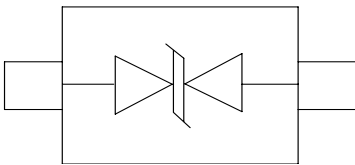


## Features

- \* 420W peak pulse power (8/20 $\mu$ s)
- \* Protects one data or power line
- \* Ultra low leakage: nA level
- \* Operating voltage: 24V
- \* Ultra low clamping voltage
- \* Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 30$ kV
    - Contact discharge:  $\pm 30$ kV
  - IEC61000-4-5 (Lightning) 9A (8/20ns)
- \* RoHS Compliant
- \* Package: SOD-523
- \* Lead Finish: Matte Tin

## Circuit Diagram



## Marking Diagram



### Transparent top view

W5B: Device Marking Code

## Description

The PESD24VS1UB is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The PESD24VS1UB complies with the IEC 61000-4-2 (ESD) standard with  $\pm 15$  kV air and  $\pm 8$  kV contact discharge. It is assembled into an ultra-small SOD-523 lead-free package. The small size and high ESD surge protection make PESD24VS1UB an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

## Applications

- \* Cellular Handsets and Accessories
- \* Personal Digital Assistants
- \* Notebooks and Handhelds
- \* Portable Instrumentation
- \* Peripherals
- \* Pagers Peripherals
- \* Desktop and Servers

## Ordering Information

Part Number	Packaging	Reel Size
PESD24VS1UB	3000/Tape & Reel	7 inch



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

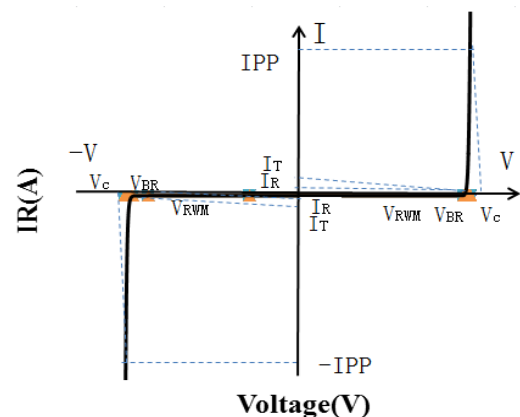
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	420	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	IPP	9	A
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	$V_{RWM}$				24	V
Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	26.0	28.0	30.5	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 24.0\text{V}$			0.5	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 1\text{A}$ (8 x 20 $\mu\text{s}$ pulse)			35	V
Clamping Voltage	$V_C$	$I_{PP} = 9\text{A}$ (8 x 20 $\mu\text{s}$ pulse)		40	45	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		30	50	pF

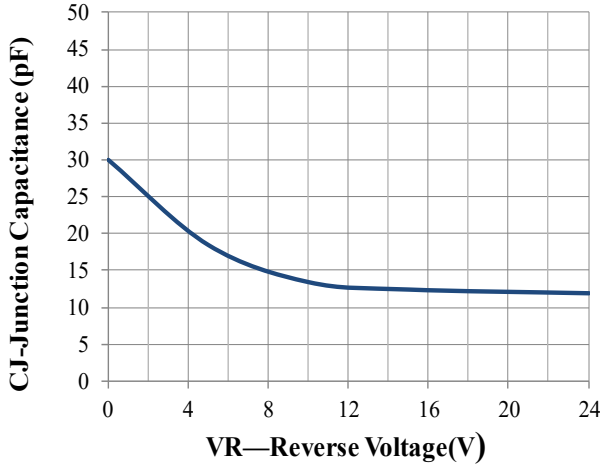
### Portion Electronics Parameter

Symbol	Parameter
$I_T$	Test Current
IPP	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_C$

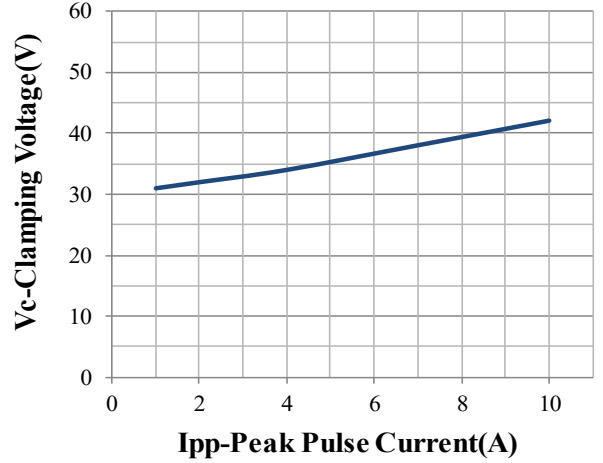




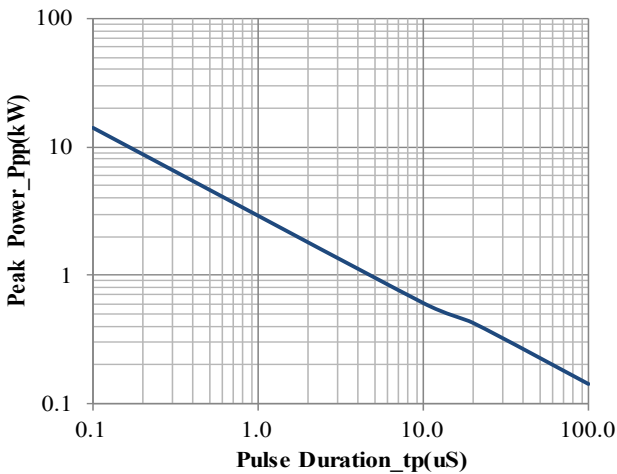
Typical Performance Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise Specified)



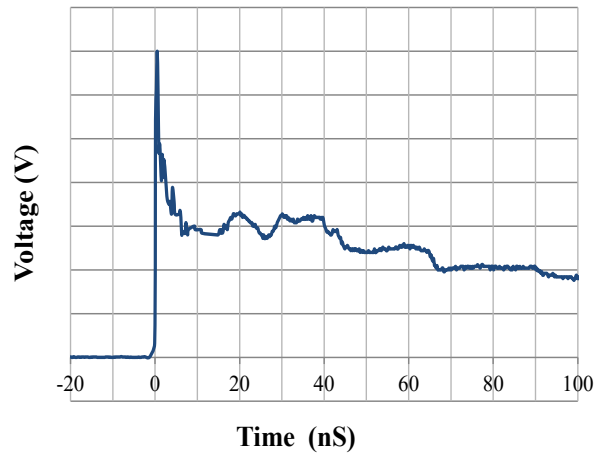
Junction Capacitance vs. Reverse Voltage



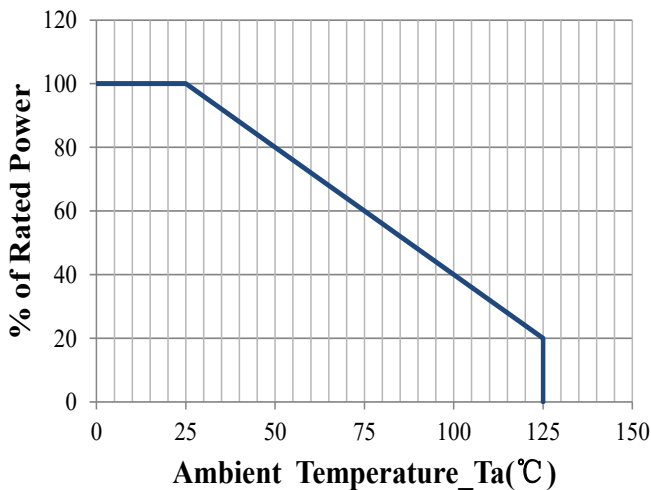
Clamping Voltage vs. Peak Pulse Current



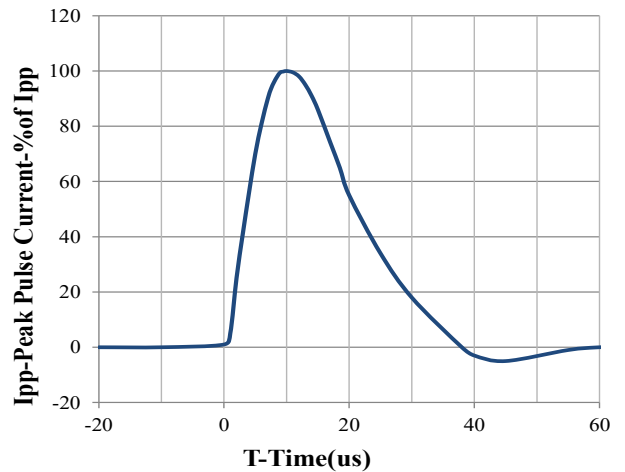
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

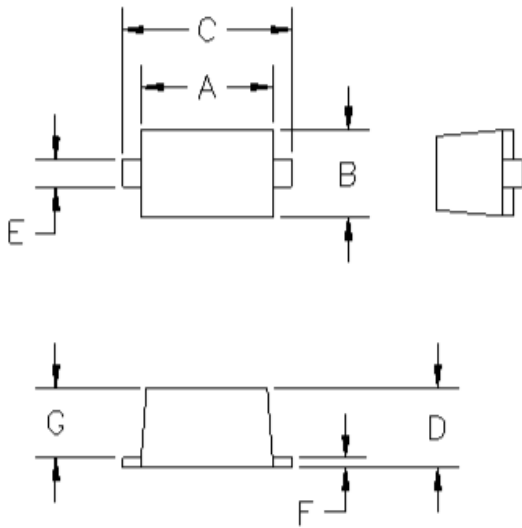


Power Derating Curve



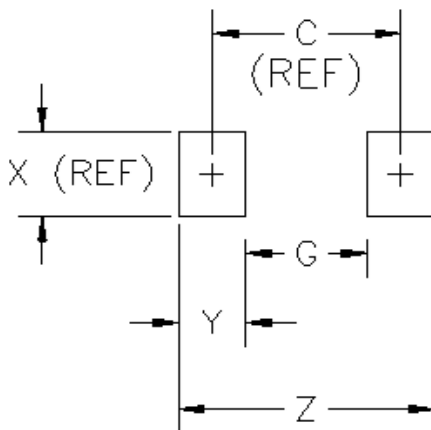
8 X 20us Pulse Waveform

### SOD-523 Package Outline Drawing



DIMENSIONS					
DIM <sup>N</sup>	INCHES		MM		NOTE
	. MIN	MAX	MIN	MAX	
A	.043	.051	1.10	1.30	—
B	.028	.035	0.70	0.90	—
C	.059	.067	1.50	1.70	—
D	.020	.028	0.50	0.70	—
E	.010	.014	0.25	0.35	—
F	.004	.008	0.10	0.20	—
G	.020	.028	0.50	0.70	—

### Suggested Land Pattern



DIMENSIONS					
DIM <sup>N</sup>	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
C	—	.067	—	1.70	REF
G	—	.043	—	1.10	—
X	—	.031	—	0.80	REF
Y	—	.024	—	0.60	—
Z	—	.091	—	2.30	—

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