

## 500mW 5% Zener Diodes

### FEATURES

- Wide zener voltage range selection: 2.0V to 75V
- VZ Tolerance Selection of  $\pm 5\%$
- Hermetically sealed glass
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

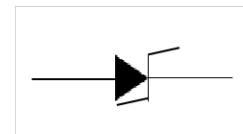
### APPLICATIONS

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

### MECHANICAL DATA

- Case: DO-35
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Polarity: Indicated by cathode band
- Weight:  $109 \pm 4$  mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$V_Z$	2.0-75	V
Test current $I_{ZT}$	2.5-5	mA
$P_{tot}$	500	mW
$V_F$ at $I_F=100mA$	1	V
$T_J$ MAX	175	$^{\circ}C$
Package	DO-35	
Configuration	Single dice	



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

PARAMETER	SYMBOL	PART NUMBER	UNIT
Forward voltage @ $I_F=100mA$	$V_F$	1	V
Total power dissipation	$P_{tot}$	500	mW
Junction temperature range	$T_J$	-55 ~ 175	$^{\circ}C$
Storage temperature range	$T_{STG}$	-55 ~ 175	$^{\circ}C$

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

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

**ORDERING INFORMATION**

<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>PACKAGE</b>	<b>PACKING</b>
BZX55CXXX (Note 1&2)	R0	G	DO-35	10K / 14" Reel
	A0			5K / Box (Ammo)

**Notes:**

1. "xxx" defines voltage from 2.0V (BZX55C2V0) to 75V (BZX55C75)
2. Whole series with green compound

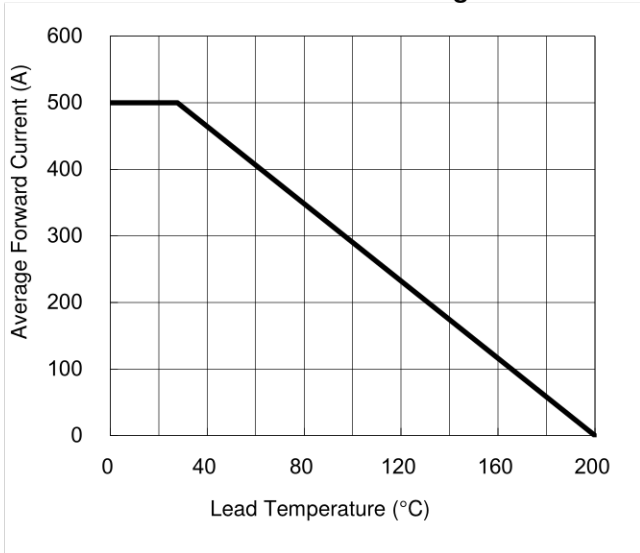
**EXAMPLE**

<b>EXAMPLE P/N</b>	<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>DESCRIPTION</b>
BZX55C75 R0G	BZX55C75	R0	G	Green compound

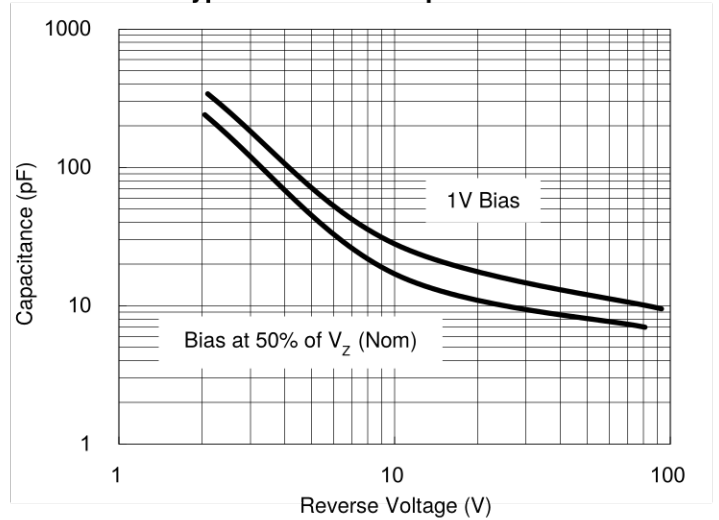
**CHARACTERISTICS CURVES**

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

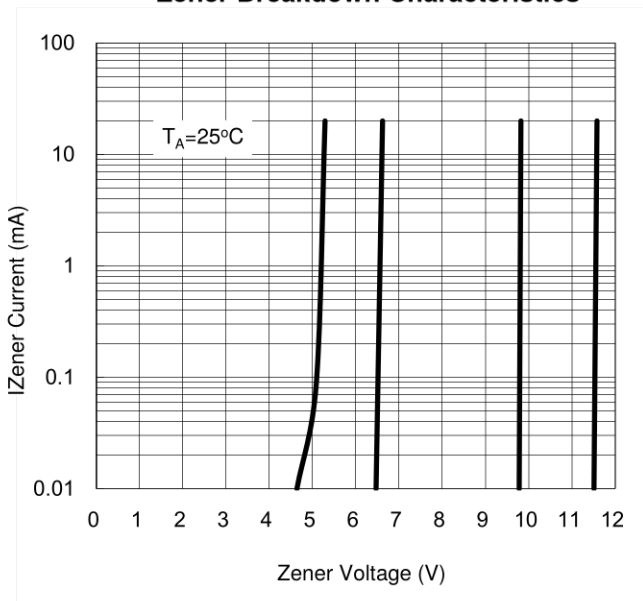
**Forward Current Derating Curve**



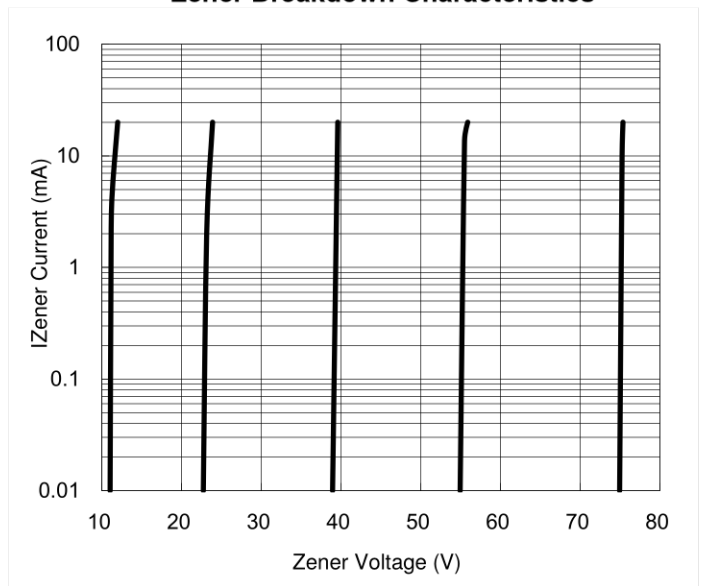
**Typical Junction Capacitance**



**Zener Breakdown Characteristics**



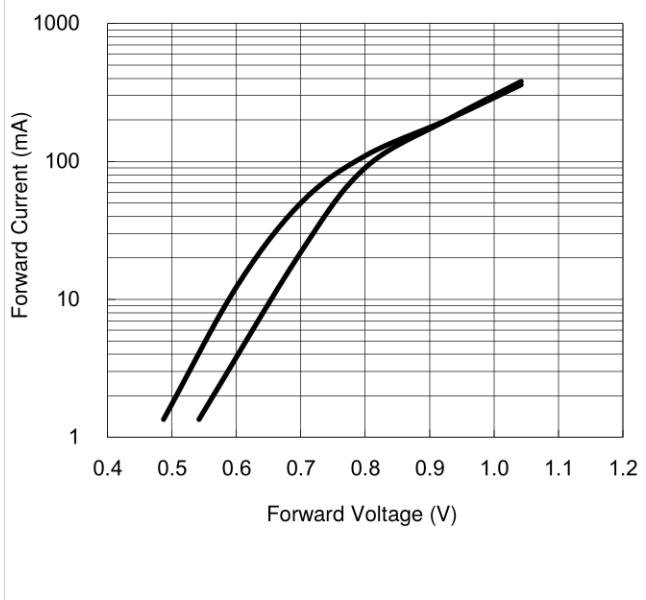
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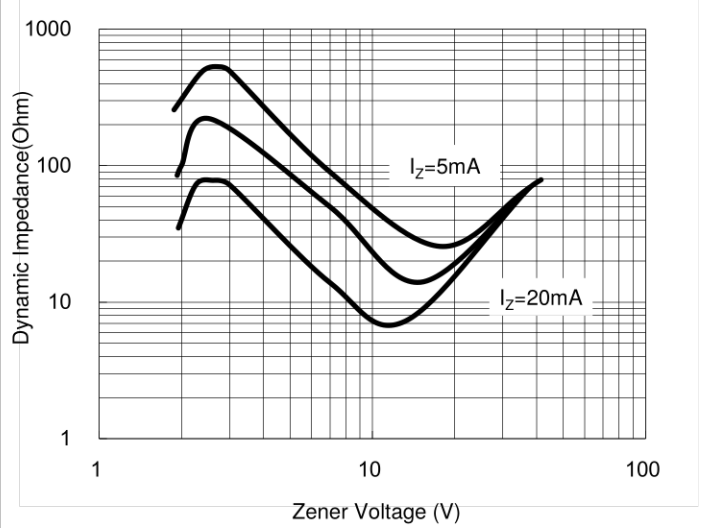
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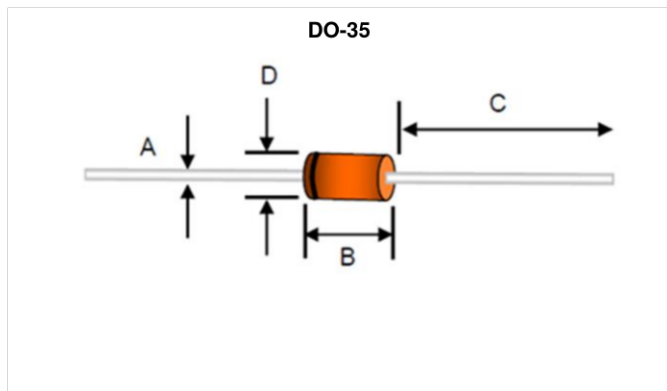
**Typical Forward Characteristics**



**Effect of Zener Voltage on Impedance**

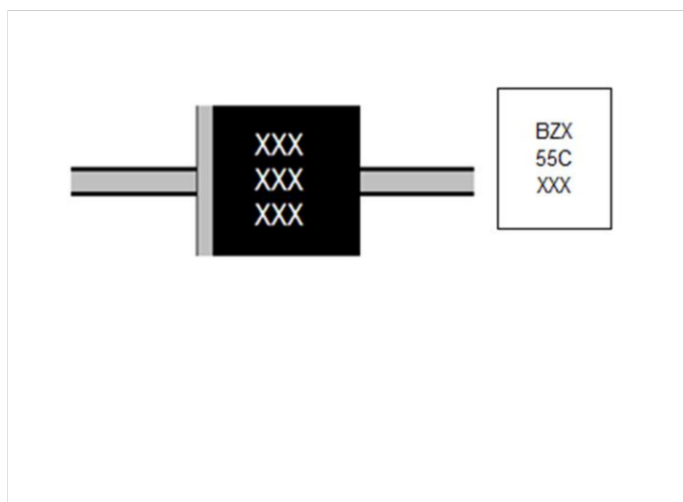


**PACKAGE OUTLINE DIMENSION**



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	0.34	0.60	0.013	0.024
B	2.90	5.08	0.114	0.200
C	25.40	38.10	1.000	1.500
D	1.30	2.28	0.051	0.090

**MARKING DIAGRAM**



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