

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: $V_C < 18.6\text{ V @ IPP} = 9\text{ A}$
- ESD Protection: 30kV(air)/ 30kV(contact) (IEC61000-4-2)
- Surge Protection: 9A (IEC 61000-4-5 8/20 μs)



SOD523

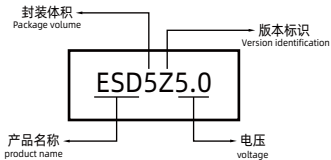
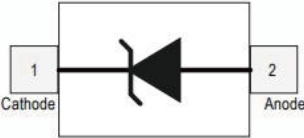
Application information

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

Ordering information

Device	Package	Reel Size	Qty(PCS)
ESD5Z5.0	SOD523	7 Inch	3000

Ordering information

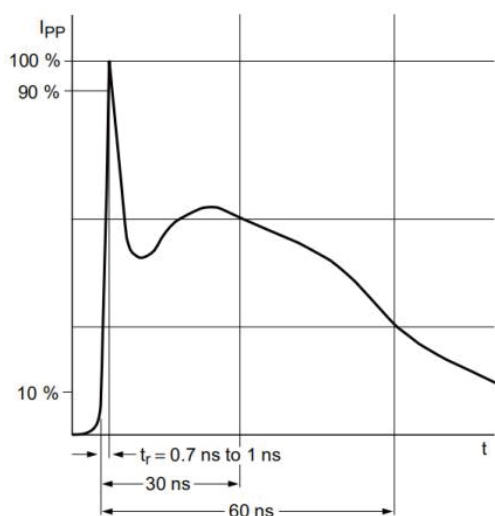
Marking	Naming rule	Graphic symbol
ZF	 The diagram shows the naming rule for the device ESD5Z5.0. It is broken down into four parts: '封装体积' (Package volume) for 'ESD', '产品名称' (Product name) for '5Z', '版本标识' (Version identification) for '5', and '电压' (Voltage) for '.0'.	 The graphic symbol is a diode symbol with a triangle pointing right. The left terminal is labeled '1 Cathode' and the right terminal is labeled '2 Anode'.

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

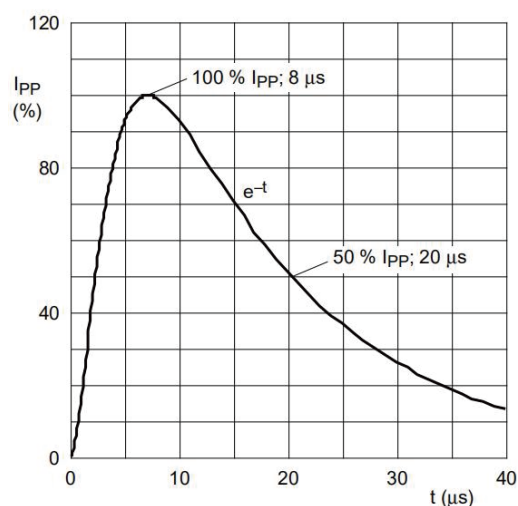
Parameter	Symbol	Value	Unit
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{PPM}	174	W
Peak Pulse Current ($t_p = 8/20\mu\text{s}$)	I_{PPM}	9	A
Maximum lead temperature for soldering during 10s	T_L	260	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$
Operating Temperature Range	T_{OP}	-40 to +125	$^\circ\text{C}$
Maximum junction temperature	T_j	150	$^\circ\text{C}$
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 ($T_A = 25^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V_{RWM}	--	--	5.0	V	
Breakdown Voltage	V_{BR}	6.2	--	8.2	V	$I_T = 1\text{mA}$
Leakage Current I_{Leak}	I_R	--	--	100	nA	$V_{RWM} = 5\text{V}$
Clamping Voltage	V_C	--	--	18.6	V	$I_{PP} = 9\text{A}, t_p = 8/20\mu\text{s}$
Junction Capacitance	C_J	--	60	80	pF	$V_R = 0\text{V}, f = 1\text{MHz}$

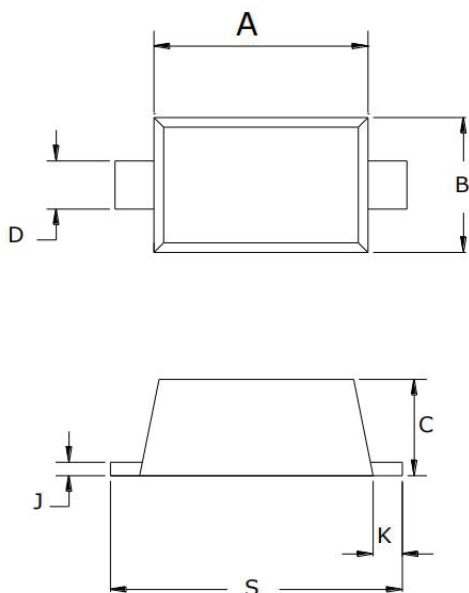


IEC61000-4-2 Waveform


 IEC 61000-4-5 Waveform (8/20 μs pulse)

Package Outline Dimensions

SOD523



SYMBOL	MILLIMETERS	
	MIN	MAX
A	1.10	1.30
B	0.70	0.90
C	0.50	0.70
D	0.25	0.35
J	0.07	0.20
K	0.15	0.25
S	1.50	1.70

Soldering Footprint (mm)

