



ESD5B5.0

SOD523

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: $V_C = 11\text{ V @ } I_{PP} = 20\text{A (TYP)}$
- ESD Protection: 30kV(air)/ 30kV(contact) (IEC61000-4-2)
- Surge Protection: 20A (IEC 61000-4-5 8/20 μs)

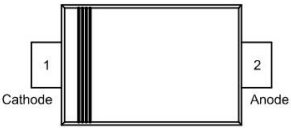
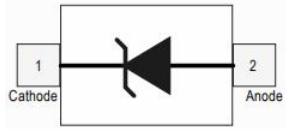
Application information

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

Ordering information

Device	Package	Packaging	Reel Size
ESD5B5.0	SOD523	3000/Tape & Reel	7 Inch

Schematic & Pin configuration

Simplified outline	Graphic symbol
	

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

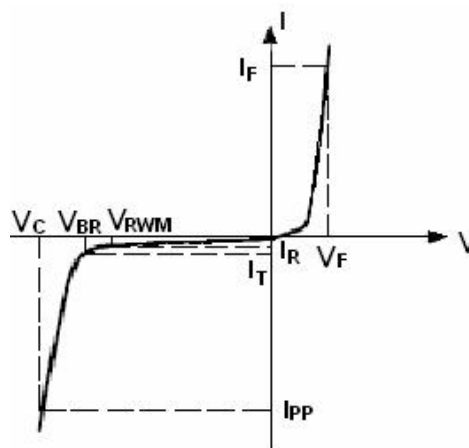
Parameter	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20 μ s)	P _{PPM}	260	W
Peak Pulse Current(tp = 8/20 μ s)	I _{PPM}	20	A
Maximum lead temperature for soldering during 10s	T _L	260	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C
Operating Temperature Range	T _{OP}	-40 to +125	°C
Maximum junction 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	--	8.2	V	I _T =1mA
Forward Voltage	V _F	0.7	0.8	0.9	V	I _F =10mA
Leakage Current I _{Leak}	I _R	--	--	100	nA	V _{RWM} =5.0V
Clamping Voltage	V _C	--	11	13	V	I _{pp} =20A, Tp=8/20μs
Junction Capacitance	C _J	--	140	150	pF	V _R =0V, f=1MHz

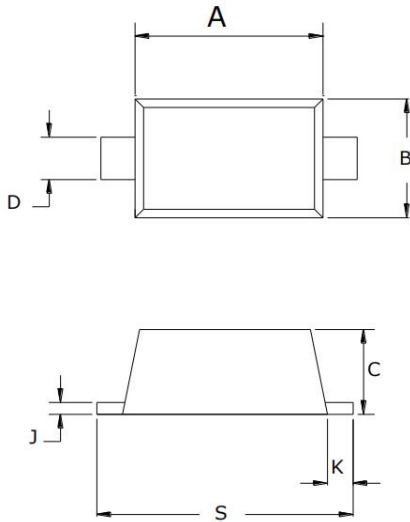
Portion Electronics Parameter

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)

