0.5W, 20mA I_{ZT} , Bare Die Zener Diode

Rev 1.0
07/07/17

Silicon Planar Zener diode in bare die form – 5% tolerance

Features:

- I_R characterized at 125°C
- Sharp Reverse Characteristics
- Low Reverse Current Levels
- High Reliability Gold Back Metal
- High Reliability tested grades.

Ordering Information

The following part suffixes apply:

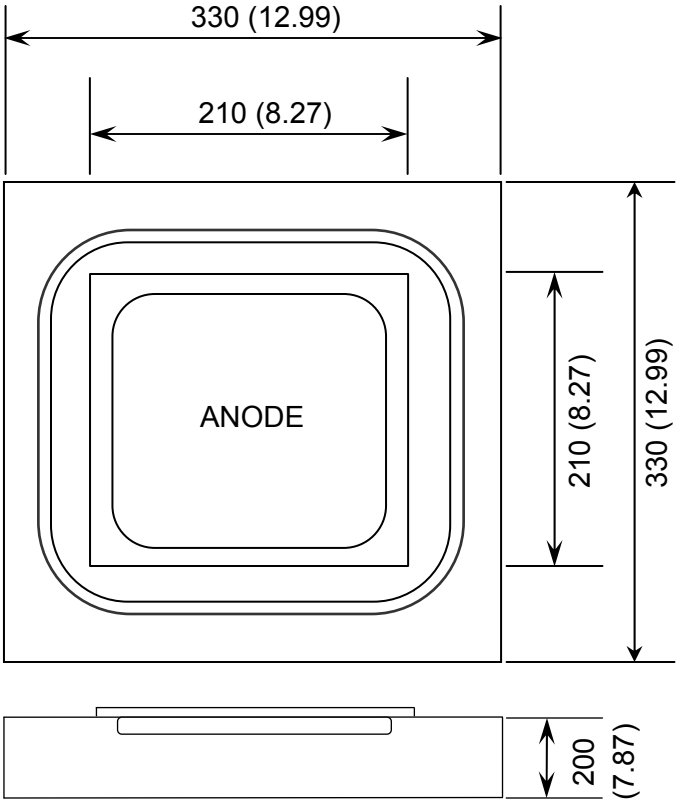
- No suffix - MIL-STD-750 /2073 Visual Inspection
- "**H**" - MIL-STD-750 /2073 Visual Inspection
  + MIL-PRF-38534 Class H LAT
- "**K**" - MIL-STD-750 /2073 Visual Inspection
  + MIL-PRF-38534 Class K LAT

LAT = Lot Acceptance Test.

For further information on LAT process flows see below.

www.siliconsupplies.com\quality\bare-die-lot-qualification

Die Dimensions in µm (mils)



CHIP BACKSIDE IS CATHODE

Supply Formats:

- Default – Die in Waffle Pack (400 per tray capacity)
- Sawn Wafer on Tape – By specific request
- Unsawn Wafer – By specific request
- Tighter V_Z tolerances:

  2% or 1% – Specific request

Mechanical Specification

Die Size (Unsawn)	330 x 330 12.99 x 12.99	µm mils
Anode Pad Size	210 x 210 8.27 x 8.27	µm mils
Die Thickness	200 7.87	µm mils
Top Metal Composition	Al	
Back Metal Composition	Au	

0.5W, 20mA I_{ZT} , Bare Die Zener Diode

Rev 1.0
07/07/17

Absolute Maximum Ratings[1] T_A = 25°C unless otherwise stated

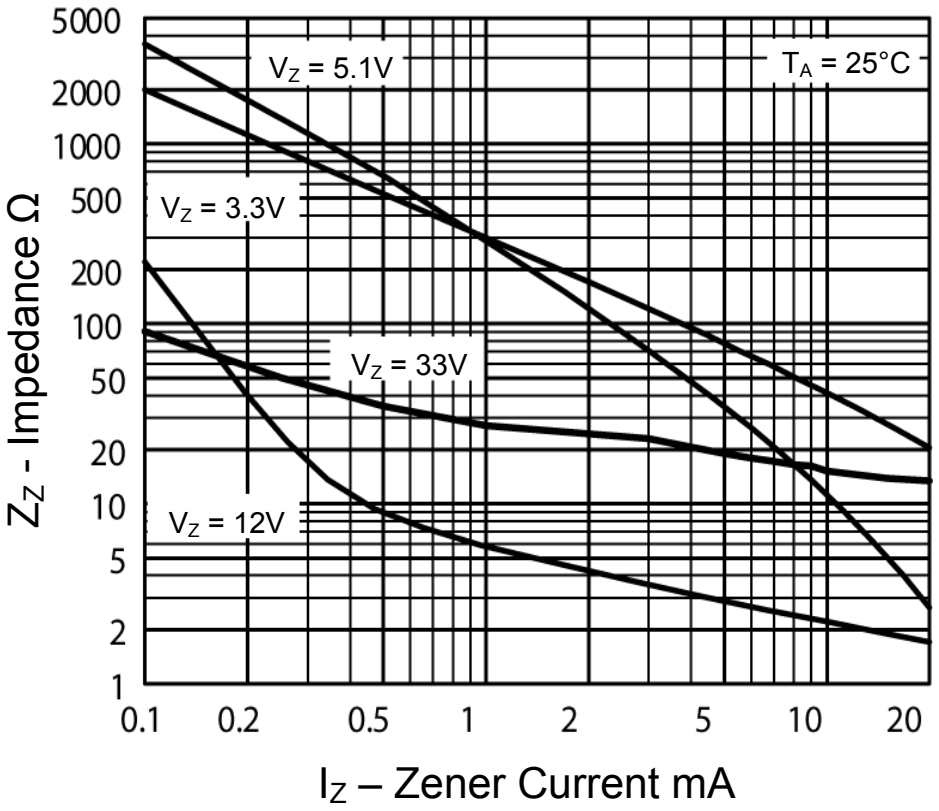
PARAMETER	SYMBOL	VALUE	UNIT
Power Dissipation[2]	P_{TOT}	500	mW
Junction Temperature	T_J	200	°C
Storage Temperature Range	T_{STG}	-65 to +175	°C
Forward Voltage @ I_F = 200mA	V_F	1.5	V

Electrical Characteristics T_A = 25°C unless otherwise stated

DEVICE	ZENER VOLTAGE RANGE			REVERSE LEAKAGE CURRENT				DYNAMIC RESISTANCE	MAXIMUM REGULATOR CURRENT
	V_Z @ I_{ZT}			I_{ZT}	I_R @ V_R			Z_Z @ I_{ZT}	I_{ZM}
					T_A = 25°C	T_A = 125°C		f = 1 kHz	
	V			mA	μA Max.		V_R	Ω	mA
	Min.	Nom.	Max.					Max.	
1N4370A	2.28	2.4	2.52	20	100	200	1	30	150
1N4371A	2.57	2.7	2.84	20	75	150	1	30	135
1N4372A	2.85	3.0	3.15	20	50	100	1	29	120
1N746A	3.14	3.3	3.47	20	10	30	1	28	110
1N747A	3.42	3.6	3.78	20	10	30	1	24	100
1N748A	3.71	3.9	4.10	20	10	30	1	23	95
1N749A	4.09	4.3	4.52	20	2	30	1	22	85
1N750A	4.47	4.7	4.94	20	2	30	1	19	75
1N751A	4.85	5.1	5.36	20	1	20	1	17	70
1N752A	5.32	5.6	5.88	20	1	20	1	11	65
1N753A	5.89	6.2	6.51	20	0.1	20	1	7	60
1N754A	6.46	6.8	7.14	20	0.1	20	1	5	55
1N755A	7.13	7.5	7.88	20	0.1	20	1	6	50
1N756A	7.79	8.2	8.61	20	0.1	20	1	8	45
1N757A	8.65	9.1	9.56	20	0.1	20	1	10	40
1N758A	9.50	10	10.5	20	0.1	20	1	17	35
1N759A	11.4	12	12.6	20	0.1	20	1	30	30

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.

Typical Electrical Characteristics



Zener Impedance Versus Operating Current - Z_Z Versus I_Z

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.