

Features

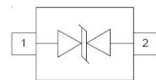
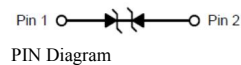
- ◇ 350 W (8x20us) Peak Pulse Power ◇
- Low Clamping Voltage
- ◇ SOD-323 Package
- ◇ RoHS Compliant
- ◇ Matte Tin Lead finish (Pb-Free) ◇
- Protect One I/O or Power Line
- ◇ Meet IEC61000-4-2 Level 4:
Contact Discharge > 30 kV
Air Discharge > 30 kV

◇ -S prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable

Applications

- ◇ Smart Phones
- ◇ Laptop Computers
- ◇ Portable Electronics

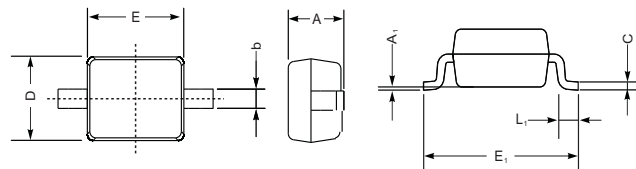
Circuit Diagram



Ordering information

Device	Package	Marking
SD12C	SOD-323	12C

SOD323



UNIT		A	C	D	E	E ₁	b	L ₁	A ₁
mm	max	1.1	0.15	1.4	1.8	2.75	0.4	0.45	0.2
	min	0.8	0.08	1.2	1.4	2.55	0.25	0.2	—
mil	max	43	5.9	55	70	108	16	16	8
	min	32	3.1	47	63	100	9.8	7.9	—

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	V _{ESD} ⁽¹⁾	±30	kV
		Air Model	
		Contact Model	
		Per Human Body Model	
JESD22-A114-B ESD Voltage		±16	
ESD Voltage	Machine Model	±0.4	
Peak Pulse Power	P _{PP} ⁽²⁾	350	W
Peak Pulse Current	I _{PP} ⁽²⁾	10	A
Lead Solder Temperature – Maximum (10 Second Duration)	T _L	260	°C
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _{stg}	-55 ~ +150	°C

(1). Device stressed with ten non-repetitive ESD pulses.

(2). Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.

SD12C

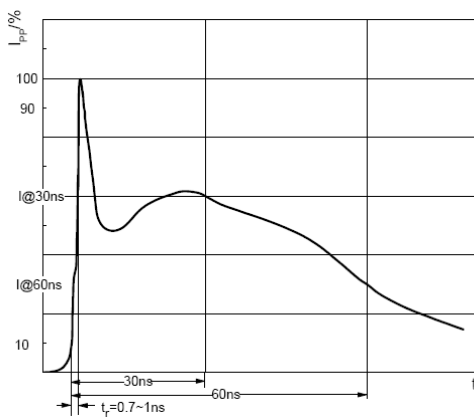
ESD standards compliance

IEC61000-4-2 Standard

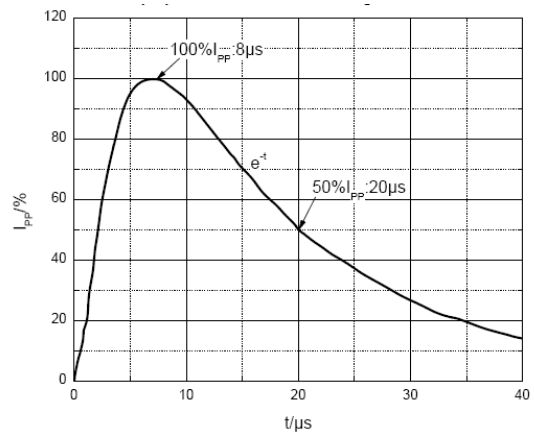
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

JESD22-A114-B Standard

ESD Class	Human Body Discharge V
0	0~249
1A	250~499
1B	500~999
1C	1000~1999
2	2000~3999
3A	4000~7999
3B	8000~15999

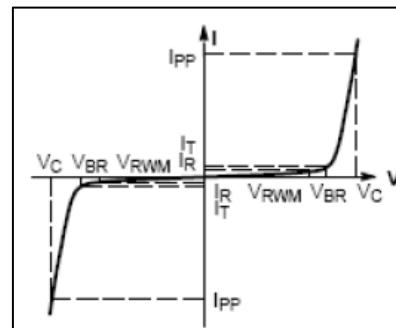


ESD pulse waveform according to IEC61000-4-2



8/20µs pulse waveform according to IEC 61000-4-5

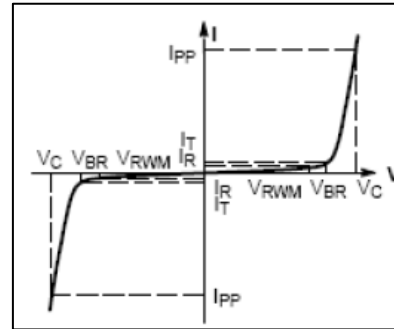
Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage



V-I characteristics for a Bi-directional TVS

SD12C

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I_{PP}	Peak Pulse Current
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V-I characteristics for a Bi-directional TVS

Electrical Characteristics (Ta = 25°C)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
VRWM	Reverse Working Peak Voltage				12	V
VBR	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	13.6		16	V
IR	Reverse Leakage Current	$V_{RWM} = 12\text{V}$			1	μA
VC	Clamping Voltage	$I_{PP} = 1\text{A} (8/20\mu\text{s})$			25	V
VC	Clamping Voltage	$I_{PP} = 10\text{A} (8/20\mu\text{s})$			35	V
Ipp	Peak Pulse Current	$\mu\text{s}) \tau_p = 8/20\mu\text{s}$			10	A
CJ	Capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$		60		pF

RATING AND CHARACTERISTIC CURVES (SD12C)

