FCDN612

1-Channel ESD Protector

ON Semiconductor®

http://onsemi.com

Product Description

The FCDN612 provides robust ESD protection for sensitive parts that may be subjected to electrostatic discharge (ESD). The tiny form factor and single wirebond requirement allows 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 for Signal in Magnitude Than 32 V
- ESD Protection Over ±8 kV Contact Discharge per MIL_STD_883 International ESD Standard

Applications

- LED Lighting
- Modules
- Interface Circuits

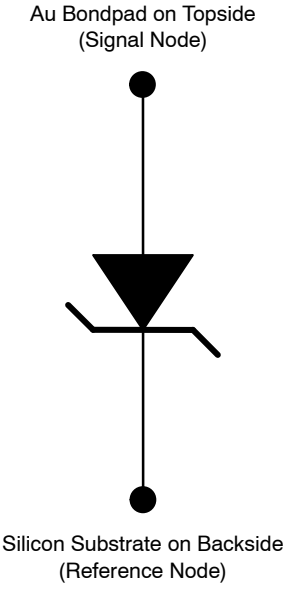

Figure 1. Electrical Schematic

ORDERING INFORMATION

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

ORDERING INFORMATION

Ordering Part Number	Topside Metal	Backside Metal	# of Channels	Shipping Method
FCDN612−UBM	Au (Gold)	None (Silicon Substrate)	1	Wafer Form

ABSOLUTE MAXIMUM RATINGS

Parameter	Rating	Unit
Operating Temperature Range	−40 to +150	°C
Storage Temperature Range	−65 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

STANDARD OPERATING CONDITIONS

Parameter	Rating	Unit
Operating Temperature Range	−40 to +150	°C

ELECTRICAL OPERATING CHARACTERISTICS (See Note 1)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
I_{LEAK}	Leakage Current (Absolute Value)	V = −32 V, 25°C V = −32 V, 150°C (Note 2)			0.5 2.0	μA mA
V_{CL}	Signal Clamp Voltage on Signal Node	T_A = 25°C; at 10 mA	−44	−40	−36	V
V_{ESD}	ESD Protection − withstand voltage: Human Body Model (MIL−STD−883, Method 3015)	T_A = 25°C (Note 2)	±8			kV

1. Operating characteristics are over standard operating conditions unless otherwise specified.
2. This parameter is guaranteed by design and/or characterization.

MECHANICAL DETAILS

MECHANICAL SPECIFICATIONS

Parameter	Condition	Unit
Composition	Silicon wafer, N+ doped	
Die shape	Square	
Length	360 (X−direction)	μm
Width	360 (Y−direction)	μm
Thickness	4	mils
Saw street widths (space between devices on wafer)	70 (X−direction) 70 (Y−direction)	μm μm
Top pad length	200	μm
Top pad width	200	μm
Top pad composition	Au (Gold)	
Back metal (backside)	None (silicon substrate)	
Die (Stepping Size)	360	μm
Passivation Opening	70	μm
Active Size	240	μm
Active to PA Opening	25	μm

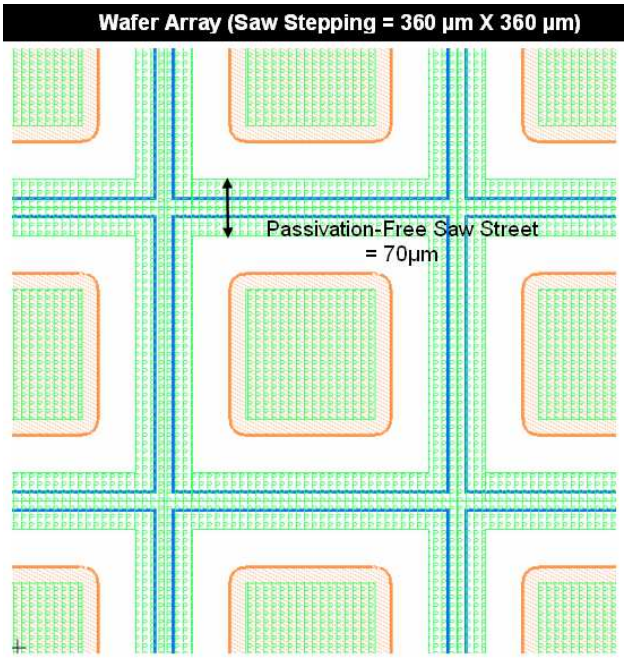

Figure 2. Wafer Array

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
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