500mW 2% Zener Diodes

FEATURES

- Wide zener voltage range selection: 2.4V to 75V
- VZ Tolerance Selection of ± 2%
- Surface device type mountin
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

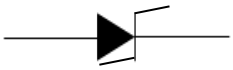
- Low voltage stabilzers or voltage references
- Adapters
- Lighting application
- On-board DC/DC converter

MECHANICAL DATA

- Case: Mini-MELF (Glass Seal)
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Polarity: Indicated by cathode band
- Weight: 29 ± 2.5mg (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
V_Z	2.4-75	V
Test current I_{ZT}	5	mA
P_{tot}	500	mW
V_F at I_F=10mA	1	V
T_J Max.	175	°C
Package	LS34	
Configuration	Single dice	

Pb-Free RoHS COMPLIANT HALOGEN FREE



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)			
PARAMETER	**SYMBOL**	**PART NUMBER**	**UNIT**
Forward voltage @ I_F=10mA	V_F	1	V
Total power dissipation	P_{tot}	500	mW
Junction temperature range	T_J	-65 to +175	°C
Storage temperature range	T_{STG}	-65 to +175	°C

THERMAL PERFORMANCE			
PARAMETER	**SYMBOL**	**LIMIT**	**UNIT**
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	500	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PART NUMBER	ZENER VOLTAGE			TEST CURRENT	REGULAR IMPEDANCE		TEST CURRENT	LEAKAGE CURRENT	
	V_Z @ I_{ZT}			I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}	I_{ZK}	I_R @ V_R	
	V			mA	Ω	Ω	mA	μA	V
	Min.	Nom.	Max.		Max.	Max.		Max.	
BZT55B2V4	2.35	2.4	2.45	5	85	600	1.0	50	1
BZT55B2V7	2.65	2.7	2.75	5	85	600	1.0	10	1
BZT55B3V0	2.94	3.0	3.06	5	85	600	1.0	4	1
BZT55B3V3	3.23	3.3	3.37	5	85	600	1.0	2	1
BZT55B3V6	3.53	3.6	3.67	5	85	600	1.0	2	1
BZT55B3V9	3.82	3.9	3.98	5	85	600	1.0	2	1
BZT55B4V3	4.21	4.3	4.39	5	75	600	1.0	1	1
BZT55B4V7	4.61	4.7	4.79	5	60	600	1.0	0.5	1
BZT55B5V1	5.00	5.1	5.20	5	35	550	1.0	0.1	1
BZT55B5V6	5..49	5.6	5.71	5	25	450	1.0	0.1	1
BZT55B6V2	6.08	6.2	6.32	5	10	200	1.0	0.1	2
BZT55B6V8	6.66	6.8	6.94	5	8	150	1.0	0.1	3
BZT55B7V5	7.35	7.5	7.65	5	7	50	1.0	0.1	5
BZT55B8V2	8.04	8.2	8.36	5	7	50	1.0	0.1	6.2
BZT55B9V1	8.92	9.1	9.28	5	10	50	1.0	0.1	6.8
BZT55B10	9.80	10.0	10.20	5	15	70	1.0	0.1	7.5
BZT55B11	10.78	11.0	11.22	5	20	70	1.0	0.1	8.2
BZT55B12	11.76	12.0	12.24	5	20	90	1.0	0.1	9.1
BZT55B13	12.74	13.0	13.26	5	26	110	1.0	0.1	10
BZT55B15	14.70	15.0	15.30	5	30	110	1.0	0.1	11
BZT55B16	15.68	16.0	16.32	5	40	170	1.0	0.1	12
BZT55B18	17.64	18.0	18.36	5	50	170	1.0	0.1	13
BZT55B20	19.60	20.0	20.40	5	55	220	1.0	0.1	15
BZT55B22	21.56	22.0	22.44	5	55	220	1.0	0.1	16
BZT55B24	23.52	24.0	24.48	5	80	220	1.0	0.1	18
BZT55B27	26.46	27.0	27.54	5	80	220	1.0	0.1	20
BZT55B30	29.40	30.0	30.60	5	80	220	1.0	0.1	22
BZT55B33	32.34	33.0	33.66	5	80	220	1.0	0.1	24
BZT55B36	35.28	36.0	36.72	5	80	220	1.0	0.1	27
BZT55B39	38.22	39.0	39.78	2.5	90	500	0.5	0.1	28
BZT55B43	42.14	43.0	43.86	2.5	90	600	0.5	0.1	32
BZT55B47	46.06	47.0	47.94	2.5	110	700	0.5	0.1	35
BZT55B51	49.98	51.0	52.02	2.5	125	700	0.5	0.1	38
BZT55B56	54.88	56.0	57.12	2.5	135	1000	0.5	0.1	42
BZT55B62	60.76	62.0	63.24	2.5	150	1000	0.5	0.1	47
BZT55B68	66.64	68.0	69.36	2.5	160	1000	0.5	0.1	51
BZT55B75	73.50	75.0	76.50	2.5	170	1000	0.5	0.1	56

Notes:

1. The Zener Voltage (VZ) is tested under pulse condition of 10ms
2. The device numbers listed have a standard tolerance on the nomial zener voltage of ±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(IZT or IZK) is superimposed to IZT or IZK

ORDERING INFORMATION

PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
BZT55BXXX (Note 1&2)	L0	G	Mini-MELF (Glass Seal)	10K / 13" Reel
	L1			2.5K / 7" Reel

Notes:

1. "xxx" defines voltage from 2.4V (BZT55B2V4) to 75V (BZT55B75)
2. Whole series with green compound

EXAMPLE

EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
BZT55B2V4 L0G	BZT55B2V4	L0	G	Green compound

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig. 1 Typical Forward Characteristics

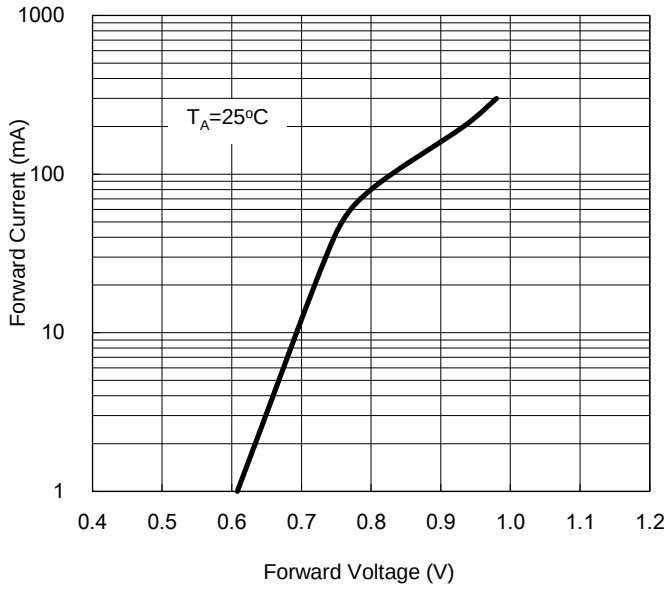


Fig. 2 Zener Breakdown Characteristics

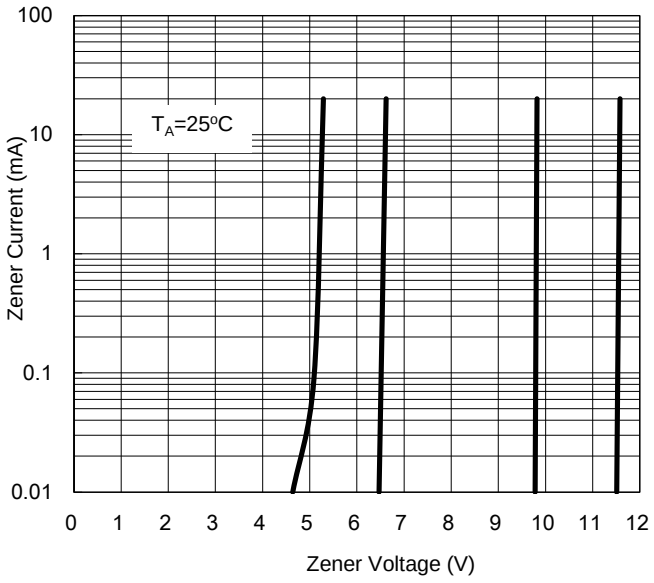


Fig. 3 Zener Breakdown Characteristics

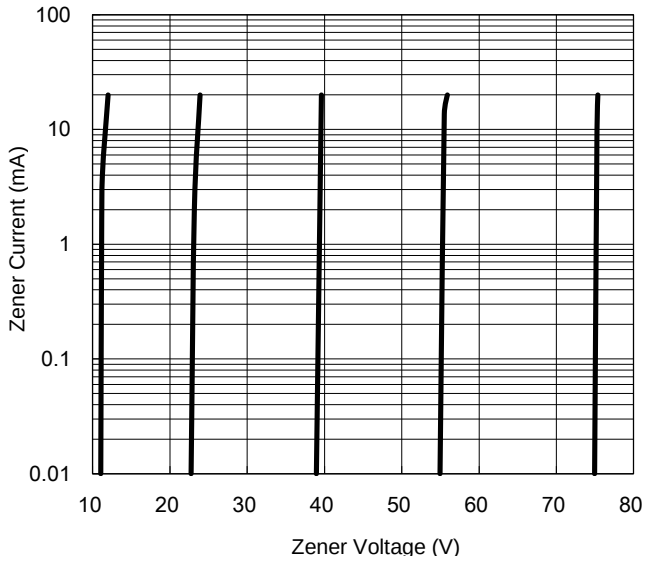
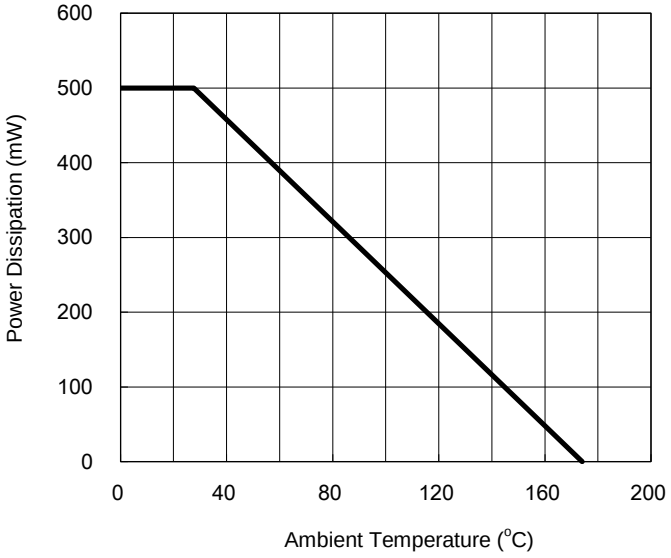


Fig. 4 Admissible Power Dissipation Curve



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig. 5 Typical Capacitance

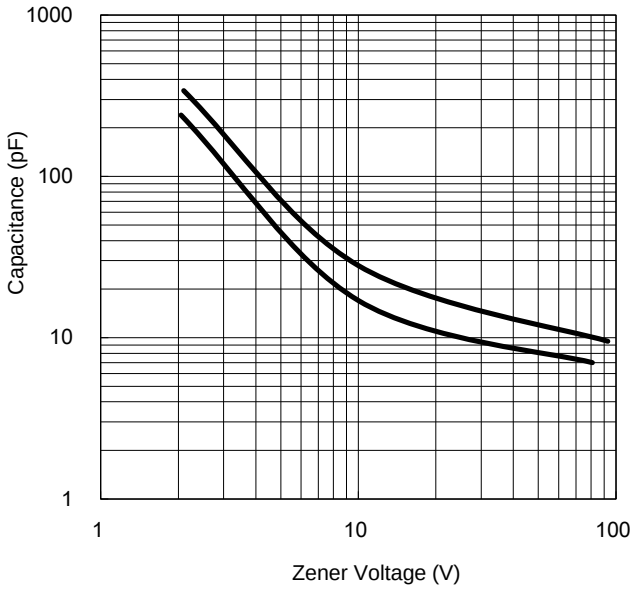
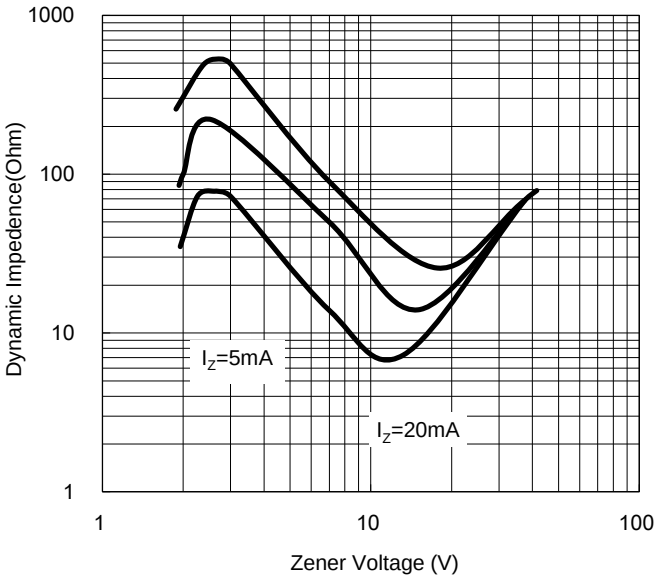
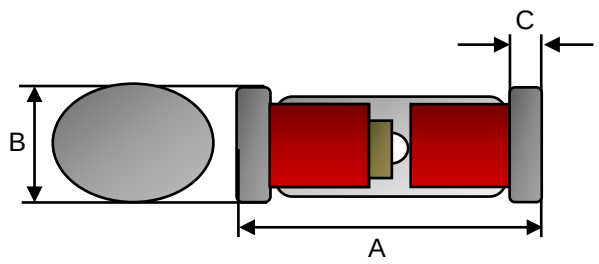


Fig. 6 Effect of Zener Voltage on Impedence



PACKAGE OUTLINE DIMENSION

LS34



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

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