

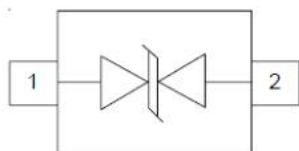
Features

- ◇ 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 > 3 0 kV
 - Air Discharge > 3 0 kV

Circuit Diagram



PIN Diagram



Applications

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

Ordering information

Device	Package	MARKING	Qty / Reel
SD12CT1G	SOD-323	ZK	3000

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage Air Model Contact Model JESD22-A114-B ESD Voltage Per Human Body Model ESD Voltage Machine Model	$V_{\text{ESD}}^{(1)}$	± 30	kV
		± 30	
		± 16	
		± 0.4	
Peak Pulse Power	$P_{\text{PP}}^{(2)}$	350	W
Peak Pulse Current	$I_{\text{PP}}^{(2)}$	10	A
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	$^{\circ}\text{C}$
Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ +150	$^{\circ}\text{C}$

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

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

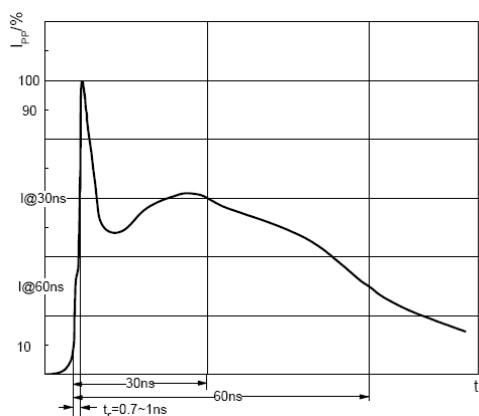
ESD standards compliance

IEC61000-4-2 Standard

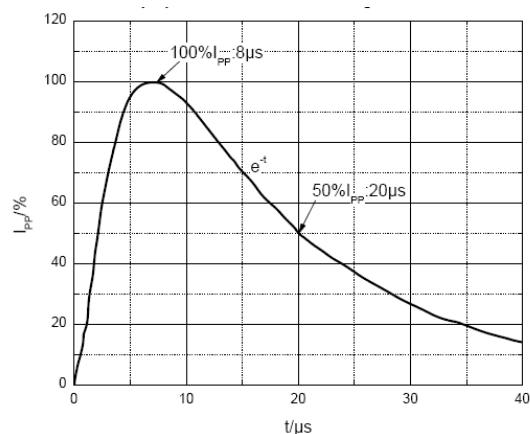
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

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

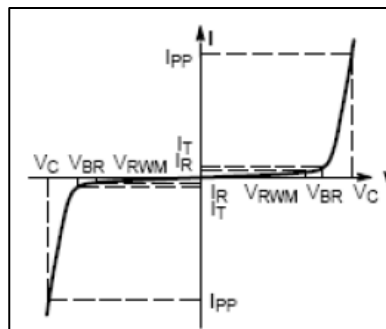


ESD pulse waveform according to IEC61000-4-2



8/20 μs 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

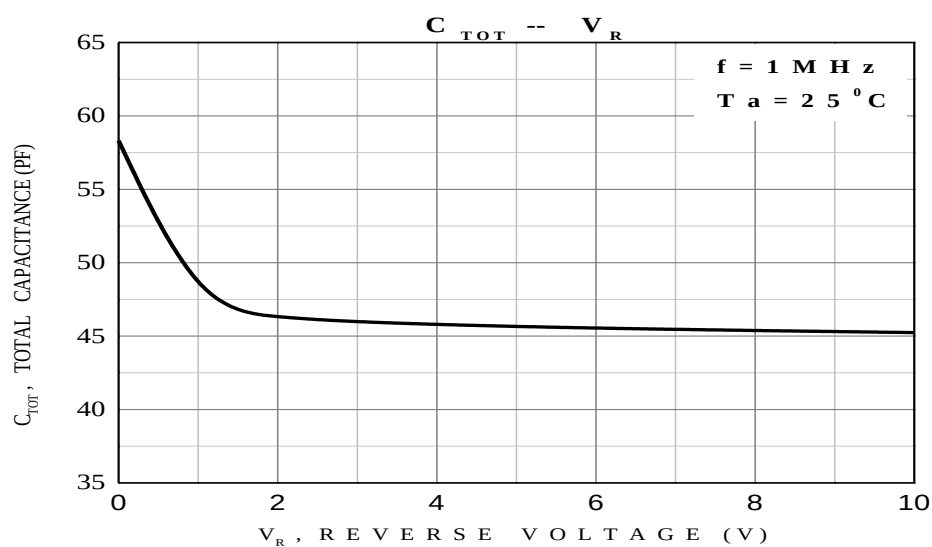
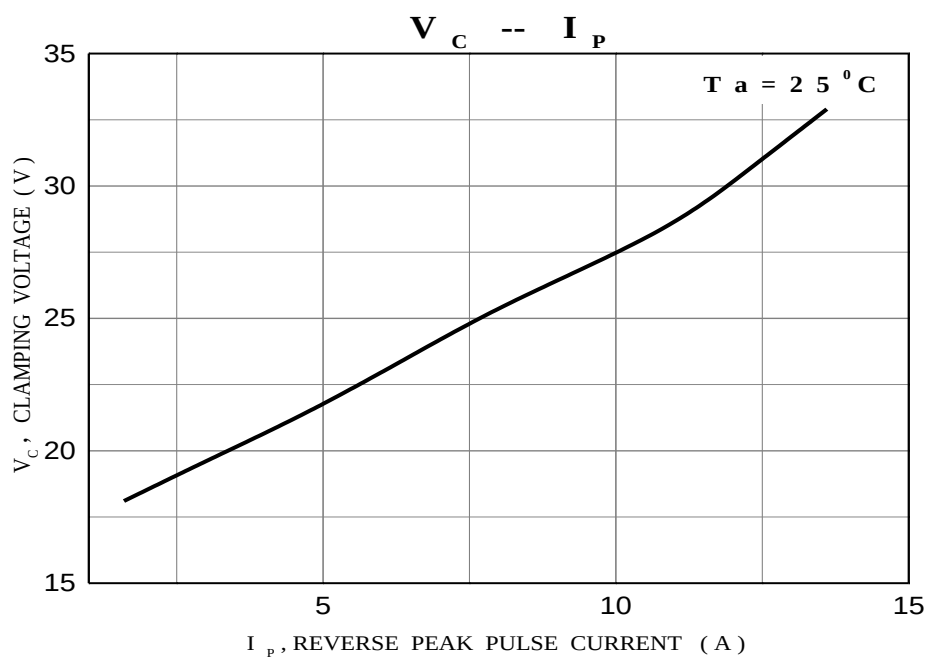


V-I characteristics for a Bi-directional TVS

Electrical Characteristics ($T_a = 25^\circ\text{C}$)

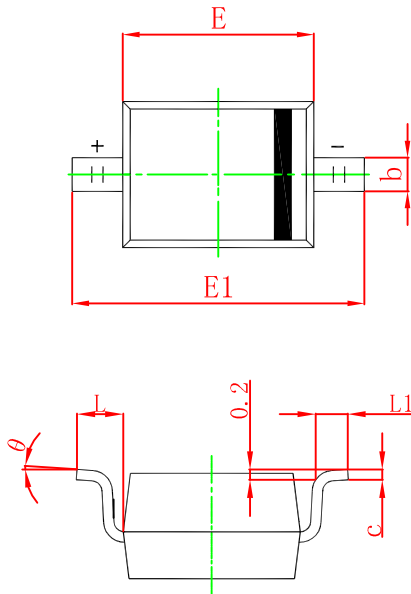
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
VRWM	Reverse Working Peak Voltage				12	V
VBR	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	13.6		16	V
IR	Reverse Leakage Current	$V_{RWM} = 12\text{V}$			1	μA
VC	Clamping Voltage	$I_{PP} = 1\text{A}$ (8/20 μs)			25	V
VC	Clamping Voltage	$I_{PP} = 10\text{A}$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

TYPICAL CHARACTERISTICS



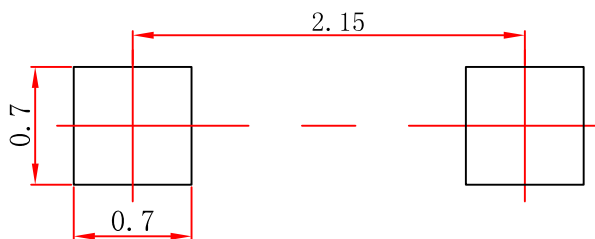
PACKAGE OUTLINE AND PAD LAYOUT INFORMATION

SOD-323 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A		1.000		0.039
A1	0.000	0.100	0.000	0.004
A2	0.800	0.900	0.031	0.035
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.200	1.400	0.047	0.055
E	1.600	1.800	0.063	0.071
E1	2.550	2.750	0.100	0.108
L	0.475 REF.		0.019 REF.	
L1	0.250	0.400	0.010	0.016
θ	0°	8°	0°	8°

SOD-323 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.