0.5W Zener Diode - 1N52*D series

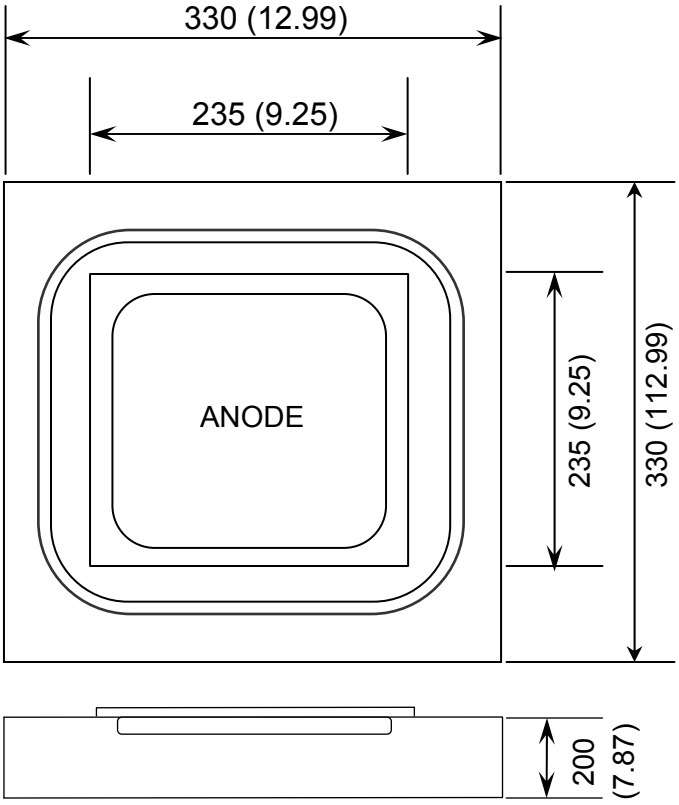
Rev 1.1
05/04/19

Silicon Planar Zener diode in bare die form – 1% tolerance

Features:

- Sharp Reverse Characteristics
- Low Reverse Current Levels
- High Reliability Gold Back Metal
- 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-STD-38534 Class H LAT
- "**K**" – Hi-rel grade die + MIL-STD-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 (400 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)	330 x 330 12.99 x 12.99	µm mils
Anode Pad Size	235 x 235 9.25 x 9.25	µm mils
Die Thickness	200 7.87	µm mils
Top Metal Composition	Al	
Back Metal Composition	AuAs	

0.5W Zener Diode - 1N52*D series

Rev 1.1
05/04/19

Absolute Maximum Ratings T_A = 25°C unless otherwise stated

PARAMETER	SYMBOL	VALUE	UNIT
Power Dissipation	P_{TOT}	500	mW
Junction Temperature	T_J	175	°C
Storage Temperature Range	T_S	-65 to +200	°C
Forward Voltage @ I_F = 200mA	V_F	1.5	V

Electrical Characteristics T_A = 25°C unless otherwise stated

DEVICE	ZENER VOLTAGE RANGE			TEST CURRENT		REVERSE LEAKAGE CURRENT		DYNAMIC RESISTANCE		TEMP. COEFFICIENT
	V_Z @ I_{ZT1}			I_{ZT2}	I_{ZT2}	I_R @ V_R		Z_Z @ I_{ZT1}	Z_{ZK} @ I_{ZT2}	α V_Z
						T_A = 25°C		f = 1 kHz		
	V			mA		µA	V	Ω		%/K
	Min.	Nom.	Max.			Max.		Max.	Max.	Typ.
1N5221D	2.376	2.4	2.424	20	0.25	100	1	30	1200	-0.085
1N5222D	2.475	2.5	2.525	20	0.25	100	1	30	1250	-0.085
1N5223D	2.673	2.7	2.727	20	0.25	75	1	30	1300	-0.08
1N5224D	2.772	2.8	2.828	20	0.25	75	1	30	1400	-0.08
1N5225D	2.970	3	3.030	20	0.25	50	1	29	1600	-0.075
1N5226D	3.267	3.3	3.333	20	0.25	25	1	28	1600	-0.07
1N5227D	3.564	3.6	3.636	20	0.25	15	1	24	1700	-0.065
1N5228D	3.861	3.9	3.939	20	0.25	10	1	23	1900	-0.06
1N5229D	4.257	4.3	4.343	20	0.25	5	1	22	2000	0.055
1N5230D	4.653	4.7	4.747	20	0.25	5	1	19	1900	0.03
1N5231D	5.049	5.1	5.151	20	0.25	5	2	17	1600	0.03
1N5232D	5.544	5.6	5.656	20	0.25	5	3	11	1600	0.038
1N5233D	5.940	6	6.060	20	0.25	5	3.5	7	1600	0.038
1N5234D	6.138	6.2	6.262	20	0.25	5	4.0	7	1000	0.045
1N5235D	6.732	6.8	6.868	20	0.25	3	5.0	5	750	0.05
1N5236D	7.425	7.5	7.575	20	0.25	3	6.0	6	500	0.058
1N5237D	8.118	8.2	8.282	20	0.25	3	6.5	8	500	0.062
1N5238D	8.613	8.7	8.787	20	0.25	3	6.5	8	600	0.065
1N5239D	9.009	9.1	9.191	20	0.25	3	7.0	10	600	0.068
1N5240D	9.90	10	10.10	20	0.25	3	8.0	17	600	0.075
1N5241D	10.89	11	11.11	20	0.25	2	8.4	22	600	0.076
1N5242D	11.88	12	12.12	20	0.25	0.1	9.1	30	600	0.077
1N5243D	12.87	13	13.13	9.5	0.25	0.1	9.9	13	600	0.079
1N5244D	13.86	14	14.14	9.0	0.25	0.1	10	15	600	0.082

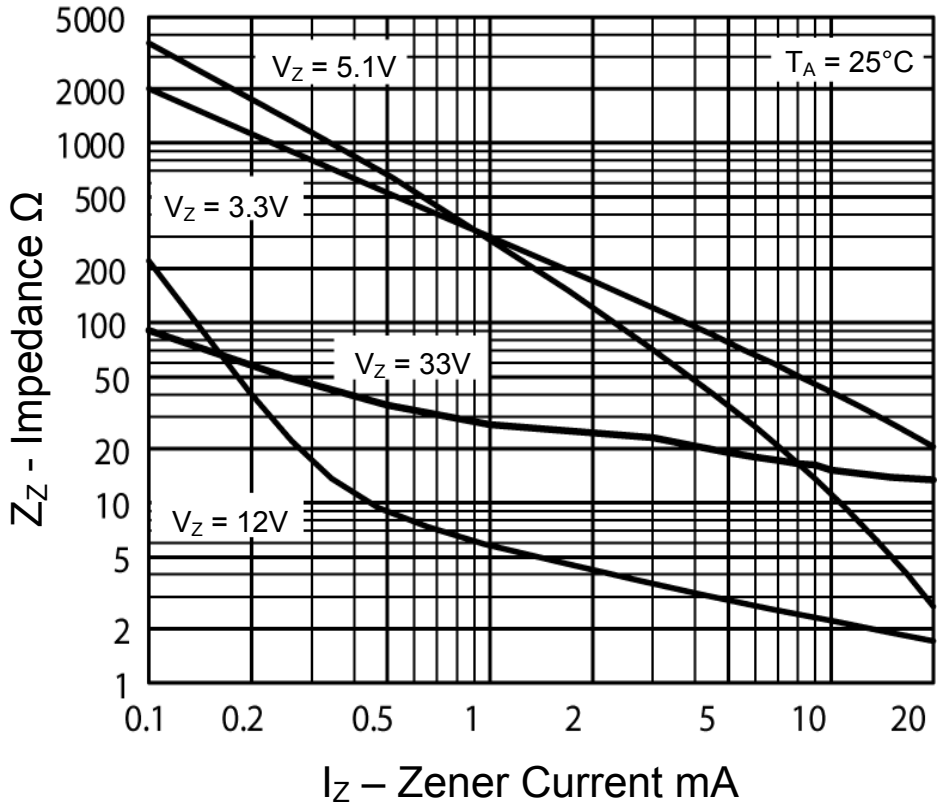
Rev 1.1
05/04/19

Electrical Characteristics T_A = 25°C unless otherwise stated

DEVICE	ZENER VOLTAGE RANGE			TEST CURRENT		REVERSE LEAKAGE CURRENT		DYNAMIC RESISTANCE		TEMP. COEFFICIENT
	V_Z @ I_{ZT1}			I_{ZT2}	I_{ZT2}	I_R @ V_R		Z_Z @ I_{ZT1}	Z_{ZK} @ I_{ZT2}	α V_Z
						T_A = 25°C		f = 1 kHz		
	V			mA		µA	V	Ω		%/K
	Min.	Nom.	Max.			Max.		Max.	Max.	Typ.
1N5245D	14.85	15	15.15	8.5	0.25	0.1	11	19	600	0.082
1N5246D	15.84	16	16.16	7.8	0.25	0.1	12	21	600	0.083
1N5247D	16.83	17	17.17	7.4	0.25	0.1	13	23	600	0.084
1N5248D	17.82	18	18.18	7	0.25	0.1	14	25	600	0.085
1N5249D	18.81	19	19.19	6.6	0.25	0.1	14	29	600	0.086
1N5250D	19.80	20	20.20	6.2	0.25	0.1	15	33	600	0.086
1N5251D	21.78	22	22.22	5.6	0.25	0.1	17	35	600	0.087
1N5252D	23.76	24	24.24	5.2	0.25	0.1	18	41	600	0.088
1N5253D	24.75	25	25.25	5	0.25	0.1	19	44	600	0.089
1N5254D	26.73	27	27.27	4.6	0.25	0.1	21	49	600	0.09
1N5255D	27.72	28	28.28	4.5	0.25	0.1	21	58	600	0.091
1N5256D	29.70	30	30.30	4.2	0.25	0.1	23	70	600	0.091
1N5257D	32.67	33	33.33	3.8	0.25	0.1	25	80	700	0.092
1N5258D	35.64	36	36.36	3.4	0.25	0.1	27	93	700	0.093
1N5259D	38.61	39	39.39	3.2	0.25	0.1	30	105	800	0.094
1N5260D	42.57	43	43.43	3	0.25	0.1	33	125	900	0.095
1N5261D	46.53	47	47.47	2.7	0.25	0.1	36	150	1000	0.095
1N5262D	50.49	51	51.51	2.5	0.25	0.1	39	170	1100	0.096
1N5263D	55.44	56	56.56	2.2	0.25	0.1	43	185	1300	0.096
1N5264D	59.40	60	60.60	2.1	0.25	0.1	46	230	1400	0.097
1N5265D	61.38	62	62.62	2	0.25	0.1	47	270	1400	0.097
1N5266D	67.32	68	68.68	1.8	0.25	0.1	52	330	1600	0.097
1N5267D	74.25	75	75.75	1.7	0.25	0.1	56	370	1700	0.098

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-35 package. Performance in die form subject to assembly heat sinking and die attach methods.



Zener Impedance Versus Operating Current - Z_Z Versus I_Z