

2-Line Uni-directional ESD Protection Diode

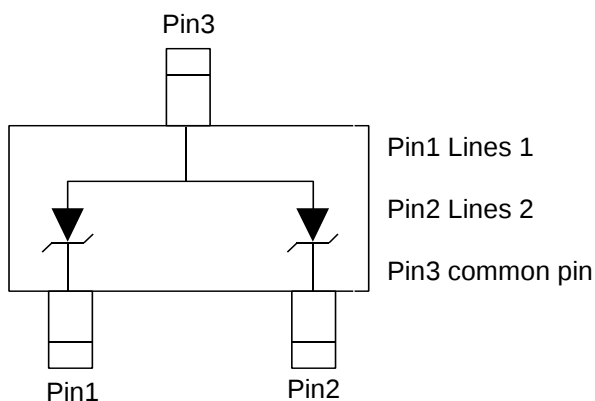
Description

These surge protection diodes are designed for applications requiring transient overvoltage 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.

Features

- Uni-directional ESD protection of two line
- Reverse stand-off voltage: 24V Max
- Low clamping voltage
- Low leakage current: nA level
- Response time is typically < 1ns
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 20\text{kV}$
 - Contact discharge: $\pm 20\text{kV}$
 - IEC 61000-4-5 (Lightning) 4A (8/20 μs)
- RoHS Compliant

Schematic and Pin Configuration



Circuit and Pin Schematic

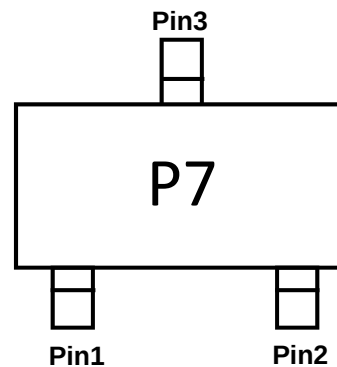
Mechanical Characteristics

- Package: SOT-523
- Case Material: “Green” Molding Compound
- We declare that the material of product compliance with RoHS requirements and Halogen Free

Applications

- Power lines
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Cell phone Handsets and Accessories
- Portable Electronics

Marking Information



P7 = Device Marking Code

Ordering Information

Part Number	Shipping	Reel Size
PSM24N	3000/Tape & Reel	7 inch

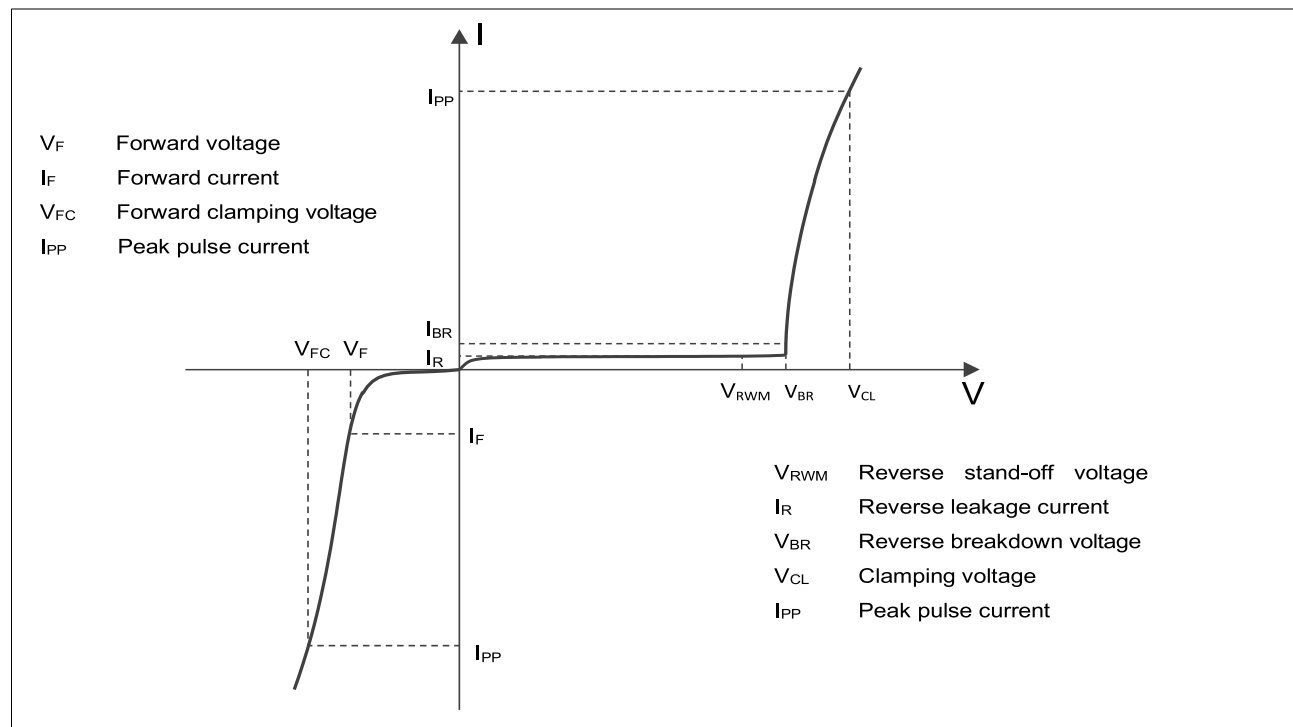
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P_{PK}	188	W
Peak Pulse Current (8/20 μs)	I_{PP}	4	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 20	kV
ESD per IEC 61000-4-2 (Contact)		± 20	kV
Lead temperature	T_L	260	$^{\circ}\text{C}$
Junction Temperature	T_J	125	$^{\circ}\text{C}$
Operating Temperature Range	T_{OP}	$-40 \sim +125$	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	$-55 \sim +150$	$^{\circ}\text{C}$

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

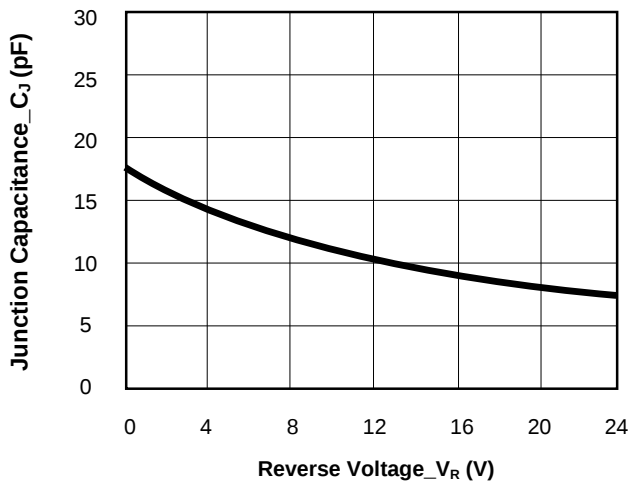
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			24	V	
Reverse Breakdown Voltage	V_{BR}	26		30	V	$I_T = 1\text{mA}$
Reverse Leakage Current	I_R			0.1	μA	$V_{RWM} = 24\text{ V}$
Forward Voltage	V_F			1.2	V	$I_F = 10\text{mA}$
Clamping Voltage	V_C			35	V	$I_{PP} = 1\text{A}$ (8/20 μs pulse)
Clamping Voltage	V_C			47	V	$I_{PP} = 4\text{A}$ (8/20 μs pulse)
Junction Capacitance	C_J		17	25	pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$ (Pin1 or Pin2 to Pin3)

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

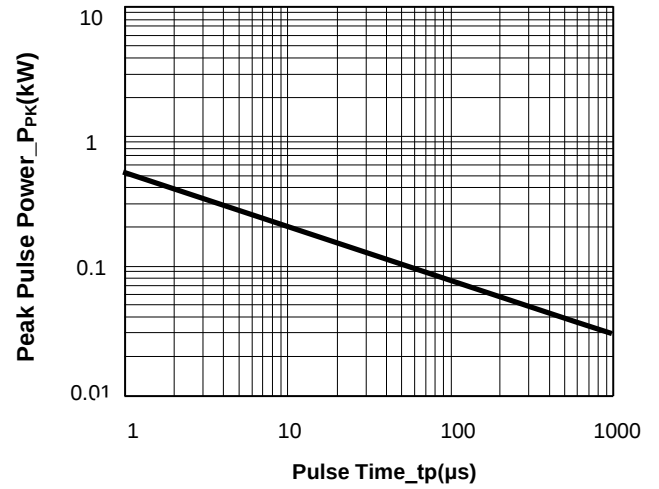


Definitions of electrical characteristics

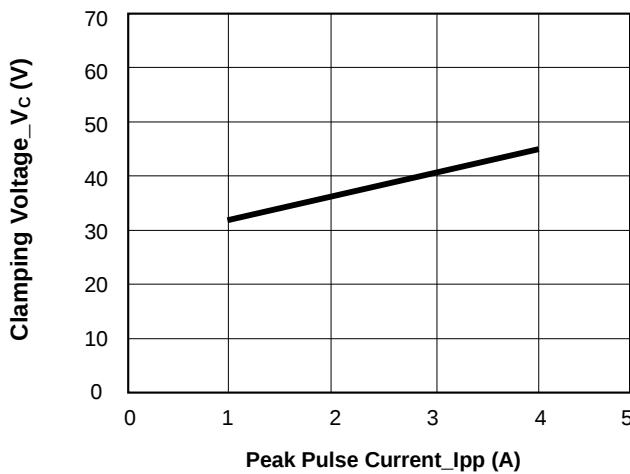
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



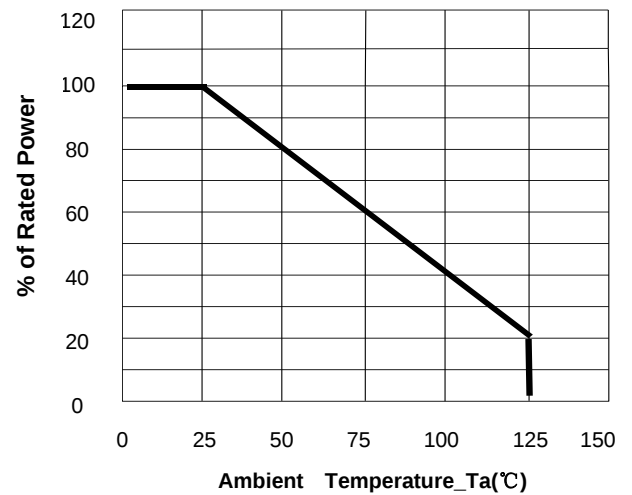
Junction Capacitance vs. Reverse Voltage



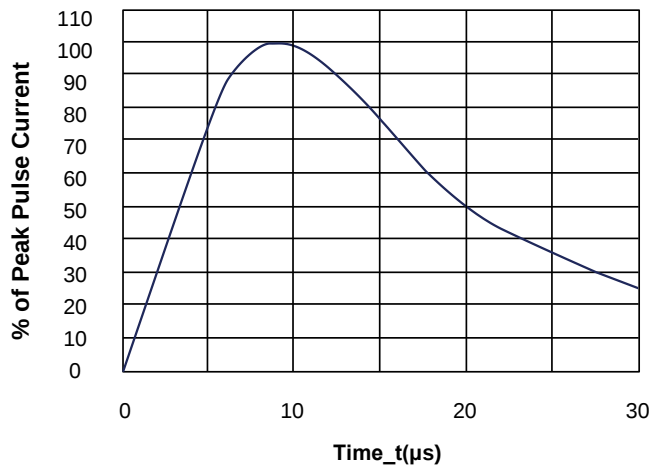
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current

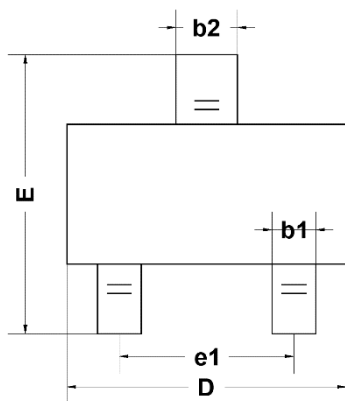


Power Derating Curve

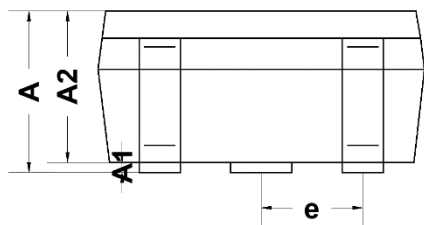


8/20 μs Pulse Waveform

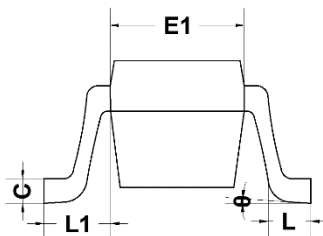
SOT-523 Package Outline Drawing



Top View



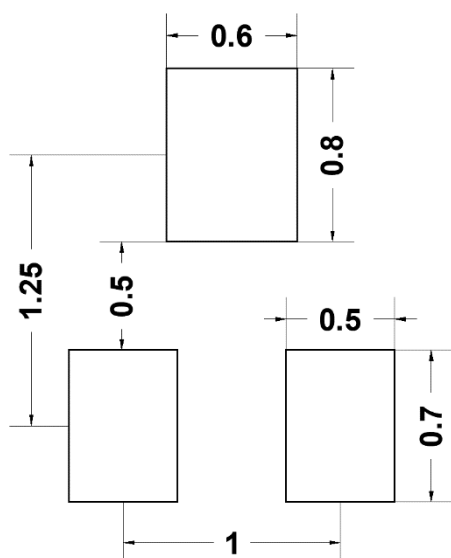
Bottom View



Side View

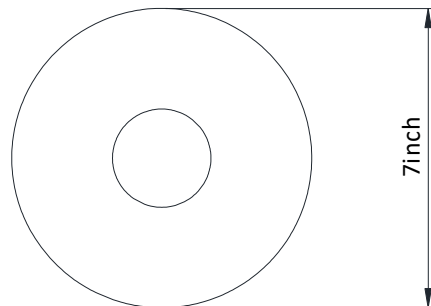
Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.68	0.80	0.92
A1	0.01	0.05	0.15
A2	0.68	0.75	0.82
b1	0.20	0.25	0.30
b2	0.30	0.35	0.40
c	0.10	0.15	0.20
D	1.48	1.58	1.72
E1	0.68	0.80	0.92
E	1.42	1.50	1.77
e	0.50 BSC.		
e1	0.90	1.00	1.10
L1	0.40 REF.		
L	0.15	0.25	0.35
θ	0°	4°	8°

Recommended PCB Layout (Unit: mm)

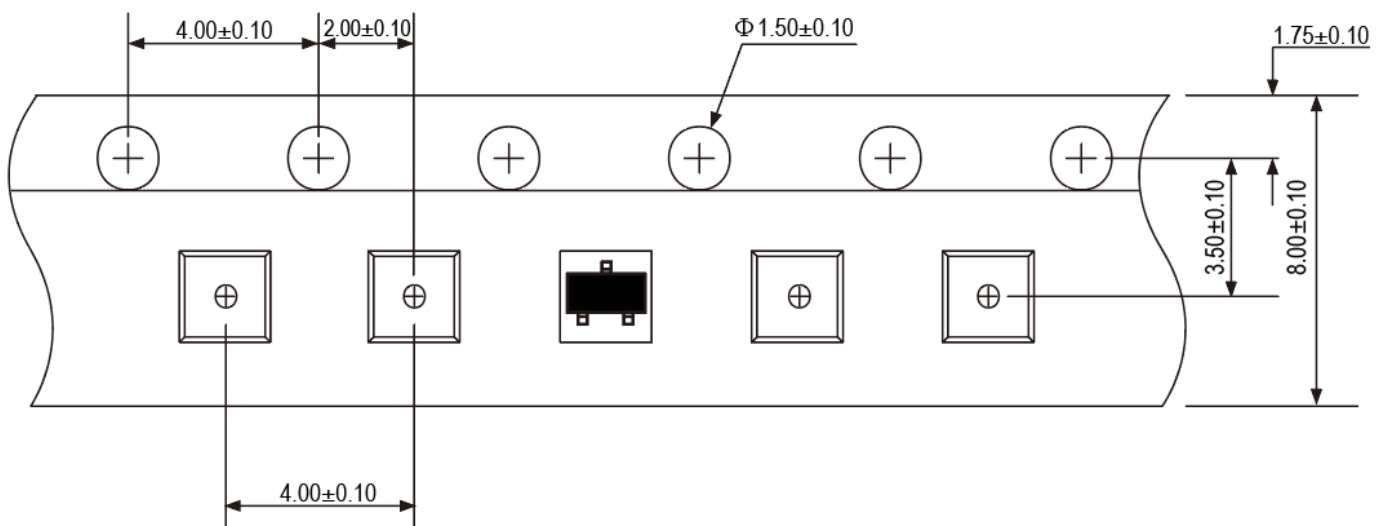


TAPE AND REEL INFORMATION

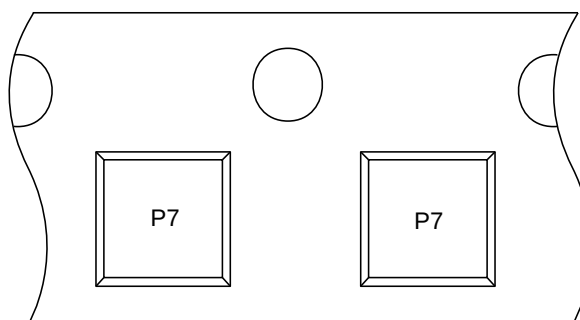
Reel Dimensions



Tape Dimensions



Unit:mm



User Direction of Feed

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