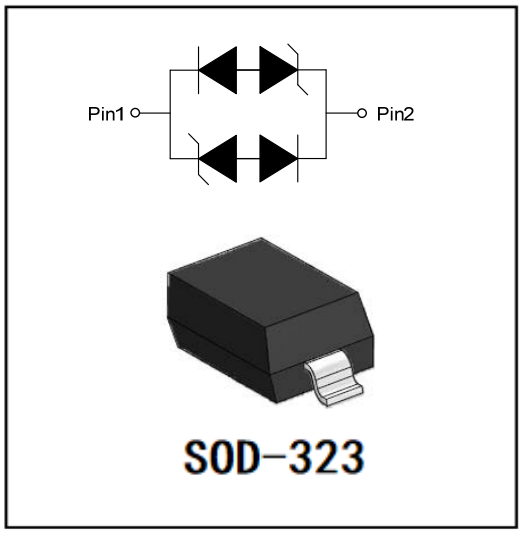
1- Line, Bi-directional, Ultra-low Capacitance Transient Voltage Suppressor



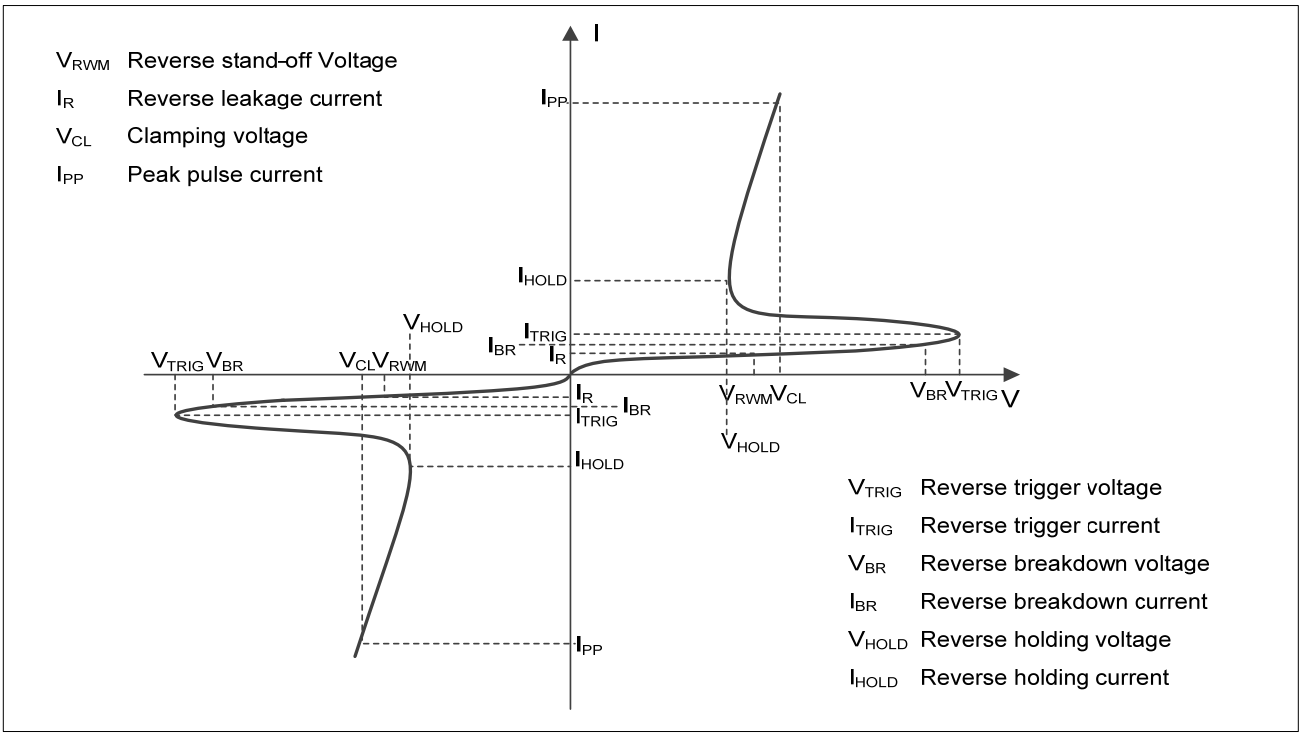
Features

- Stand-off voltage: 5V Max
- Transient protection for each line according to
IEC61000-4-2(ESD): ±30kV (contact)
IEC61000-4-4 (EFT): 40A (5/50ns)
IEC61000-4-5(surge): 15A (8/20μs)
- Ultra-low capacitance: C_J = 1.6pF typ.
- Low leakage current: I_R <1nA typ.
- Low clamping voltage: V_{CL} = 12.0V typ. @ I_{PP} = 16A (TLP)
- Solid-state silicon technology

Mechanical Data

- **Package**: SOD323
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end
- **Marking:** 5SD

■Definitions of electrical characteristics



■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power (t_p = 8/20μs)	P_{pk}	210	W
Peak pulse current (t_p = 8/20μs)	I_{PP}	15	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±30	KV
ESD according to IEC61000-4-2 contact discharge		±30	
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		<1	50
Reverse breakdown voltage	$V_{(BR)}$	V	I_{BR} = 1mA	6	8	
Reverse holding voltage	V_{HOLD}	V	I_{HOLD} = 50mA	5	7	
Clamping voltage [1]	V_{CL}	V	I_{PP} = 16A, t_p = 100ns		10.0	
Dynamic resistance [1]	R_{DYN}	Ω			0.3	
Clamping voltage [2]	V_{CL}	V	V_{ESD} = 8kV		10.0	
Clamping voltage [3]	V_{CL}	V	I_{PP} = 1A, t_p = 8/20μs		8	10
		V	I_{PP} = 15A, t_p = 8/20μs		12	14
Junction capacitance	C_J	pF	V_R = 0V, f = 1MHz		1.6	2

Notes:

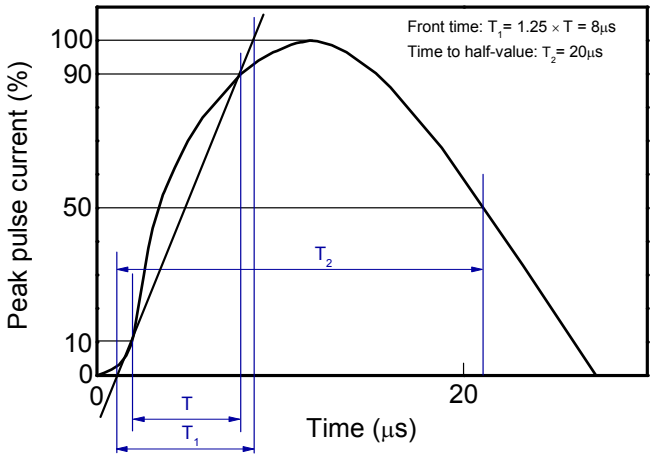
1) TLP parameter: Z_0 = 50Ω, t_p = 100ns, t_r = 2ns, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.
2) Contact discharge mode, according to IEC61000-4-2.
3) Non-repetitive current pulse, according to IEC61000-4-5.

■Ordering Information (Example)

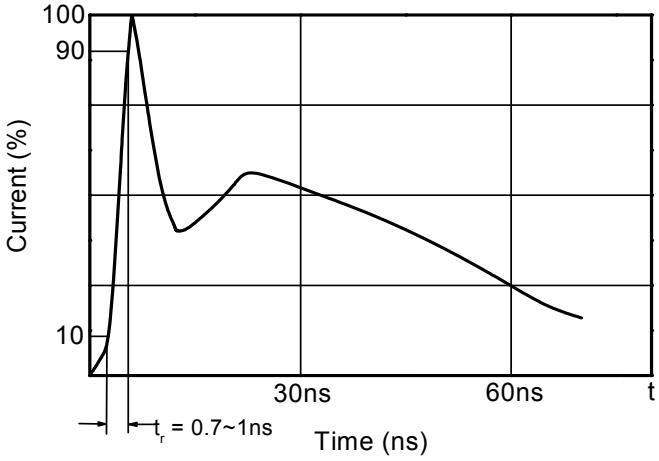
PREFERED P/N	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESDSLC3V3D3B	Approximate 0.004	3000	30000	120000	7 reel

■ Characteristics (Typical)

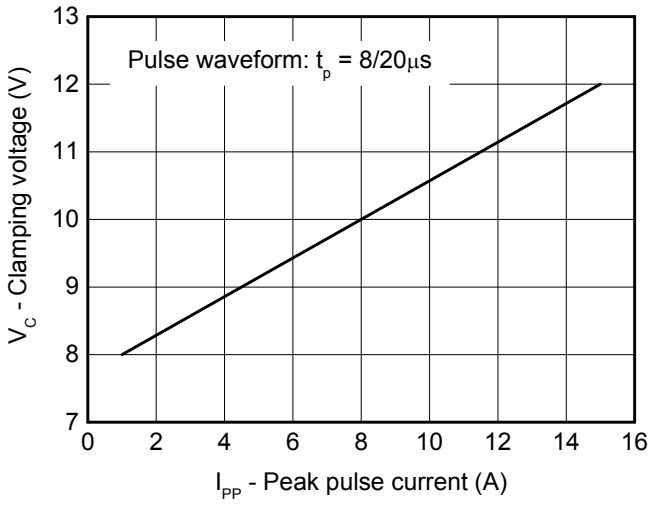
8/20μs waveform per IEC61000-4-5



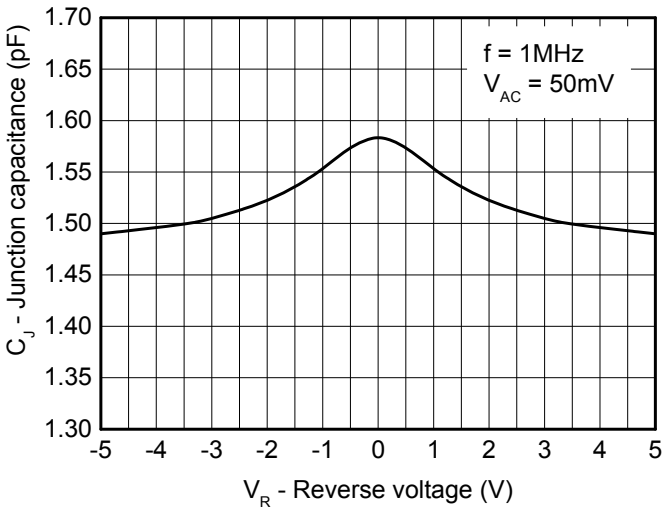
Contact discharge current waveform per IEC61000-4-2



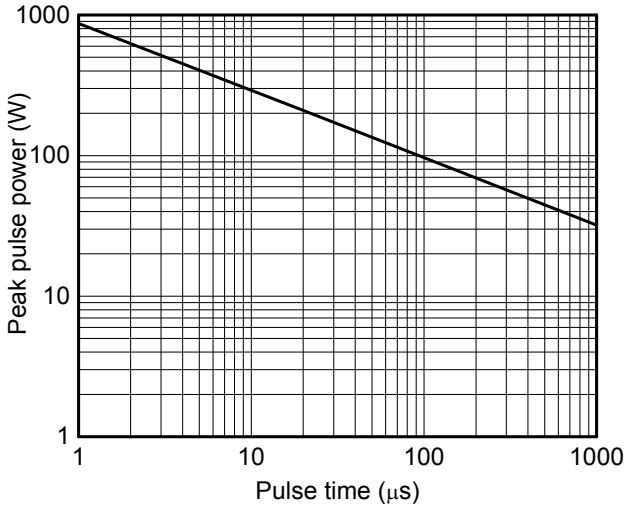
Clamping voltage vs. Peak pulse current



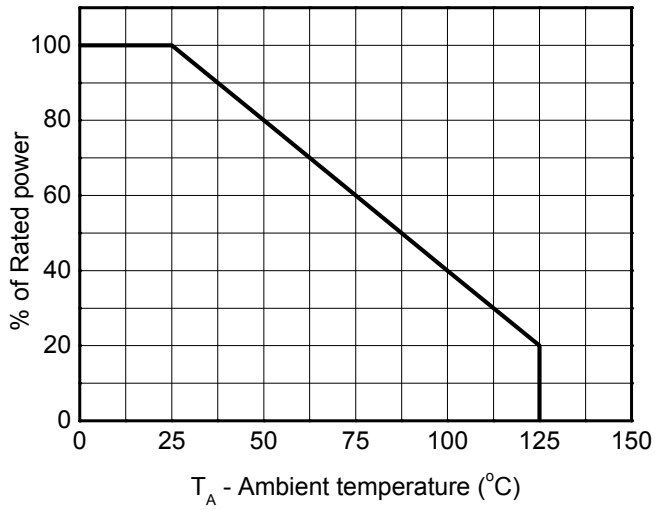
Capacitance vs. Reverse voltage



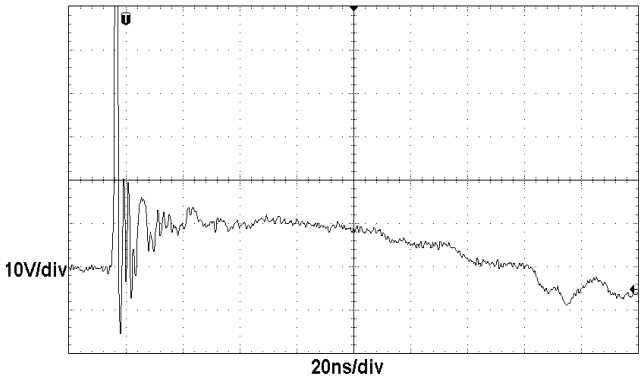
Non-repetitive peak pulse power vs. Pulse time



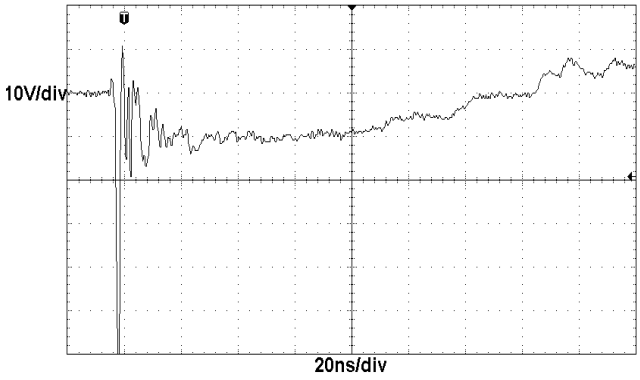
Power derating vs. Ambient temperature



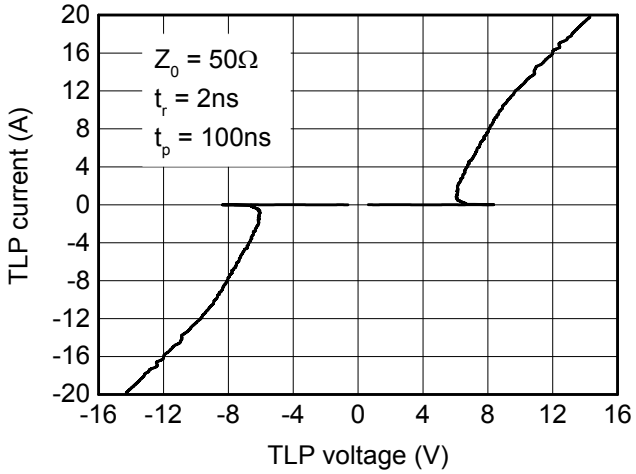
ESD clamping
(+8kV contact discharge per IEC61000-4-2)



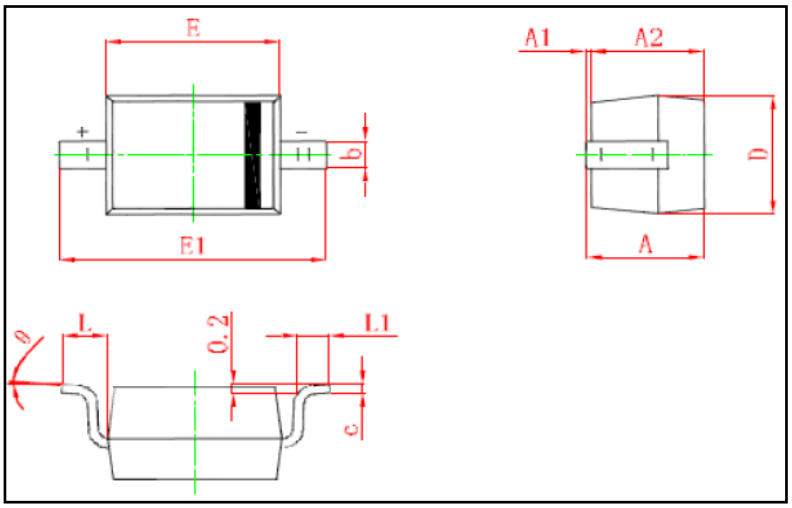
ESD clamping
(-8kV contact discharge per IEC61000-4-2)



TLP Measurement

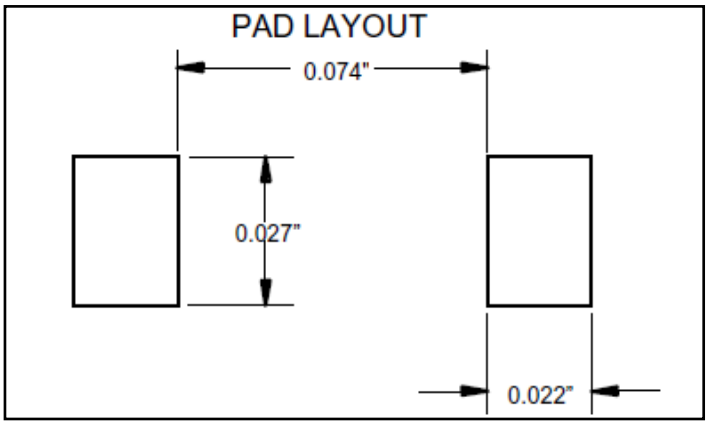


■ Outline Dimensions



Symbol	Min. (mm)	Max. (mm)
A		1.000
A1	0.000	0.100
A2	0.800	0.900
b	0.250	0.400
c	0.080	0.150
D	1.200	1.400
E	1.600	1.800
E1	2.500	2.700
L	0.475REF	
L1	0.250	0.400
θ	0°	8°

■ Soldering Footprint



Unit：inches

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