

1-Line Bi-directional Low Capacitance TVS Diode

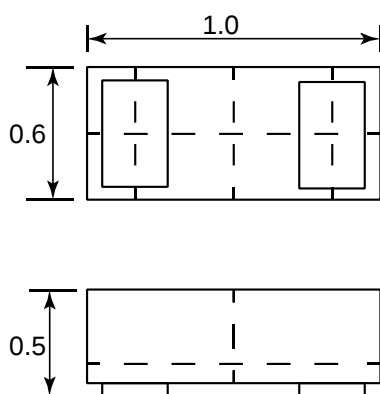
Description

The PESDU0561P1L is bi-directional TVS diode, provide fast response time, very low capacitance and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The PESDU0561P1L complies with the IEC 61000-4-2 (ESD) standard with $\pm 15\text{kV}$ air and $\pm 8\text{kV}$ contact discharge. It is assembled into an ultra-small $1.0 \times 0.6 \times 0.5\text{mm}$ lead-free DFN package. The small size and very low capacitance make PESDU0561P1L an ideal choice to protect cellphone, digital cameras, audio players, data interface and many other portable applications.

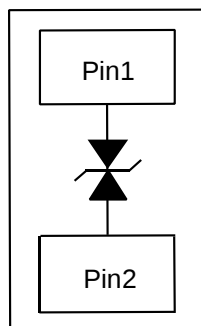
Features

- Ultrasmall package: $1.0 \times 0.6 \times 0.5\text{mm}$
- Protects one data or power line
- Very low capacitance: 2.5pF typical
- Ultralow leakage: nA level
- Low operating voltage: 5V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 15\text{kV}$
Contact discharge: $\pm 8\text{kV}$
 - IEC61000-4-5 (Lightning) 1.5A ($8/20\mu\text{s}$)
- RoHS compliant

Dimensions and Pin Configuration



Package Dimensions



Circuit and Pin Schematic

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
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

Marking Information



56 = Device Marking Code

Ordering Information

Part Number	Shipping	Reel Size
PESDU0561P1L	10000/Tape & Reel	7 inch

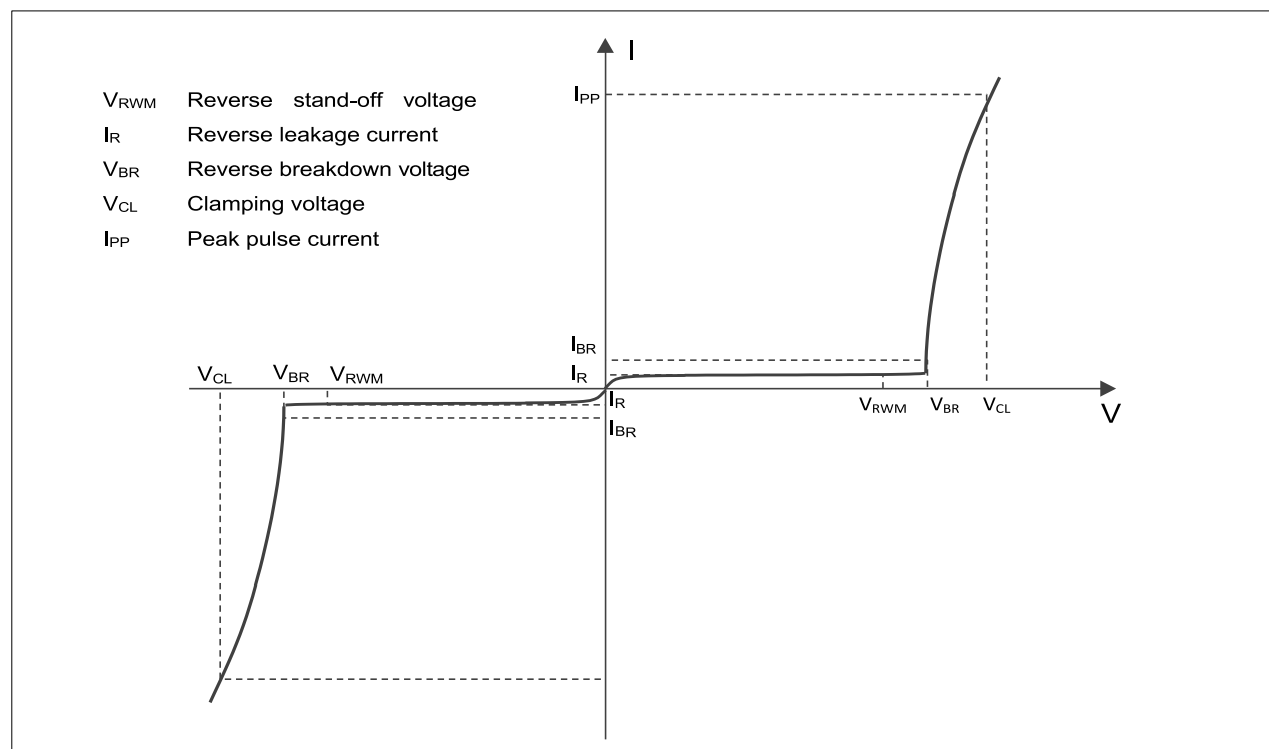
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse power(8/20 μs)	P_{PK}	20	W
Peak Pulse Current (8/20 μs)	I_{PP}	1.5	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 15	kV
ESD per IEC 61000-4-2 (Contact)		± 8	
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)

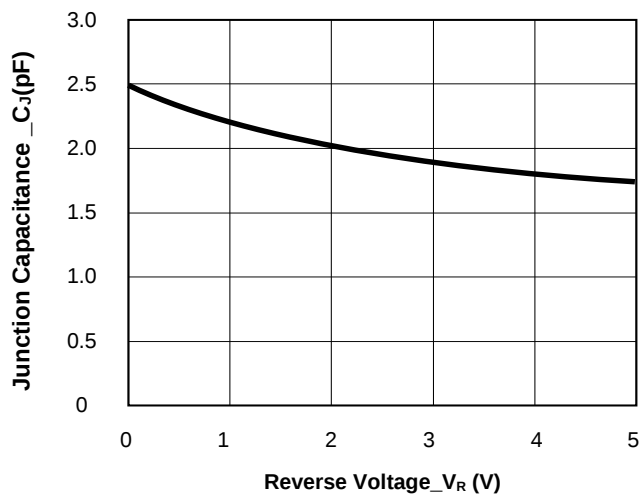
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Reverse Working Voltage	V_{RWM}		5		V	
Breakdown Voltage	V_{BR}	5.3	6		V	$I_T = 1\text{mA}$
Reverse Leakage Current	I_R			1.0	μA	$V_{RWM} = 5\text{V}$
Clamping Voltage	V_C			13.5	V	$I_{PP} = 1.5\text{A}$ (8/20 μs pulse)
Junction Capacitance	C_J		2.5		pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$

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

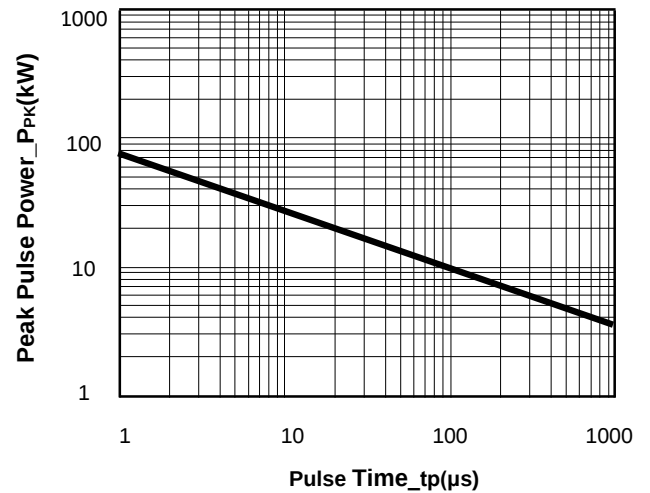


Definitions of electrical characteristics

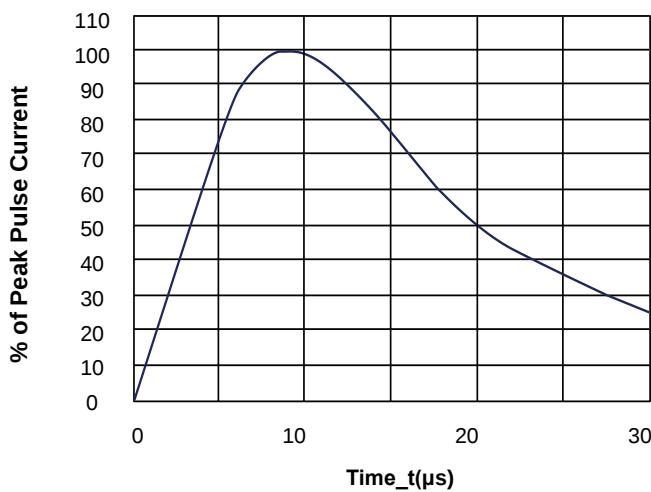
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



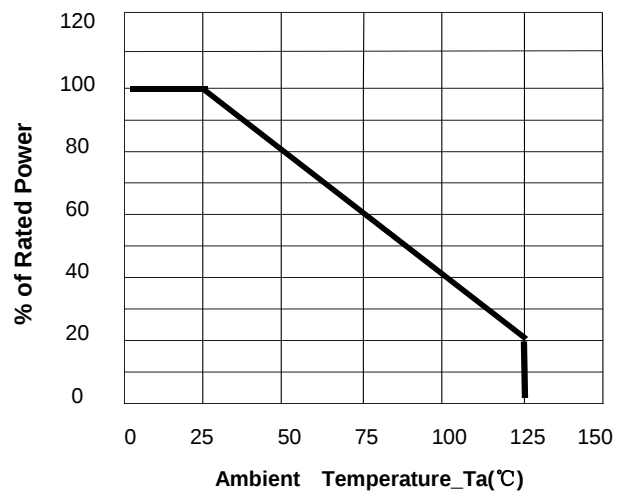
Junction Capacitance vs. Reverse Voltage



Peak Pulse Power vs. Pulse Time

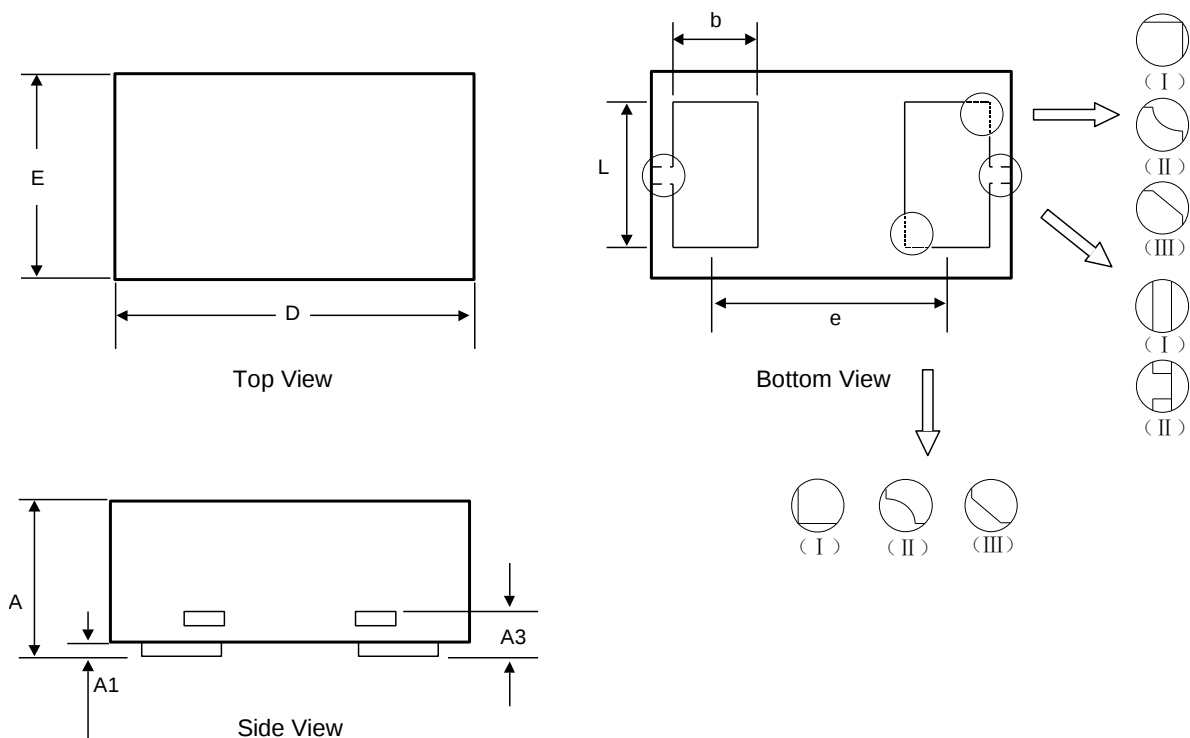


8/20 μs Pulse Waveform



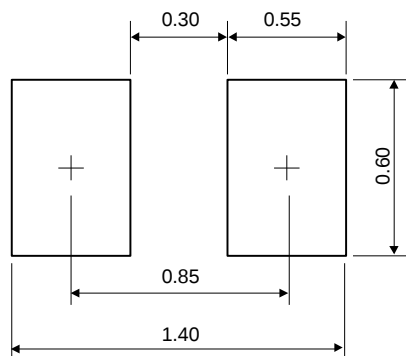
Power Derating Curve

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)

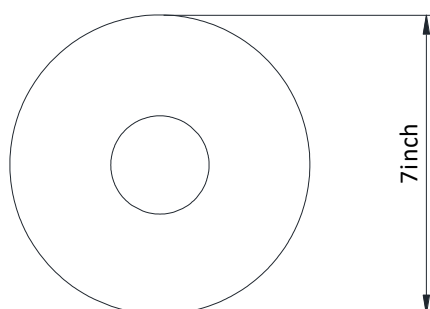


Notes:

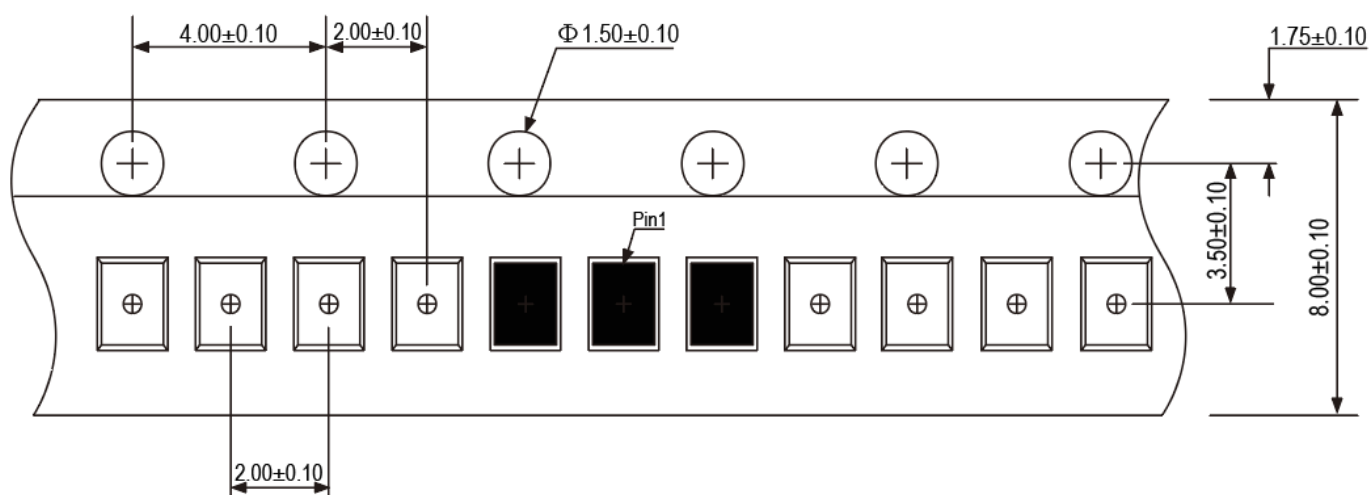
This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.

TAPE AND REEL INFORMATION

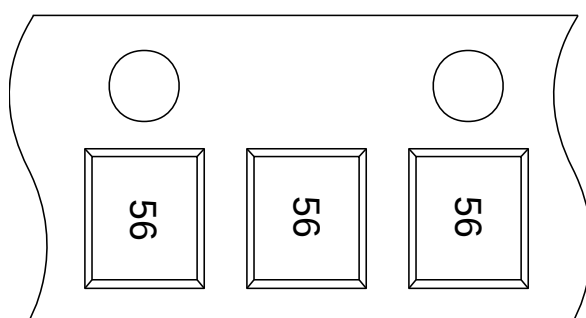
Reel Dimensions



Tape Dimensions



Unit:mm



User Direction of Feed

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