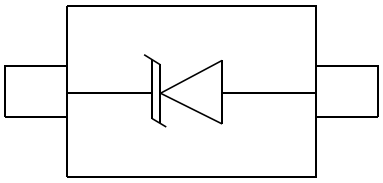
APPLICATIONS

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): ±30kV(Air)
IEC 61000-4-2 (ESD): ±25kV(Contact)
IEC61000-4-5 (Lightning) 6A (8/20μs).
RoHS Compliant.

SOD-523

MACHANICAL DATA

Package: SOD-523.
Lead Finish: Matte Tin.
Case Material: “Green” Molding Compound.
Moisture Sensitivity: Level 3 per J-STD-020.
Terminal Connections: See Diagram Below.
Marking Information: See Below.
Tape & Reel : 3,000pcs.
Reel Size : 7 inch.
Marking code: According to the physical

DEVICE CHARACTERISTICS

Absolute Maximum Ratings (TA=25° C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppp	300	W
Peak Pulse Current (8/20μs)	Ipp	6	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	±30 ±25	kV
Operating Temperature Range	TJ	-55 to +125	° C
Storage Temperature Range	Tstg	-55 to +150	° C

ELECTRICAL CHARACTERISTICS(TA=25° C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			24	V	
Breakdown Voltage	VBR	26		28	V	IT = 1mA
Reverse Leakage Current	I_R			1	μA	VRWM = 24V
Clamping Voltage	VC			32	V	IPP = 1A (8 x 20μs pulse)
Clamping Voltage	VC			58	V	IPP = 6A (8 x 20μs pulse)
Junction Capacitance	CJ			40	pF	VR = 0V, f = 1MHz

ELECTRICAL CHARACTERISTICS

① Surge waveform: 8/20μs

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 Ipp

IR: Reverse Leakage Curre

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

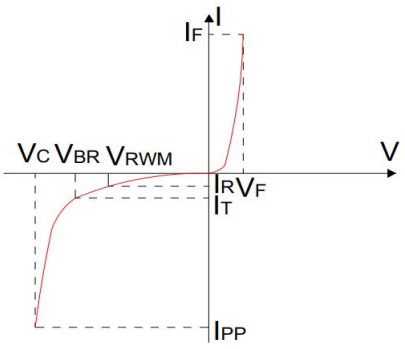
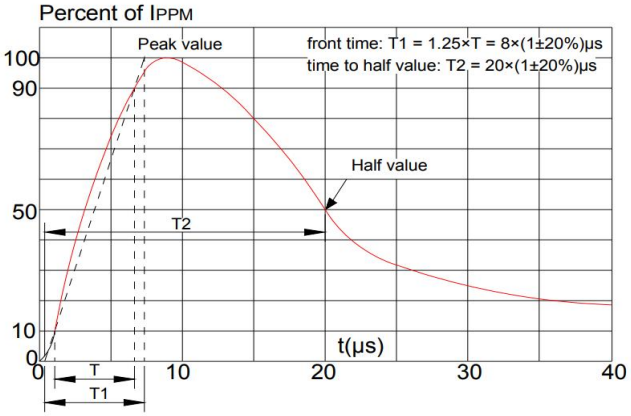
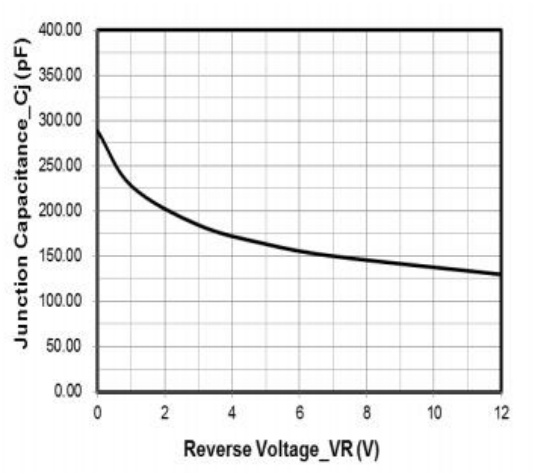


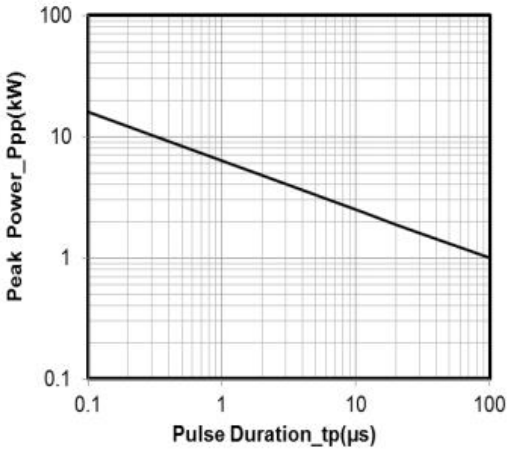
FIG.2: Pulse waveform (8/20μs)



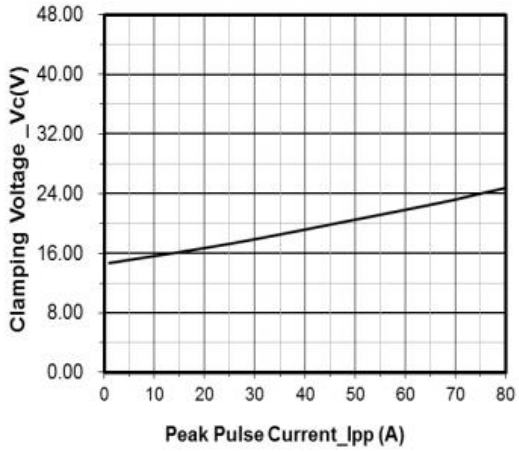
TYPICAL CHARACTERISTICS(TA=25° C unless otherwise Specified)



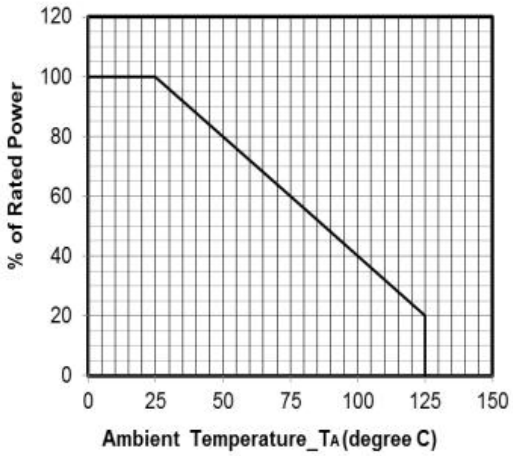
Junction Capacitance vs. Reverse Voltage



Peak Pulse Power vs. Pulse Time

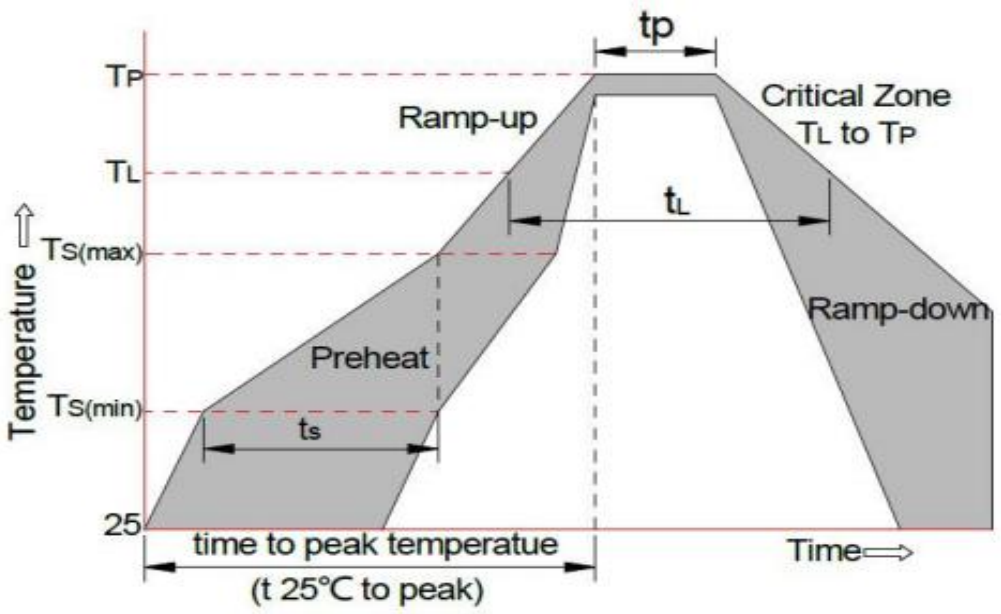


Clamping Voltage vs. Peak Pulse Current



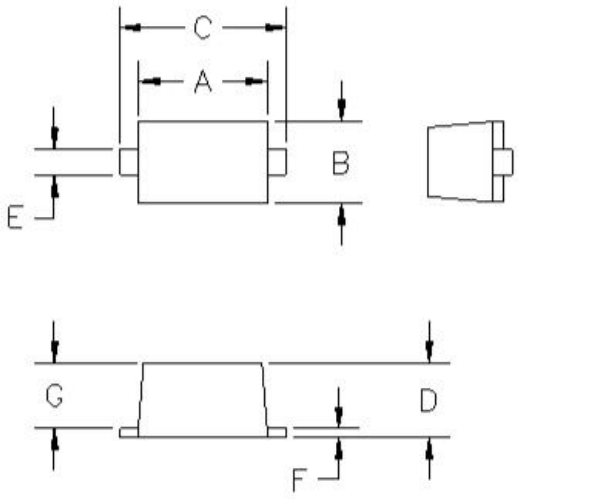
Power Derating Curve

SOLDERING PARAMETERS



Reflow Condition		Pb-Free assembly (see FIG.5)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-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
xTime 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

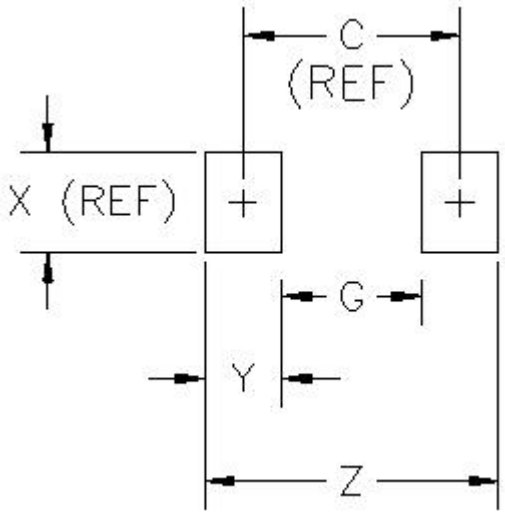
SOD-523 PACKAGE OUTLINE DRAWING



1 CONTROLLING DIMENSION: MILLIMETERS

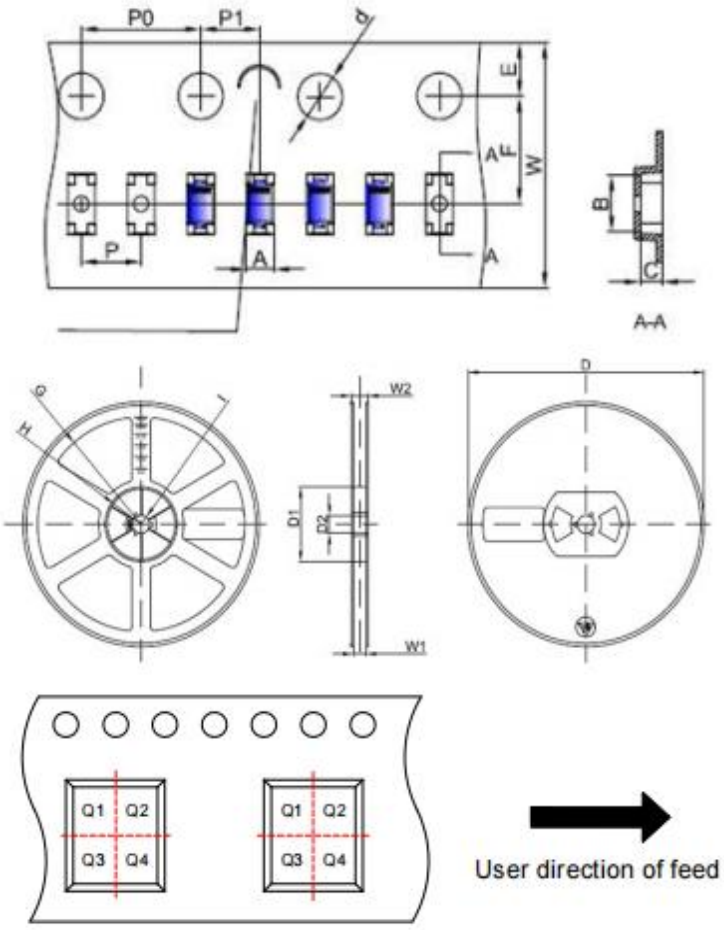
DIMENSIONS					
DIM[N]	INCHES		MM		NOTE
	. MIN	MAX	MIN	MAX	
A	. 043	. 051	1.10	1.30	—
B	. 028	. 035	0.70	0.90	—
C	. 059	. 067	1.50	1.70	—
D	. 020	. 028	0.50	0.70	—
E	. 010	. 014	0.25	0.35	—
F	. 004	. 008	0.10	0.20	—
G	. 020	. 028	0.50	0.70	—

SUGGESTED LAND PATTERN



DIMENSIONS					
DIM[N]	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
C	—	. 067	—	1.70	REF
G	—	. 043	—	1.10	—
X	—	. 031	—	0.80	REF
Y	—	. 024	—	0.60	—
Z	—	. 091	--	2.30	—

TAPE AND REEL SPECIFICATION-SOD-523



Pin 1 quadrant:Q1&Q2

Symbol	Millimeters	Inches
	Typ.	Typ.
A	0.95	0.037
B	1.92	0.076
C	0.73	0.029
d	Φ1.50	Φ0.059
E	1.75	0.069
F	3.50	0.138
P0	4.00	0.157
P	2.00	0.079
P1	2.00	0.079
W	8.00	0.315
D	Φ178	Φ7.008
D1	54.40	2.142
D2	13.00	0.512
G	R78.00	R3.071
H	R25.60	R1.008
I	R6.50	R0.256
W1	9.50	0.374
W2	12.30	0.484

Packaging Description:

SOD-523 parts are shipped in tape. The carrier tape is made from a dissipative(carbon filled) polycarbonate resin. The cover tape is a multilayer film(heat activated adhesive in nature)primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 5,000 or 8,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and made of polystyrene plastic(anti-static coated).