

## 1.Description

The LESD8LH5.0CT5G is designed to protect voltage sensitive components that require ultra-low capacitance from ESD and transient voltage events. Excellent clamping capability, low capacitance, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed and antenna line applications.

## 3.Features

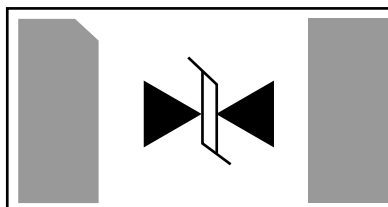
- Ultra Low Capacitance 3 pF
- Low Clamping Voltage
- Small Body Outline Dimensions:  
0.039" x 0.024" (1.00 mm x 0.60mm)
- Low Body Height: 0.020" (0.5 mm)

## 2.Mechanical Characteristics

- CASE: Void-free, transfer-molded, thermosetting
- plastic Epoxy Meets UL 94 V-0
- LEAD FINISH: 100% Matte Sn (Tin)
- Qualified Max Reflow Temperature: 260°C
- Device Meets MSL 1 Requirements

- Stand-off Voltage: 5 V
- Low Leakage
- Response Time is Typically < 1.0 ns
- IEC61000-4-2 Level 4 ESD Protection
- This is a Pb-Free Device

## 4.Pinning information



**SOD-882**



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

Parameter	Symbol	Value	Units
IEC 61000-4-2 (ESD) Contact Air		$\pm 10$	kV
		$\pm 15$	kV
Total Power Dissipation on FR-5 Board (Note 1) @ $T_A=25^{\circ}\text{C}$	$P_D$	150	mW
Storage Temperature Range	$T_{STG}$	-55 to 150	$^{\circ}\text{C}$
Junction Temperature Range	$T_J$	-55 to 125	$^{\circ}\text{C}$
Lead Solder Temperature – Maximum (10 Second Duration)	$T_L$	260	$^{\circ}\text{C}$

### Notes:

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings 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 x 0.75 x 0.62 in.



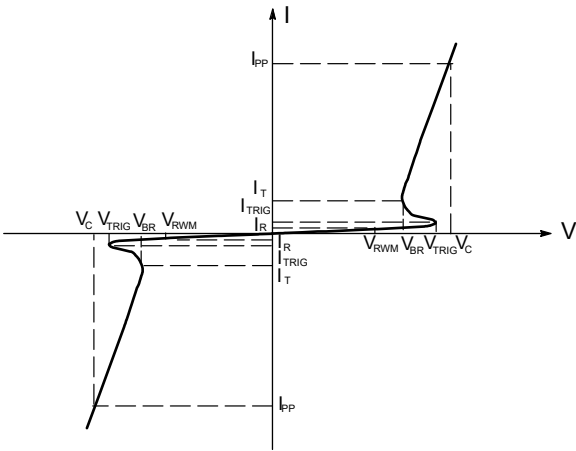
6.Electrical Characteristic (T<sub>A</sub>=25°C unless otherwise noted)

Device	V <sub>RWM</sub> (V)	I <sub>R</sub> (uA) @V <sub>RWM</sub>	V <sub>BR</sub> (V) @ I <sub>T</sub> =1mA (Note 2)	C(pF)		V <sub>C</sub> (V) @I <sub>PP</sub> =3.5A (Note 3)	I <sub>PP</sub> (A) t <sub>p</sub> =8/20μs	P <sub>PP</sub> (W)	V <sub>C</sub>
	Max	Max	Min	Typ	Max	Max	Max	Max	Per IEC61000-4-2 (Note4)
LESD8LH5.0CT5G	5	1	5.5	3	3.5	11.5	3.5	40	Figures 1 and 2 See Below

Notes:

- 2. V<sub>BR</sub> is measured with a pulse test current I<sub>T</sub> at an ambient temperature of 25°C.
- 3. Surge current waveform per Figure 4.
- 4. For test procedure see Figures 3.

7.Electrical Parameter



Bi-Directional TVS

Symbol	Parameter
I <sub>PP</sub>	Maximum Reverse Peak Pulse Current
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
V <sub>RWM</sub>	Reverse stand-off voltage
I <sub>R</sub>	Maximum Reverse Leakage Current @ V <sub>RWM</sub>
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>
I <sub>T</sub>	Test Current
V <sub>TRIG</sub>	Reverse trigger voltage
I <sub>TRIG</sub>	Reverse trigger current



## 8. Typical characteristic

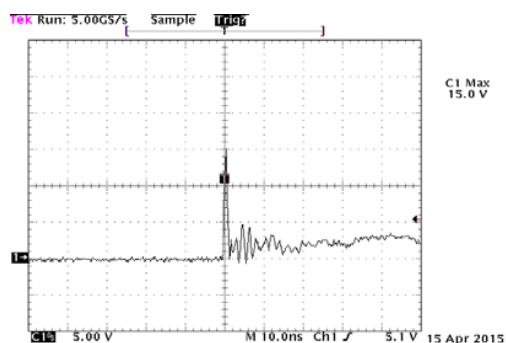


Figure 1: ESD Clamping Voltage Screenshot  
Positive 8 kV Contact per IEC61000-4-2

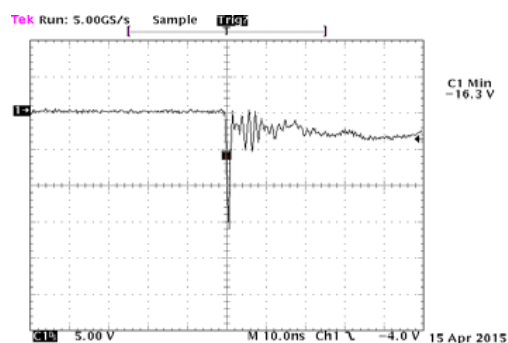


Figure 2: ESD Clamping Voltage Screenshot  
Negative 8 kV Contact per IEC61000-4-2

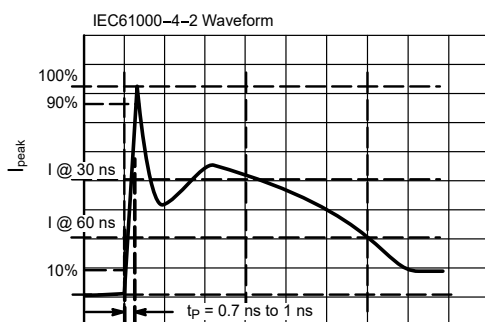


Figure 3: IEC61000-4-2 Waveform

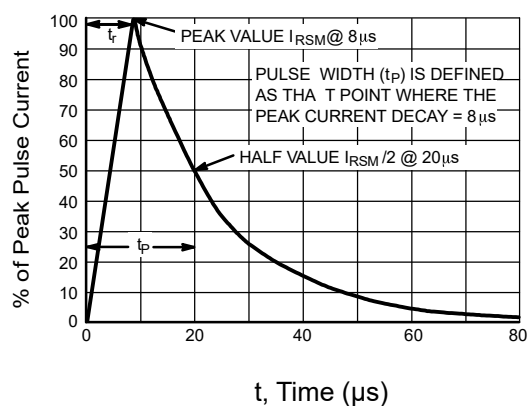


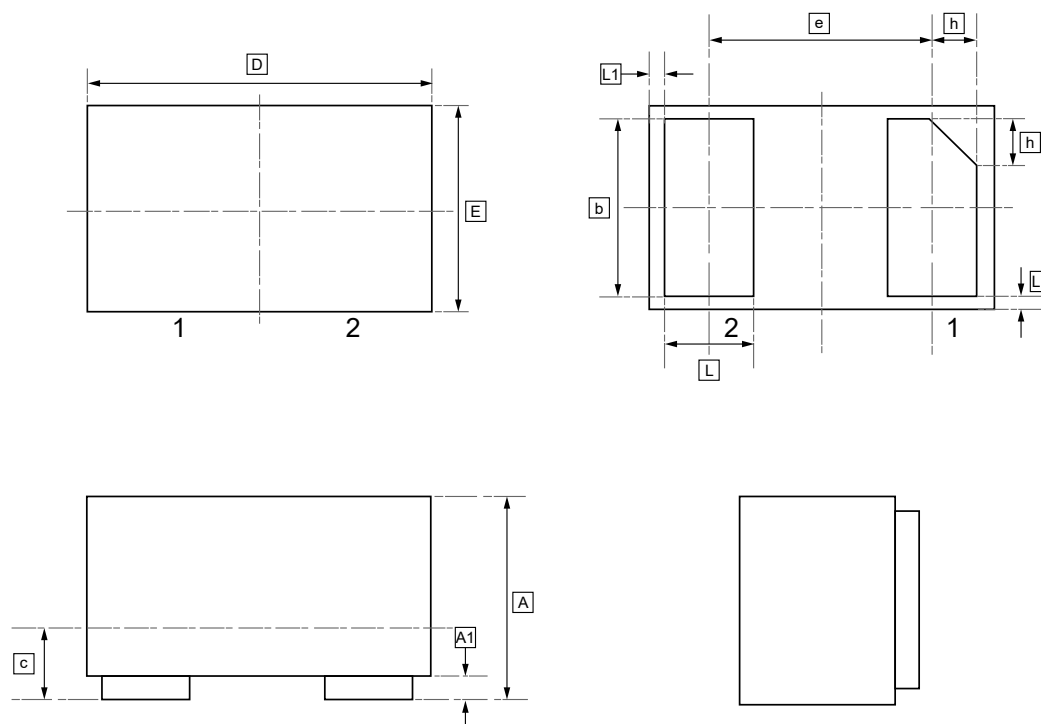
Figure 4: 8 X 20  $\mu$ s Pulse Waveform

Level	Test Voltage (kV)	First Peak Current (A)	Current at 30 ns(A)	Current at 60 ns(A)
1	2	7.5	4	2
2	4	15	8	4
3	6	22.5	12	6
4	8	30	16	8

IEC 61000-4-2 Spec



## 9.SOD-882 Package Outline Dimensions

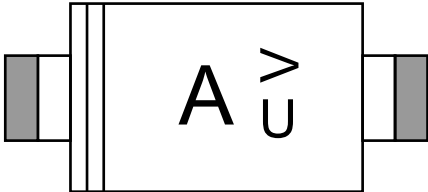


### DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	b	c	D	e	E	L	L1	h
Min	0.45	0.00	0.45	0.12	0.95	0.65	0.55	0.20	0.05	0.07
Max	0.55	0.05	0.55	0.18	1.05	BSC	0.65	0.30	REF	0.17



10.Ordering information



Order Code	Package	Base QTY	Delivery Mode
UMW LESD8LH5.0CT5G	SOD-882	10000	Tape and reel



## **11.Disclaimer**

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