500mW, 2.4V - 36V Surface Mount Zener Diode

FEATURES

- Wide Zener voltage range selection: 2.4V to 36V
- V_Z Tolerance Selection of ± 5%
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant

APPLICATIONS

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

MECHANICAL DATA

- Case: 1206 (Ceramics)
- Molding compound meets UL 94HB flammability rating
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 10.90mg (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
V_Z	2.4 - 36	V
Test current I_{ZT}	5	mA
P_D	500	mW
V_F at I_F = 10mA	1.5	V
$T_{J\ MAX}$	150	°C
Package	1206 (Ceramics)	
Configuration	Single die	

Pb-Free RoHS COMPLIANT

1206 (Ceramics)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)			
PARAMETER	**SYMBOL**	**VALUE**	**UNIT**
Forward voltage @ I_F = 10mA	V_F	1.5	V
Power dissipation	P_D	500	mW
Junction temperature range	T_J	-55 to +150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

THERMAL PERFORMANCE			
PARAMETER	**SYMBOL**	**LIMIT**	**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}[1]			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	
BZS55C2V4	2V4	2.28	2.40	2.52	5	85	600	1	50	1.0
BZS55C2V7	2V7	2.57	2.70	2.84	5	85	600	1	10	1.0
BZS55C3V0	3	2.85	3.00	3.15	5	85	600	1	4	1.0
BZS55C3V3	3V3	3.14	3.30	3.47	5	85	600	1	2	1.0
BZS55C3V6	3V6	3.42	3.60	3.78	5	85	600	1	2	1.0
BZS55C3V9	3V9	3.71	3.90	4.10	5	85	600	1	2	1.0
BZS55C4V3	4V3	4.09	4.30	4.52	5	80	600	1	1	1.0
BZS55C4V7	4V7	4.47	4.70	4.94	5	70	600	1	0.5	1.0
BZS55C5V1	5V1	4.85	5.10	5.36	5	50	550	1	0.1	1.0
BZS55C5V6	5V6	5.32	5.60	5.88	5	30	450	1	0.1	1.0
BZS55C6V2	6V2	5.89	6.20	6.51	5	10	200	1	0.1	2.0
BZS55C6V8	6V8	6.46	6.80	7.14	5	8	150	1	0.1	3.0
BZS55C7V5	7V5	7.13	7.50	7.88	5	7	50	1	0.1	5.0
BZS55C8V2	8V2	7.79	8.20	8.61	5	7	50	1	0.1	6.2
BZS55C9V1	9V1	8.65	9.10	9.56	5	10	50	1	0.1	6.8
BZS55C10	10	9.50	10.00	10.50	5	15	70	1	0.1	7.5
BZS55C11	11	10.45	11.00	11.55	5	20	70	1	0.1	8.2
BZS55C12	12	11.40	12.00	12.60	5	20	90	1	0.1	9.1
BZS55C13	13	12.35	13.00	13.65	5	26	110	1	0.1	10
BZS55C15	15	14.25	15.00	15.75	5	30	110	1	0.1	11
BZS55C16	16	15.20	16.00	16.80	5	40	170	1	0.1	12
BZS55C18	18	17.10	18.00	18.90	5	50	170	1	0.1	13
BZS55C20	20	19.00	20.00	21.00	5	55	220	1	0.1	15
BZS55C22	22	20.90	22.00	23.10	5	55	220	1	0.1	16
BZS55C24	24	22.80	24.00	25.20	5	80	220	1	0.1	18
BZS55C27	27	25.65	27.00	28.35	5	80	220	1	0.1	20
BZS55C30	30	28.50	30.00	31.50	5	80	220	1	0.1	22
BZS55C33	33	31.35	33.00	34.65	5	80	220	1	0.1	24
BZS55C36	36	34.20	36.00	37.80	5	80	220	1	0.1	27

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 ±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**
BZS55Cx RAG	1206 (Ceramics)	10,000 / 13" Tape & Reel

Notes

1. "x" defines voltage from 2.4V (BZS55C2V4) to 36V (BZS55C36)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Typical Forward Characteristics

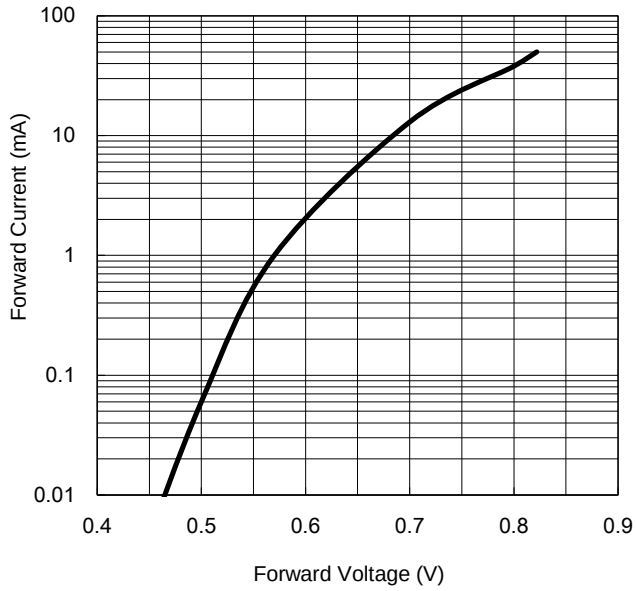


Fig.2 Zener Breakdown Characteristics

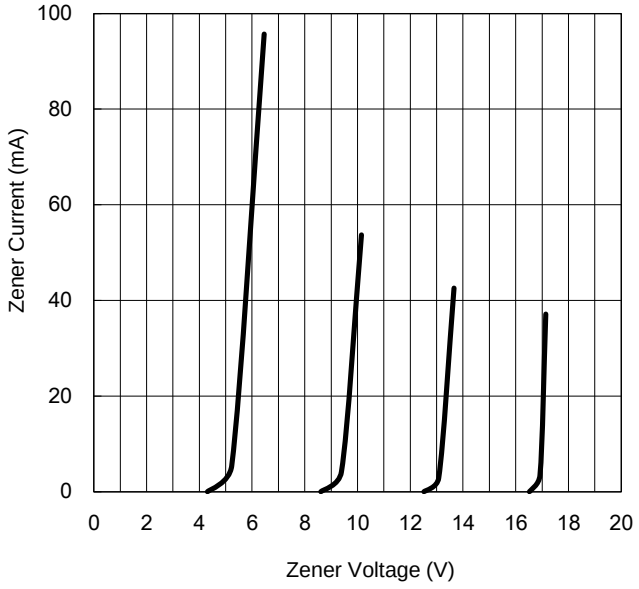


Fig.3 Zener Breakdown

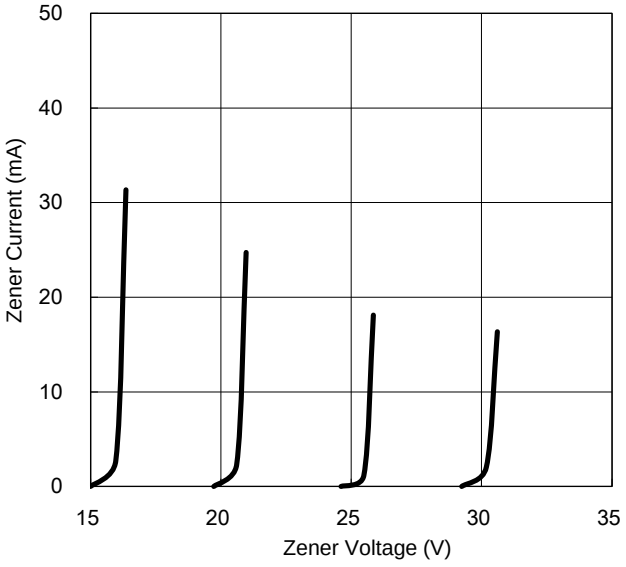
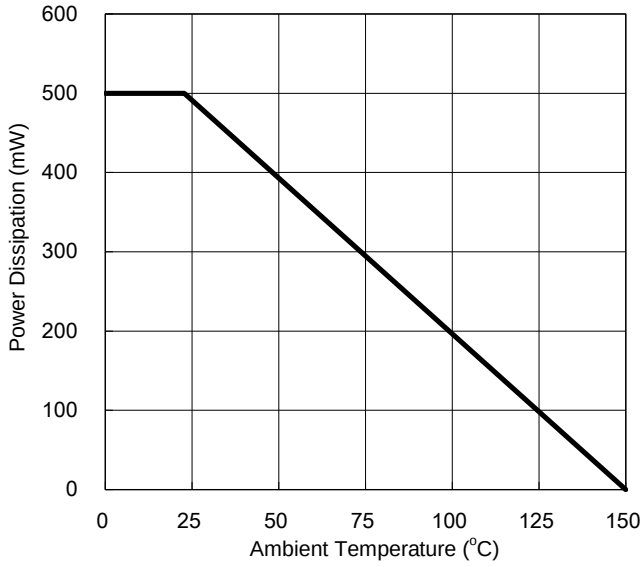


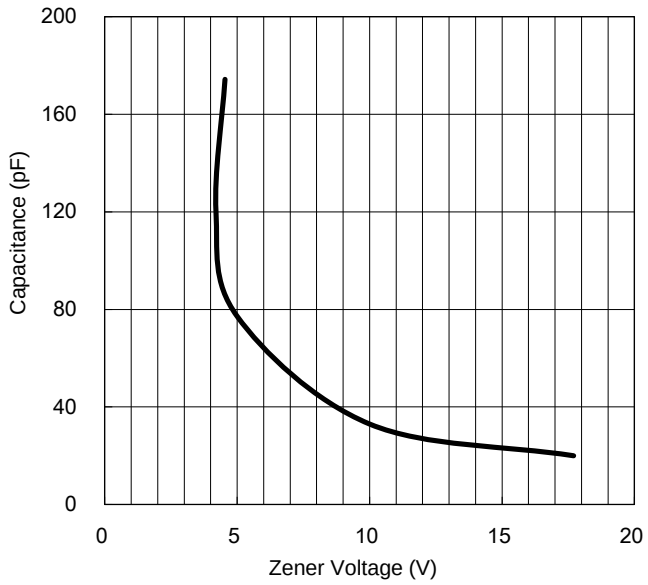
Fig.4 Admissible Power Dissipation Curve



CHARACTERISTICS CURVES

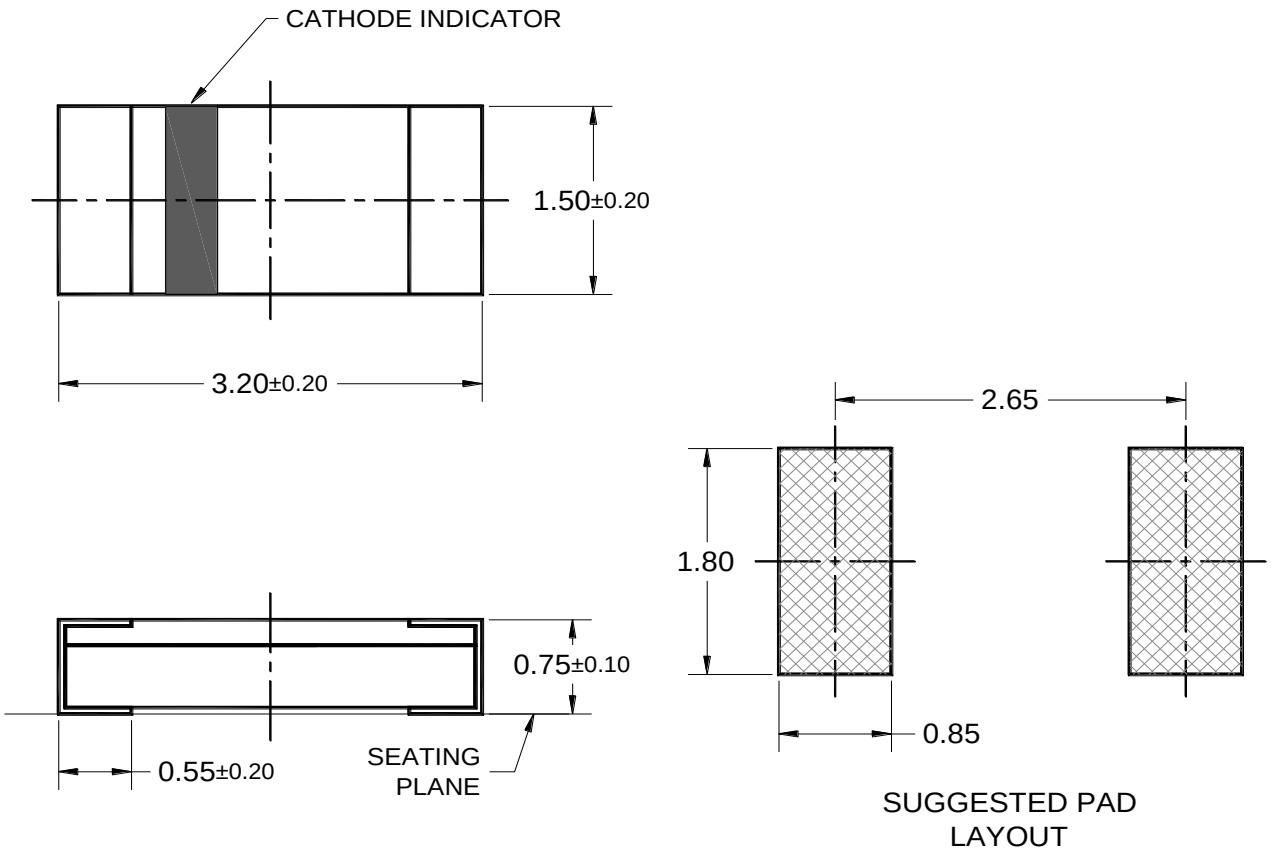
(T_A = 25°C unless otherwise noted)

Fig.5 Typical Capacitance



PACKAGE OUTLINE DIMENSIONS

1206 (Ceramics)



NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. PACKAGE SIZE CODE REFERENCE:
   EIA (inch) NAME: 1206 (0.126in x 0.063in)
   IEC (metric) NAME: 3216 (3.2mm x1.6mm)
3. DWG NO. REF: HQ2SD07-1206C-049 REV A.

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