

## 1- Line Bidirectional ESD Protection Diode

### General description

The PWESD-5VSDC is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

### Features and benefits

- Low Capacitance 2.8 pF(Typ)
- Reverse stand-off voltage: 5V Max
- Low leakage current: nA Level
- Response time is typically < 1 ns
- IEC61000-4-2 Level 4 ESD Protection



### Application information

- Cellular Handsets & Accessories
- Digital Cameras
- Peripherals
- MP3 Players
- Portable Instrumentation
- Notebooks & Desktop Computers
- Keypads, Side Keys, USB 2.0, LCD Displays

### Ordering information

Device	Package	Packaging	Reel Size
PWESD-5VSDC	SOD523	3000/Tape & Reel	7 Inch

### Schematic & Pin configuration

Mimensions	Circuit Diagram
	

## Maximum Ratings

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

Parameter	Symbol	Value	Unit
Peak Pulse Power ( $T_p = 8/20\text{ }\mu\text{s}$ )	$P_{PPM}$	53	W
Rated Peak Pulse Current ( $T_p = 8/20\text{ }\mu\text{s}$ )	$I_{PPM}$	3.5	A
ESD voltage IEC 61000-4-2 (air discharge)	$V_{ESD}$	25	kV
ESD voltage IEC 61000-4-2 (contact discharge)	$V_{ESD}$	25	kV
Operating Temperature Range	$T_L$	260	$^\circ\text{C}$
Maximum lead temperature for soldering during 10s	$T_{stg}$	-55 to +150	$^\circ\text{C}$
Storage Temperature Range	$T_{OP}$	-40 to +125	$^\circ\text{C}$

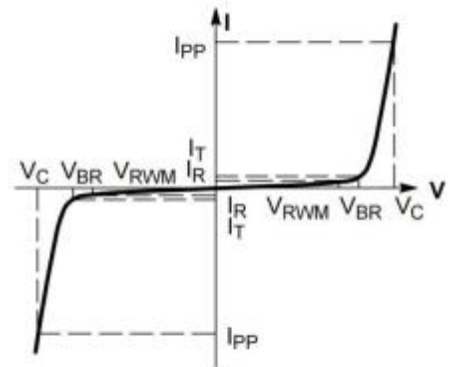
## Electrical Characteristics

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

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	$V_{RWM}$	--	--	5.0	V	
Breakdown Voltage	$V_{BR}$	7.0	--	9.0	V	$I_T=1\text{mA}$
Leakage Current $I_{Leak}$	$I_R$	--	--	100	nA	$V_{RWM}=5\text{V}$
Clamping Voltage	$V_C$	--	10.0	12.0	V	$I_{PP}=1.0\text{A}, T_p=8/20\mu\text{s}$
		--	14.0	15.0	V	$I_{PP}=3.5\text{A}, T_p=8/20\mu\text{s}$
Junction Capacitance	$C_j$	--	2.8	3.2	pF	$V_R=0\text{V}, f=1\text{MHz}$
		--	2.0	2.5	pF	$V_R=5.0\text{V}, f=1\text{MHz}$

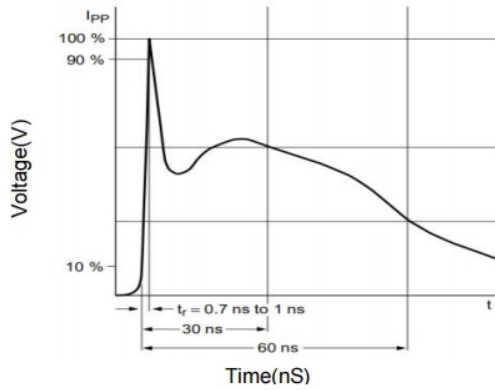
## Portion Electronics Parameter

Symbol	Parameter
$I_{PP}$	Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	VBR Test Current

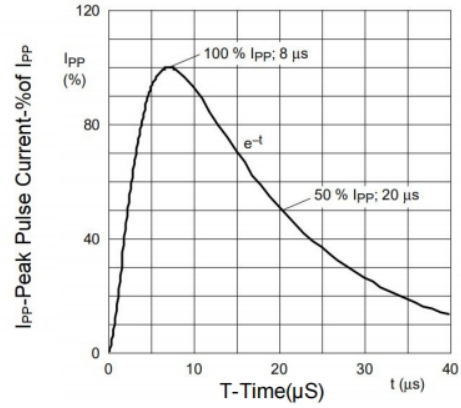


## Typical Performance Characteristics

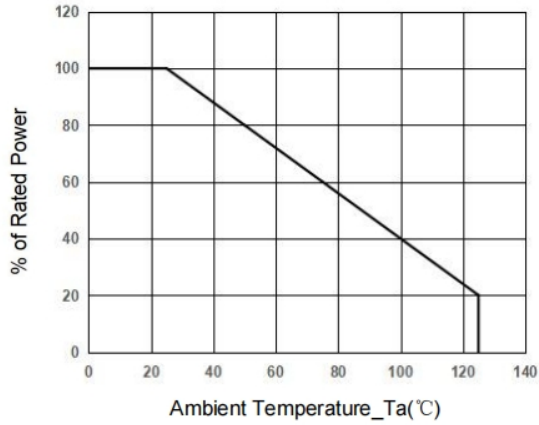
( $T_A=25^\circ\text{C}$  unless otherwise Specified)



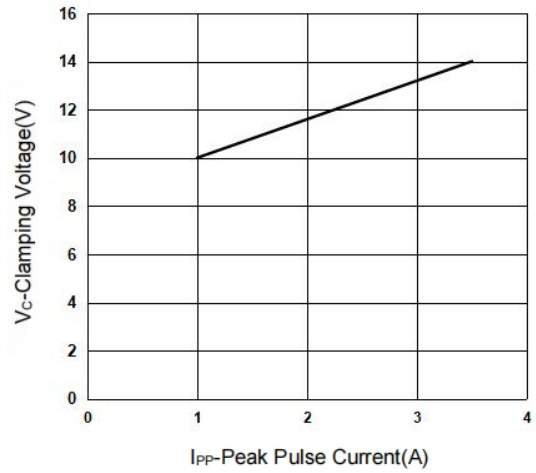
IEC61000-4-2 Pulse Waveform



IEC61000-4-5 8X20 $\mu\text{s}$  Pulse Waveform



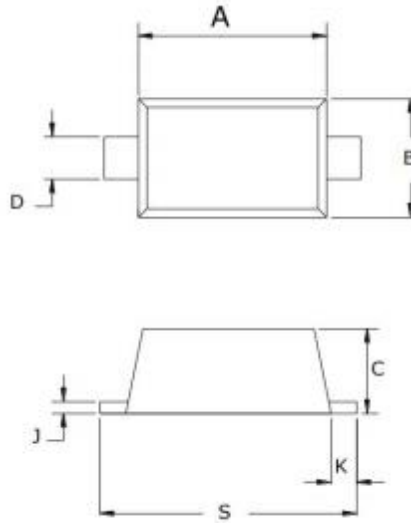
Power Derating Curve



Clamping Voltage vs. Peak Pulse Current

## Package Outline Dimensions

SOD523



SYMBOL	Dimensions In Millimet	
	MIN	MAX
A	1.10	1.30
B	0.70	0.90
C	0.50	0.70
D	0.25	0.35
J	0.07	0.20
K	0.15	0.25
S	1.50	1.70

## Soldering Footprint (mm)

