
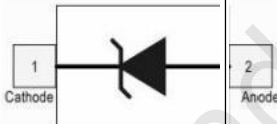




1-Line Unidirectional ESD Protection Diode

SOD523

## Schematic & Pin configuration

Simplified outline	Graphic symbol
	

## General description

The ESD5U5.0 is an uni-directional TVS diode,utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage,making this device an ideal solution for protecting voltage sensitive data and power line.The ESD5U5.0 complies with the IEC 61000-4-2 (ESD)standard with  $\pm 20\text{KV}$  air and  $\pm 15\text{KV}$  contact discharge.It is assembled into an ultra-small 1.6x0.8x0.6mm lead-free SOD523 package. The small size and high ESD surge protection make ESD5U5.0 an ideal choice to protect cell phone,digital cameras,audio players and many other portable applications.

## Features and benefits

- Low Capacitance 0.5 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

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>·10/100/1000 Mbit/s Ethernet</li> <li>· FireWire</li> <li>·High-speed data lines</li> <li>·Subscriber Identity Module (SIM) card protection</li> <li>·Cellular handsets and accessories</li> </ul> | <ul style="list-style-type: none"> <li>· Portable electronics</li> <li>·Communication systems</li> <li>·Computers and peripherals</li> <li>·Audio and video equipment</li> <li>·Antenna protection</li> </ul> |
|---|---|

## Ordering information

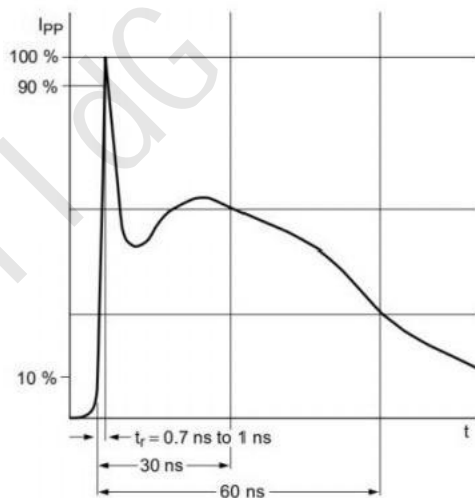
Device	Package	Packaging
ESD5U5.0	SOD523	3000/Tape &Reel

**Maximum Ratings (Top=25 C,unless otherwise specified)**

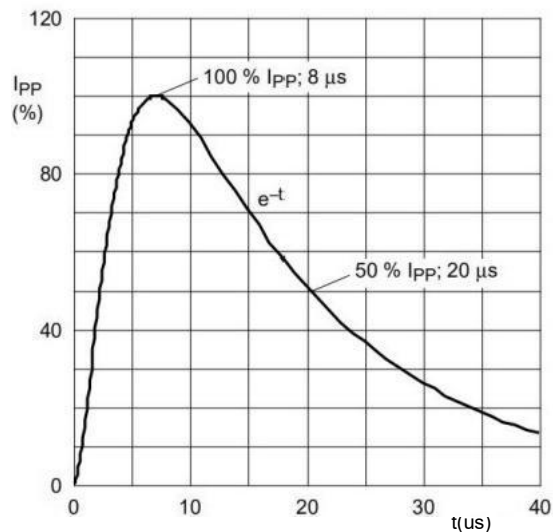
Parameter	Symbol	Value	Unit
Peak Pulse Power( $t_p=8/20 \mu s$ )	PppM	80	W
Peak Pulse Current( $t_p =8/20 \mu s$ )	Ippm	4.0	A
Maximum lead temperature for soldering during 10s	TL	260	°C
Storage Temperature Range	Tstg	-55 to +150	°C
Operating Temperature Range	Top	-40 to +125	°C
Maximum junction temperature	Tj	150	°C
ESD voltage IEC 61000-4-2 (air discharge)	VESD	20	kV
ESD voltage IEC 61000-4-2 (contact discharge)	VESD	15	kV

**Electrical Characteristics (Top=25C,unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	VRWM	-		5.0	V	
Breakdown Voltage	VBR	6.5		9.0	V	$I_r=1mA$
Leakage Current ILeak	$I_r$			100	nA	$VR_{WM}=5V$
Clamping Voltage	$V_c$		12	14	V	$I_{pp}=4.0A, T_p=8/20 \mu s$
Junction Capacitance	$C_j$		0.5	0.6	pF	$V_g=0V, f=1MHz;$



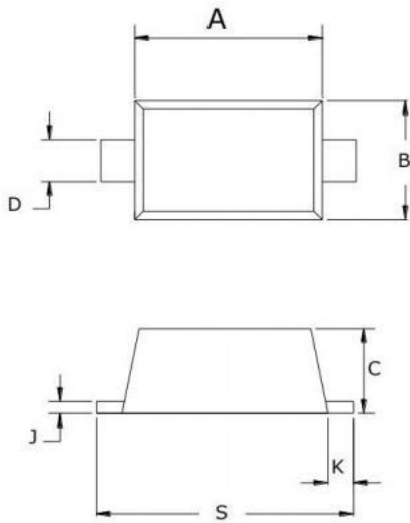
IEC61000-4-2 Waveform



IEC 61000-4-5 Waveform(8/20 $\mu s$  pulse)

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	<b>0.35</b>
J	0.08	0.11	<b>0.15</b>
K	0.15	0.20	<b>0.25</b>
S	1.50	<b>1.60</b>	<b>1.70</b>

Soldering Footprint (mm)

