



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.

Ordering Information

The following part suffixes apply:

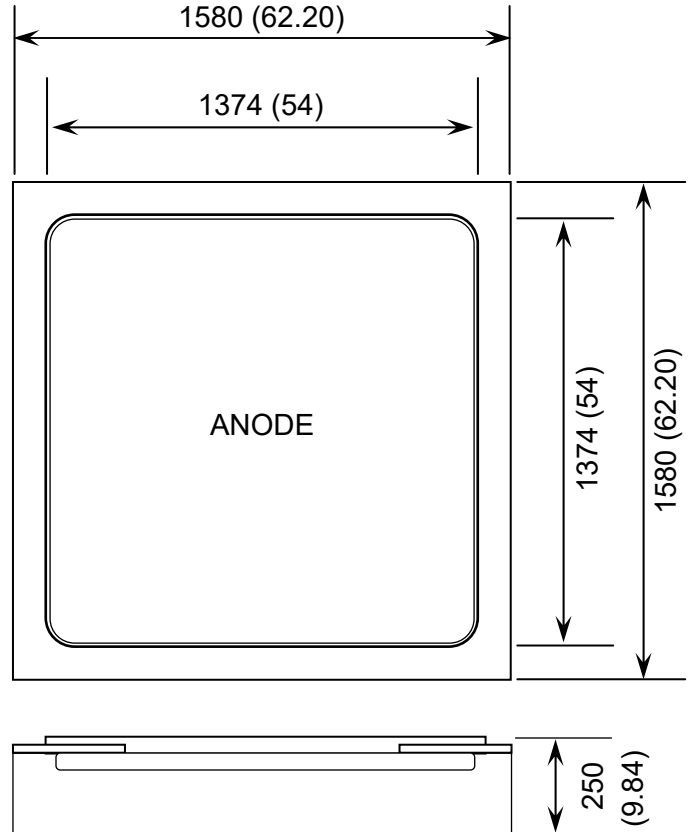
- No suffix - Commercial grade die
- “H” – Hi-rel grade die + MIL-PRF-38534 Class H LAT
- “K” – Hi-rel grade die + MIL-PRF-38534 Class K LAT.

LAT = Lot acceptance Test.

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

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

Die Dimensions in μm (mils)



CHIP BACKSIDE IS CATHODE

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





5W Zener Diode - 1N5338C to 1N5379C

Rev 1.0
04/02/25

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

| PARAMETER | SYMBOL | VALUE | UNIT |
|-------------------------------------|-----------|-------------|------------------|
| Power Dissipation ² | P_{TOT} | 5 | W |
| Junction Temperature | T_J | 175 | $^\circ\text{C}$ |
| Storage Temperature Range | T_S | -65 to +200 | $^\circ\text{C}$ |
| Forward Voltage @ $I_F = 1\text{A}$ | V_F | 0.87 | 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} | $I_{R1} @ V_{R1}$ | | $I_{R1} @ V_{R2}$ | | $Z_Z @ I_{ZT1}$ | $Z_{ZK} @ I_{ZT2}$ |
| | V | | | mA | | $T_A = 25^\circ\text{C}$ | | | | $f = 1\text{ kHz}$ | |
| | Min. | Nom. | Max. | | | I_{R1} | V_{R1} | I_{R2} | V_{R2} | Ω | |
| | | | | | | μA | V | μA | V | Max. | Max. |
| | | | | | 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 |





5W Zener Diode - 1N5338C to 1N5379C

Rev 1.0
04/02/25

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} | $I_{R1} @ V_{R1}$ | | $I_{R1} @ V_{R2}$ | | $Z_Z @ I_{ZT1}$ | $Z_{ZK} @ I_{ZT2}$ |
| | V | | | mA | | $T_A = 25^\circ\text{C}$ | | | | $f = 1 \text{ kHz}$ | |
| | Min. | Nom. | Max. | | | I_{R1} | V_{R1} | I_{R2} | V_{R2} | Ω | |
| | | | | | | μA | V | μA | V | Max. | Max. |
| | | | | | 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.

DISCLAIMER: The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Silicon Supplies Ltd hereby disclaims any and all warranties and liabilities of any kind.

LIFE SUPPORT POLICY: Silicon Supplies Ltd components may be used in life support devices or systems only with the express written approval of Silicon Supplies Ltd, if a failure of such components can reasonably be expected to cause the failure of that life support device or system or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.

