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PESD5V0X1UB

1-Line Low Capacitance TVS Diode

Features

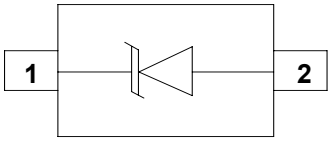
- Protects one data line
- Ultra low leakage: nA level
- Operating voltage: 5V
- Ultra low clamping voltage
- Ultra low capacitance: 0.6pF
- Complies with following standards:
  – IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±25kV
    Contact discharge: ±20kV
  – IEC61000-4-5 (Lightning) 5A (8/20μs)
- RoHS Compliant



SOD-523

Mechanical Characteristics

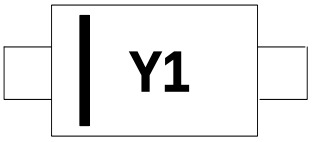
- Package: SOD-523
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below



Circuit diagram

Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks, Desktops, Server
- USB 2.0 and USB 3.0 Interfaces
- Ethernet - 10/100/1000 Base T



Y1=Device Marking Code
Bar denotes cathode

Marking (Top View)

Ordering Information

Part Number	Packaging	Reel Size
PESD5V0X1UB	3000/Tape & Reel	7 inch

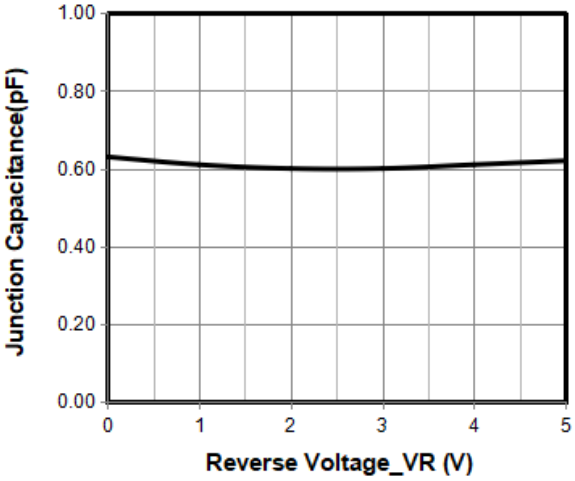
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	75	W
Peak Pulse Current (8/20μs)	Ipp	5	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±25 ±20	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

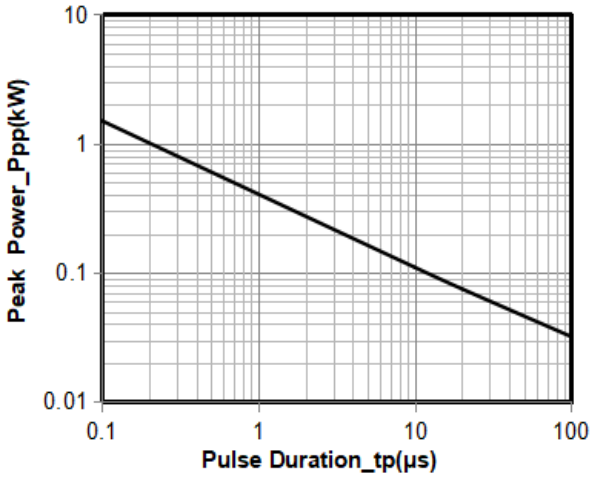
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	Pin 1 to Pin 2
Breakdown Voltage	V_{BR}	6			V	IT = 1mA, Pin 1 to Pin 2
Reverse Leakage Current	I_R			0.2	μA	VRWM = 5V, Pin 1 to Pin 2
Forward Voltage	V_F		1.0	1.2	V	IF = 10mA, Pin 2 to Pin 1
Clamping Voltage	V_C			10	V	IPP = 1A (8 x 20μs pulse), Pin 1 to Pin 2
Clamping Voltage	V_C			15	V	IPP = 5A (8 x 20μs pulse), Pin 1 to Pin 2
Junction Capacitance	C_J		0.6		pF	VR = 0V, f = 1MHz

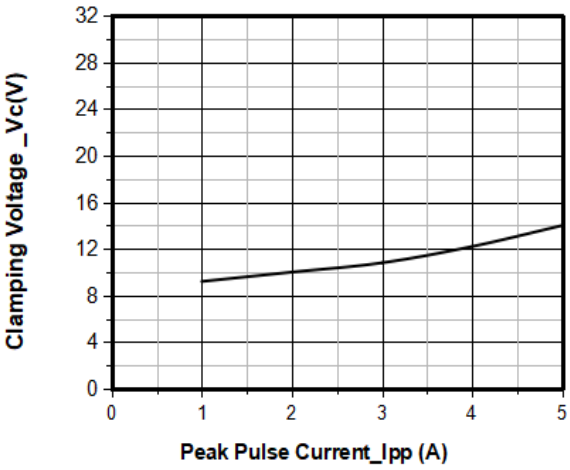
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



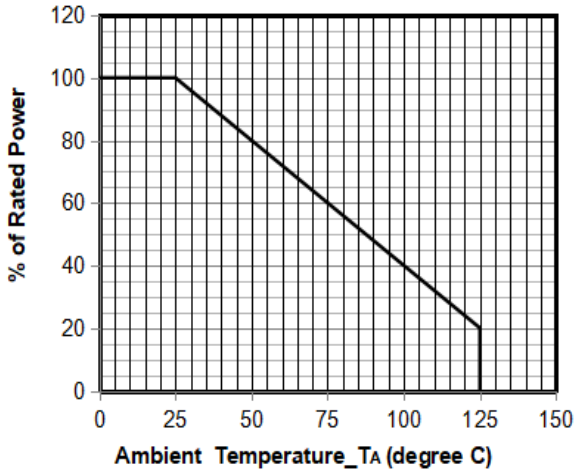
Junction Capacitance vs. Reverse Voltage



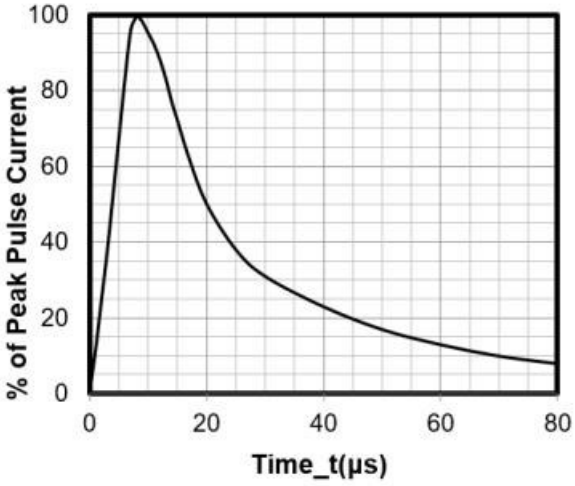
Peak Pulse Power vs. Pulse Time



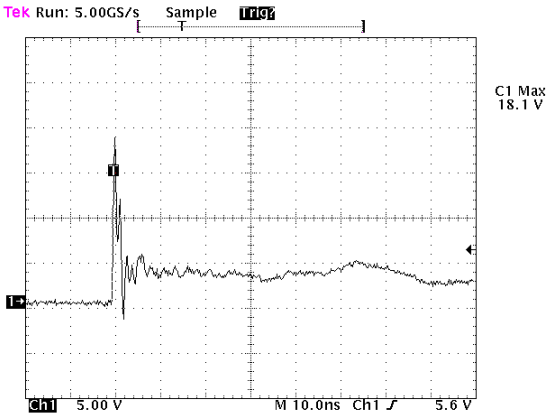
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform

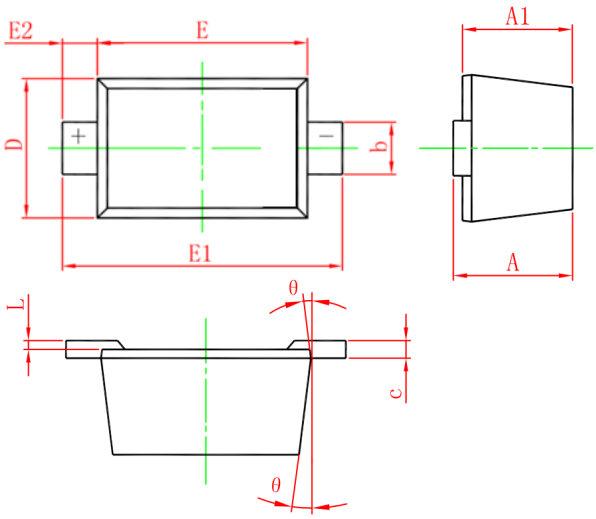


Note：Data is taken with a 10x attenuator

ESD Clamping Voltage

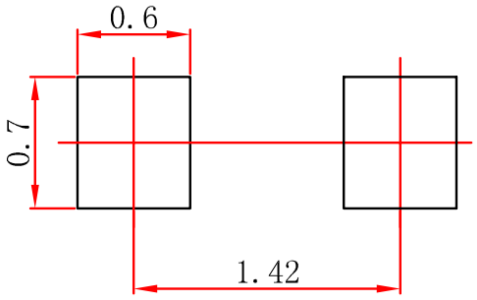
8 kV Contact per IEC61000−4−2

SOD-523 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.51	- -	0.77	0.020	- -	0.031
A1	0.50	- -	0.70	0.020	- -	0.028
b	0.25	- -	0.35	0.010	- -	0.014
c	0.08	- -	0.15	0.003	- -	0.006
D	0.75	- -	0.85	0.030	- -	0.033
E	1.10	- -	1.30	0.043	- -	0.051
E1	1.50	- -	1.70	0.059		0.067
E2	0.20REF			0.008REF		
L	0.01	- -	0.07	0.001	- -	0.003
Θ	7° REF			7° REF		

Suggested Land Pattern



Unit：mm