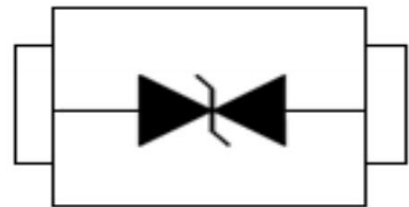


APPLICATIONS

Serial ATA.
Desktops, Servers and Notebooks.
Cellular Phones.
MDDI Ports.
USB2.0 Power and Data Line Protection.
Display Ports
Digital Visual Interfaces (DVI).

FEATURES

Protects one data or power line.
Ultra low leakage: nA level.
Low clamping voltage.
2-pin leadless package.
Complies with following standards:
IEC 61000-4-2 (ESD): $\pm 30\text{kV}$ (Air)
IEC 61000-4-2 (ESD): $\pm 30\text{kV}$ (Contact)
IEC61000-4-4 (EFT) 40A (5/50ns)
IEC61000-4-5 (Lightning) 9A (8/20 μs)



SOD523

MACHANICAL DATA

Package: SOD-523.
Lead Finish: Matte Tin.
Case Material: “Green” Molding Compound.
Terminal Connections: See Diagram Below.
Marking Information: See Below.
Tape & Reel
Reel Size : 7 inch.
Quantity per reel:3000pcs
Marking code: According to the physical

DEVICE CHARACTERISTICS

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)			
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P _{pp}	150	W
Peak Pulse Current (8/20 μs)	I _{pp}	9	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	± 30 ± 30	kV
Operating Temperature Range	T _J	-55to +125	$^\circ\text{C}$
Storage Temperature Range	T _{stg}	-55to +150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V _{RWM}	Reverse Working Voltage				7.0	V
V _{BR}	Reverse Breakdown Voltage	I _r = 1mA	7.6		9	V
I _R	Reverse Leakage Current	V _{RWM} = 7V			0.1	μA
V _C	Clamping Voltage	I _{pp} =9A, t _p = 8/20 μs		16	17	V
C _J	Junction Capacitance	V _R = 0V, f = 1MHz		8	10	pF

ELECTRICAL CHARACTERISTICS

① Surge waveform: 8/20 μs

VR : Stand-off Voltage -- Maximum voltage that can be applied
 VBR: Breakdown Voltage

VC: Clamping Voltage -- Peak voltage measured across the suppressor at a specified I_{pp}
 IR: Reverse Leakage Current.

TYPICAL CHARACTERISTICS(TA=25°C unless otherwise Specified)

FIG.1:V- I curve characteristics (Uni-directional)

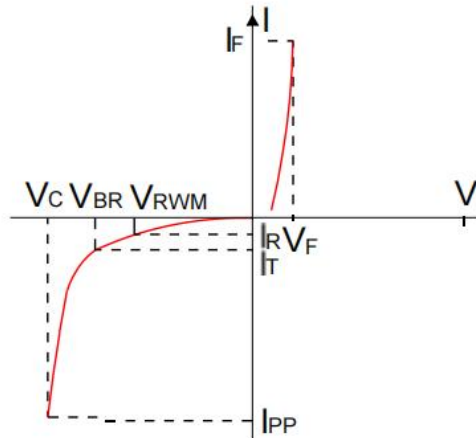
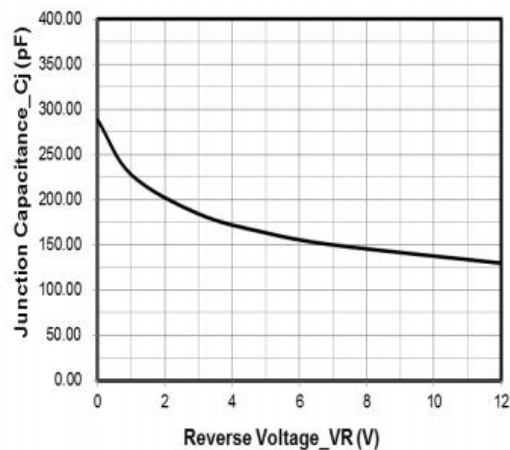
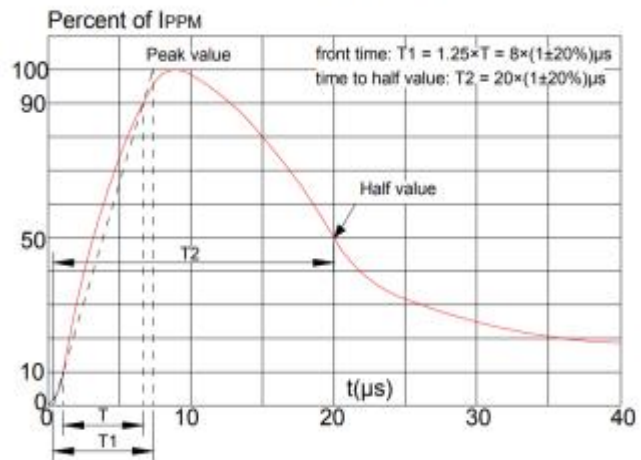
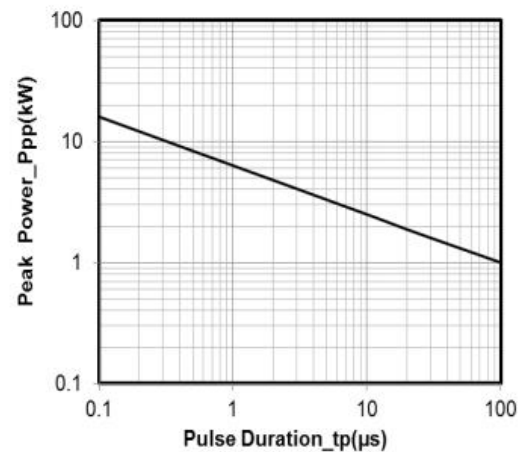


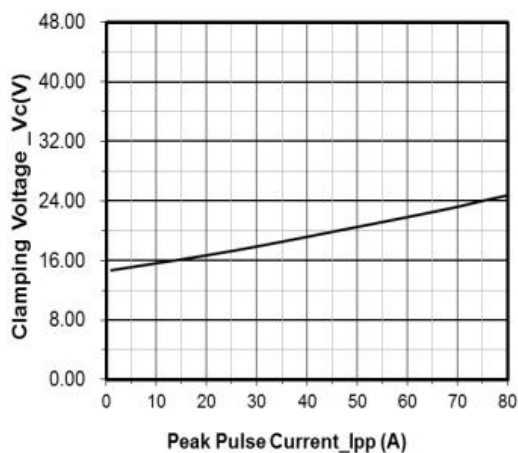
FIG.2: Pulse waveform (8/20μs)



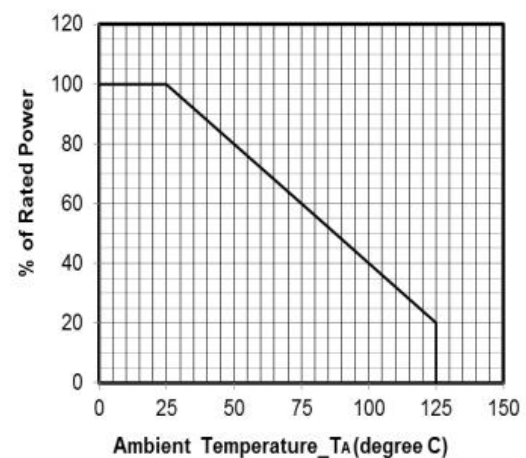
Junction Capacitance vs. Reverse Voltage



Peak Pulse Power vs. Pulse Time

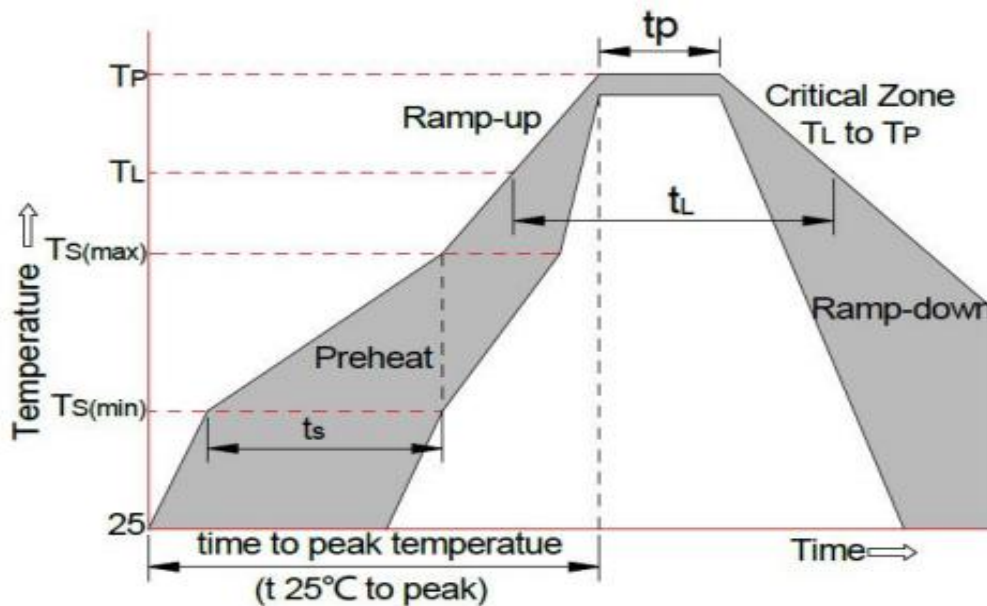


Clamping Voltage vs. Peak Pulse Current



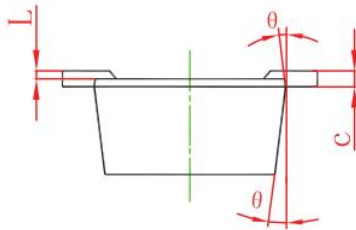
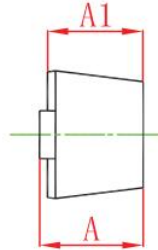
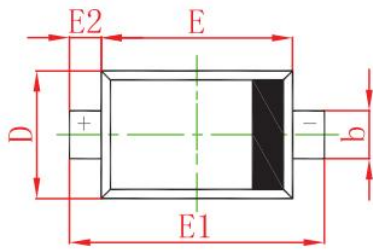
Power Derating Curve

SOLDERING PARAMETERS

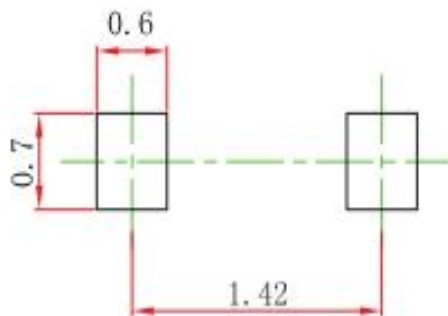


Reflow Condition		Pb-Free assembly (see FIG.5)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150 °C
	-Temperature Max($T_{s(max)}$)	+200 °C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3 °C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3 °C/sec. Max
Reflow	-Temperature(T_L)(Liquid 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
xTime 25 °C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260 °C

SOD-523 PACKAGE OUTLINE DRAWING



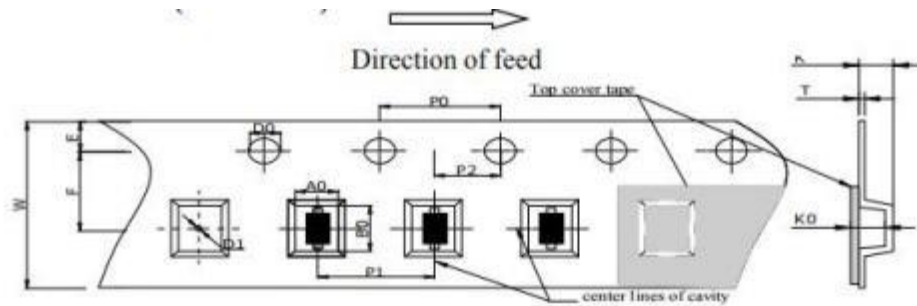
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.510	0.770	0.020	0.031
A1	0.400	0.700	0.015	0.028
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	0.750	0.850	0.030	0.033
E	1.100	1.300	0.043	0.051
E1	1.500	1.700	0.059	0.067
E2	0.200 REF		0.008 REF	
L	0.010	0.070	0.001	0.003
θ	7° REF		7° REF	



Note:

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

Product Orientation (continued)



Package	Chip Size	Pocket Size B0×A0×K0(mm)	Tape Width	Reel Diameter	Quantity Per Reel	P0	P1
SOD-523	1.60×0.8×0.6	1.75×0.95×0.75	8mm	178mm(7")	3000	4mm	4mm
D0	D1	E	F	K	T	W	
1.5mm	0.5mm	1.75mm	3.5mm	0.70mm	0.2mm	8mm	

The LEADER is a minimum of 100 components in length and it consists of empty cavities with sealed cover tape. The TRAILER is a minimum of 100 components in length and it consists of empty cavities with sealed cover tape.