

## 1-Line Unidirectional ESD Protection Diode

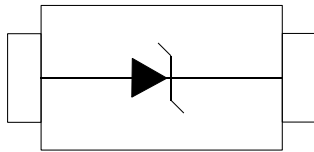
### Description

Unidirectional ElectroStatic Discharge (ESD) protection diode in a SOD523 plastic package designed to protect one transmission or data line from the damage caused by ESD and other transients.

### Features

- Unidirectional ESD protection of one line
- Reverse stand-off voltage: 7.0V Max
- Low leakage current: nA Level
- Response time is typically < 1 ns
- Low clamping voltage: VC < 20 V @ IPP = 5.8A
- ESD Protection: 15kV(air)/ 8kV(contact)  
( IEC61000-4-2)
- Surge Protection: 5.8A ( IEC 61000-4-5 8/20  $\mu$ s)

### Schematic and Pin Configuration



Graphic symbol

### Applications

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

### Marking Information



ZH= Device Marking Code

### Ordering nformation

Part Number	Packaging	Package
PESDU0701D5N	3000/Tape & Reel	SOD523

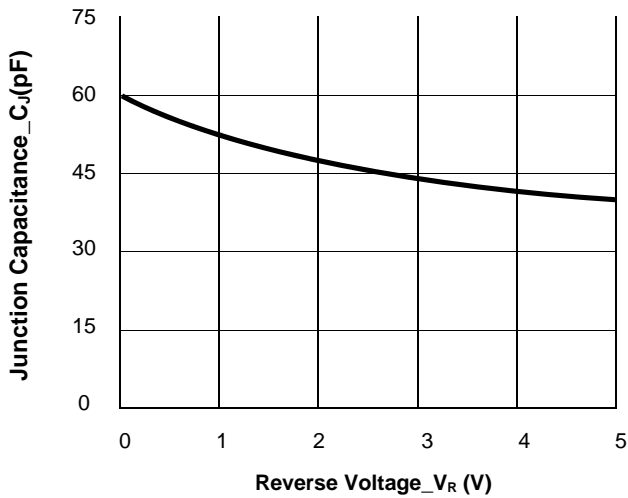
**Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$  unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	$P_{PK}$	120	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	$I_{PP}$	5.8	A
ESD per IEC 61000-4-2 (Air)	$V_{ESD}$	$\pm 15$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 8$	
Operating Temperature Range	$T_{OP}$	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ\text{C}$

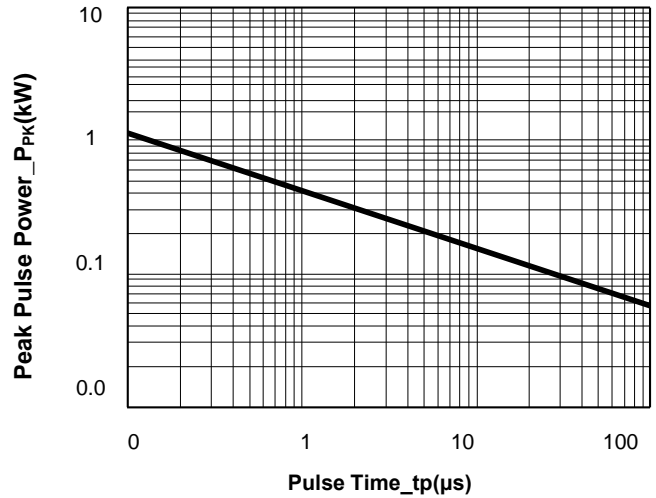
**Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	$V_{RWM}$			7.0	V	Any I/O pin to ground
Breakdown Voltage	$V_{BR}$	7.5			V	$I_T = 1\text{mA}$ , any I/O pin to ground
Reverse Leakage Current	$I_R$			100	nA	$V_{RWM} = 7.0\text{V}$ , any I/O pin to ground
Clamping Voltage	$V_C$			20.0	V	$I_{PP} = 5.8\text{A}$ (8/20 $\mu\text{s}$ pulse)
Junction Capacitance	$C_J$			65	pF	$V_R = 0\text{V}$ , $f = 1\text{MHz}$

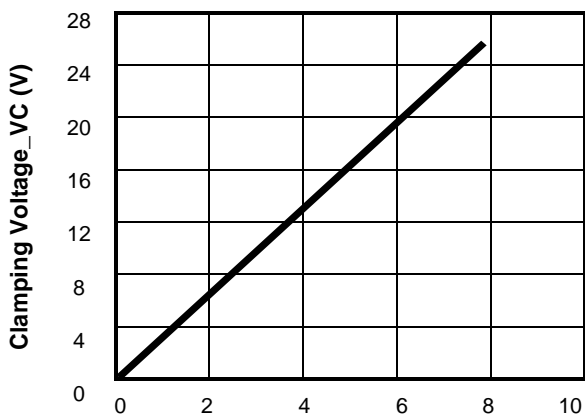
**Typical Performance Characteristics (T<sub>A</sub>=25°C unless otherwise Specified)**



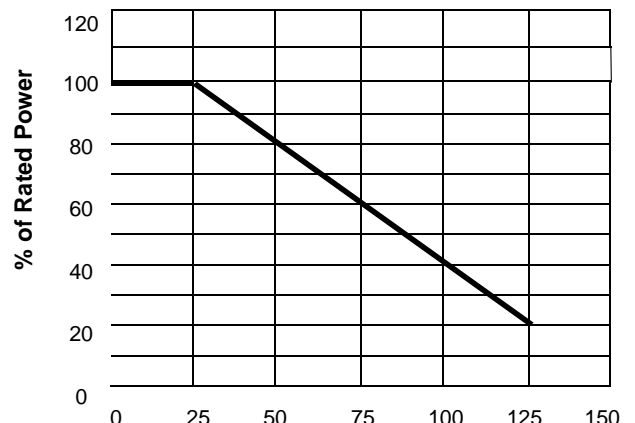
**Junction Capacitance vs. Reverse Voltage**



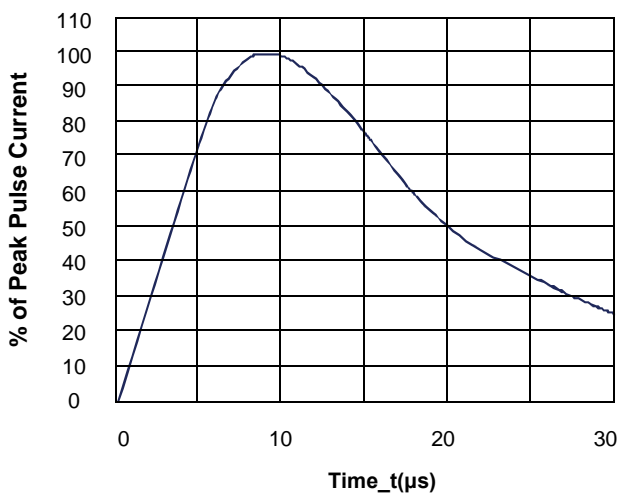
**Peak Pulse Power vs. Pulse Time**



**Clamping Voltage vs. Peak Pulse Current**

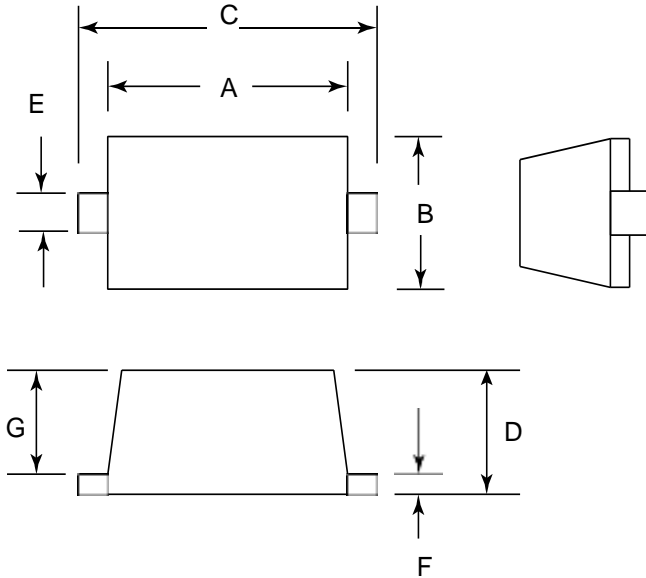


**Power Derating Curve**



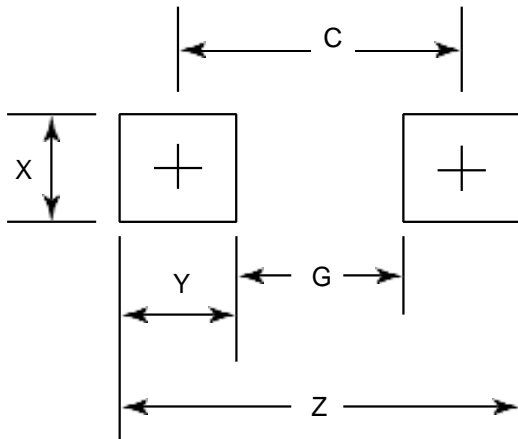
**8/20μs Pulse Waveform**

**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	1.70	0.067
G	1.10	0.043
X	0.80	0.031
Y	0.60	0.024
Z	2.30	0.091