

**1-Line Bi-directional TVS Diode**

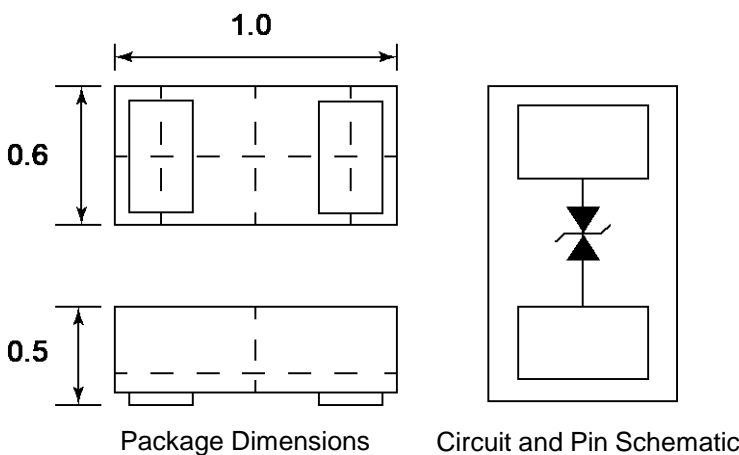
**Description**

PESDU3311P1A is a bi-directional TVS (Transient Voltage Suppressor). It has been specifically designed to protect sensitive electronic components which are connected to low speed data lines and control lines from over-stress caused by ESD (Electrostatic Discharge) and Lightning. PESDU3311P1A may be used to provide ESD protection up to  $\pm 30\text{KV}$  (air and contact discharge) according to IEC61000- 4-2, and withstand peak pulse current up to  $9\text{A}(8/20\mu\text{s})$  according to IEC61000-4-5. PESDU3311P1A is available in DFN1006-2 package. Standard products are Pb-free and Halogen-free.

**Features**

- Ultra small package: 1.0x0.6x0.5mm
- Protects one data or power line
- Low operating voltage: 3.3V
- 2-pin leadless package
- 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)  $9\text{A}(8/20\mu\text{s})$
- RoHS Compliant

**Dimensions and Pin Configuration**



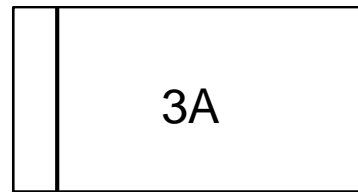
**Mechanical Characteristics**

- Package: DFN1006-2 (1.0x0.6x0.5mm)
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity: Level 1 per J-STD-020
- Marking Information: See Below

**Applications**

- Cellular Handsets and Accessories
- Tablets
- Laptops
- Other portable devices
- Network communication devices

**Marking Information**



**3A** = Device Marking Code

**Ordering Information**

Part Number	Shipping	Reel Size
PESDU3311P1A	10000/Tape & Reel	7 inch

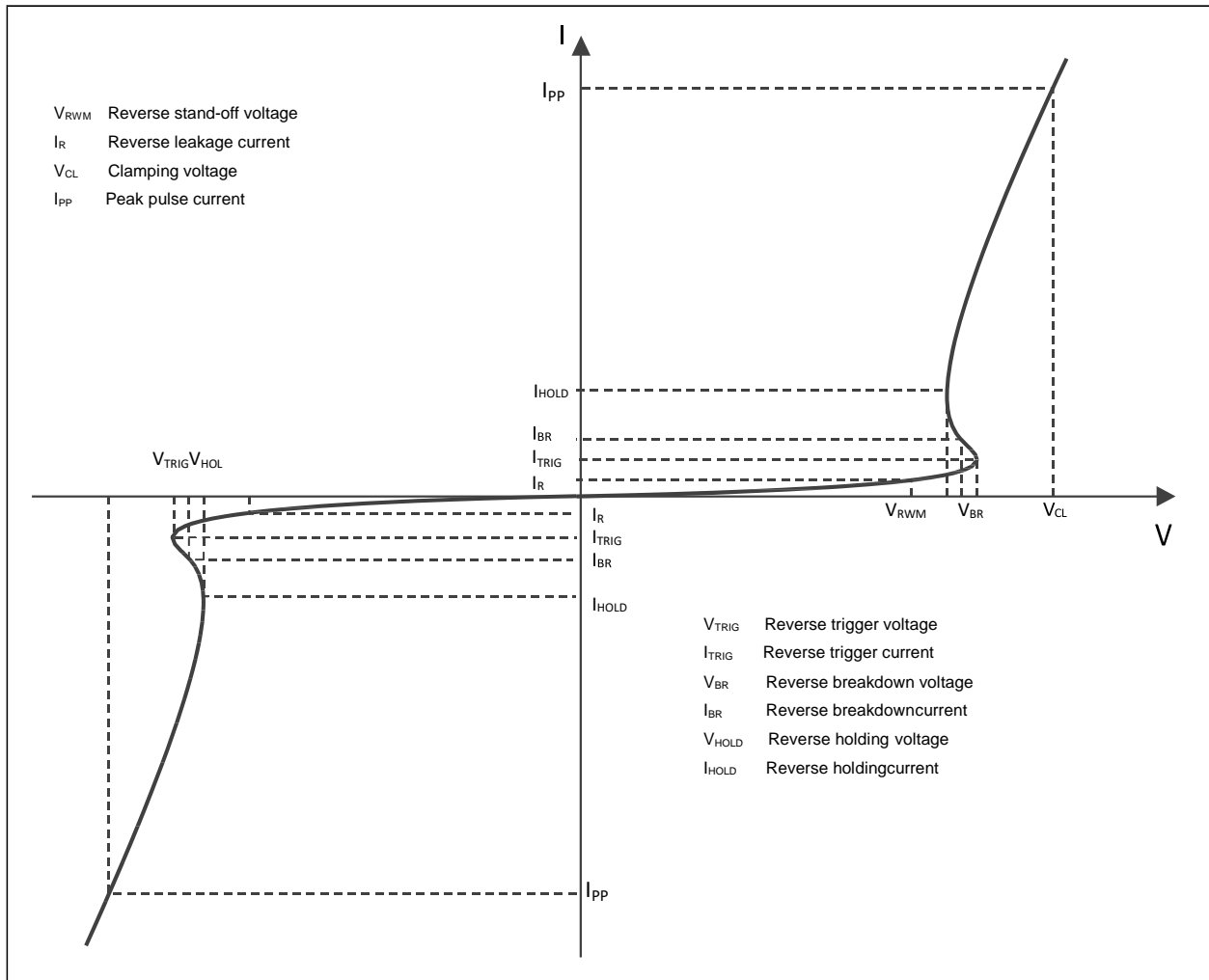
**Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P <sub>PK</sub>	90	W
Peak Pulse Current (8/20μs)	I <sub>PP</sub>	9	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)**

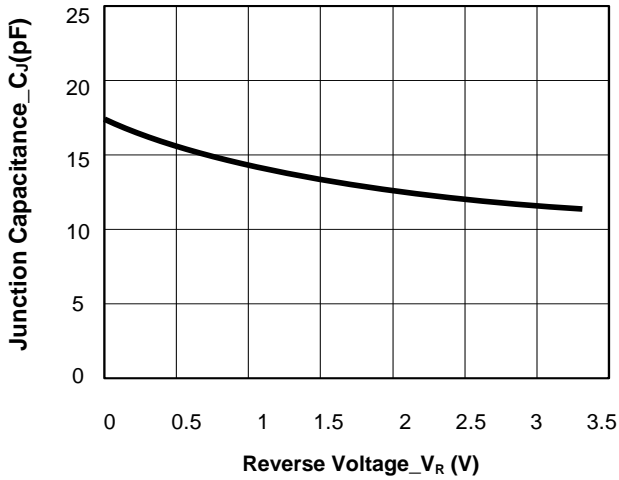
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			3.3	V	
Breakdown Voltage	V <sub>BR</sub>	3.4	4		V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			0.1	μA	V <sub>RWM</sub> = 3.3V
Clamping Voltage	V <sub>C</sub>			6	V	I <sub>PP</sub> = 1A (8/20μs pulse)
Clamping Voltage	V <sub>C</sub>			10	V	I <sub>PP</sub> = 9A (8/20μs pulse)
Junction Capacitance	C <sub>J</sub>		17	22	pF	V <sub>R</sub> = 0V, f = 1MHz

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

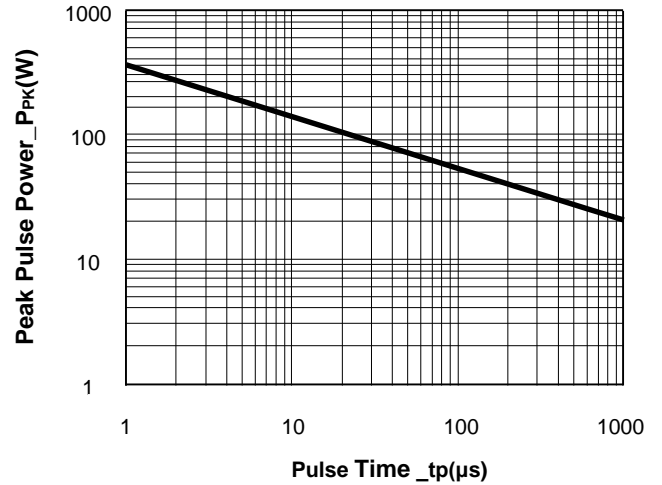


Definitions of electrical characteristics

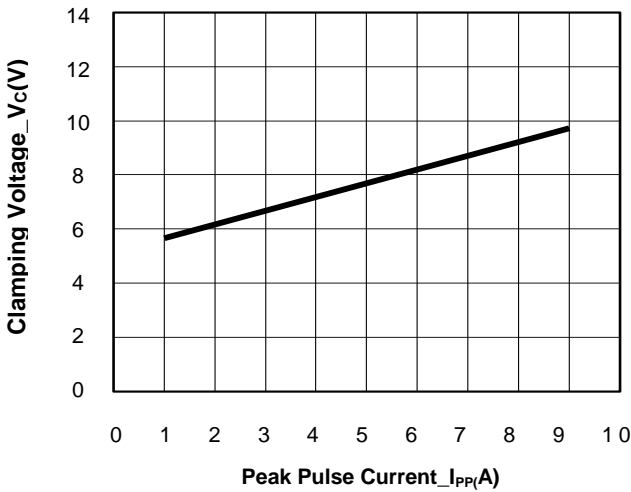
**Typical Performance Characteristics (T<sub>A</sub>=25°C unless otherwise Specified)**



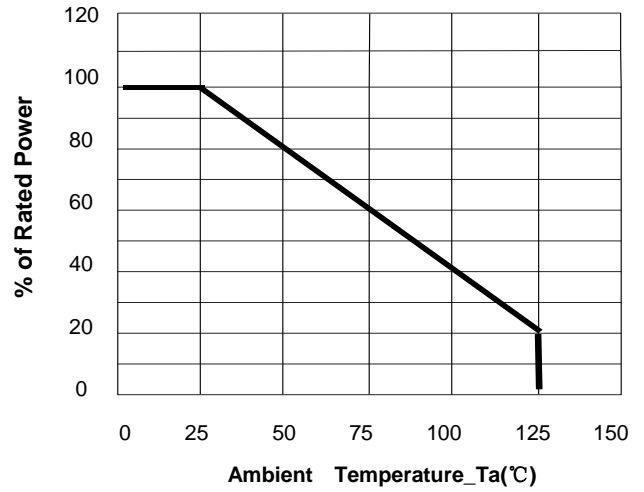
**Junction Capacitance vs. Reverse Voltage**



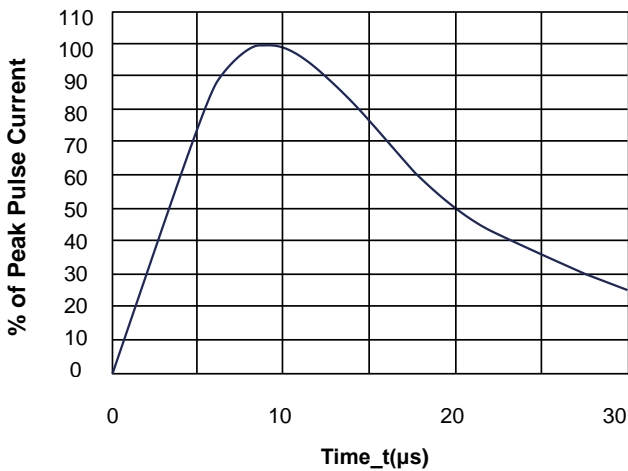
**Peak Pulse Power vs. Pulse Time**



**Clamping Voltage vs. Peak Pulse Current**

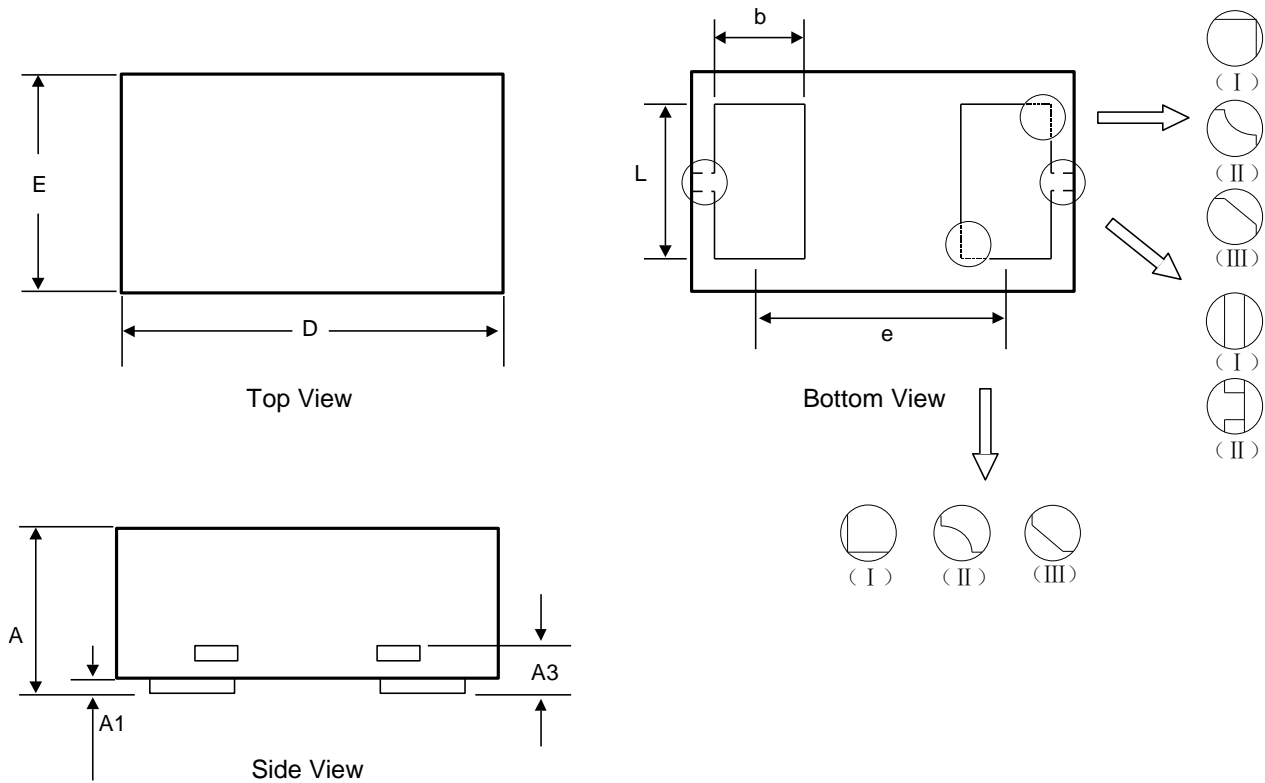


**Power Derating Curve**



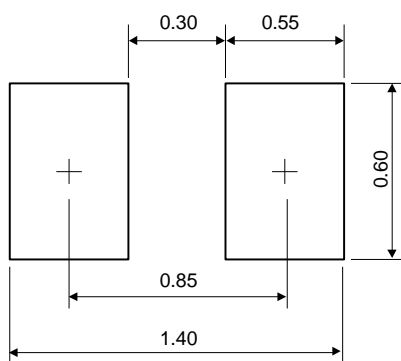
**8/20μs Pulse Waveform**

**DFN1006-2 Package Outline Drawing**



Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.340	0.450	0.550
A1	0.000	0.020	0.050
A3	0.125 Ref.		
D	0.950	1.000	1.075
E	0.490	0.600	0.675
b	0.200	0.250	0.300
L	0.450	0.500	0.550
e	0.650 BSC		

**Recommended PCB Layout (Unit: mm)**

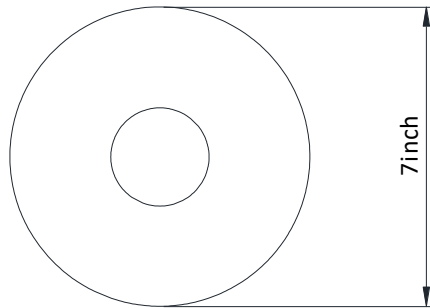


**Notes:**

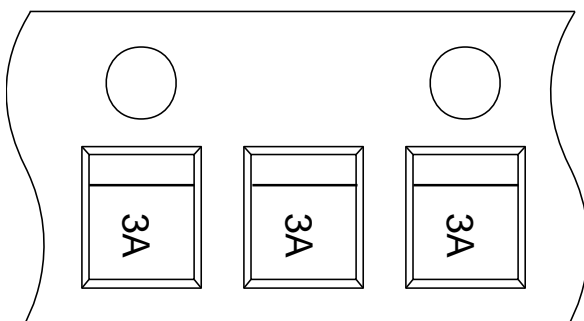
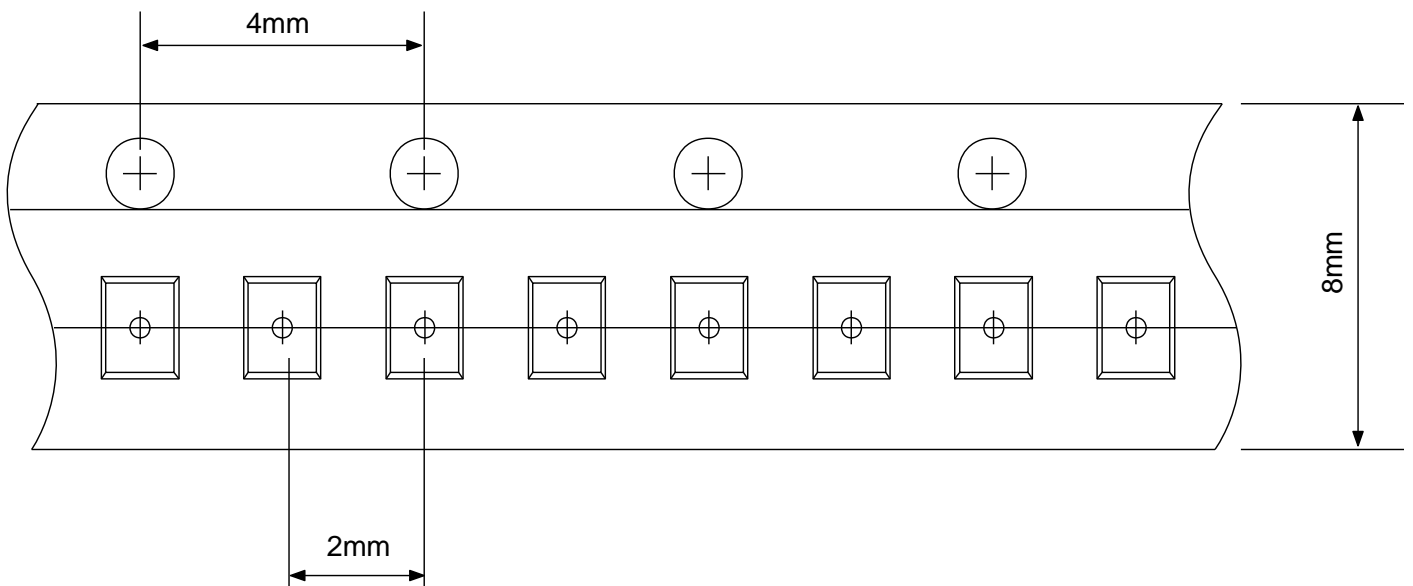
This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.

**TAPE AND REEL INFORMATION**

Reel Dimensions



Tape Dimensions



User Direction of Feed

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