

Description

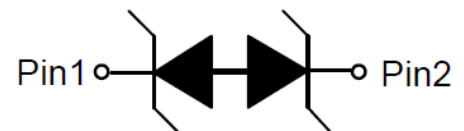
The XE5DLC5VB is a bi-directional ESD protection diode designed to protect sensitive electronic components which are connected to low speed data lines and control lines from over-stress caused by ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lightning. The XE5DLC5VB may be used to provide ESD protection up to $\pm 15\text{kV}$ contact and $\pm 20\text{kV}$ air discharge according to IEC61000-4-2, and withstand peak pulse current up to 2A (8/20 μs) according to IEC61000-4-5.

The XE5DLC5VB is available in SOD523 package. Standard products are Pb-free and Halogen-free.

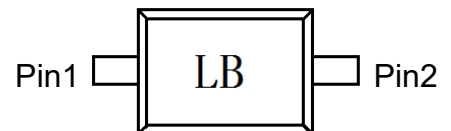
<http://www.xihangsemi.com>



SOD523



Circuit Diagram



Marking (Top View)

Features

- ◆ Working voltage: 5V
- ◆ SOD523 Package
- ◆ Transient protection for data lines to IEC61000-4-2 (ESD) $\pm 20\text{kV}$ (air), $\pm 15\text{kV}$ (contact)
- IEC61000-4-5 (Surge) 2A (8/20 μs)
- IEC61000-4-4(EFT)40A(5/50ns)
- ◆ Low leakage current
- ◆ Low clamping voltage
- ◆ Solid-state silicon-avalanche technology

Order Information

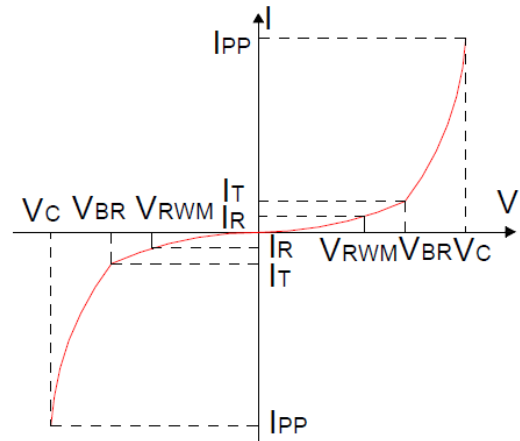
Device	Package	Shipping
XE5DLC5VB	SOD523	5000/Tape&Reel

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 ($t_P = 8/20\mu S$)	P_{PK}	40	W
Peak Pulse Current ($t_P = 8/20\mu S$)	I_{pp}	2	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 10	kV
ESD according to IEC61000-4-2 contact discharge		± 15	kV
Lead Soldering Temperature	T_L	260 (10 sec)	$^{\circ}C$
Operating Temperature	T_{OP}	-55 to +125	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}C$

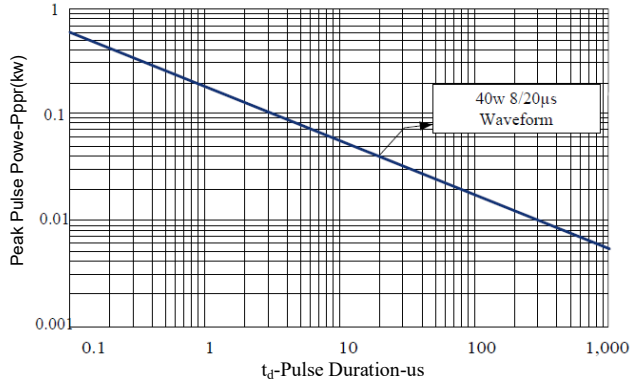
Electrical Characteristics ($T_a=25^{\circ}C$, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				± 5	V
Reverse Leakage Current	I_R	$V_{RWM} = 5V$			200	nA
Reverse Breakdown Voltage	V_{BR}	$I_T = 1mA$	5.6			V
Clamping Voltage	V_C	$I_{PP} = 2A$ $t_P = 8/20\mu s$		11	13	V
Junction Capacitance	C_j	$V_R = 0V$ $f = 1MHz$		2.7	3.5	pF

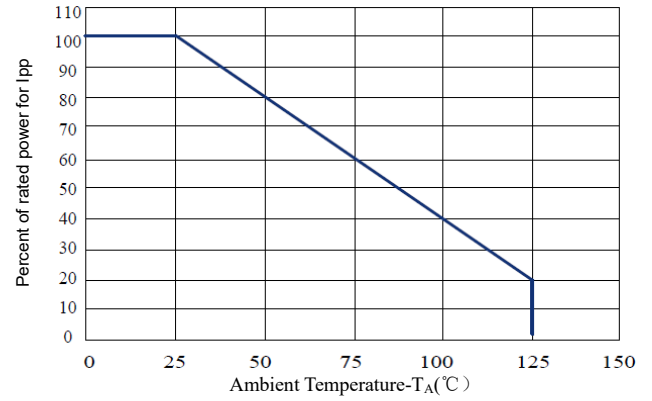
Notes:

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

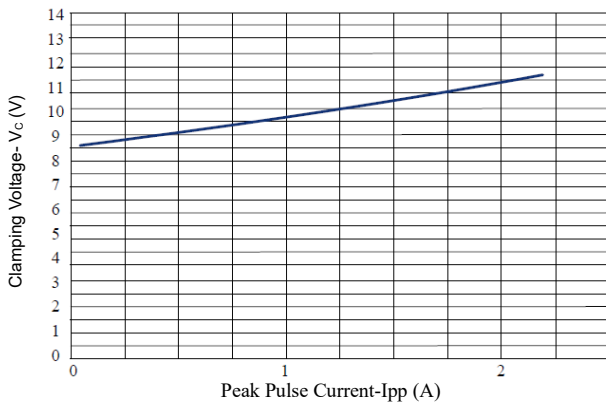
Typical Characteristics (Ta=25°C, unless otherwise noted)



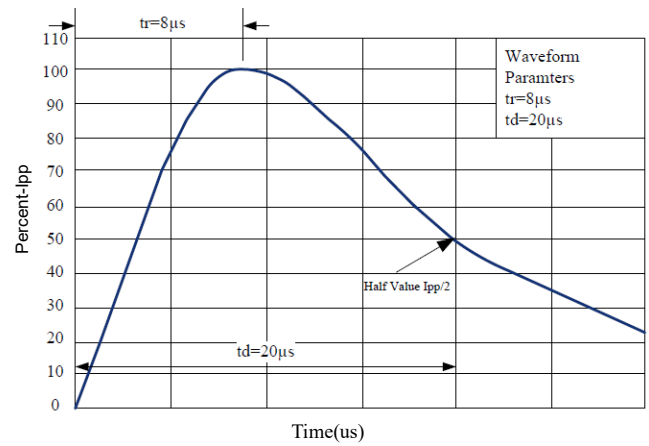
Peak Pulse Power vs. Pulse Time



Power Derating Curve

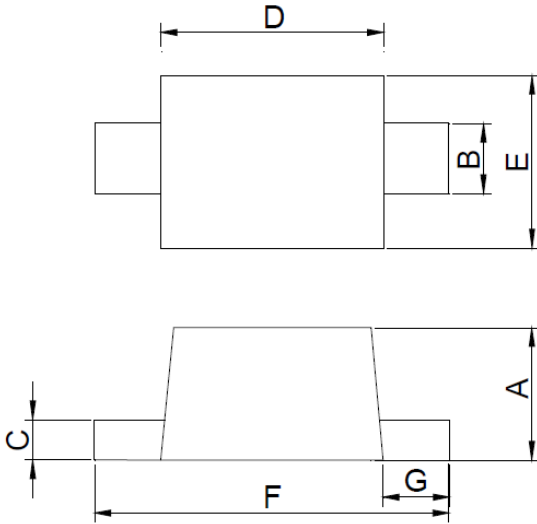


Clamping Voltage vs. Peak Pulse Current



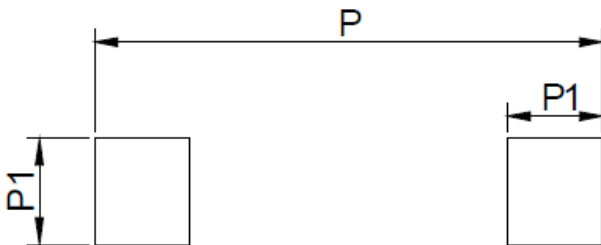
Pulse Waveform

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.

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