

1-Line Bi-directional TVS Diode

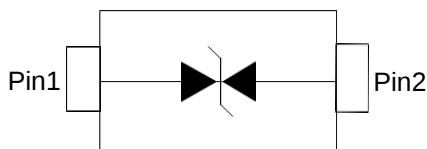
Description

The PESDU1521D5 is a 15V bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The PESDU1521D5 complies with the IEC 61000-4-2 (ESD) with ± 30 kV air and ± 30 kV contact discharge. It is assembled into an ultra-small lead-free SOD-523 package. The small size and high ESD surge protection make PESDU1521D5 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 15V
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: ± 30 kV
 - Contact discharge: ± 30 kV
 - IEC 61000-4-5 (Lightning) 6A (8/20 μ s)
- RoHS Compliant

Schematic and Pin Configuration



Graphic symbol

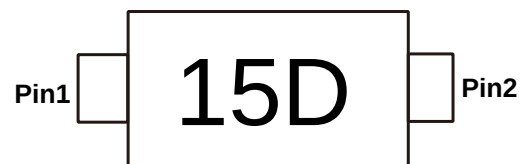
Mechanical Characteristics

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

Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players

Marking Information



15D = Device Marking Code Bar

Ordering Information

Part Number	Shipping	Reel Size
PESDU1521D5	3000/Tape & Reel	7 inch

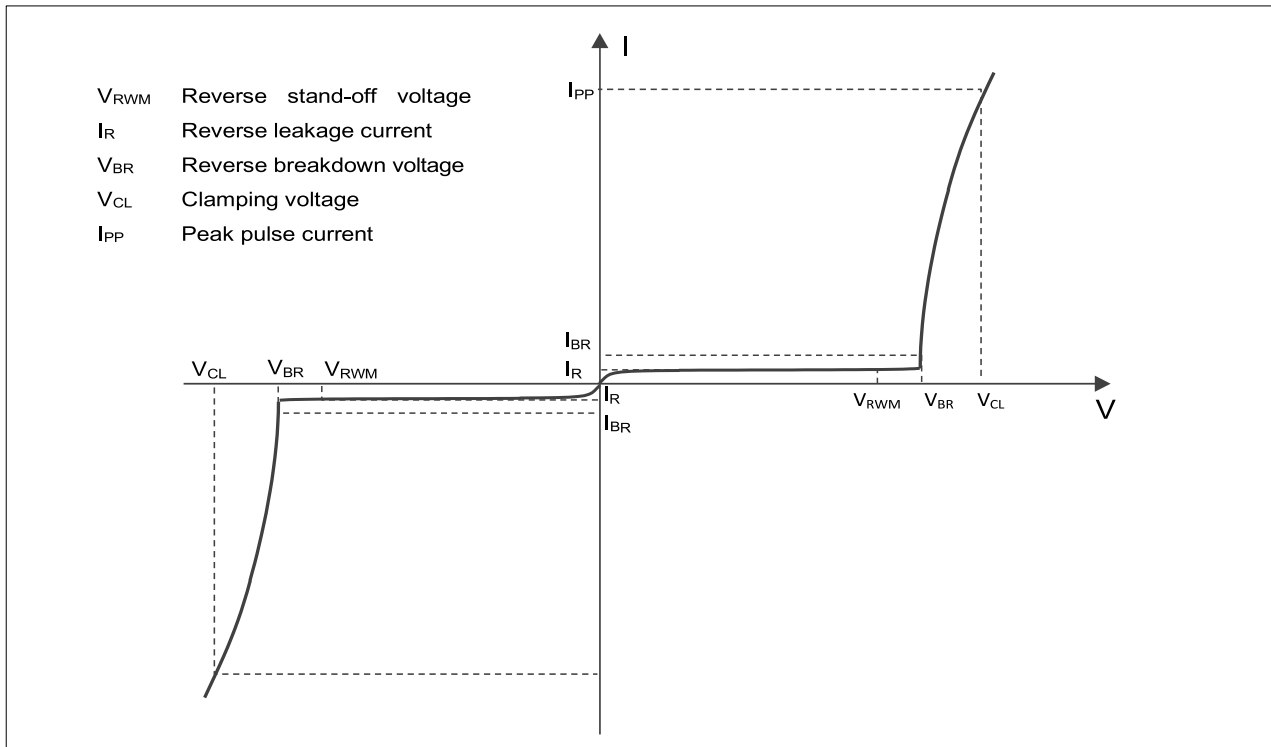
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P _{pk}	150	W
Peak Pulse Current (8/20μs)	I _{PP}	6	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	°C
Junction Temperature	T _J	125	°C
Operating Temperature Range	T _{OP}	-40 ~ +125	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

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

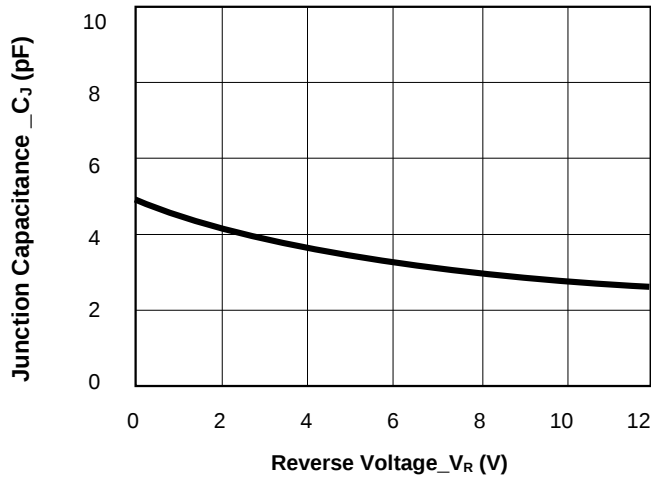
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			15	V	
Breakdown Voltage	V _{BR}	16.2			V	I _T = 1mA
Reverse Leakage Current	I _R			0.2	uA	V _{RWM} = 15V
Clamping Voltage	V _C			18	V	I _{PP} = 1A (8/20μs pulse)
Clamping Voltage	V _C			25	V	I _{PP} = 6A (8/20μs pulse)
Junction Capacitance	C _J		7		pF	V _R = 0V, f = 1MHz

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

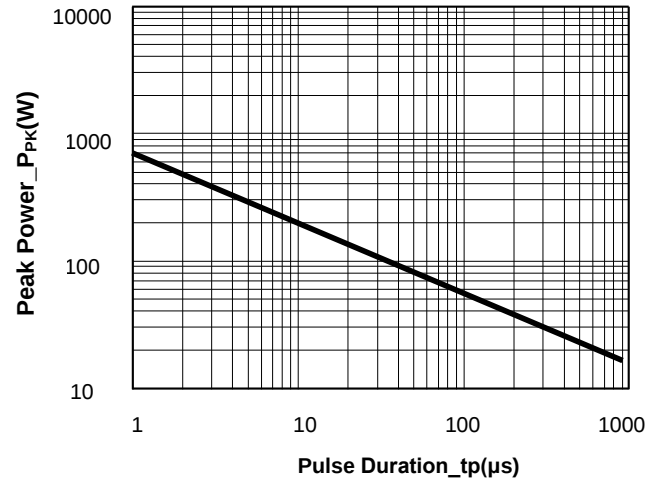


Definitions of electrical characteristics

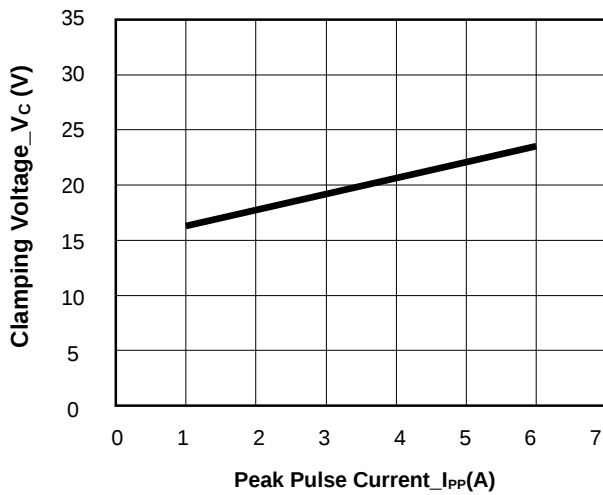
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



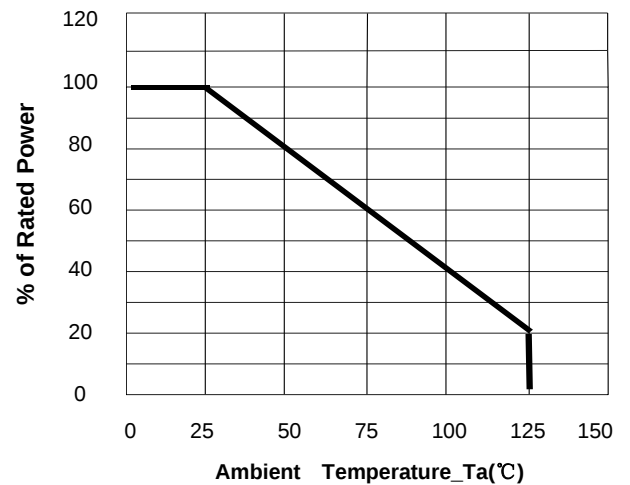
Junction Capacitance vs. Reverse Voltage



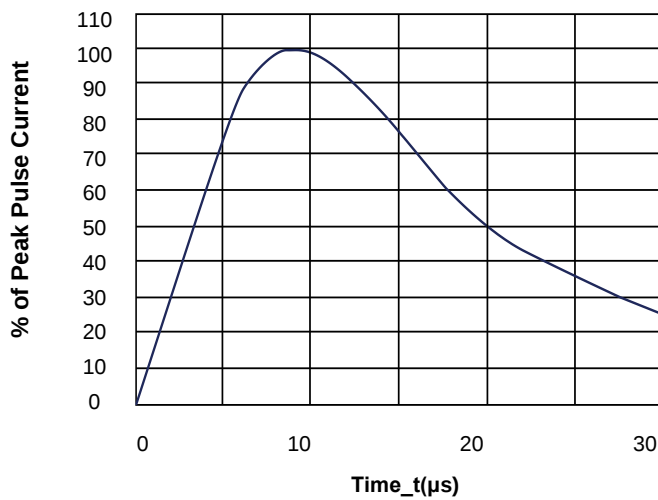
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current

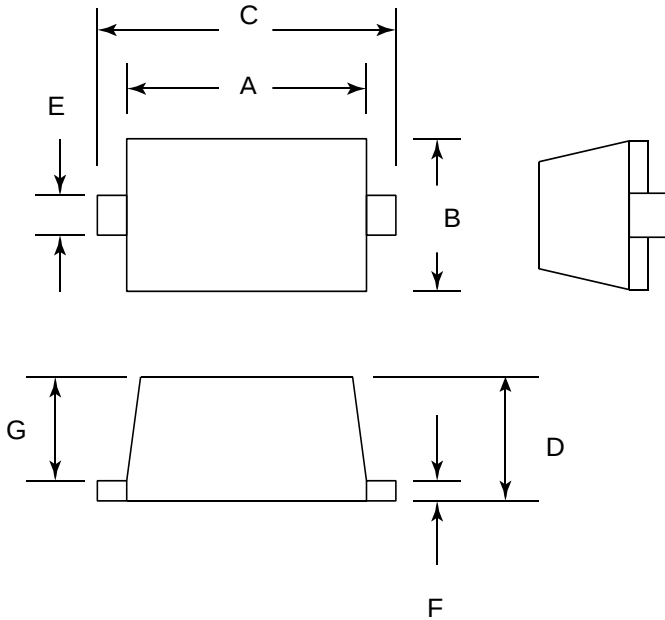


Power Derating Curve



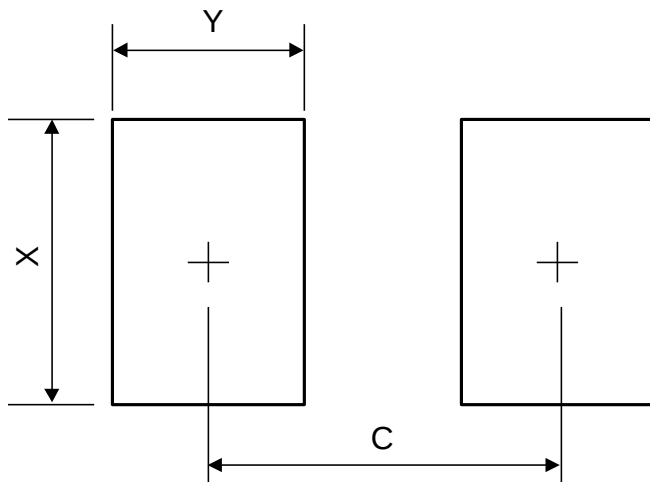
8/20 μs Pulse Waveform

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

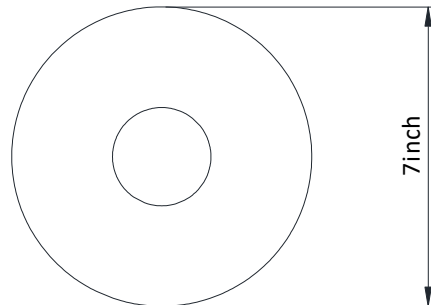
Suggested Land Pattern



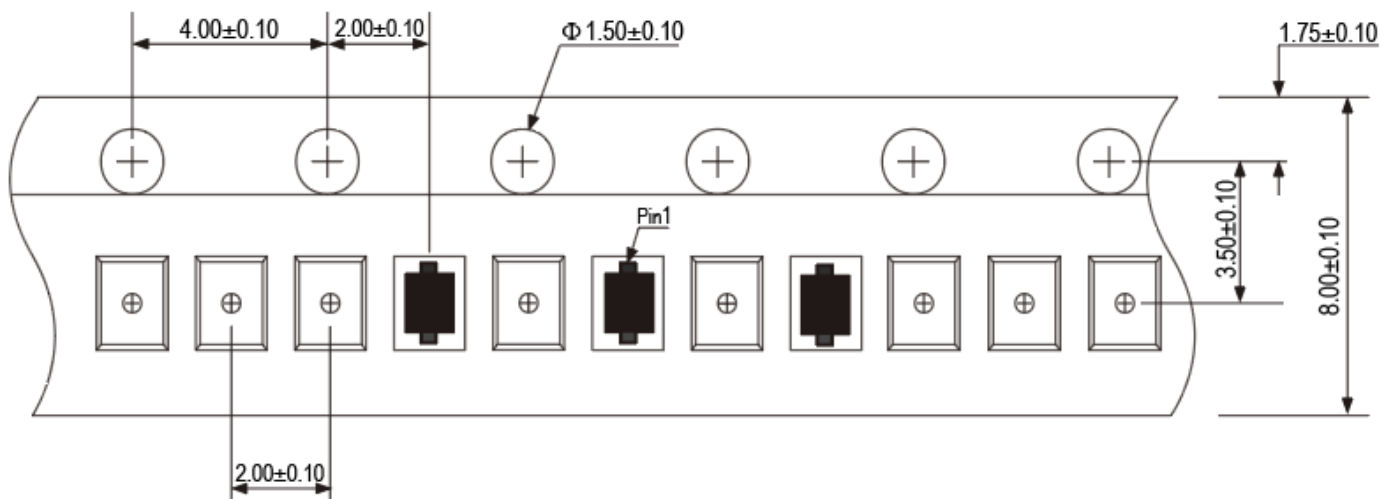
SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	1.42	0.056
X	0.70	0.028
Y	0.60	0.024

TAPE AND REEL INFORMATION

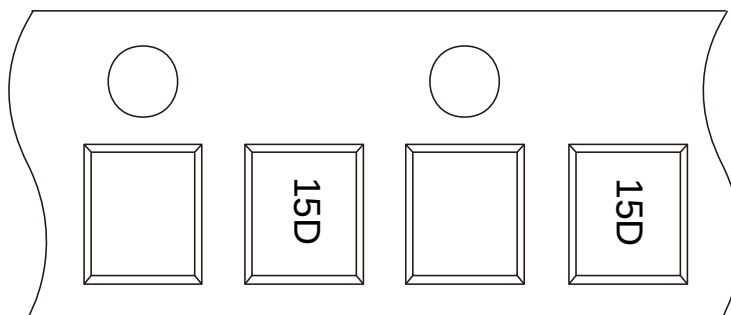
Reel Dimensions



Tape Dimensions



Unit:mm



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User Direction of Feed

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