

# HBL1009

## Advance Information 1-Channel ESD Protector

### Product Description

The HBL1009 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  $\pm 3$  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  $\pm 4$  V
- ESD Protection to over  $\pm 8$  V 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

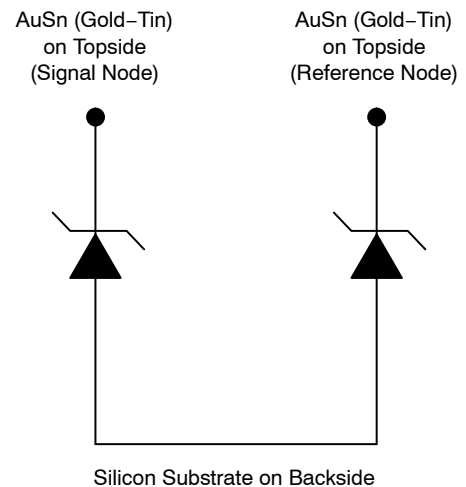


Table 1. ORDERING INFORMATION†

Part Numbering Information					
Ordering Part Number	Topside Metal	Back Metal	BG Thickness	Inking?	Shipping Method
HBL1009-RP	Gold-Tin (AuSn)	None (Si Substrate)	4 mils	No	Die on tape in ring-pack

NOTE: Contact your sales representative for other ordering options.

This document contains information on a new product. Specifications and information herein are subject to change without notice.

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## 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**

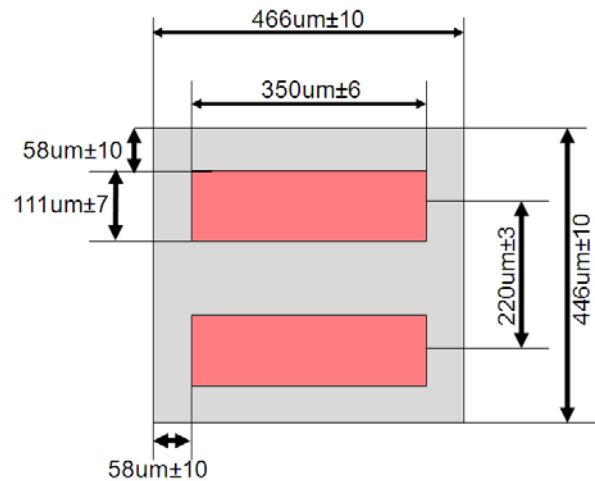
Symbol	Parameter	Conditions	Min	Typ	Max	Units
I <sub>LEAK</sub>	Leakage Current	V = ±4 V, T = 25°C		±0.1	±1	μA
		V = ±7 V, T = 25°C		±10	±100	μA
V <sub>BD</sub>	Breakdown Voltage	T = 25°C at ±20.0 mA	±7.3	±8	±8.9	V
V <sub>ESD</sub>	ESD Voltage Rating Contact Discharge per Human Body Model, MIL-STD-883 (Method 3015)	(Note 1)	±8			kV
C <sub>T</sub>	Capacitance			50		pF
	Temp Coefficient of BV	20 mA		1.0		mV/K

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

## MECHANICAL DETAILS

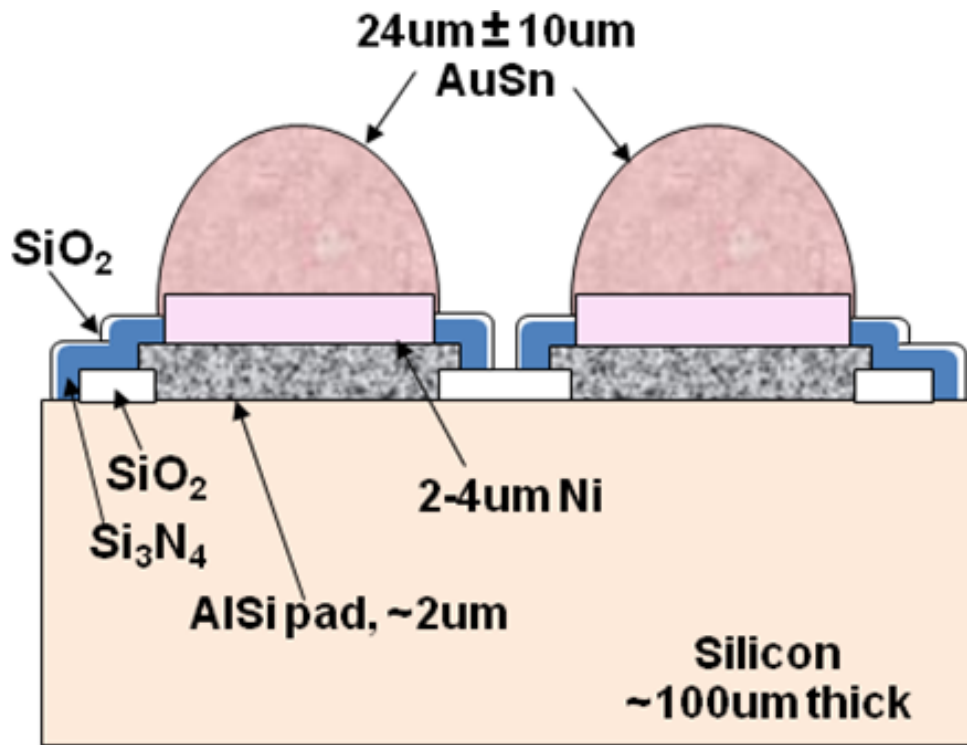
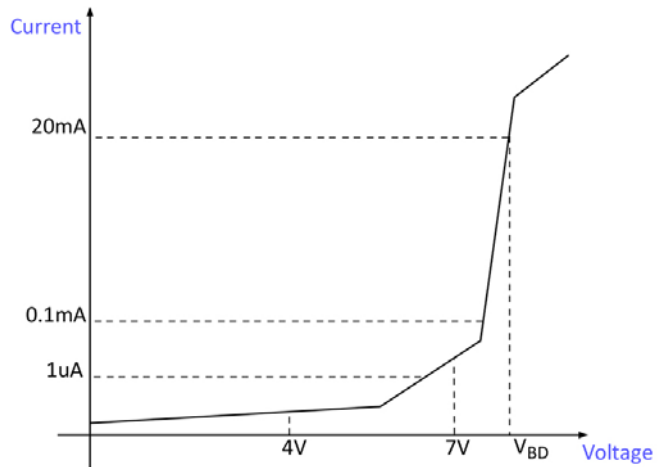
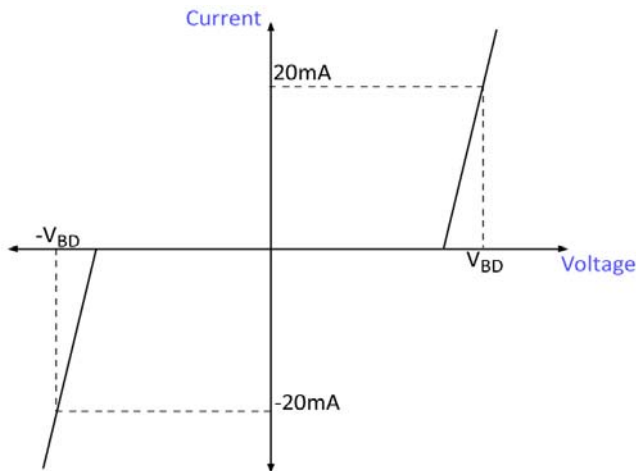
**Table 4. MECHANICAL SPECIFICATIONS** (Note 2)

Symbol	Value	Unit
Composition	Silicon Wafer, P+ doped	
Length (Sawn)	466	μm
Width (Sawn)	446	μm
Thickness	4	mils
Top Pad Length	350	μm
Top Pad Width	111	μm
Top Pad Spacing	109	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.

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