

## 1-Line Uni-directional TVS Diode

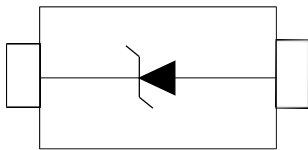
### Description

PESDU3301D5N is a Uni-directional Electro-Static Discharge (ESD) protection diode in a SOD523 plastic package. The PESDU3301D5N complies with the IEC 61000-4-2 (ESD) standard with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge. It is designed to protect one transmission or data line from the damage caused by ESD and other transients.

### Features

- Uni-directional ESD protection of one line
- Reverse stand-off voltage:  $3.3\text{V}$  Max
- Low leakage current: nA level
- Response time is typically  $< 1\text{ ns}$
- 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)  $11.2\text{A}$  ( $8/20\mu\text{s}$ )
- RoHS Compliant

### Schematic and Pin Configuration



Graphic symbol

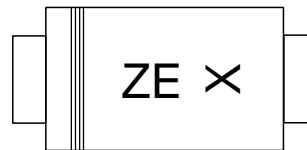
### Mechanical Characteristics

- Package: SOD-523
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 1 per J-STD-020
- Marking Information: See Below

### Applications

- Cellular phones
- Portable devices
- Digital Cameras
- Power supplies

### Marking Information



ZE X = Device Marking Code

Bar denotes cathode

### Ordering Information

Part Number	Shipping	Reel Size
PESDU3301D5N	3000/Tape & Reel	7 inch

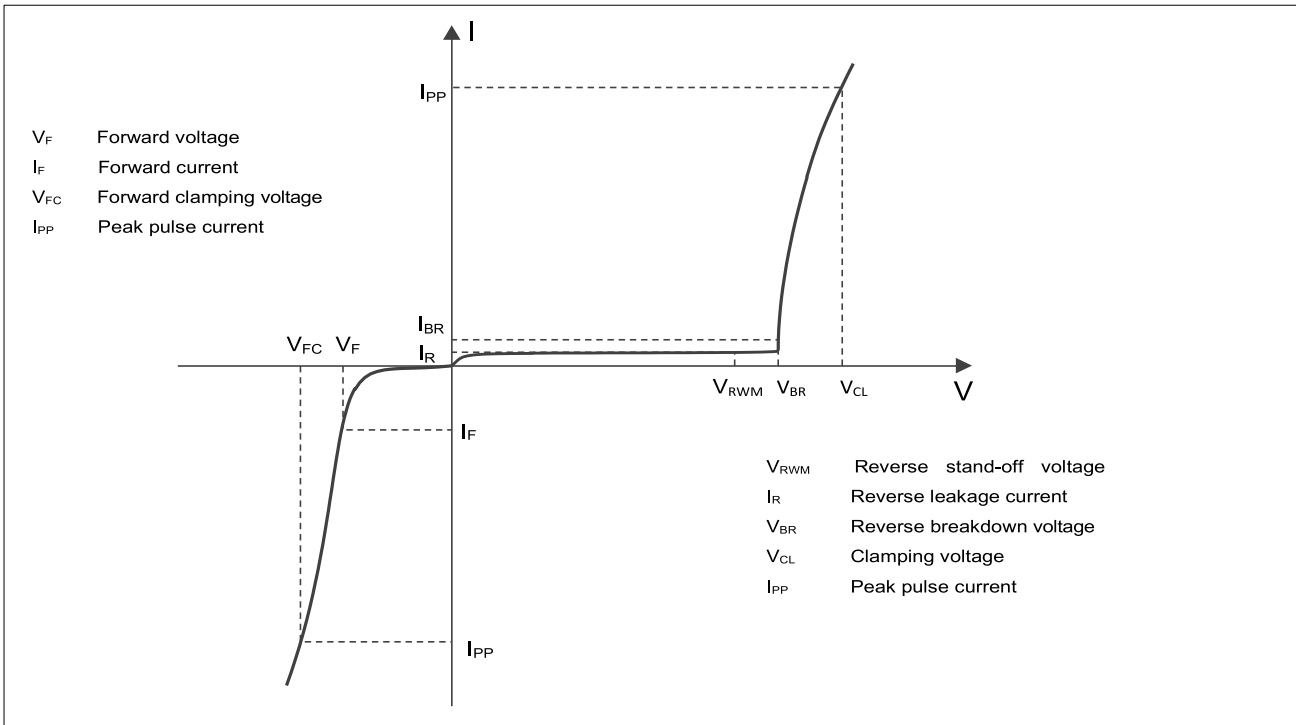
**Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P <sub>pk</sub>	158	W
Peak Pulse Current (8/20μs)	I <sub>PP</sub>	11.2	A
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	±30	kV
ESD per IEC 61000-4-2 (Contact)		±30	
Lead temperature	T <sub>L</sub>	260	°C
Operating Temperature Range	T <sub>OP</sub>	-40 ~ +85	°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ +150	°C

**Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)**

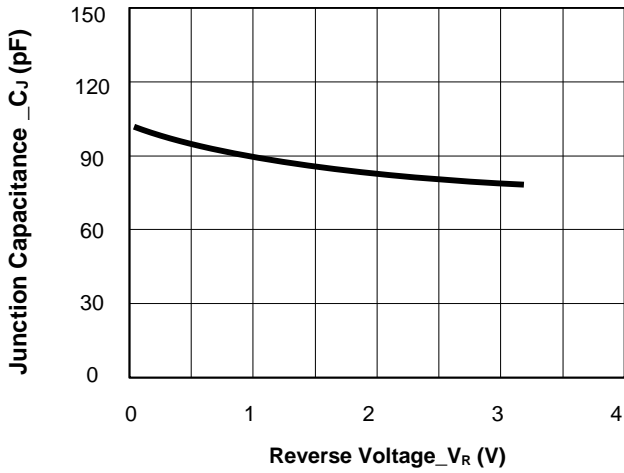
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			3.3	V	
Breakdown Voltage	V <sub>BR</sub>	5.0			V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>			100	nA	V <sub>RWM</sub> = 3.3V
Clamping Voltage	V <sub>C</sub>			14	V	I <sub>PP</sub> = 11.2A (8/20μs pulse),
Junction Capacitance	C <sub>J</sub>		70	100	pF	V <sub>R</sub> = 0V, f = 1MHz

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

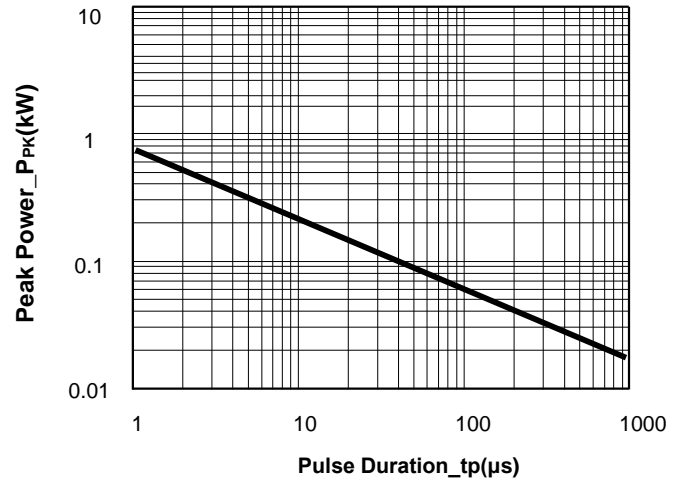


Definitions of electrical characteristics

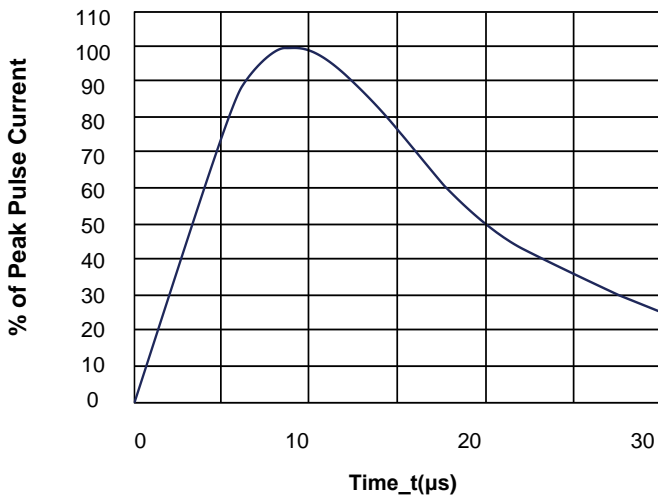
**Typical Performance Characteristics (T<sub>A</sub>=25°C unless otherwise Specified)**



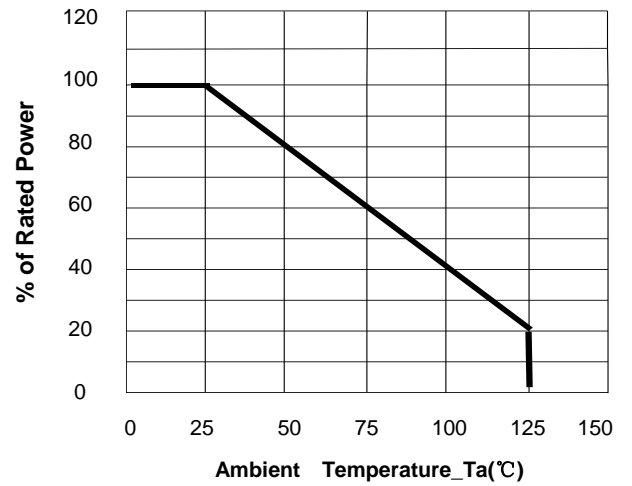
**Junction Capacitance vs. Reverse Voltage**



**Peak Pulse Power vs. Pulse Time**

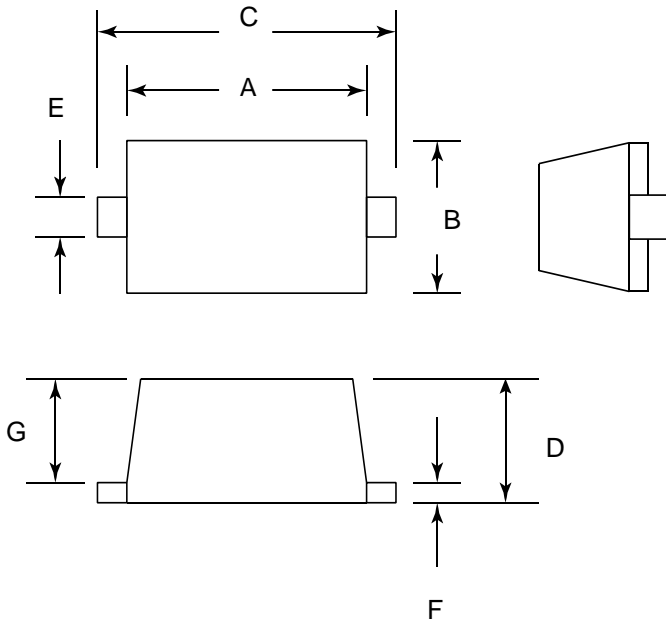


**8/20 $\mu$ s Pulse Waveform**



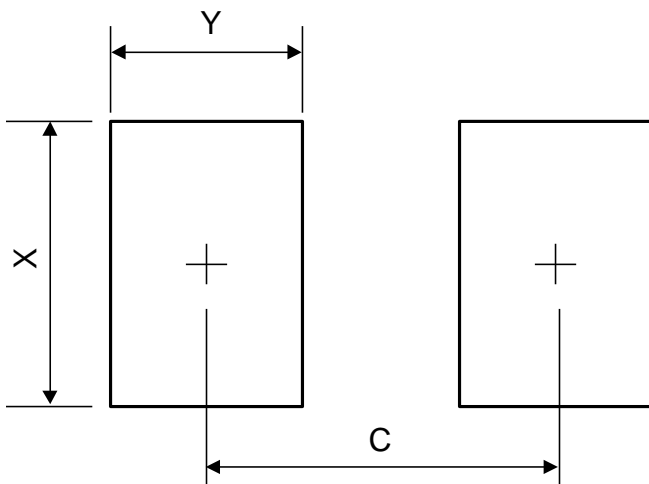
**Power Derating Curve**

**SOD523 Package Outline Drawing**



SYM	DIMENSIONS			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.10	1.30	0.043	0.051
B	0.70	0.90	0.028	0.035
C	1.50	1.70	0.059	0.067
D	0.50	0.70	0.020	0.028
E	0.25	0.35	0.010	0.014
F	0.10	0.20	0.004	0.008
G	0.50	0.70	0.020	0.028

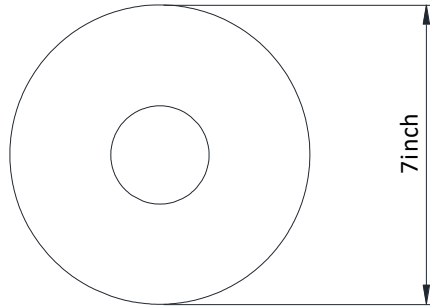
**Suggested Land Pattern**



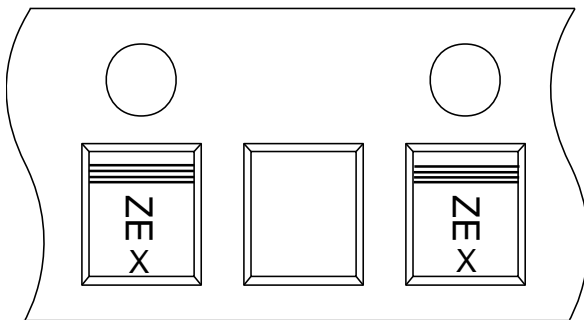
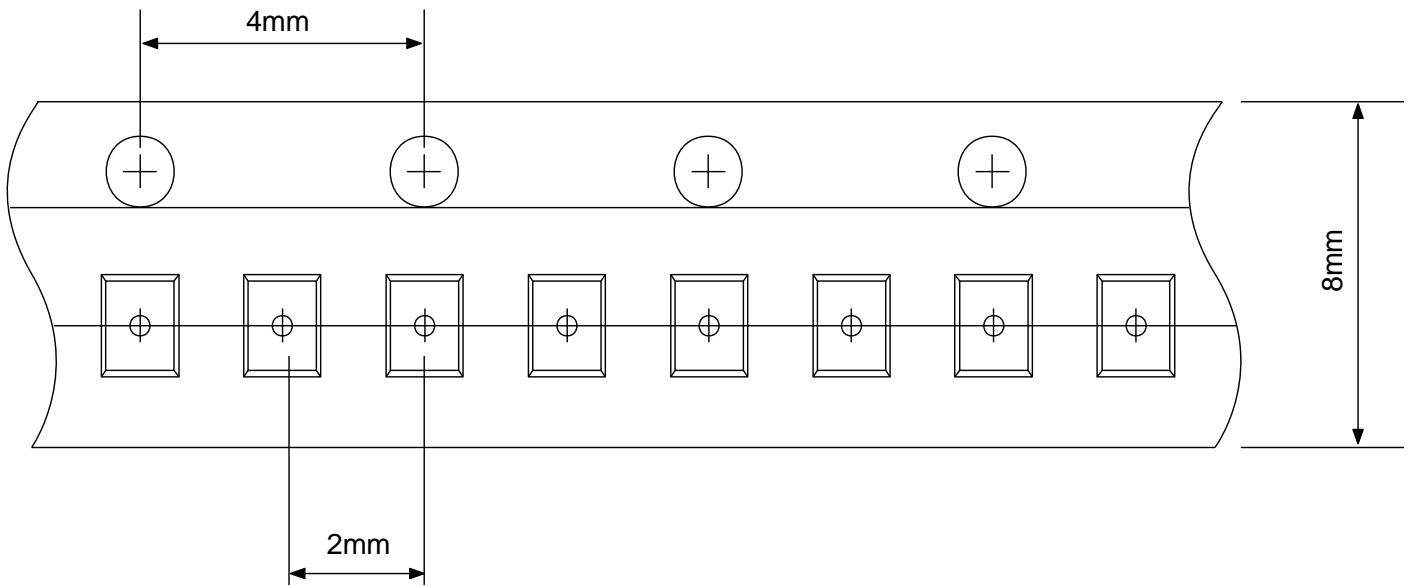
SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	1.42	0.056
X	0.70	0.028
Y	0.60	0.024

**TAPE AND REEL INFORMATION**

Reel Dimensions



Tape Dimensions



User Direction of Feed

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