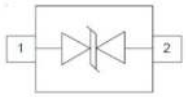
Features

100W (8x20us) Peak Pulse Power
Low Clamping Voltage
SOD-523 Package
RoHS Compliant
Matte Tin Lead finish (Pb-Free)
Protect One I/O or Power Line
Meet IEC61000-4-2 Level 4:
ContactDischarge>30kV
AirDischarge>30kV

5C

Applications

Smart Phones
Laptop Computers
Portable Electronics



SOD-523
Schematic & PIN Configuration

Absolute Maximum Rating

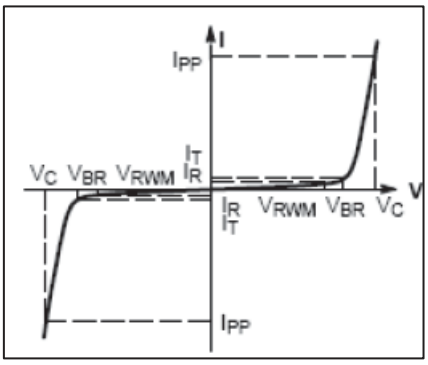
Symbol	Parameter	Value	Unit
TJ	Junction Temperature	-55 to +150	℃
TSTG	Storage Temperature	-55 to +150	℃
Ipp Max	Maximum Peak Pulse Current	7	A
PPK	Peak Pulse Power	100	W

Electrical Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
VRWM	Reverse Working Peak Voltage				5.0	V
VBR	Reverse Breakdown Voltage	IT = 1mA	6.0	7.0	8.5	V
IR	Reverse Leakage Current	VRWM = 5.0V			1	μA
VC1	Clamping Voltage	IPP = 1 A (8/20μs)			8	V
VC2	Clamping Voltage	IPP =7A(8/20μs)		11	16	V
Ipp	Peak Pulse Current	‘tp = 8/20μs			7	A
CJ	Capacitance	VR = 0V, f = 1MHz		15	20	pF

Electronics Parameter

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

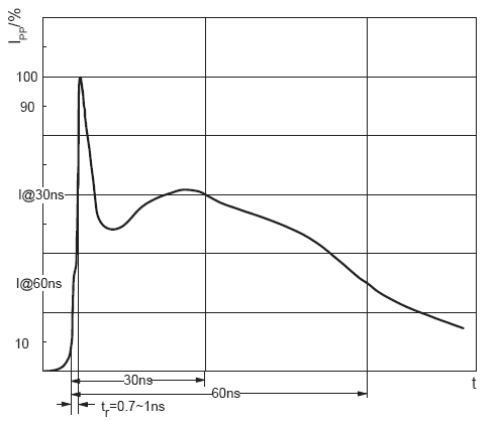
ESD standards compliance

IEC61000-4-2 Standard

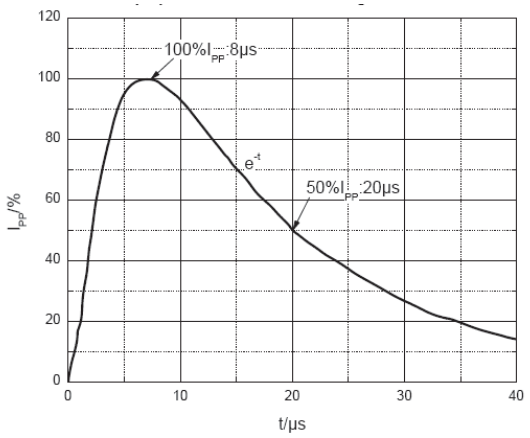
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

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

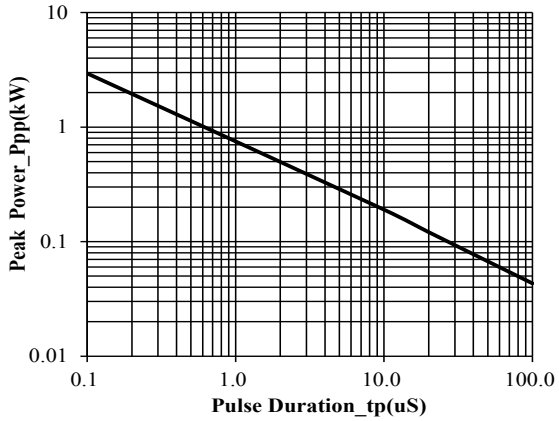


ESD pulse waveform according to IEC61000-4-2

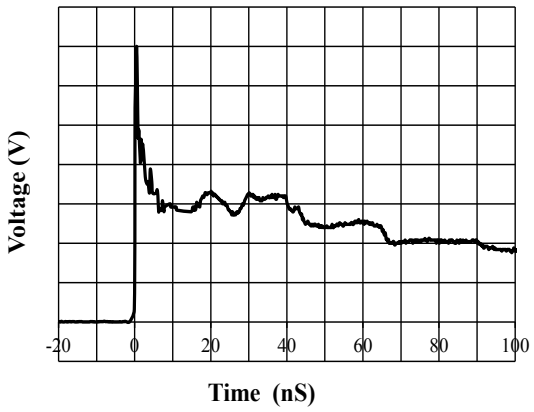


8/20μs pulse waveform according to IEC 61000-4-5

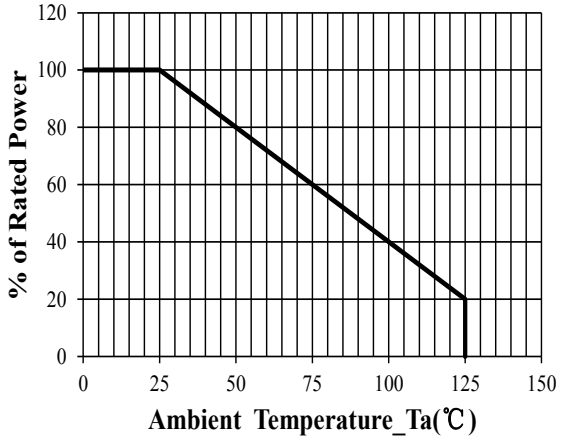
RATING AND CHARACTERISTIC CURVES



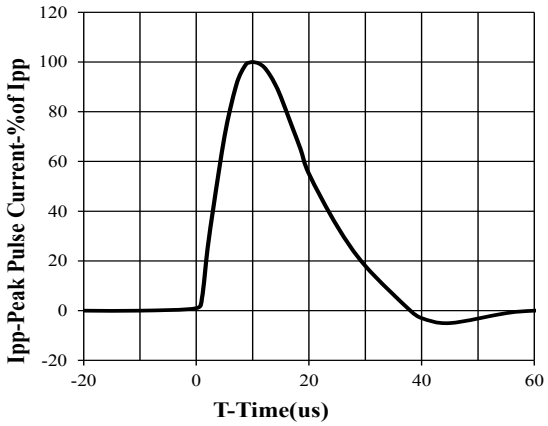
Peak Pulse Power vs. Pulse Time



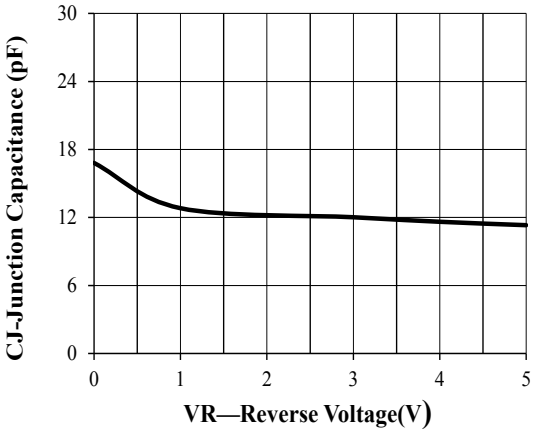
IEC61000−4−2 Pulse Waveform



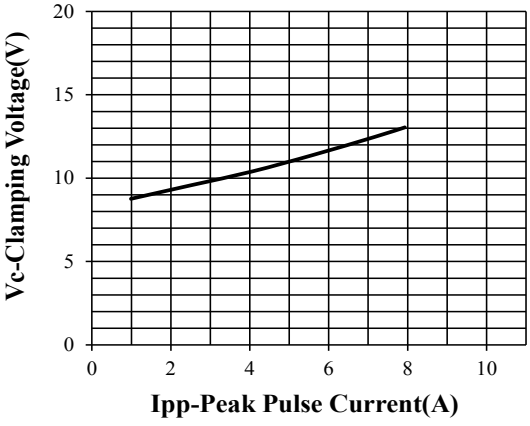
Power Derating Curve



8 X 20us Pulse Waveform



Junction Capacitance vs. Reverse Voltage

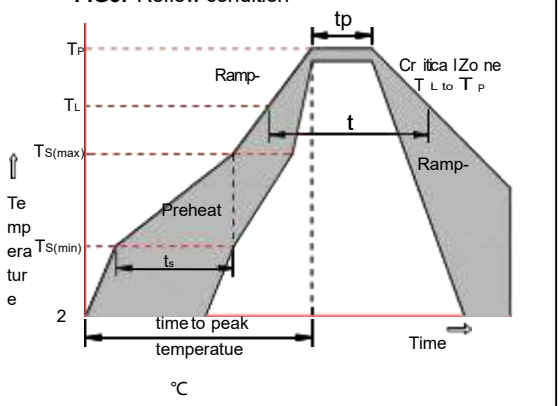


Clamping Voltage vs. Peak Pulse Current

Soldering parameters

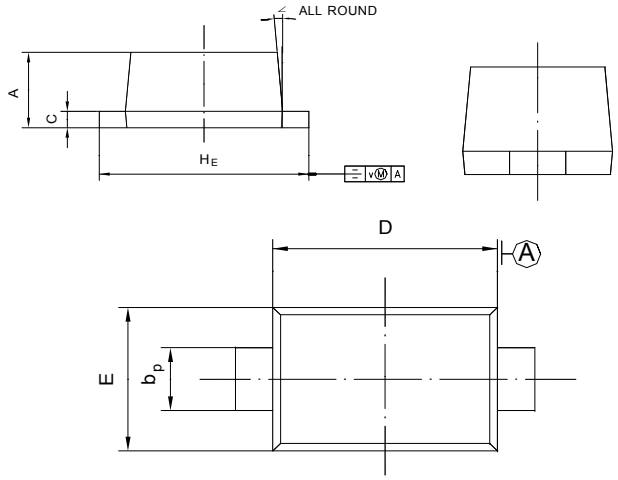
Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid 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

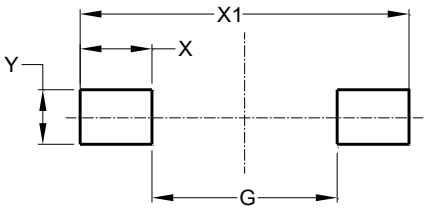


Package Dimensions & Suggested Pad Layout

SOD523



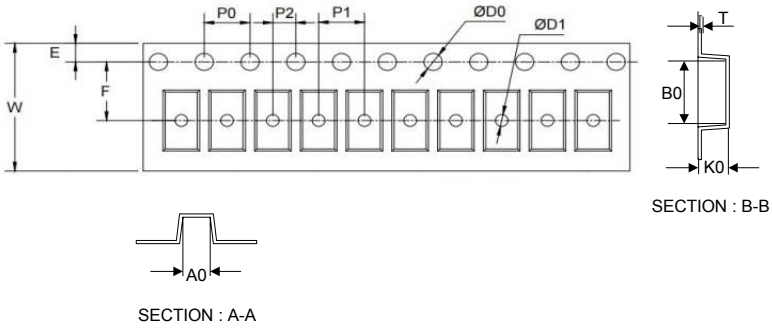
UNIT	A	b_p	C	D	E	H_E	V	∠
mm	0.70 0.50	0.40 0.20	0.14 0.05	1.30 1.10	0.90 0.75	1.70 1.50	0.1	5°



Dimensions	Value (in mm)
G	0.85
X	0.70
X1	2.25
Y	0.80

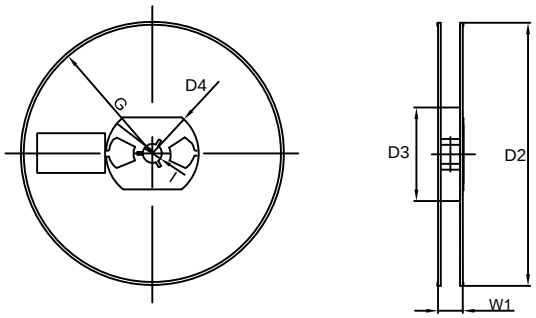
Tape & rell specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.20
P1	2.00±0.20
P2	2.00±0.20
D0	1.55±0.20
D1	0.50±0.20
E	1.55±0.25
F	3.60±0.20
W	8.00±0.20
A0	1.30±0.20
B0	2.35±0.20
K0	0.95±0.20
T	0.20±0.20

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