

## 1- Line Unidirectional ESD Protection Diode

### General 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 and benefits

- Unidirectional ESD protection of one line
- Reverse stand-off voltage: 24V Max
- Low leakage current: nA Level
- Response time is typically < 1 ns
- Low clamping voltage:  $V_C = 42\text{ V @ IPP} = 6\text{ A (TYP)}$
- ESD Protection: 30kV(air)/ 30kV(contact) ( IEC61000-4-2)
- Surge Protection: 6A ( IEC 61000-4-5 8/20  $\mu\text{s}$ )



### Application information

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

### Ordering information

Device	Package	Packaging	Reel Size
PWESD-24VSSA	SOD523	3000/Tape & Reel	7 Inch

### Schematic & Pin configuration

Simplified outline	Graphic symbol
	

## Maximum Ratings

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20 $\mu$ s)	$P_{PPM}$	270	W
Peak Pulse Current(tp = 8/20 $\mu$ s)	$I_{PPM}$	6	A
Maximum lead temperature for soldering during 10s	$T_L$	260	$^{\circ}\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^{\circ}\text{C}$
Operating Temperature Range	$T_{OP}$	-40 to +125	$^{\circ}\text{C}$
Maximum junction temperature	$T_j$	150	$^{\circ}\text{C}$
ESD voltage IEC 61000-4-2 (air discharge)	$V_{ESD}$	30	kV
ESD voltage IEC 61000-4-2 (contact discharge)	$V_{ESD}$	30	kV

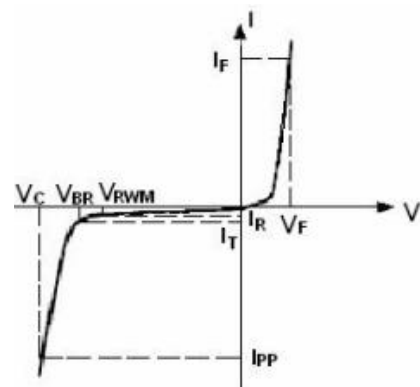
## Electrical Characteristics

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

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	$V_{RWM}$	--	--	24	V	
Breakdown Voltage	$V_{BR}$	26	--	30	V	$I_T=1\text{mA}$
Forward Voltage	$V_F$	0.7	0.8	0.9	V	$I_F=10\text{mA}$
Leakage Current ILeak	$I_R$	--	--	100	nA	$V_{RWM}=24\text{V}$
Clamping Voltage	$V_C$	--	42	45	V	$I_{PP}=6\text{A}, T_p=8/20\mu\text{s}$
Junction Capacitance	$C_J$	--	30	35	pF	$V_R=0\text{V}, f=1\text{MHz}$
		--	8.2	10	pF	$V_R=24\text{V}, f=1\text{MHz}$

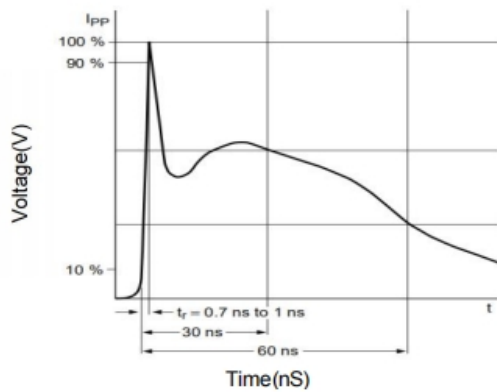
## Portion Electronics Parameter

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

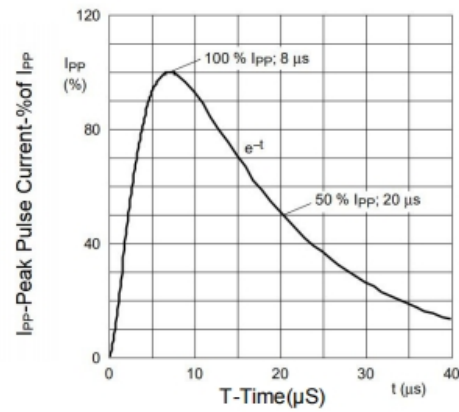


## Typical Performance Characteristics

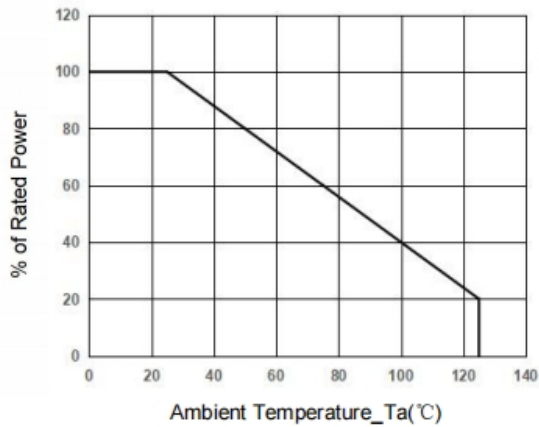
( $T_A=25^\circ\text{C}$  unless otherwise Specified)



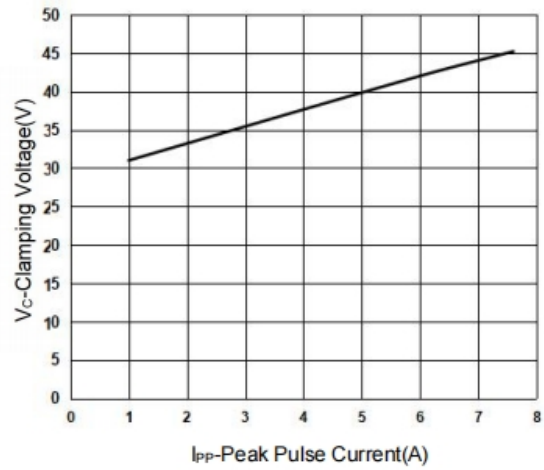
IEC61000-4-2 Pulse Waveform



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



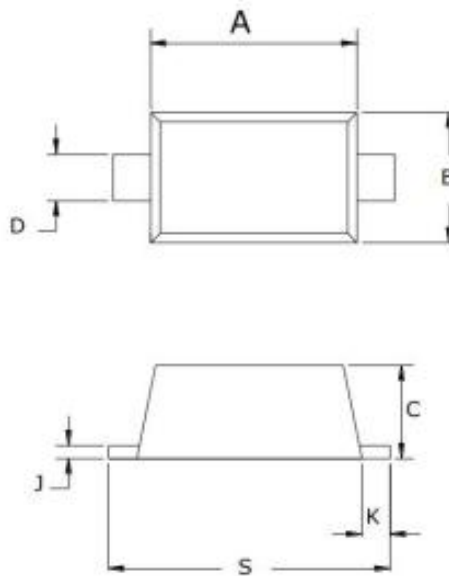
Power Derating Curve



Clamping Voltage vs. Peak Pulse Current

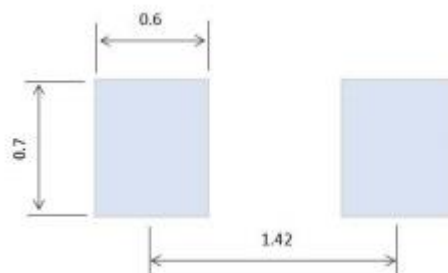
## Package Outline Dimensions

SOD523



SYMBOL	MILLIMETERS		
	MIN	NOR	MAX
A	1.10	1.20	1.30
B	0.70	0.80	0.90
C	0.60	0.65	0.70
D	0.25	0.30	0.35
J	0.08	0.11	0.15
K	0.15	0.20	0.25
S	1.50	1.60	1.70

## Soldering Footprint (mm)



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