

1-Line Uni-directional TVS Diode

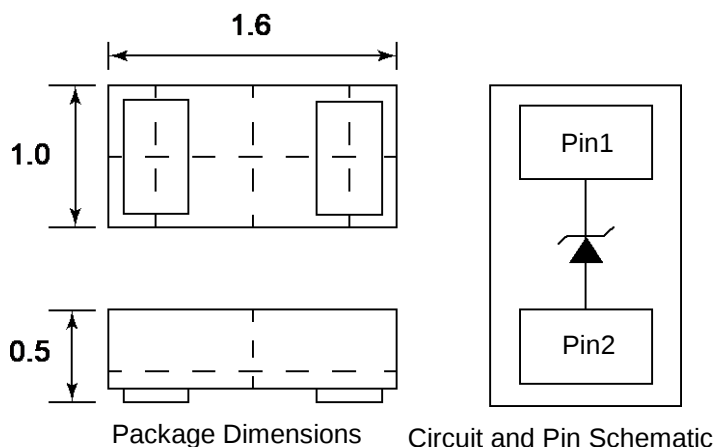
Description

The PESDU1871P6 is an uni-directional TVS diode, utilizing leading monolithic silicon technology 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 PESDU1871P6 complies with the IEC 61000-4-2 (ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into an ultra-small 1.6x1.0x0.5mm lead-free DFN package. The small size and high ESD surge protection make PESDU1871P6 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- Small package: 1.6x1.0x0.5mm
- Protects one data or power line
- Working Voltage: 18V
- High peak pulse current capability
- low clamping voltage
- 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) 40A (8/20 μs)
- RoHS Compliant

Dimensions and Pin Configuration



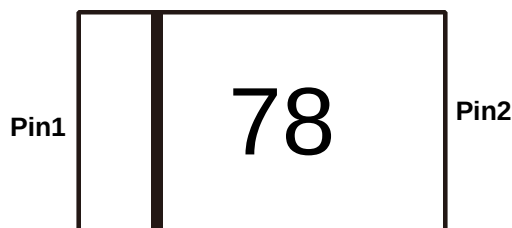
Mechanical Characteristics

- Package: DFN1610-2
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

- Mobile Phones and Accessories
- Battery Protection
- USB Power line
- Power Line Protection
- Hand Held Portable Applications

Marking Information



78 = Device Marking Code

Bar denotes Cathode

Ordering Information

Part Number	Shipping	Reel Size
PESDU1871P6	3000/Tape & Reel	7 inch

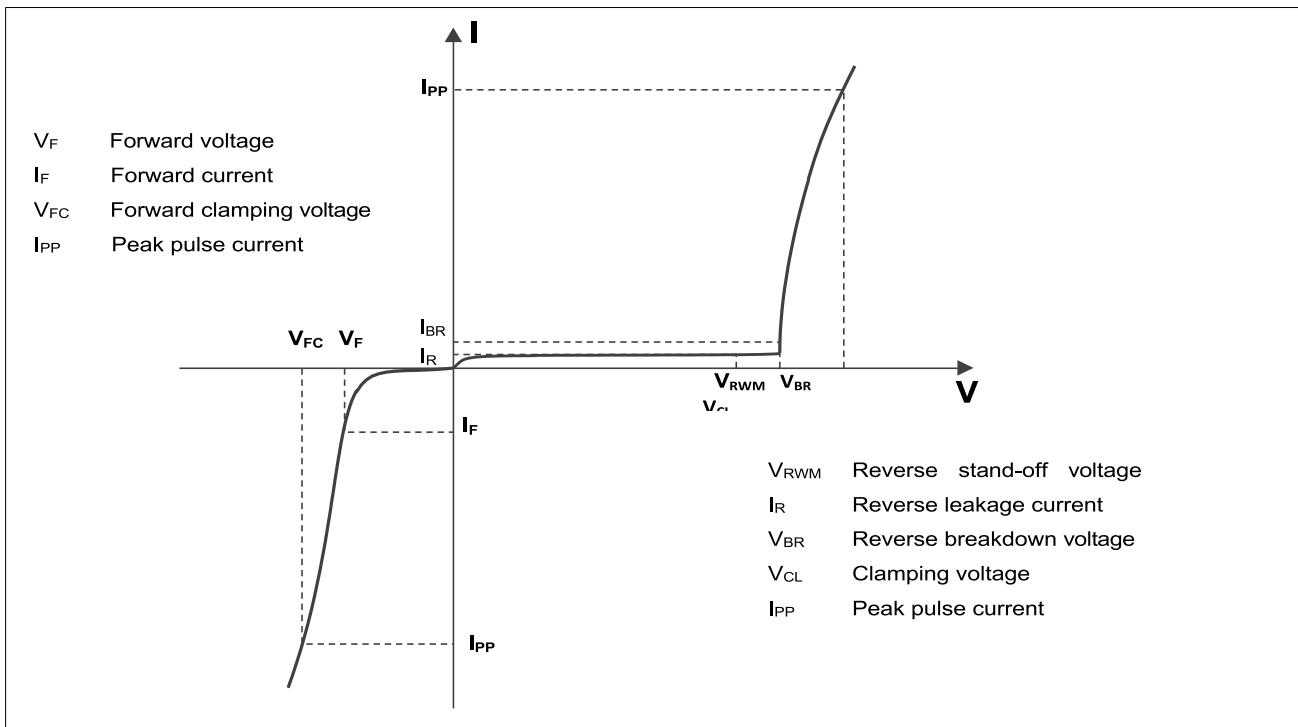
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	PPK	1400	W
Peak Pulse Current (8/20 μs)	I _{PP}	40	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	kV
Lead temperature	T _L	260	$^{\circ}\text{C}$
Junction Temperature	T _J	125	$^{\circ}\text{C}$
Operating Temperature Range	T _{OP}	-40 ~ +125	$^{\circ}\text{C}$
Storage Temperature Range	T _{STG}	-55 ~ +150	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

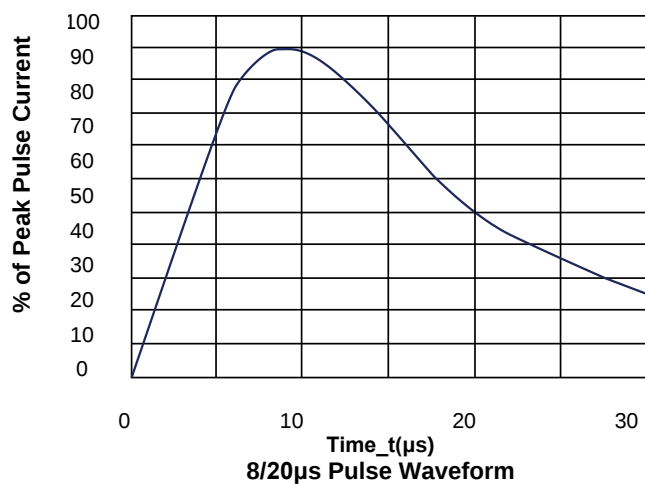
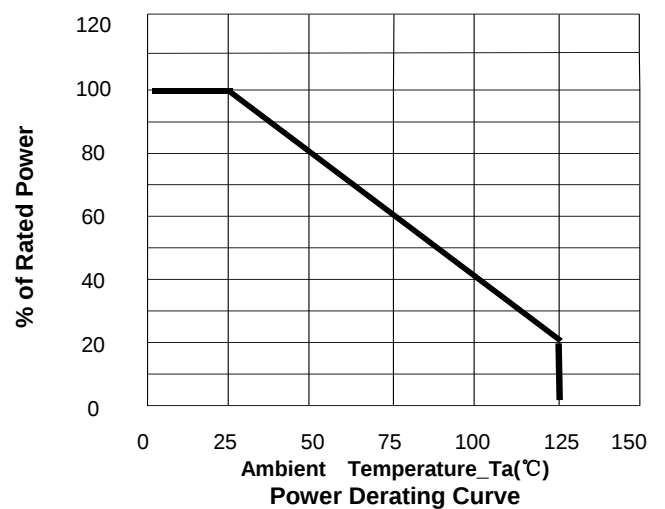
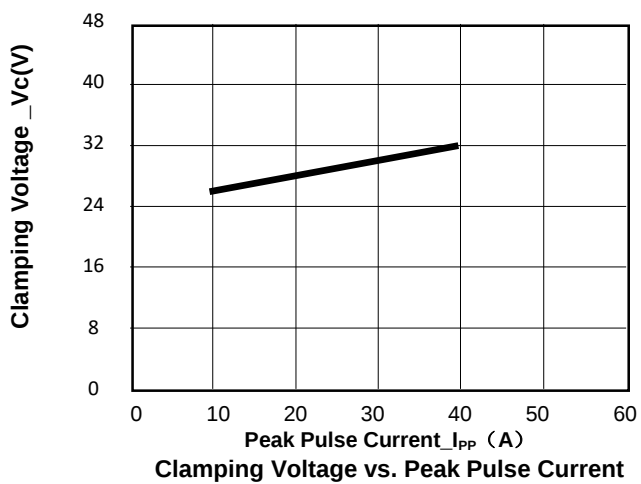
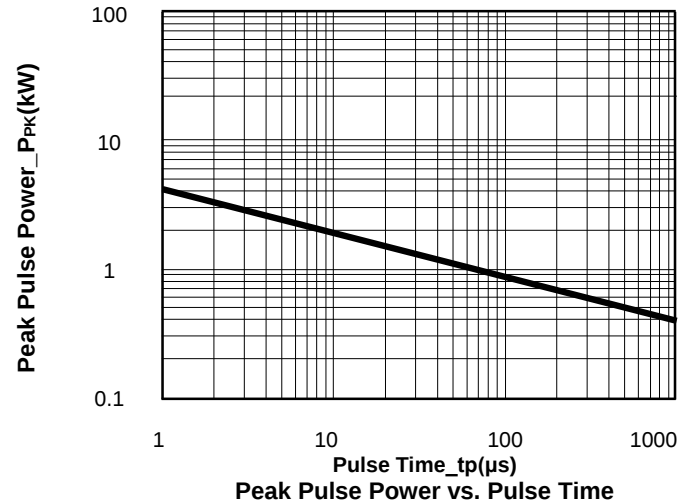
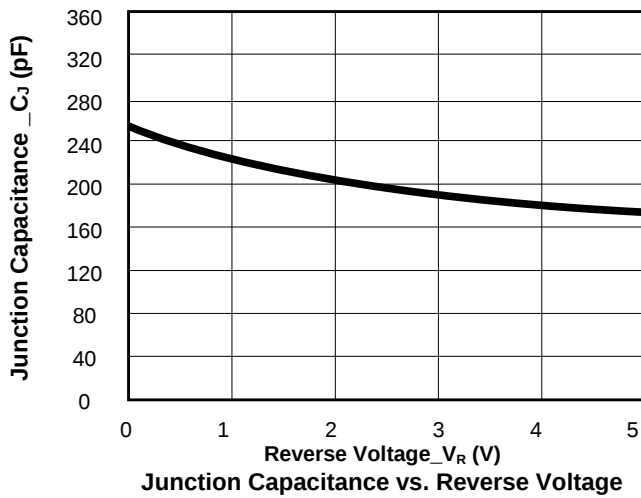
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			18	V	
Breakdown Voltage	V _{BR}	19			V	I _T = 1mA
Reverse Leakage Current	I _R			0.1	μA	V _{RWM} = 18 V
Clamping Voltage	V _C			26	V	I _{PP} = 10A (8/20 μs pulse)
Clamping Voltage	V _C			35	V	I _{PP} = 40A (8/20 μs pulse)
Junction Capacitance	C _J		250	350	pF	V _R = 0V, f = 1MHz

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

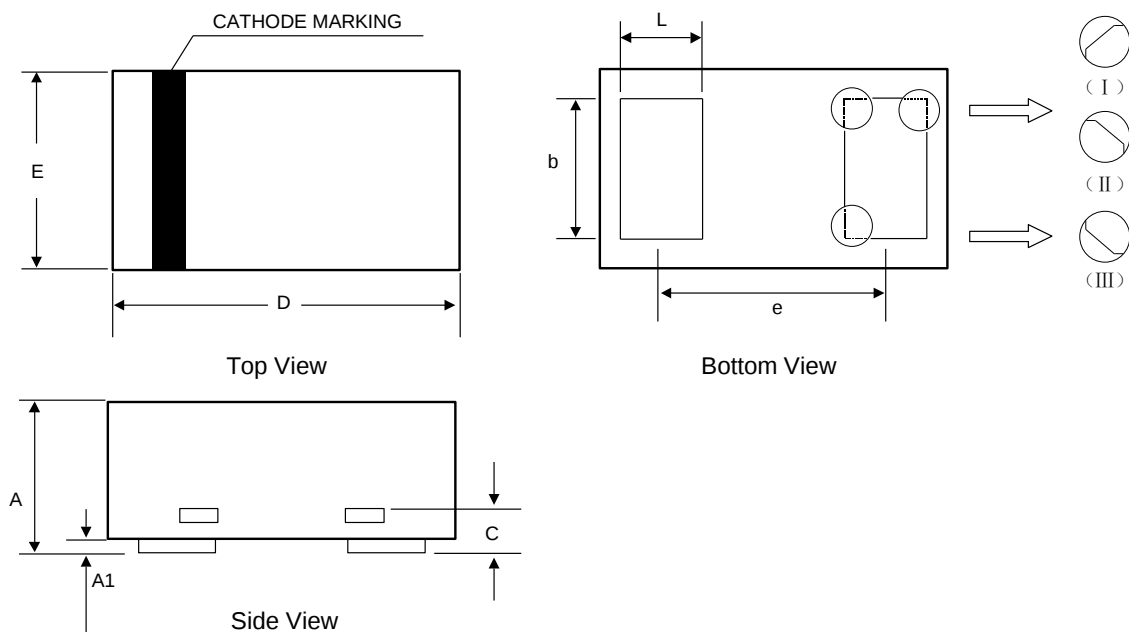


Definitions of electrical characteristics

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

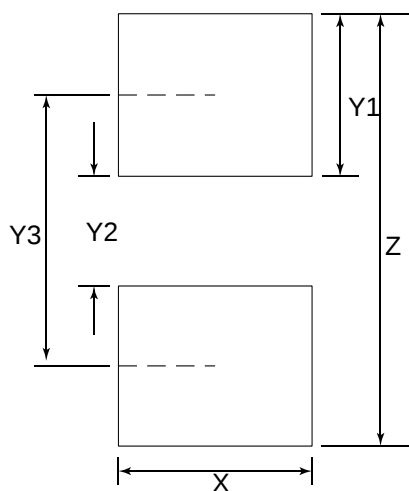


DFN1610-2 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1		0.02	0.05		0.001	0.002
b	0.75	0.80	0.85	0.030	0.032	0.034
c	0.10	0.15	0.20	0.004	0.006	0.008
D	1.55	1.60	1.65	0.062	0.064	0.066
e	1.10 BSC			0.044 BSC		
E	0.95	1.00	1.05	0.038	0.040	0.042
L	0.35	0.40	0.45	0.014	0.016	0.018

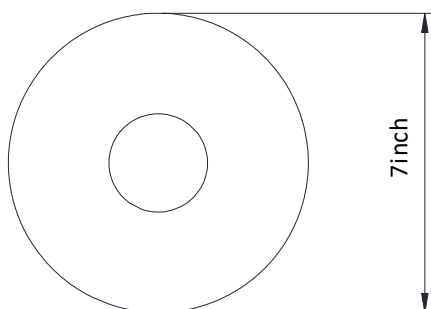
Suggested Land Pattern



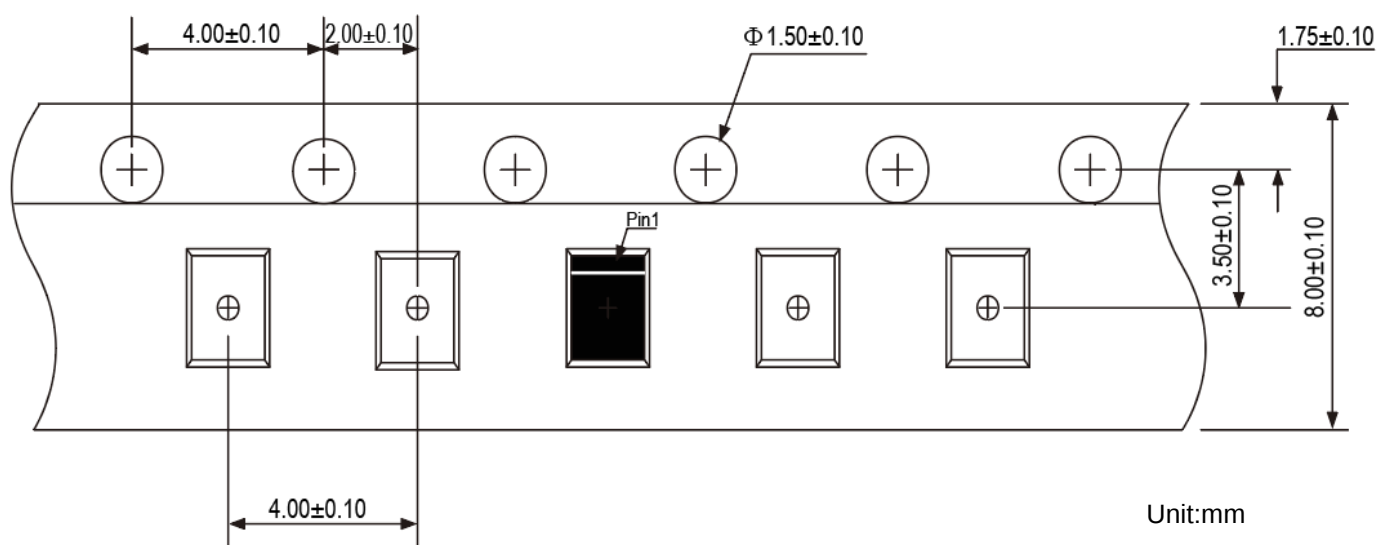
SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	1.00	0.040
Y1	0.62	0.025
Y2	0.60	0.024
Y3	1.22	0.049
Z	1.85	0.074

TAPE AND REEL INFORMATION

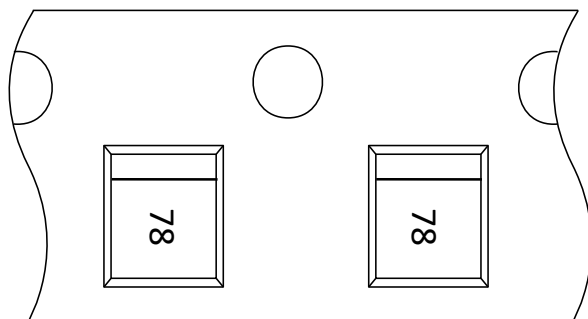
Reel Dimensions



Tape Dimensions



Unit:mm



→
User Direction of Feed

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