

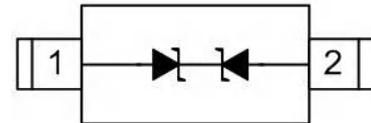
## Features

200W (8/20  $\mu$ s) Peak Pulse Power  
 Low Capacitance ESD Protection  
 SOD - 523 Package  
 RoHS Compliant  
 Matte Tin Lead finish (Pb - Free)  
 Protect One High Speed Data Line  
 Meet IEC61000 - 4 - 2 Level 4: Contact Discharge > 30kV; Air Discharge > 30kV



## Applications

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



Schematic & PIN Configuration

## Absolute Maximum Rating

Symbol	Parameter	Value	Unit
PPK	Peak Pulse Power	200	W
IPP	Peak Pulse Current	5	A
VESD (Contact)	Contact ESD Voltage per IEC61000-4-2	30	kV
VESD (Air)	Air ESD Voltage per IEC61000-4-2	30	kV
TJ	Junction Temperature	-55 to +150	°C
TSTG	Storage Temperature	-55 to +150	°C

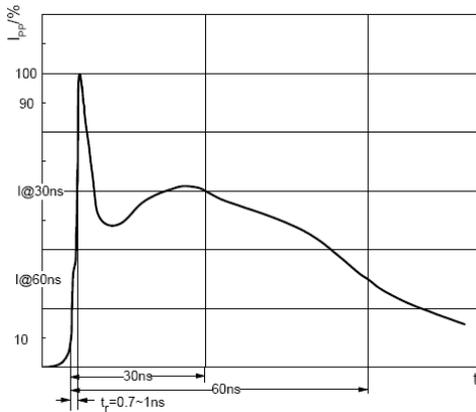
## ESD Standards Compliance

### IEC61000-4-2 Standard

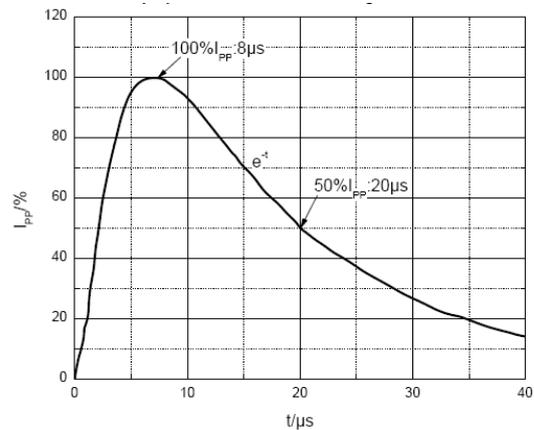
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

### 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



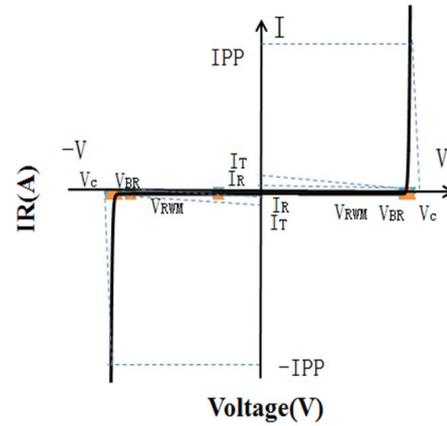
ESD pulse waveform according to IEC61000-4-2



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

**Electrical Parameters (TA = 25 °C unless otherwise noted)**

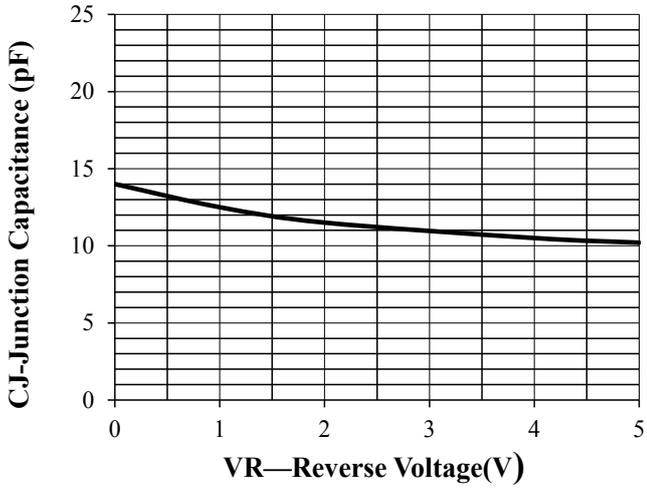
Symbol	Parameter
$I_T$	Test Current
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_c$	Clamping Voltage @ $I_c$



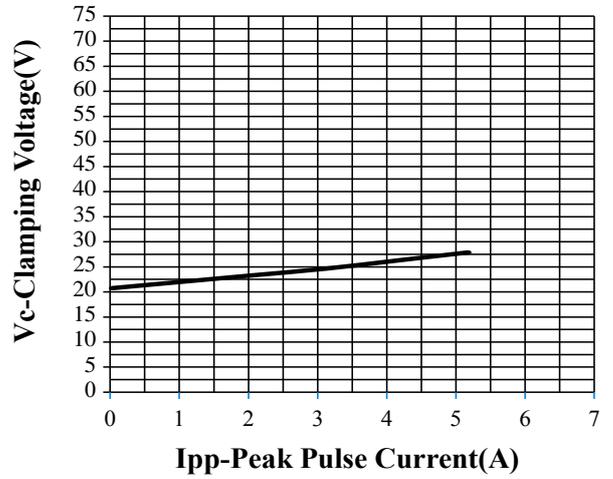
**Electrical Characteristics (TA=25°C unless otherwise specified)**

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
VRWM	Reverse Working Peak Voltage				15	V
VBR	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	16.5	18	21	V
IR	Reverse Leakage Current	$V_{RWM} = 12\text{V}$			0.2	$\mu\text{A}$
VC	Clamping Voltage	$I_{PP} = 1\text{A} (8/20\mu\text{s})$			25	V
VC	Clamping Voltage	$I_{PP} = 6\text{A} (8/20 \mu\text{s})$		27	40	V
CJ	Capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$		14	20	pF

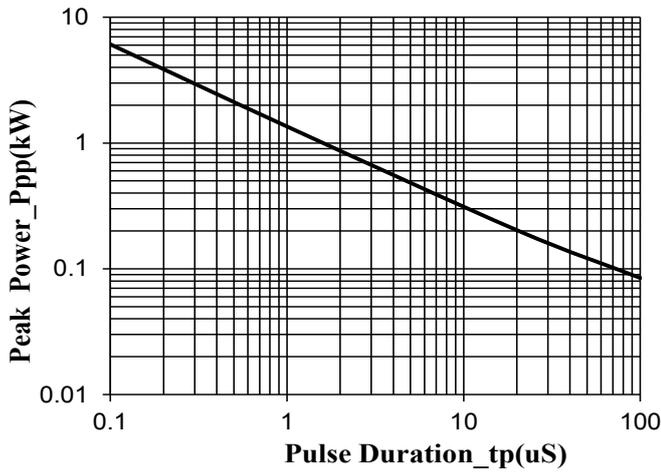
**RATING AND CHARACTERISTIC CURVES**



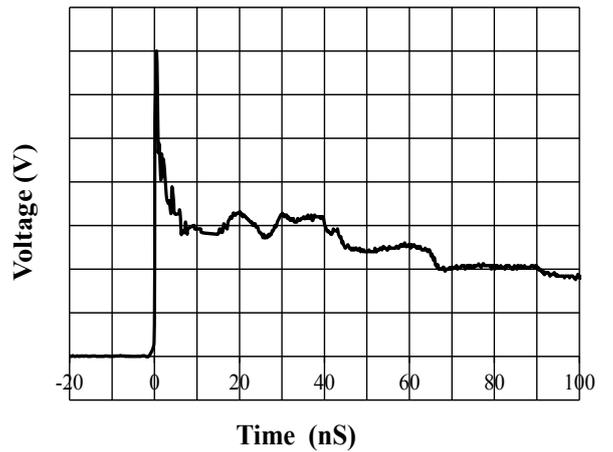
**Junction Capacitance vs. Reverse Voltage**



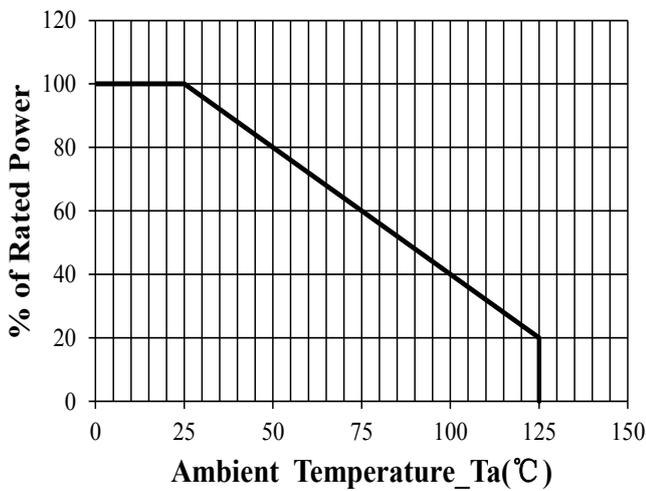
**Clamping Voltage vs. Peak Pulse Current**



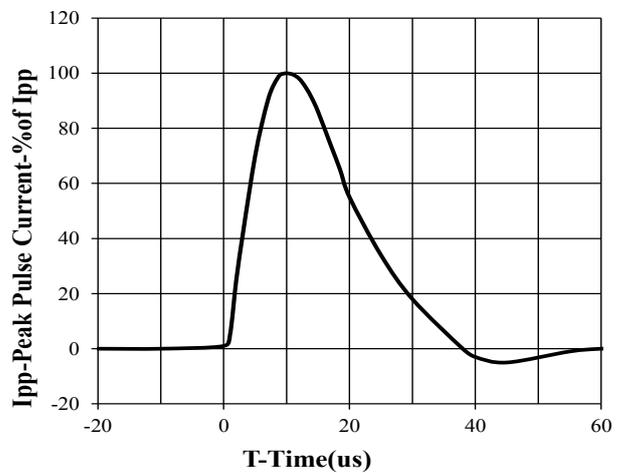
**Peak Pulse Power vs. Pulse Time**



**IEC61000-4-2 Pulse Waveform**



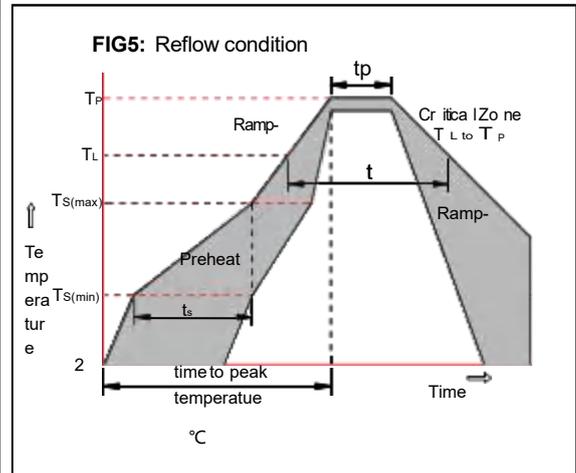
**Power Derating Curve**



**8 X 20us Pulse Waveform**

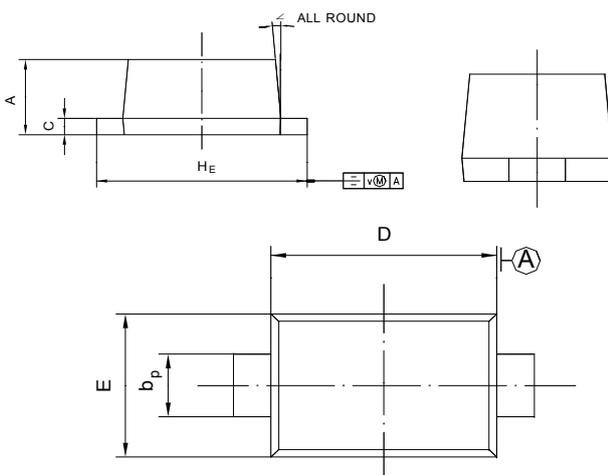
**Soldering parameters**

Reflow Condition		Pb-Free assembly (see as 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

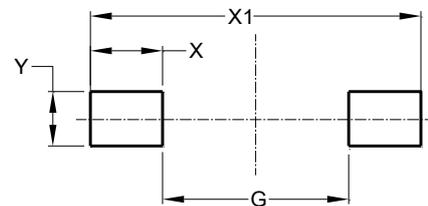


**Package Dimensions & Suggested Pad Layout**

SOD523



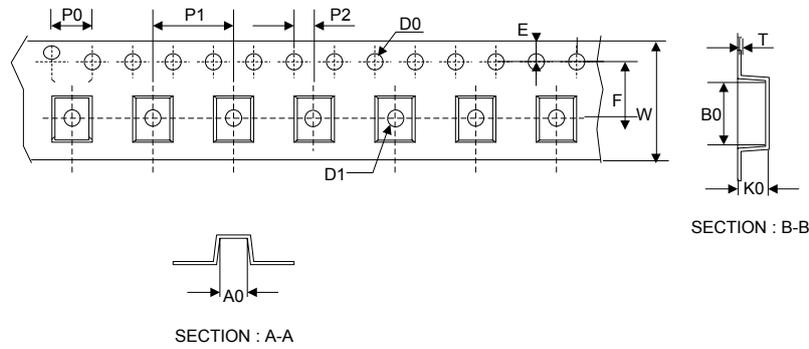
UNIT	A	b <sub>p</sub>	C	D	E	H <sub>E</sub>	V	∠
mm	0.70 0.50	0.40 0.20	0.14 0.05	1.30 1.10	0.90 0.75	1.70 1.50	0.1	5°



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

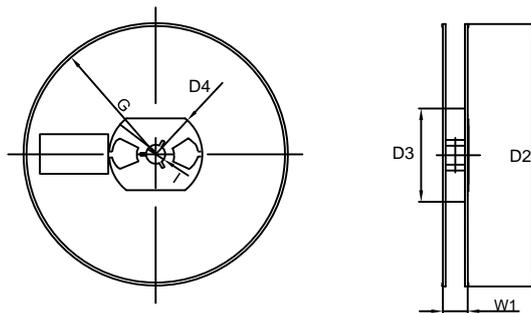
Tape & reel specification

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