



# 0.5W, 5mA $I_{ZT}$ , Bare Die Zener Diode

Rev 1.0  
07/07/17

Silicon Planar Zener diode in bare die form – 5% tolerance, “C” grade

## 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:

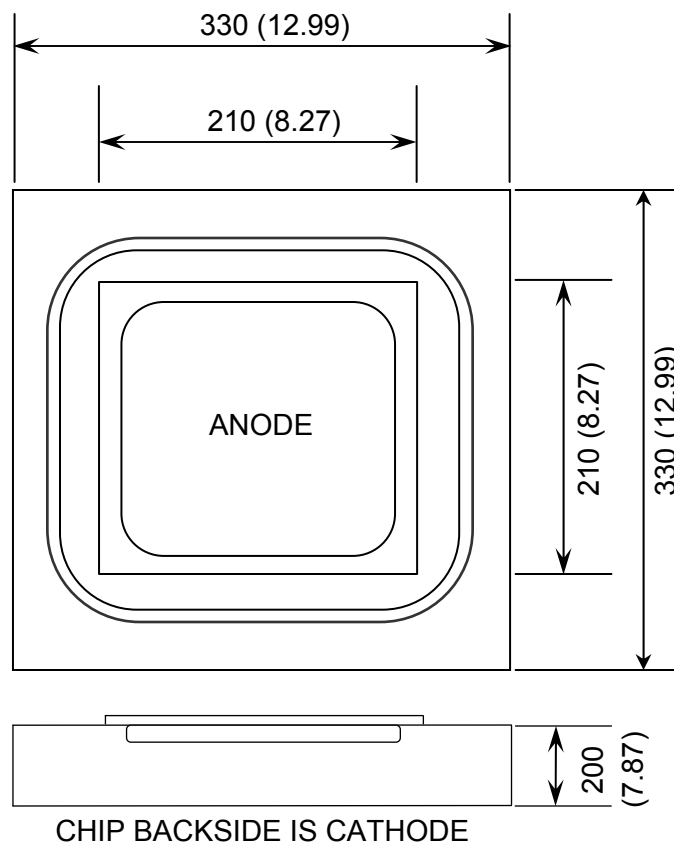
- No suffix - MIL-STD-750 /2073 Visual Inspection
- “H” - MIL-STD-750 /2073 Visual Inspection  
+ MIL-PRF-38534 Class H LAT
- “K” - MIL-STD-750 /2073 Visual Inspection  
+ MIL-PRF-38534 Class K LAT

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% - B grade, 1% - A grade – 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	$T_S$	-65 to +200	$^\circ\text{C}$
Forward Voltage @ $I_F = 100\text{mA}$	$V_F$	1.3	V

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

DEVICE	ZENER VOLTAGE RANGE			TEST CURRENT		REVERSE LEAKAGE CURRENT			DYNAMIC RESISTANCE	
	$V_Z @ I_{ZT1}$			$I_{ZT1}$	$I_{ZT2}$	$I_R @ V_R$			$Z_Z @ I_{ZT1}$	$Z_{ZK} @ I_{ZT2}$
	V			mA		$T_A = 25^\circ\text{C}$	$T_A = 125^\circ\text{C}$		$f = 1\text{ kHz}$	
	Min.	Nom.	Max.			$\mu\text{A Max.}$		V	Max.	Max.
BZX55C2V4	2.28	2.4	2.56	5	1	50.0	100	1.0	85	600
BZX55C2V7	2.5	2.7	2.9	5	1	10.0	50	1.0	85	600
BZX55C3V0	2.8	3.0	3.2	5	1	4.0	40	1.0	85	600
BZX55C3V3	3.1	3.3	3.5	5	1	2.0	40	1.0	85	600
BZX55C3V6	3.4	3.6	3.8	5	1	2.0	40	1.0	85	600
BZX55C3V9	3.7	3.9	4.1	5	1	2.0	40	1.0	85	600
BZX55C4V3	4.0	4.3	4.6	5	1	1.0	20	1.0	75	600
BZX55C4V7	4.4	4.7	5.0	5	1	0.5	10	1.0	60	600
BZX55C5V1	4.8	5.1	5.4	5	1	0.1	2.0	1.0	35	550
BZX55C5V6	5.2	5.6	6.0	5	1	0.1	2.0	1.0	25	450
BZX55C6V2	5.8	6.2	6.6	5	1	0.1	2.0	2.0	10	200
BZX55C6V8	6.4	6.8	7.2	5	1	0.1	2.0	3.0	8.0	150
BZX55C7V5	7.0	7.5	7.9	5	1	0.1	2.0	5.0	7.0	50
BZX55C8V2	7.7	8.2	8.7	5	1	0.1	2.0	6.2	7.0	50
BZX55C9V1	8.5	9.1	9.6	5	1	0.1	2.0	6.8	10	50

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.

Zener Voltages 10V to 75V are constructed using a larger die geometry.

Please see [here](#) for further details

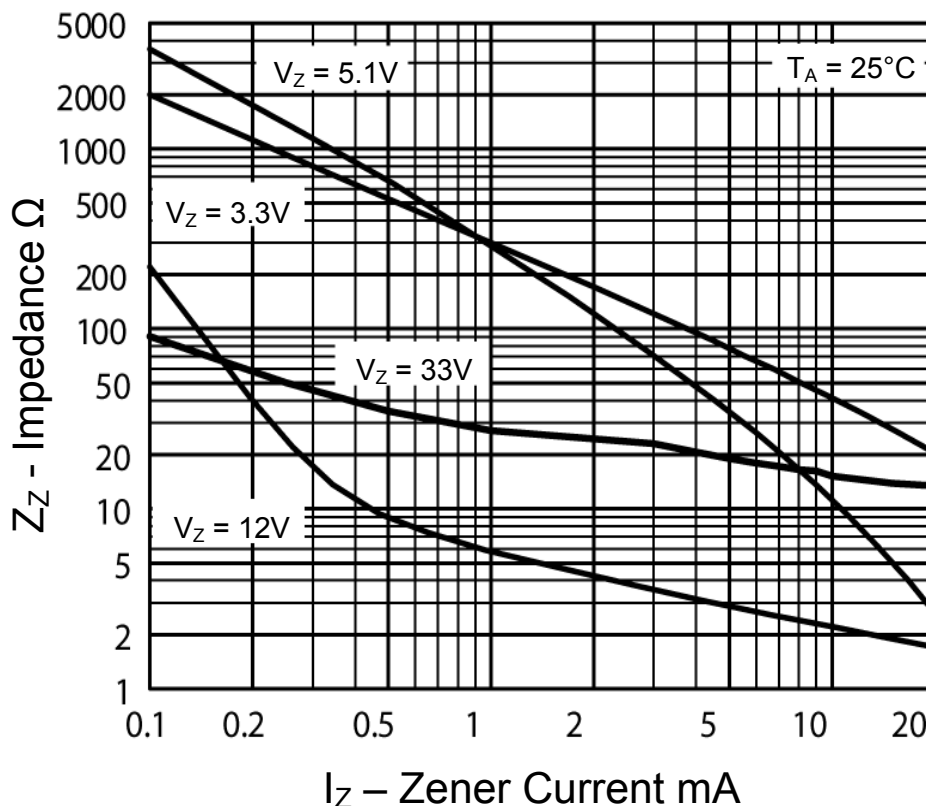




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## Typical Electrical Characteristics



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

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