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CM1753

1-Channel ESD Protector

Product Description

The CM1753 provides robust ESD protection for sensitive parts that may be subjected to electrostatic discharge (ESD). The tiny form factor and single wirebond requirement enable it to be used in very confined spaces. 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 Smaller than -45 V
- ESD Protection Over ± 8 kV Contact Discharge per MIL_STD_883 International ESD Standard

Applications

- LED Lighting
- Modules
- Interface Circuits



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ELECTRICAL SCHEMATIC

Au (Gold) bondpad on topside
("Signal" node mentioned in
Electrical Specification table)



Bare Silicon on backside
(Reference node)

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 2 of this data sheet.

CM1753

ORDERING INFORMATION

| Ordering Part Number | Topside Metal | Backside Metal | BG Thickness | Shipping Method |
|----------------------|---------------|----------------|--------------|-----------------|
| CM1753-1004YT | Au (Gold) | Bare Silicon | 4 mils | Wafer Form |

OPERATING CONDITIONS

| Parameter | Rating | Unit |
|-----------------------------|-------------|------|
| Operating Temperature Range | -40 to +125 | °C |
| Storage Temperature Range | -65 to +150 | °C |

ELECTRICAL OPERATING CHARACTERISTICS

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|------------|--|---|--------------|--------------|--------------|------|
| I_{LEAK} | Leakage Current | $V = -35\text{ V}, 25^\circ\text{C}$ | | | 100 | nA |
| | | $V = -45\text{ V}, 25^\circ\text{C}$ | | | 500 | nA |
| V_{CL} | Signal Clamp Voltage Positive polarity on signal node (V_{CL+}) Negative polarity on signal node (V_{CL-}) | $T_A = 25^\circ\text{C};$ at 10 mA (I_{CL+}) at -10 mA (I_{CL-}) (Note 1) | 0.4 -57.0 | 0.8 -52.0 | 1.5 -47.0 | V |
| V_{ESD} | ESD Protection – withstand voltage: Human Body Model (MIL-STD-883, Method 3015) | $T_A = 25^\circ\text{C}$ (Note 2) | ± 8 | | | kV |

1. V_{CL-} is measured with a -10 mA pulse at 1 ms.
2. This parameter is guaranteed by design.

CM1753

MECHANICAL DETAILS

MECHANICAL SPECIFICATIONS

| Parameter | Condition | Unit |
|------------------------|----------------------------|------|
| Composition | Silicon wafer, n+ doped | |
| Wafer Diameter | 150 | mm |
| Die shape | Square | |
| Length (Stepping Size) | 270 | μm |
| Width (Stepping Size) | 270 | μm |
| Thickness | 100 | μm |
| Top Pad Length | 190 | μm |
| Top Pad Width | 190 | μm |
| Top Pad Composition | Au (Gold) | |
| Back Metal (Backside) | None (Bare Silicon) | |
| Die (Stepping Size) | 270 | μm |
| Passivation Opening | 60 | μm |
| Active Size | 160 | μm |
| Active to PA Opening | 25 | μm |

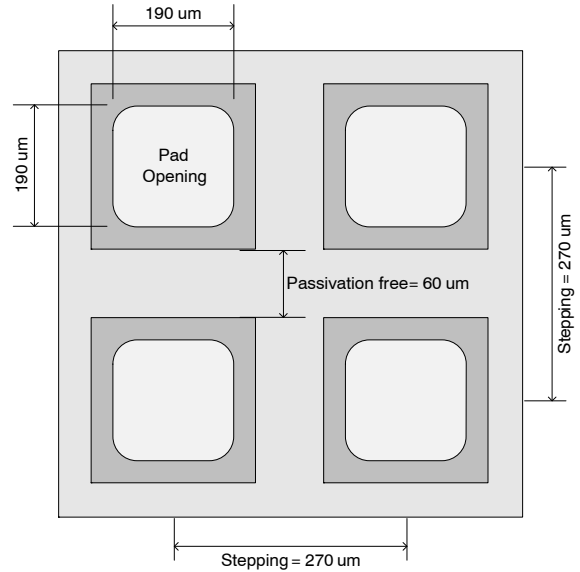


Figure 1. Wafer Array

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