

ESD Protection TVS Diode

Product Description:

OnChip's ESD-PL02 is an ultra small (18.3 mils x 17.5 mils x 6 mils) ESD protection TVS Diodes specifically designed for protecting HB LED. It provides a high level of protection for components that may be subjected to electrostatic discharge (ESD). The back-to-back 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 that are as high as 8kV contact-discharge (15kV air-discharge) when tested per IEC-61000 specifications for Human Body Model (HBM). The device is RoHS compliant. Product will be shipped as unsawn 5" wafer unless otherwise specified.

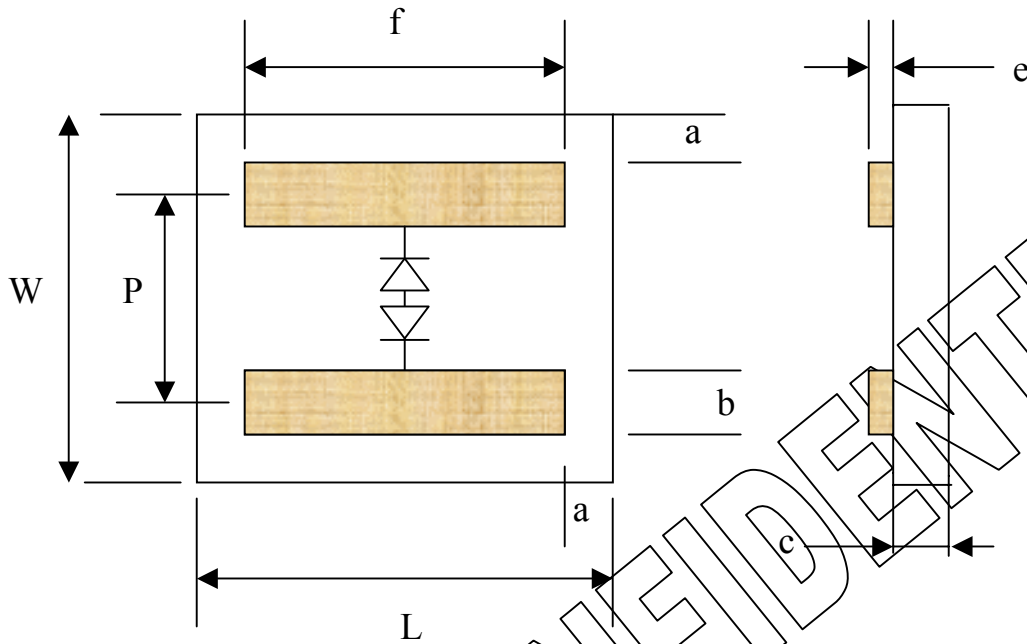
Electrical Specifications	Min.	Typ.	Max.	Unit
Diode Breakdown Voltage at 1mA	25	28	-	V
Leakage current at 22V Bias, 25°C	-	0.1	2	µA
Channel Clamp Voltage during 8kV HBM	-	±30	-	V
In-system ESD withstand voltage per IEC 61000-4-2:				
Contact Discharge *	± 8	-	-	kV
Air Discharge *	± 16	-	-	kV
Input Capacitance at 1MHz, 5V	-	100	150	pF
Peak (ESD) Pulse Current @ 8/20 µs		-	15	A
Temperature Range:				
Operating	-40	-	85	°C
Storage	-65		150	°C

* These parameters are guaranteed by design and characterization.

Pad Material	OnChip P/N
Al/1%Si pads - 1.8 Micron thick (RoHS Compliant)	ESD-PL02WR
5.0µm Electroplated Au Bumps (RoHS Compliant). Adhesion layer will be 2,000 Angs TiW.	ESD-PL02WFR-Au

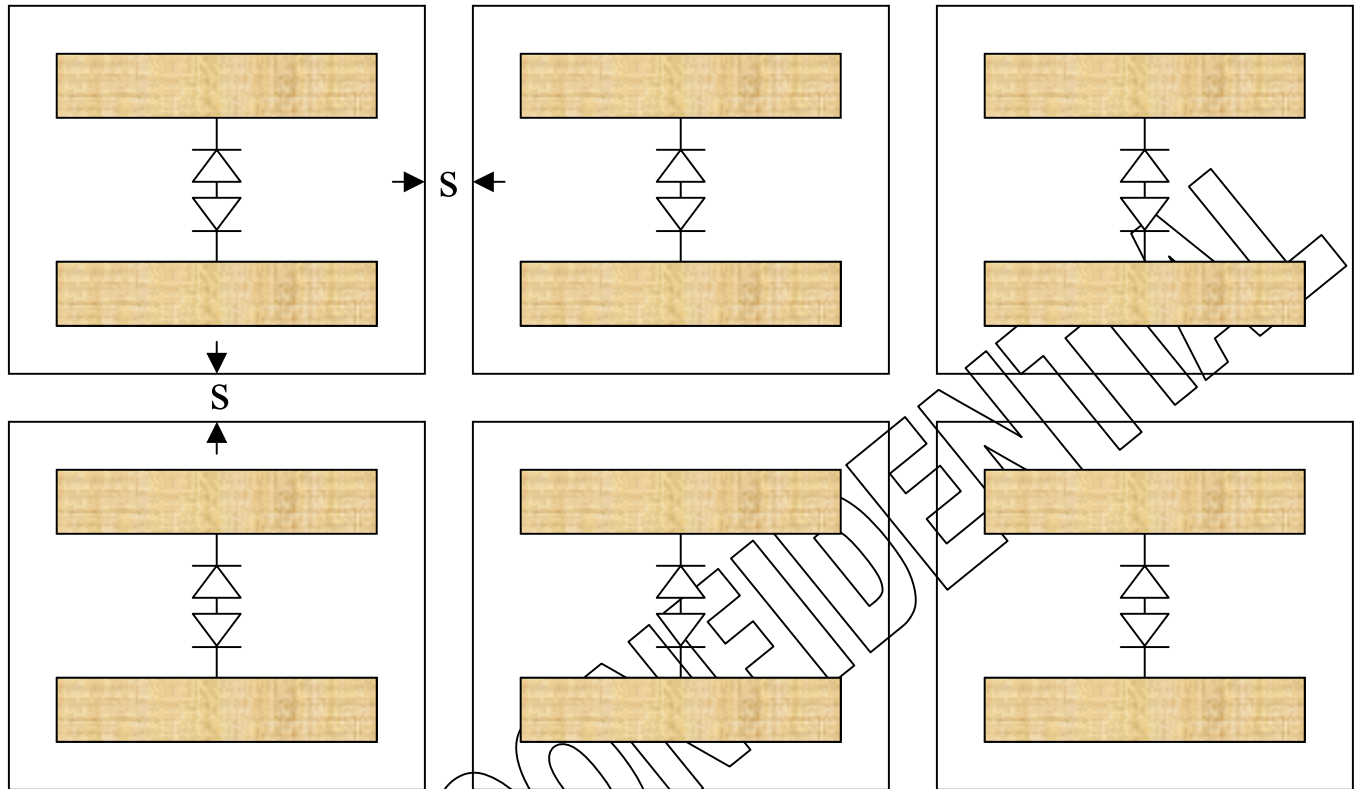
- a) **Bump Height Co-planarity:** ±1µm within the same die; ±2µm within the same wafer; and ±3µm from wafer to wafer
- b) **Gold Purity:** 99.99% pure
- c) **Shear Strength:** >8.5mgf/um²
- d) **Bump Hardness:** HV23~61 after annealing

Device Dimensions:



Dim.	Specification (μm)
L	465 +/- 3
W	445 +/- 3
P	220 +/- 3
a	60 +/- 2
b	105 +/- 3
c	150 +/- 5
e	5 +/- 3
f	345 +/- 3

Wafer Step Array



S (saw street) = 80 um