

1-Line Bidirectional ESD Protection Diode

General description

These surge protection diodes are designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines, communication systems, medical equipment and other applications. These devices are ideal for situations where board space is at a premium.

Features and benefits

- Bidirectional ESD protection of one line
- Reverse stand-off voltage: 12.0V Max
- Low Capacitance 10 pF(Typ)
- Low leakage current: nA Level
- Response time is typically < 1 ns
- ESD Protection: 30kV(air)/ 30kV(contact) (IEC61000-4-2)
- RoHS compliant

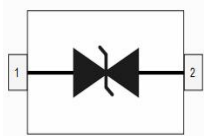
Application information

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers

Ordering information

Device	Package	Packaging	Reel Size
SD12CD	SOD323	3000/Tape & Reel	7 inch

Schematic & Pin configuration

Simplified outline	Graphic symbol
	

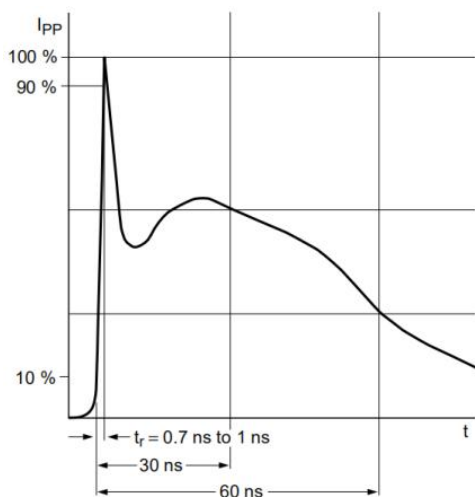
Maximum Ratings (T_{OP} = 25 °C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20 μ s)	P _{PPM}	200	W
Peak Pulse Current(tp = 8/20 μ s)	I _{PPM}	11	A
ESD voltage IEC 61000-4-2 (air discharge)	V _{ESD}	30	kV
ESD voltage IEC 61000-4-2 (contact discharge)	V _{ESD}	30	kV
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

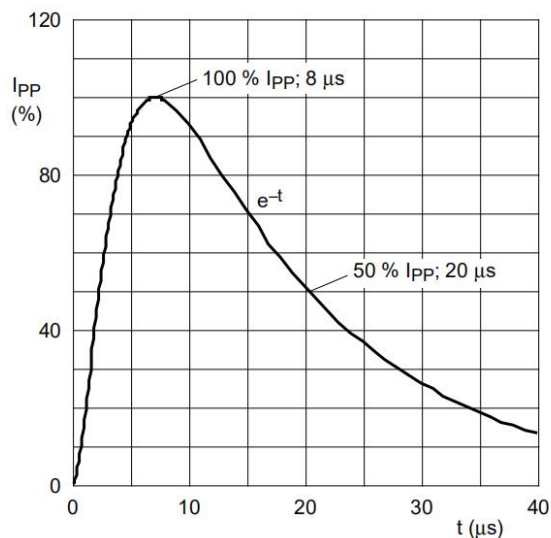
Electrical Characteristics (T_{OP} = 25 °C, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V _{RWM}	--	--	12.0	V	
Breakdown Voltage	V _{BR}	13.0	--	15.5	V	I _T =1mA
Leakage Current I _{Leak}	I _R	--	--	100	nA	V _{RWM} =12V
Clamping Voltage	V _C	--	13	14	V	I _{PP} =1A, Tp=8/20μs
		--	17	18		I _{PP} =11A, Tp=8/20μs
Junction Capacitance	C _J	--	10	12	pF	V _R =0V, f=1MHz

Typical Characteristics



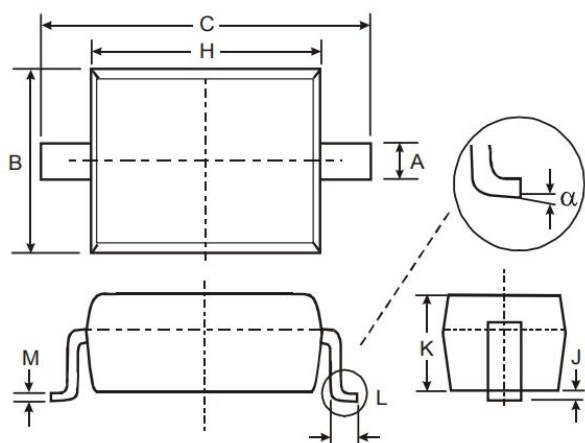
IEC61000-4-2 Waveform



IEC 61000-4-5 Waveform(8/20μs pulse)

Package Outline Dimensions

SOD323



SYMBOL	MILLIMETERS	
	MIN	MAX
A	0.25	0.35
B	1.20	1.40
C	2.40	2.70
H	1.60	1.80
J	0.01	0.15
K	0.70	0.90
L	0.20	0.40
M	0.08	0.15
α	0°	8°