

## 1-Line Bi-directional TVS Diode

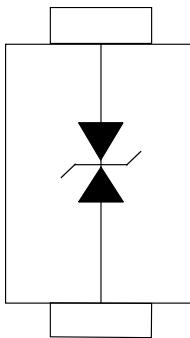
### Description

The PESDU2481D1F is a bi-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 PESDU2481D1F 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 a SOD-123FL lead-free package. The small size and high ESD/surge protection make PESDU2481D1F an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

### Features

- Protects one data or power line
- Operating voltage: 24V
- 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) 200A (8/20 $\mu\text{s}$ )
- RoHS Compliant

### Pin Configuration



Circuit and Pin Schematic

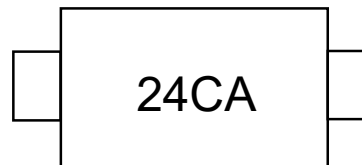
### Mechanical Characteristics

- 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



24CA = Device Marking Code

### Ordering Information

Part Number	Shipping	Real Size
PESDU2481D1F	3000/Tape & Reel	7 inch

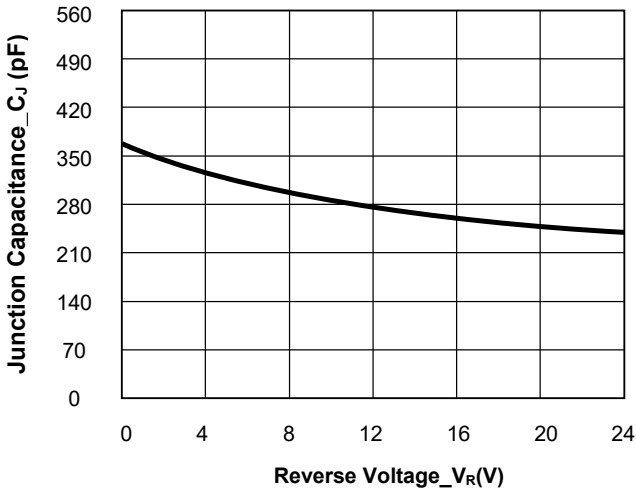
**Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P <sub>PK</sub>	7000	W
Peak Pulse Current (8/20μs)	I <sub>PP</sub>	200	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V <sub>ESD</sub>	±30 ±30	kV
Operating Temperature Range	T <sub>OP</sub>	-55 to +125	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C

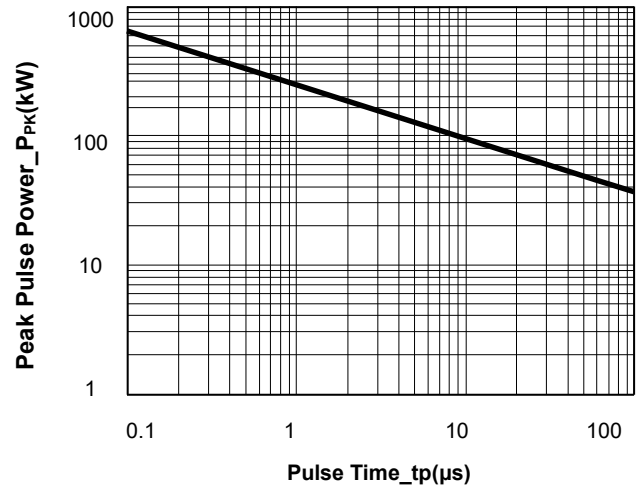
**Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			24	V	
Breakdown Voltage	V <sub>BR</sub>	25			V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			1.0	μA	V <sub>RWM</sub> = 24V
Clamping Voltage	V <sub>C</sub>			30	V	I <sub>PP</sub> = 150A (8/20μs pulse)
Clamping Voltage	V <sub>C</sub>			35	V	I <sub>PP</sub> = 200A (8/20μs pulse)
Junction Capacitance	C <sub>J</sub>		370		pF	V <sub>R</sub> = 0V, f = 1MHz

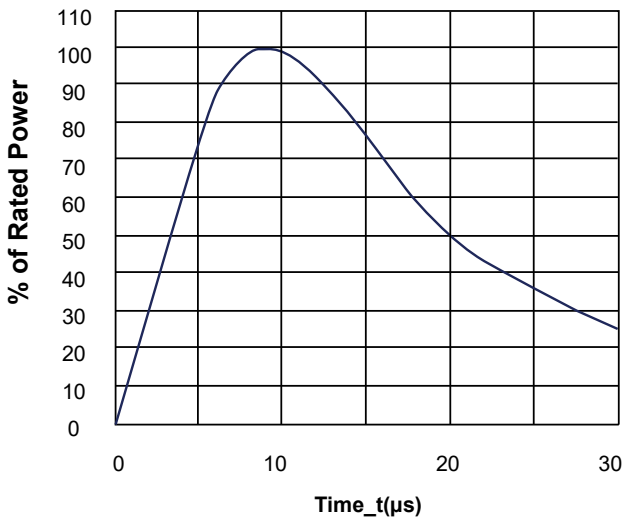
**Typical Performance Characteristics (T<sub>A</sub>=25°C unless otherwise Specified)**



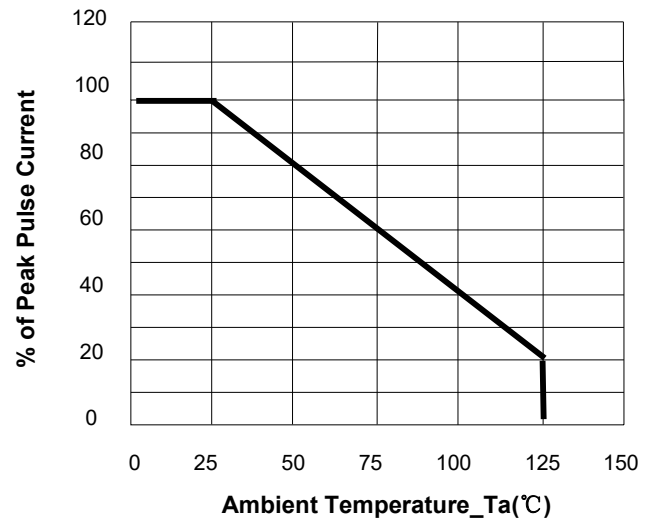
**Junction Capacitance vs. Reverse Voltage**



**Peak Puls ePower vs. Pulse Time**

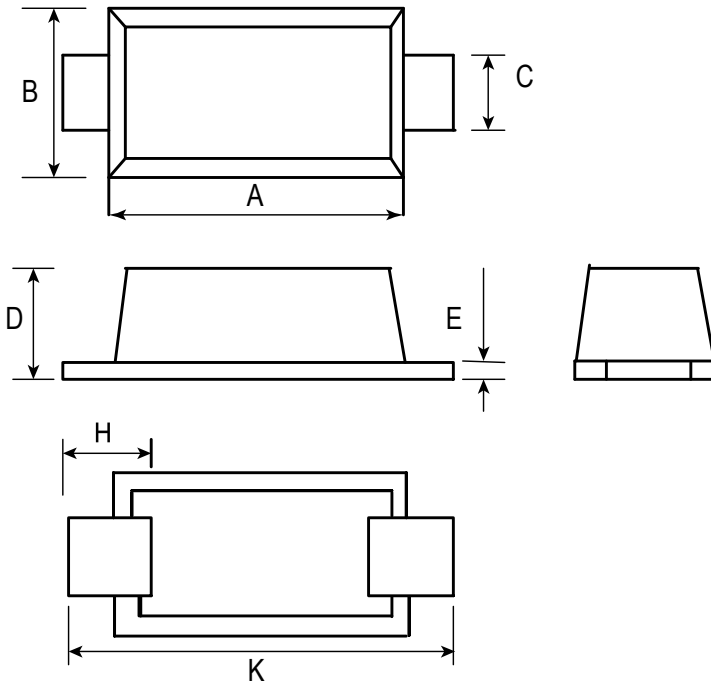


**8/20μs Pulse Waveform**



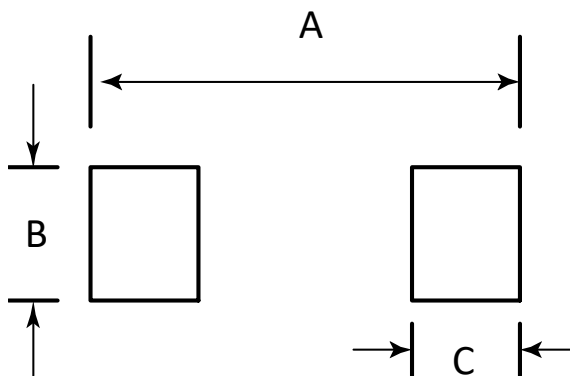
**Power Derating Curve**

**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

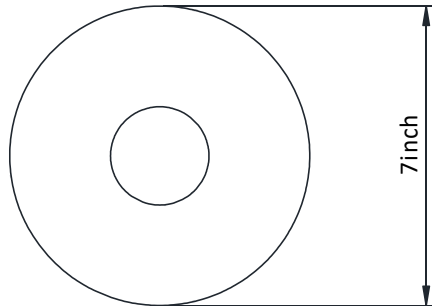
**Suggested Land Pattern**



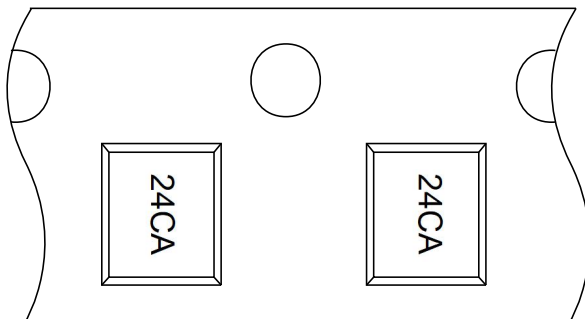
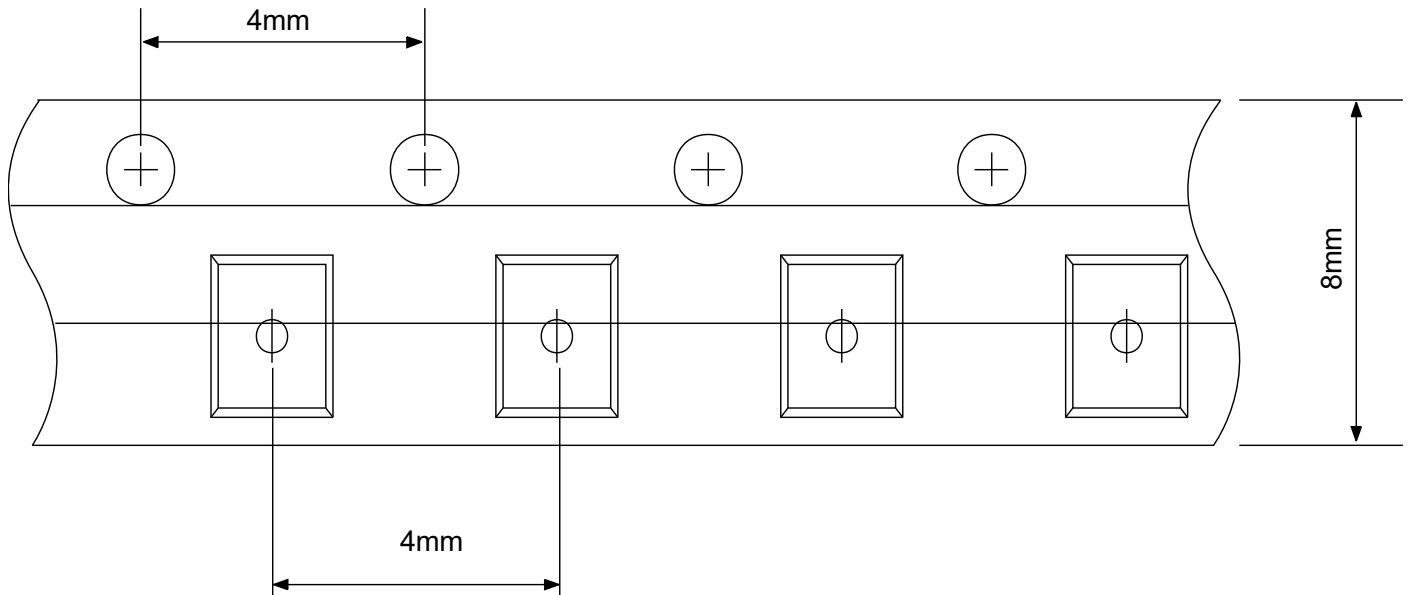
SYM	DIMENSIONS	
	MILLIMETERS	INCHES
A	4.19	0.165
B	1.20	0.048
C	0.90	0.036

**TAPE AND REEL INFORMATION**

Reel Dimensions



Tape Dimensions



User Direction of Feed

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