



## Discription

The LESD9L5.0T5G protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD. It gives designer the flexibility to protect one unidirectional line in applications where arrays are not practical.



SOD-923

## Features

- ★ Ultra Low Capacitance 0.5 pF
- ★ Low Clamping Voltage
- ★ Small Body Outline Dimensions:  
0.039" x 0.024" (1.00 mm x 0.60 mm)
- ★ Low Body Height: 0.016" (0.4 mm)
- ★ 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



Circuit Diagram

## Ordering Information

| Product ID   | Pack    | Qty(PCS) |
|--------------|---------|----------|
| LESD9L5.0T5G | SOD-923 | 8000     |

## Absolute Ratings(Tamb = 25°C)

| Symbol           | Parameter                                         | Value                              | Units              |
|------------------|---------------------------------------------------|------------------------------------|--------------------|
| P <sub>pp</sub>  | Peak Pulse Power (t <sub>p</sub> = 8/20μs)        | 90                                 | W                  |
| T <sub>L</sub>   | Maximum lead temperature for soldering during 10s | 260                                | °C                 |
| T <sub>stg</sub> | Storage Temperature Range                         | -55 to +150                        | °C                 |
| T <sub>op</sub>  | Operating Temperature Range                       | -40 to +125                        | °C                 |
| T <sub>j</sub>   | Maximum junction temperature                      | 150                                | °C                 |
|                  | IEC61000-4-2 (ESD)                                | air discharge<br>contact discharge | ± 15<br>± 10<br>KV |



## Electrical Characteristics

| Symbol    | Parameter                 | Test Condition                 | Min | Typ | Max | Units   |
|-----------|---------------------------|--------------------------------|-----|-----|-----|---------|
| $V_{RWM}$ | Reverse Working Voltage   |                                |     |     | 5.0 | V       |
| $V_{BR}$  | Reverse Breakdown Voltage | $I_T = 1mA$                    | 5.4 |     |     | V       |
| $I_R$     | Reverse Leakage Current   | $V_{RWM} = 5V$                 |     |     | 1.0 | $\mu A$ |
| $V_C$     | Clamping Voltage          | $I_{PP} = 1A, t_p = 8/20\mu s$ |     | 15  |     | V       |
|           |                           | $I_{PP} = 4A, t_p = 8/20\mu s$ |     | 20  |     | V       |
| $C_J$     | Junction Capacitance      | $V_R = 0V, f = 1MHz$           |     | 60  |     | pF      |

## Typical Characteristics

### IEC 61000-4-2 Spec.

| 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                    |

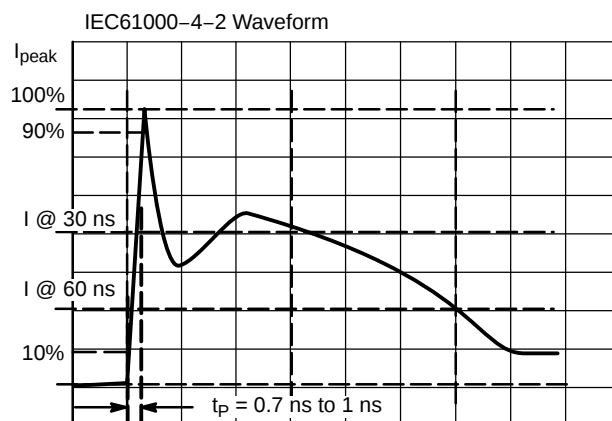


Figure 1. IEC61000-4-2 Spec

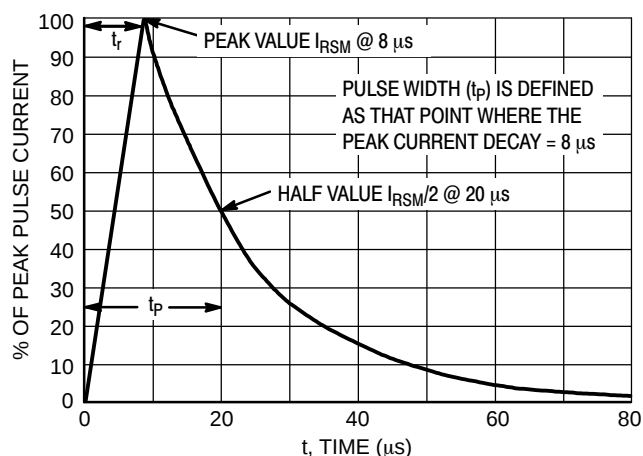
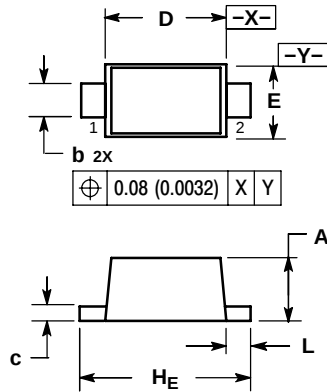


Figure 2. 8 X 20  $\mu s$  Pulse Waveform



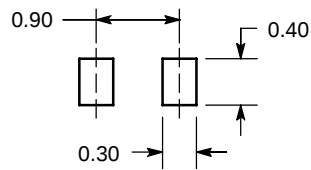
## SOD-923 Package Information



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
  2. CONTROLLING DIMENSION: MILLIMETERS.
  3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

| DIM            | MILLIMETERS |      |      | INCHES |       |       |
|----------------|-------------|------|------|--------|-------|-------|
|                | MIN         | NOM  | MAX  | MIN    | NOM   | MAX   |
| A              | 0.34        | 0.37 | 0.40 | 0.013  | 0.015 | 0.016 |
| 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 <sub>E</sub> | 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 |

## SOLDERING FOOTPRINT\*



DIMENSIONS: MILLIMETERS



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