



# 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](http://www.siliconsupplies.com/bare-die-lot-qualification)

## Die Dimensions in $\mu\text{m}$ (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	$\mu\text{m}$ mils
Anode Pad Size	1372 x 1372 54 x 54	$\mu\text{m}$ mils
Die Thickness	250 ( $\pm 20$ ) 9.84 ( $\pm 0.79$ )	$\mu\text{m}$ mils
Top Metal Composition	AlSi 3 $\mu\text{m}$	
Back Metal Composition	NiTi-Ag 0.2-0.8 $\mu\text{m}$	





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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>	$P_{TOT}$	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.
						$\mu\text{A}$	V	$\mu\text{A}$	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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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.			$I_{R1}$	$V_{R1}$	$I_{R2}$	$V_{R2}$	$\Omega$	
						$\mu\text{A}$	V	$\mu\text{A}$	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.

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