

1-channel ESD/TVS Protection Diode

Features

- Compact die 8 x 8 mils sq. protects from ESD discharges
- This product is full RoHS compliant.
- ESD protection to over 8kV contact discharge per MIL_STD-883 international ESD standard.

Applications

- LED Lighting
- Modules
- Interface circuits

Product Description

The ESD-8x8 provides a high level of protection for sensitive parts that may be subjected to electrostatic discharge (ESD). The device is 8 mils x 8 mils x 8 mils. The tiny form factor and single wire-bond requirement mean it can be used in very confined spaces and miniature packages. The electrical “back-to-back” Zener diode 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 8kV, according to the MIL-STD-883 (Method 3015) specification for Human Body Model (HBM) ESD.

Product will be shipped in wafer-form. The silicon wafer diameter is 4”.

	Min.	Typ.	Max.	Unit
Leakage current at V=5V, 25°C		<1		µA
Signal Clamp Voltage at 25°C:				
Positive Clamp, 10mA	5	7	15	V
Negative Clamp, 10mA	-5	-7	-15	V
ESD withstand voltage*:				
Human Body Model (MIL-STD-883, method 3015)	± 8			kV
ESD withstand voltage*:				
Contact Discharge Method (IEC 61000-4-2)	± 2	± 4		kV
Clamping voltage during ESD discharge* Positive		+15		
MIL-STD-883 (Method 3015), 4kV Negative		-15		V
Diode Input Capacitance @ 0V *		80		pF
Temperature Range:				
Operating	-40		150	°C
Storage	-65		150	

* This parameter is guaranteed by design. Not 100% tested.

Ordering Part No.			
Part Family	Package Type	Front Metal Pad for Wire Bonding	Back Metal for Die Attach (Typical thickness)
ESD-8x8	W = Wafer-form	A = Aluminum	1= Ti/Ni/Au (550A/4,000A/2,500A)
	B = Bare die	G = Gold	2 = Ti/Ag (550A/5,000A)
			3= Ti/Ni/AuSn (550A/2,000A/3um)

Part Number Example: **ESD-8x8WG3** is a 8 x 8 mils sq ESD chip shipped as 5" wafers with Gold top pads and Ti/Ni/AuSn back metal

Please use electrically conductive epoxy for die attach.

Mechanical specifications:		Unit
Die composition	Silicon wafer, n+ doped.	
Die shape	Rectangle	
Length (± 1 mil)	200	μm
Width (± 1 mil)	200	μm
Thickness	8 ± 1	mils
Saw street widths (space between each diode chip on the wafer)	80 (X-direction) 80 (Y-direction)	μm
Top pad length	125	μm
Top pad width	125	μm
Top pad composition	Aluminum or Gold ⁽¹⁾	
Back metal (underside of ESD die)	Gold or Silver or AuSn ⁽¹⁾	

(1) For Top pad and Back-metal choices please see ordering part number table on page 1

Wafer Array: Saw step size is 260 μm x 260 μm

