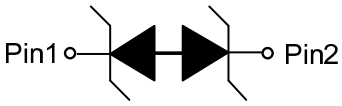
1-Line, Bi-directional, Transient Voltage Suppressor





SOD-323

Features

- Stand-off voltage: ±3.3V Max
- Transient protection for each line according to IEC61000-4-2(ESD): ±30kV (contact) IEC61000-4-5(surge): 8A (8/20μs)
- Ultra-low capacitance: CJ = 15pF typ
- Low leakage current
- Low clamping voltage: V_{CL} =11V typ. @ IPP = 16A(TLP)

Applications

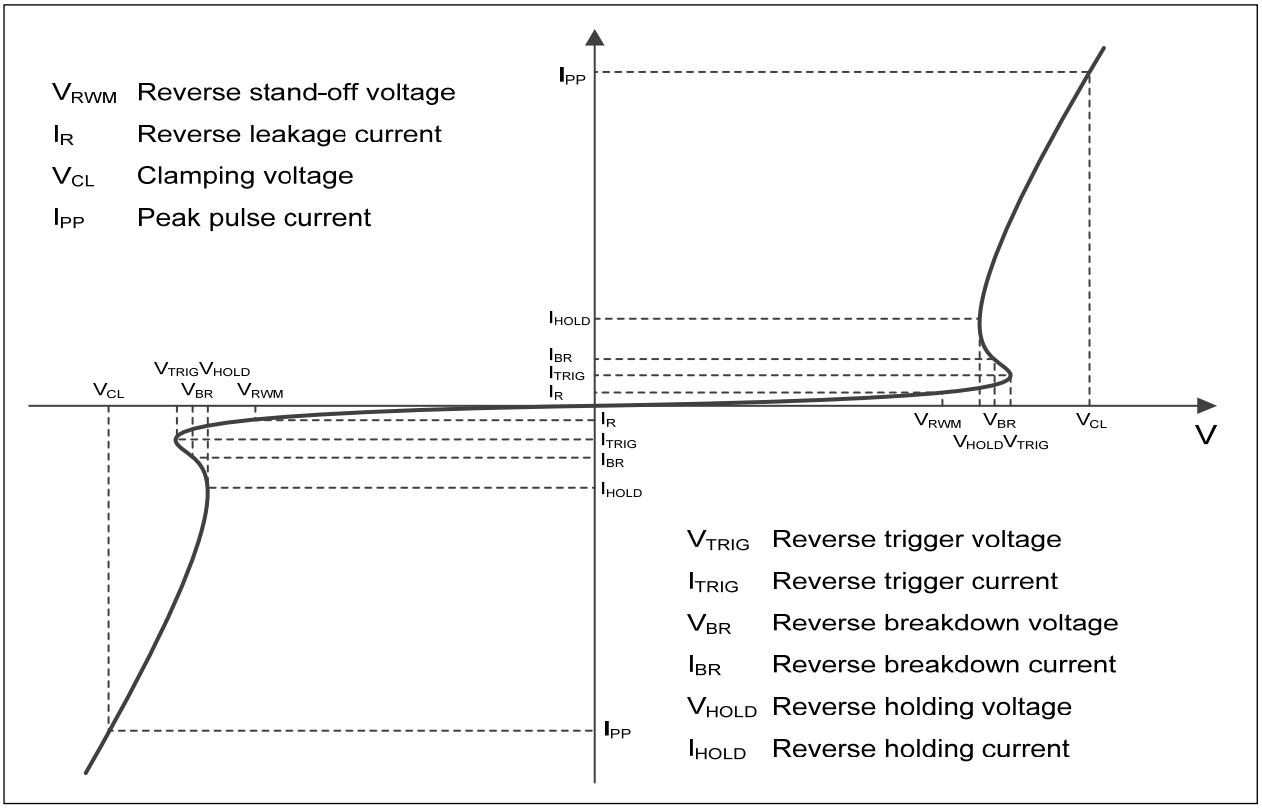
- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

Mechanical Data

- Package: SOD-323
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity: Level 1 per J-STD-020
- Marking Information: See Below



■Definitions of electrical characteristics



■Maximum Ratings

PARAMETER	SYMBOL	Rating	UNIT
Peak pulse power (t_p = 8/20μs)	P_{pk}	88	W
Peak pulse current (t_p = 8/20μs)	I_{PP}	8	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±30	KV
ESD according to IEC61000-4-2 contact discharge		±30	KV
Junction temperature	T_J	125	°C
Operating temperature	T_{OP}	-40~85	°C
Storage temperature	T_{STG}	-55~150	°C

■Electrical Characteristics（T_a=25℃ Unless otherwise specified）

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				±3.3
Reverse leakage current	I_R	nA	V_{RWM} =3.3V			100
Reverse breakdown voltage	V_{BR}	V	I_T = 1mA	3.6		5.0
Clamping voltage 1)	V_{CL}	V	I_{PP} = 16A, t_p = 100ns		11	
Dynamic resistance 1)	R_{DYN}	Ω			0.36	
Clamping voltage 2)	V_{CL}	V	V_{ESD} = 8kV		10	
Clamping voltage 3)	V_{CL}	V	I_{PP} = 1A, t_p = 8/20μs			8
		V	I_{PP} = 8A, t_p = 8/20μs			11
Junction capacitance	C_J	pF	V_R = 0V, f = 1MHz		15	
		pF	V_R = 2.5V, f = 1MHz		12	

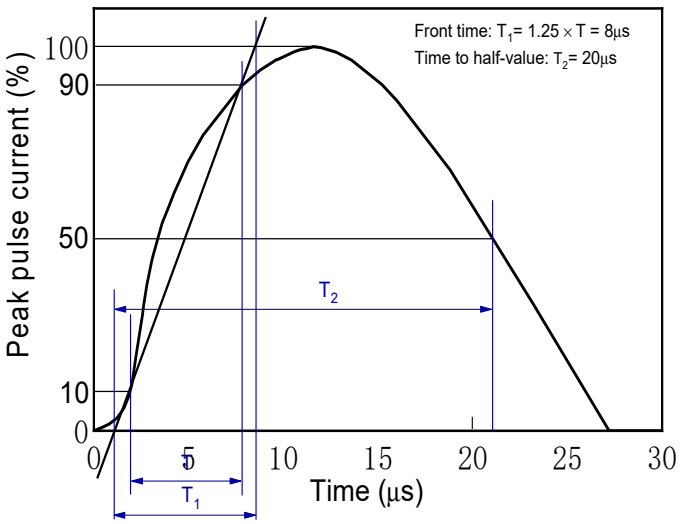
(1). TLP parameter: Z_0 = 50Ω, t_p = 100ns, t_r = 2ns, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.
(2). Contact discharge mode, according to IEC61000-4-2.
(3). Non-repetitive current pulse, according to IEC61000-4-5.

■Ordering Information (Example)

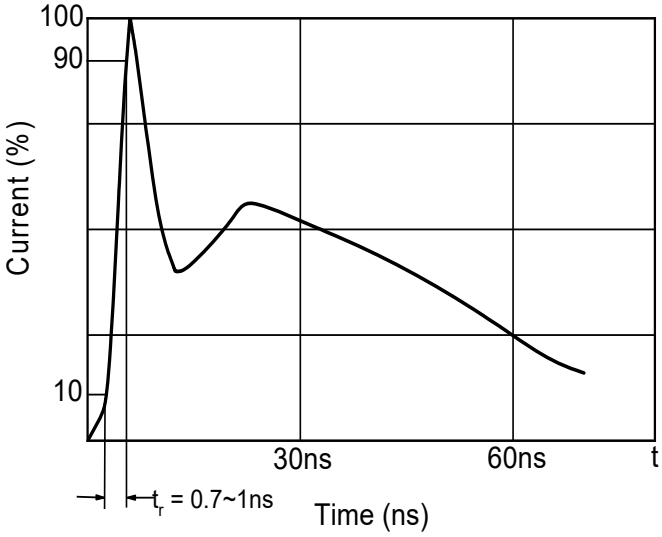
PREFERED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD3V3D3B	F2	Approximate 4	3000	30000	120000	7” reel

■ Characteristics (Typical)

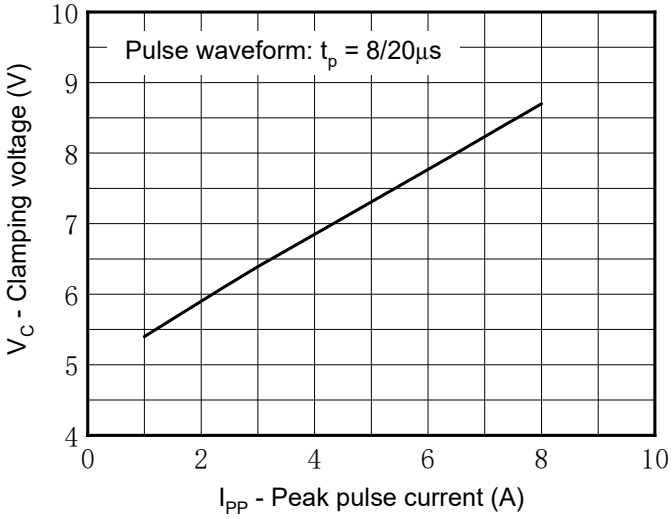
8/20μs waveform per IEC61000-4-5



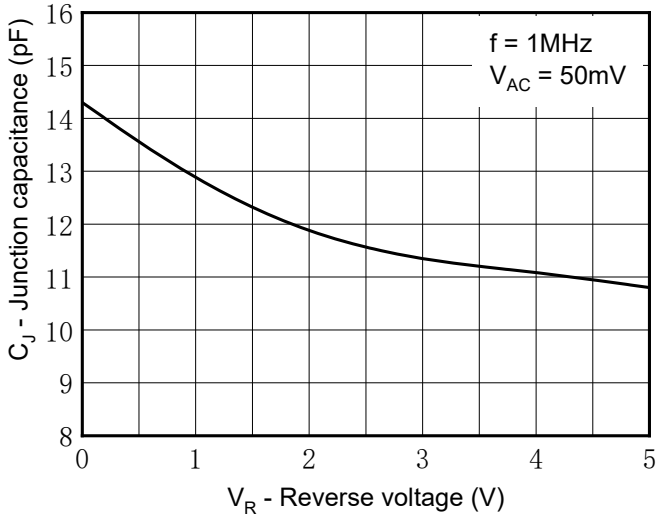
Contact discharge current waveform per IEC61000-4-2



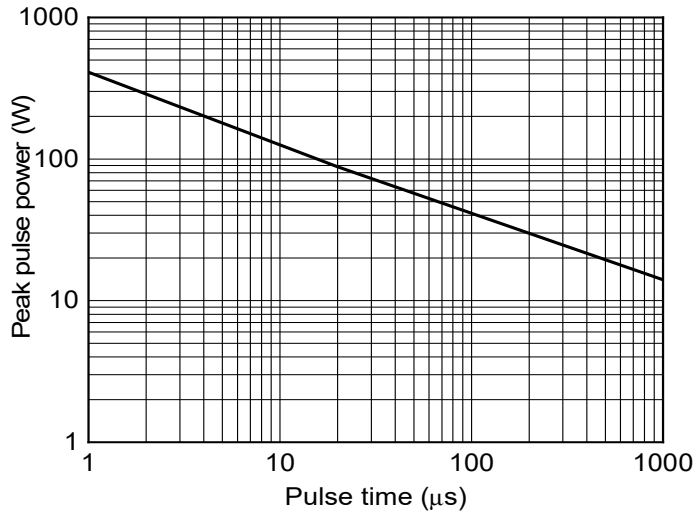
Clamping voltage vs. Peak pulse current



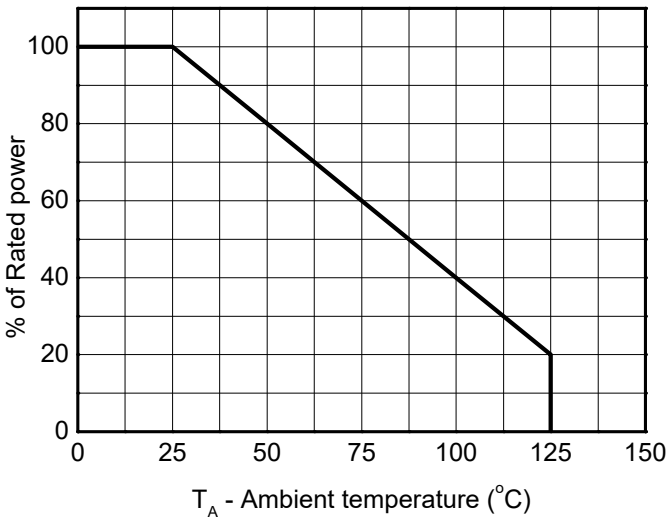
Capacitance vs. Reverse voltage



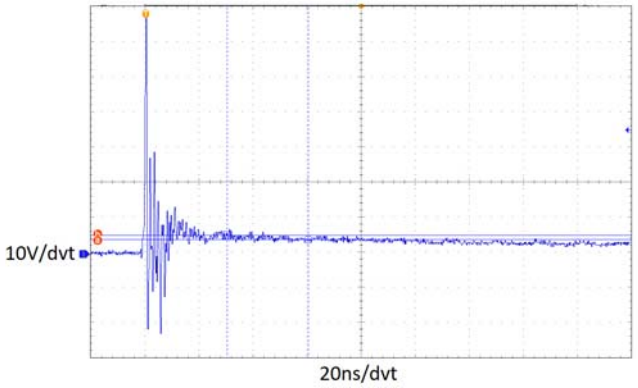
Non-repetitive peak pulse power vs. Pulse time



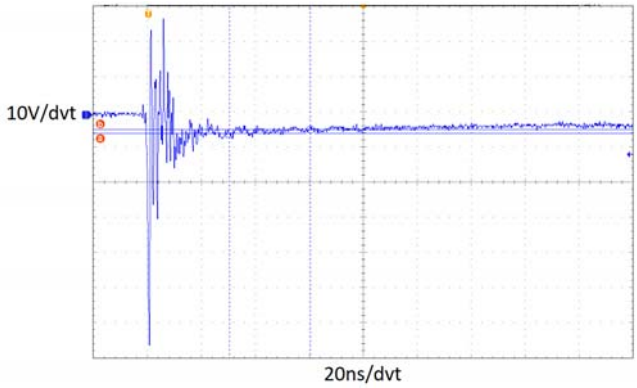
Power derating vs. Ambient temperature



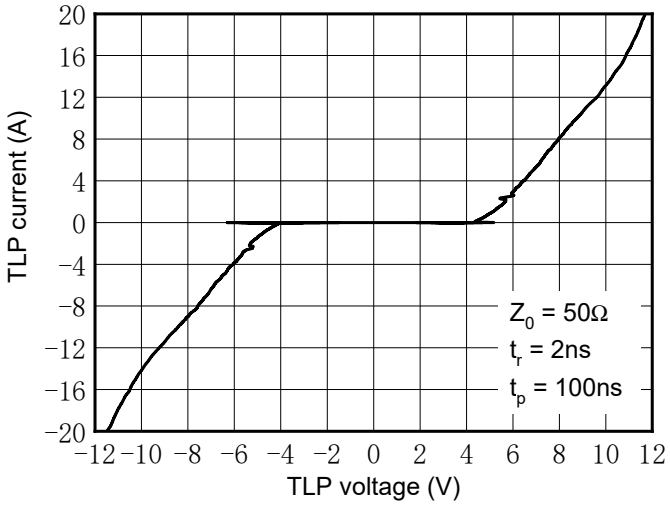
ESD clamping
(+8kV contact discharge per IEC61000-4-2)



ESD clamping
(-8kV contact discharge per IEC61000-4-2)

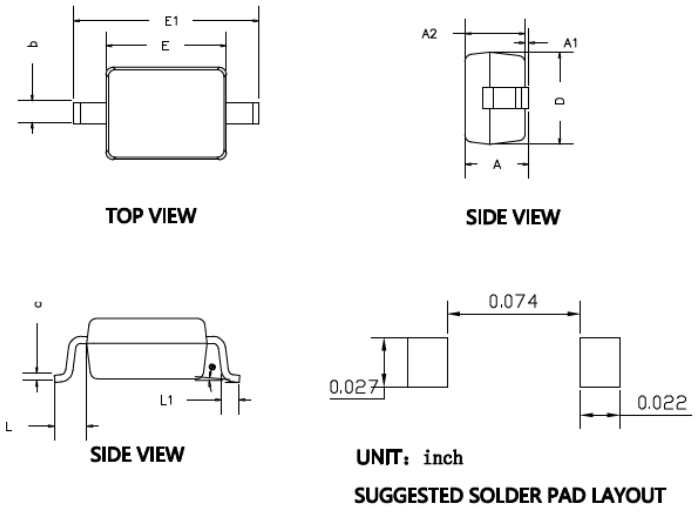


TLP Measurement



■ Outline Dimensions

SOD-323



DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MN	MAX
A	---	0.0390	---	1.0000
A1	0.0000	0.0039	0.0000	0.1000
A2	0.0310	0.0354	0.8000	0.9000
b	0.0100	0.0157	0.2500	0.4000
c	0.0003	0.0059	0.0800	0.1500
D	0.0470	0.0551	1.2000	1.4000
E	0.0630	0.0709	1.6000	1.8000
E1	0.0984	0.1063	2.5000	2.7000
L	0.0187TYP		0.475TYP	
L1	0.0098	0.0157	0.250	0.400
θ	0°	8°	0°	8°

Notes:
This suggested land pad layout is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met

Notice

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise. Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in STARSEA's terms and conditions of sale for such products, STARSEA assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of STARSEA products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.