1-Line Uni-directional ESD Protection Diode



General description

Unidirectional ElectroStatic Discharge (ESD) protection diode in a SOD923 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: 3.3V Max
- Low leakage current: nA Level
- Response time is typically < 1 ns
- Low clamping voltage: V_C < 10 V @ I_{PP} = 11A
- ESD Protection: 30kV(air)/ 30kV(contact) (IEC61000-4-2)
- Surge Protection: 11A (IEC 61000-4-5 8/20 μs)

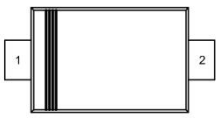
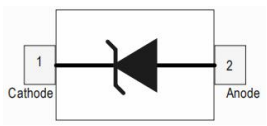
Application information

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

Ordering information

Device	Package	Packaging
ESD9X3.3S-SL	SOD923	8000/Tape & Reel

Schematic & Pin configuration

Simplified outline	Graphic symbol
	

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

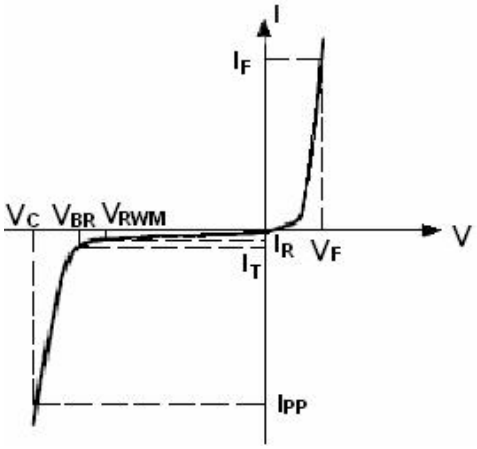
Parameter	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20 μ s)	P_{PPM}	110	W
Peak Pulse Current(tp = 8/20 μ s)	I_{PPM}	11	A
Maximum lead temperature for soldering during 10s	T_L	260	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C
Operating Temperature Range	T_{OP}	-40 to +125	°C
Maximum junction temperature	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}	--	--	3.3	V	
Breakdown Voltage	V_{BR}	5.2	--	6.2	V	I_T=1mA
Forward Voltage	V_F	--	0.75	0.85	V	I_F=10mA
Leakage Current ILeak	I_R	--	--	100	nA	V_{RWM}=3.3V
Clamping Voltage	V_C	--	6.5	7.0	V	I_{PP}=1A,Tp=8/20μs
Clamping Voltage	V_C	--	9.0	10.0	V	I_{PP}=11A,Tp=8/20μs
Junction Capacitance	C_J	--	65	80	pF	V_R=0V, f=1MHz

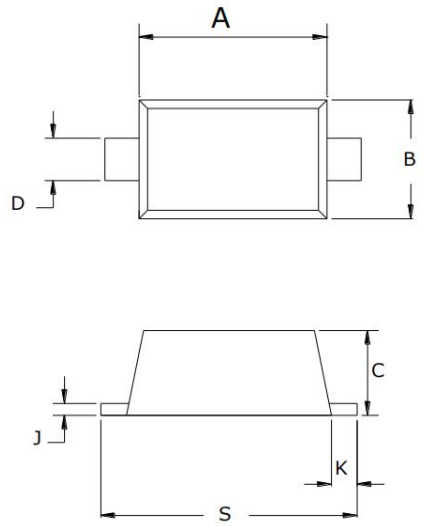
Portion Electronics Parameter

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

SOD923



SYMBOL	MILLIMETERS	
	MIN	MAX
A	0.74	0.86
B	0.54	0.66
C	0.35	0.45
D	0.14	0.26
K	0.04	0.16
S	0.95	1.10

Soldering Footprint (mm)

