

1-Line Bi-directional TVS Diode

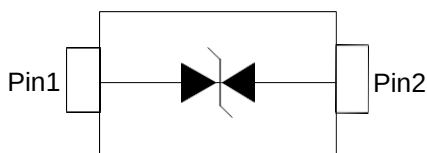
Description

The PESDU0511D5N is designed to protect voltage sensitive components from ESD and transient voltage events. The PESDU0511D5N complies with the IEC 61000-4-2 (ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. Excellent clamping capability, low leakage, and fast response time make these parts ideal for ESD protection on designs where board space is at a premium.

Features

- Reverse stand-off voltage: 5.0V Max
- Low leakage current: nA level
- Low Clamping Voltage
- Response time is typically $< 1\text{ ns}$
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC 61000-4-5 (Lightning) 5A ($8/20\mu\text{s}$)
- RoHS Compliant

Schematic and Pin Configuration



Graphic symbol

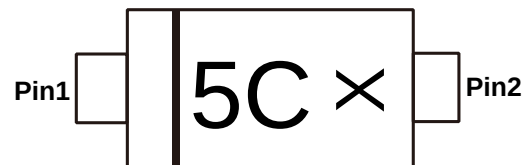
Mechanical Characteristics

- Package: SOD-523
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 1 per J-STD-020
- Marking Information: See Below

Applications

- Cellular phones
- Portable devices
- Digital Cameras
- Power supplies

Marking Information



5C X = Device Marking Code

Ordering Information

Part Number	Shipping	Reel Size
PESDU0511D5N	3000/Tape & Reel	7 inch

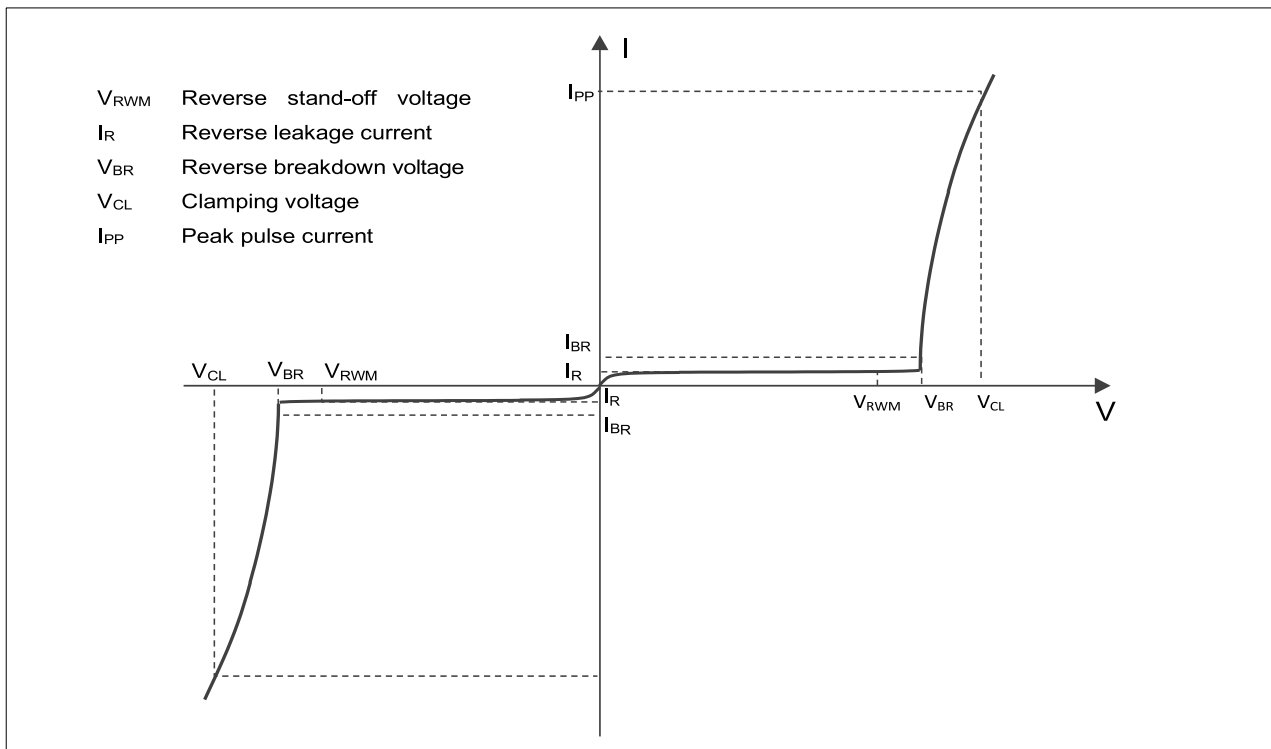
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P _{pk}	80	W
Peak Pulse Current (8/20 μs)	I _{PP}	5	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Lead temperature	T _L	260	$^{\circ}\text{C}$
Junction Temperature	T _J	125	$^{\circ}\text{C}$
Operating Temperature Range	T _{OP}	-40 ~ +125	$^{\circ}\text{C}$
Storage Temperature Range	T _{STG}	-55 ~ +150	$^{\circ}\text{C}$

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

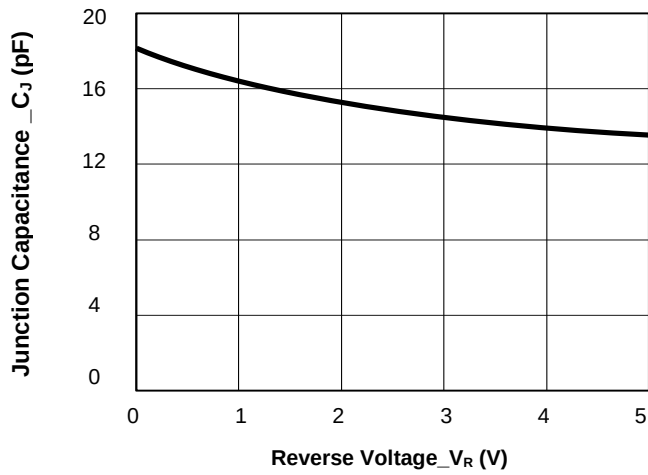
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			5.0	V	
Breakdown Voltage	V _{BR}	5.6			V	I _T = 1mA
Reverse Leakage Current	I _R			100	nA	V _{RWM} = 5.0V
Clamping Voltage	V _C			7	V	I _{PP} = 1A (8/20 μs pulse)
Clamping Voltage	V _C			16	V	I _{PP} = 5A (8/20 μs pulse)
Junction Capacitance	C _J		18		pF	V _R = 0V, f = 1MHz

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

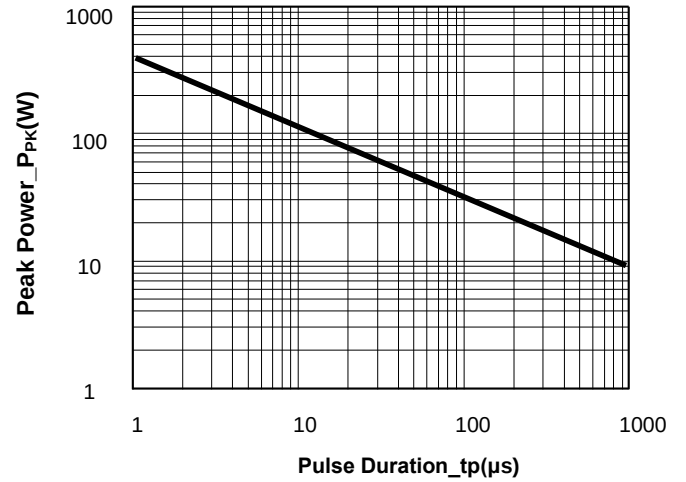


Definitions of electrical characteristics

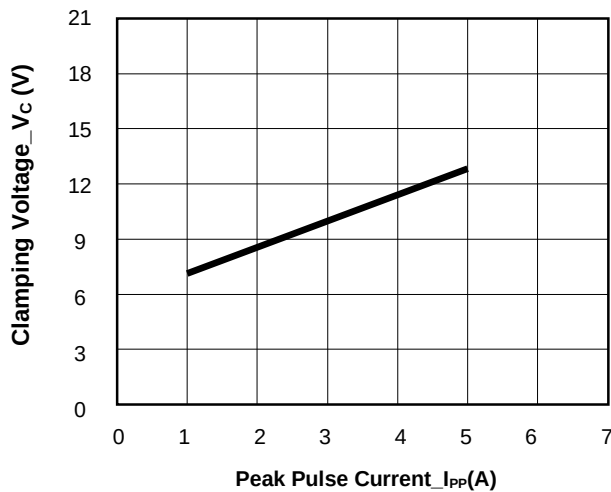
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



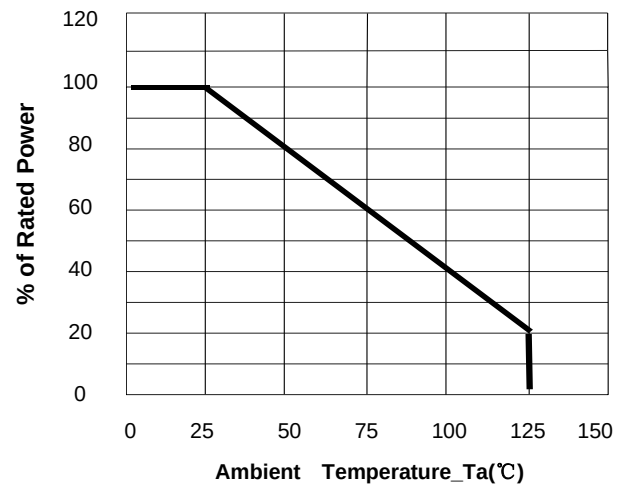
Junction Capacitance vs. Reverse Voltage



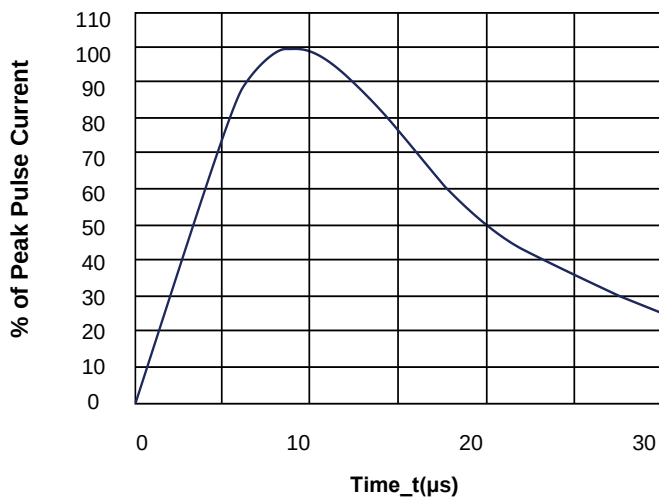
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current

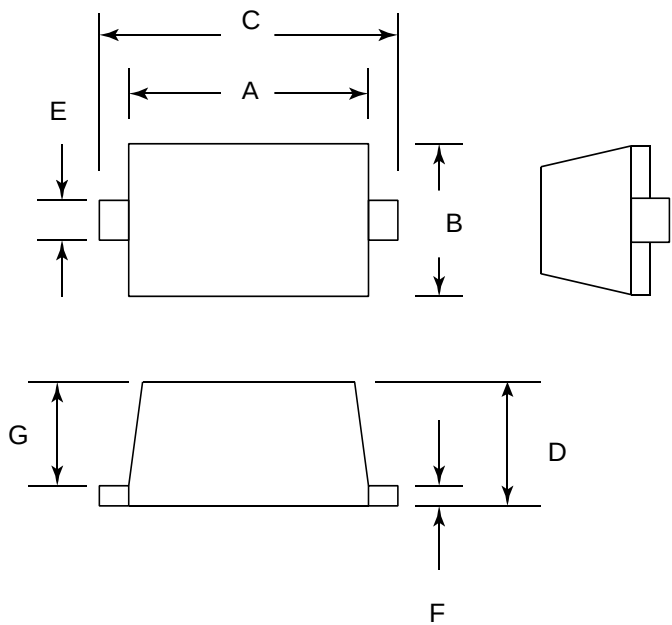


Power Derating Curve



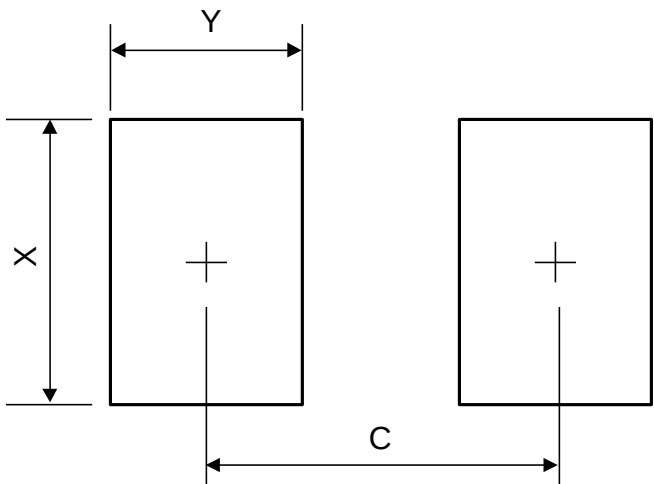
8/20 μs Pulse Waveform

SOD523 Package Outline Drawing



SYM	DIMENSIONS			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.10	1.30	0.043	0.051
B	0.70	0.90.	0.028	0.035
C	1.50	1.70	0.059	0.067
D	0.50	0.70	0.020	0.028
E	0.25	0.35	0.010	0.014
F	0.10	0.20	0.004	0.008
G	0.40	0.50	0.016	0.020

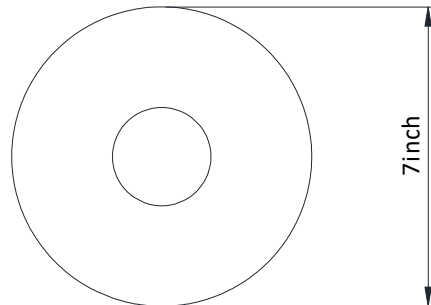
Suggested Land Pattern



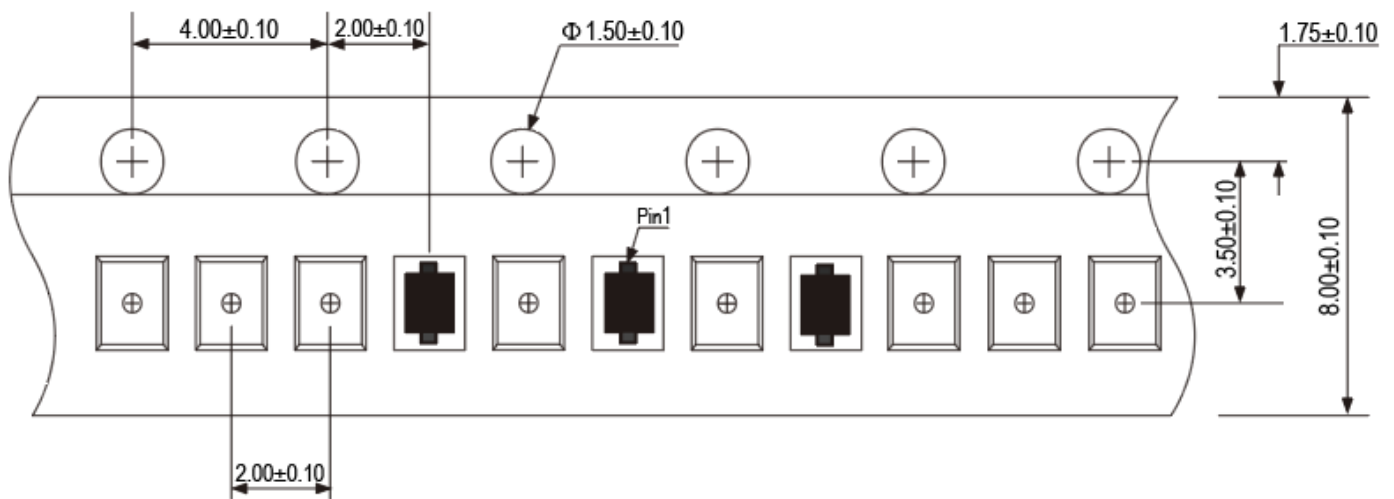
SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	1.42	0.056
X	0.70	0.028
Y	0.60	0.024

TAPE AND REEL INFORMATION

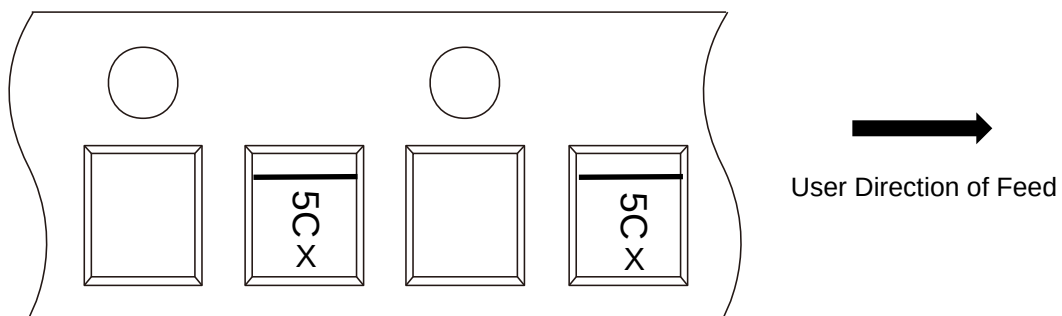
Reel Dimensions



Tape Dimensions



Unit:mm



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