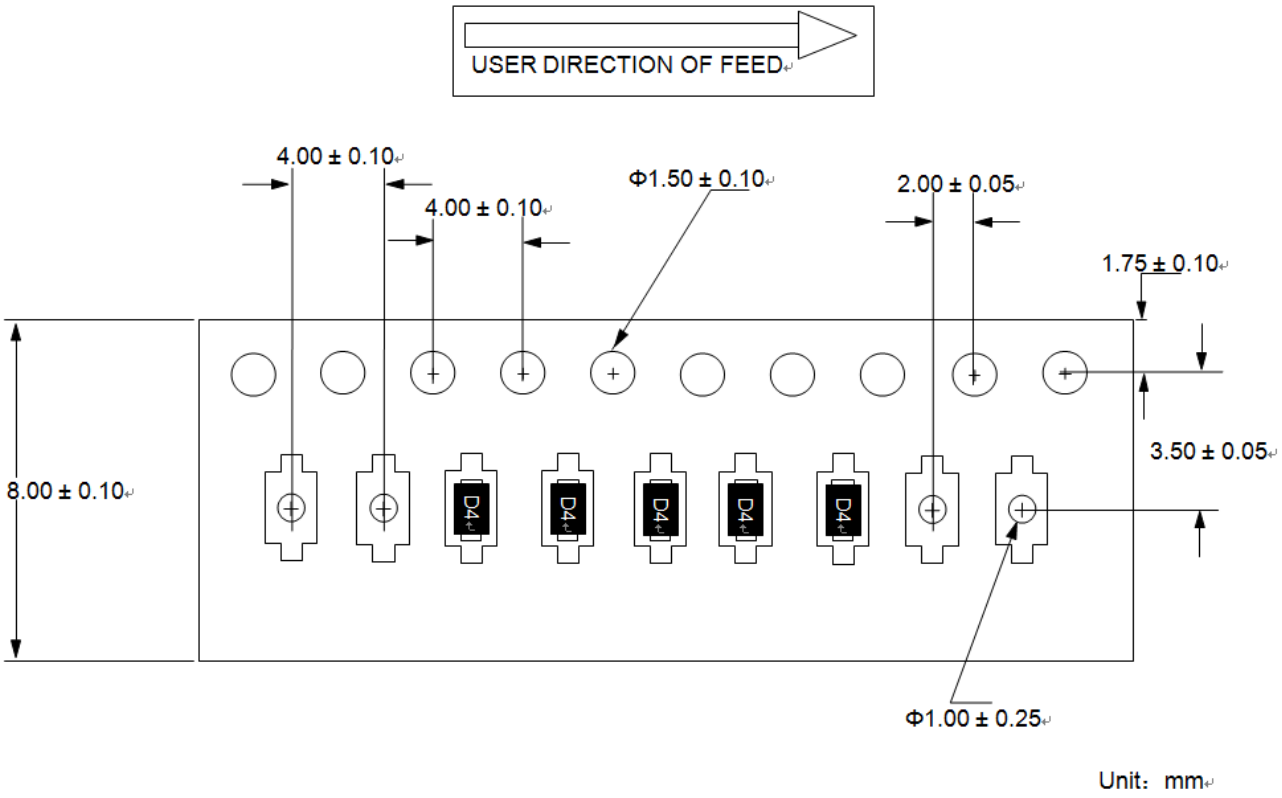

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