

LESD8LH5.0AT5G Transient Voltage Suppressors

ESD Protection Diodes with Ultra-Low Capacitance

The ESD8L 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.

Specification Features:

- Ultra Low Capacitance
- Low Clamping Voltage
- Small Body Outline Dimensions:
0.039" x 0.024" (1.00 mm x 0.60 mm)
- Low Body Height: 0.020" (0.5 mm)
- Stand-off Voltage: 5 V
- Low Leakage:nA level
- IEC61000-4-2 Level 4 ESD Protection
- This is a Pb-Free Device

Mechanical Characteristics:

CASE: Void-free, transfer-molded, thermosetting plastic
Epoxy Meets UL 94 V-0

LEAD FINISH: NiPdAu

QUALIFIED MAX REFLOW TEMPERATURE: 260°C

Device Meets MSL 1 Requirements

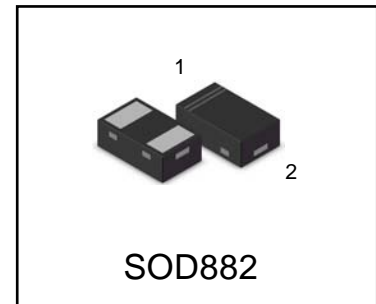
MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|------------------|-------------|------|
| IEC 61000-4-2 (ESD) Contact Air | | ±30 ±30 | kV |
| Total Power Dissipation on FR-5 Board (Note 1) @ T _A = 25°C | P _D | 150 | mW |
| Storage Temperature Range | T _{stg} | -55 to +150 | °C |
| Junction Temperature Range | T _J | -55 to +125 | °C |
| Lead Solder Temperature - Maximum (10 Second Duration) | T _L | 260 | °C |

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.

LESD8LH5.0AT5G



Ordering information

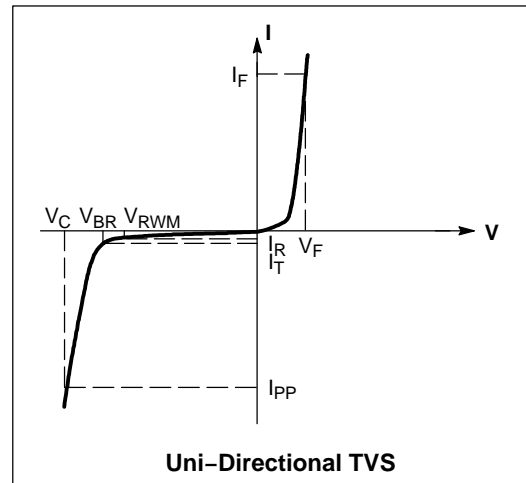
| Device | Marking | Shipping |
|----------------|---------|-----------------|
| LESD8LH5.0AT5G | MA | 10000/Tape&Reel |

LESD8LH5.0AT5G

ELECTRICAL CHARACTERISTICS

($T_A = 25^\circ\text{C}$ unless otherwise noted)

| 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} |
| V_{BR} | Breakdown Voltage @ I_T |
| I_T | Test Current |
| I_F | Forward Current |
| V_F | Forward Voltage @ I_F |
| P_{pk} | Peak Power Dissipation |
| C | Capacitance @ $V_R = 0$ and $f = 1.0$ MHz |



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Device | V_{RWM} (V) | I_R (μA) @ V_{RWM} | V_{BR} (V) @ I_T (Note 2) | | I_T | V_C (V) @ $I_{PP} = 1$ A (Note 3) | V_C (V) @ MAX I_{PP} (Note 3) | I_{PP} (A) (Note 3) | P_{PK} (W) (Note 3) | C (pF) | |
|----------------|---------------|-------------------------------------|-------------------------------|-----|-------|-------------------------------------|-----------------------------------|-----------------------|-----------------------|--------|-----|
| | Max | Max | Min | Max | mA | Max | Max | Max | Max | Typ | Max |
| LESD8LH5.0AT5G | 5 | 0.5 | 6 | 8.5 | 1.0 | 11 | 20 | 10 | 200 | 0.7 | 2 |

Other voltage available upon request.

- V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C
- Surge current waveform per Figure 1 according to IEC 61000-4-5.

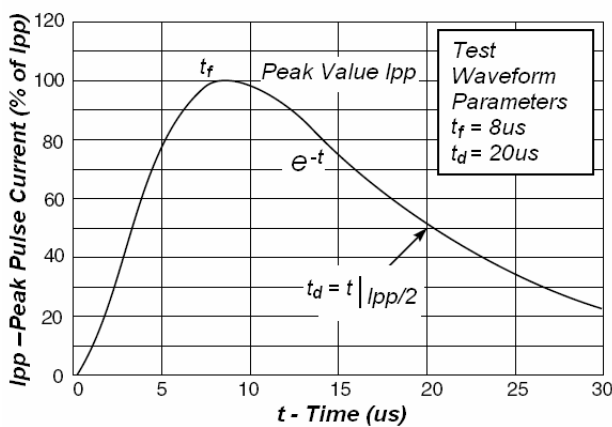


Fig1. Pulse Waveform according to IEC 61000-4-5

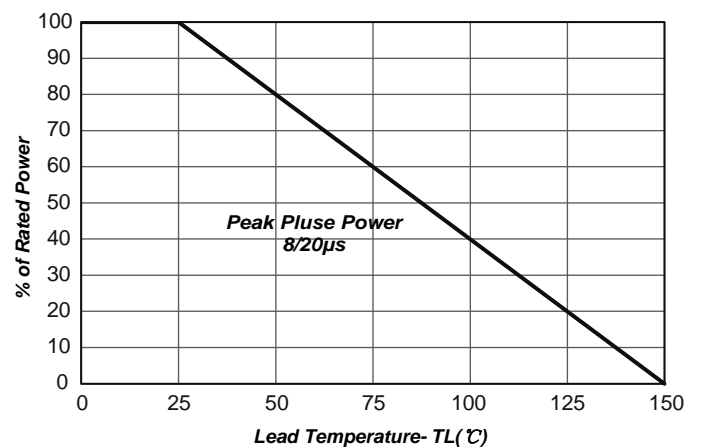


Fig2. Power Derating Curve

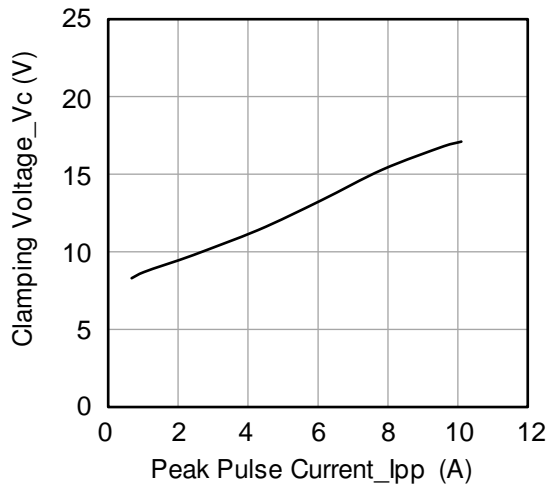
LESD8LH5.0AT5G

Fig3 .Clamping Voltage vs. Peak Pluse Current according to IEC 61000-4-5

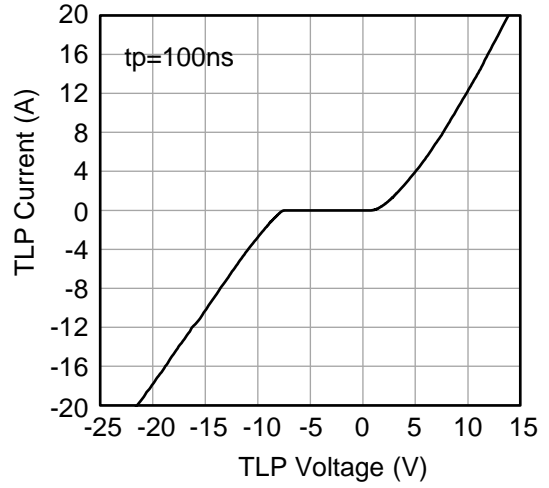
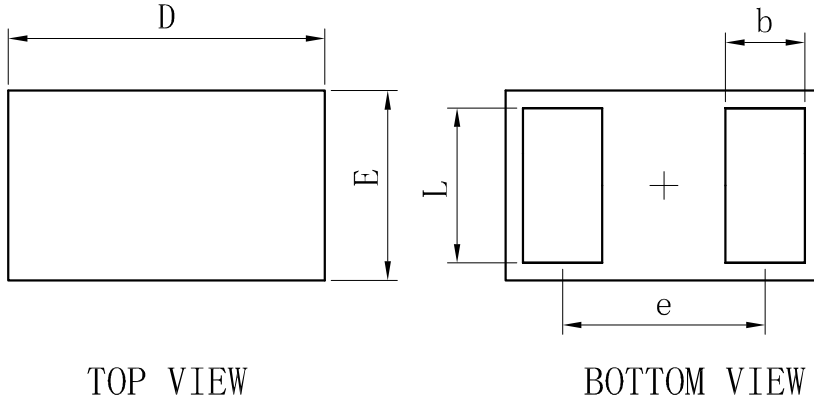


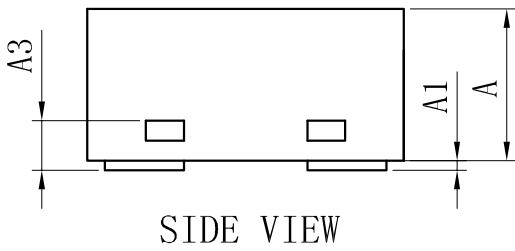
Fig 4. TLP Measurement

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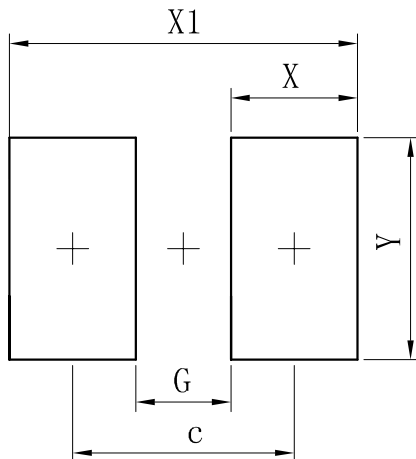
Package Outline Dimension



| SOD882 | | | |
|----------------------|-----------|------|------|
| Dim | Min | Typ | Max |
| D | 0.95 | 1.00 | 1.05 |
| E | 0.55 | 0.60 | 0.65 |
| e | - | 0.64 | - |
| L | 0.44 | 0.49 | 0.54 |
| b | 0.20 | 0.25 | 0.30 |
| A | 0.43 | 0.48 | 0.53 |
| A1 | 0 | - | 0.05 |
| A3 | 0.127REF. | | |
| All Dimensions in mm | | | |



Suggested Pad layout



| Dimensions | (mm) |
|------------|------|
| c | 0.70 |
| G | 0.30 |
| X | 0.40 |
| X1 | 1.10 |
| Y | 0.70 |

DISCLAIMER

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
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