



1 Watt, Bare Die Zener Diode

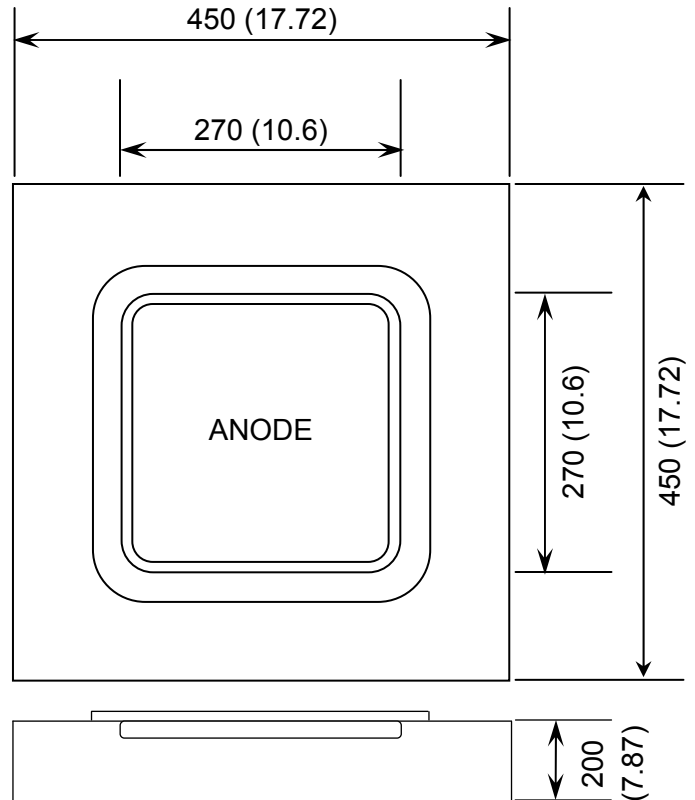
Rev 1.0
07/07/17

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

Features:

- High peak reverse power dissipation
- Sharp Reverse Characteristics
- Low Reverse Current Levels
- High Reliability Gold Back Metal
- High Reliability tested grades.

Die Dimensions in μm (mils)



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 /2072 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

CHIP BACKSIDE IS CATHODE

Note: Zener Voltages 2.4V to 9.1V are constructed using a smaller die geometry and are specified [here](#)

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)	450 x 450 17.72 x 17.72	μm mils
Anode Pad Size	270 x 270 10.6 x 10.6	μm mils
Die Thickness	200 7.87	μm mils
Top Metal Composition	Al	
Back Metal Composition	Au	





1 Watt, Bare Die Zener Diode

Rev 1.0
07/07/17

Absolute Maximum Ratings¹ $T_A = 25^\circ\text{C}$ unless otherwise stated

PARAMETER	SYMBOL	VALUE	UNIT
Power Dissipation ²	P_{TOT}	1	W
Junction Temperature	T_J	200	$^\circ\text{C}$
Storage Temperature Range	T_S	-65 to +200	$^\circ\text{C}$
Forward Voltage @ $I_F = 200\text{mA}$	V_F	1.2	V

Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise stated

DEVICE	ZENER VOLTAGE RANGE			TEST CURRENT		REVERSE LEAKAGE CURRENT		DC ZENER CURRENT	DYNAMIC RESISTANCE	
	$V_Z @ I_{ZT1}$			I_{ZT1}	I_{ZT2}	$I_R @ V_R$		I_{ZM}	$Z_Z @ I_{ZT1}$	$Z_{ZK} @ I_{ZT2}$
	V			mA		$\mu\text{A Max.}$	@ V_R	mA	Ω	
	Min.	Nom	Max.						Max.	Max.
BZX85C10	9.4	10	10.6	25	0.5	50	7.5	105	7	200
BZX85C11	10.4	11	11.6	20	0.5	50	8.2	97	8	300
BZX85C12	11.4	12	12.7	20	0.5	0.5	9.1	88	9	350
BZX85C13	12.4	13	14.1	20	0.5	0.5	10	79	10	400
BZX85C15	13.8	15	15.6	15	0.5	0.5	11	71	15	500
BZX85C16	15.3	16	17.1	15	0.5	0.5	12	66	15	500
BZX85C18	16.8	18	19.1	15	0.5	0.5	13	62	20	500
BZX85C20	18.8	20	21.2	10	0.5	0.5	15	56	24	600
BZX85C22	20.8	22	23.3	10	0.5	0.5	16	52	25	600
BZX85C24	22.8	24	25.6	10	0.5	0.5	18	47	25	600
BZX85C27	25.1	27	28.9	8	0.25	0.5	20	41	30	750
BZX85C30	28	30	32	8	0.25	0.5	22	36	30	1000
BZX85C33	31	33	35	8	0.25	0.5	24	33	35	1000
BZX85C36	34	36	38	8	0.25	0.5	27	30	40	1000
BZX85C39	37	39	41	6	0.25	0.5	30	28	50	1000
BZX85C43	40	43	46	6	0.25	0.5	33	26	50	1000
BZX85C47	44	47	50	4	0.25	0.5	36	23	90	1500
BZX85C51	48	51	53	4	0.25	0.5	39	21	115	1500
BZX85C56	52	56	60	4	0.25	0.5	43	19	120	2000
BZX85C62	58	62	66	4	0.25	0.5	47	16	125	2000
BZX85C68	64	68	72	4	0.25	0.5	51	15	130	2000
BZX85C75	70	75	80	4	0.25	0.5	56	14	135	2000

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-41 package. Performance in die form subject to assembly heat sinking and die attach methods.

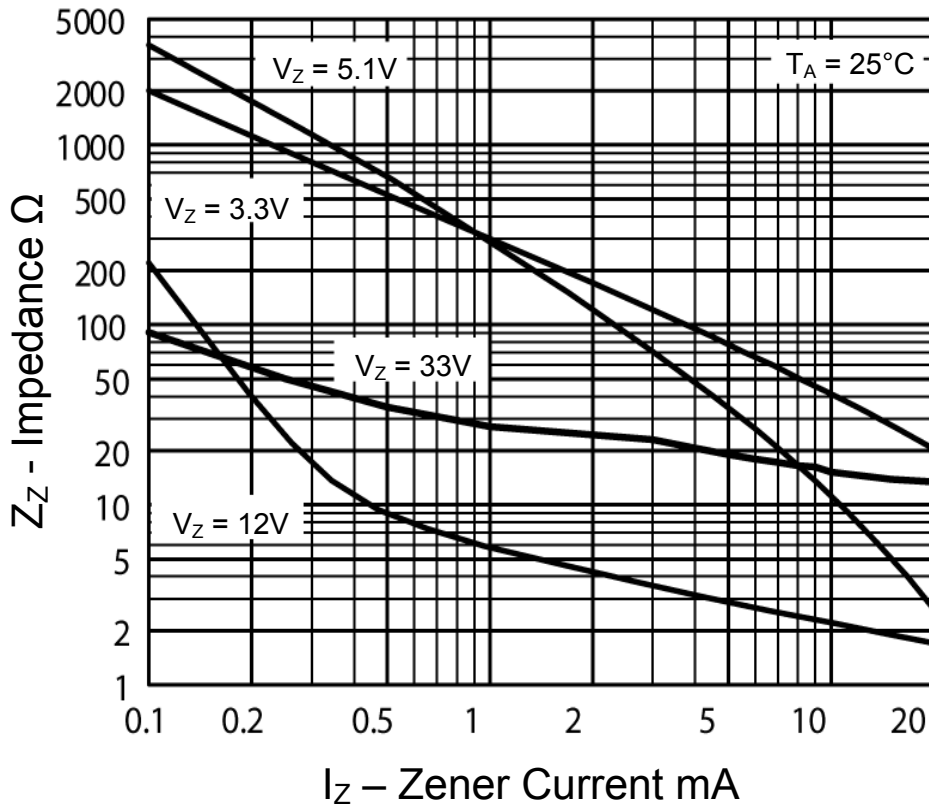




1 Watt, Bare Die Zener Diode

Rev 1.0
07/07/17

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.

