5W Zener Diode - 1N5338B to 1N5379B

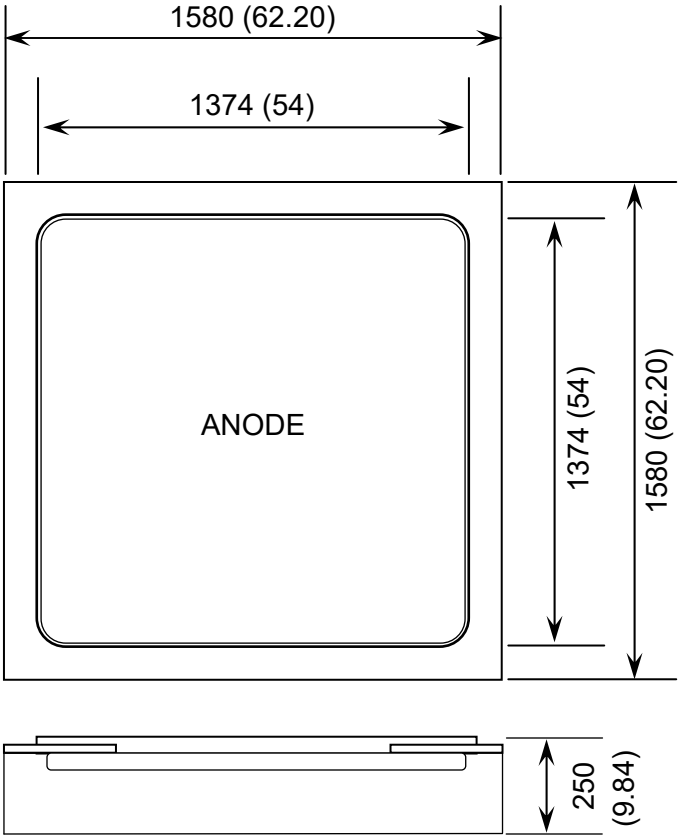
Rev 1.0
04/02/25

Silicon Planar Zener diode in bare die form – 5% 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 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 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.
1N5338B	4.886	5.1	5.314	240	1	5	1	5	1	2	400
1N5339B	5.365	5.6	5.835	220	1	5	2	5	2	1	400
1N5340B	5.748	6.0	6.252	200	1	5	3	5	3	1	300
1N5341B	5.940	6.2	6.460	200	1	5	3	5	3	1	200
1N5342B	6.514	6.8	7.086	175	1	5	5.2	5	5.2	1	200
1N5343B	7.185	7.5	7.815	175	1	5	5.7	5	5.7	1	200
1N5344B	7.856	8.2	8.544	150	1	5	6.2	5	6.2	2	200
1N5345B	8.335	8.7	9.065	150	1	5	6.6	5	6.6	2	200
1N5346B	8.718	9.1	9.482	150	1	0.1	6.9	0.1	6.9	2	150
1N5347B	9.58	10	10.42	125	1	0.1	8	0.1	8	2	125
1N5348B	10.54	11	11.46	125	1	0.1	8.4	0.5	9.4	2.5	125
1N5349B	11.50	12	12.50	100	1	0.1	9.1	0.5	10.3	3	125
1N5350B	12.45	13	13.55	100	1	0.1	9.9	0.5	11.1	3	100
1N5351B	13.41	14	14.59	100	1	0.1	10.6	1.2	12	3	75
1N5352B	14.37	15	15.63	75	1	0.1	11.5	1	12.8	3	75
1N5353B	15.33	16	16.67	75	1	0.1	12.2	0.1	13.7	3	75
1N5354B	16.29	17	17.71	70	1	0.1	12.9	0.5	14.5	3	75
1N5355B	17.24	18	18.76	65	1	0.1	13.7	0.5	15.4	3	75
1N5356B	18.20	19	19.80	65	1	0.1	14.4	0.1	16.2	3	75
1N5357B	19.16	20	20.84	65	1	0.1	15.2	0.5	17.1	3	75
1N5358B	21.08	22	22.92	50	1	0.1	16.7	0.5	18.8	4	75
1N5359B	22.99	24	25.01	50	1	0.1	18.2	0.5	20.5	4	100
1N5360B	23.95	25	26.05	50	1	0.1	19	0.5	21.4	4	110
1N5361B	25.87	27	28.13	50	1	0.1	20.6	0.5	23.1	5	120
1N5362B	26.82	28	29.18	50	1	0.1	21.2	1	23.9	6	130
1N5363B	28.74	30	31.26	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}
						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.
1N5364B	31.61	33	34.39	40	1	0.1	25.1	0.5	28.2	10	150
1N5365B	34.49	36	37.51	30	1	0.1	27.4	0.5	30.8	11	160
1N5366B	37.36	39	40.64	30	1	0.1	29.7	0.5	33.3	14	170
1N5367B	41.19	43	44.81	30	1	0.1	32.7	1	36.8	20	190
1N5368B	45.03	47	48.97	25	1	0.1	35.8	0.7	40.2	25	210
1N5369B	48.86	51	53.14	25	1	0.1	38.8	0.2	43.6	27	230
1N5370B	53.65	56	58.35	20	1	0.1	42.6	0.8	47.9	35	280
1N5371B	57.48	60	62.52	20	1	0.1	45.5	0.8	51.3	40	350
1N5372B	59.40	62	64.60	20	1	0.1	47.1	0.8	53	42	400
1N5373B	65.14	68	70.86	20	1	0.1	51.7	0.8	58.1	44	500
1N5374B	71.85	75	78.15	20	1	0.1	56	0.8	64.1	45	620
1N5375B	78.56	82	85.44	15	1	0.1	62.2	0.15	70.1	60	720
1N5376B	83.35	87	90.65	15	1	0.1	66	0.15	74.4	75	760
1N5377B	87.18	91	94.82	15	1	0.1	69.2	1	77.8	75	760
1N5378B	95.8	100	104.2	12	1	0.1	76	1	85.5	90	800
1N5379B	105.4	110	114.6	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.