

Small Signal Product

500mW, 2% Tolerance Zener Diode

FEATURES

- Wide zener voltage range selection : 2.4V to 75V
- VZ Tolerance Selection of $\pm 2\%$
- Hermetically sealed glass
- Pb free and RoHS compliant
- High reliability glass passivation insuring parameter stability and protection against junction contamination



Mini-MELF (LL34)
Hermetically Sealed Glass



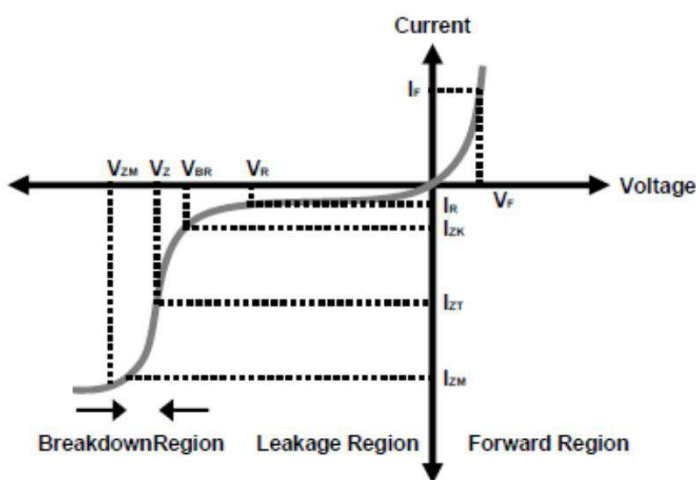
MECHANICAL DATA

- Case: Mini-MELF Package (JEDEC DO-213AC)
- High temperature soldering guaranteed: 270°C/10s
- Polarity: Indicated by cathode band
- Weight : 31 mg (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Power Dissipation	P_D	500	mW
Forward Voltage	V_F	1	V
Thermal Resistance (Junction to Ambient)	$R_{\theta JA}$	300	$^\circ\text{C/W}$
Storage Temperature Range	T_J, T_{STG}	- 65 to + 175	$^\circ\text{C}$

Note1 : Valid provided that electrodes are kept at ambient temperature

Zener I vs. V Characteristics



- V_{BR} : Voltage at I_{ZK}
- I_{ZK} : Test current for voltage V_{BR}
- Z_{ZK} : Dynamic impedance at I_{ZK}
- I_{ZT} : Test current for voltage V_Z
- V_Z : Voltage at current
- Z_{ZT} : Dynamic impedance at I_{ZT}
- I_{ZM} : Maximum steady state current
- V_{ZM} : Voltage at I_{ZM}

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Electrical Characteristics (Ratings at $T_A=25^\circ\text{C}$ ambient temperature unless otherwise specified)
 V_F Forward Voltage = 1.0V Maximum @ $I_F = 100$ mA for all part numbers

Part Number	$V_Z @ I_{ZT}$ (Volt)			I_{ZT} (mA)	$Z_{ZT} @ I_{ZT}$ (Ω) Max	I_{ZK} (mA)	$Z_{ZK} @ I_{ZK}$ (Ω) Max	$I_R @ V_R$ (\approx) Max	V_R (V)
	Min	Nom	Max						
BZV55B2V4	2.35	2.4	2.45	5	85	1.0	600	50	1.0
BZV55B2V7	2.65	2.7	2.75	5	85	1.0	600	10	1.0
BZV55B3V0	2.94	3.0	3.06	5	85	1.0	600	4	1.0
BZV55B3V3	3.23	3.3	3.37	5	85	1.0	600	2	1.0
BZV55B3V6	3.53	3.6	3.67	5	85	1.0	600	2	1.0
BZV55B3V9	3.82	3.9	3.98	5	85	1.0	600	2	1.0
BZV55B4V3	4.21	4.3	4.39	5	75	1.0	600	1	1.0
BZV55B4V7	4.61	4.7	4.79	5	60	1.0	600	0.5	1.0
BZV55B5V1	5.00	5.1	5.20	5	35	1.0	550	0.1	1.0
BZV55B5V6	5.49	5.6	5.71	5	25	1.0	450	0.1	1.0
BZV55B6V2	6.08	6.2	6.32	5	10	1.0	200	0.1	2.0
BZV55B6V8	6.66	6.8	6.94	5	8	1.0	150	0.1	3.0
BZV55B7V5	7.35	7.5	7.65	5	7	1.0	50	0.1	5.0
BZV55B8V2	8.04	8.2	8.36	5	7	1.0	50	0.1	6.2
BZV55B9V1	8.92	9.1	9.28	5	10	1.0	50	0.1	6.8
BZV55B10	9.80	10	10.20	5	15	1.0	70	0.1	7.5
BZV55B11	10.78	11	11.22	5	20	1.0	70	0.1	8.2
BZV55B12	11.76	12	12.24	5	20	1.0	90	0.1	9.1
BZV55B13	12.74	13	13.26	5	26	1.0	110	0.1	10
BZV55B15	14.70	15	15.30	5	30	1.0	110	0.1	11
BZV55B16	15.68	16	16.32	5	40	1.0	170	0.1	12
BZV55B18	17.64	18	18.36	5	50	1.0	170	0.1	13
BZV55B20	19.60	20	20.40	5	55	1.0	220	0.1	15
BZV55B22	21.56	22	22.44	5	55	1.0	220	0.1	16
BZV55B24	23.52	24	24.48	5	80	1.0	220	0.1	18
BZV55B27	26.46	27	27.54	5	80	1.0	220	0.1	20
BZV55B30	29.40	30	30.60	5	80	1.0	220	0.1	22
BZV55B33	32.34	33	33.66	5	80	1.0	220	0.1	24
BZV55B36	35.28	36	36.72	5	80	1.0	220	0.1	27
BZV55B39	38.22	39	39.78	2.5	90	0.5	500	0.1	28
BZV55B43	42.14	43	43.86	2.5	90	0.5	600	0.1	32
BZV55B47	46.06	47	47.94	2.5	110	0.5	700	0.1	35
BZV55B51	49.98	51	52.02	2.5	125	0.5	700	0.1	38
BZV55B56	54.88	56	57.12	2.5	135	0.5	1000	0.1	42
BZV55B62	60.76	62	63.24	2.5	150	0.5	1000	0.1	47
BZV55B68	66.64	68	69.36	2.5	160	0.5	1000	0.1	51
BZV55B75	73.50	75	76.50	2.5	170	0.5	1000	0.1	56

 Notes: 1. The Zener Voltage (V_Z) is tested under pulse condition of 10ms.

 2. The device numbers listed have a standard tolerance on the nominal zener voltage of $\pm 2\%$

 3. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and tighter voltage tolerances, contact your nearest **Taiwan Semiconductor** representative.

 4. The Zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an RMS value equal to 10% of the dc zener current (I_{ZT} or I_{ZK}) is superimposed to I_{ZT} or I_{ZK} .

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RATINGS AND CHARACTERISTICS CURVES (BZV55B2V4 ~ BZV55B75)

(TA=25°C unless otherwise noted)

Fig. 1 Power Dissipation VS. Ambient Temperature

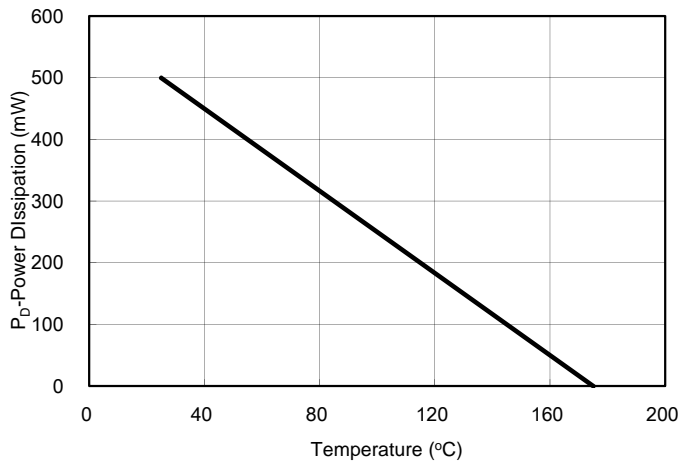


Fig. 2 Total Capacitance

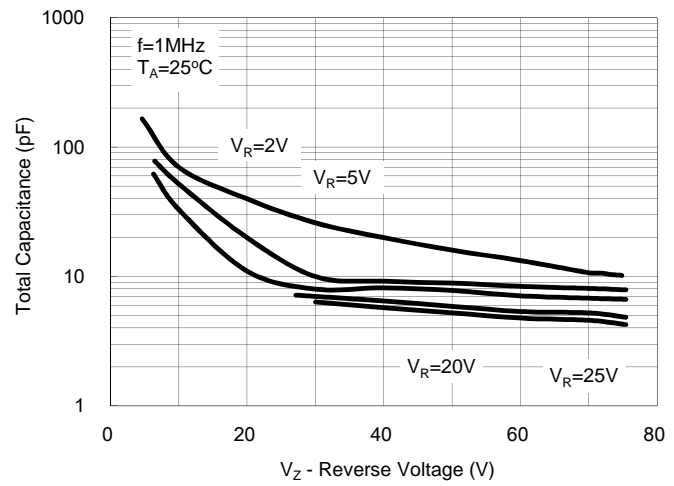


Fig. 3 Differential Impedance VS. Zener Voltage

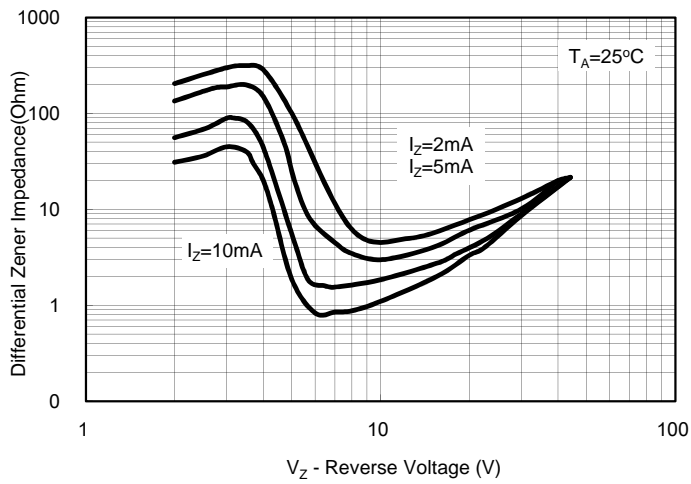


Fig. 4 Forward Current VS. Forward Voltage

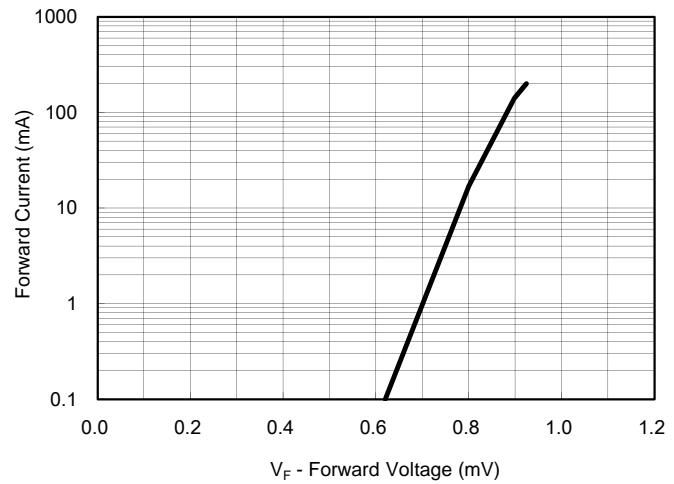


Fig. 5 Reverse Current VS. Reverse Voltage

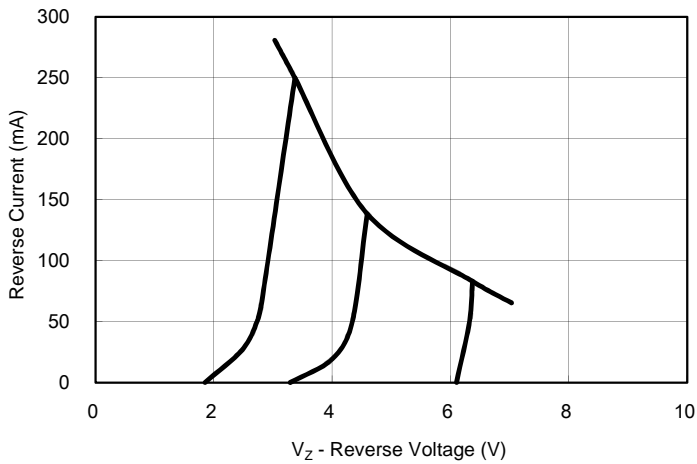
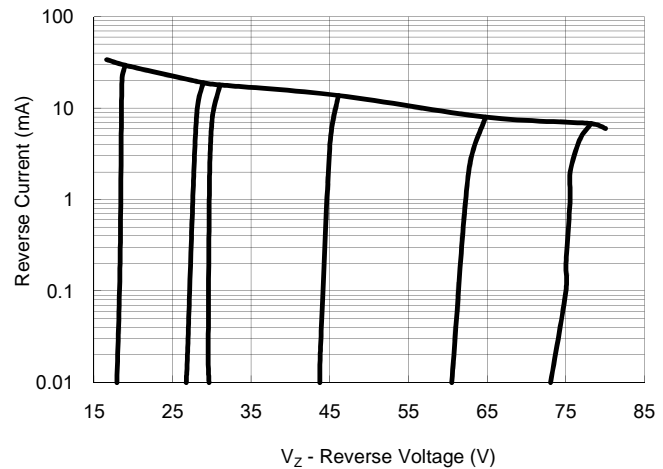


Fig. 6 Reverse Current VS. Reverse Voltage



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ORDERING INFORMATION					
PART NO.	MANUFACTURE CODE	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING
BZV55Bxxx (Note1)	(Note 2)	L0	G	Mini-MELF (Glass Seal)	10K / 13" Reel
		L1	G	Mini-MELF (Glass Seal)	2.5K / 7" Reel

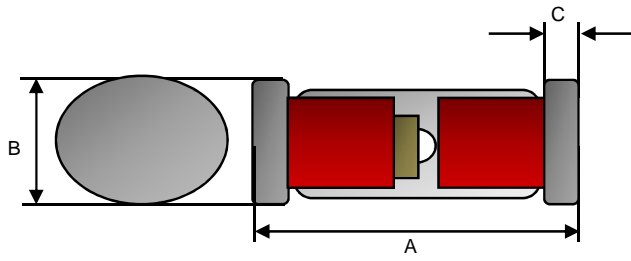
Note 1 : "xxx" is Device Code from "2V4" thru "75".

Note 2 : Manufacture special control, if empty means no special control requirement.

EXAMPLE					
PREFERRED P/N	PART NO.	MANUFACTURE CODE	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
BZV55B2V4 L0G	BZV55B2V4		L0	G	Green compound
BZV55B2V4-L0 L0G	BZV55B2V4	L0	L0	G	Green compound
BZV55B2V4-B0 L0G	BZV55B2V4	B0	L0	G	Green compound

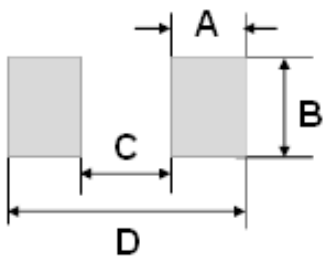
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PACKAGE OUTLINE DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	3.30	3.70	0.130	0.146
B	1.40	1.60	0.055	0.063
C	0.20	0.50	0.008	0.020

SUGGESTED PAD LATOUT



DIM.	Unit(mm)	Unit(inch)
	Typ.	Typ.
A	1.25	0.049
B	2.00	0.079
C	2.50	0.098
D	5.00	0.197