

## 500mW 2% Zener Diodes

### FEATURES

- Wide zener voltage range selection: 2.4V to 36V
- VZ Tolerance Selection of  $\pm 2\%$
- 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 stabilizers or voltage references
- Adapters
- Lighting application
- On-board DC/DC converter

### MECHANICAL DATA

- Case: 1206
- Molding compound: UL flammability classification rating 94HB
- Moisture sensitivity level: level 1, per J-STD-020
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 0.01g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$V_Z$	2.4-36	V
Test current $I_{ZT}$	5	mA
$P_{tot}$	500	mW
$V_F$ at $I_F=10mA$	1.5	V
$T_J$ Max.	150	$^{\circ}C$
Package	1206	
Configuration	Single dice	



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

PARAMETER	SYMBOL	PART NUMBER	UNIT
Forward voltage @ $I_F=10mA$	$V_F$	1.5	V
Total power dissipation	$P_{tot}$	500	mW
Junction temperature range	$T_J$	-55 to +150	$^{\circ}C$
Storage temperature range	$T_{STG}$	-55 to +150	$^{\circ}C$

### THERMAL PERFORMANCE

PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	300	$^{\circ}C/W$

**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	$\Omega$	$\Omega$	mA	$\mu\text{A}$	V
		Min.	Nom.	Max.		Max.	Max.		Max.	
BZS55B2V4	2V4	2.35	2.40	2.45	5	85	600	1.0	50	1.0
BZS55B2V7	2V7	2.65	2.70	2.75	5	85	600	1.0	10	1.0
BZS55B3V0	3	2.94	3.00	3.06	5	85	600	1.0	4	1.0
BZS55B3V3	3V3	3.23	3.30	3.37	5	85	600	1.0	2	1.0
BZS55B3V6	3V6	3.53	3.60	3.67	5	85	600	1.0	2	1.0
BZS55B3V9	3V9	3.82	3.90	3.98	5	85	600	1.0	2	1.0
BZS55B4V3	4V3	4.21	4.30	4.39	5	80	600	1.0	1	1.0
BZS55B4V7	4V7	4.61	4.70	4.79	5	70	600	1.0	0.5	1.0
BZS55B5V1	5V1	5.00	5.10	5.20	5	50	550	1.0	0.1	1.0
BZS55B5V6	5V6	5.49	5.60	5.71	5	30	450	1.0	0.1	1.0
BZS55B6V2	6V2	6.08	6.20	6.32	5	10	200	1.0	0.1	2.0
BZS55B6V8	6V8	6.66	6.80	6.94	5	8	150	1.0	0.1	3.0
BZS55B7V5	7V5	7.35	7.50	7.65	5	7	50	1.0	0.1	5.0
BZS55B8V2	8V2	8.04	8.20	8.36	5	7	50	1.0	0.1	6.2
BZS55B9V1	9V1	8.92	9.10	9.28	5	10	50	1.0	0.1	6.8
BZS55B10	10	9.80	10.00	10.20	5	15	70	1.0	0.1	7.5
BZS55B11	11	10.78	11.00	11.22	5	20	70	1.0	0.1	8.2
BZS55B12	12	11.76	12.00	12.24	5	20	90	1.0	0.1	9.1
BZS55B13	13	12.74	13.00	13.26	5	26	110	1.0	0.1	10.0
BZS55B15	15	14.70	15.00	15.30	5	30	110	1.0	0.1	11.0
BZS55B16	16	15.68	16.00	16.32	5	40	170	1.0	0.1	12.0
BZS55B18	18	17.64	18.00	18.36	5	50	170	1.0	0.1	13.0
BZS55B20	20	19.60	20.00	20.40	5	55	220	1.0	0.1	15.0
BZS55B22	22	21.56	22.00	22.44	5	55	220	1.0	0.1	16.0
BZS55B24	24	23.52	24.00	24.48	5	80	220	1.0	0.1	18.0
BZS55B27	27	26.46	27.00	27.54	5	80	220	1.0	0.1	20.0
BZS55B30	30	29.40	30.00	30.60	5	80	220	1.0	0.1	22.0
BZS55B33	33	32.34	33.00	33.66	5	80	220	1.0	0.1	24.0
BZS55B36	36	35.28	36.00	36.72	5	80	220	1.0	0.1	27.0

**Notes:**

1. The Zener Voltage (VZ) 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

**ORDERING INFORMATION**

<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>PACKAGE</b>	<b>PACKING</b>
BZS55BXX (Note 1&2)	RX	G	1206	5K / 7" Reel
	RA			10K / 13" Reel

**Notes:**

1. "xxx" defines voltage from 2.4V (BZS55B2V4) to 36V (BZS55B36)
2. Whole series with green compound

**EXAMPLE**

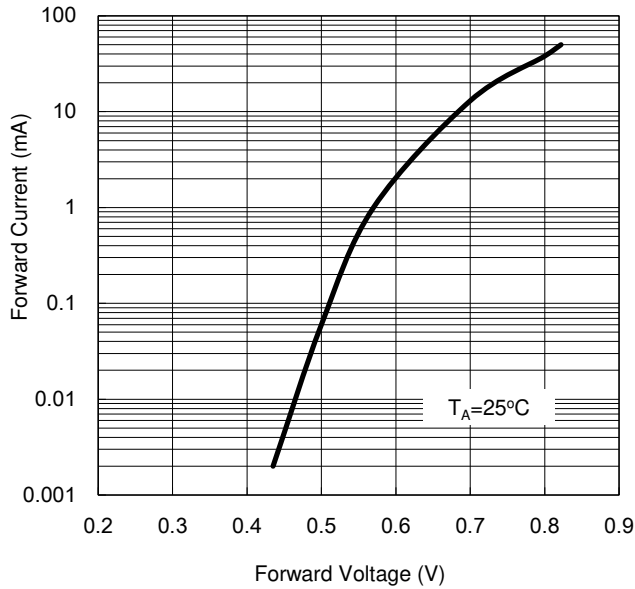
<b>EXAMPLE P/N</b>	<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>DESCRIPTION</b>
BZS55B36 RXG	BZS55B36	RX	G	Green compound

Not Recommended

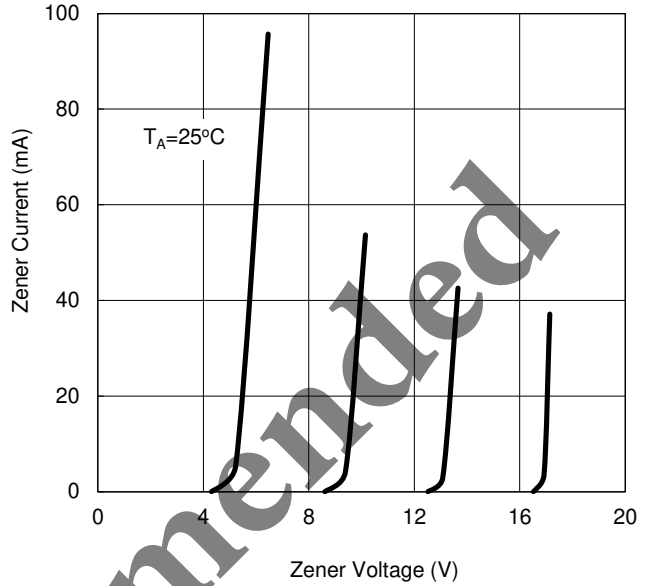
**CHARACTERISTICS CURVES**

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

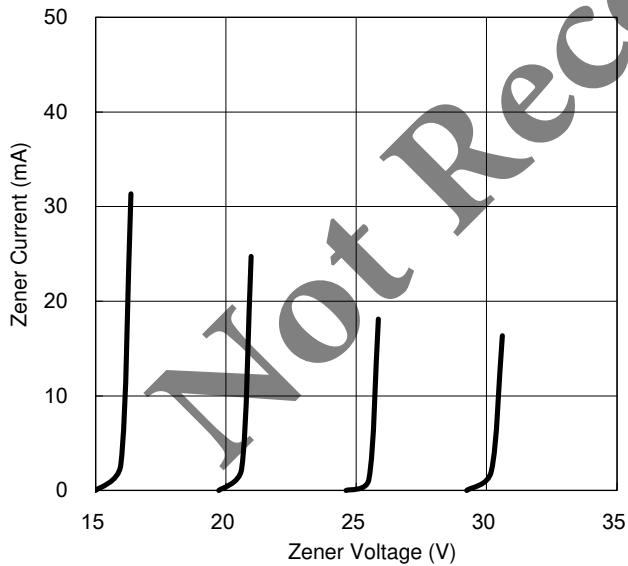
**Typical Forward Characteristics**



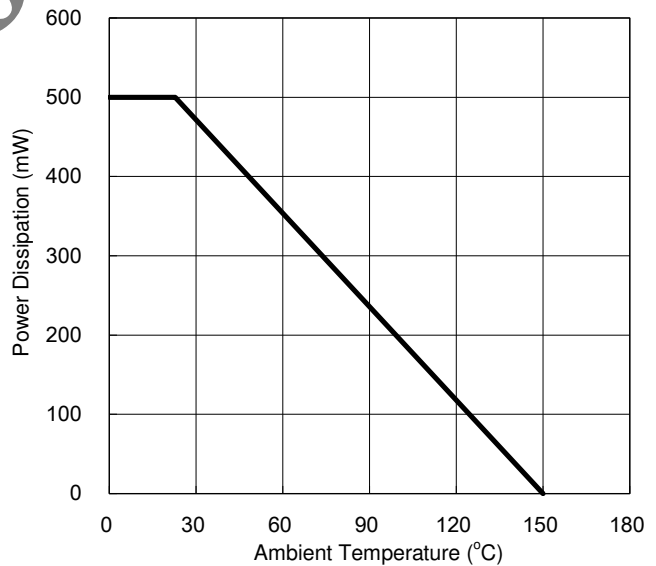
**Zener Breakdown Characteristics**



**Zener Breakdown**



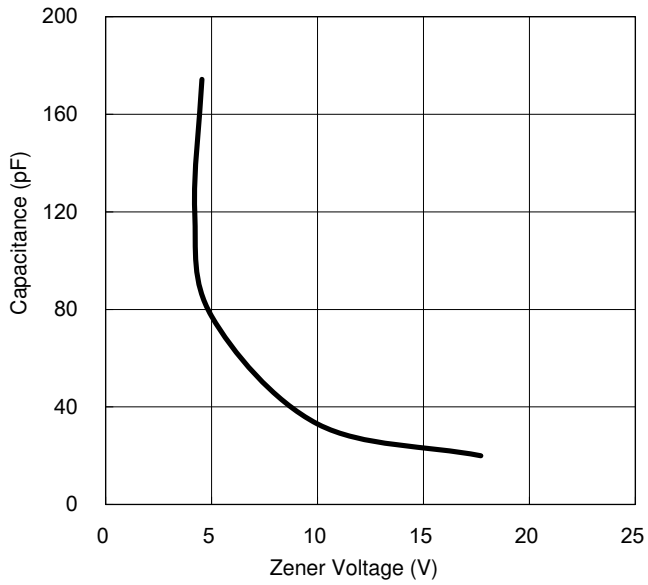
**Admissible Power Dissipation Curve**



**CHARACTERISTICS CURVES**

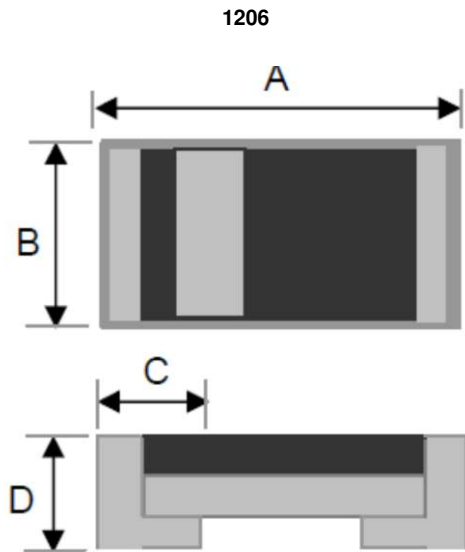
(T<sub>A</sub> = 25°C unless otherwise noted)

**Typical Capacitance**



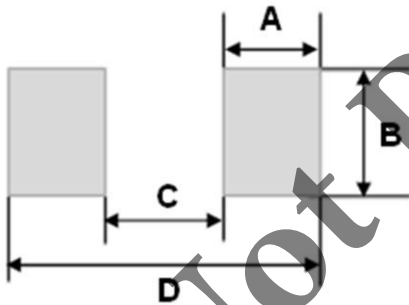
**Not Recommended**

**PACKAGE OUTLINE DIMENSION**



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	3.00	3.40	0.118	0.134
B	1.30	1.70	0.051	0.067
C	0.35	0.75	0.014	0.030
D	0.65	0.85	0.026	0.033

**SUGGEST PAD LAYOUT**



DIM.	Unit(mm)	Unit(inch)
	Typ	Typ
A	1.20	0.047
B	1.70	0.067
C	2.20	0.087
D	4.60	0.181

**Not Recommended**

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