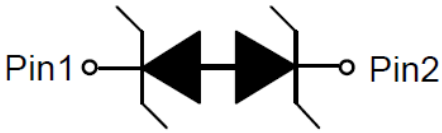
Description

The XE5D3V3B is a bi-directional ESD protection diode designed to protect sensitive electronic components which are connected to low speed data lines and control lines from over-stress caused by ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lightning. The XE5D3V3B 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 10A (8/20μs) according to IEC61000-4-5.

The XE5D3V3B is available in SOD523 package. Standard products are Pb-free and Halogen-free.

http//:www.xihangsemi.com

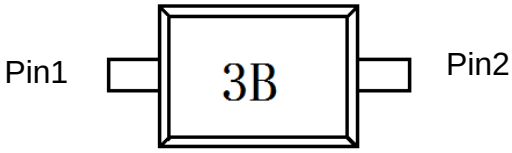
SOD523（Bottom View）



Circuit Diagram

Features

- Working voltage: 3.3V
- SOD523 Package
- Transient protection for data lines to
  IEC 61000-4-2 (ESD) ±30kV (air),
  ±30kV (contact)
  IEC 61000-4-5 (Surge) 10A (8/20us)
- Low leakage current
- Low clamping voltage
- Solid-state silicon-avalanche technology



Marking（Top View）

Order Information

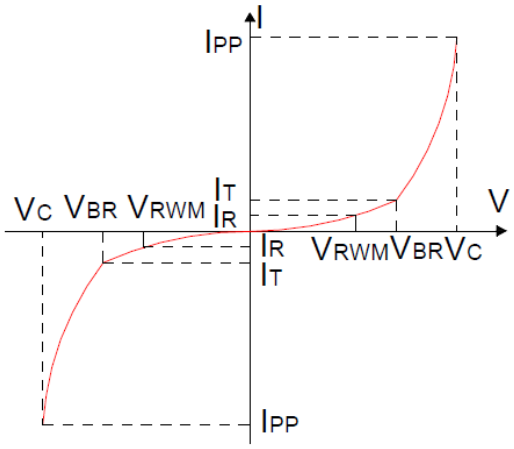
Device	Package	Shipping
XE5D3V3B	SOD523	3000/Tape&Reel

Applications

- Personal digital assistants (PDA's)
- 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}	85	W
Peak Pulse Currentr (t_P = 8/20μS)	I_{pp}	10	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	℃

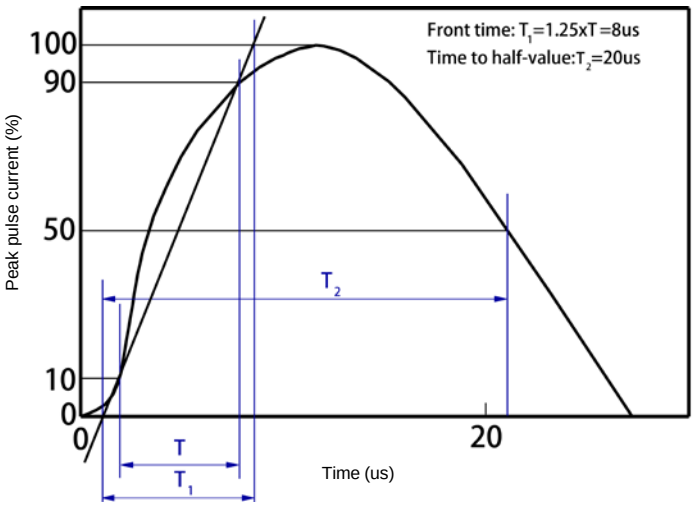
Electrical Characteristics (Ta=25℃, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				±3.3	V
Reverse Leakage Current	I_R	V_{RWM}=±3.3V			100	nA
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	3.7	4.1	5	V
Clamping Voltage[1)]	V_{CL}	I_{PP}=5A t_P = 8/20μs		6	7	V
		I_{PP}=10A t_P = 8/20μs		8.5	9.5	V
Junction Capacitance	C_j	V_R=0V f = 1MHz		13	15	pF

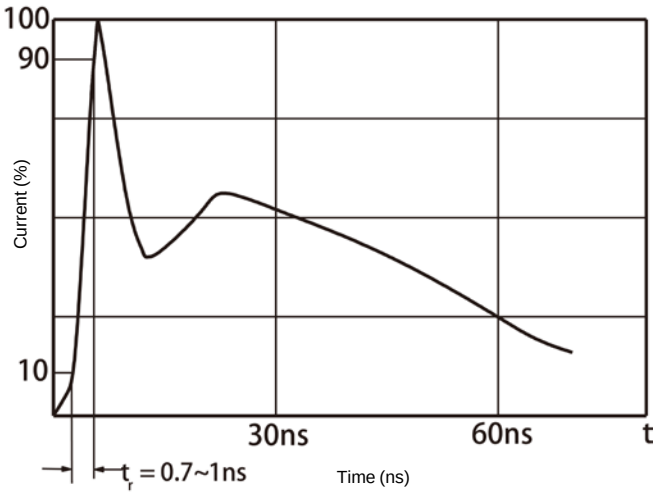
Notes:

1)Non-repetitive current pulse, according to IEC61000-4-5.

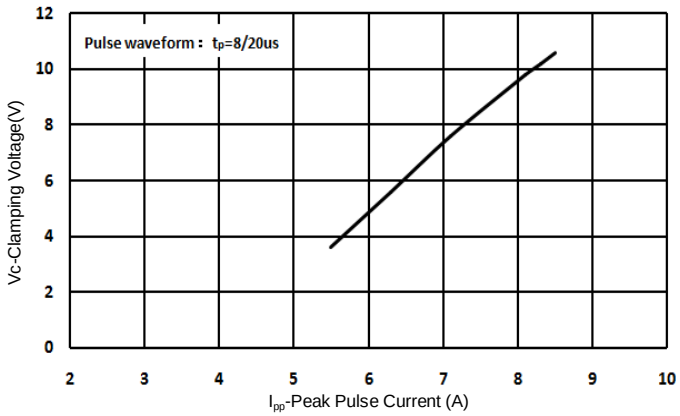
Typical Characteristics (Ta=25℃, unless otherwise noted)



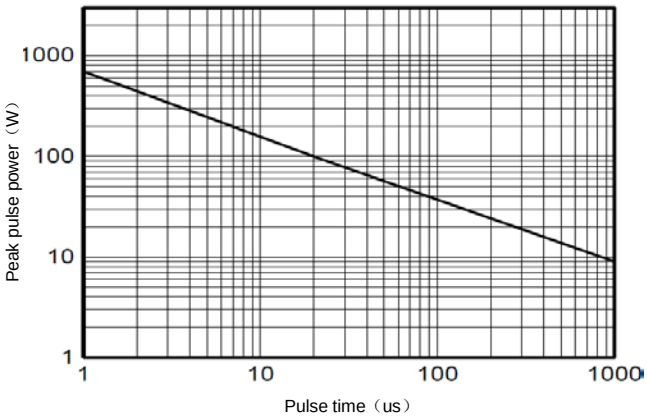
8/20 us waveform per IEC61000-4-5



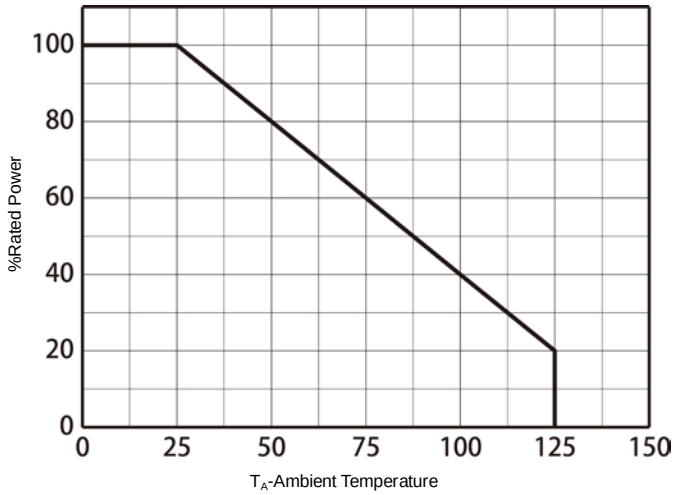
Contact discharge current waveform per IEC61000-4-2



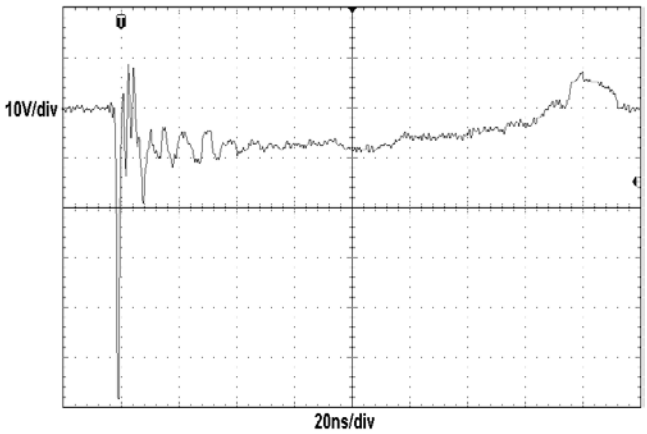
Clamping voltage vs. Peak pulse current



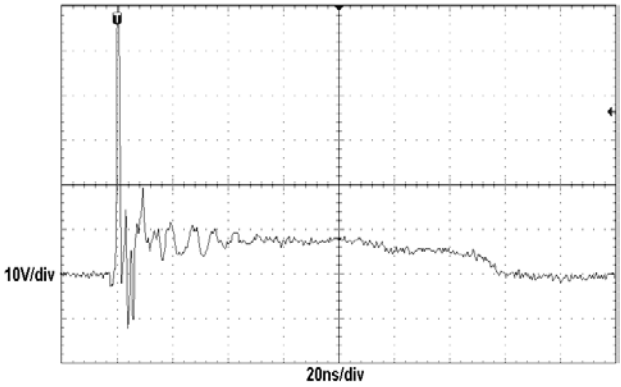
Non-repetiitive peak pulse power vs. Pulse time



Power derating vs. Ambient temperature

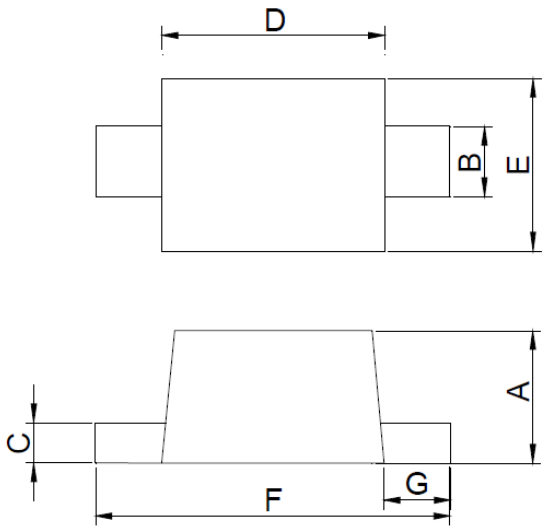


ESD Clamping(+8kV Contact Discharge)



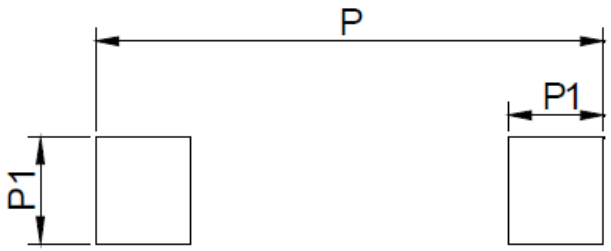
ESD Clamping(-8kV Contact Discharge)

Package Outline Dimensions (SOD523）



Dim	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.020	0.028	0.50	0.70
B	0.010	0.014	0.25	0.35
C	0.0028	0.0079	0.07	0.20
D	0.043	0.051	1.10	1.30
E	0.028	0.035	0.70	0.90
F	0.059	0.067	1.50	1.70
G	0.006	0.010	0.15	0.25
P1	0.016		0.40	
P	0.072		1.80	

Recommend Land Pattern (Unit: mm)



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