1-Line Bidirectional ESD Protection Diode

General description

The ESD5Z24C 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: 24V Max
- Low leakage current: nA Level
- Low Clamping Voltage
- Response time is typically < 1 ns
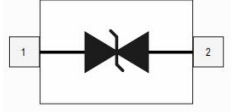- IEC61000−4−2 Level 4 ESD Protection

Application information

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

Ordering information

Device	Package	Marking	Packaging
ESD5Z24C	SOD523	W5B	3000/Tape & Reel

Schematic & Pin configuration

Simplified outline	Graphic symbol

Maximum Ratings (T$_{OP}$ = 25 °C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20 μ s)	P$_{PPM}$	400	W
Peak Pulse Current (tp = 8/20 μ s)	I$_{PPM}$	9	A
Maximum lead temperature for soldering during 10s	T$_L$	260	°C
Storage Temperature Range	T$_{stg}$	-55 to +150	°C
Operating Temperature Range	T$_{OP}$	-40 to +125	°C
Maximum junction temperature	T$_j$	150	°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 °C, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V$_{RWM}$	--	--	24.0	V	
Breakdown Voltage	V$_{BR}$	25.0	--	30.0	V	I$_T$=1mA
Leakage Current ILeak	I$_R$	--	--	100	nA	V$_{RWM}$=24V
Clamping Voltage	V$_C$	--	40	44	V	I$_{PP}$=9A,Tp=8/20μs
Junction Capacitance	C$_J$	--	26	30	pF	V$_R$=0V, f=1MHz

Typical Electrical and Thermal Characteristics (Curves)
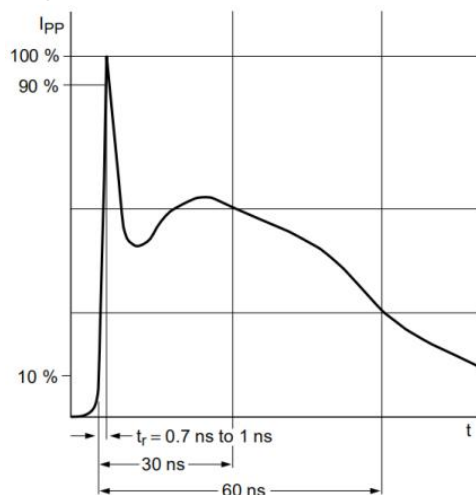
IEC61000−4−2 Waveform
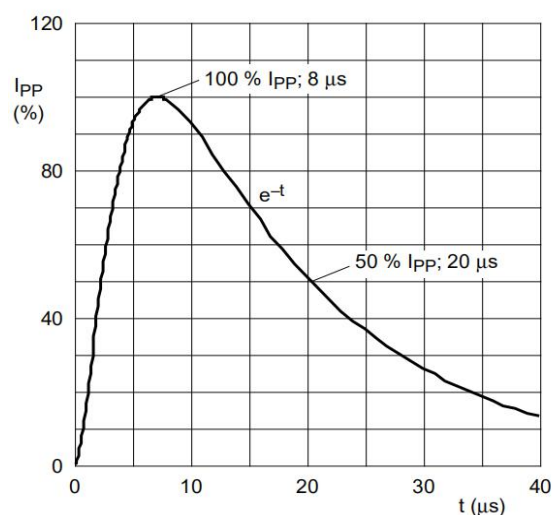
IEC 61000-4-5 Waveform(8/20μs pulse)

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Package Outline Dimensions

SOD523
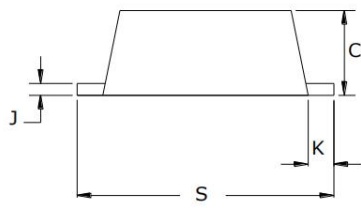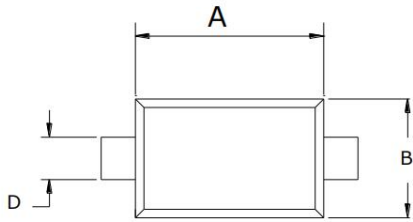
SYMBOL	Dimensions In Millimet	
	MIN	MAX
A	1.10	1.30
B	0.70	0.90
C	0.50	0.70
D	0.25	0.35
J	0.07	0.20
K	0.15	0.25
S	1.50	1.70

Soldering Footprint (mm)