

**1-Line Uni-directional TVS Diode**

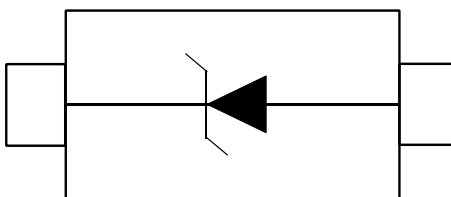
**Description**

The PESDU1571D3 is an Uni-directional high power 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 line. The PESDU1571D3 complies with the IEC 61000-4-2 (ESD) with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge. It is assembled into an ultra-small lead -free SOD-323 package. The small size and high ESD protection make PESDU1571D3 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

**Features**

- Small SOD-323 package
- Protects one data or power line
- Operating Voltage: 15V
- High peak pulse current capability
- 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) 60A (8/20 $\mu\text{s}$ )
- RoHS Compliant

**Dimensions and Pin Configuration**



**SOD-323 (Top View)**

Circuit Schematic

**Mechanical Characteristics**

- Package: SOD-323
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 1 per J-STD-020
- Marking Information: See Below

**Applications**

- Mobile Phones and Accessories
- Battery Protection
- Power Supply Protection
- Hand Held Portable Applications
- Peripherals

**Marking Information**



**57D** = Device Marking Code  
Bar denotes cathode

**Ordering Information**

Part Number	Shipping	Reel Size
PESDU1571D3	3000/Tape & Reel	7 inch

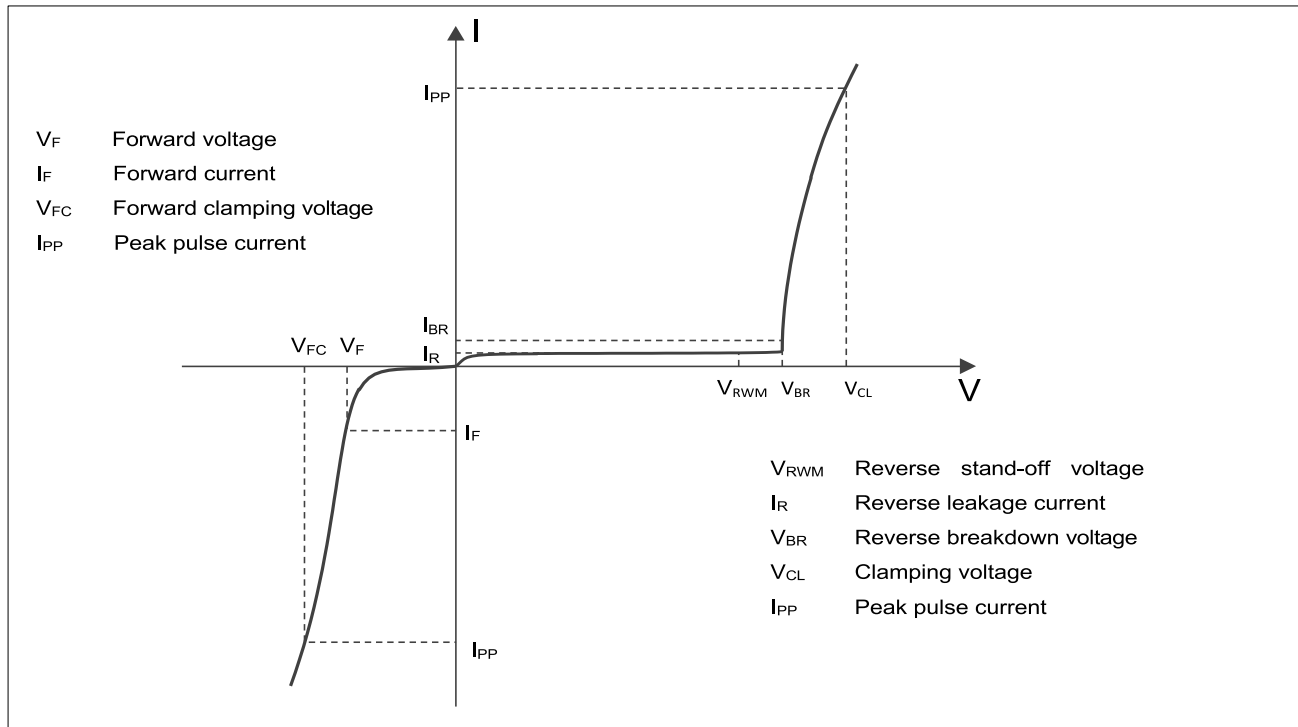
**Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P <sub>PK</sub>	1890	W
Peak Pulse Current (8/20μs)	I <sub>PP</sub>	60	A
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	±30	kV
ESD per IEC 61000-4-2 (Contact)		±30	
Lead temperature	T <sub>L</sub>	260	°C
Operating Temperature Range	T <sub>OP</sub>	-40 ~ +85	°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ +150	°C

**Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)**

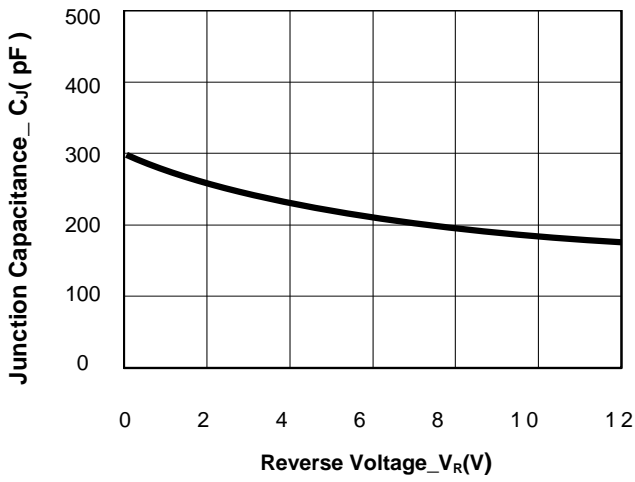
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			15	V	
Breakdown Voltage	V <sub>BR</sub>	17.8			V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			1	μA	V <sub>RWM</sub> = 15V
Clamping Voltage	V <sub>C</sub>			21.5	V	I <sub>PP</sub> = 10A (8/20μs pulse)
Clamping Voltage	V <sub>C</sub>			31.5	V	I <sub>PP</sub> = 60A (8/20μs pulse)
Junction Capacitance	C <sub>J</sub>		300		pF	V <sub>R</sub> = 0V, f = 1MHz

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

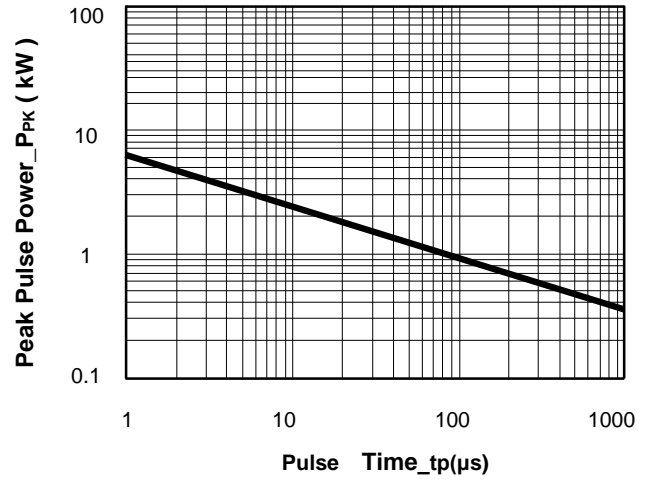


Definitions of electrical characteristics

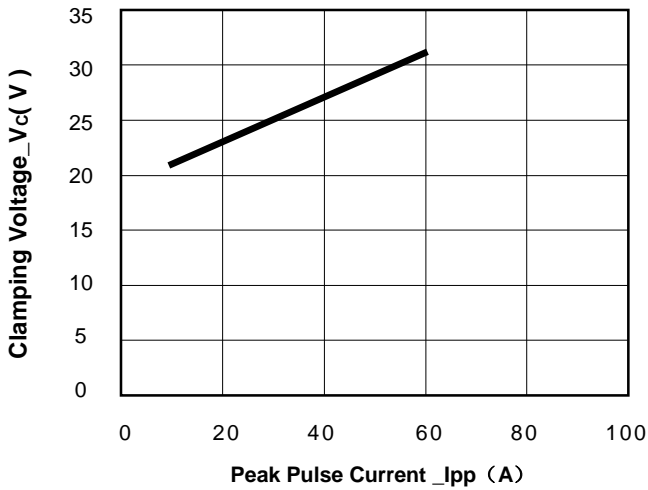
**Typical Performance Characteristics (T<sub>A</sub>=25°C unless otherwise Specified)**



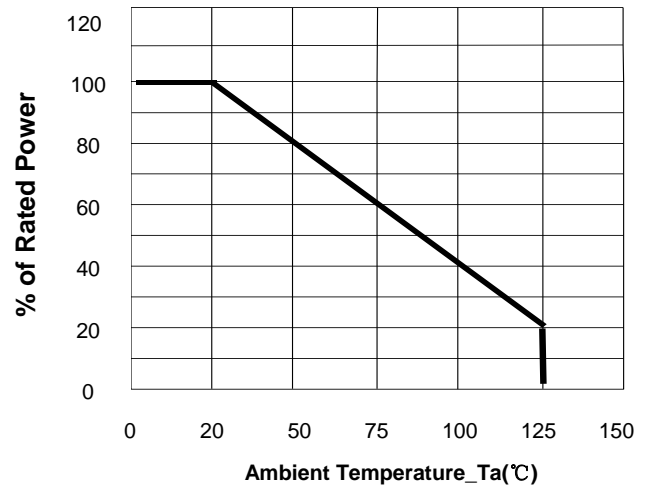
**Junction Capacitance vs. Reverse Voltage**



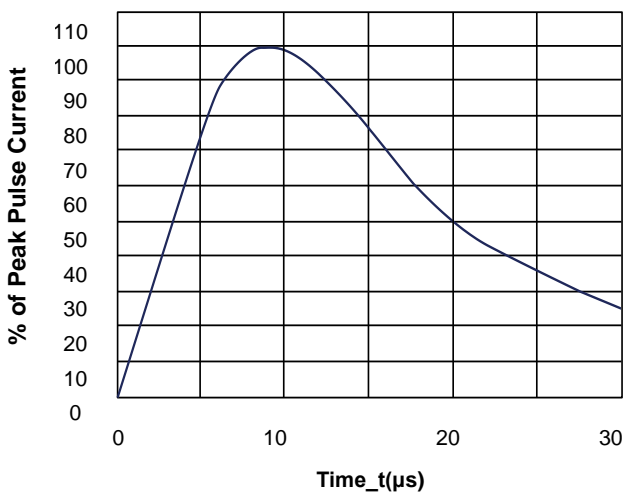
**Peak Pulse Power vs. Pulse Time**



**Clamping Voltage vs. Peak Pulse Current**

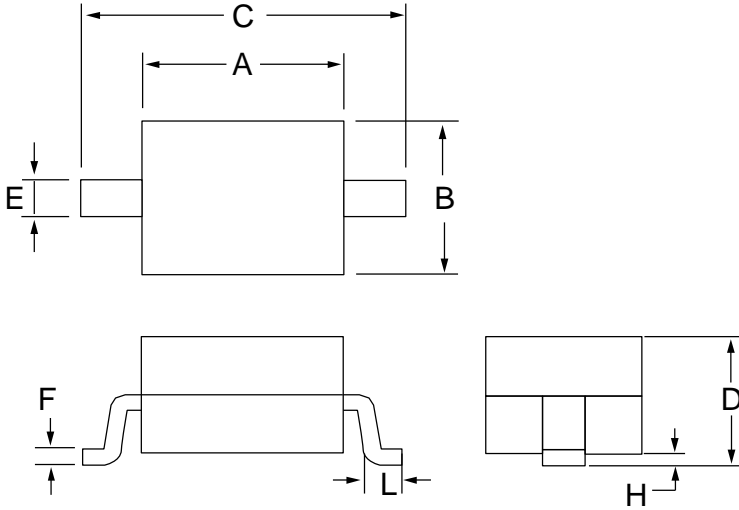


**Power Derating Curve**



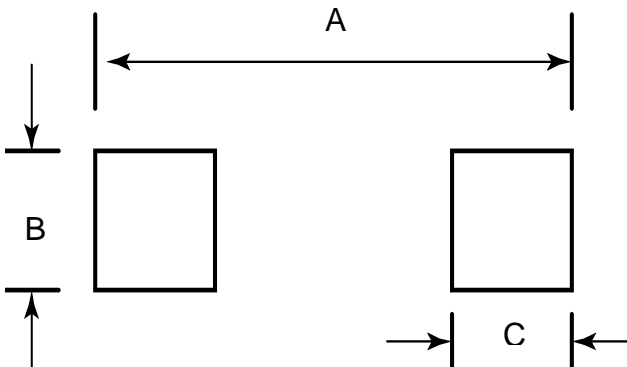
**8/20μs Pulse Waveform**

**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

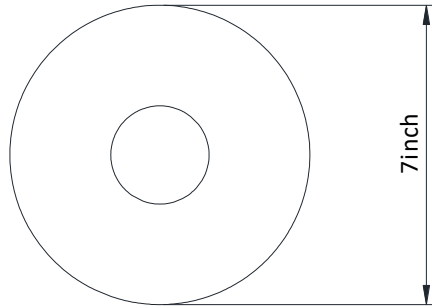
**Suggested Land Pattern**



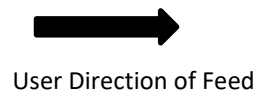
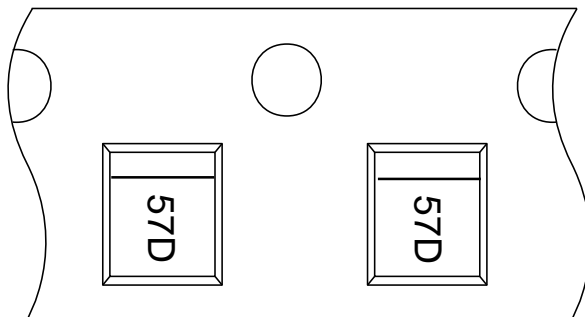
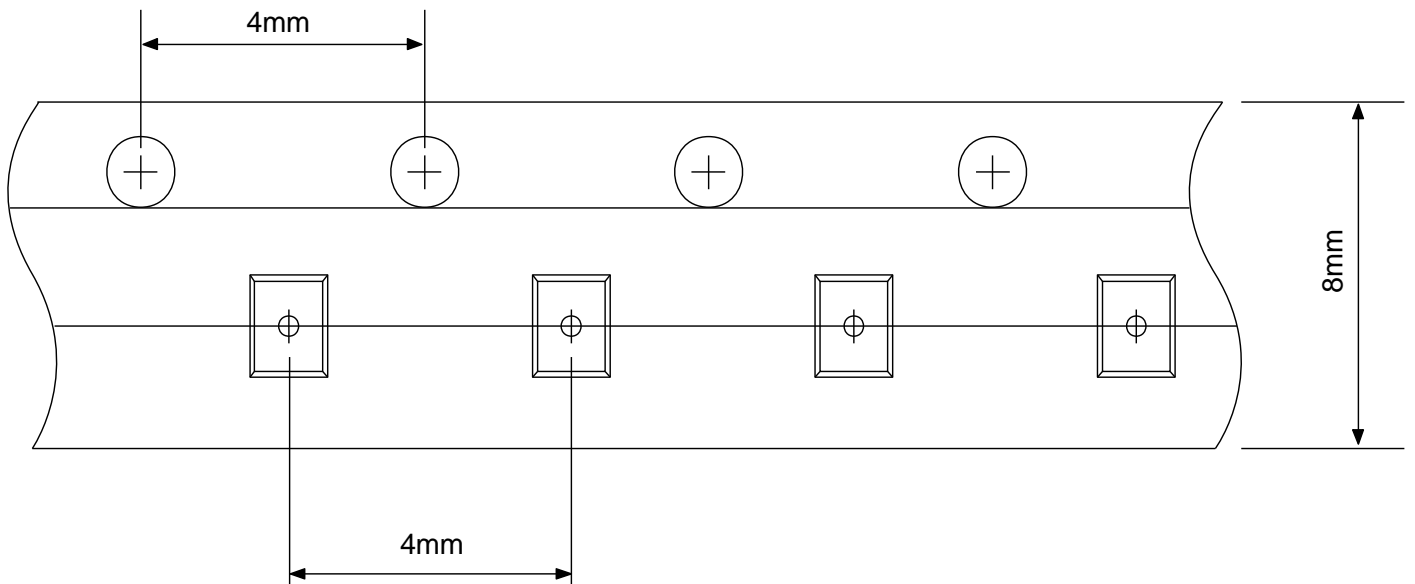
SYM	DIMENSIONS	
	MILLIMETERS	INCHES
A	3.15	0.120
B	0.80	0.031
C	0.80	0.031

**TAPE AND REEL INFORMATION**

Reel Dimensions




Tape Dimensions



## IMPORTANT NOTICE

The information given in this document is believed to be accurate and reliable but shall in no event be regarded as a guarantee of conditions or characteristics. PN-Silicon assumes no responsibility for any errors in this document, or for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of PN-Silicon.

The product listed in this document are designed to be used with ordinary electronic equipment or devices and are not authorized to used with equipment or devices which require an extremely high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, aerospace machinery, nuclear-reactor controllers, automotive and other safety device.)

The  logo is a registered trademark of PN-Silicon co., ltd which reserves the right to make changes to the product or this document at any time without notice. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. PN-Silicon makes no warranty, representation or guarantee, express or implied, regarding the suitability of its products for any particular purpose. All rights reserved.