1-Channel ESD Protector

Product Description

The HBL1010 provides robust ESD protection for sensitive parts that may be subjected to electrostatic discharge (ESD). The tiny form factor means it can be used in very confined spaces. The electrical 'back-to-back Zener' configuration provides symmetrical ESD protection in cases where nodes with AC signals are present. This device is designed and characterized to safely dissipate ESD strikes of at least ± 8 kV, according to the MIL-STD-883 (Method 3015) specification for Human Body Model (HBM) ESD.

Features

- Compact Die Protects from ESD Discharges
- Almost no Conduction at Signal Amplitudes less than ±4 V
- ESD Protection to over ±8 kV Contact Discharge per MIL_STD_883 International ESD Standard
- These Devices are Pb-Free and are RoHS Compliant

Applications

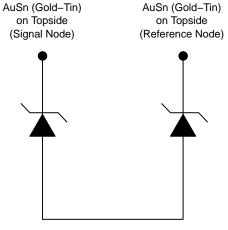
- LED Lighting
- Modules
- Interface Circuits



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ELECTRICAL SCHEMATIC



Silicon Substrate on Backside

Table 1. ORDERING INFORMATION[†]

| Part Numbering Information | | | | | | |
|----------------------------|-----------------|---------------------|--------------|---------|--------------------------|--|
| Ordering Part Number | Topside Metal | Back Metal | BG Thickness | Inking? | Shipping Method | |
| HBL1010RP | Gold–Tin (AuSn) | None (Si Substrate) | 4 mils | No | Die on tape in ring-pack | |

NOTE: Contact your sales representative for other ordering options.

HBL1010

SPECIFICATIONS

Table 2. OPERATING CONDITIONS

| Parameter | Rating | Units | |
|-----------------------------|-------------|-------|--|
| Operating Temperature Range | -40 to +130 | °C | |
| Storage Temperature Range | -55 to +130 | °C | |

Table 3. ELECTRICAL OPERATING CHARACTERISTICS

| Symbol | Parameter | Conditions | Min | Тур | Max | Units |
|-------------------|--------------------------------------------------------------------------------------------|-------------------------|------|------|------|-------|
| I _{LEAK} | Leakage Current | V = ±4 V, T = 25°C | | ±0.1 | ±1 | μΑ |
| | | V = ±7 V, T = 25°C | | ±10 | ±100 | μΑ |
| V _{BD} | Breakdown Voltage | T = 25°C at ±20.0 mA | ±7.3 | ±8 | ±8.9 | V |
| V _{ESD} | ESD Voltage Rating Contact Discharge per Human Body Model, MIL–STD–883 (Method 3015) | T = 25°C (Note 1) | ±8 | | | kV |
| CT | Capacitance | T = 25°C | | 18 | | pF |
| | Temp Coefficient of BV | 20 mA | | 1.0 | | mV/K |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

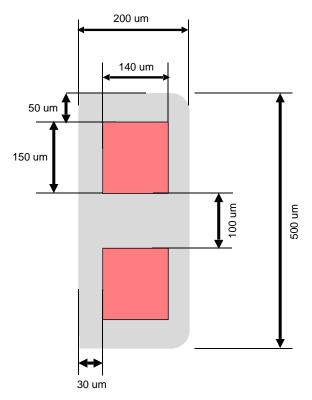
1. Per the standard, 3 positive and 3 negative strikes are applied, one second apart.

MECHANICAL DETAILS

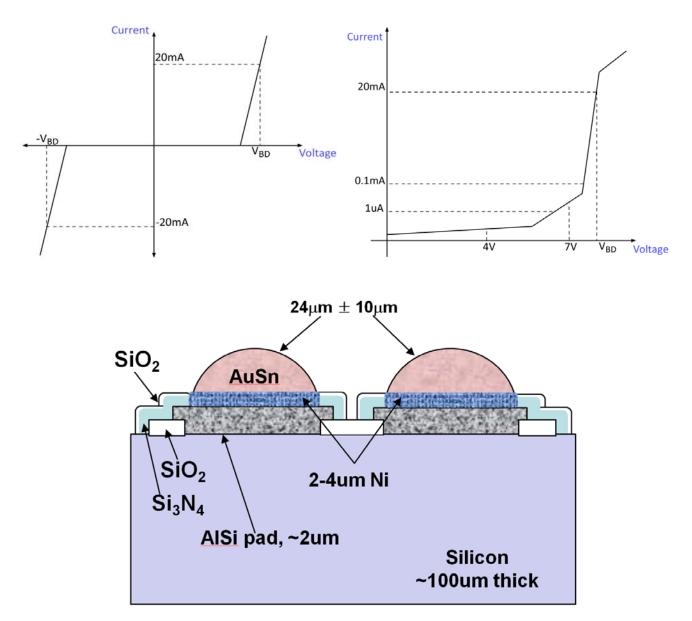
Table 4. MECHANICAL SPECIFICATIONS (Note 2)

| Symbol | Value | Unit |
|------------------------|----------------------------|------|
| Composition | Silicon Wafer, P+ doped | |
| Length (Sawn) | 500 | μm |
| Width (Sawn) | 200 | μm |
| Thickness | 4 | mils |
| Top Pad Length | 150 | μm |
| Top Pad Width | 140 | μm |
| Top Pad Spacing | 100 | μm |
| Top Pad Composition | AuSn (gold–tin) | |
| Top Pad Thickness | 24 ± 10 | μm |
| Back Metal (Underside) | None (silicon substrate) | |

2. Dimensions are typical values if tolerances are not specified.



HBL1010



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PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

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