

1-Line Uni-directional TVS Diode

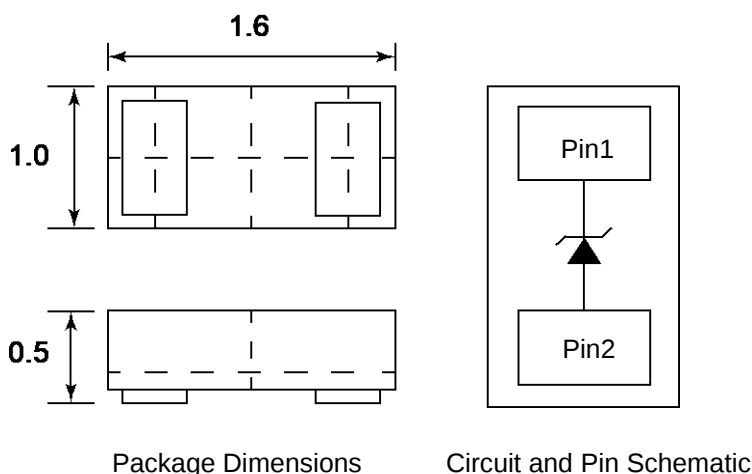
Description

The PESDU3091P6 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 PESDU3091P6 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 an ultra-small $1.6 \times 1.0 \times 0.5\text{mm}$ lead-free DFN package. The small size and high ESD surge protection make PESDU3091P6 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- Ultra small package: $1.6 \times 1.0 \times 0.5\text{mm}$
- Protects one data or power line
- Working Voltage: 30V
- 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: $\pm 30\text{kV}$
 - IEC 61000-4-5 (Lightning) 60A ($8/20\mu\text{s}$)
- RoHS Compliant

Dimensions and Pin Configuration



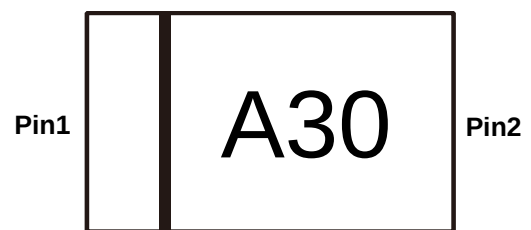
Mechanical Characteristics

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

Applications

- Mobile Phones and Accessories
- USB Power line
- Power Line Protection
- Vbus pin for Mobile Devices
- Hand Held Portable Applications

Marking Information



A30 = Device Marking Code
Bar denotes cathode

Ordering Information

Part Number	Shipping	Reel Size
PESDU3091P6	3000/Tape & Reel	7 inch

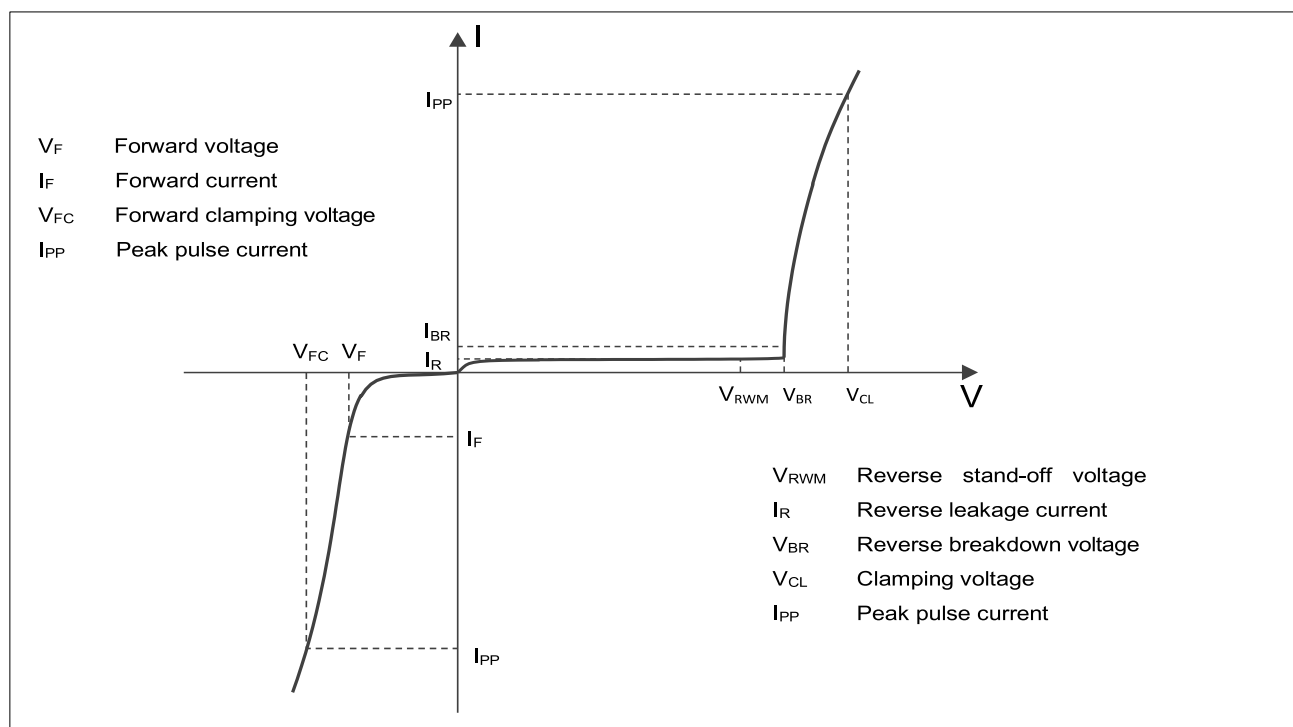
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P _{PK}	2280	W
Peak Pulse Current (8/20μs)	I _{PP}	60	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	±30	kV
ESD per IEC 61000-4-2 (Contact)		±30	
Lead temperature	T _L	260	°C
Junction Temperature	T _J	125	°C
Operating Temperature Range	T _{OP}	-40 ~ +125	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

Electrical Characteristics (T_A=25°C unless otherwise specified)

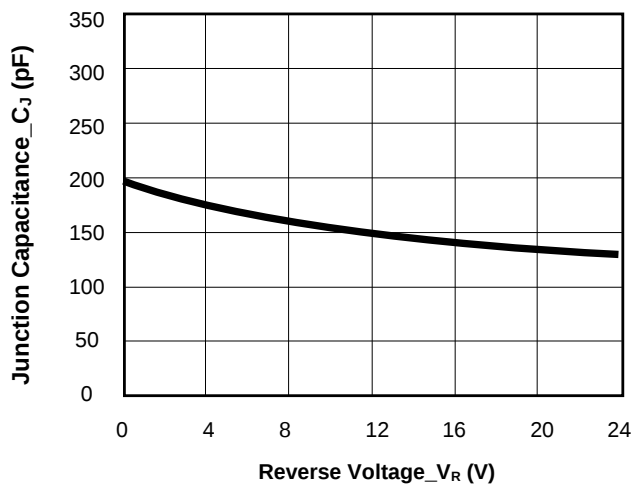
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			30	V	
Breakdown Voltage	V _{BR}	31			V	I _T = 1mA
Reverse Leakage Current	I _R			0.5	μA	V _{RWM} = 30V
Clamping Voltage	V _C			35	V	I _{PP} = 10A (8/20μs pulse)
Clamping Voltage	V _C			38	V	I _{PP} = 60A (8/20μs pulse)
Junction Capacitance	C _J		195		pF	V _R = 0V, f = 1MHz

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

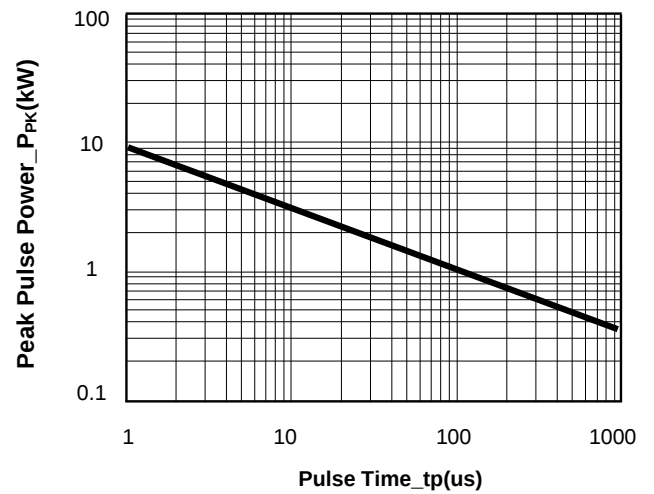


Definitions of electrical characteristics

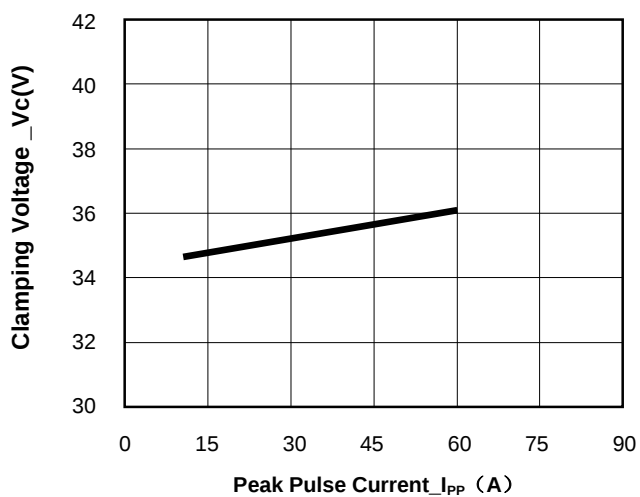
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



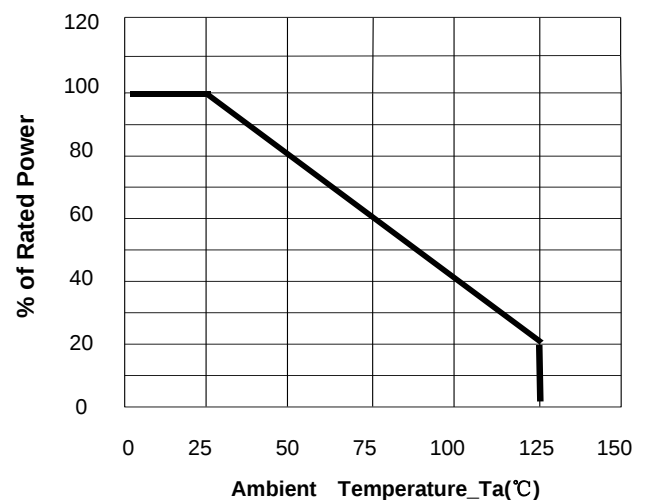
Junction Capacitance vs. Reverse Voltage



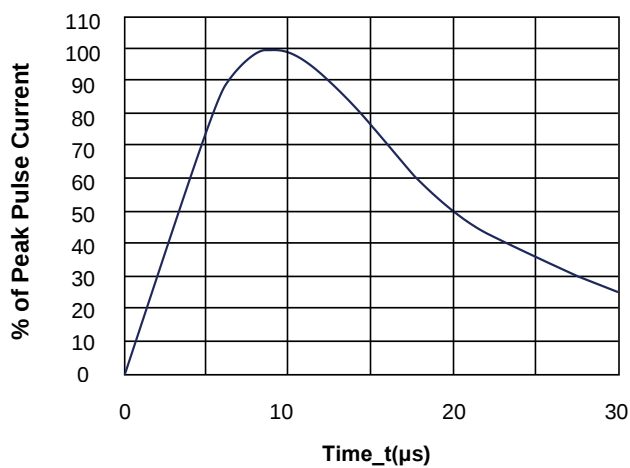
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current

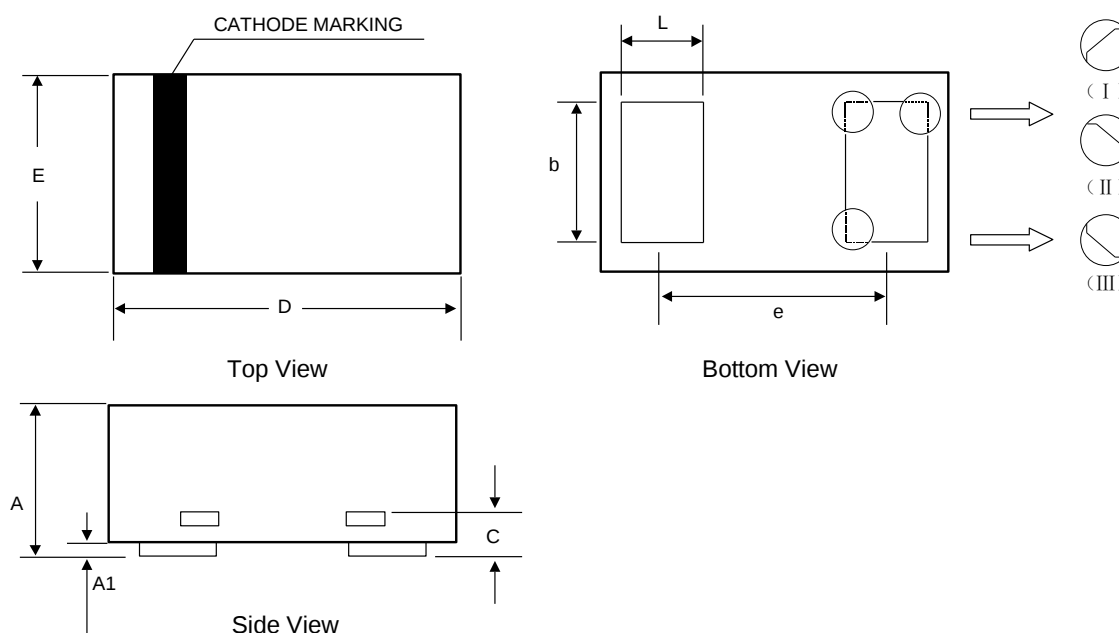


Power Derating Curve



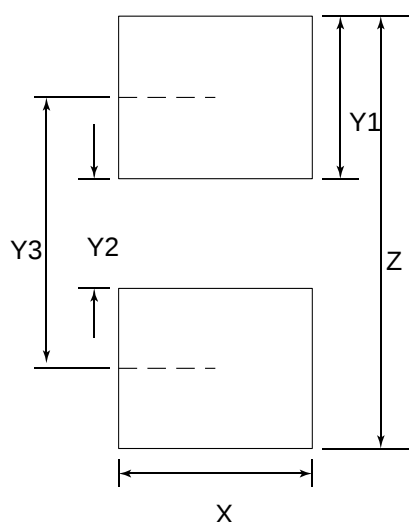
8/20μs Pulse Waveform

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

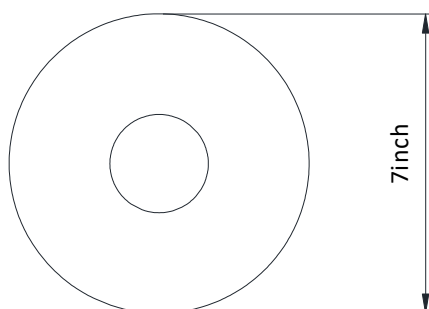
Suggested Land Pattern



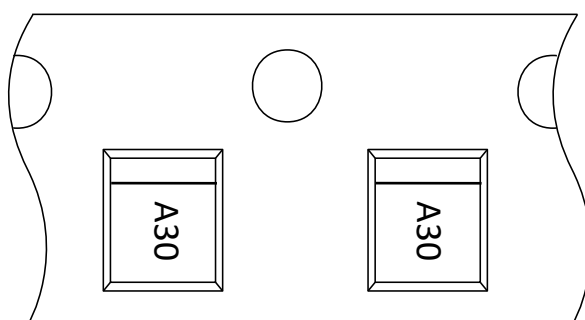
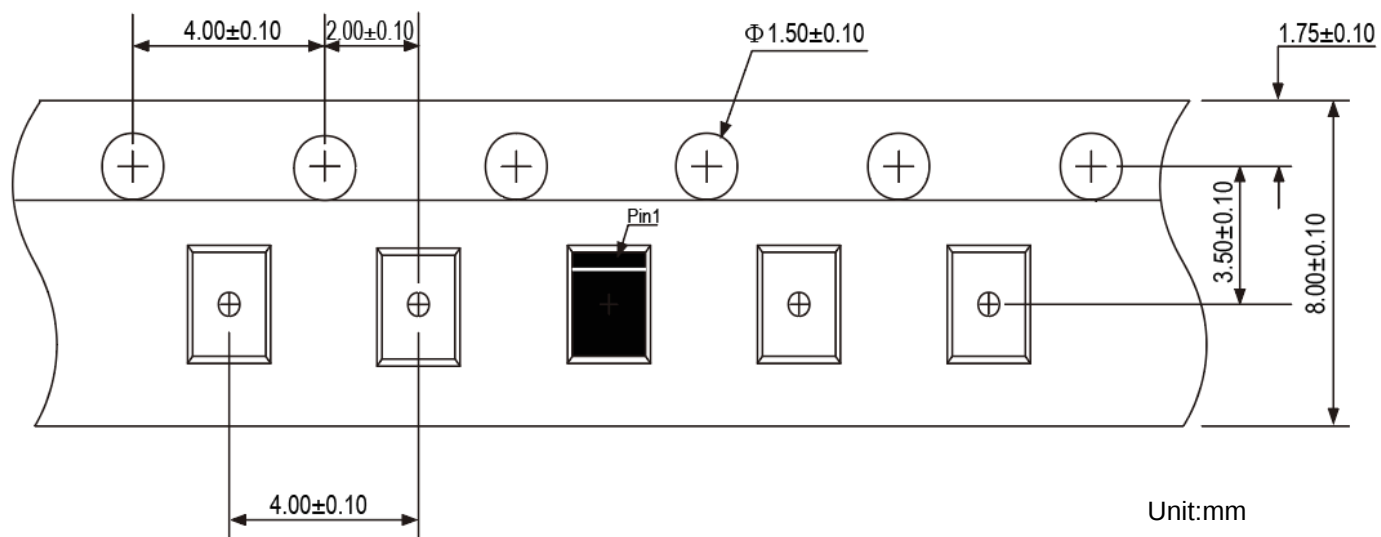
SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	1.00	0.040
Y1	0.62	0.025
Y2	0.60	0.024
Y3	1.22	0.049
Z	1.85	0.074

TAPE AND REEL INFORMATION

Reel Dimensions



Tape Dimensions



User Direction of Feed

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