

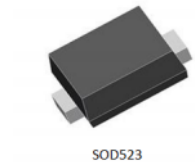
### Features

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

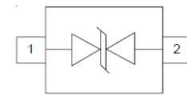


### Applications

Smart Phones  
 Laptop Computers  
 Portable Electronics



SOD523



SOD-523

Schematic & PIN Configuration

### Absolute Maximum Rating

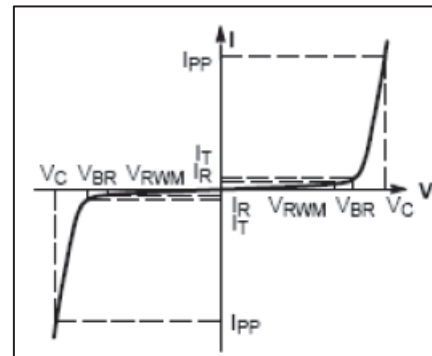
Symbol	Parameter	Value	Unit
TJ	Junction Temperature	-55 to +150	°C
TSTG	Storage Temperature	-55 to +150	°C
Ipp Max	Maximum Peak Pulse Current	7	A
PPK	Peak Pulse Power	100	W

## Electrical Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
VRWM	Reverse Working Peak Voltage				5.0	V
VBR	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	6.0	7.0	8.5	V
IR	Reverse Leakage Current	VRWM = 5.0V			1	$\mu\text{A}$
VC1	Clamping Voltage	IPP = 1 A (8/20 $\mu\text{s}$ )			8	V
VC2	Clamping Voltage	IPP = 7A(8/20 $\mu\text{s}$ )		11	16	V
Ipp	Peak Pulse Current	$t_p = 8/20\mu\text{s}$			7	A
CJ	Capacitance	VR = 0V, f = 1MHz		15	20	pF

## Electronics Parameter

Symbol	Parameter
VC	Clamping Voltage @ IPP
IPP	Peak Pulse Current
VBR	Breakdown Voltage @ IT
IT	Test Current
IR	Reverse Leakage Current @ VRWM
VRWM	Reverse Standoff Voltage



V-I characteristics for a Bi-directional TVS

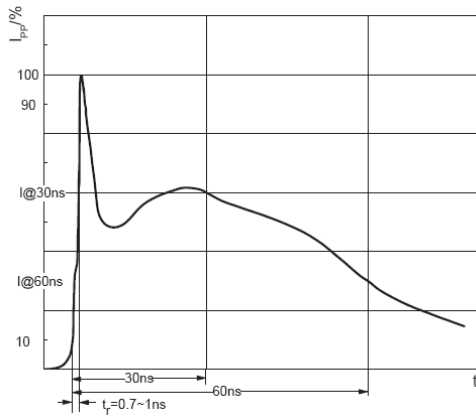
## ESD standards compliance

### IEC61000-4-2 Standard

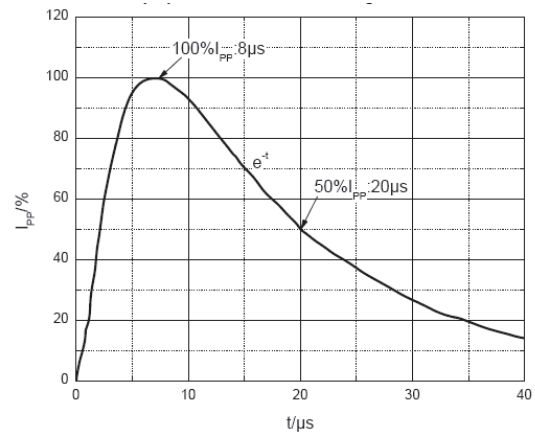
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

### JESD22-A114-B Standard

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

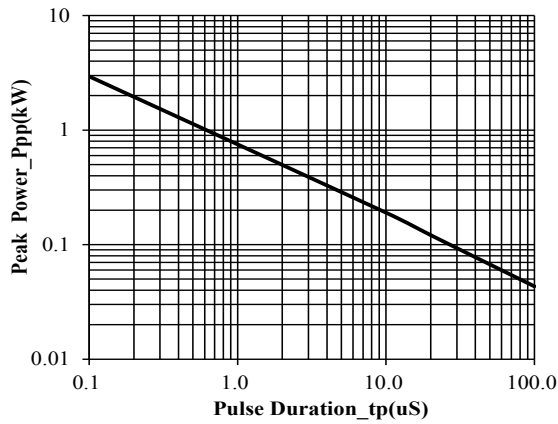


ESD pulse waveform according to IEC61000-4-2

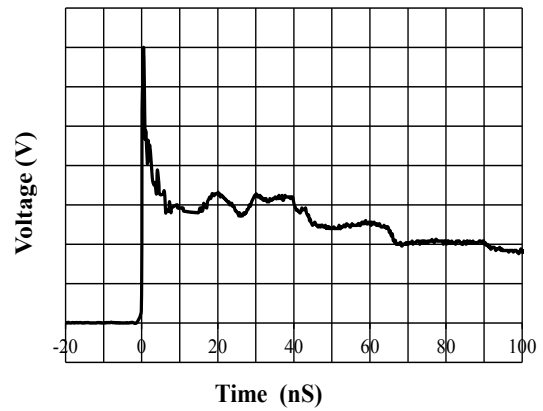


8/20µs pulse waveform according to IEC 61000-4-5

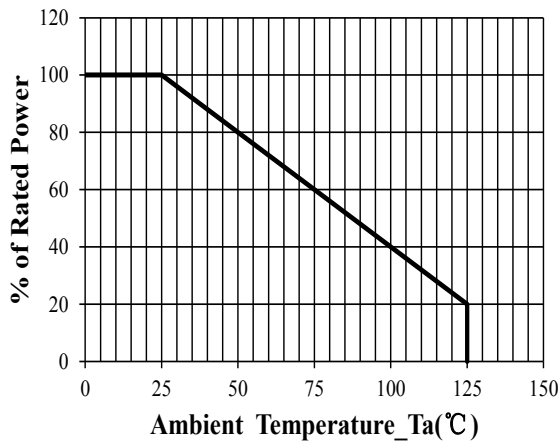
RATING AND CHARACTERISTIC CURVES



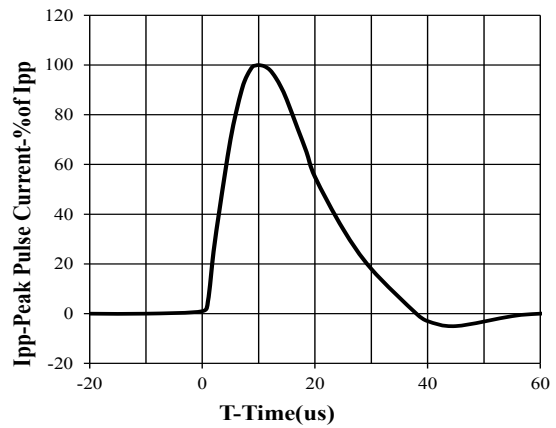
Peak Pulse Power vs. Pulse Time



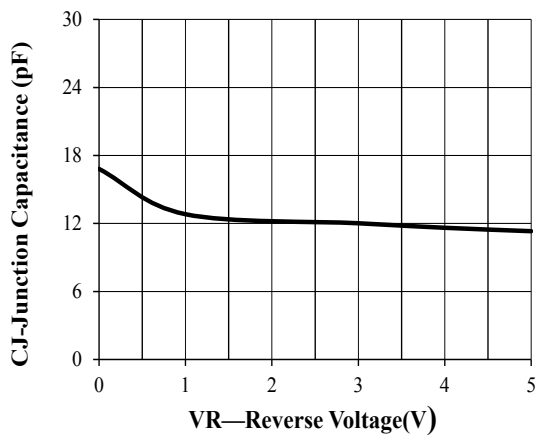
IEC61000-4-2 Pulse Waveform



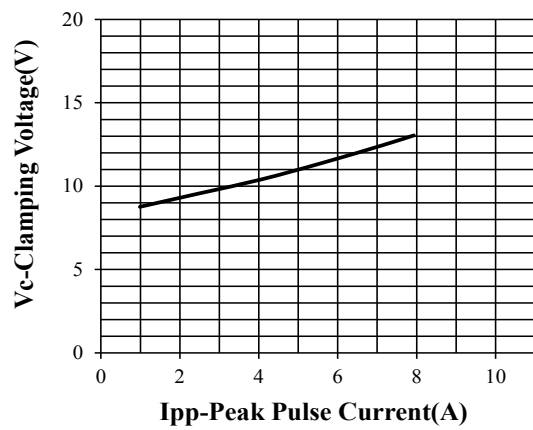
Power Derating Curve



8 X 20us Pulse Waveform



Junction Capacitance vs. Reverse Voltage



Clamping Voltage vs. Peak Pulse Current

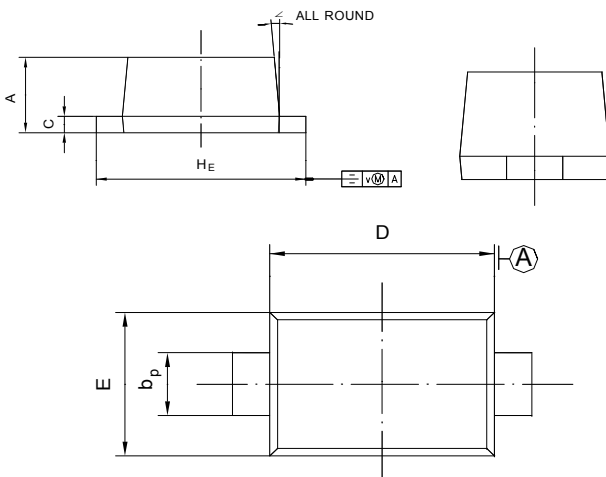
Soldering parameters

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

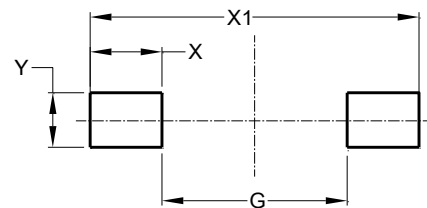


Package Dimensions & Suggested Pad Layout

SOD523



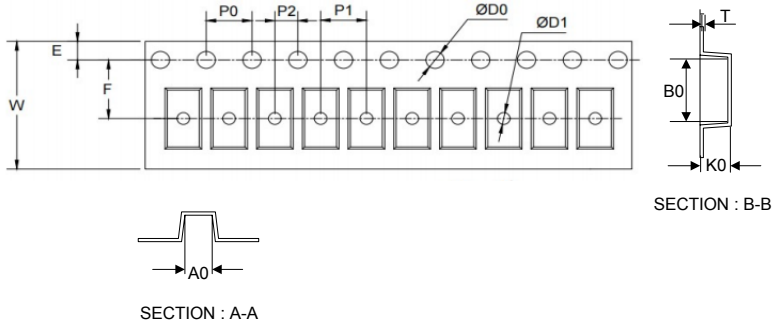
UNIT	A	$b_p$	C	D	E	$H_E$	V	$\angle$
mm	0.70 0.50	0.40 0.20	0.14 0.05	1.30 1.10	0.90 0.75	1.70 1.50	0.1	5°



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

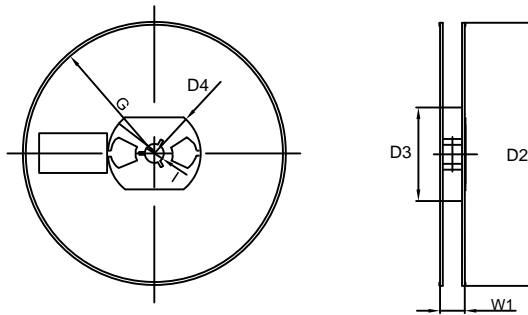
Tape & reel specification

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
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

7" Reel



Quantity: 3000PCS