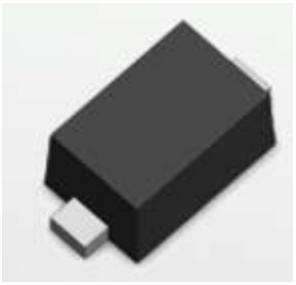
LM-PESD5V0V1BB

1-Line Bi-directional TVS Diode

Features

- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
  - – IEC61000-4-4 (EFT) 40A (5/50ns)
  - – IEC61000-4-5 (Lightning) 8A (8/20 μs)
- RoHS Compliant

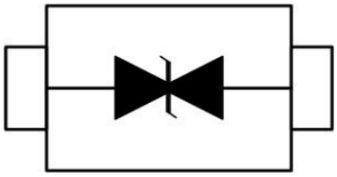
Dimensions SOD-523



Applications

- USB 2.0 power and data line
- Set-top box and digital TV
- Digital video interface (DVI)
- Notebook Computers
- SIM Ports
- 10/100 Ethernet

Pin Configuration



Mechanical Characteristics

- Package: SOD-523
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel:3,000pcs
- Reel Size:7 inch
- Device Marking:5B

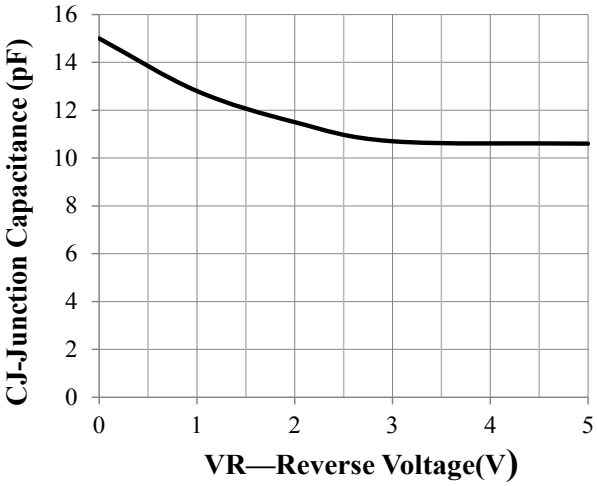
Absolute Maximum Ratings(Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppp	100	W
ESD per IEC 61000−4−2 (Air)	V_{ESD}	± 30	kV
ESD per IEC 61000−4−2 (Contact)		± 30	
Operating Temperature Range	T_J	-55 to +125	℃
Storage Temperature Range	T_{STJ}	-55 to +150	℃

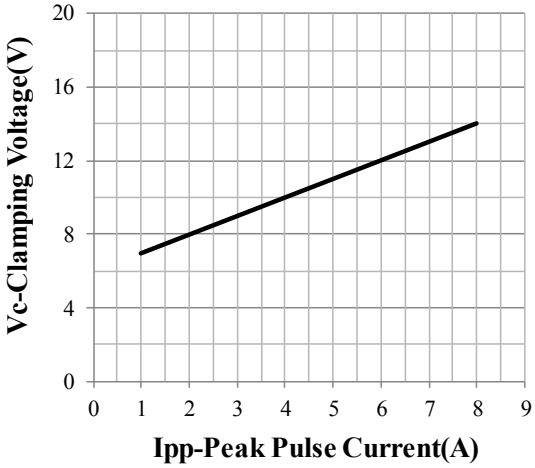
Electrical Characteristics(TA=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	I_T = 1mA	5.5			V
Reverse Leakage Current	I_R	V_{RWM} = 5V			1	μA
Clamping Voltage	V_C	I_{PP} = 1A (8 x 20 μs pulse)			9	V
Clamping Voltage	V_C	I_{PP} = 8A (8 x 20 μs pulse)			12	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHz		15		pF

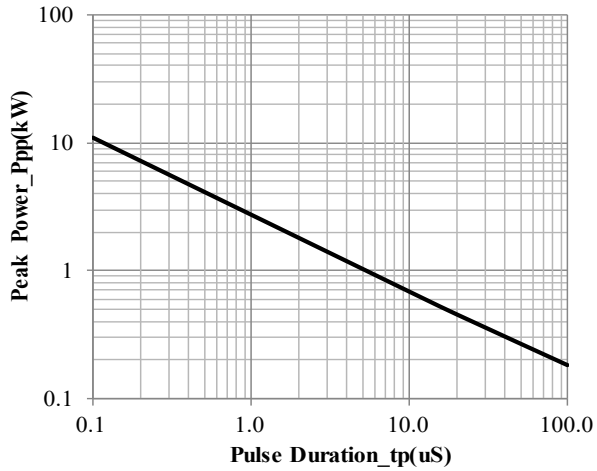
Typical Performance Characteristics(TA=25°C unless otherwise specified)



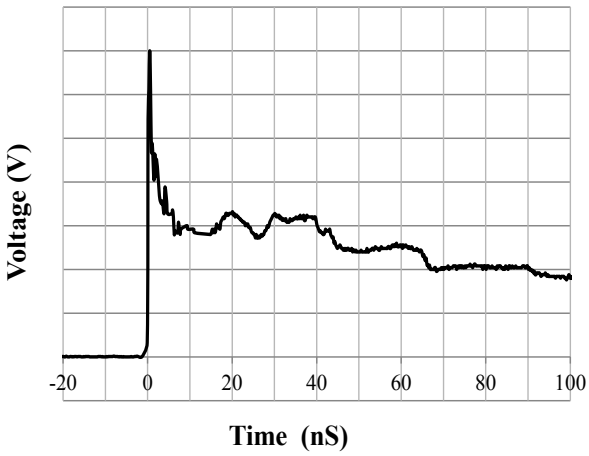
Junction Capacitance vs. Reverse Voltage



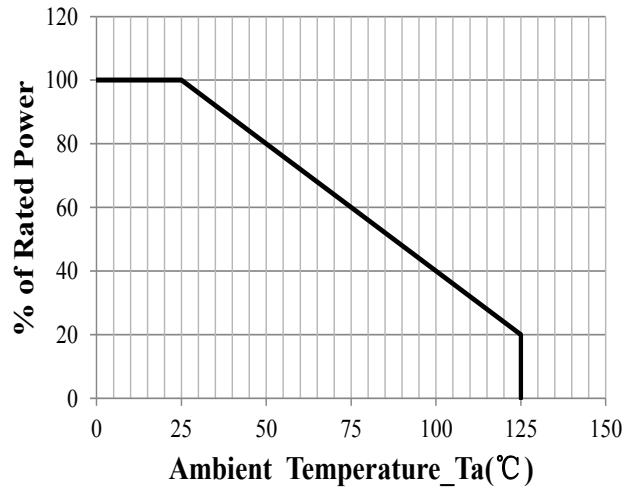
Clamping Voltage vs. Peak Pulse Current



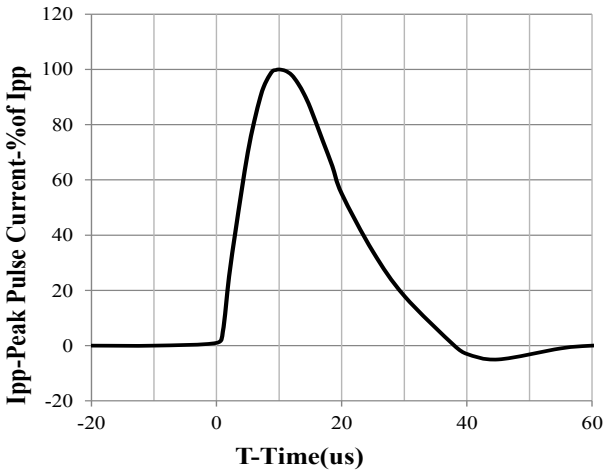
Peak Pulse Power vs. Pulse Time



IEC61000−4−2 Pulse Waveform

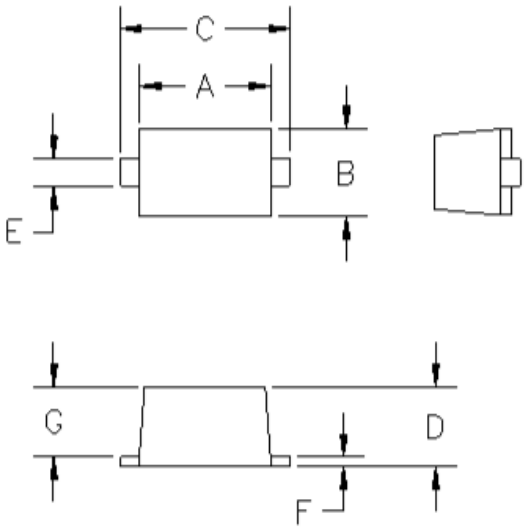


Power Derating Curve



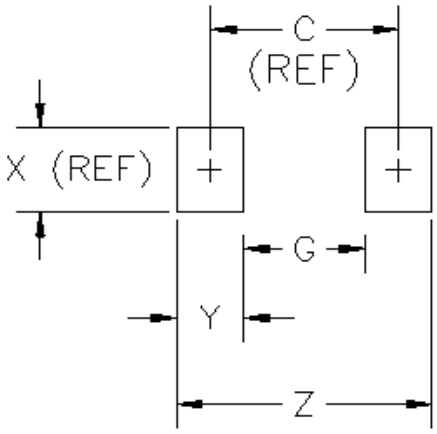
8 X 20us Pulse Waveform

SOD-523 Package Outline Drawing



DIMENSIONS					
DIM[N]	INCHES		MM		NOTE
	. MIN	MAX	MIN	MAX	
A	. 043	. 051	1.10	1.30	—
B	. 028	. 035	0.70	0.90	—
C	. 059	. 067	1.50	1.70	—
D	. 020	. 028	0.50	0.70	—
E	. 010	. 014	0.25	0.35	—
F	. 004	. 008	0.10	0.20	—
G	. 020	. 028	0.50	0.70	—

Suggested Land Pattern



DIMENSIONS					
DIM[N]	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
C	—	. 067	—	1.70	REF
G	—	. 043	—	1.10	—
X	—	. 031	—	0.80	REF
Y	—	. 024	—	0.60	—
Z	—	. 091	--	2.30	—

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