

DESCRIPTION

The ESD7D 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 premium.

APPLICATIONS

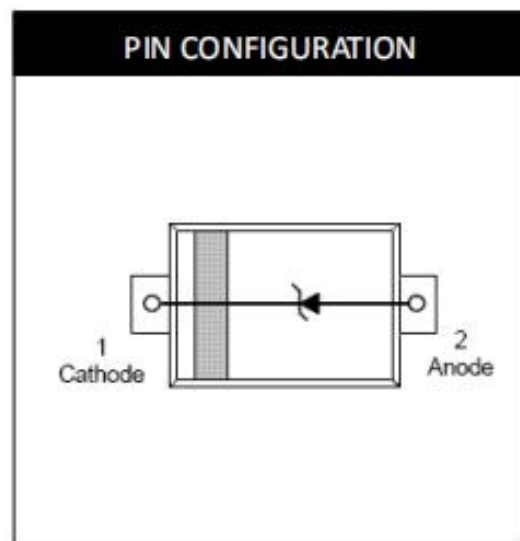
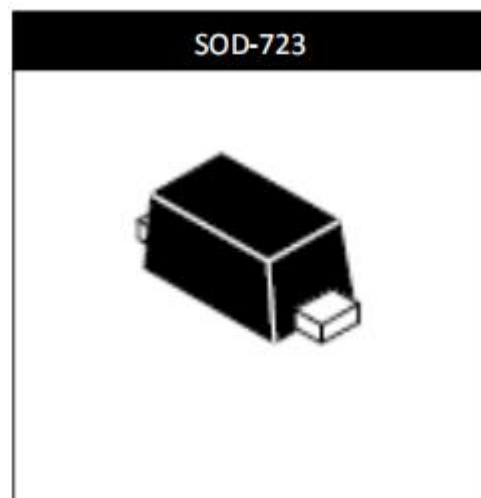
- ✧ Cellular phones audio.
- ✧ MP3 players.
- ✧ Digital cameras.
- ✧ Portable applications.
- ✧ mobile telephone.

FEATURES

- ✧ Small Body Outline Dimensions.
- ✧ Low Body Height.
- ✧ Stand-off Voltage: 5.0V-12.0V.
- ✧ Peak Power up to 200Watts @ 8 x20us Pulse.
- ✧ Low Leakage.
- ✧ Response Time is Typically < 1 ns.

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) .



DEVICE CHARACTERISTICS

Absolute Ratings ($T_{amb}=25^{\circ}\text{C}$)

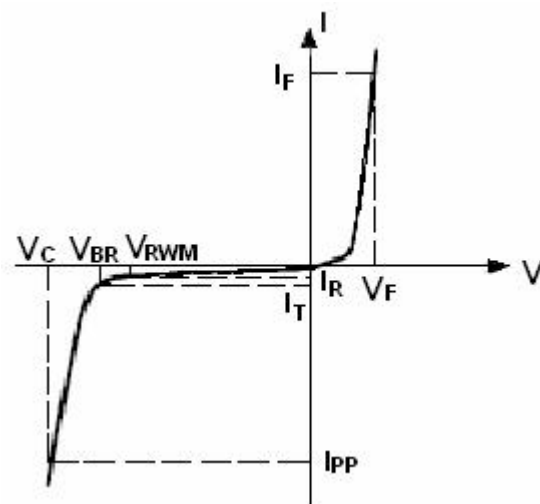
Symbol	Rating	Value	Unit
	IEC 61000-4-2 (ESD) Contact	± 30	kV
	ESD Voltage Per Human Body Model Per Machine Model	25 400	kV V
P_D	Total Power Dissipation on FR-5 Board (Note 1) @ $T_A=25^{\circ}\text{C}$	150	mW
T_J, T_{STG}	Junction and Storage Temperature Range	-55 to 150	$^{\circ}\text{C}$
T_L	Lead Solder Temperature - Maximum (10 Second Duration)	260	$^{\circ}\text{C}$

Stresses exceeding Maximum Ratings may damage the device. Maximum Rating are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-5 = 1.0*0.75*0.62 in.

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 ($T_A=25^\circ\text{C}$ unless otherwise noted, $V_F=0.9\text{V}$ Max. @ $I_F=10\text{Ma}$ for all types)

Part Numbers	Vbr			I _r	V _{RWM}	I _R	V _F	I _F	C
	Min.	Typ.	Max.				Max.		Typ. 0v bias
	V	V	V		V	uA	V		pF
ESD7D5V	6.0	6.6	7.1	1	5.0	1	1.25	200	100
ESD7D6V	6.8	7.4	7.9	1	6.0	1	1.25	200	95
ESD7D7V	7.5	8.1	8.6	1	7.0	1	1.25	200	90
ESD7D12V	14.1	15.2	16.3	1	12.0	1	1.25	200	60

1. Other voltage available upon request.
2. V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C
3. Surge current waveform per Figure 3.

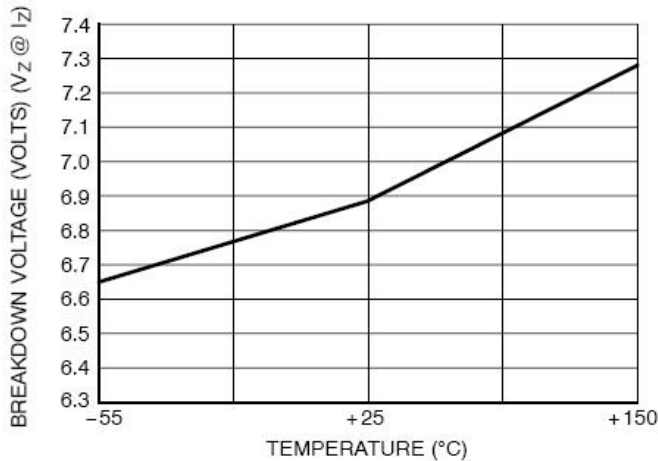
TYPICAL CHARACTERISTICS


Fig 1. Typical Breakdown Voltage versus Temperature

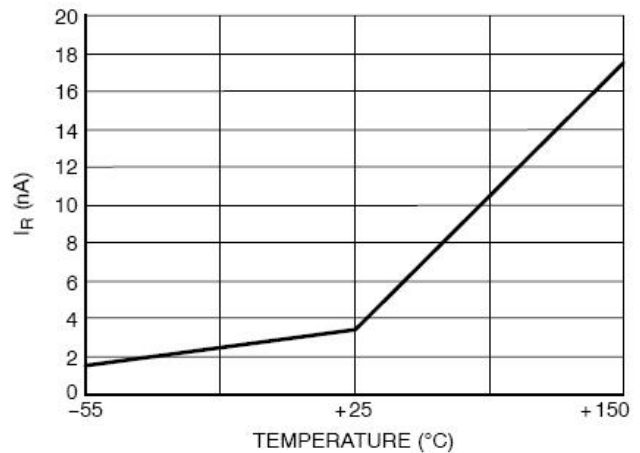


Fig 2. Typical Leakage Current versus Temperature

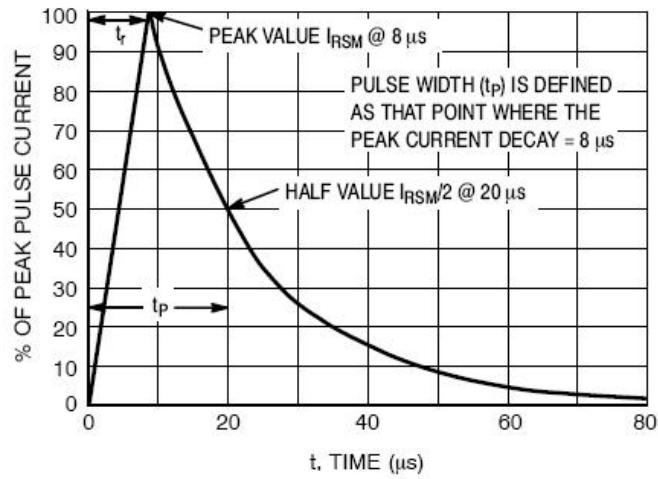


Fig 3. 8*20 μ s Pulse Waveform

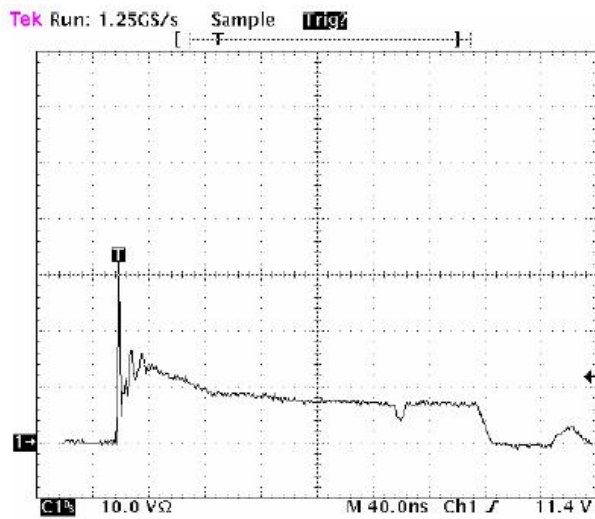


Fig 4. Positive 8kV contact per IEC

61000-4-2-ESD7D5V

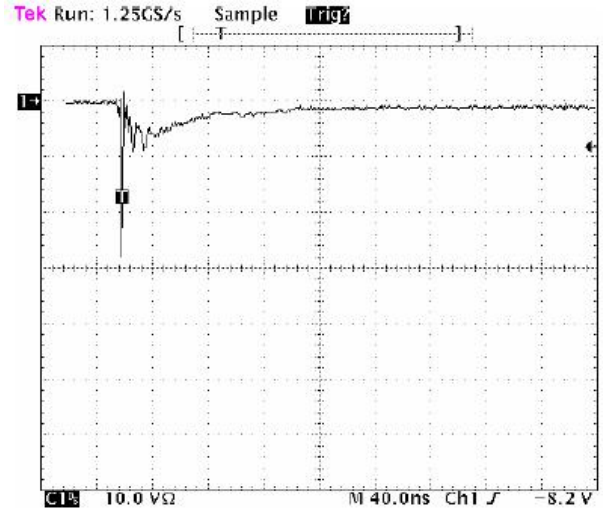
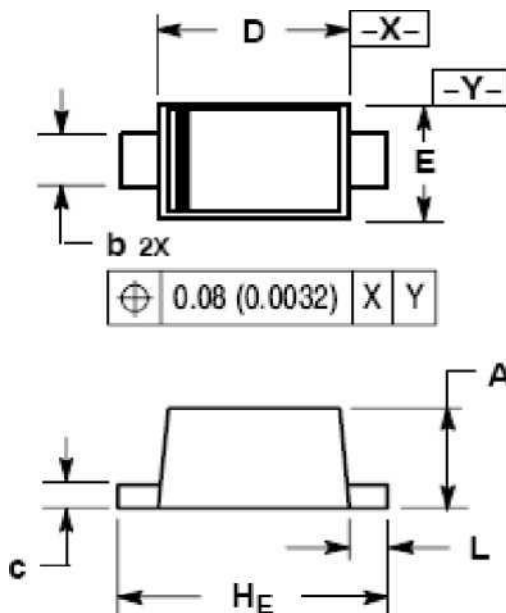
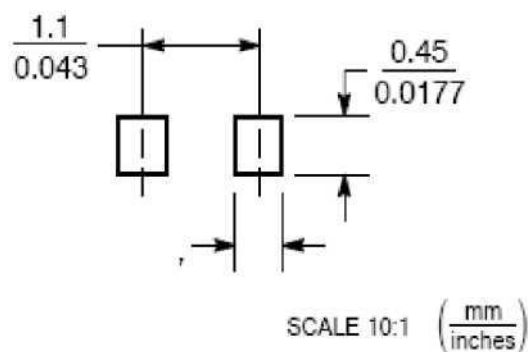


Fig 5. Negative 8kV contact per IEC

61000-4-2-ESD7D5V

SOD-723 MECHANICAL DATA

SOLDERING FOOTPRINT*


Dim	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.49	0.52	0.55	0.019	0.020	0.022
b	0.25	0.28	0.32	0.0098	0.011	0.013
c	0.08	0.12	0.15	0.0032	0.0047	0.0059
D	0.95	1.00	1.05	0.037	0.039	0.041
E	0.55	0.60	0.65	0.022	0.024	0.026
He	1.35	1.40	1.45	0.053	0.055	0.057
L	0.15	0.20	0.25	0.006	0.0079	0.010

Website: <http://www.jksemi.com>

For additional information, please contact your local Sales Representative.

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