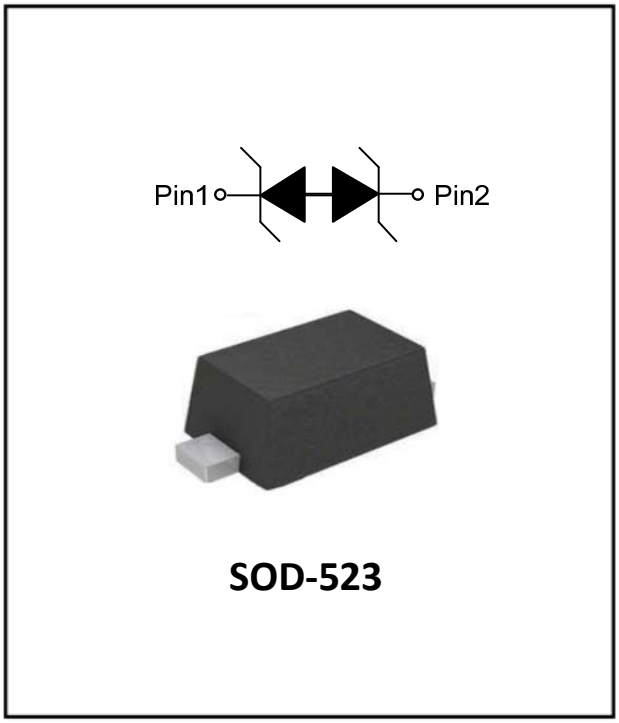
1- Line, Bi-directional, Transient Voltage Suppressor



Features

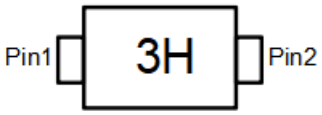
- Stand-off voltage: ±3.3V Max
- Transient protection for each line according to
IEC61000-4-2(ESD): ±30kV (contact)
IEC61000-4-4 (EFT): 40A (5/50ns)
IEC61000-4-5(surge): 13A (8/20μs)
- Low leakage current
- Ultra low clamping voltage
- RoHS Compliant

Applications

- Cellular handsets
- Tablets
- Laptops
- Other portable devices
- Network communication devices

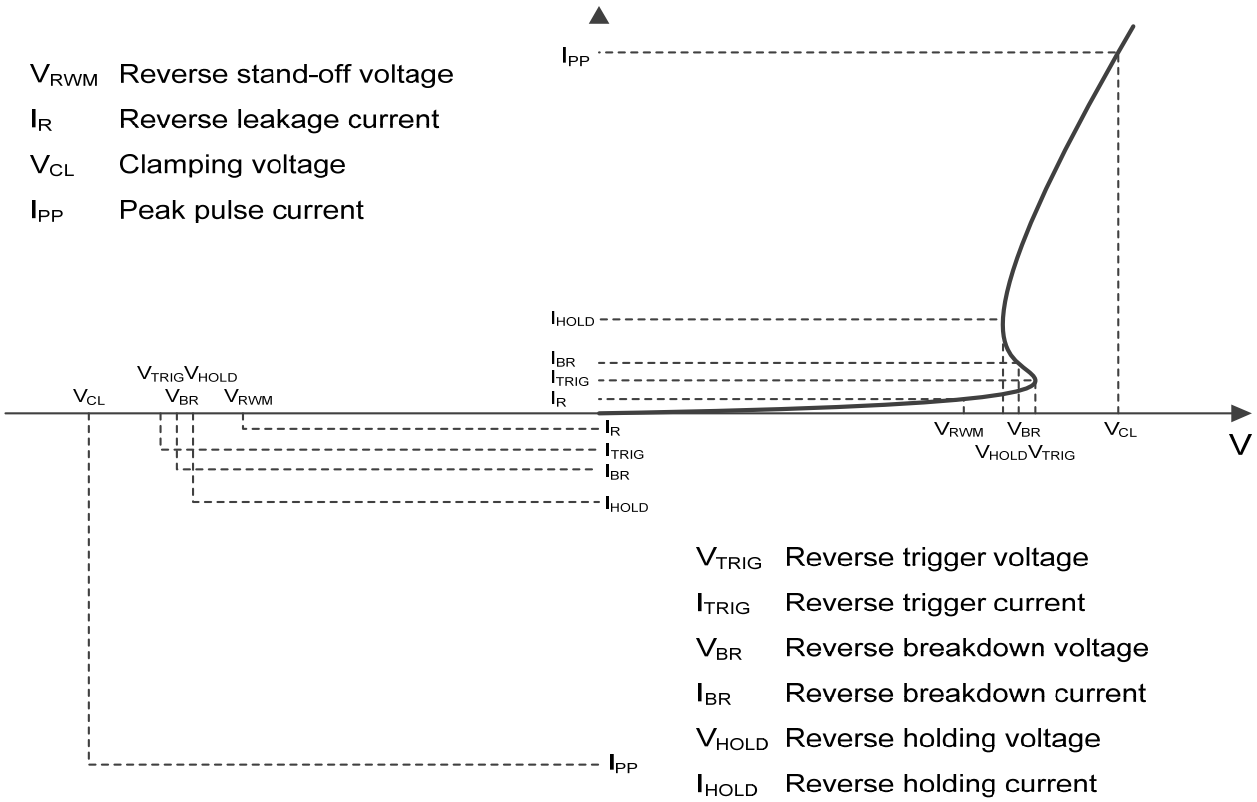
Mechanical Data

- Package: SOD-523
- 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

V_{RWM}	Reverse stand-off voltage
I_R	Reverse leakage current
V_{CL}	Clamping voltage
I_{PP}	Peak pulse current



V_{TRIG}	Reverse trigger voltage
I_{TRIG}	Reverse trigger current
V_{BR}	Reverse breakdown voltage
I_{BR}	Reverse breakdown current
V_{HOLD}	Reverse holding voltage
I_{HOLD}	Reverse holding current

■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power (t_p = 8/20μs)	P_{pk}	125	W
Peak pulse current (t_p = 8/20μs)	I_{PP}	13	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	-55~125	°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	μA	V_{RWM} = 3.3V			0.1
Reverse breakdown voltage	V_{BR}	V	I_{BR} = 1mA	3.63	4	
Clamping voltage 1)	V_{CL}	V	I_{PP} = 16A, t_p = 100ns		7.2	
Dynamic resistance 1)	R_{DYN}	Ω			0.17	
Clamping voltage 2)	V_{CL}	V	V_{ESD} = 8kV		7.5	
Clamping voltage 1)	V_{CL}	V	I_{PP} = 1A, t_p = 8/20μs		4.5	5.5
		V	I_{PP} = 13A, t_p = 8/20μs		8.2	9.5
Junction capacitance	C_J	pF	V_R = 0V, f = 1MHz		20	28
	C_J	pF	V_R = 2.5V, f = 1MHz		18	22

Notes:
(1). 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
ESD3V3D5BA	F3	Approximate 2	3000	30000	120000	7” reel

■ Characteristics (Typical)

Fig.1 8/20μs waveform per IEC61000-4-5

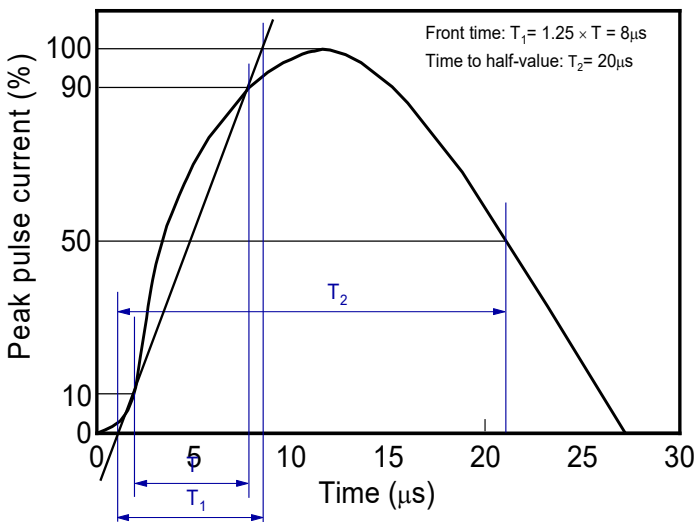


Fig.2 Contact discharge current waveform per IEC61000-4-2

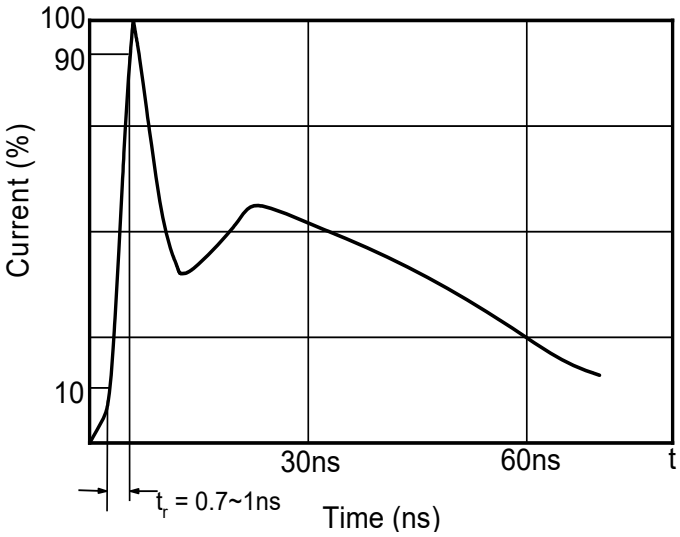


Fig.3 Clamping voltage vs. Peak pulse current

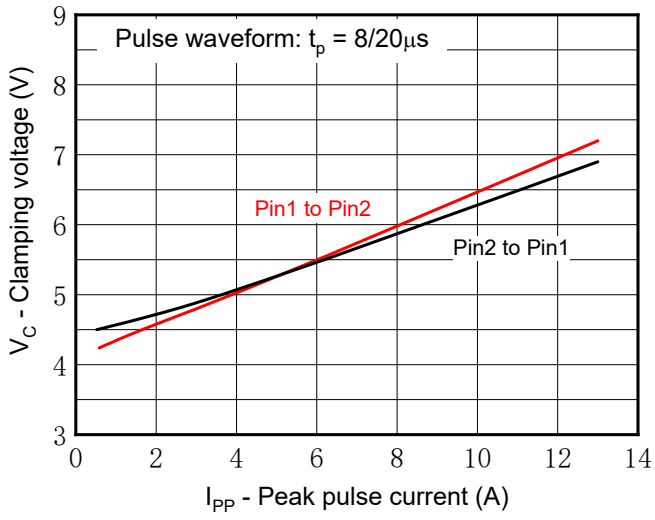


Fig.4 Capacitance vs. Reverse voltage

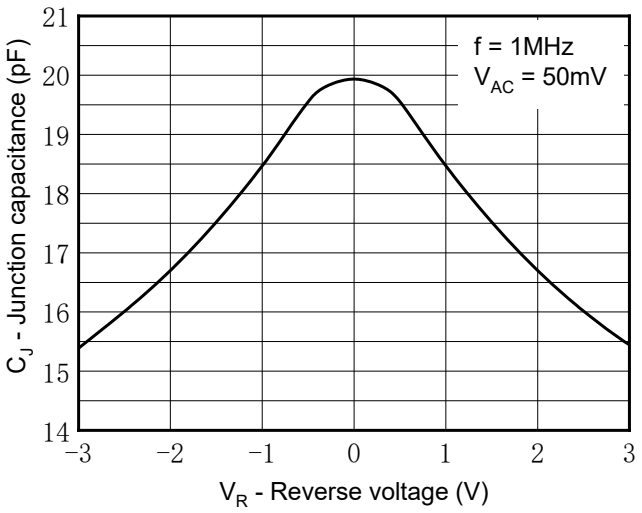


Fig.5 Non-repetitive peak pulse power vs. Pulse time

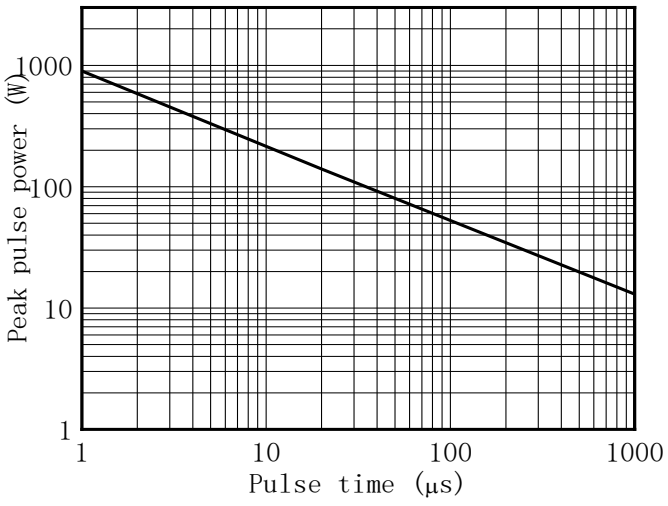


Fig.6 Power derating vs. Ambient temperature

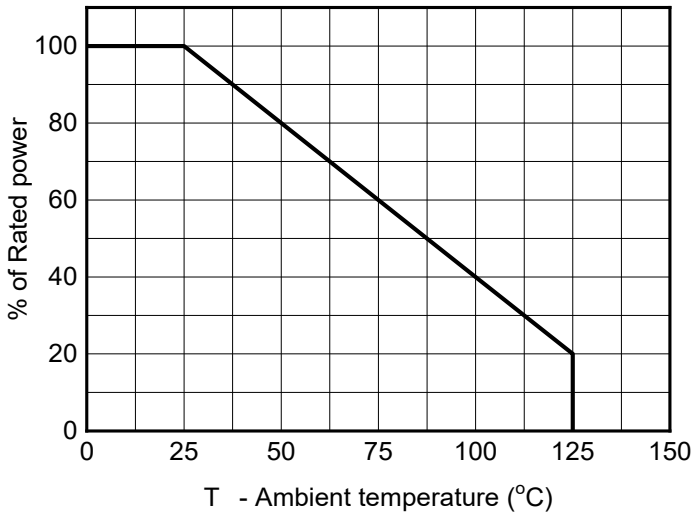
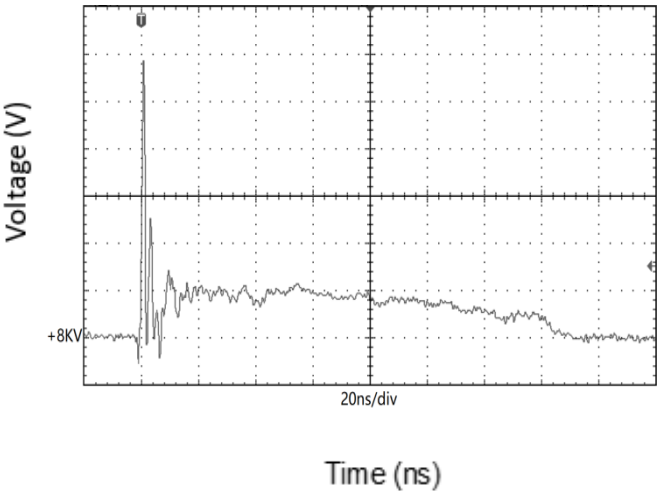
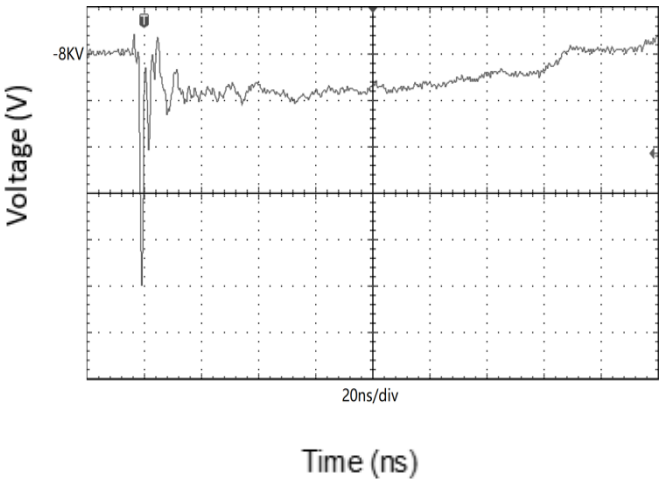


Fig.7 ESD clamping



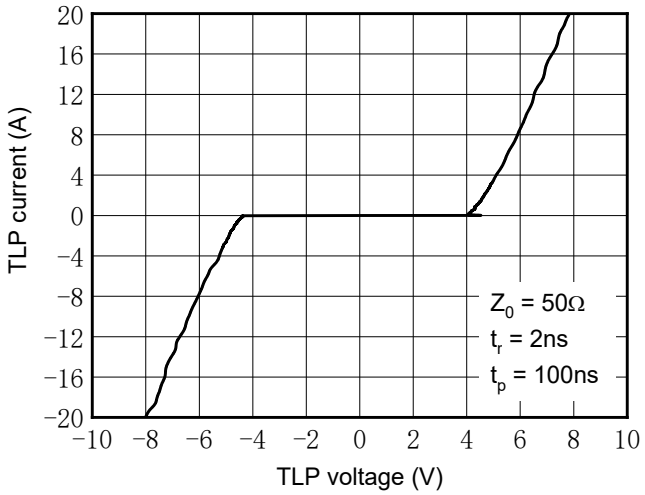
(+8kV contact discharge per IEC61000-4-2)

Fig.8 ESD clamping t

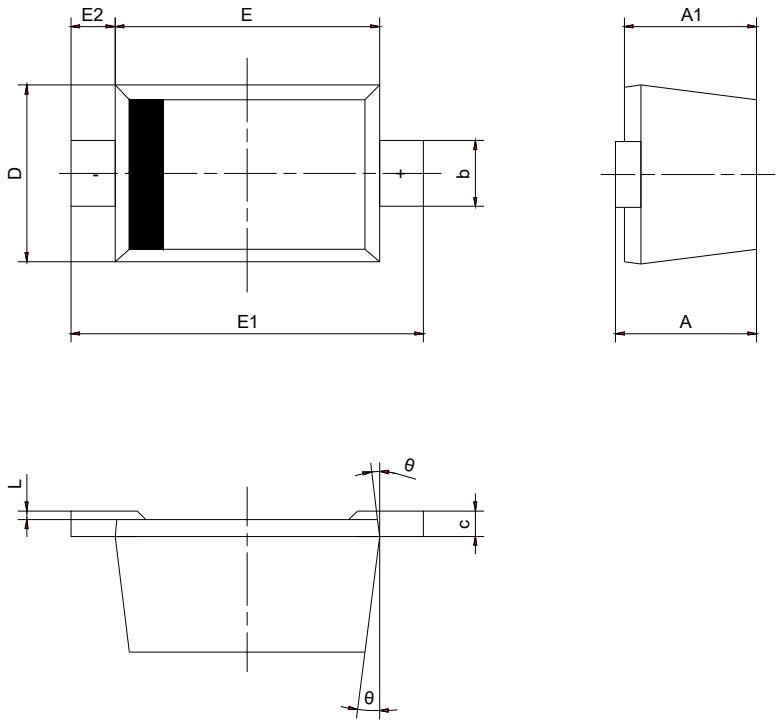


(-8kV contact discharge per IEC61000-4-2)

Fig.9 TLP Measurment

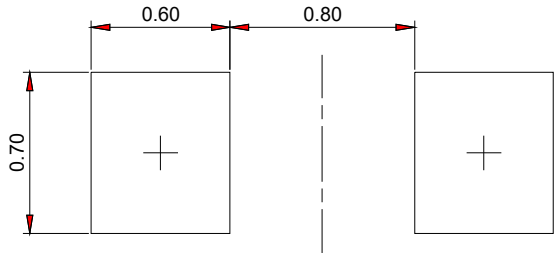


■ Outline Dimensions



Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	0.510	0.640	0.770
A1	0.500	0.600	0.700
b	0.250	0.300	0.350
c	0.080	0.115	0.150
D	0.750	0.800	0.850
E	1.100	1.200	1.300
E1	1.500	1.600	1.700
E2	0.200 Ref		
L	0.010	0.040	0.070
θ	7° Ref		

■ Soldering Footprint



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

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