

1-Line High Power TVS Diode

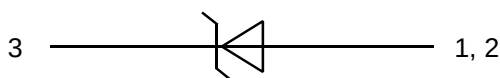
Description

The PESDU1551P4-3 is a high power TVS, to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive lines. The PESDU1551P4-3 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 a 3-pin DFN2020-3L lead-free package. The leads are finished with NiPdAu. Each device will protect one line. The combination of small size, and high surge capability makes the them ideal for use in applications such as cell phones, LCD displays, USB and other interfaces.

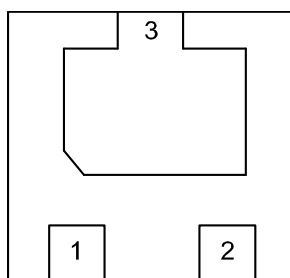
Features

- 6000W peak pulse power (8/20 μs)
- Low leakage: nA level
- Low operating voltage: 15V
- Ultra low clamping voltage
- One power line protects
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 30\text{kV}$
Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 200A (8/20 μs)
- RoHS Compliant

Dimensions and Pin Configuration



Circuit Diagram



Transparent top view

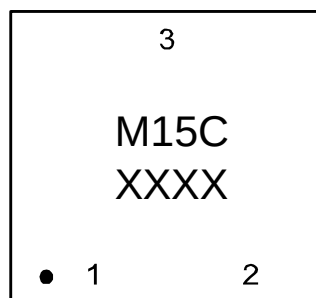
Mechanical Characteristics

- Package: DFN2020-3L
- Molding compound flammability rating: UL 94V-0
- Marking : Making Code
- Packaging : Tape and Reel per EIA 481
- Marking Information: See Below
- RoHS Compliant

Applications

- I/O Interfaces
- Power lines
- Automotive and Telecommunication
- Computer & Consumer Electronics
- Industrial Electronics
- Microcontroller Input Protection

Marking Information



M15C = Specific Device Making Code

XXXX = Lot Code

Ordering Information

Part Number	Shipping	Reel Size
PESDU1551P4-3	3000/Tape & Reel	7 inch

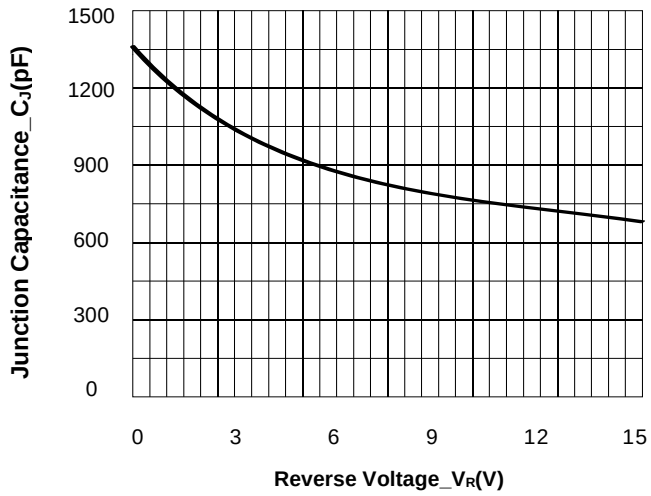
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P _{PK}	6000	W
Peak Pulse Current (8/20μs)	I _{PP}	200	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	±30	kV
ESD per IEC 61000-4-2 (Contact)		±30	kV
Operating Temperature Range	T _{OP}	-55 to +125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

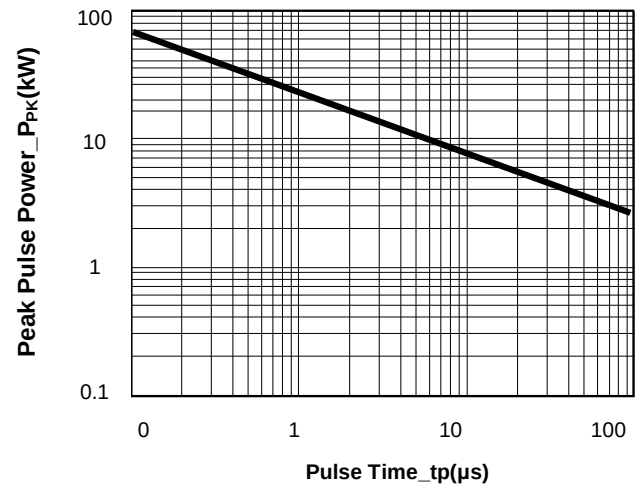
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			15	V	
Breakdown Voltage	V _{BR}	16.7			V	I _T = 1mA
Reverse Leakage Current	I _R			200	nA	V _{RWM} = 15V, T _a =25°C
Forward Voltage	V _F	0.6		1.0	V	I _F =10mA
Clamping Voltage	V _C		18.4	20	V	I _{PP} = 1A (8/20μs pulse)
Clamping Voltage	V _C		24.5	27	V	I _{PP} = 150A (8/20μs pulse)
Clamping Voltage	V _C		27.8	30		I _{PP} = 200A (8/20μs pulse)
Junction Capacitance	C _J		1230	1700	pF	V _R = 0V, f = 1MHz

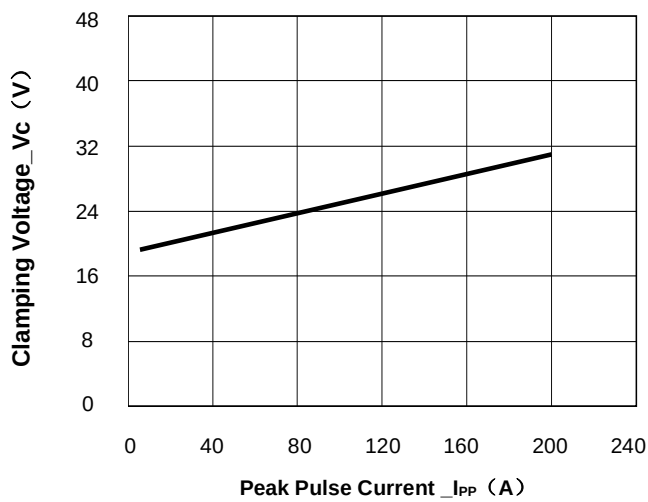
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



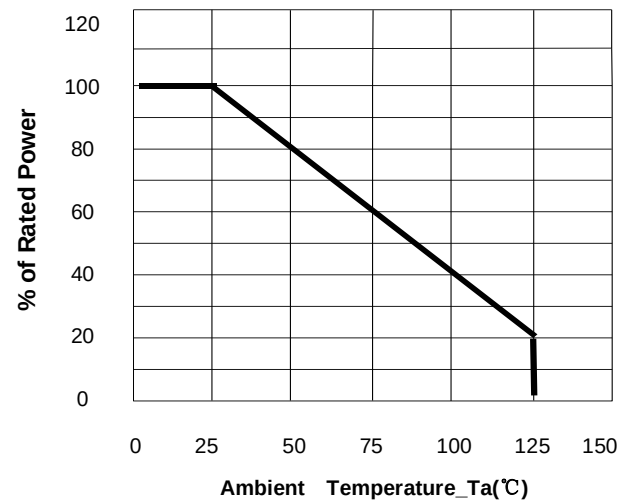
Junction Capacitance vs. Reverse Voltage



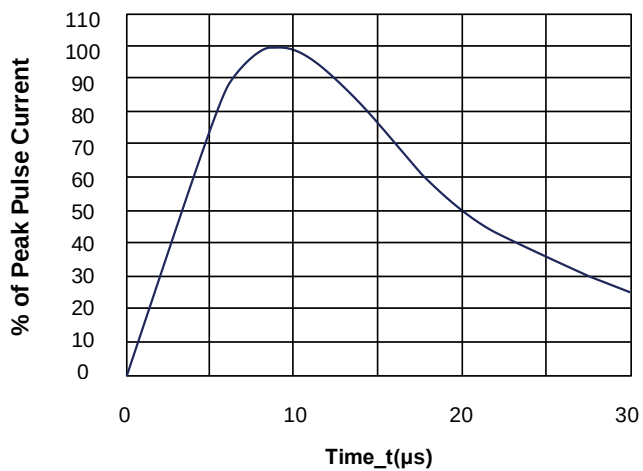
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current

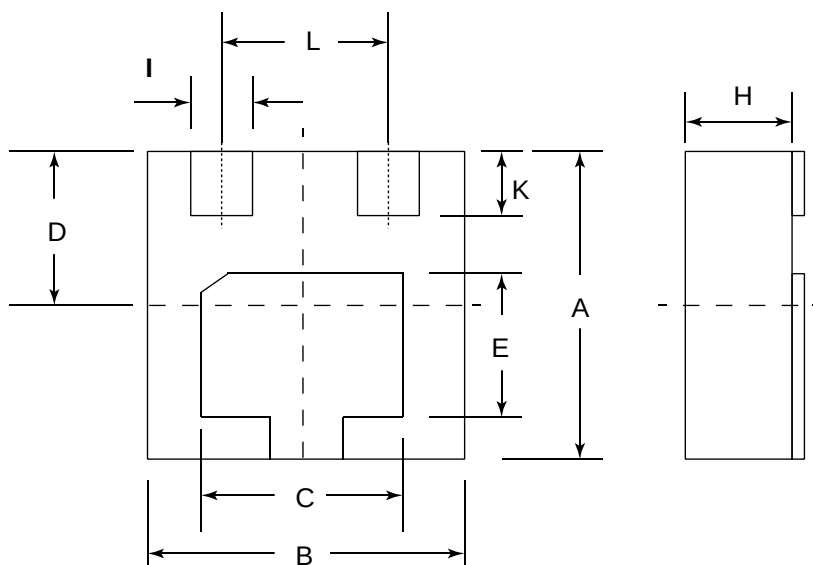


Power Derating Curve



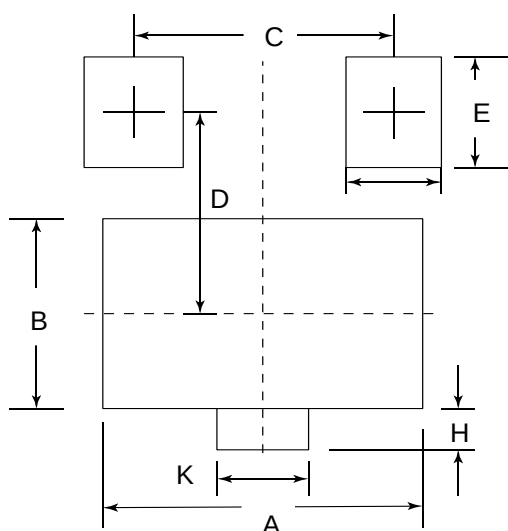
8/20 μs Pulse Waveform

DFN2020-3L Package Outline Drawing



DIM	Millimeters		
	Min	Nom	Max
A	1.90	2.00	2.10
B	1.90	2.00	2.10
C	1.40	1.50	1.60
D	0.95	1.0	1.05
E	0.90	1.00	1.10
H			0.65
L		1.3	
I	0.25	0.30	0.35
K	0.35	0.40	0.45

Suggested Land Pattern



SYM	MILLIMETERS
A	1.60
B	1.10
C	1.30
D	1.05
E	0.50
K	0.40
H	0.25