



# 0.5W, 20mA $I_{ZT}$ , Bare Die Zener Diode

Rev 1.0  
07/07/17

Silicon Planar Zener diode in bare die form – 5% tolerance

## Features:

- $I_R$  characterized at 125°C
- Sharp Reverse Characteristics
- Low Reverse Current Levels
- High Reliability Gold Back Metal
- High Reliability tested grades.

## Ordering Information

The following part suffixes apply:

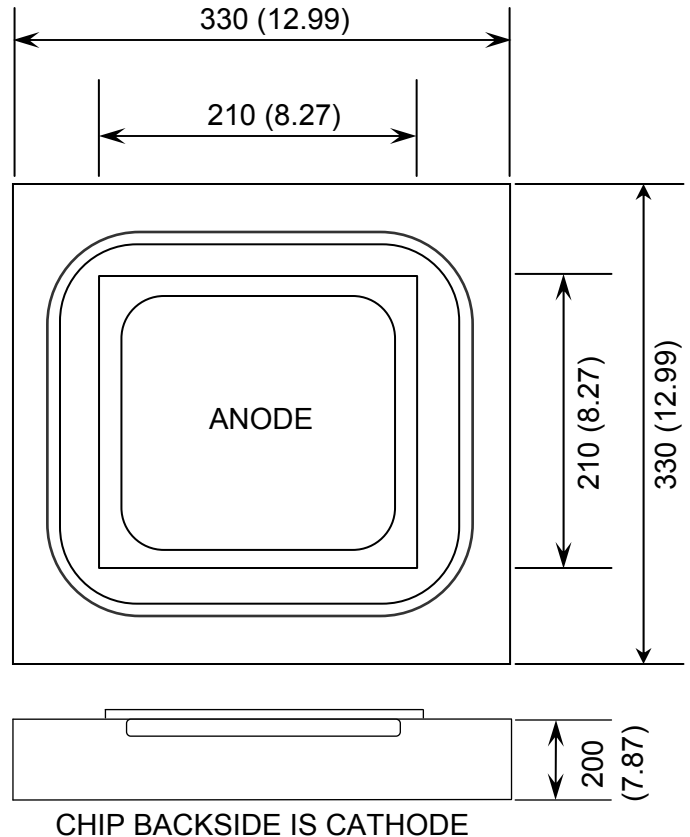
- No suffix - MIL-STD-750 /2073 Visual Inspection
- “H” - MIL-STD-750 /2073 Visual Inspection  
+ MIL-PRF-38534 Class H LAT
- “K” - MIL-STD-750 /2073 Visual Inspection  
+ MIL-PRF-38534 Class K LAT

LAT = Lot Acceptance Test.

For further information on LAT process flows see below.

[www.siliconsupplies.com/quality/bare-die-lot-qualification](http://www.siliconsupplies.com/quality/bare-die-lot-qualification)

## Die Dimensions in $\mu\text{m}$ (mils)



## Supply Formats:

- Default – Die in Waffle Pack (400 per tray capacity)
- Sawn Wafer on Tape – By specific request
- Unsawn Wafer – By specific request
- Tighter  $V_Z$  tolerances:  
2% or 1% – Specific request

## Mechanical Specification

Die Size (Unsawn)	330 x 330 12.99 x 12.99	$\mu\text{m}$ mils
Anode Pad Size	210 x 210 8.27 x 8.27	$\mu\text{m}$ mils
Die Thickness	200 7.87	$\mu\text{m}$ mils
Top Metal Composition	Al	
Back Metal Composition	Au	





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## Absolute Maximum Ratings<sup>1</sup> $T_A = 25^\circ\text{C}$ unless otherwise stated

PARAMETER	SYMBOL	VALUE	UNIT
Power Dissipation <sup>2</sup>	$P_{TOT}$	500	mW
Junction Temperature	$T_J$	200	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65 to +175	$^\circ\text{C}$
Forward Voltage @ $I_F = 200\text{mA}$	$V_F$	1.5	V

## Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise stated

DEVICE	ZENER VOLTAGE RANGE			REVERSE LEAKAGE CURRENT			DYNAMIC RESISTANCE	MAXIMUM REGULATOR CURRENT	
	$V_Z @ I_{ZT}$			$I_{ZT}$	$I_R @ V_R$		$Z_Z @ I_{ZT}$	$I_{ZM}$	
	V				$T_A = 25^\circ\text{C}$	$T_A = 125^\circ\text{C}$	f = 1 kHz		
	Min.	Nom.	Max.	mA	$\mu\text{A Max.}$	$V_R$	$\Omega$ Max.	mA	
1N4370A	2.28	2.4	2.52	20	100	200	1	30	150
1N4371A	2.57	2.7	2.84	20	75	150	1	30	135
1N4372A	2.85	3.0	3.15	20	50	100	1	29	120
1N746A	3.14	3.3	3.47	20	10	30	1	28	110
1N747A	3.42	3.6	3.78	20	10	30	1	24	100
1N748A	3.71	3.9	4.10	20	10	30	1	23	95
1N749A	4.09	4.3	4.52	20	2	30	1	22	85
1N750A	4.47	4.7	4.94	20	2	30	1	19	75
1N751A	4.85	5.1	5.36	20	1	20	1	17	70
1N752A	5.32	5.6	5.88	20	1	20	1	11	65
1N753A	5.89	6.2	6.51	20	0.1	20	1	7	60
1N754A	6.46	6.8	7.14	20	0.1	20	1	5	55
1N755A	7.13	7.5	7.88	20	0.1	20	1	6	50
1N756A	7.79	8.2	8.61	20	0.1	20	1	8	45
1N757A	8.65	9.1	9.56	20	0.1	20	1	10	40
1N758A	9.50	10	10.5	20	0.1	20	1	17	35
1N759A	11.4	12	12.6	20	0.1	20	1	30	30

1. Operation above the absolute maximum rating may cause device failure. Operation at the absolute maximum ratings, for extended periods, may reduce device reliability.

2. Assembled in DO-35 package. Performance in die form subject to assembly heat sinking and die attach methods.





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## Typical Electrical Characteristics



Zener Impedance Versus Operating Current -  $Z_Z$  Versus  $I_Z$

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