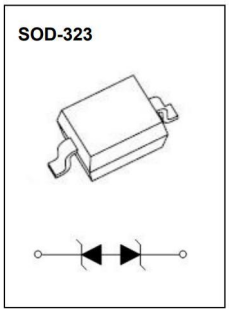
Features

250 W (8/20 μs) Peak Pulse Power
Low Capacitance ESD Protection
SOD-323 Package
RoHS Compliant
Matte Tin Lead finish (Pb-Free)
Protect One High Speed Data Line
Meet IEC61000-4-2 Level 4:
Contact Discharge > 20 kV
Air Discharge > 20 kV



Applications

Communication System
Portable Instrumentation
Audio and Video Equipment
Computers and Peripherals
USB 1.1, USB 1.0 Ports

Absolute Maximum Rating

Symbol	Parameter	Value	Unit
P_{PK}	Peak Pulse Power	250	W
I_{PP}	Peak Pulse Current	5	A
V_{ESD} (Contact)	Contact ESD Voltage per IEC61000-4-2	20	kV
V_{ESD} (Air)	Air ESD Voltage per IEC61000-4-2	20	kV
TJ	Junction Temperature	-55 to +150	℃
TSTG	Storage Temperature	-55 to +150	℃

Electrical Characteristics

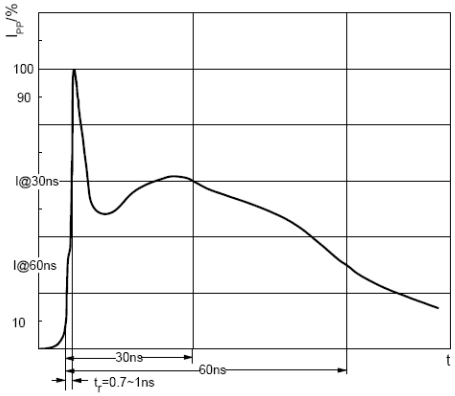
ESD standards compliance

IEC61000-4-2 Standard

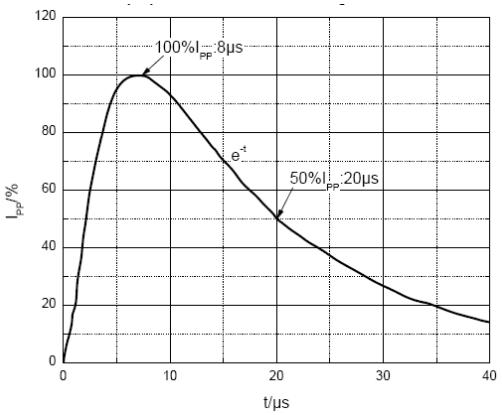
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

JESD22-A114-B Standard

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



ESD pulse waveform according to IEC61000-4-2

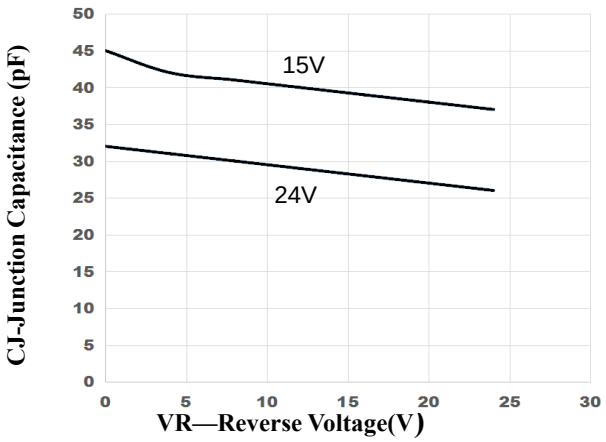


8/20μs pulse waveform according to IEC 61000-4-5

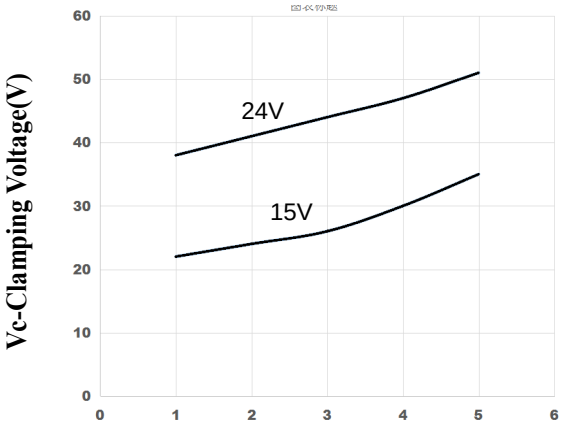
Electrical Characteristics (Ta = 25℃)

Symbol	Parameter	Test Condition	Pin 1 to Pin 2 (15V TVS)			Pin 2 to Pin 1 (24V TVS)			Units
			Min	Typ	Max	Min	Typ	Max	
V_{RWM}	Reverse Working Voltage				15		24		V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA	16		19	26.5		31	V
I_R	Reverse Leakage Current	$V_R = V_{RWM}$			0.2			0.2	μA
V_{C1}	Clamping Voltage 1	I_{PP} = 1A, t_p = 8/20μs			22			38	V
V_{C2}	Clamping Voltage 2	I_{PP} =5A, t_p = 8/20μs			35			51	V
C_{J1}	Junction Capacitance 1	V_R = 0V, f = 1MHz			45			32	pF
C_{J2}	Junction Capacitance 2	$V_R = V_{RWM}$, f = 1MHz		23			20		pF

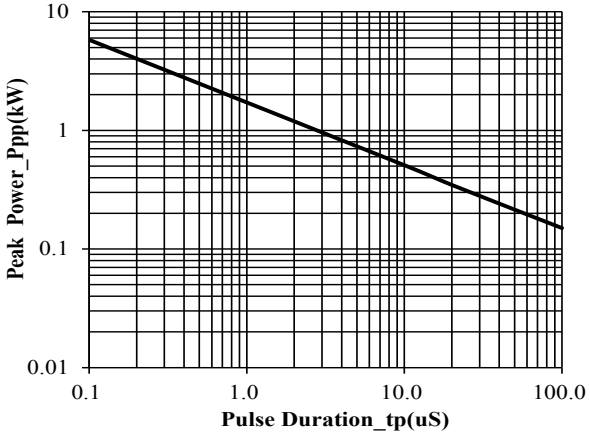
RATING AND CHARACTERISTIC CURVES



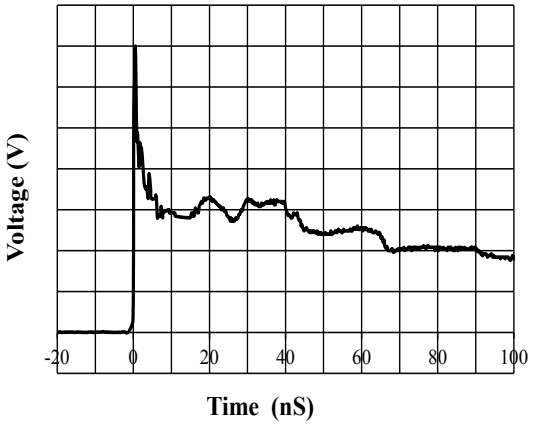
Junction Capacitance vs. Reverse Voltage



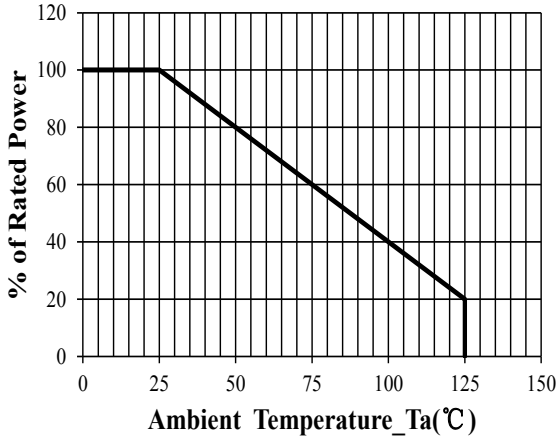
Clamping Voltage vs. Peak Pulse Current



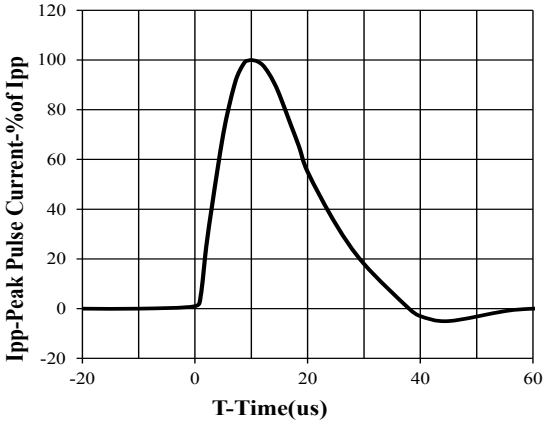
Peak Pulse Power vs. Pulse Time



IEC61000−4−2 Pulse Waveform



Power Derating Curve

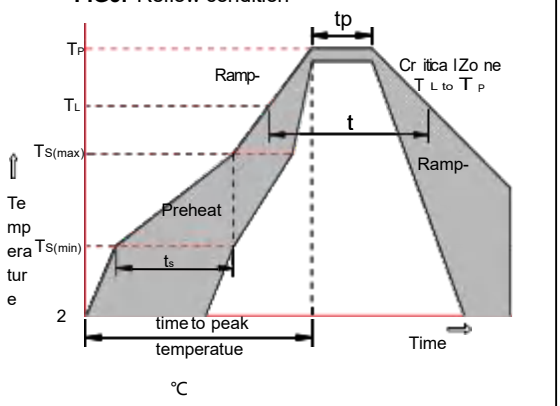


8 X 20us Pulse Waveform

Soldering parameters

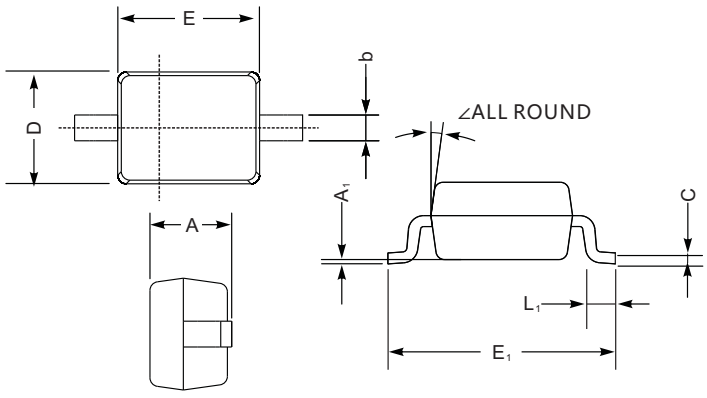
Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

FIG5: Reflow condition



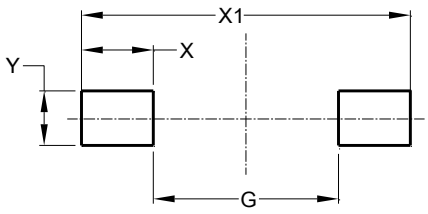
Package Dimensions & Suggested Pad Layout

SOD323



SOD-323 mechanical data

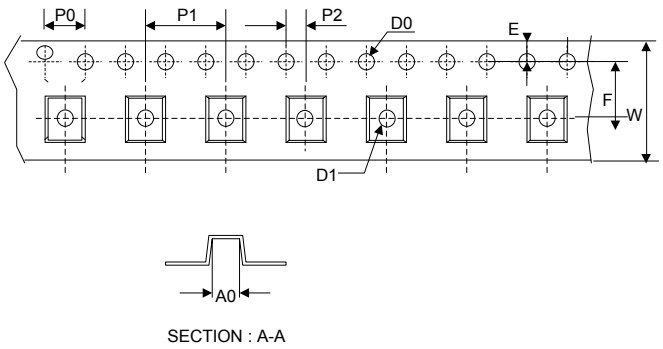
UNIT		A	C	D	E	E_1	b	L_1	A_1	∠
mm	max	1.1	0.15	1.4	1.8	2.75	0.4	0.45	0.2	9°
	min	0.8	0.08	1.2	1.4	2.55	0.25	0.2	—	
mil	max	43	5.9	55	70	108	16	16	8	
	min	32	3.1	47	63	100	9.8	7.9	—	



Dimensions	Value (in mm)
G	1.40
X	1.20
X1	3.80
Y	1.00

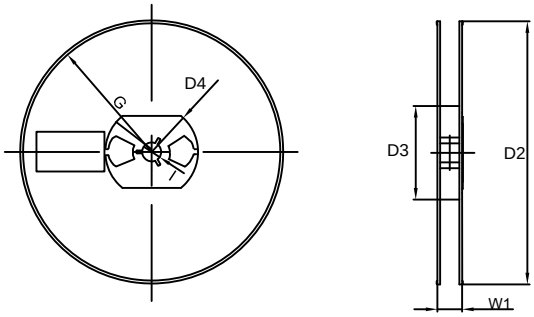
Tape & rell specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.20
P1	4.00±0.20
P2	2.00±0.20
D0	1.55±0.20
D1	1.00±0.20
E	1.55±0.25
F	3.60±0.20
W	8.00±0.20
A0	2.00±0.20
B0	3.25±0.20
K0	1.35±0.20
T	0.23±0.10

7” Reel



D2	177.0±5.0
D3	55Min.
D4	R24.6±2.0
G	R82.0±2.0
I	13.0±2.0
W1	10.20±3.0

Quantity: 3000PCS