



## 1-Line Bidirectional ESD Protection Diode

### General description

The ESD9L5.0C 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 0.6 pF(Typ)
- . Reverse stand-off voltage: 5V Max
- . Low leakage current: nA Level
- . Low Clamping Voltage
- . Response time is typically < 1 ns
- . IEC61000-4-2 Level 4 ESD Protection


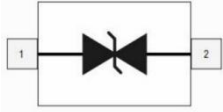
### Application information

- . 10/100/1000 Mbit/s Ethernet
- . FireWire
- . High- speed data lines
- . Subscriber Identity Module (SIM) card protection
- . Cellular handsets and accessories
- . Portable electronics
- . Communication systems
- . Computers and peripherals
- . Audio and video equipment
- . Antenna protection

### Ordering information

Device	Package	Marking	Packaging
ESD9L5.0C	SOD923	N	8000/Tape & Reel

### Schematic & Pin configuration

Simplified outline	Graphic symbol
	

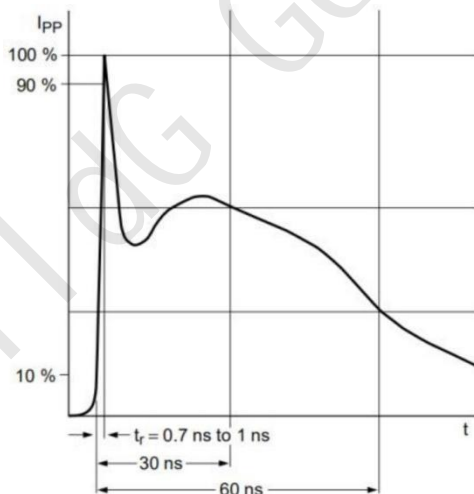
**Maximum Ratings** ( $T_{OP} = 25 \text{ }^\circ\text{C}$ , unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power ( $t_p = 8/20 \mu\text{s}$ )	$P_{PPM}$	45	W
Peak Pulse Current ( $t_p = 8/20 \mu\text{s}$ )	$I_{PPM}$	3	A
ESD voltage IEC 61000-4-2 (air discharge)	$V_{ESD}$	15	kV
ESD voltage IEC 61000-4-2 (contact discharge)	$V_{ESD}$	8	kV
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	$^\circ\text{C}$

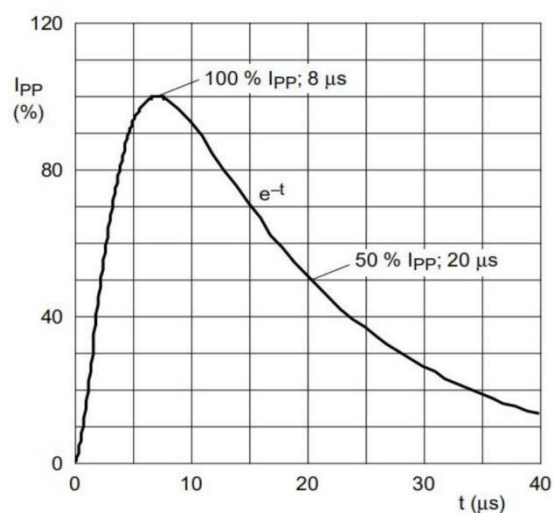
**Electrical Characteristics** ( $T_{OP} = 25 \text{ }^\circ\text{C}$ , unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	$V_{RWM}$	--	--	5.0	V	
Breakdown Voltage	$V_{BR}$	6.5	--	9.0	V	$I_T=1\text{mA}$
Leakage Current $I_{Leak}$	$I_R$	--	--	100	nA	$V_{RWM}=5\text{V}$
Clamping Voltage	$V_C$	--	--	15.0	V	$I_{pp}=3\text{A}, T_p=8/20\mu\text{s}$
Junction Capacitance	$C_j$	--	0.6	0.8	pF	$V_R=0\text{V}, f=1\text{MHz}$

**Typical Electrical and Thermal Characteristics (Curves)**



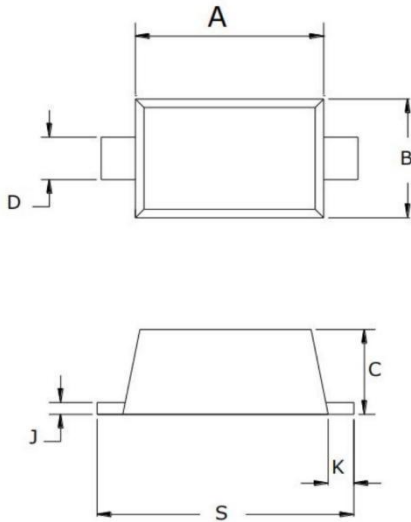
IEC61000-4-2 Waveform



IEC 61000-4-5 Waveform( 8/20µs pulse)

**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)**

