

**Small Signal Product**

**5% Tolerance Zener Diode**

**FEATURES**

- Wide zener voltage range selection: 2.0V to 75V
- VZ Tolerance selection of ±5%
- Designed for through-hole device type mounting
- Hermetically sealed glass
- Pb free and RoHS compliant
- High reliability glass passivation insuring parameter stability and protection against junction contamination



**DO-35**

Hermetically Sealed Glass



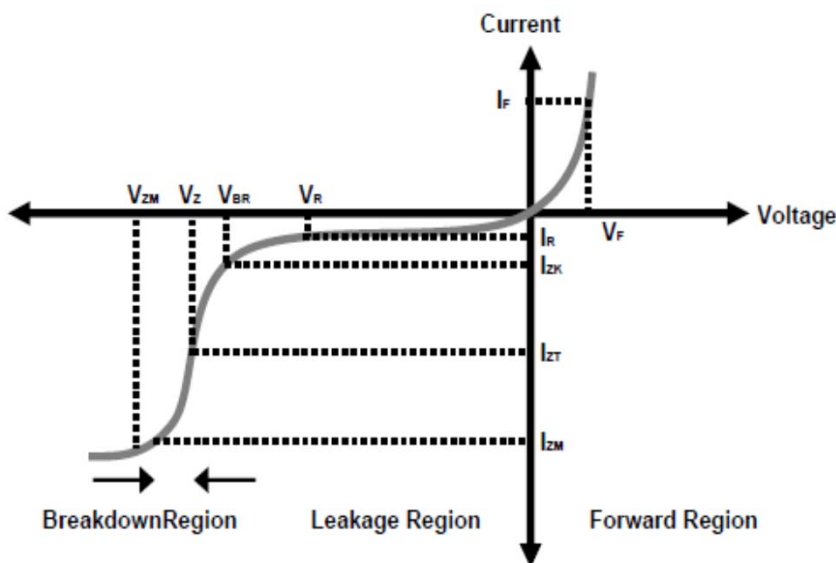
**MECHANICAL DATA**

- Case: DO-35
- High temperature soldering guaranteed: 260°C/10s
- Polarity: Cathode indicated by polarity band
- Weight : 109 ±4 mg (approximately)

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	V <sub>F</sub>	1.5	V
Thermal Resistance (Junction to Ambient) (Note 1)	R <sub>θJA</sub>	300	°C/W
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	- 65 to +175	°C

Note 1: Valid provided that electrodes are kept at ambient temperature .

**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	Marking code	$V_Z @ I_{ZT}$ (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)
		Min	Nom	Max						
BZX79C2V0	BZX79C2V0	1.88	2.0	2.12	5	100	1.0	600	150	1.0
BZX79C2V2	BZX79C2V2	2.08	2.2	2.33	5	100	1.0	600	150	1.0
BZX79C2V4	BZX79C2V4	2.28	2.4	2.56	5	100	1.0	600	100	1.0
BZX79C2V7	BZX79C2V7	2.51	2.7	2.89	5	100	1.0	600	75	1.0
BZX79C3V0	BZX79C3V0	2.8	3.0	3.2	5	95	1.0	600	50	1.0
BZX79C3V3	BZX79C3V3	3.1	3.3	3.5	5	95	1.0	600	25	1.0
BZX79C3V6	BZX79C3V6	3.4	3.6	3.8	5	90	1.0	600	15	1.0
BZX79C3V9	BZX79C3V9	3.7	3.9	4.1	5	90	1.0	600	10	1.0
BZX79C4V3	BZX79C4V3	4.0	4.3	4.6	5	90	1.0	600	5	1.0
BZX79C4V7	BZX79C4V7	4.4	4.7	5.0	5	80	1.0	500	3	2.0
BZX79C5V1	BZX79C5V1	4.8	5.1	5.4	5	60	1.0	480	2	2.0
BZX79C5V6	BZX79C5V6	5.2	5.6	6.0	5	40	1.0	400	1	2.0
BZX79C6V2	BZX79C6V2	5.8	6.2	6.6	5	10	1.0	150	3	4.0
BZX79C6V8	BZX79C6V8	6.4	6.8	7.2	5	15	1.0	80	2	4.0
BZX79C7V5	BZX79C7V5	7.0	7.5	7.9	5	15	1.0	80	1	5.0
BZX79C8V2	BZX79C8V2	7.7	8.2	8.7	5	15	1.0	80	0.7	5.0
BZX79C9V1	BZX79C9V1	8.5	9.1	9.6	5	15	1.0	100	0.5	6.0
BZX79C10	BZX79C10	9.4	10	10.6	5	20	1.0	150	0.2	7.0
BZX79C11	BZX79C11	10.4	11	11.6	5	20	1.0	150	0.1	8.0
BZX79C12	BZX79C12	11.4	12	12.7	5	25	1.0	150	0.1	8.0
BZX79C13	BZX79C13	12.4	13	14.1	5	30	1.0	170	0.1	8
BZX79C15	BZX79C15	13.8	15	15.6	5	30	1.0	200	0.05	10.5
BZX79C16	BZX79C16	15.3	16	17.1	5	40	1.0	200	0.05	11.2
BZX79C18	BZX79C18	16.8	18	19.1	5	45	1.0	225	0.05	12.6
BZX79C20	BZX79C20	18.8	20	21.2	5	55	1.0	225	0.05	14.0
BZX79C22	BZX79C22	20.8	22	23.3	5	55	1.0	250	0.05	15.4
BZX79C24	BZX79C24	22.8	24	25.6	5	70	1.0	250	0.05	16.8
BZX79C27	BZX79C27	25.1	27	28.9	2	80	0.5	300	0.05	18.9
BZX79C30	BZX79C30	28.0	30	32.0	2	80	0.5	300	0.05	21.0
BZX79C33	BZX79C33	31.0	33	35.0	2	80	0.5	325	0.05	23.1
BZX79C36	BZX79C36	34.0	36	38.0	2	90	0.5	350	0.05	25.2
BZX79C39	BZX79C39	37.0	39	41.0	2	130	0.5	350	0.05	27.3
BZX79C43	BZX79C43	40.0	43	46.0	2	150	0.5	375	0.05	30.1
BZX79C47	BZX79C47	44.0	47	50.0	2	170	0.5	375	0.05	32.9
BZX79C51	BZX79C51	48.0	51	54.0	2	180	0.5	400	0.05	35.7
BZX79C56	BZX79C56	52.0	56	60.0	2	200	0.5	425	0.05	39.2
BZX79C62	BZX79C62	58.0	62	66.0	2.5	215	0.5	1000	0.05	43.4
BZX79C68	BZX79C68	64.0	68	72.0	2.5	240	0.5	1000	0.05	47.6
BZX79C75	BZX79C75	70.0	75	80.0	2.5	255	0.5	1000	0.05	52.5

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  $\pm 5\%$ .

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

(TA=25°C unless otherwise noted)

Fig. 1 Power Dissipation VS. Ambient Temperature

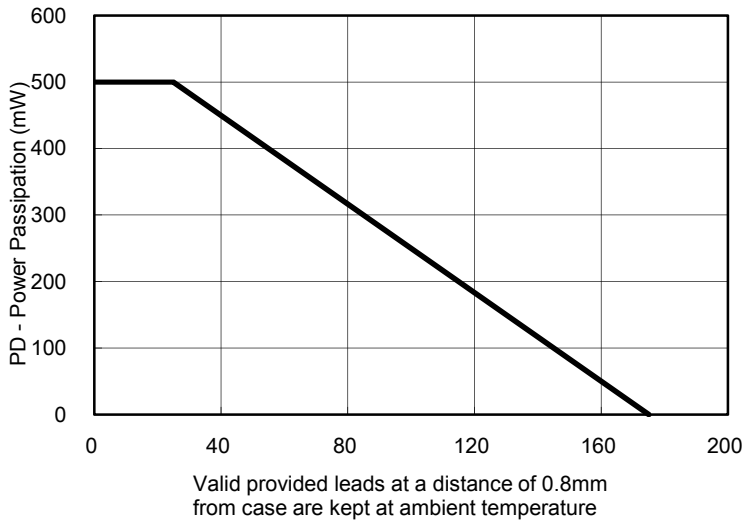


Fig. 2 Total Capacitance

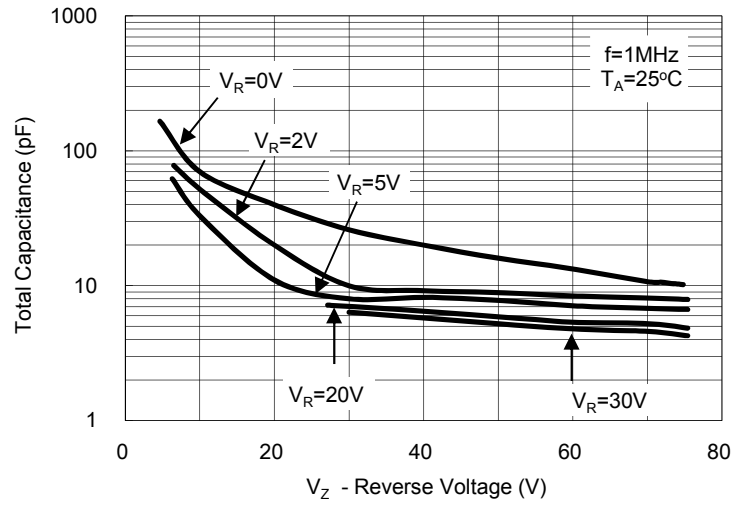


Fig. 3 Differential Impedance VS. Zener Voltage

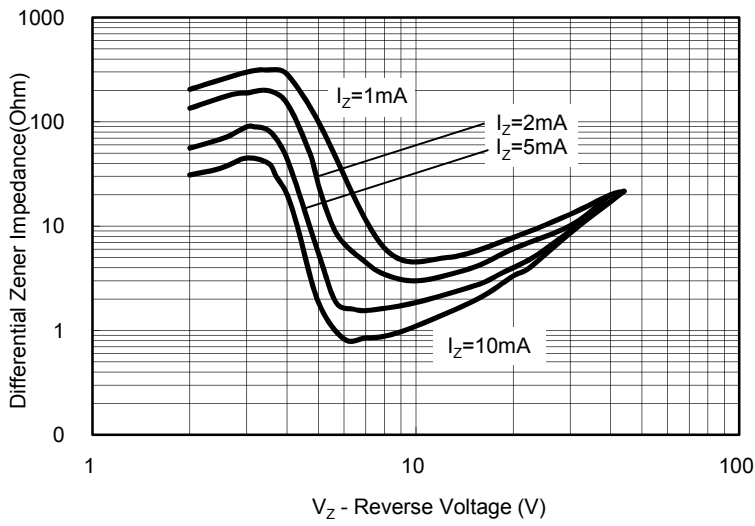


Fig. 4 Forward Current VS. Forward Voltage

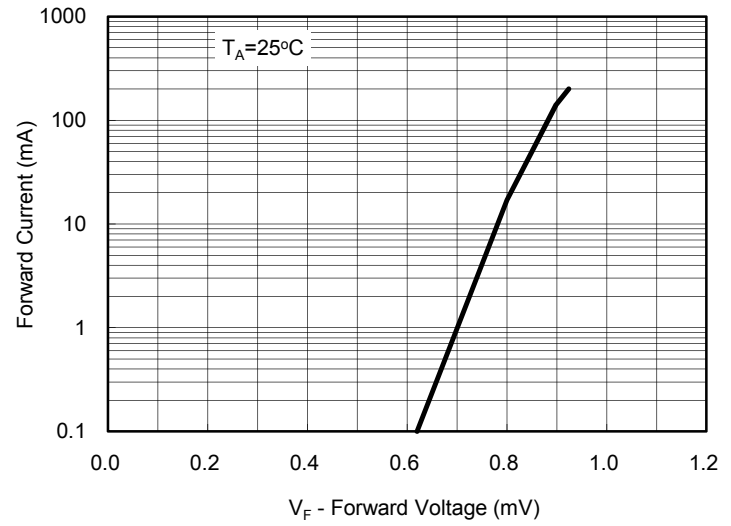


Fig. 5 Reverse Current VS. Reverse Voltage

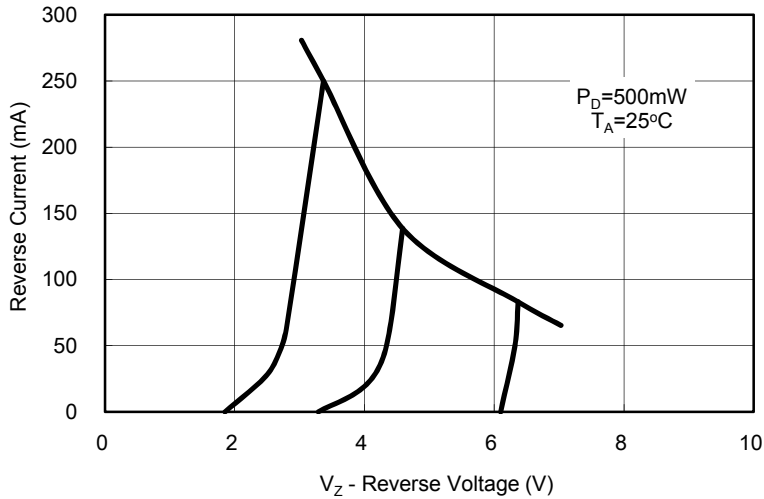
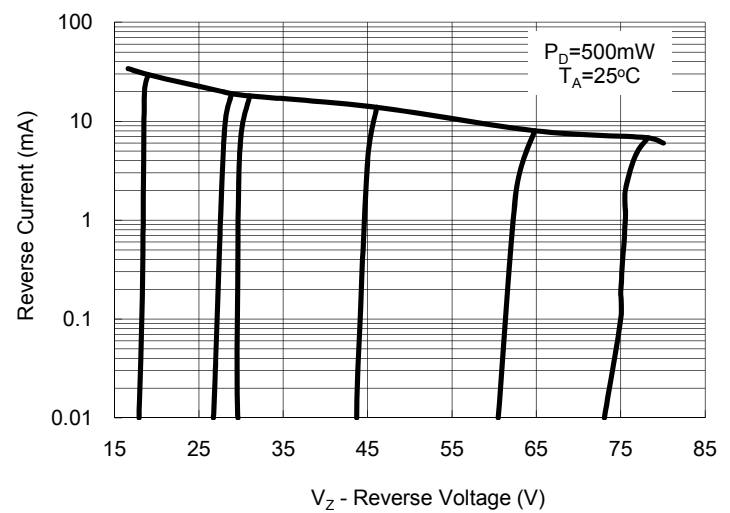


Fig. 6 Reverse Current VS. Reverse Voltage



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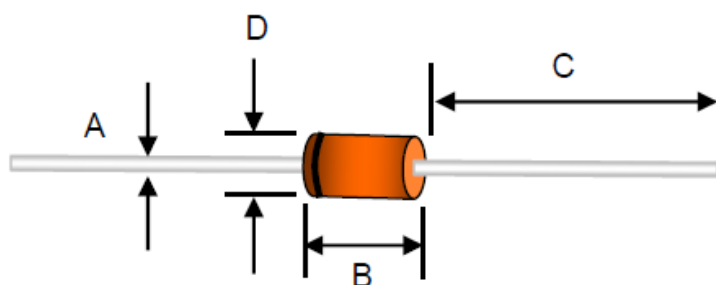
ORDERING INFORMATION					
PART NO.	MANUFACTURE CODE	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING
BZX79Cxxx (Note1)	(Note 2)	R0	G	DO-35	10K / 14" Reel
		A0			5K / Box (Ammo)

Note 1: "xxx" defines voltage from 2.0V (BZX79C2V0) to 75V (BZX79C75)

Note 2: Manufacture special control, if empty means no special control requirement.

EXAMPLE					
PREFERRED P/N	PART NO.	MANUFACTURE CODE	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
BZX79C75 R0G	BZX79C75		R0	G	Green compound
BZX79C75-L0 R0G	BZX79C75	L0	R0	G	Green compound

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

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