500mW, 2V - 75V Zener Diode

FEATURES

- Wide Zener voltage range selection: 2.0V to 75V
- V_Z Tolerance Selection of ± 5%
- Hermetically sealed glasss
- 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 - 75	V
Test current I_{ZT}	2.5 - 5.0	mA
P_D	500	mW
V_F at I_F = 100mA	1	V
$T_{J\ MAX}$	175	°C
Package	DO-35	
Configuration	Single die	

Pb-Free RoHS COMPLIANT

DO-35

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)			
PARAMETER	**SYMBOL**	**VALUE**	**UNIT**
Power dissipation	P_D	500	mW
Forward voltage @ I_F = 100mA	V_F	1	V
Junction temperature range	T_J	-55 to +175	°C
Storage temperature range	T_{STG}	-55 to +175	°C

THERMAL PERFORMANCE			
PARAMETER	**SYMBOL**	**TYP**	**UNIT**
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	300	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°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	
BZX55C2V0	BZX55C2V0	1.88	2.00	2.11	5.0	100	600	1.0	100	1.0
BZX55C2V2	BZX55C2V2	2.08	2.20	2.33	5.0	100	600	1.0	100	1.0
BZX55C2V4	BZX55C2V4	2.28	2.40	2.56	5.0	85	600	1.0	50	1.0
BZX55C2V7	BZX55C2V7	2.51	2.70	2.89	5.0	85	600	1.0	10	1.0
BZX55C3V0	BZX55C3V0	2.80	3.00	3.20	5.0	85	600	1.0	4.0	1.0
BZX55C3V3	BZX55C3V3	3.10	3.30	3.50	5.0	85	600	1.0	2.0	1.0
BZX55C3V6	BZX55C3V6	3.40	3.60	3.80	5.0	85	600	1.0	2.0	1.0
BZX55C3V9	BZX55C3V9	3.70	3.90	4.10	5.0	85	600	1.0	2.0	1.0
BZX55C4V3	BZX55C4V3	4.00	4.30	4.60	5.0	75	600	1.0	1.0	1.0
BZX55C4V7	BZX55C4V7	4.40	4.70	5.00	5.0	60	600	1.0	0.5	1.0
BZX55C5V1	BZX55C5V1	4.80	5.10	5.40	5.0	35	550	1.0	0.1	1.0
BZX55C5V6	BZX55C5V6	5.20	5.60	6.00	5.0	25	450	1.0	0.1	1.0
BZX55C6V2	BZX55C6V2	5.80	6.20	6.60	5.0	10	200	1.0	0.1	2.0
BZX55C6V8	BZX55C6V8	6.40	6.80	7.20	5.0	8	150	1.0	0.1	3.0
BZX55C7V5	BZX55C7V5	7.00	7.50	7.90	5.0	7	50	1.0	0.1	5.0
BZX55C8V2	BZX55C8V2	7.70	8.20	8.70	5.0	7	50	1.0	0.1	6.2
BZX55C9V1	BZX55C9V1	8.50	9.10	9.60	5.0	10	50	1.0	0.1	6.8
BZX55C10	BZX55C10	9.40	10.00	10.60	5.0	15	70	1.0	0.1	7.5
BZX55C11	BZX55C11	10.40	11.00	11.60	5.0	20	70	1.0	0.1	8.2
BZX55C12	BZX55C12	11.40	12.00	12.70	5.0	20	90	1.0	0.1	9.1
BZX55C13	BZX55C13	12.40	13.00	14.10	5.0	26	110	1.0	0.1	10
BZX55C15	BZX55C15	13.80	15.00	15.60	5.0	30	110	1.0	0.1	11
BZX55C16	BZX55C16	15.30	16.00	17.10	5.0	40	170	1.0	0.1	12
BZX55C18	BZX55C18	16.80	18.00	19.10	5.0	50	170	1.0	0.1	14
BZX55C20	BZX55C20	18.80	20.00	21.20	5.0	55	220	1.0	0.1	15
BZX55C22	BZX55C22	20.80	22.00	23.30	5.0	55	220	1.0	0.1	17
BZX55C24	BZX55C24	22.80	24.00	25.60	5.0	80	220	1.0	0.1	18
BZX55C27	BZX55C27	25.10	27.00	28.90	5.0	80	220	1.0	0.1	20
BZX55C30	BZX55C30	28.00	30.00	32.00	5.0	80	220	1.0	0.1	22
BZX55C33	BZX55C33	31.00	33.00	35.00	5.0	80	220	1.0	0.1	24
BZX55C36	BZX55C36	34.00	36.00	38.00	5.0	80	220	1.0	0.1	27
BZX55C39	BZX55C39	37.00	39.00	41.00	2.5	90	500	0.5	0.1	28
BZX55C43	BZX55C43	40.00	43.00	46.00	2.5	90	600	0.5	0.1	32
BZX55C47	BZX55C47	44.00	47.00	50.00	2.5	110	700	0.5	0.1	35
BZX55C51	BZX55C51	48.00	51.00	54.00	2.5	125	700	0.5	0.1	38
BZX55C56	BZX55C56	52.00	56.00	60.00	2.5	135	1000	0.5	0.1	42
BZX55C62	BZX55C62	58.00	62.00	66.00	2.5	150	1000	0.5	0.1	47
BZX55C68	BZX55C68	64.00	68.00	72.00	2.5	160	1000	0.5	0.1	51
BZX55C75	BZX55C75	70.00	75.00	80.00	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 ±5%
3. Specials available include : nominal Zener voltages between the voltages shown and tighter voltage, for detailed information on price, availability and delivery, contact your nearest Taiwan Semiconductor representative.
4. Zener impedance (Z_Z) derivation : Zener impedance is derived from the 60-cycle AC voltage, which results when AC current having an R_{MS} value equal to 10% of the dc Zener current(I_{ZT}) is superimposed to I_{ZT}

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING
BZX55Cx R0G	DO-35	10,000 / 14” Reel
BZX55Cx A0G	DO-35	5,000 / Ammo Box

Notes:

1. "x" defines voltage from 2.0V (BZX55C2V0) to 75V (BZX55C75)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Admissible Power Dissipation

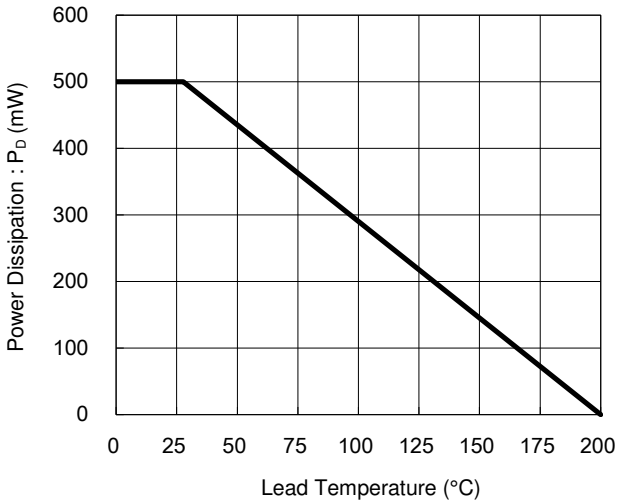


Fig.2 Typical Junction Capacitance

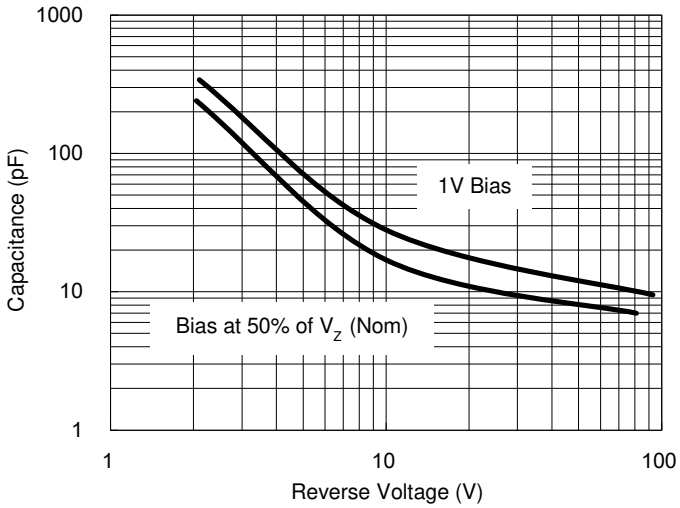


Fig.3 Zener Breakdown Characteristics

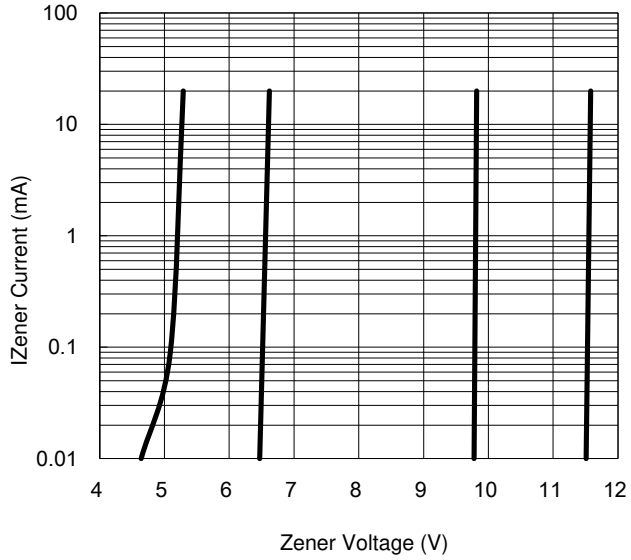
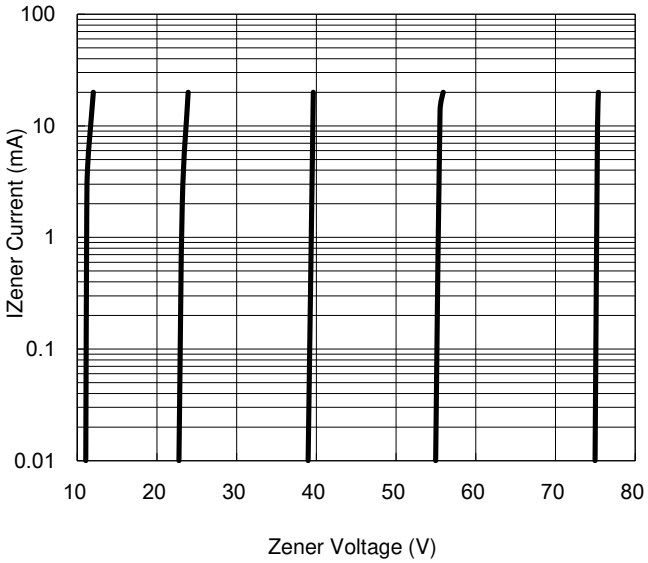


Fig.4 Zener Breakdown Characteristics



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.5 Typical Forward Characteristics

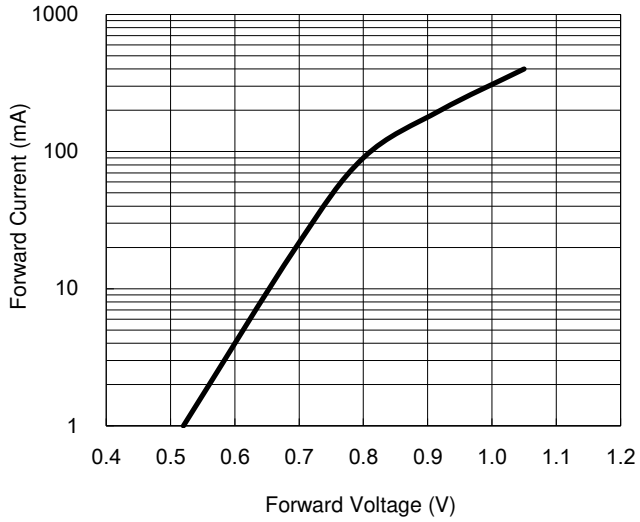
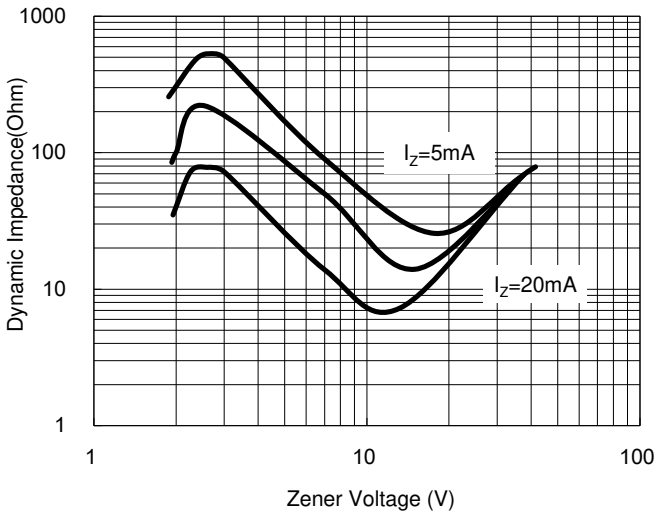
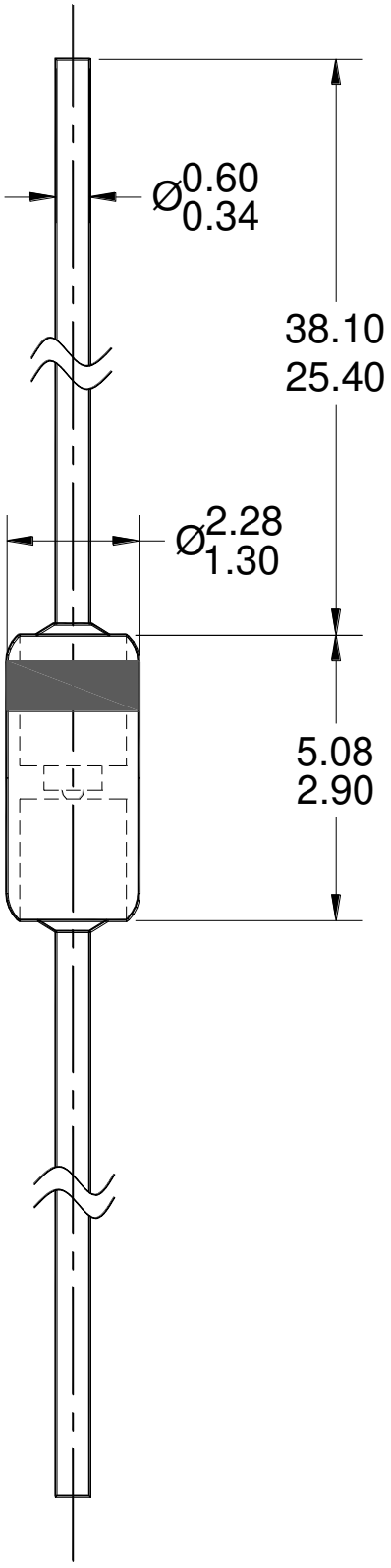


Fig.6 Effect of Zener Voltage on Impedance



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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