SHANGHAI SINO-IC
MICROELECTRONICS CO., LTD.

June 2006

SESD9D Series
ESD Protection Diode

Revision:B

General Description

The SESD9D Series is designed to protect Voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium.

Features

- Small Body Outline Dimensions: 0.039″ x 0.024″(1.0 mm x 0.60 mm)
- Low Body Height: 0.017″ (0.43 mm) Max
- Stand−off Voltage: 3.3 V − 24 V
- Low Leakage
- Response Time is Typically < 1 ns

Applications

- Cellular phones audio
- MP3 players
- Digital cameras
- Portable applications
- mobile telephone

Complies with the following standards

IEC61000-4-2

Level 4 15 kV (air discharge)

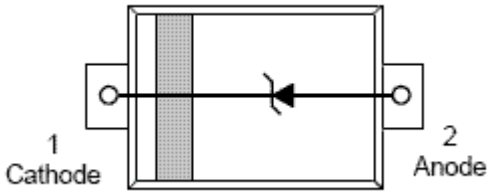
8 kV(contact discharge)

MIL STD 883E - Method 3015-7 Class 3

25 kV HBM (Human Body Model)

Functional diagram

SOD-923

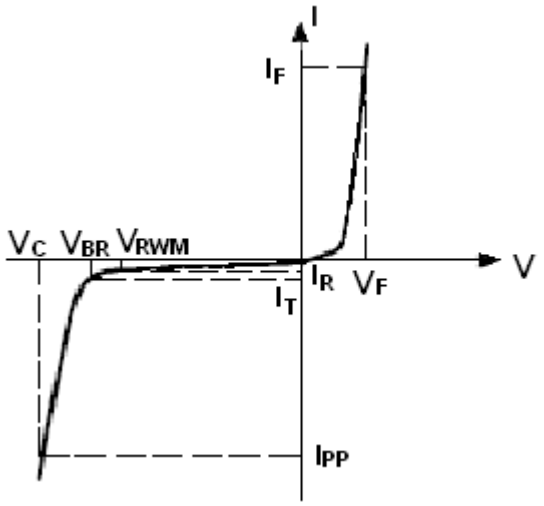


Maximum Ratings

Parameter	Symbol	Value	Unit
IEC 61000-4-2 (ESD) Contact		8	kV
ESD Voltage Per Human Body Model		25	kV
Per Machine Model		400	V
Peak Pulse Power (t_p = 8/20μs) @ T_A=25℃	P_D	60	W
Junction and Storage Temperature Range	T_J,T_{STG}	-55 to 150	℃
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	℃

Electrical Parameter

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T
I_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical Characteristics (T_A=25℃ unless otherwise noted, V_F=0.9V Max. @ I_F=10mA for all types)

Part Numbers	V_{BR}			I_T	V_{RWM}	I_R	V_F	I_F	C
	Min.	Typ.	Max.				Max.		Typ. (Note1)
	V	V	V	mA	V	μA	V	mA	pF
SESD9D3V3	5.0	5.7	6.4	2.5	3.0	1	1.25	10	40
SESD9D5V	6.2	6.8	7.6	1.0	5.0	1	1.25	10	25
SESD9D7V	7.5	8.1	8.6	1.0	7.0	1	1.25	10	25
SESD9D12V	13.5	14.2	15.0	1.0	12.0	1	1.25	10	15
SESD9D24V	22.8	24.0	26	5.0	24.0	0.5	1.25	10	8.5

1.Capacitance is measured at f=1MHz, V_R=0V,T_A=25℃.

Typical Characteristics

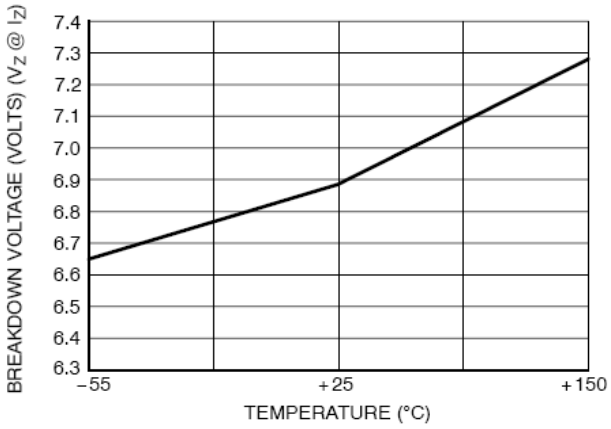


Fig 1. Typical Breakdown Voltage versus Temperature

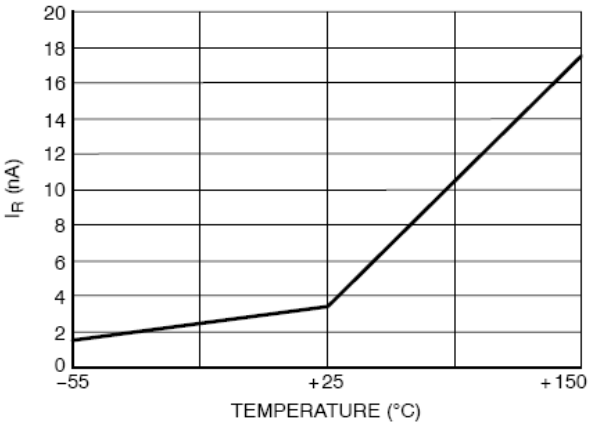


Fig 2. Typical Leakage Current versus Temperature

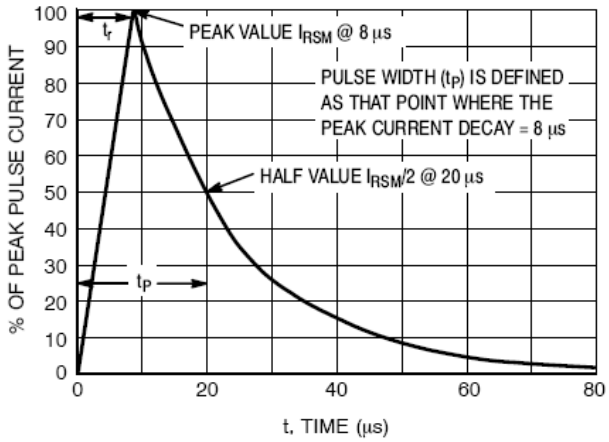


Fig 3. 8/20 µs Pulse Waveform

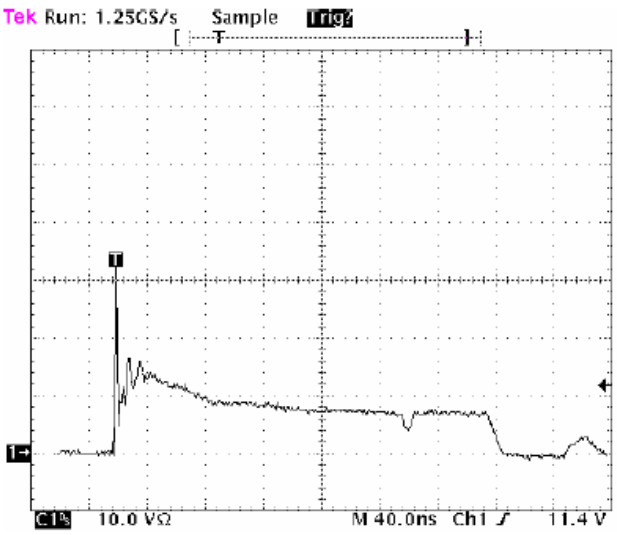


Fig 4. Positive 8kV contact per IEC 61000-4-2-SESD9D5V

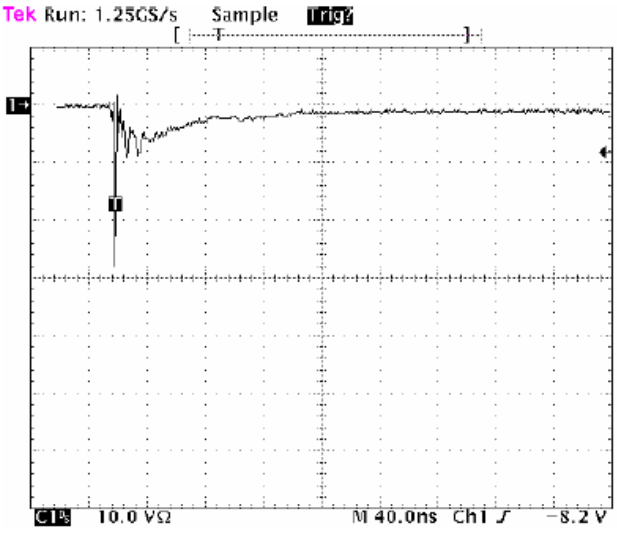
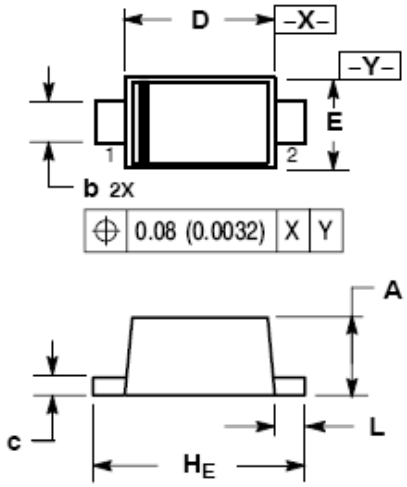
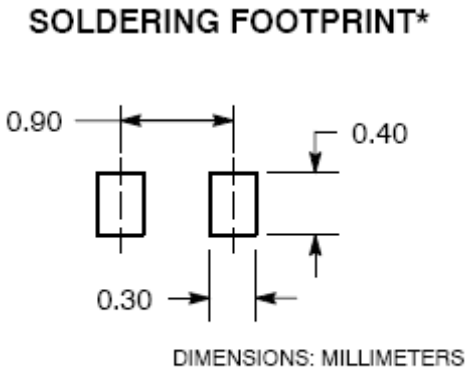


Fig 5. Negative 8kV contact per IEC 61000-4-2-SESD9D5V

SOD-923 Mechanical Data





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Dim	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.36	0.40	0.43	0.014	0.016	0.017
b	0.15	0.20	0.25	0.006	0.008	0.010
c	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.031	0.033
E	0.55	0.60	0.65	0.022	0.024	0.026
H_E	0.95	1.00	1.05	0.037	0.039	0.041
L	0.05	0.10	0.15	0.002	0.004	0.006

SHANGHAI SINO-IC MICROELECTRONICS CO., LTD

Add: Building 3, Room 3401-03, No.200 Zhangheng Road, ZhangJiang Hi-Tech Park, Pudong, Shanghai 201203, China
Phone: +86-21-33932402 33932403 33932405 33933508 33933608
Fax: +86-21-33932401
Email: szrxw002@126.com
Website: http://www.sino-ic.net