

2-Line bi-directional TVS Diode

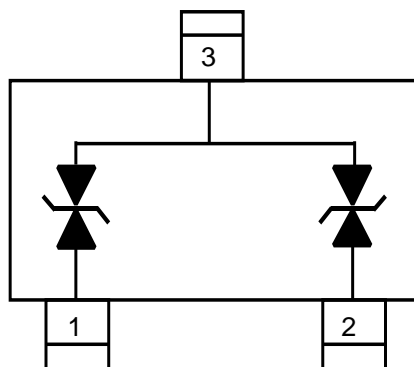
Description

The PESDU2462S2 is a 24V 2-line bi-directional TVS diode, utilizing leading monolithic silicon technology fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data lines. The PESDU2462S2 complies with the IEC61000-4-2(ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into a lead-free SOT-23 package. The small size, low capacitance and high ESD surge protection make PESDU2462S2 an ideal choice to protect cellphone, digital video interfaces and many other portable applications.

Features

- Ultra low leakage: nA level
- Ultra low operating voltage: 24V
- Up to 2-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)
- RoHS Compliant

Dimensions and Pin Configuration



Circuit and Pin Schematic

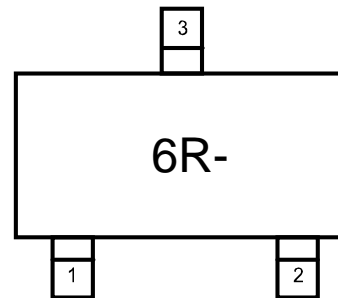
Mechanical Characteristics

- Package: SOT-23
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Marking Information: See Below

Applications

- CAN bus protection
- Automotive applications

Marking Information



6R- = Device Marking Code
Pin 3 is ground

Ordering Information

Part Number	Shipping	Reel Size
PESDU2462S2	3000/Tape & Reel	7 inch

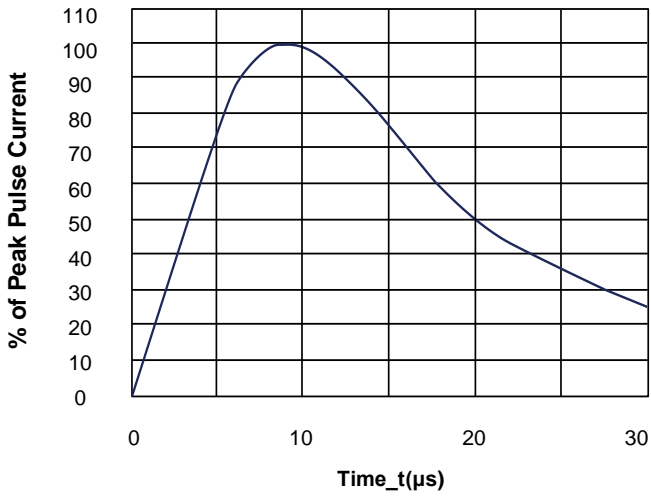
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P_{PK}	350	W
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	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}\text{C}$

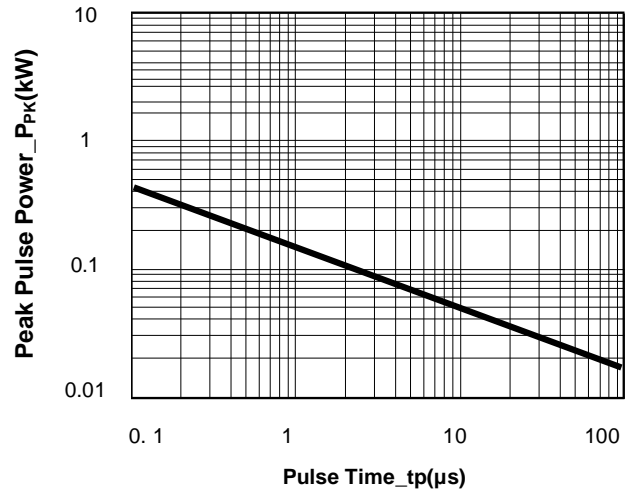
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			24	V	Pin 1 or pin 2 to pin 3 and between pin 1 and pin 2
Breakdown Voltage	V_{BR}	26			V	$I_T = 1\text{mA}$, pin 1 or pin 2 to pin 3 and between pin 1 and pin 2
Reverse Leakage Current	I_R			10	nA	$V_{RWM} = 24\text{V}$, Pin 1 or pin 2 to pin 3 and between pin 1 and pin 2
Clamping Voltage	V_C			34	V	$I_{PP} = 1\text{A}$ (8/20 μs pulse) pin 1 or pin 2 to pin 3
Clamping Voltage	V_C		50	66	V	$I_{PP} = 8\text{A}$ (8/20 μs pulse) pin 1 or pin 2 to pin 3
Junction Capacitance	C_J		28	40	pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$, pin 1 or pin 2 to pin 3

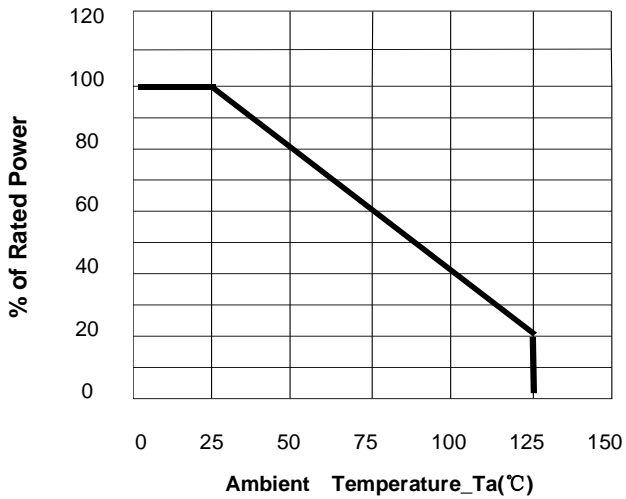
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



8/20μs Pulse Waveform

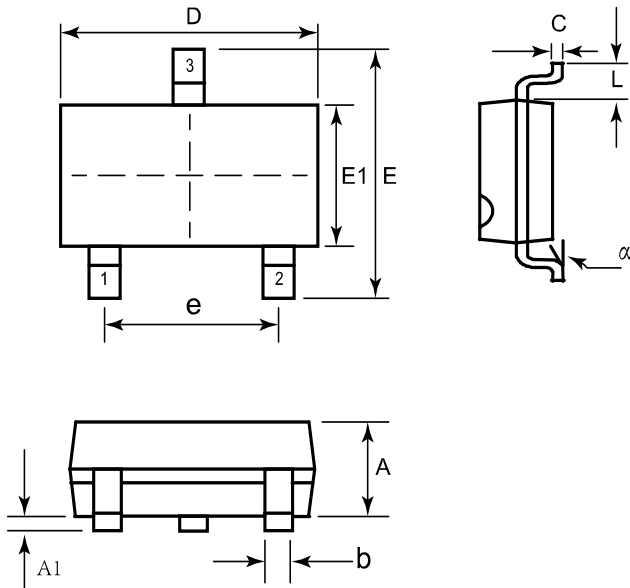


Peak Pulse Power vs. Pulse Time



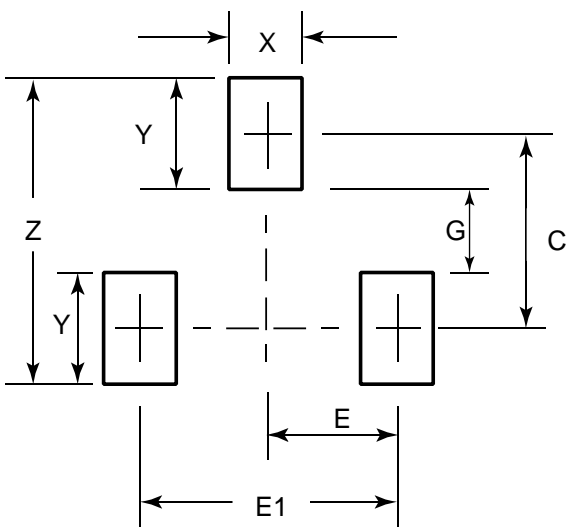
Power Derating Curve

SOT-23 Package Outline Drawing



SYM	DIMENSIONS					
	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.035	0.037	0.040	0.88	0.95	1.02
A1	0.000	-	0.004	0.01	-	0.10
b	0.012	-	0.020	0.30	-	0.51
C	0.003	-	0.007	0.08	-	0.18
D	0.110	0.114	0.120	2.80	2.90	3.04
E	0.082	0.093	0.104	2.10	2.37	2.64
E1	0.047	0.051	0.055	1.20	1.30	1.40
e	0.075 BSC			1.90 BSC		
L	0.022 BSC			0.55 BSC		
α	0°		8°	0°		8°

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	2.20	0.087
E	0.95	0.037
E1	1.90	0.075
G	0.80	0.031
X	1.00	0.039
Y	1.40	0.055
Z	3.60	0.141