

## 500mW 5% Zener Diodes

### FEATURES

- Wide zener voltage range selection: 2.4V to 36V
- VZ Tolerance Selection of  $\pm 5\%$
- 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	
		$V_Z @ I_{ZT}$			$I_{ZT}$	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	$I_{ZK}$	$V_Z @ I_{ZT}$	
		V			mA	$\Omega$	$\Omega$	mA	$\mu\text{A}$	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 (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>
BZS55CXX (Note 1&2)	RX	G	1206	5K / 7" Reel
	RA			10K / 13" Reel

**Notes:**

1. "xxx" defines voltage from 2.4V (BZS55C2V4) to 36V (BZS55C36)
2. Whole series with green compound

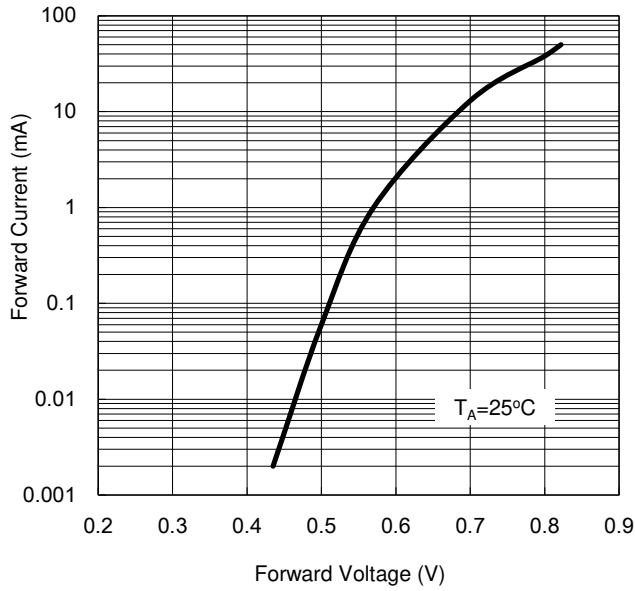
**EXAMPLE**

<b>EXAMPLE P/N</b>	<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>DESCRIPTION</b>
BZS55C36 RXG	BZS55C36	RX	G	Green compound

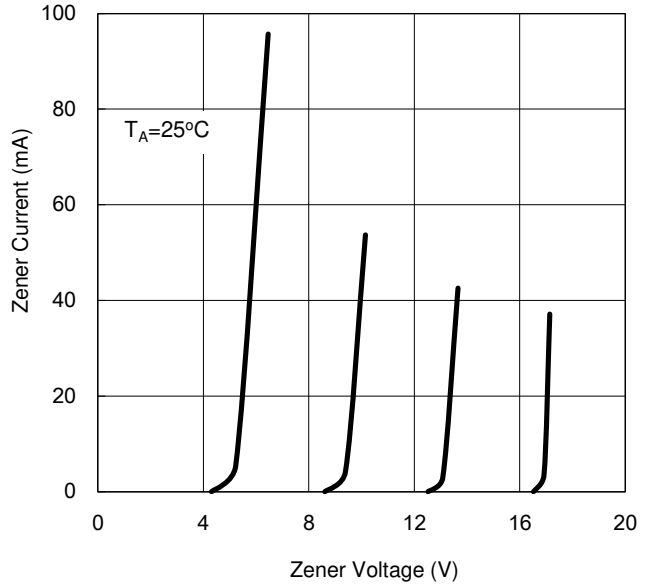
**CHARACTERISTICS CURVES**

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

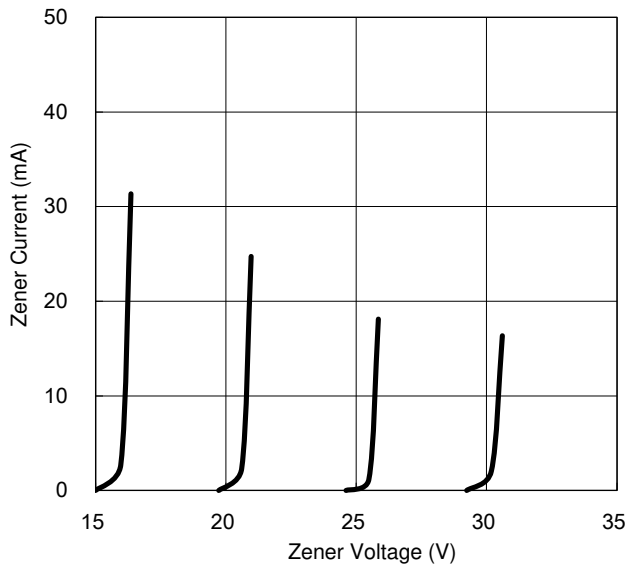
**Typical Forward Characteristics**



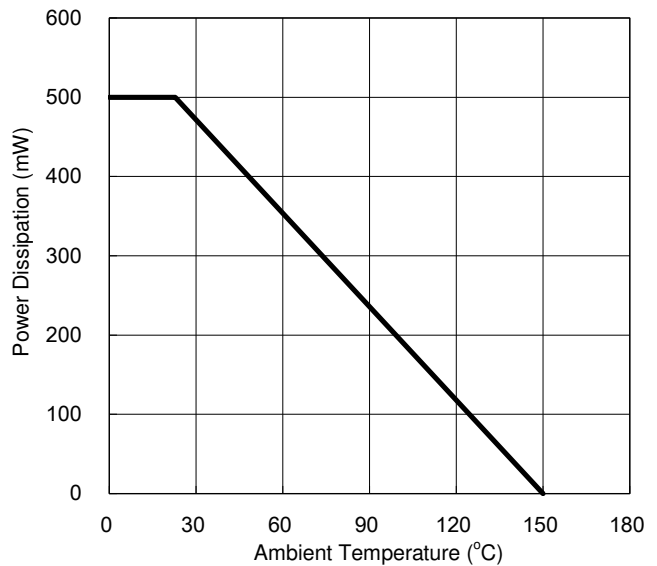
**Zener Breakdown Characteristics**



**Zener Breakdown**



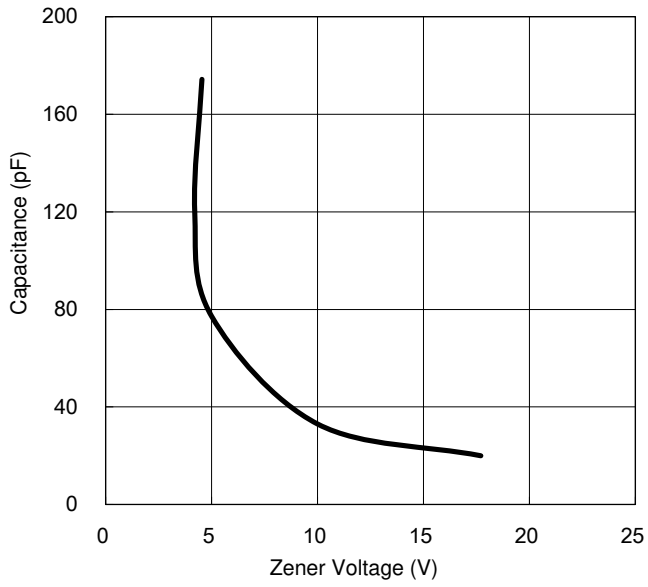
**Admissible Power Dissipation Curve**



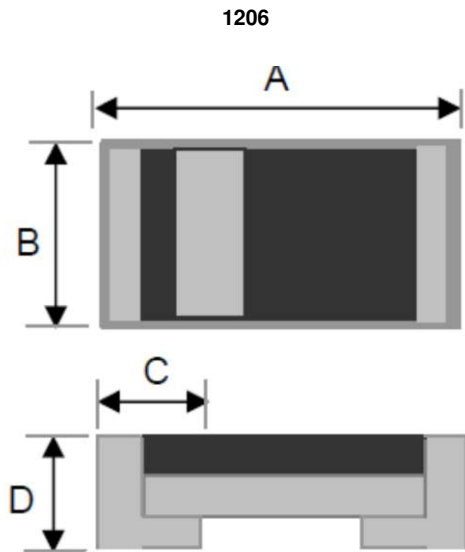
**CHARACTERISTICS CURVES**

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

**Typical Capacitance**

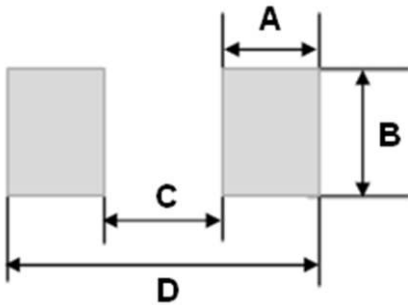


**PACKAGE OUTLINE DIMENSION**



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

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