

1-Line Bi-directional low capacitance TVS Diode

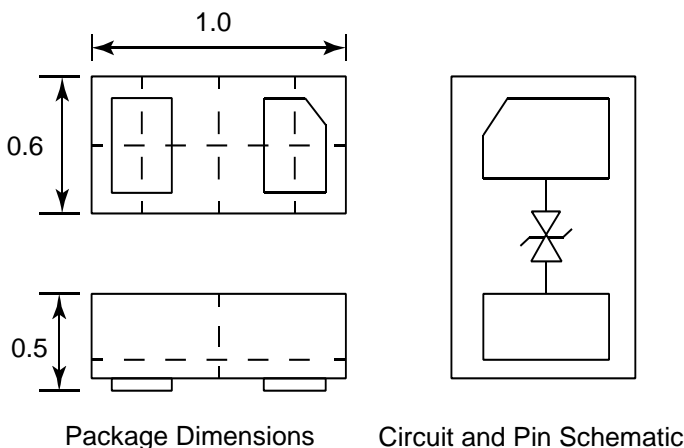
Description

The PESDU3361P1 is bi-directional TVS diode, to 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 PESDU3361P1 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 1.0x0.6x0.5mm lead-free DFN package. The small size and very low capacitance make PESDU3361P1 an ideal choice to protect cellphone, digital cameras, audio players, data interface and many other portable applications.

Features

- Ultra small package: 1.0x0.6x0.5mm
- Protects one data or power line
- 450 Watts Peak Pulse Power per (tp=8/20 μ s)
- Ultra low leakage: nA level
- Working voltage: 3.3V
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 30\text{kV}$
Contact discharge: $\pm 30\text{kV}$
 - IEC 61000-4-4 (EFT) 40A (5/50ns)
 - IEC 61000-4-5 (Lightning) 30A (8/20 μ s)
- RoHS compliant

Dimensions and Pin Configuration



Mechanical Characteristics

- Package: DFN1006-2L (1.0x0.6x0.5mm)
- Lead Finish: NiPdAu
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Marking Information: See Below

Applications

- Cellular Handsets & Accessories
- Personal Digital Assistants (PDAs)
- Notebooks & Handhelds
- Portable Instrumentation
- Digital Cameras
- MP3 Players

Marking Information



W W = Device Marking Code

Ordering Information

Part Number	Shipping	Reel Size
PESDU3361P1	10000/Tape & Reel	7 inch

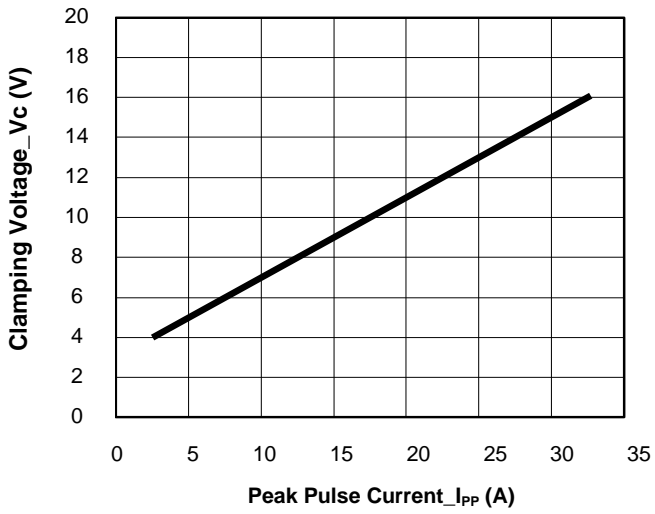
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P _{PK}	450	W
Peak Pulse Current (8/20μs)	I _{PP}	30	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	±30 ±30	kV
Operating Temperature Range	T _{OP}	-55 to +125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

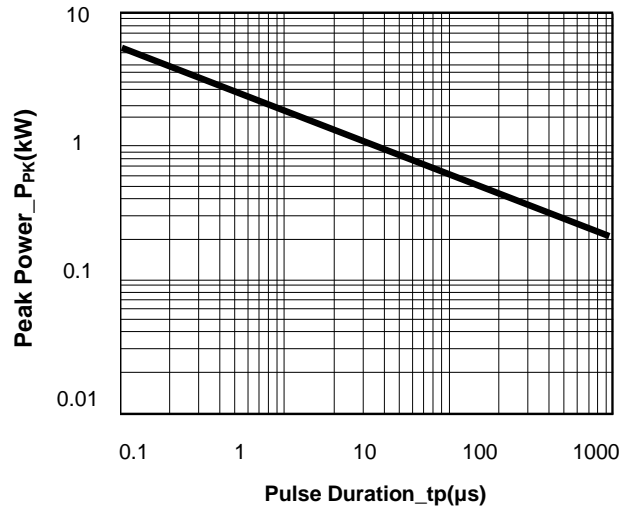
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			3.3	V	
Breakdown Voltage	V _{BR}	4.0			V	I _T = 1mA
Reverse Leakage Current	I _R			1	μA	V _{RWM} = 3.3V
Clamping Voltage	V _C			15.0	V	I _{PP} = 30A (8/20μs pulse)
ESD Clamping Voltage	V _C		5.5		V	I _{PP} = 4A (tp = 0.2/100ns (TLP))
ESD Clamping Voltage	V _C		7.5		V	I _{PP} = 16A (tp = 0.2/100ns (TLP))
Junction Capacitance	C _J		60	70	pF	V _R = 0V, f = 1MHz

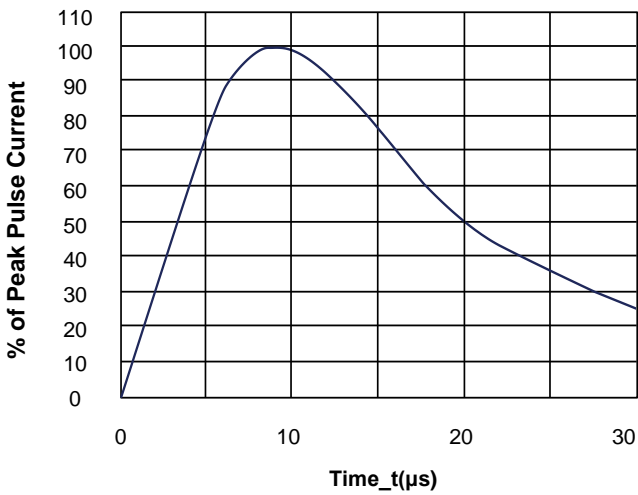
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



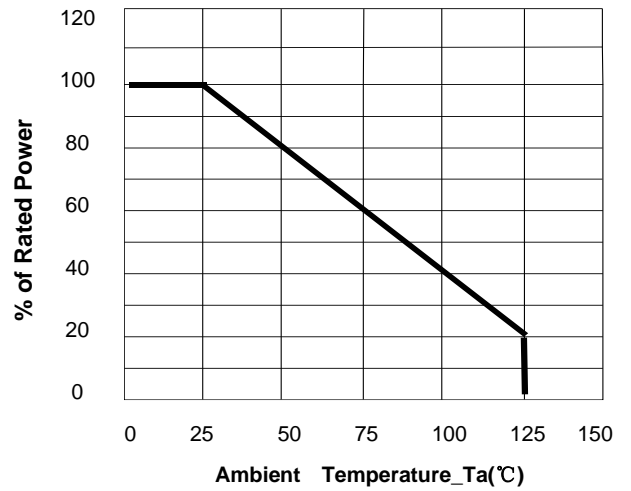
Clamping Voltage vs. Peak Pulse Current



Peak Pulse Power vs. Pulse Time

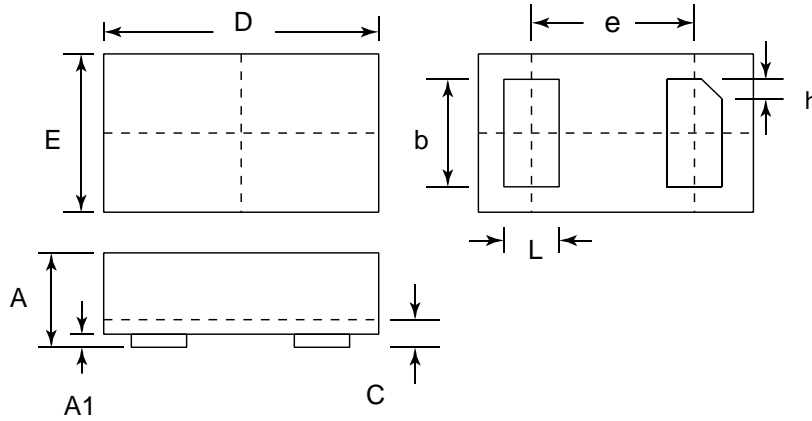


8/20μs Pulse Waveform



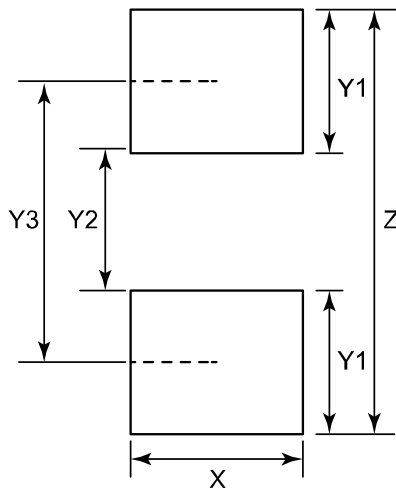
Power Derating Curve

DFN1006-2L 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	0.00	0.02	0.05	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
c	0.12	0.15	0.18	0.005	0.006	0.007
D	0.95	1.00	1.05	0.037	0.039	0.041
e	0.65 BSC			0.026 BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012
h	0.07	0.12	0.17	0.003	0.005	0.007

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.60	0.024
Y1	0.50	0.020
Y2	0.30	0.012
Y3	0.80	0.032
Z	1.30	0.052