# 5W Zener Diode - 1N5338C to 1N5379C

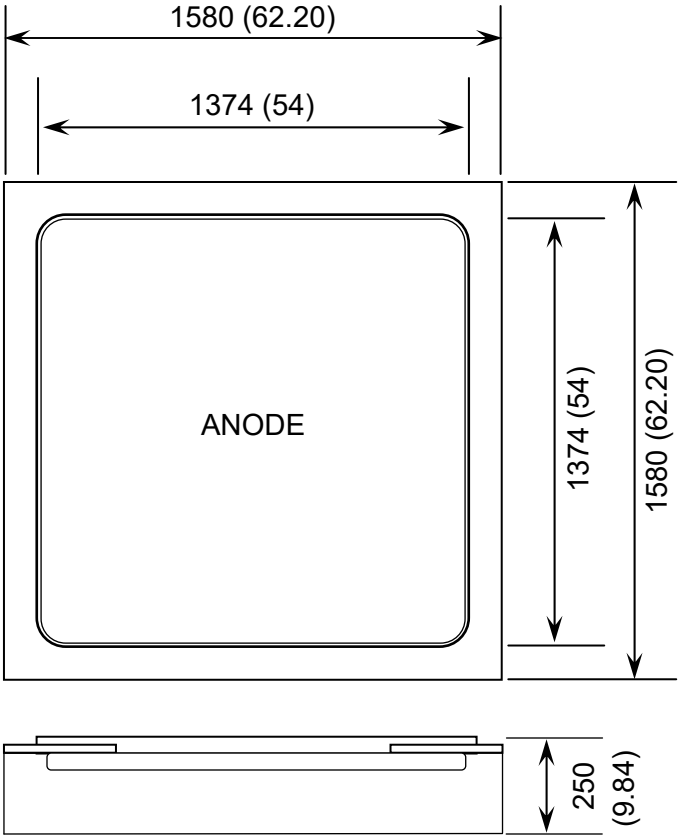
**Rev 1.0**
**04/02/25**

**Silicon Planar Zener diode in bare die form – 2% tolerance**

## Features:

- High Power Rating
- Sharp Reverse Characteristics
- Low Reverse Current Levels
- High Reliability tested grades.

## Die Dimensions in µm (mils)




CHIP BACKSIDE IS CATHODE

## Ordering Information

The following part suffixes apply:

- No suffix - Commercial grade die
- "**H**"– Hi-rel grade die + MIL-PRF-38534 Class H LAT
- "**K**" – Hi-rel grade die + MIL-PRF-38534 Class K LAT.

LAT = Lot acceptance Test.

For information on Hi-Rel LAT flows please see below.

www.siliconsupplies.com\bare-die-lot-qualification

## Supply Formats:

- Default – Die in Waffle Pack (100 per tray capacity)
- Sawn Wafer on Tape – By specific request
- Unsawn Wafer – By specific request
- With additional electrical selection – By specific request

## Mechanical Specification

| | | |
|---|---|---|
| Die Size (Unsawn) | 1580 x 1580<br>62.20 x 62.20 | µm<br>mils |
| Anode Pad Size | 1372 x 1372<br>54 x 54 | µm<br>mils |
| Die Thickness | 250 (±20)<br>9.84 (±0.79) | µm<br>mils |
| Top Metal Composition | AlSi 3µm | |
| Back Metal Composition | NiTi-Ag 0.2-0.8µm | |

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## Absolute Maximum Ratings[1] $T_A$ = 25°C unless otherwise stated

| PARAMETER | SYMBOL | VALUE | UNIT |
|---|---|---|---|
| Power Dissipation[2] | $P_{TOT}$ | 5 | W |
| Junction Temperature | $T_J$ | 175 | °C |
| Storage Temperature Range | $T_S$ | -65 to +200 | °C |
| Forward Voltage @ $I_F$ = 1A | $V_F$ | 0.87 | V |

## Electrical Characteristics $T_A$ = 25°C unless otherwise stated

| DEVICE | ZENER VOLTAGE RANGE | | | TEST CURRENT | | REVERSE LEAKAGE CURRENT | | | | DYNAMIC RESISTANCE | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | $V_Z$ @ $I_{ZT1}$ | | | $I_{ZT1}$ | $I_{ZT2}$ | $I_{R1}$ @ $V_{R1}$ | | $I_{R1}$ @ $V_{R2}$ | | $Z_Z$ @ $I_{ZT1}$ | $Z_{ZK}$ @ $I_{ZT2}$ |
| | | | | | | $T_A$ = 25°C | | | | f = 1 kHz | |
| | V | | | mA | | $I_{R1}$ | $V_{R1}$ | $I_{R2}$ | $V_{R2}$ | Ω | |
| | Min. | Nom. | Max. | | | μA Max. | V | μA Max. | V | Max. | Max. |
| 1N5338C | 5.001 | 5.1 | 5.199 | 240 | 1 | 5 | 1 | 5 | 1 | 2 | 400 |
| 1N5339C | 5.491 | 5.6 | 5.709 | 220 | 1 | 5 | 2 | 5 | 2 | 1 | 400 |
| 1N5340C | 5.883 | 6.0 | 6.117 | 200 | 1 | 5 | 3 | 5 | 3 | 1 | 300 |
| 1N5341C | 6.079 | 6.2 | 6.321 | 200 | 1 | 5 | 3 | 5 | 3 | 1 | 200 |
| 1N5342C | 6.667 | 6.8 | 6.933 | 175 | 1 | 5 | 5.2 | 5 | 5.2 | 1 | 200 |
| 1N5343C | 7.354 | 7.5 | 7.646 | 175 | 1 | 5 | 5.7 | 5 | 5.7 | 1 | 200 |
| 1N5344C | 8.040 | 8.2 | 8.360 | 150 | 1 | 5 | 6.2 | 5 | 6.2 | 2 | 200 |
| 1N5345C | 8.530 | 8.7 | 8.870 | 150 | 1 | 5 | 6.6 | 5 | 6.6 | 2 | 200 |
| 1N5346C | 8.923 | 9.1 | 9.277 | 150 | 1 | 0.1 | 6.9 | 0.1 | 6.9 | 2 | 150 |
| 1N5347C | 9.81 | 10 | 10.19 | 125 | 1 | 0.1 | 8 | 0.1 | 8 | 2 | 125 |
| 1N5348C | 10.79 | 11 | 11.21 | 125 | 1 | 0.1 | 8.4 | 0.5 | 9.4 | 2.5 | 125 |
| 1N5349C | 11.77 | 12 | 12.23 | 100 | 1 | 0.1 | 9.1 | 0.5 | 10.3 | 3 | 125 |
| 1N5350C | 12.75 | 13 | 13.25 | 100 | 1 | 0.1 | 9.9 | 0.5 | 11.1 | 3 | 100 |
| 1N5351C | 13.73 | 14 | 14.27 | 100 | 1 | 0.1 | 10.6 | 1.2 | 12 | 3 | 75 |
| 1N5352C | 14.71 | 15 | 15.29 | 75 | 1 | 0.1 | 11.5 | 1 | 12.8 | 3 | 75 |
| 1N5353C | 15.69 | 16 | 16.31 | 75 | 1 | 0.1 | 12.2 | 0.1 | 13.7 | 3 | 75 |
| 1N5354C | 16.67 | 17 | 17.33 | 70 | 1 | 0.1 | 12.9 | 0.5 | 14.5 | 3 | 75 |
| 1N5355C | 17.65 | 18 | 18.35 | 65 | 1 | 0.1 | 13.7 | 0.5 | 15.4 | 3 | 75 |
| 1N5356C | 18.63 | 19 | 19.37 | 65 | 1 | 0.1 | 14.4 | 0.1 | 16.2 | 3 | 75 |
| 1N5357C | 19.61 | 20 | 20.39 | 65 | 1 | 0.1 | 15.2 | 0.5 | 17.1 | 3 | 75 |
| 1N5358C | 21.57 | 22 | 22.43 | 50 | 1 | 0.1 | 16.7 | 0.5 | 18.8 | 4 | 75 |
| 1N5359C | 23.53 | 24 | 24.47 | 50 | 1 | 0.1 | 18.2 | 0.5 | 20.5 | 4 | 100 |
| 1N5360C | 24.51 | 25 | 25.49 | 50 | 1 | 0.1 | 19 | 0.5 | 21.4 | 4 | 110 |
| 1N5361C | 26.47 | 27 | 27.53 | 50 | 1 | 0.1 | 20.6 | 0.5 | 23.1 | 5 | 120 |
| 1N5362C | 27.45 | 28 | 28.55 | 50 | 1 | 0.1 | 21.2 | 1 | 23.9 | 6 | 130 |
| 1N5363C | 29.42 | 30 | 30.58 | 40 | 1 | 0.1 | 22.8 | 0.5 | 25.7 | 8 | 140 |

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## Electrical Characteristics $T_A$ = 25°C unless otherwise stated

| DEVICE | ZENER VOLTAGE RANGE | | | TEST CURRENT | | REVERSE LEAKAGE CURRENT | | | | DYNAMIC RESISTANCE | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | $V_Z$ @ $I_{ZT1}$ | | | $I_{ZT1}$ | $I_{ZT2}$ | $I_{R1}$ @ $V_{R1}$ | | $I_{R1}$ @ $V_{R2}$ | | $Z_Z$ @ $I_{ZT1}$ | $Z_{ZK}$ @ $I_{ZT2}$ |
| | | | | | | $T_A$ = 25°C | | | | f = 1 kHz | |
| | V | | | mA | | $I_{R1}$ | $V_{R1}$ | $I_{R2}$ | $V_{R2}$ | Ω | |
| | Min. | Nom. | Max. | | | μA Max. | V | μA Max. | V | Max. | Max. |
| 1N5364C | 32.36 | 33 | 33.64 | 40 | 1 | 0.1 | 25.1 | 0.5 | 28.2 | 10 | 150 |
| 1N5365C | 35.30 | 36 | 36.70 | 30 | 1 | 0.1 | 27.4 | 0.5 | 30.8 | 11 | 160 |
| 1N5366C | 38.24 | 39 | 39.76 | 30 | 1 | 0.1 | 29.7 | 0.5 | 33.3 | 14 | 170 |
| 1N5367C | 42.16 | 43 | 43.84 | 30 | 1 | 0.1 | 32.7 | 1 | 36.8 | 20 | 190 |
| 1N5368C | 46.08 | 47 | 47.92 | 25 | 1 | 0.1 | 35.8 | 0.7 | 40.2 | 25 | 210 |
| 1N5369C | 50.01 | 51 | 51.99 | 25 | 1 | 0.1 | 38.8 | 0.2 | 43.6 | 27 | 230 |
| 1N5370C | 54.91 | 56 | 57.09 | 20 | 1 | 0.1 | 42.6 | 0.8 | 47.9 | 35 | 280 |
| 1N5371C | 58.83 | 60 | 61.17 | 20 | 1 | 0.1 | 45.5 | 0.8 | 51.3 | 40 | 350 |
| 1N5372C | 60.79 | 62 | 63.21 | 20 | 1 | 0.1 | 47.1 | 0.8 | 53 | 42 | 400 |
| 1N5373C | 66.67 | 68 | 69.33 | 20 | 1 | 0.1 | 51.7 | 0.8 | 58.1 | 44 | 500 |
| 1N5374C | 73.54 | 75 | 76.46 | 20 | 1 | 0.1 | 56 | 0.8 | 64.1 | 45 | 620 |
| 1N5375C | 80.40 | 82 | 83.60 | 15 | 1 | 0.1 | 62.2 | 0.15 | 70.1 | 60 | 720 |
| 1N5376C | 85.30 | 87 | 88.70 | 15 | 1 | 0.1 | 66 | 0.15 | 74.4 | 75 | 760 |
| 1N5377C | 89.23 | 91 | 92.77 | 15 | 1 | 0.1 | 69.2 | 1 | 77.8 | 75 | 760 |
| 1N5378C | 98.1 | 100 | 101.9 | 12 | 1 | 0.1 | 76 | 1 | 85.5 | 90 | 800 |
| 1N5379C | 107.9 | 110 | 112.1 | 12 | 1 | 0.1 | 83.6 | 1 | 94.1 | 125 | 1000 |

**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-15 package. Die form performance subject to assembly heat sinking & die attach methods.