



## 1-Line Bidirectional ESD Protection Diode

### General description

The ESD5Z12C 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

- . Reverse stand-off voltage: 12V Max
- . Low leakage current: nA Level
- . Low Clamping Voltage:  $V_c \leq 17\text{ V}@9\text{A}(8/20\mu\text{s})$
- . Response time is typically  $< 1\text{ ns}$
- . IEC61000-4-2 Level 4 ESD Protection


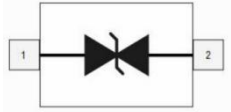
### Application information

- . Cell phones
- . Audio equipment
- . Portable devices
- . Digital cameras
- . Power supplies

### Ordering information

Device	Package	Packaging	Reel Size
ESD5Z12C	SOD523	3000/Tape & Reel	7 inch

### Schematic & Pin configuration

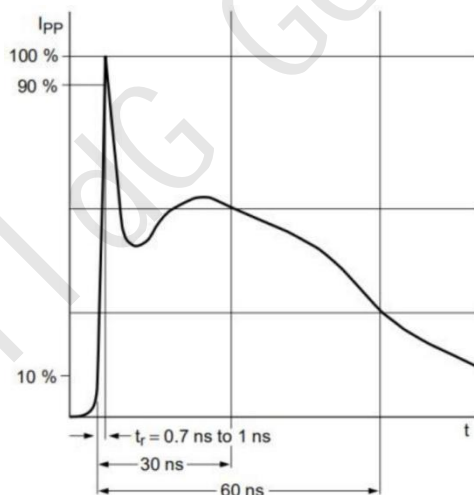
Simplified outline	Graphic symbol
	

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

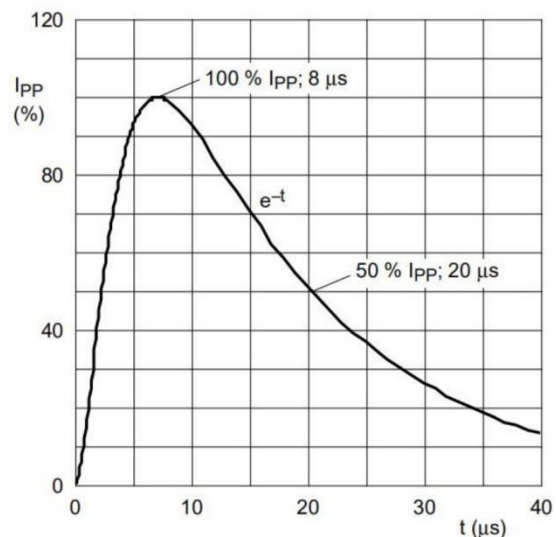
Parameter	Symbol	Value	Unit
Peak Pulse Power ( $t_p = 8/20 \text{ } \mu\text{s}$ )	$P_{PPM}$	160	W
Peak Pulse Current ( $t_p = 8/20 \text{ } \mu\text{s}$ )	$I_{PPM}$	9	A
Maximum lead temperature for soldering during 10s	$T_L$	260	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^\circ\text{C}$
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** ( $T_{OP} = 25 \text{ } ^\circ\text{C}$ , unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	$V_{RWM}$	--	--	12.0	V	
Breakdown Voltage	$V_{BR}$	13.0	--	16	V	$I_r=1\text{mA}$
Leakage Current $I_{Leak}$	$I_r$	--	--	200	nA	$V_{RWM}=12\text{V}$
Clamping Voltage	$V_C$	--	17	18	V	$I_{pp}=9\text{A}, t_p=8/20\mu\text{s}$
Junction Capacitance	$C_j$	--	8	10	pF	$V_R=0\text{V}, f=1\text{MHz}$



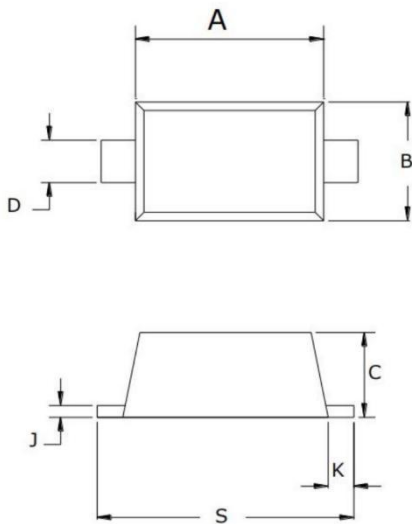
IEC61000-4-2 Waveform



IEC 61000-4-5 Waveform( 8/20µs pulse)

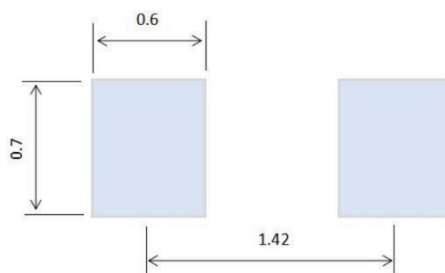
**Package Outline Dimensions**

**SOD523**



SYMBOL	Dimensions In Millimet	
	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)**



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