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: 5.0V Max
- Low leakage current: nA Level
- Response time is typically < 1 ns
- Low clamping voltage: VC =10 V @ IPP = 11 A (TYP)
- ESD Protection: 30kV(air)/ 30kV(contact) (IEC61000-4-2)
- Surge Protection: 11A (IEC 61000-4-5 8/20 μs)

Application information

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

Ordering information

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

Schematic & Pin configuration

Simplified outline	Graphic symbol
	

Maximum Ratings

(T_{OP} = 25 °C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20μs)	P_{PPM}	132	W
Peak Pulse Current(tp = 8/20μs)	I_{PPM}	11	A
Maximum lead temperature for soldering during 10s	T_L	260	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C
Operating Temperature Range	T_{OP}	-40 to +125	°C
Maximum junction temperature	T_j	150	°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

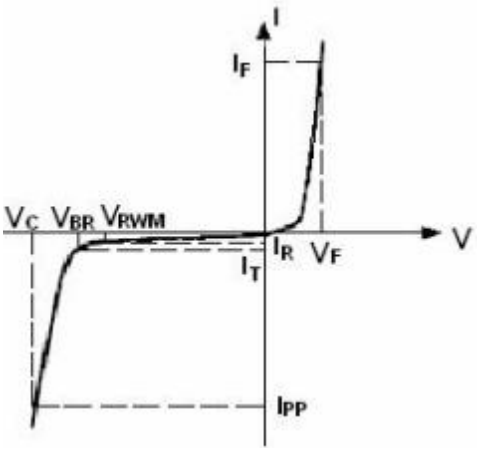
Electrical Characteristics

(T_{OP} = 25 °C, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V_{RWM}	--	--	5.0	V	
Breakdown Voltage	V_{BR}	6.8	--	8.0	V	I_T=1mA
Forward Voltage	V_F	0.7	0.8	0.9	V	I_F=10mA
Leakage Current ILeak	I_R	--	--	100	nA	V_{RWM}=5.0V
Clamping Voltage	V_C	--	10	12	V	I_{PP}=11A,T_p=8/20μs
Junction Capacitance	C_J	--	80	100	pF	V_R=0V, f=1MHz

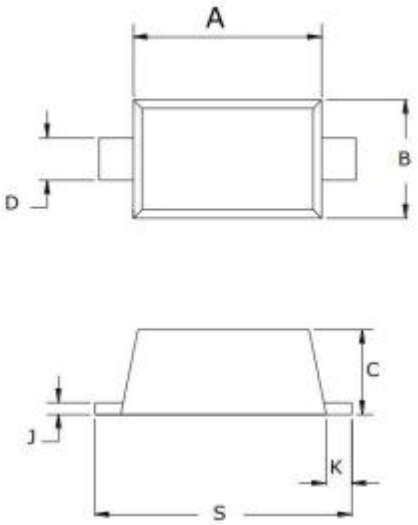
Portion Electronics Parameter

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



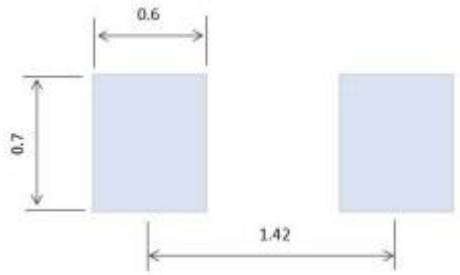
Package Outline Dimensions

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)



IMPORTANT NOTICE

Wuxi PWChip Semi Technology CO., LTD (PW) reserves the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any products or services. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete.

PW assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using PW components.

PW products are not authorized for use in safety-critical applications (such as life support devices or systems) where a failure of the PW product would reasonably be expected to affect the safety or effectiveness of that devices or systems.

The information included herein is believed to be accurate and reliable. However, PW assumes no responsibility for its use; nor for any infringement of patents or other rights of third parties which may result from its use.