1-Line Bi-directional ESD Protection Diode

Description

These surge protection diodes are designed for applications requiring transient over voltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications. These devices are ideal for situations where board space is at a premium.

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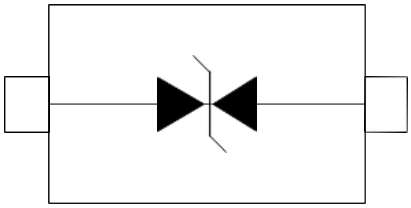
Features

- Bi-directional ESD protection of one line
- Reverse stand-off voltage: 48.0V Max
- Low leakage current: nA Level
- Response time is typically < 1 ns
- Complies with following standards:
  - —IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
  - —IEC61000-4-5 (Lightning) 9.0A (8/20μs)
- RoHS Compliant

Schematic and Pin Configuration



SOD-323 (Top View)

Circuit Schematic

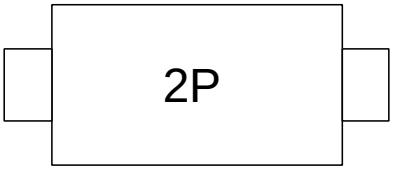
Mechanical Characteristics

- SOD-323 Small Outline Plastic Package
- Level 1 moisture sensitivity per J-STD-020
- Case Material: “Green” Molding Compound
- Lead Finish: Matte Tin
- We declare that the material of product compliance With RoHS requirements and Halogen Free

Applications

- Cell Phone
- Audio equipment
- Portable devices
- Digital cameras
- Power supplies

Marking Information



2P = Device Marking Code

Ordering Information

Part Number	Shipping	Reel Size
PSD48C	3000/Tape &Reel	7 inch

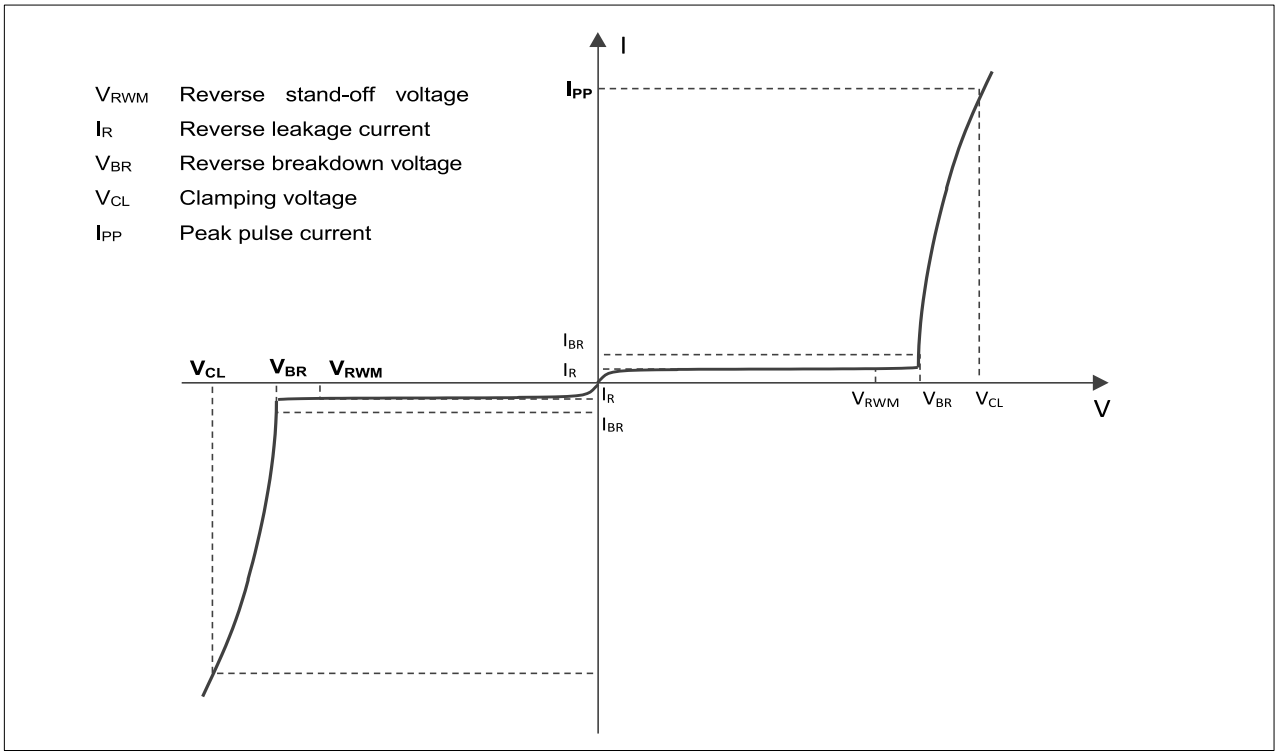
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P_{PK}	760	W
Peak Pulse Current (8/20μs)	I_{PP}	9	A
ESD per IEC 61000−4−2 (Air)	V_{ESD}	±30	kV
ESD per IEC 61000−4−2 (Contact)		±30	kV
Maximum lead temperature for soldering during 10s	T_L	260	℃
Operating Temperature Range	T_{OP}	−40 to +125	℃
Storage Temperature Range	T_{STG}	−55 to +150	℃

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

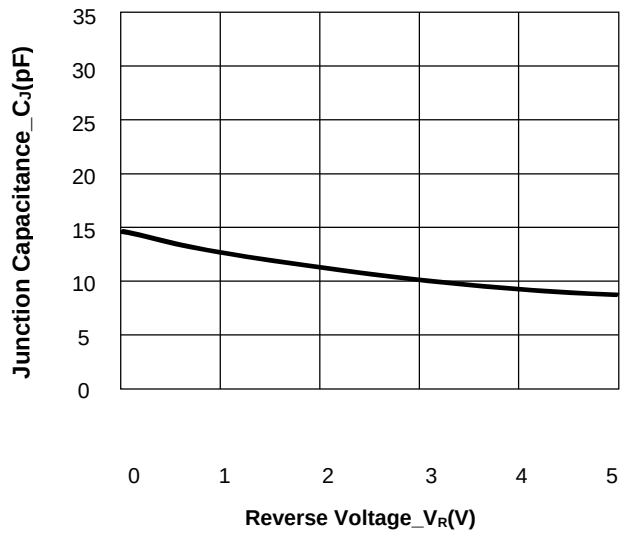
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			48	V	
Reverse Breakdown Voltage	V_{BR}	52		65	V	I_T = 1mA
Reverse Leakage Current	I_R			100	nA	V_{RWM} =48V
Clamping Voltage	V_C		64	72	V	I_{PP} = 3A (8/20μs pulse)
Clamping Voltage	V_C		80	84	V	I_{PP} = 9A (8/20μs pulse)
Junction Capacitance	C_J		15	20	pF	V_R = 0V, f = 1MHz

Electrical characteristics (T_A = 25℃, unless otherwise noted)

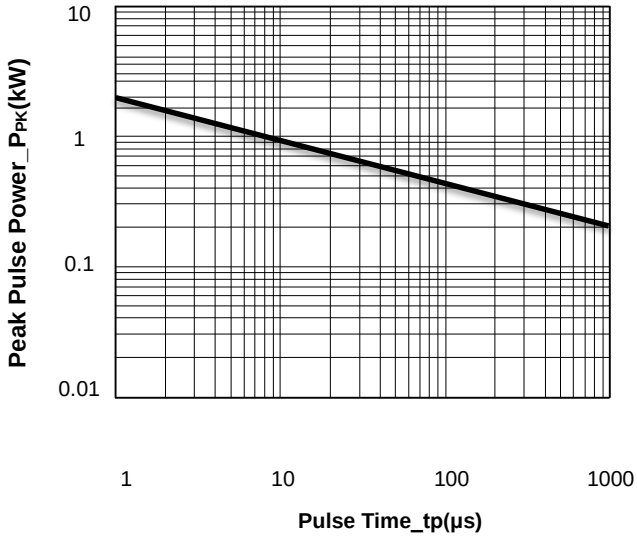


Definitions of electrical characteristics

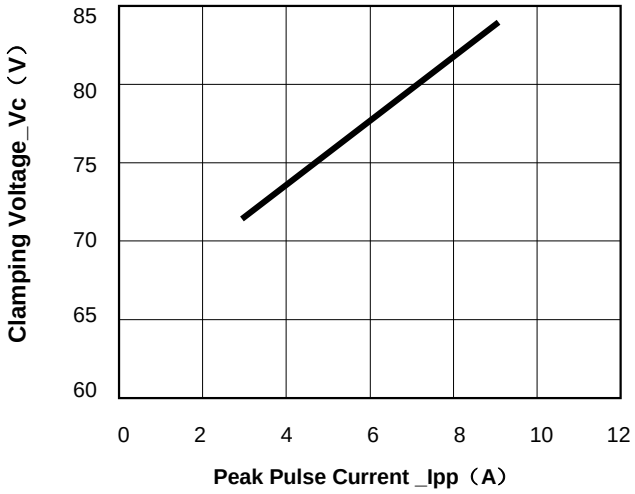
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



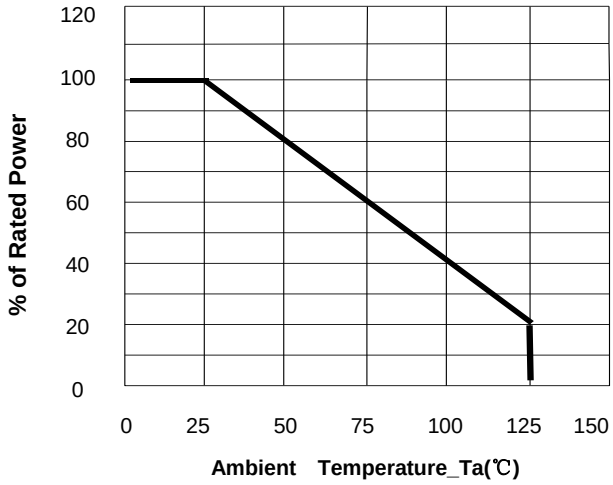
Junction Capacitance vs. Reverse Vlotage



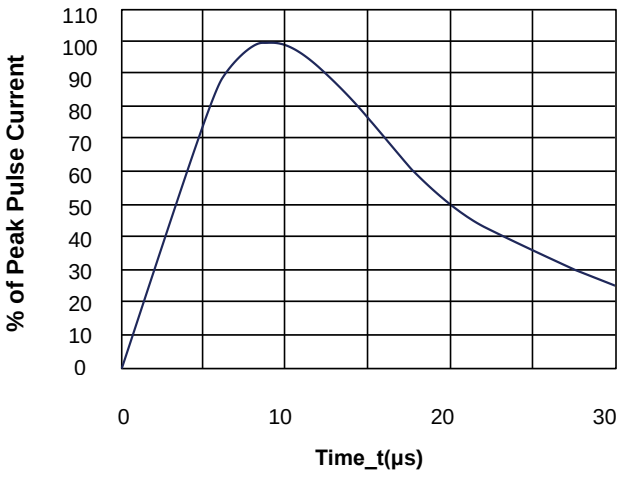
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs.Peak Pulse Current

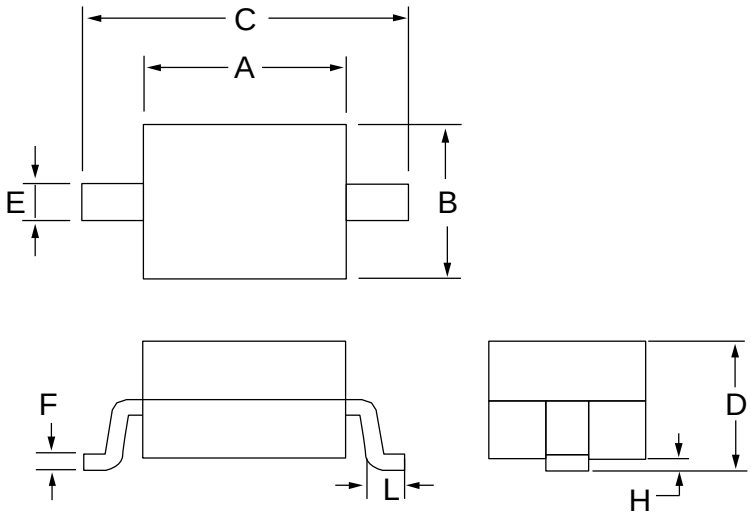


Power Derating Curve



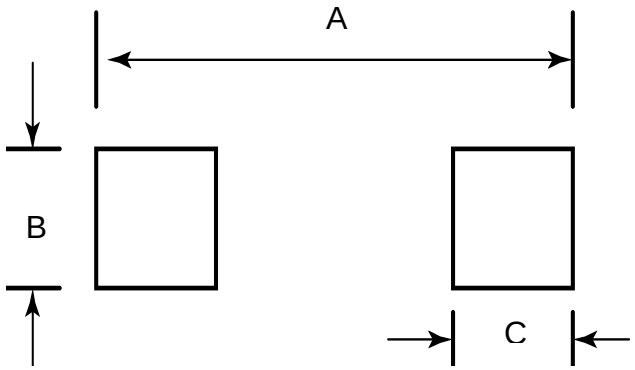
8/20μs Pulse Waveform

SOD-323 Package Outline Drawing



SYM	DIMENSIONS				
	MILLIMETERS			INCHES	
	MIN	NOM	MAX	MIN	MAX
A	1.50	1.65	1.80	0.060	0.071
B	1.20	1.30	1.40	0.045	0.054
C	2.30	2.50	2.70	0.090	0.107
D	-		1.10	-	0.043
E	0.30		0.40	0.012	0.016
F	0.10		0.25	0.004	0.010
L	0.20		0.40	0.008	0.016
H	-		0.10	-	0.004

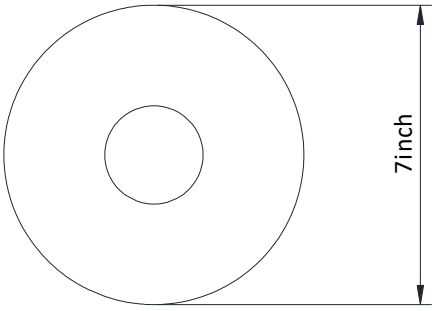
Suggested Land Pattern



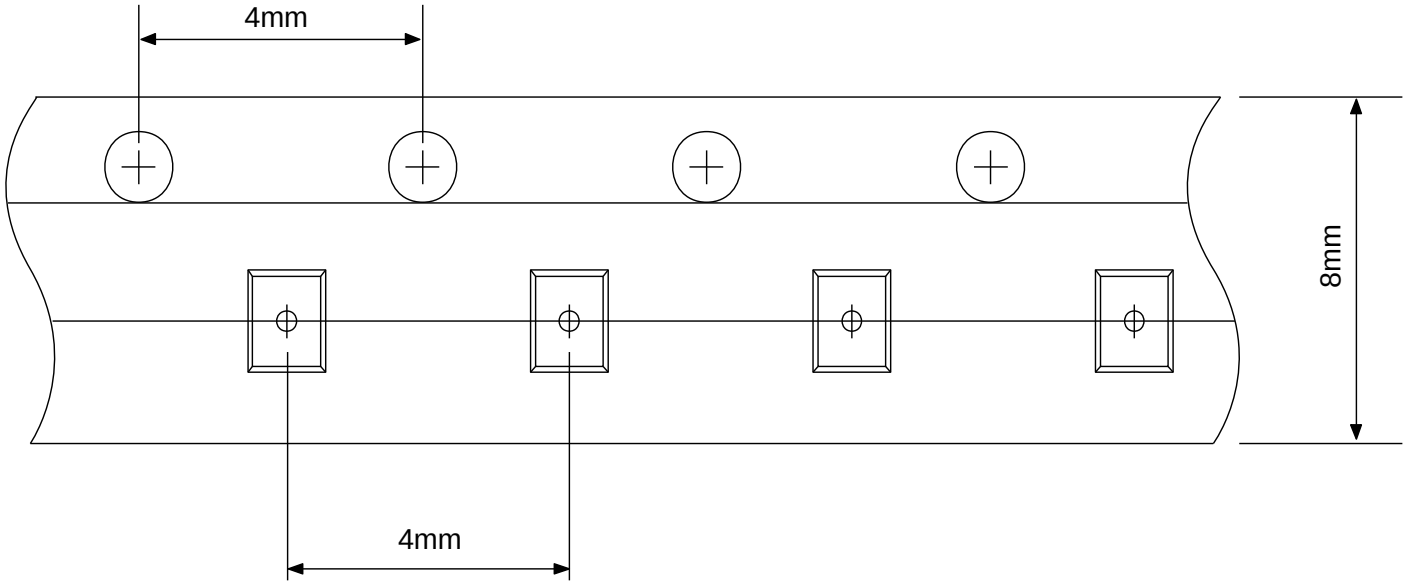
SYM	DIMENSIONS	
	MILLIMETERS	INCHES
A	3.15	0.120
B	0.80	0.031
C	0.80	0.031

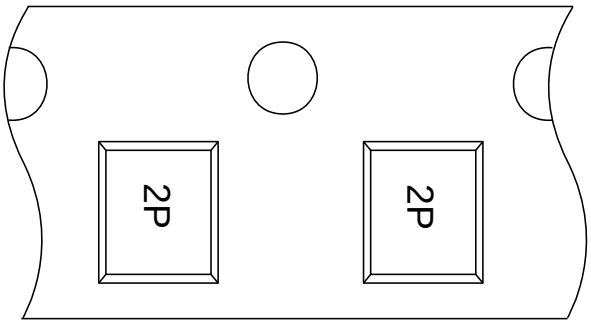
TAPE AND REEL INFORMATION

Reel Dimensions



Tape Dimensions





User Direction of Feed

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