

500mW, 2.4V - 75V Zener Diode

FEATURES

- Wide Zener voltage range selection: 2.4V to 75V
- V_Z Tolerance Selection of $\pm 2\%$
- Hermetically sealed glass
- RoHS Compliant

APPLICATIONS

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

MECHANICAL DATA

- Case: DO-35
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Polarity: Indicated by cathode band
- Weight: 101.67mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
V_Z	2.4 - 75	V
Test current I_{ZT}	2.5 - 5.0	mA
P_D	500	mW
V_F at $I_F = 100\text{mA}$	1	V
$T_{J\text{ MAX}}$	175	$^{\circ}\text{C}$
Package	DO-35	
Configuration	Single die	



DO-35



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Power dissipation	P_D	500	mW
Forward voltage @ $I_F = 100\text{mA}$	V_F	1	V
Junction temperature range	T_J	-55 to +175	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +175	$^{\circ}\text{C}$

THERMAL PERFORMANCE

PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	240	$^{\circ}\text{C/W}$

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PART NUMBER	MARKING CODE	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	
BZX55B2V4	BZX55B2V4	2.35	2.40	2.45	5	85	600	1.0	50	1.0
BZX55B2V7	BZX55B2V7	2.65	2.70	2.75	5	85	600	1.0	10	1.0
BZX55B3V0	BZX55B3V0	2.94	3.00	3.06	5	85	600	1.0	4.0	1.0
BZX55B3V3	BZX55B3V3	3.23	3.30	3.37	5	85	600	1.0	2.0	1.0
BZX55B3V6	BZX55B3V6	3.53	3.60	3.67	5	85	600	1.0	2.0	1.0
BZX55B3V9	BZX55B3V9	3.82	3.90	3.98	5	85	600	1.0	2.0	1.0
BZX55B4V3	BZX55B4V3	4.21	4.30	4.39	5	75	600	1.0	1.0	1.0
BZX55B4V7	BZX55B4V7	4.61	4.70	4.79	5	60	600	1.0	0.5	1.0
BZX55B5V1	BZX55B5V1	5.00	5.10	5.20	5	35	550	1.0	0.1	1.0
BZX55B5V6	BZX55B5V6	5.49	5.60	5.71	5	25	450	1.0	0.1	1.0
BZX55B6V2	BZX55B6V2	6.08	6.20	6.32	5	10	200	1.0	0.1	2.0
BZX55B6V8	BZX55B6V8	6.66	6.80	6.94	5	8	150	1.0	0.1	3.0
BZX55B7V5	BZX55B7V5	7.35	7.50	7.65	5	7	50	1.0	0.1	5.0
BZX55B8V2	BZX55B8V2	8.04	8.20	8.36	5	7	50	1.0	0.1	6.2
BZX55B9V1	BZX55B9V1	8.92	9.10	9.28	5	10	50	1.0	0.1	6.8
BZX55B10	BZX55B10	9.80	10.00	10.20	5	15	70	1.0	0.1	7.5
BZX55B11	BZX55B11	10.78	11.00	11.22	5	20	70	1.0	0.1	8.2
BZX55B12	BZX55B12	11.76	12.00	12.24	5	20	90	1.0	0.1	9.1
BZX55B13	BZX55B13	12.74	13.00	13.26	5	26	110	1.0	0.1	10
BZX55B15	BZX55B15	14.70	15.00	15.30	5	30	110	1.0	0.1	11
BZX55B16	BZX55B16	15.68	16.00	16.32	5	40	170	1.0	0.1	12
BZX55B18	BZX55B18	17.64	18.00	18.36	5	50	170	1.0	0.1	14
BZX55B20	BZX55B20	19.60	20.00	20.40	5	55	220	1.0	0.1	15
BZX55B22	BZX55B22	21.56	22.00	22.44	5	55	220	1.0	0.1	17
BZX55B24	BZX55B24	23.52	24.00	24.48	5	80	220	1.0	0.1	18
BZX55B27	BZX55B27	26.46	27.00	27.54	5	80	220	1.0	0.1	20
BZX55B30	BZX55B30	29.40	30.00	30.6	5	80	220	1.0	0.1	22
BZX55B33	BZX55B33	32.34	33.00	33.66	5	80	220	1.0	0.1	24
BZX55B36	BZX55B36	35.28	36.00	36.72	5	80	220	1.0	0.1	27
BZX55B39	BZX55B39	38.22	39.00	39.78	2.5	90	500	0.5	0.1	28
BZX55B43	BZX55B43	42.14	43.00	43.86	2.5	90	600	0.5	0.1	32
BZX55B47	BZX55B47	46.06	47.00	47.94	2.5	110	700	0.5	0.1	35
BZX55B51	BZX55B51	49.98	51.00	52.02	2.5	125	700	0.5	0.1	38
BZX55B56	BZX55B56	54.88	56.00	57.12	2.5	135	1000	0.5	0.1	42
BZX55B62	BZX55B62	60.76	62.00	63.24	2.5	150	1000	0.5	0.1	47
BZX55B68	BZX55B68	66.64	68.00	69.36	2.5	160	1000	0.5	0.1	51
BZX55B75	BZX55B75	73.50	75.00	76.50	2.5	170	1000	0.5	0.1	56

Notes:

1. Tolerance and voltage designation : the type numbers listed have Zener voltage as shown
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}

ORDERING INFORMATION		
ORDERING CODE⁽¹⁾	PACKAGE	PACKING
BZX55Bx R0G	DO-35	10,000 / 14" Reel
BZX55Bx A0G	DO-35	5,000 / Ammo Box

Notes:

1. "x" defines voltage from 2.4V (BZX55B2V4) to 75V (BZX55B75)

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Admissible Power Dissipation

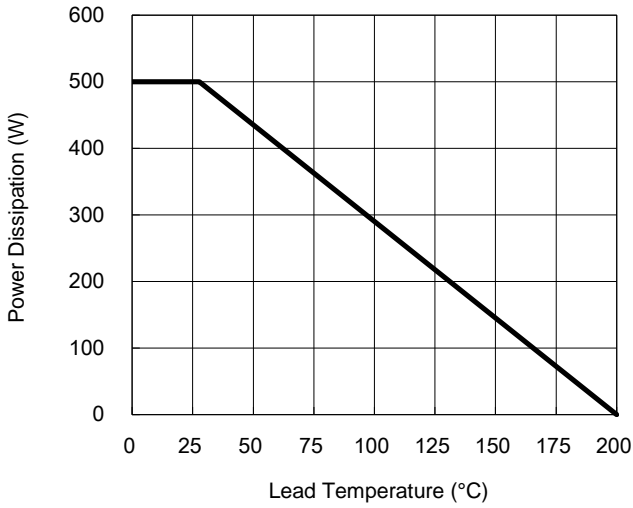


Fig.2 Typical Junction Capacitance

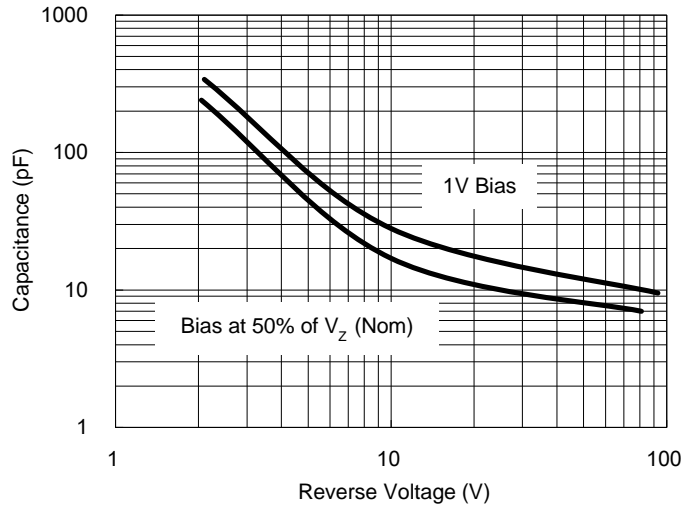


Fig.3 Zener Breakdown Characteristics

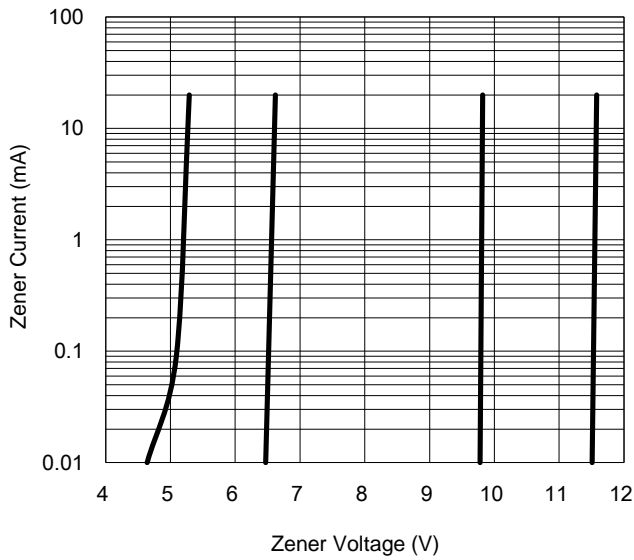
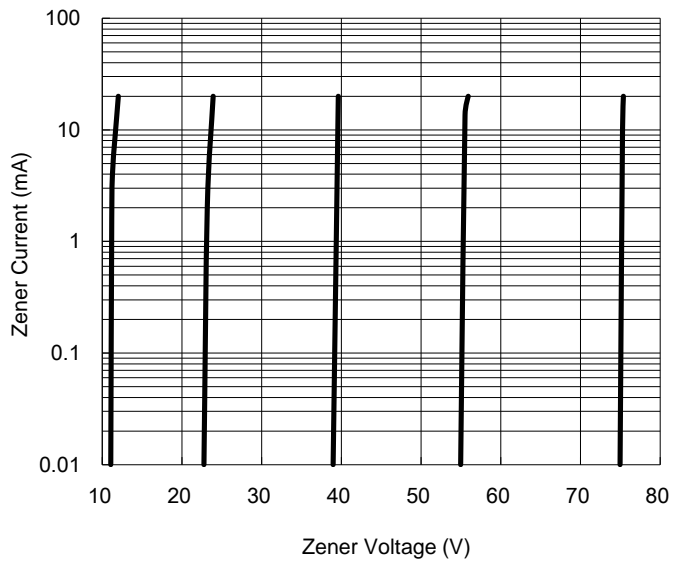


Fig.4 Zener Breakdown Characteristics



CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.5 Typical Forward Characteristics

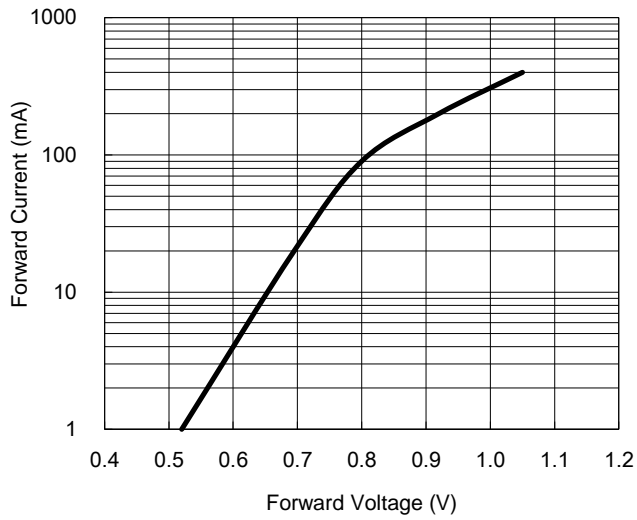
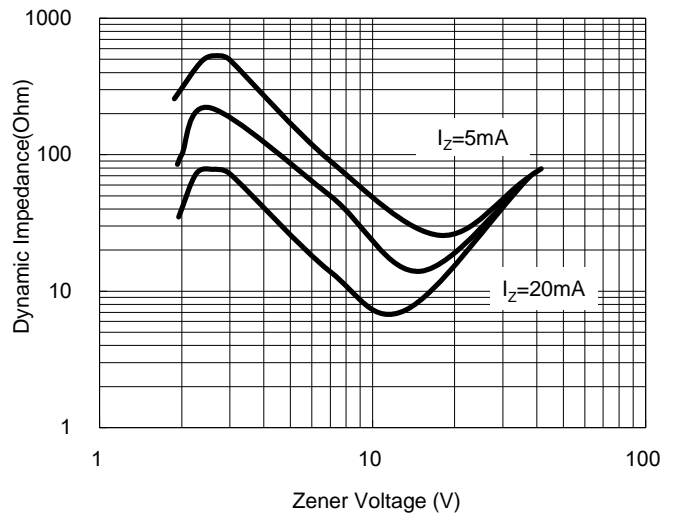
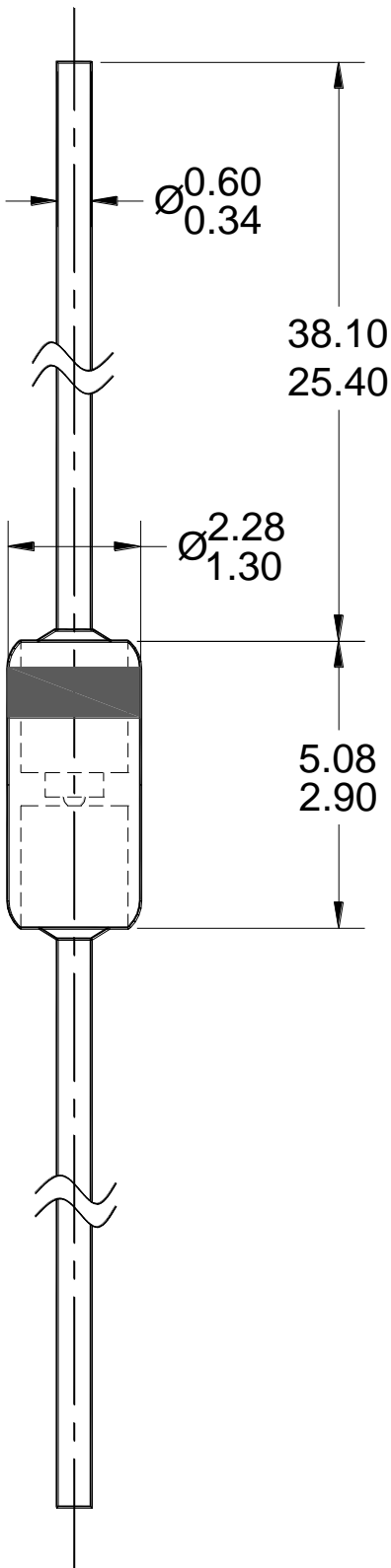


Fig.6 Effect of Zener Voltage on Impedance



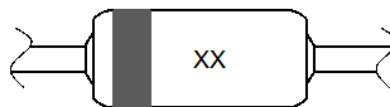
PACKAGE OUTLINE DIMENSIONS

DO-35



NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. DWG NO. REF: HQ2SD07-DO35-058 REV A.



XX = MARKING CODE

MARKING DIAGRAM

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