



## 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


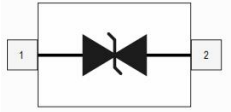
### Application information

- 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
	

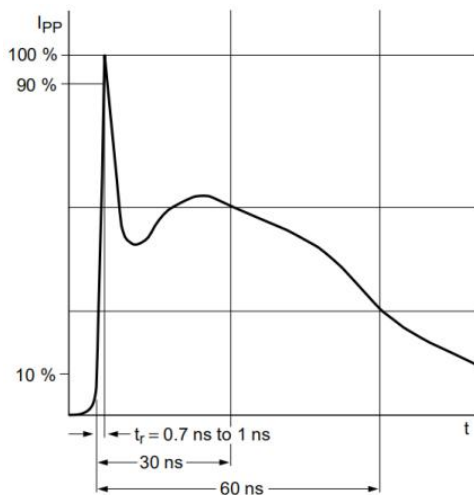
**Maximum Ratings** ( $T_{OP} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power ( $t_p = 8/20\text{ }\mu\text{s}$ )	$P_{PPM}$	45	W
Peak Pulse Current ( $t_p = 8/20\text{ }\mu\text{s}$ )	$I_{PPM}$	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	$^{\circ}\text{C}$

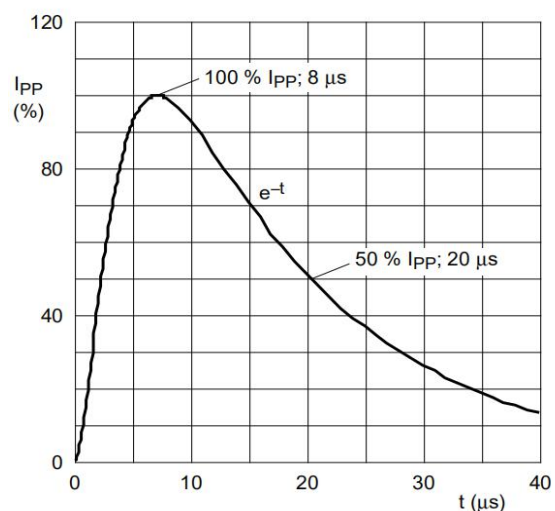
**Electrical Characteristics** ( $T_{OP} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

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)**



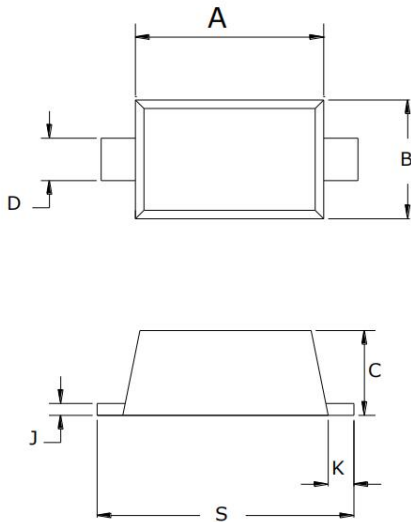
IEC61000-4-2 Waveform



IEC 61000-4-5 Waveform( 8/20 $\mu\text{s}$  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)**

