



5W Zener Diode - 1N5338C to 1N5379C

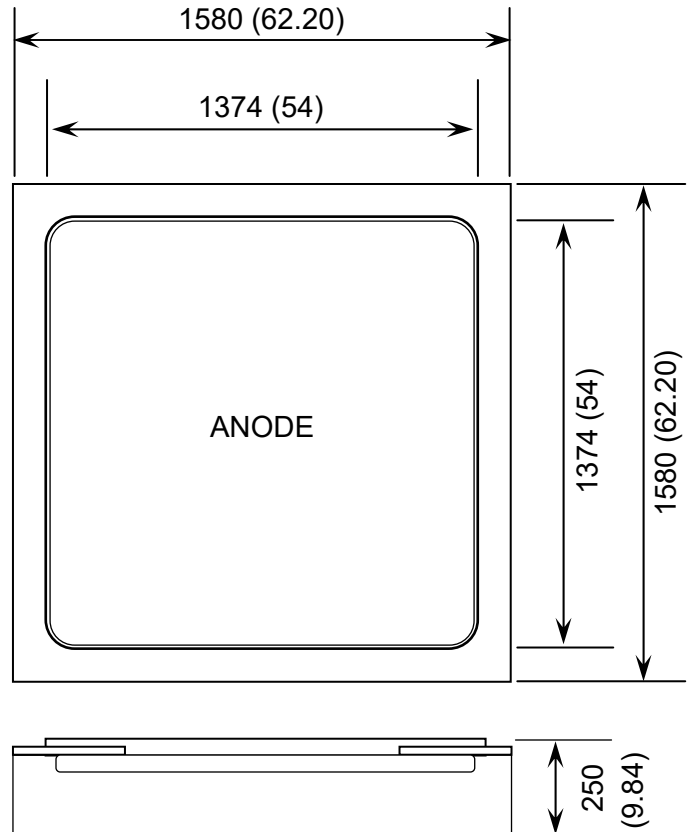
Rev 1.0
04/02/25

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)



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

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}	Max.	Max.
						μA	V	μA	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





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.

