CM1771

Advance Information

1-Channel ESD Protector

ON Semiconductor®

http://onsemi.com

Product Description

The CM1771 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 ±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 +85 V
- ESD Protection to over ±6 kV Contact Discharge per MIL_STD_883 International ESD Standard
- ESD Protection to over ±3 kV Contact Discharge per IEC61000−4−2 Standard
- These Devices are Pb−Free and are RoHS Compliant

Applications

- LED Lighting
- Modules
- Interface Circuits

ELECTRICAL SCHEMATIC

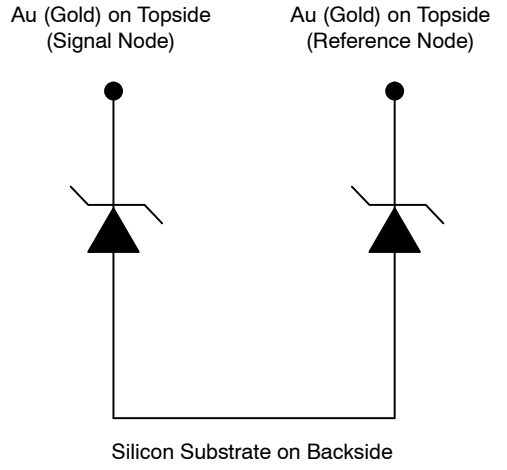


Table 1. ORDERING INFORMATION†

Part Numbering Information					
Ordering Part Number	**Topside Metal**	**Back Metal**	**BG Thickness**	**Inking?**	**Shipping Method**
CM1771−5006YL	Gold (Au)	None (silicon Substrate)	6 mils	N	Wafer Jar

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 +150	°C
Storage Temperature Range	−55 to +150	°C

Table 3. ELECTRICAL OPERATING CHARACTERISTICS

Symbol	Parameter	Conditions	Min	Typ	Max	Units
I_{LEAK}	Leakage Current	V = +85 V, T_A = 25°C			1.0	μA
V_{BD}	Breakdown Voltage on Signal Node Positive polarity on Signal Node Negative polarity on Signal Node	T_A = 25°C at 1.0 mA (I_{CL+}) at −1.0 mA (I_{CL-})	 +90 −80	 +100	 +110 −60	V
V_{ESD}	ESD Voltage Rating Contact Discharge per Human Body Model, MIL−STD−883 (Method 3015) Contact Discharge per IEC61000−4−2 Standard	(Notes 1 and 2)	 ±6 ±3			kV

1. Per the standard, 3 positive and 3 negative strikes are applied, one second apart.
2. V_{ESD} is the ESD capability for the protection device only.

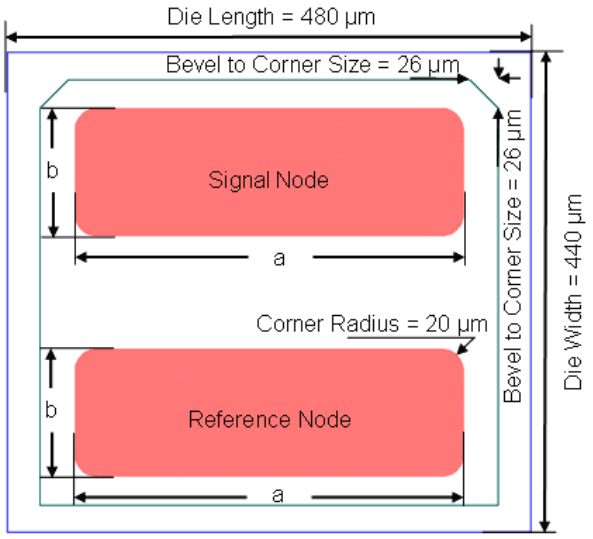
MECHANICAL DETAILS

Table 4. MECHANICAL SPECIFICATIONS (Note 1)

Parameter	Condition	Unit
Composition	Silicon Wafer, P+ doped	
Die Shape	Rectangular	
Length (Sawn)	480±10	μm
Width (Sawn)	440±10	μm
BG Thickness	6	mils
Top Pad Length (a)	356	μm
Top Pad Width (b)	117	μm
Top Pads Spacing	103	μm
Top Pad Composition	Au (Gold)	
Top Pad Thickness	3	μm
Back Metal (Underside)	None (silicon Substrate)	

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

SAWN DIE DIAGRAM



Package Dimensions

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