



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


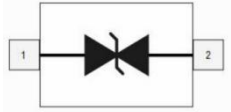
Application information

- 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

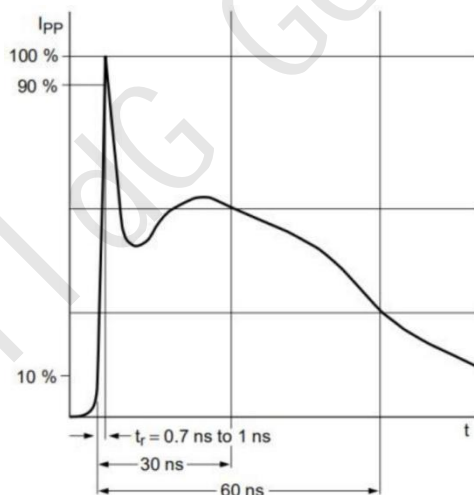
Simplified outline	Graphic symbol
	

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

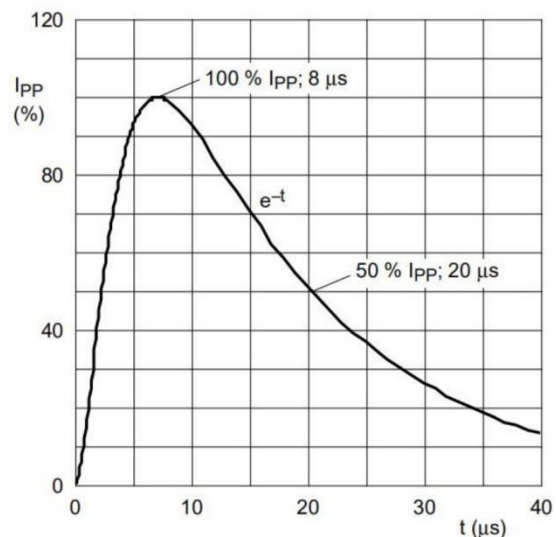
Parameter	Symbol	Value	Unit
Peak Pulse Power ($t_p = 8/20 \text{ } \mu\text{s}$)	P_{PPM}	160	W
Peak Pulse Current ($t_p = 8/20 \text{ } \mu\text{s}$)	I_{PPM}	9	A
Maximum lead temperature for soldering during 10s	T_L	260	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$
Operating 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	$V_R=0\text{V}, f=1\text{MHz}$



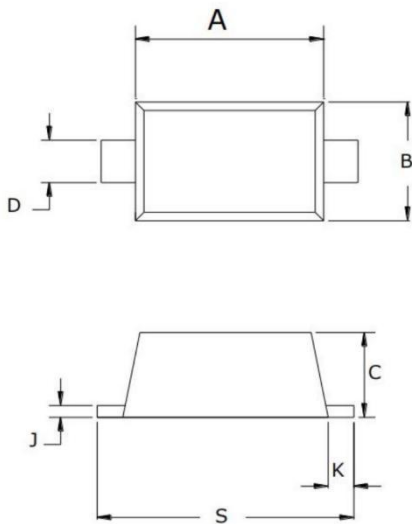
IEC61000-4-2 Waveform



IEC 61000-4-5 Waveform(8/20 μs 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)

