

Small Signal Product

**2% Tolerance Zener Diode**

FEATURES

- Wide zener voltage range selection: 2.4V to 75V
- VZ Tolerance Selection of  $\pm 2\%$
- Hermetically sealed glass
- Moisture sensitivity level 1
- Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- Pb free and RoHS compliant
- All external surfaces are corrosion resistant and leads are readily solderable
- ESD rating 15KV per human body model
- Packing code with suffix "G" means Halogen-free



**DO-35**

Hermetically Sealed Glass



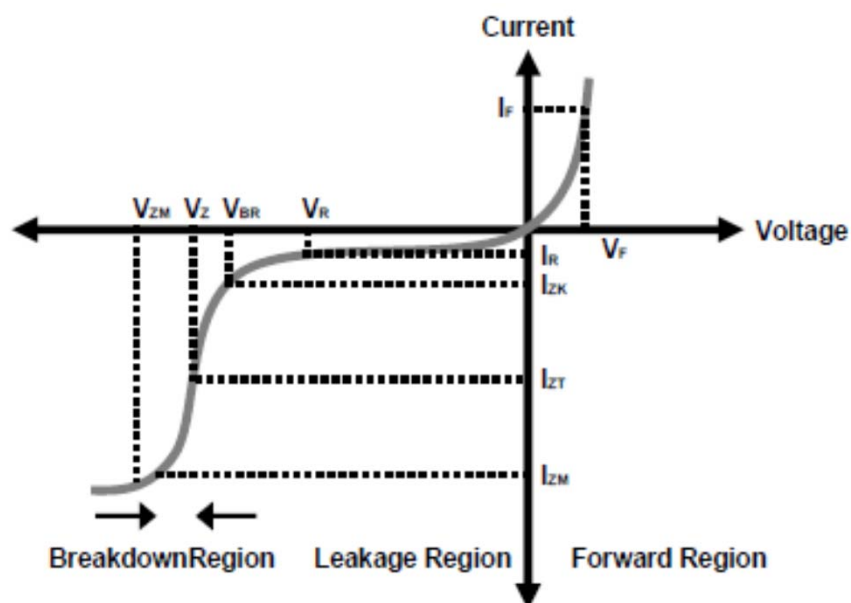
MECHANICAL DATA

- Case: DO-35
- High temperature soldering guaranteed: 260°C/10s
- Polarity: Indicated by black cathode band
- Weight: 109  $\pm$  4 mg

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Power Dissipation	P <sub>D</sub>	500	mW
Forward Voltage	I <sub>F</sub> = 10 mA	1	V
Thermal Resistance (Junction to Ambient)	(Note 1) R <sub>θJA</sub>	240	°C/W
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	- 65 to +200	°C

Note1: Valid provided that electrodes are kept at ambient temperature, and mount on PC board 50mm x 50mm x1.6mm

Zener I vs. V Characteristics



- V<sub>BR</sub> : Voltage at I<sub>ZK</sub>
- I<sub>ZK</sub> : Test current for voltage V<sub>BR</sub>
- Z<sub>ZK</sub> : Dynamic impedance at I<sub>ZK</sub>
- I<sub>ZT</sub> : Test current for voltage V<sub>Z</sub>
- V<sub>Z</sub> : Voltage at current I<sub>ZT</sub>
- Z<sub>ZT</sub> : Dynamic impedance at I<sub>ZT</sub>
- I<sub>ZM</sub> : Maximum steady state current
- V<sub>ZM</sub> : Voltage at I<sub>ZM</sub>

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

Part Number	$V_Z @ I_{ZT}$ (Volt)			$I_{ZT}$ (mA)	$Z_{ZT} @ I_{ZT}$ ( $\Omega$ ) Max	$I_{ZK}$ (mA)	$Z_{ZK} @ I_{ZK}$ ( $\Omega$ ) Max	$I_R @ V_R$ ( $\mu\text{A}$ ) Max	$V_R$ (V)
	Nom	Min	Max						
BZX55B2V4	2.4	2.35	2.45	5.0	85	1.0	600	50	1.0
BZX55B2V7	2.7	2.65	2.75	5.0	85	1.0	600	10	1.0
BZX55B3V0	3.0	2.94	3.06	5.0	85	1.0	600	4.0	1.0
BZX55B3V3	3.3	3.23	3.37	5.0	85	1.0	600	2.0	1.0
BZX55B3V6	3.6	3.53	3.67	5.0	85	1.0	600	2.0	1.0
BZX55B3V9	3.9	3.82	3.98	5.0	85	1.0	600	2.0	1.0
BZX55B4V3	4.3	4.21	4.39	5.0	75	1.0	600	1.0	1.0
BZX55B4V7	4.7	4.61	4.79	5.0	60	1.0	600	0.5	1.0
BZX55B5V1	5.1	5.00	5.20	5.0	35	1.0	550	0.1	1.0
BZX55B5V6	5.6	5.49	5.71	5.0	25	1.0	450	0.1	1.0
BZX55B6V2	6.2	6.08	6.32	5.0	10	1.0	200	0.1	2.0
BZX55B6V8	6.8	6.66	6.94	5.0	8	1.0	150	0.1	3.0
BZX55B7V5	7.5	7.35	7.65	5.0	7	1.0	50	0.1	5.0
BZX55B8V2	8.2	8.04	8.36	5.0	7	1.0	50	0.1	6.2
BZX55B9V1	9.1	8.92	9.28	5.0	10	1.0	50	0.1	6.8
BZX55B10	10	9.80	10.20	5.0	15	1.0	70	0.1	7.5
BZX55B11	11	10.78	11.22	5.0	20	1.0	70	0.1	8.2
BZX55B12	12	11.76	12.24	5.0	20	1.0	90	0.1	9.1
BZX55B13	13	12.74	13.26	5.0	26	1.0	110	0.1	10
BZX55B15	15	14.70	15.30	5.0	30	1.0	110	0.1	11
BZX55B16	16	15.68	16.32	5.0	40	1.0	170	0.1	12
BZX55B18	18	17.64	18.36	5.0	50	1.0	170	0.1	14
BZX55B20	20	19.60	20.40	5.0	55	1.0	220	0.1	15
BZX55B22	22	21.56	22.44	5.0	55	1.0	220	0.1	17
BZX55B24	24	23.52	24.48	5.0	80	1.0	220	0.1	18
BZX55B27	27	26.46	27.54	5.0	80	1.0	220	0.1	20
BZX55B30	30	29.40	30.60	5.0	80	1.0	220	0.1	22
BZX55B33	33	32.34	33.66	5.0	80	1.0	220	0.1	24
BZX55B36	36	35.28	36.72	5.0	80	1.0	220	0.1	27
BZX55B39	39	38.22	39.78	2.5	90	0.5	500	0.1	28
BZX55B43	43	42.14	43.86	2.5	90	0.5	600	0.1	32
BZX55B47	47	46.06	47.94	2.5	110	0.5	700	0.1	35
BZX55B51	51	49.98	52.02	2.5	125	0.5	700	0.1	38
BZX55B56	56	54.88	57.12	2.5	135	0.5	1000	0.1	42
BZX55B62	62	60.76	63.24	2.5	150	0.5	1000	0.1	47
BZX55B68	68	66.64	69.36	2.5	160	0.5	1000	0.1	51
BZX55B75	75	73.50	76.50	2.5	170	0.5	1000	0.1	56

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  $\pm 2\%$

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 ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed to  $I_{ZT}$  or  $I_{ZK}$ .

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RATINGS AND CHARACTERISTICS CURVES

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

Fig. 1 Typical Forward Characteristics

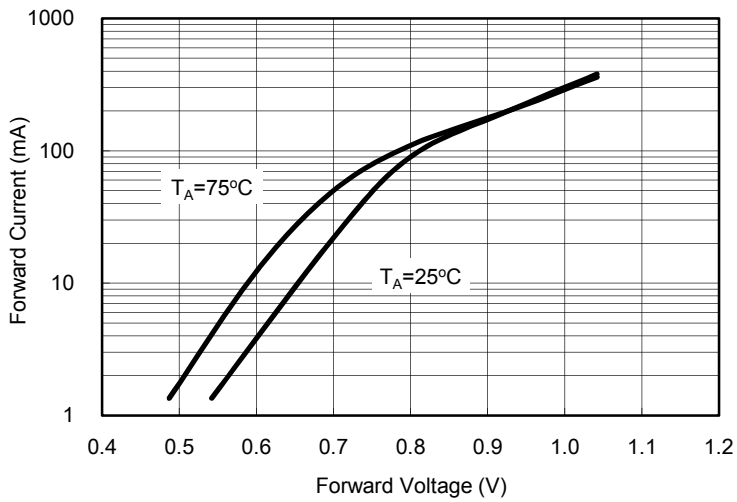


Fig. 2 Zener Breakdown Characteristics

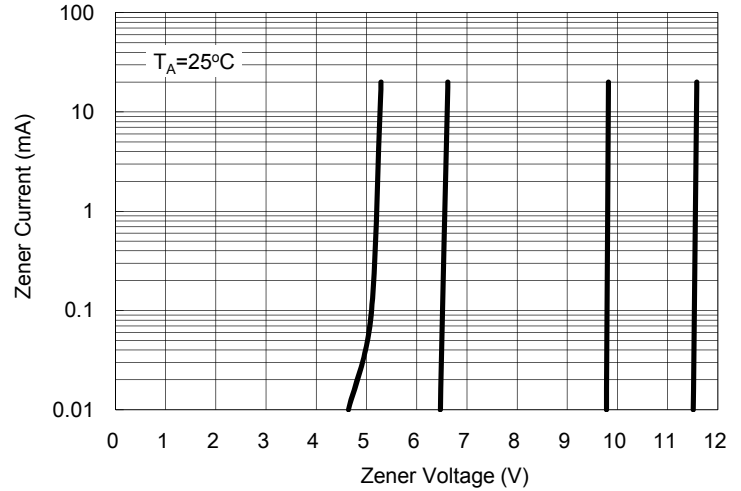


Fig. 3 Zener Breakdown Characteristics

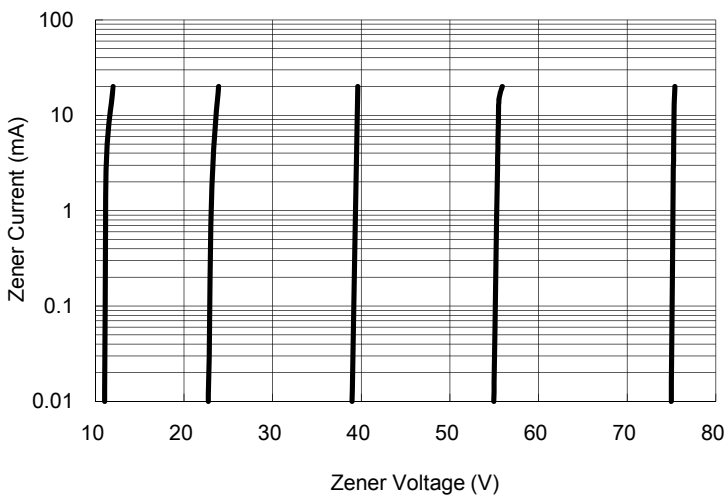


Fig. 4 Admissible Power Dissipation curve

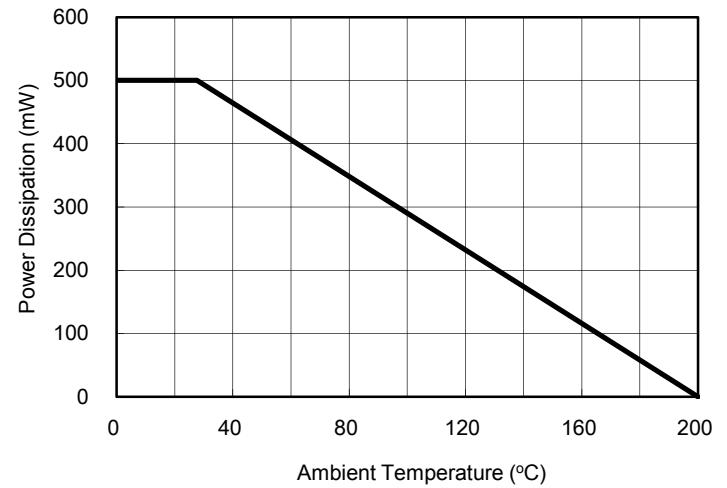


Fig. 5 Typical Capacitance

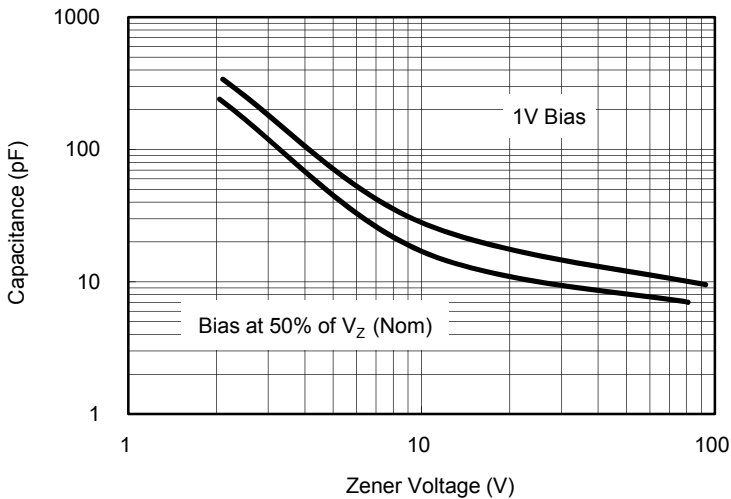
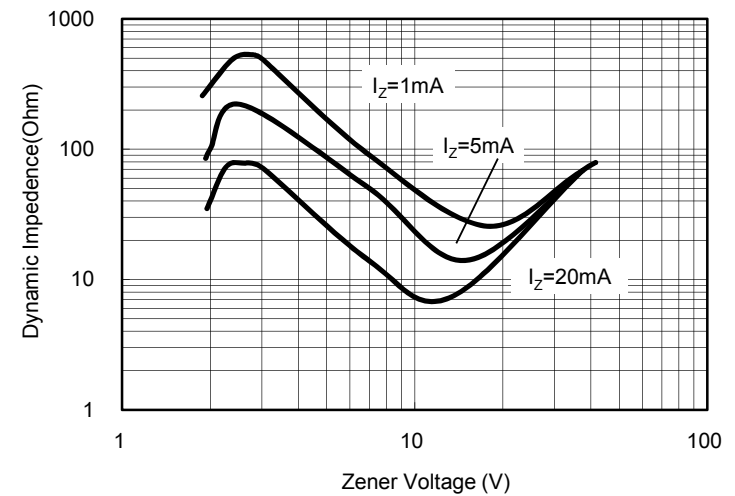


Fig. 6 Effect of Zener Voltage on Impedance



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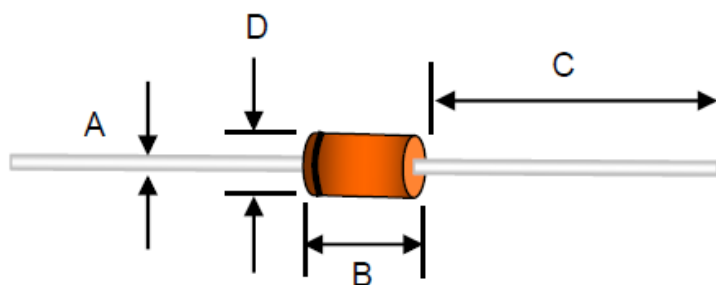
ORDERING INFORMATION					
PART NO.	PART NO. SUFFIX (Note 2)	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
BZX55Bxxx (Note1)	-xx	R0	G	DO-35	10K / 14" Reel
		A0			5K / Box (Ammo)

Note 1: "xxx" defines voltage from 2.4V (BZX55B2V4) to 75V (BZX55B75)

Note 2: Part No. Suffix „-xx “ would be used for special requirement

EXAMPLE					
PREFERRED PART NO.	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
BZX55B75 R0G	BZX55B75		R0	G	Multiple manufacture source Halogen free
BZX55B75-L0 R0G	BZX55B75	L0	R0	G	Define manufacture source Halogen free
BZX55B75-B0 R0G	BZX55B75	B0	R0	G	Define manufacture source Halogen free

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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