

1-Line Uni-directional TVS Diode

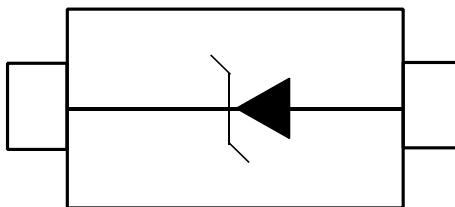
Description

The PESDU1851D1FT is an uni-directional TVS diode, to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power lines. The PESDU1851D1FT complies with the IEC 61000- 4-2 (ESD) standard with $\pm 30\text{kV}$ and air $\pm 30\text{kV}$ contact discharge. It is assembled into a SOD -123FL lead-free package. The small size and high ESD protection make PESDU1851D1FT an ideal choice to protect cellphone, digital cameras, audio players and many other portable applications.

Features

- Protects one data or power line
- operating voltage: 18V
- Ultra low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD)immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) 120A (8/20 μs)
- RoHS Compliant

Pin Configuration



Circuit and Pin Schematic

Mechanical Characteristics

- Package: SOD-123FL
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity: Level 1 per J-STD-020
- Marking Information: See Below

Applications

- Fast-charge battery chargers
- Power management system
- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals

Marking Information



EIT = Device Marking Code

Bar denotes Cathode

Ordering Information

Part Number	Packaging	Real Size
PESDU1851D1FT	3000/Tape & Reel	7 inch

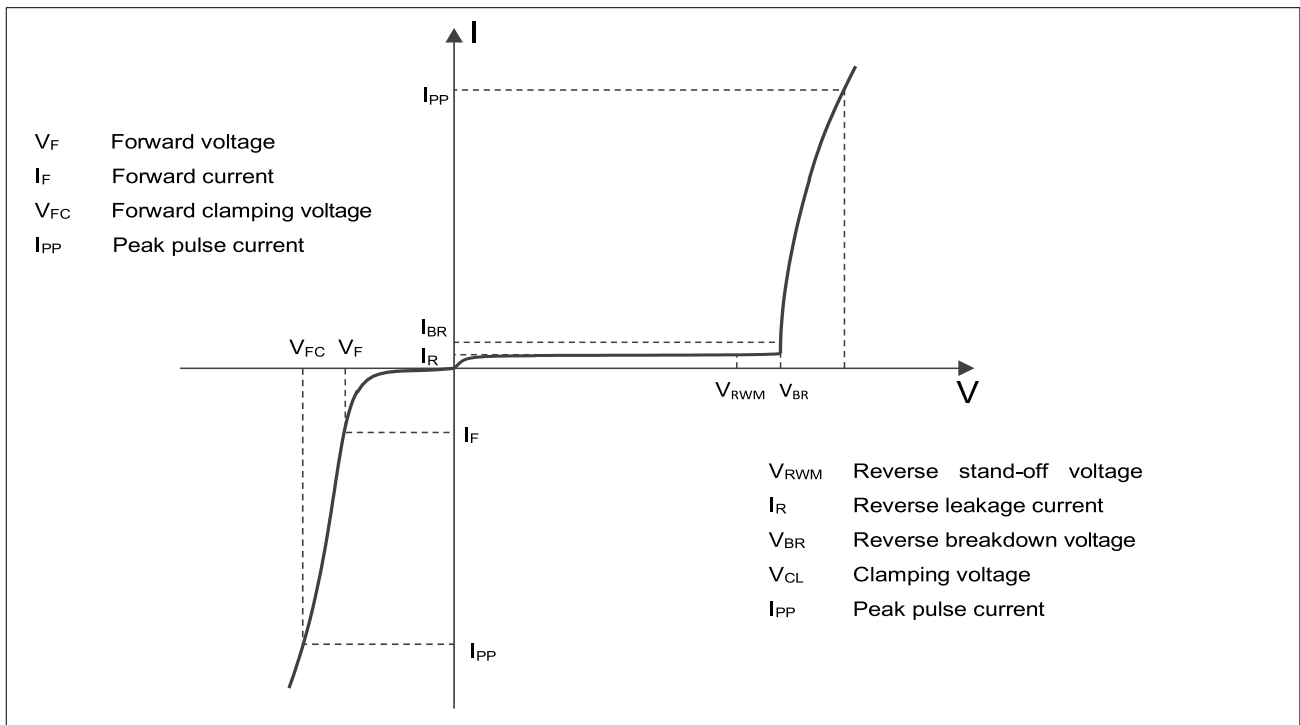
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P_{PK}	4800	W
Peak Pulse Current (8/20 μs)	I_{PP}	120	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}	$-40 \sim +125$	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	$-55 \sim +150$	$^{\circ}\text{C}$

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

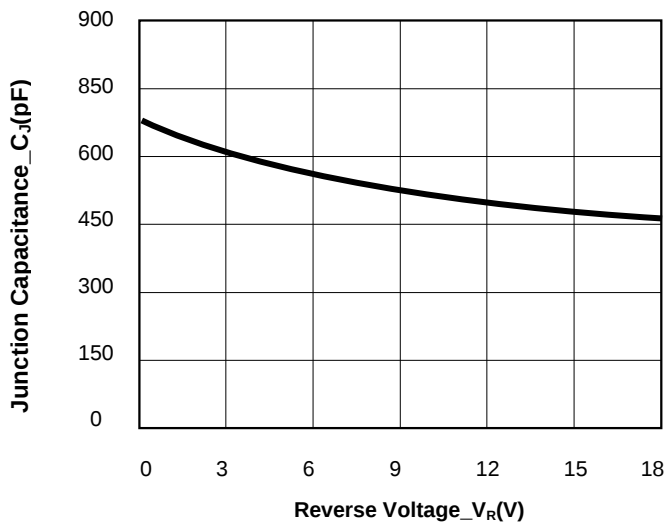
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			18	V	
Breakdown Voltage	V_{BR}	18.5			V	$I_T = 1\text{mA}$
Reverse Leakage Current	I_R			1	μA	$V_{RWM} = 18\text{V}$
Clamping Voltage	V_C			27	V	$I_{PP} = 20\text{A}$ (8/20 μs pulse)
Clamping Voltage	V_C			41	V	$I_{PP} = 120\text{A}$ (8/20 μs pulse)
Junction Capacitance	C_J		750		pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$

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

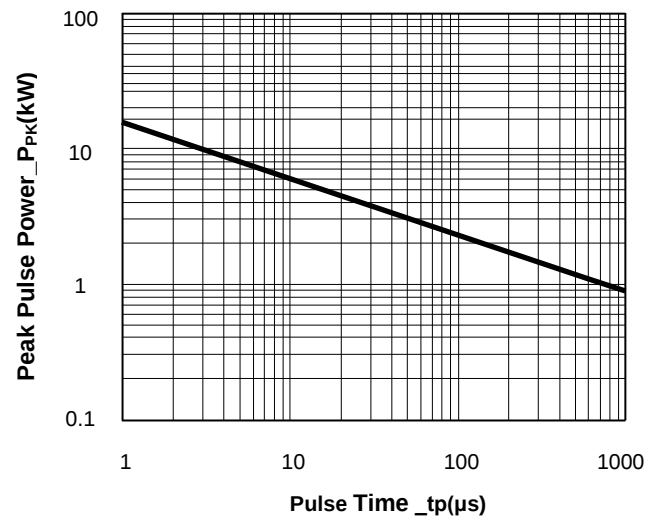


Definitions of electrical characteristics

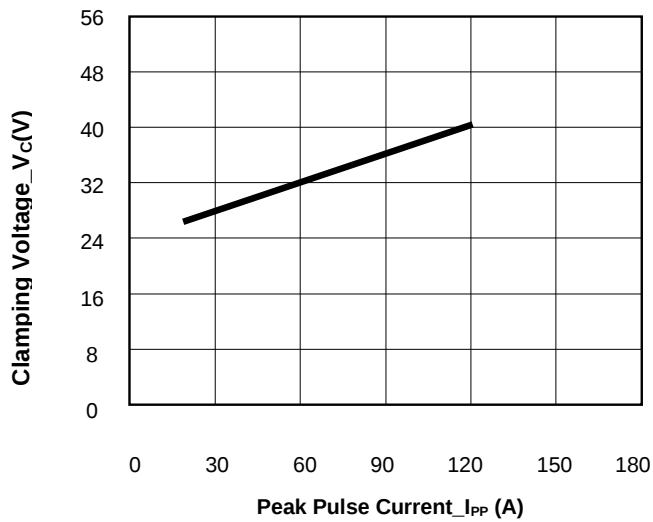
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



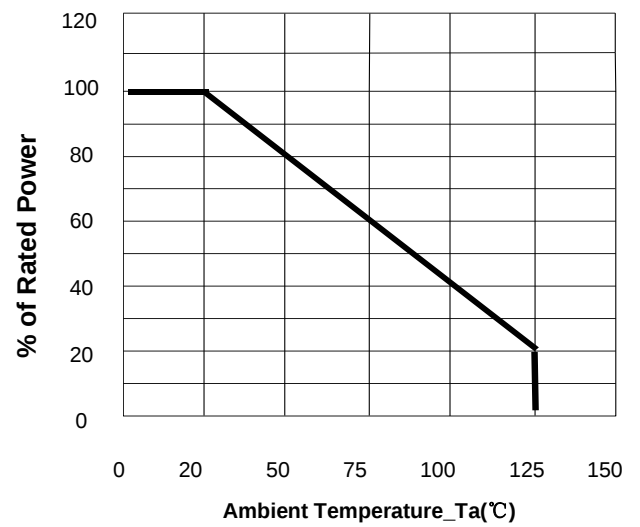
Junction Capacitance vs. Reverse Voltage



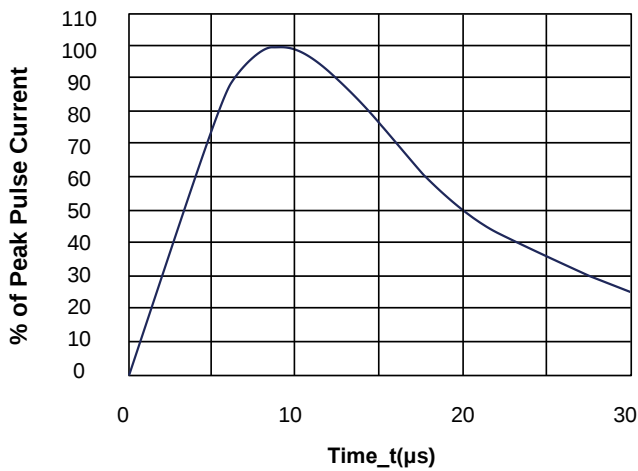
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current

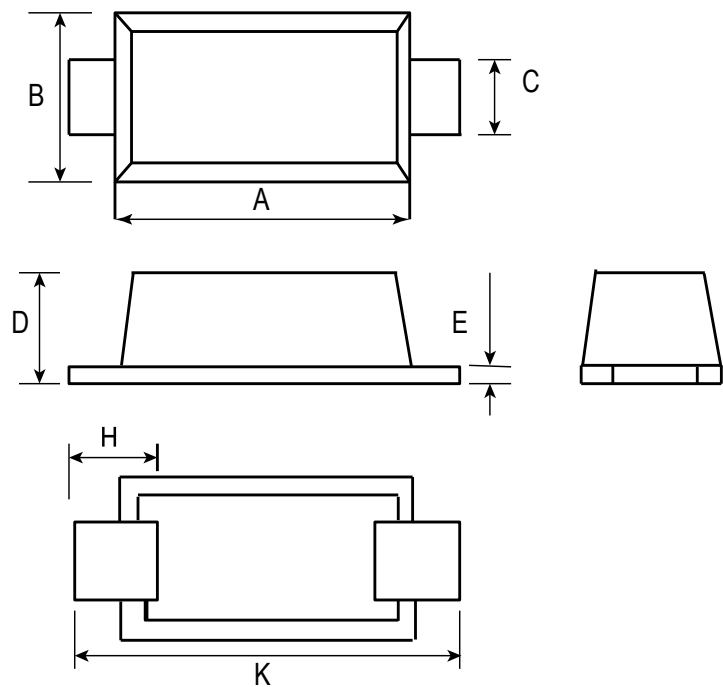


Power Derating Curve



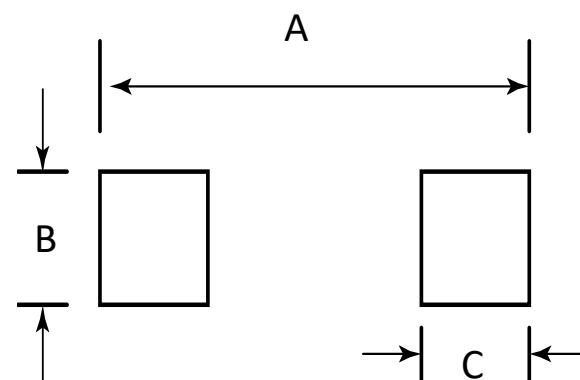
8/20 μs Pulse Waveform

SOD-123FL Package Outline Drawing



DIM	Millimeters		
	Min	Nom	Max
A	2.70	2.80	2.90
B	1.80	1.90	2.00
C	0.80	1.00	1.20
D			1.03
E	0.10	0.20	0.30
H	0.35		0.85
K	3.50		3.90

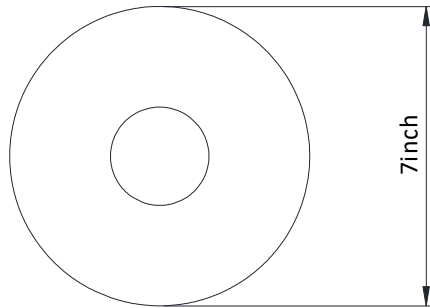
Suggested Land Pattern



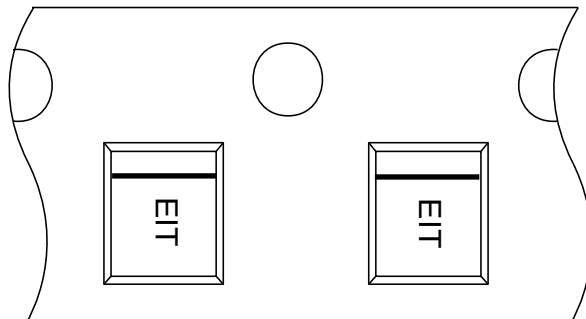
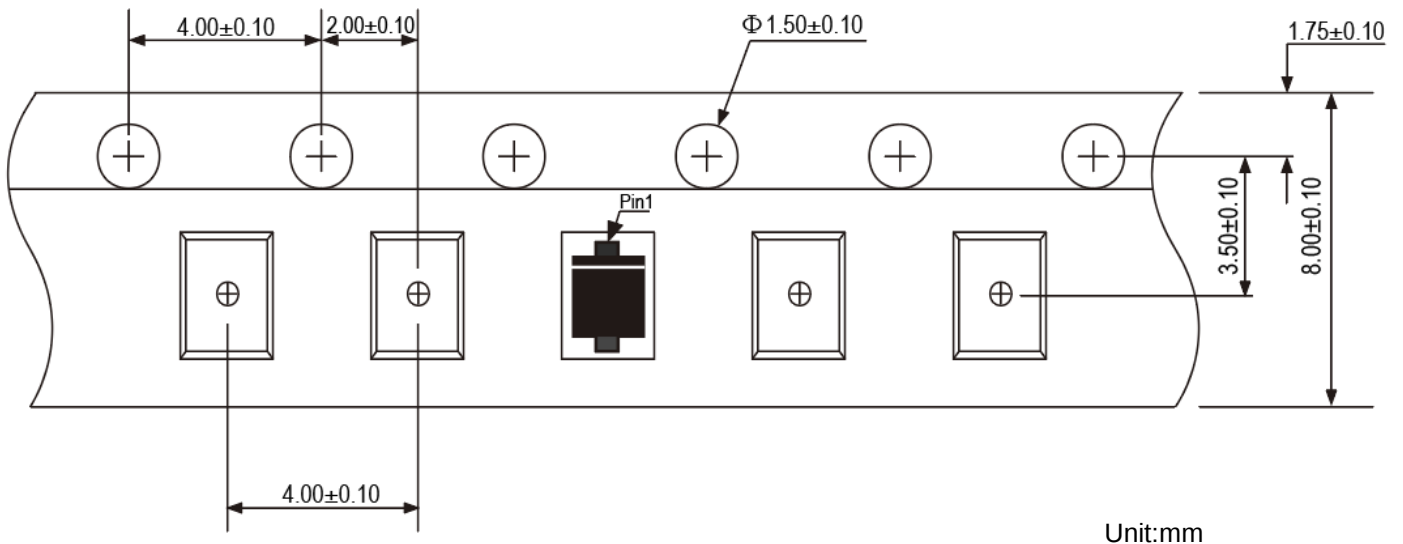
SYM	DIMENSIONS	
	MILLIMETERS	INCHES
A	4.19	0.165
B	1.20	0.048
C	0.90	0.036

TAPE AND REEL INFORMATION

Reel Dimensions



Tape Dimensions



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