



0.5W Zener Diode - BZX55A* series

Rev 1.0

0.5W 5mA I_{ZT} Silicon Planar Zener diode in bare die form – 1% tolerance, “A” grade 07/04/19

Features:

- Tight tolerance reverse breakdown voltage
- I_R characterized at 125°C
- Sharp reverse characteristics
- Low reverse current Levels
- High reliability gold back metal

Ordering Information

The following part suffixes apply:

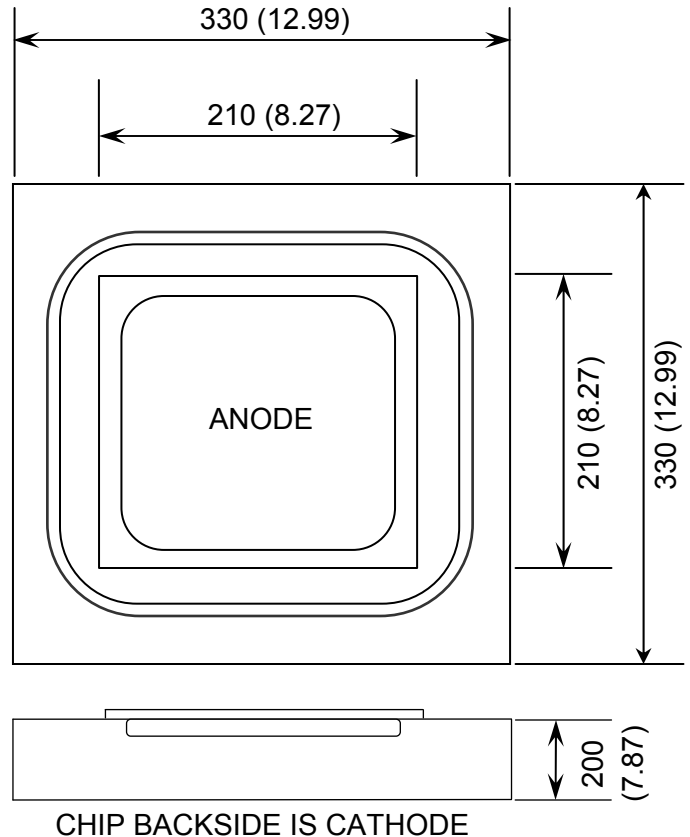
- No suffix - MIL-STD-750 /2073 Visual Inspection
- “H” - MIL-STD-750 /2073 Visual Inspection
+ MIL-PRF-38534 Class H LAT
- “K” - MIL-STD-750 /2073 Visual Inspection
+ MIL-PRF-38534 Class K LAT

LAT = Lot Acceptance Test.

For further information on LAT process flows see below.

www.siliconsupplies.com/quality/bare-die-lot-qualification

Die Dimensions in μm (mils)



Supply Formats:

- Default – Die in Waffle Pack (400 per tray capacity)
- Sawn Wafer on Tape – By specific request
- Unsawn Wafer – By specific request
- Lower precision V_Z tolerances:
2% - B grade, 5% - C grade

Mechanical Specification

| | | |
|------------------------|----------------------------|------------|
| Die Size (Unsawn) | 330 x 330 12.99 x 12.99 | μm mils |
| Anode Pad Size | 210 x 210 8.27 x 8.27 | μm mils |
| Die Thickness | 200 7.87 | μm mils |
| Top Metal Composition | Al | |
| Back Metal Composition | Au | |





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Absolute Maximum Ratings¹ $T_A = 25^\circ\text{C}$ unless otherwise stated

| PARAMETER | SYMBOL | VALUE | UNIT |
|--|-----------|-------------|------------------|
| Power Dissipation ² | 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 kHz | |
| | Min. | Nom. | Max. | | | $\mu\text{A Max.}$ | | V | Max. | Max. |
| BZX55A2V4 | 2.376 | 2.4 | 2.424 | 5 | 1 | 50.0 | 100 | 1.0 | 85 | 600 |
| BZX55A2V7 | 2.673 | 2.7 | 2.727 | 5 | 1 | 10.0 | 50 | 1.0 | 85 | 600 |
| BZX55A3V0 | 2.97 | 3.0 | 3.03 | 5 | 1 | 4.0 | 40 | 1.0 | 85 | 600 |
| BZX55A3V3 | 3.267 | 3.3 | 3.333 | 5 | 1 | 2.0 | 40 | 1.0 | 85 | 600 |
| BZX55A3V6 | 3.564 | 3.6 | 3.636 | 5 | 1 | 2.0 | 40 | 1.0 | 85 | 600 |
| BZX55A3V9 | 3.861 | 3.9 | 3.939 | 5 | 1 | 2.0 | 40 | 1.0 | 85 | 600 |
| BZX55A4V3 | 4.257 | 4.3 | 4.343 | 5 | 1 | 1.0 | 20 | 1.0 | 75 | 600 |
| BZX55A4V7 | 4.653 | 4.7 | 4.747 | 5 | 1 | 0.5 | 10 | 1.0 | 60 | 600 |
| BZX55A5V1 | 5.049 | 5.1 | 5.151 | 5 | 1 | 0.1 | 2.0 | 1.0 | 35 | 550 |
| BZX55A5V6 | 5.544 | 5.6 | 5.656 | 5 | 1 | 0.1 | 2.0 | 1.0 | 25 | 450 |
| BZX55A6V2 | 6.138 | 6.2 | 6.262 | 5 | 1 | 0.1 | 2.0 | 2.0 | 10 | 200 |
| BZX55A6V8 | 6.732 | 6.8 | 6.868 | 5 | 1 | 0.1 | 2.0 | 3.0 | 8.0 | 150 |
| BZX55A7V5 | 7.425 | 7.5 | 7.575 | 5 | 1 | 0.1 | 2.0 | 5.0 | 7.0 | 50 |
| BZX55A8V2 | 8.118 | 8.2 | 8.282 | 5 | 1 | 0.1 | 2.0 | 6.2 | 7.0 | 50 |
| BZX55A9V1 | 9.009 | 9.1 | 9.191 | 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

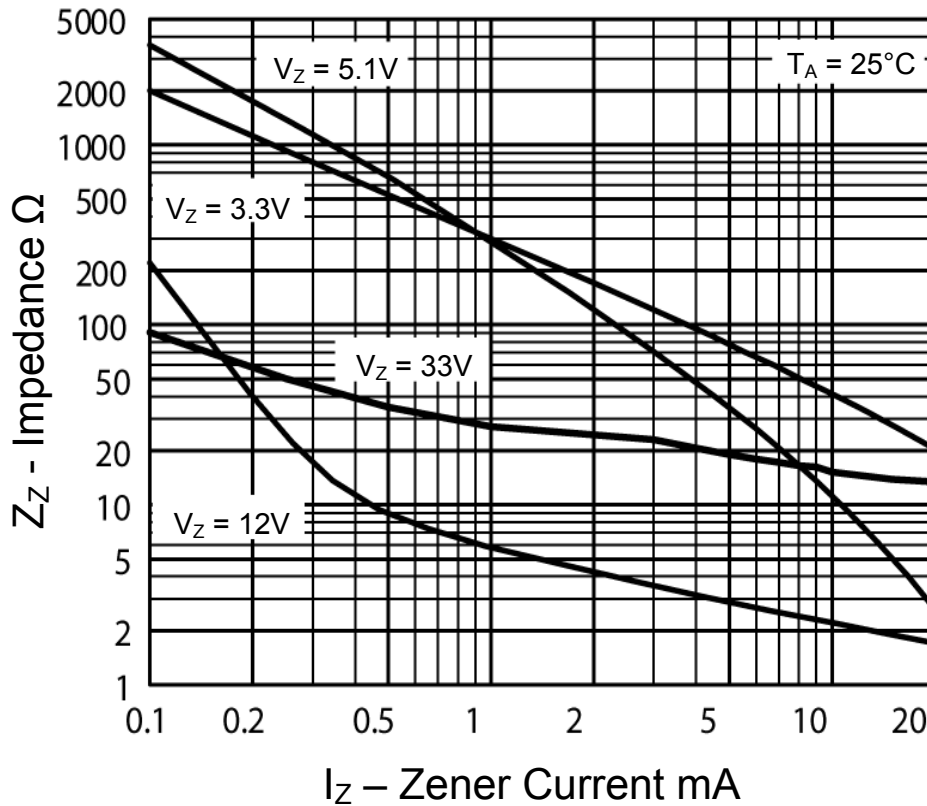




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Typical Electrical Characteristics



Zener Impedance Versus Operating Current - Z_Z Versus I_Z

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