

## 1-Line Bi-directional TVS Diode

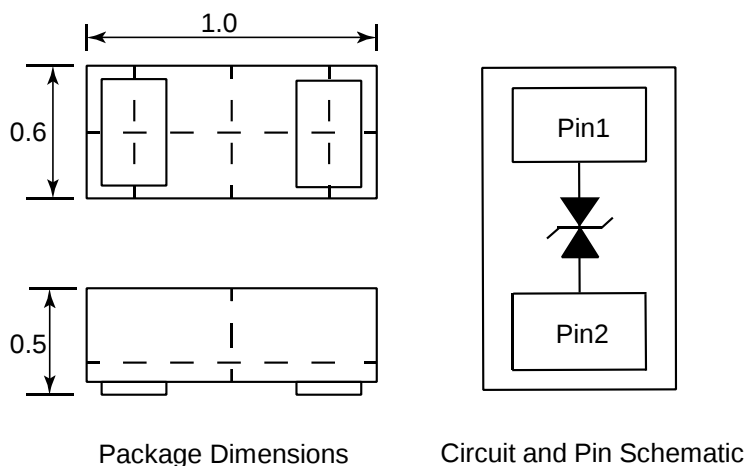
### Description

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:  $1.0 \times 0.6 \times 0.5\text{mm}$
- Protects one data or power line
- Low operating voltage:  $3.3\text{V}$
- 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



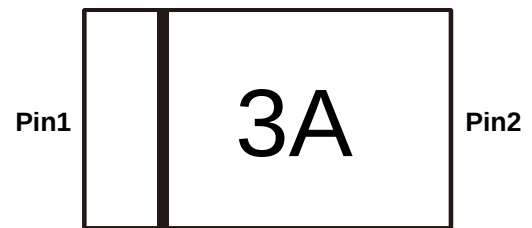
### Mechanical Characteristics

- Package: DFN1006-2 ( $1.0 \times 0.6 \times 0.5\text{mm}$ )
- 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    |

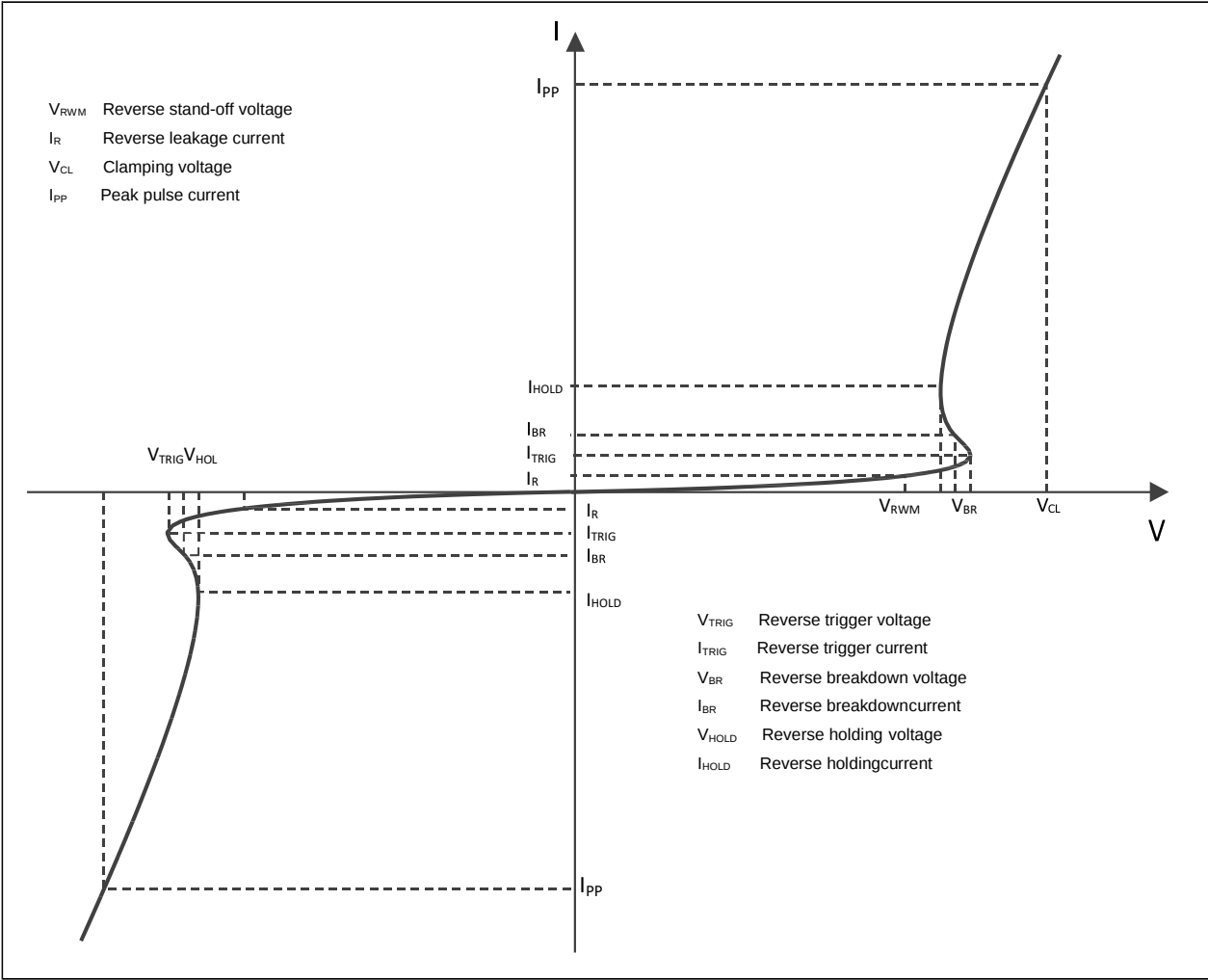
**Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)**

| 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   |
| Junction Temperature            | T <sub>J</sub>   | 125        | °C   |
| Operating Temperature Range     | T <sub>OP</sub>  | -40 ~ +125 | °C   |
| Storage Temperature Range       | T <sub>STG</sub> | -55 ~ +150 | °C   |

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

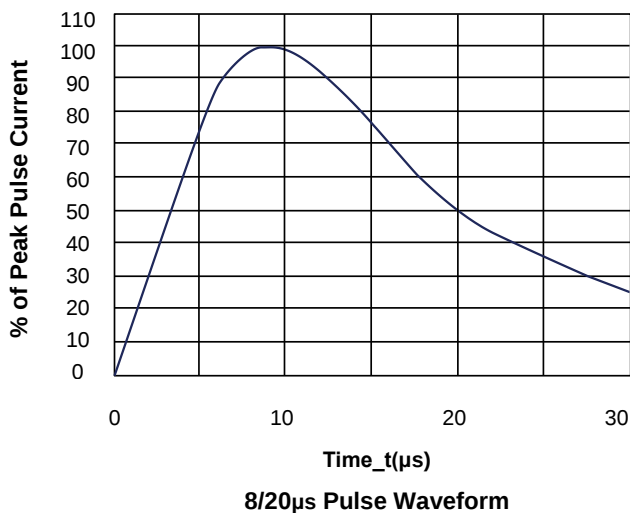
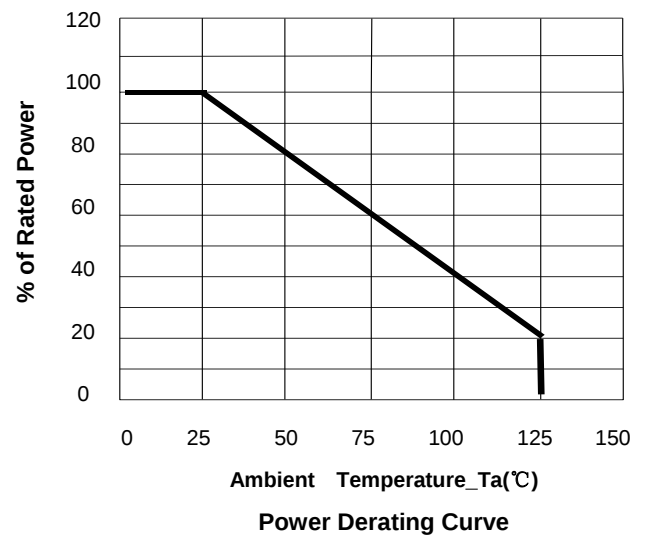
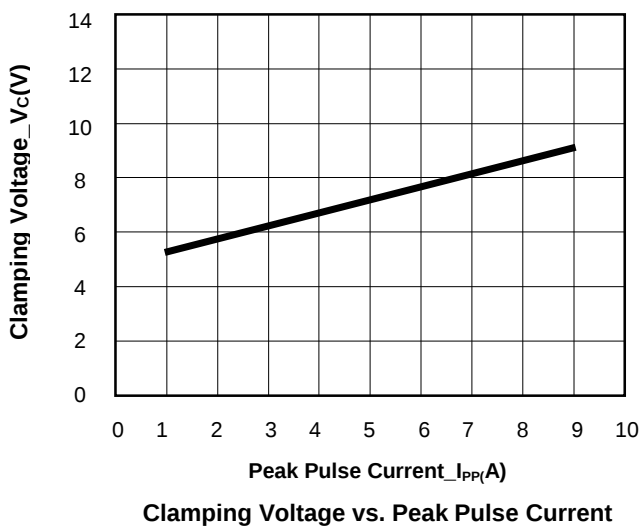
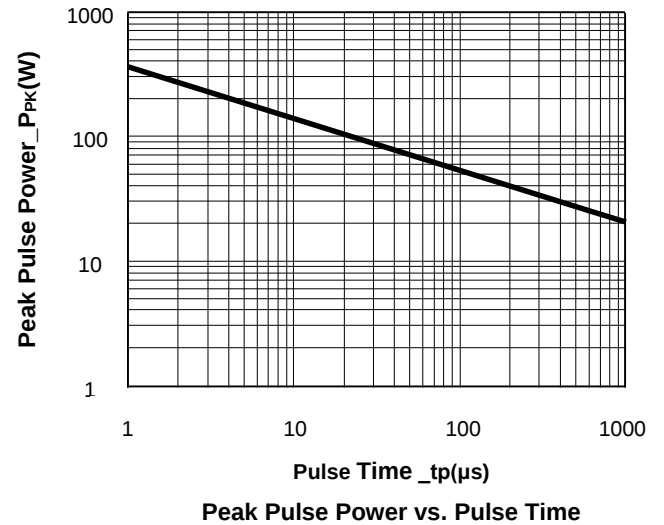
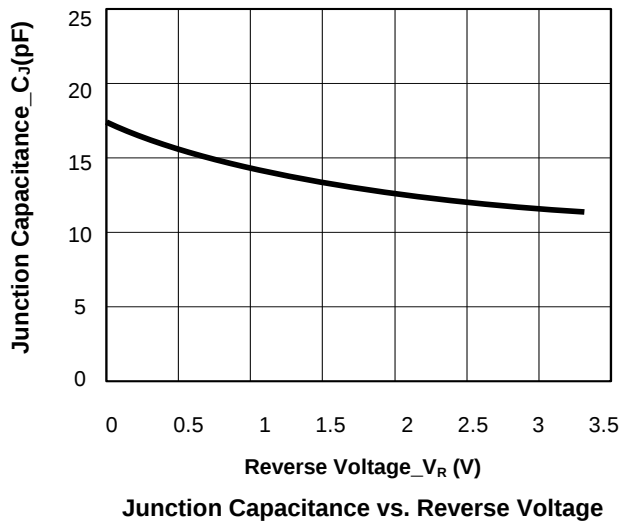
| Parameter               | Symbol           | Min. | Typ. | Max. | Unit | Test Condition                      |
|-------------------------|------------------|------|------|------|------|-------------------------------------|
| Reverse Working Voltage | V <sub>RWM</sub> |      |      | 3.3  | V    |                                     |
| 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)**

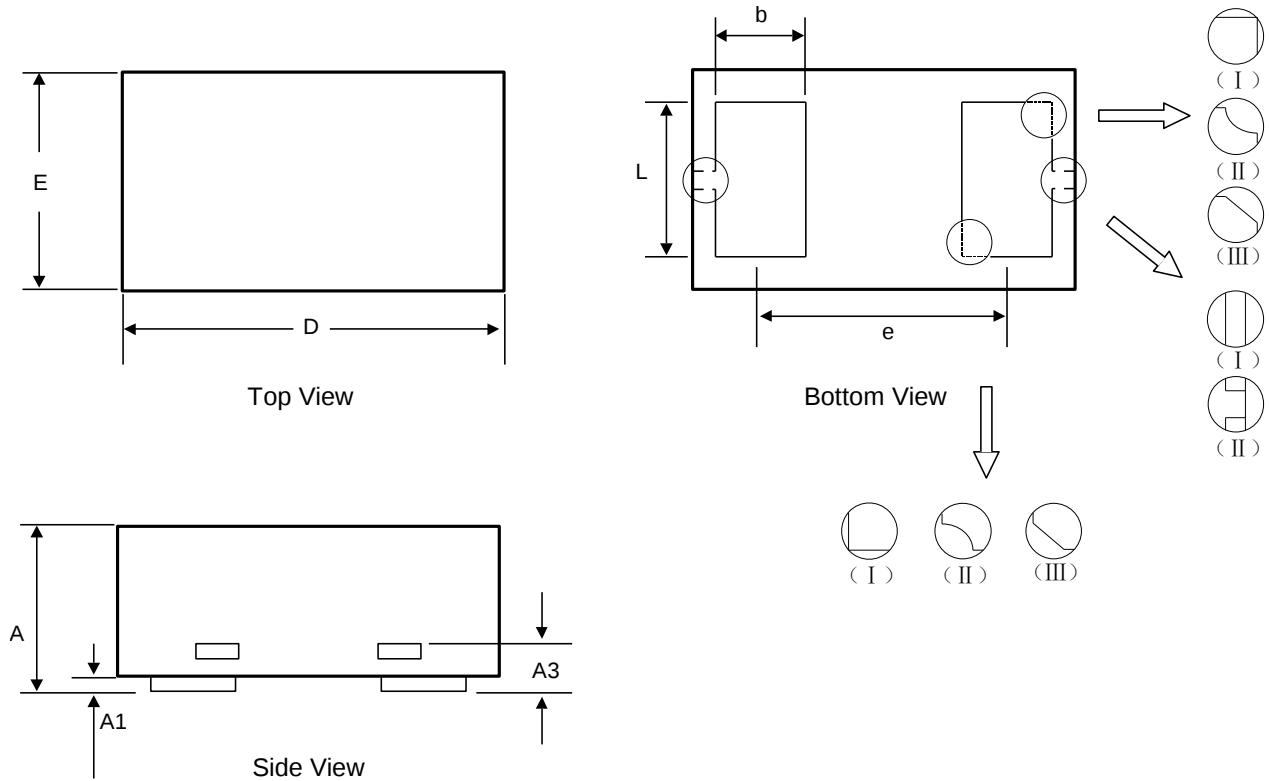


Definitions of electrical characteristics

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

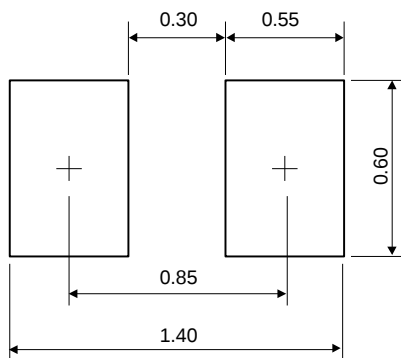


**DFN1006-2 Package Outline Drawing**



| 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)**

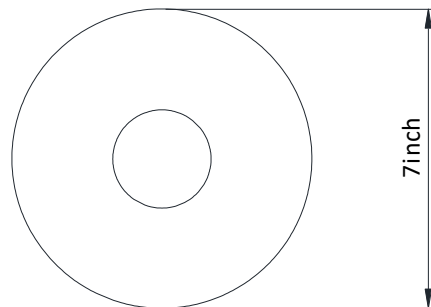


**Notes:**

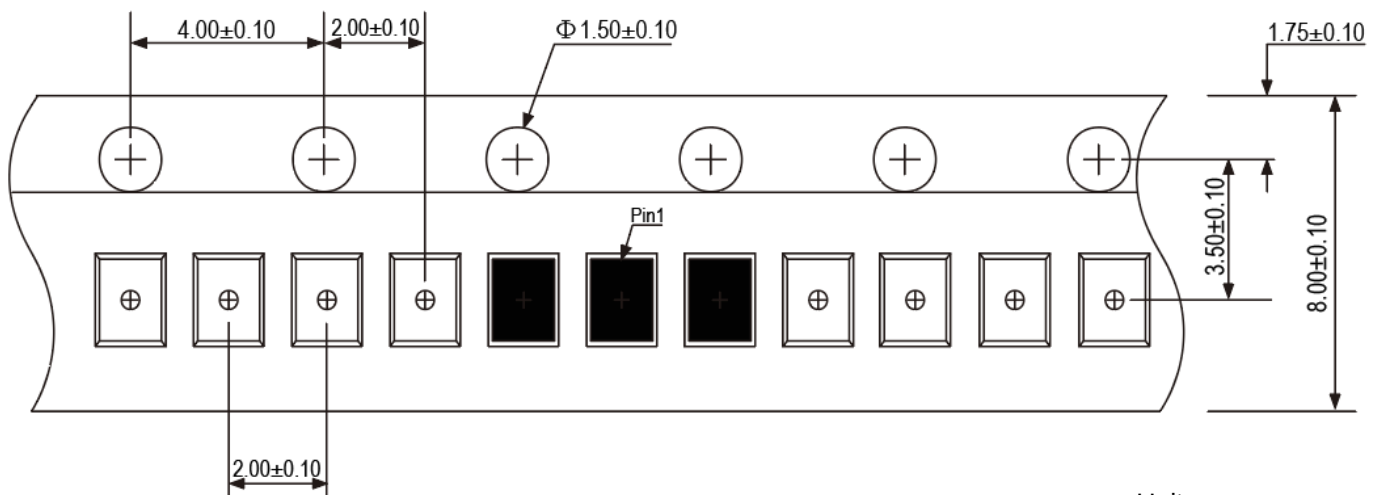
This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.

## TAPE AND REEL INFORMATION

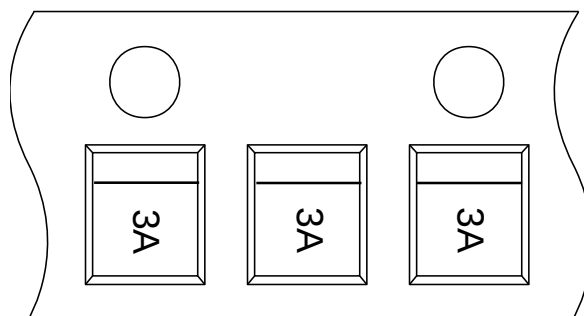
Reel Dimensions



Tape Dimensions



Unit:mm



**→**  
User Direction of Feed

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