

Low Capacitance ESD Protection Diode

General description

Silicon Protection Diode in a SOD-523 Package.

FEATURES

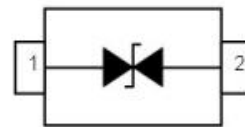
- 35Watt peak pulse power ($t_p=8/20$)
- Capacitance typ 3 pF
- Bidirectional configurations
- Low Leakage Current
- Low clamping voltage
- IEC 61000-4-2 $\pm 8\text{kV}$ Contact $\pm 15\text{kV}$ air.
- RoHS Compliant
- Green EMC

Device Marking: LB

Package Outline



SOD-523 Package



Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Contact) ESD per IEC 61000-4-2 (Air)	± 8 ± 15	kV
P_{PP}	Peak Pulse Power (8/20 μs)	35	W
T_{OPT}	Operating Temperature	-55~150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55~150	$^\circ\text{C}$

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

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				5.0	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	5.6		9.4	V
I_{R}	Reverse Leakage Current	$V_{\text{RWM}} = 5\text{V}$			2.0	μA
V_{C}	Clamping Voltage	$I_{\text{PP}} = 1\text{A}$, $t_p = 8/20\mu\text{s}$			10.5	V
		$I_{\text{PP}} = 2\text{A}$, $t_p = 8/20\mu\text{s}$			14.0	V
V_{CTLTP}	TLP Clamping Voltage	$I_{\text{PP}} = 16\text{A}$ IEC61000-4-2 Level 4 equivalent ($\pm 8\text{kV}$ Contact, $\pm 15\text{kV}$ Air)		14.5		V
R_{DYN}	Dynamic Resistance	$t_p = 100\text{ns}$		0.3		Ω
C_{J}	Junction Capacitance	$V_{\text{R}} = 0\text{V}$, $f = 1\text{MHz}$		3.0	3.5	pF



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ELECTRICAL CHARACTERISTICS CURV

Fig 1 8/20 μ s Waveform per IEC61000-4-5

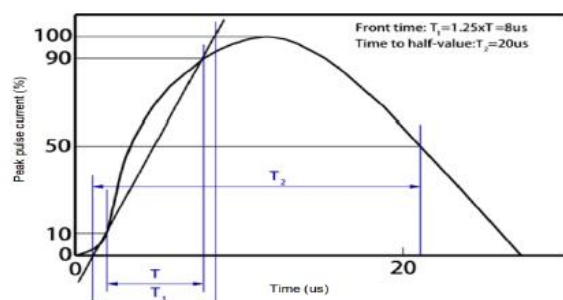


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2

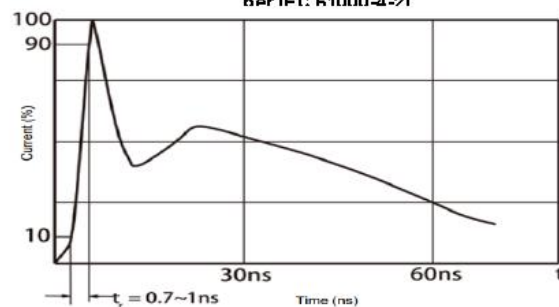


Fig 3 Power Derating Curve

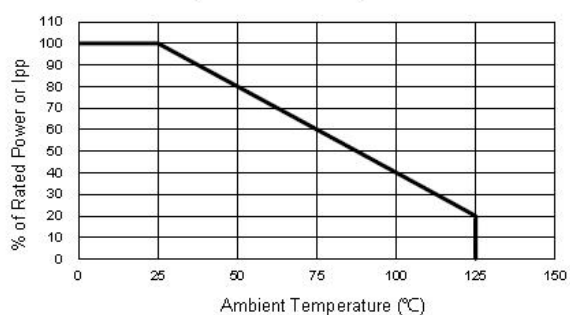


Fig 4 Voltage vs Capacitance

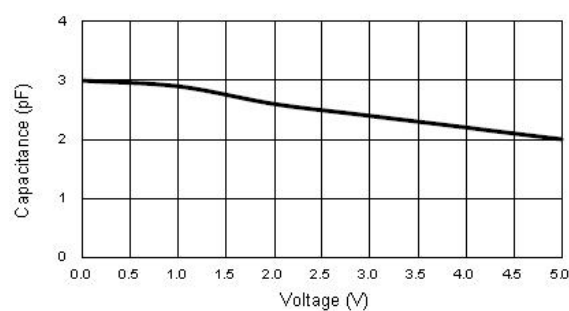


Fig 5 Transmission Line Pulsing (TLP) Measurement

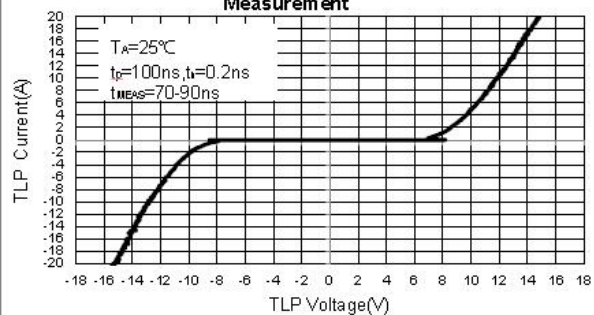
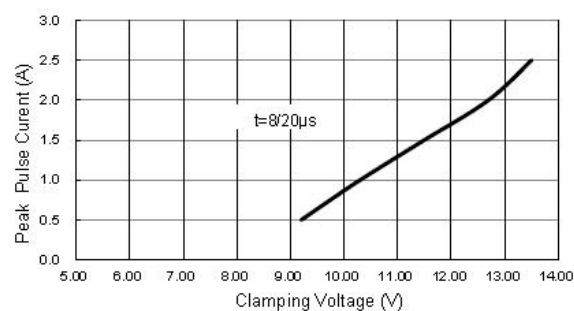


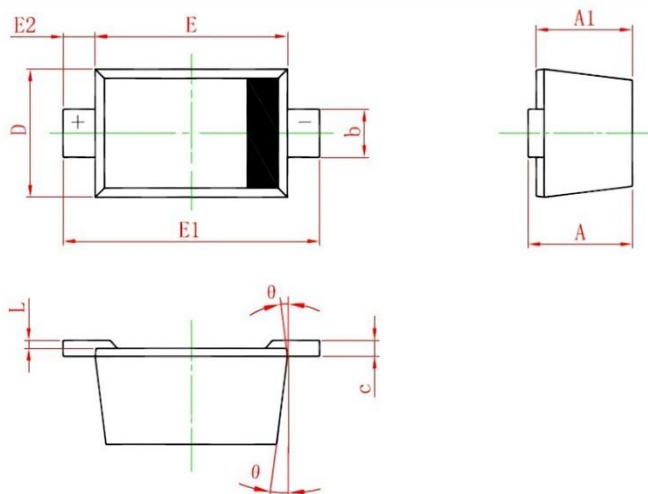
Fig 6 Clamping Voltage vs Peak Pulse Current





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SOD-523 PACKAGE OUTLINE Plastic surface mounted package



Symbol	Dimensions in millimeters		Dimensions in inches	
	Min	Max	Min	Max
A	0.510	0.770	0.020	0.031
A1	0.500	0.700	0.020	0.028
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	0.750	0.850	0.030	0.033
E	1.100	1.300	0.043	0.051
E1	1.500	1.700	0.059	0.067
E2	0.200 REF		0.008 REF	
L	0.010	0.070	0.001	0.003
θ	7° REF		7° REF	

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