

Small Signal Product

**Features**

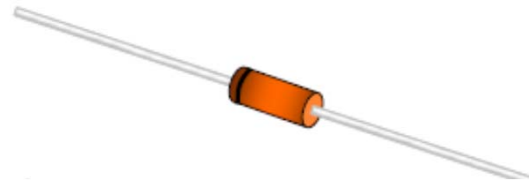
- ◇ Wide zener voltage range selection : 2.0V to 75V
- ◇  $V_Z$  Tolerance selection of  $\pm 5\%$
- ◇ Designed for through-hole device type mounting
- ◇ Hermetically sealed glass
- ◇ Pb free version and RoHS compliant
- ◇ High reliability glass passivation insuring parameter stability and protection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

**Mechanical Data**

- ◇ Case : DO-35 Package (SOD-27)
- ◇ Lead : Axial leads, solderable per MIL-STD-202, method 2025
- ◇ High temperature soldering guaranteed : 260°C/10s
- ◇ Polarity : Indicated by cathode band
- ◇ Weight : 109  $\pm$ 4 mg (approximately)

**DO-35 Axial Lead**

Hermetically Sealed Glass



**Maximum Ratings and Electrical Characteristics**

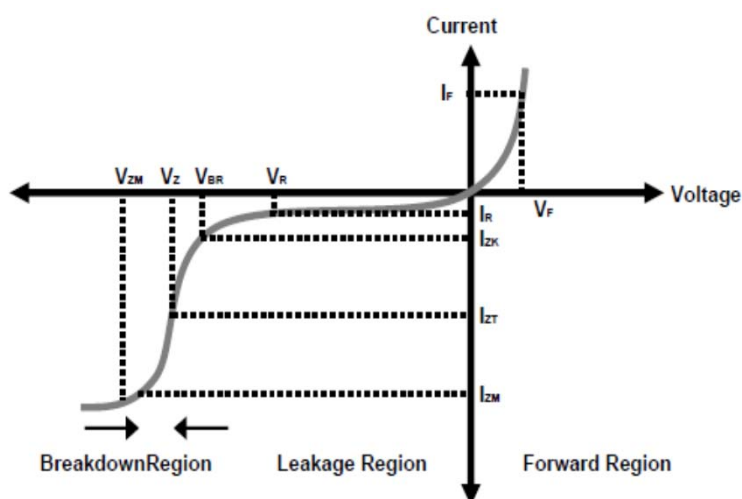
Rating at 25 °C ambient temperature unless otherwise specified.

**Maximum Ratings**

Parameter	Symbol	Value	Unit
Power Dissipation	$P_D$	500	mW
Maximum Forward Voltage @ $I_F = 100$ mA	$V_F$	1.5	V
Thermal Resistance (Junction to Ambient) (Note 1)	$R_{\theta JA}$	300	°C/W
Storage Temperature Range	$T_J, T_{STG}$	-65 to +175	°C

Notes: Valid provided that electrodes are kept at ambient temperature .

**Zener I vs. V Characteristics**



- $V_{BR}$  : Voltage at  $I_{ZK}$
- $I_{ZK}$  : Test current for voltage  $V_{BR}$
- $Z_{ZK}$  : Dynamic impedance at  $I_{ZK}$
- $I_{ZT}$  : Test current for voltage  $V_Z$
- $V_Z$  : Voltage at current  $I_{ZT}$
- $Z_{ZT}$  : Dynamic impedance at  $I_{ZT}$
- $I_{ZM}$  : Maximum steady state current
- $V_{ZM}$  : Voltage at  $I_{ZM}$

## Small Signal Product

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

$V_F$  Forward Voltage = 1.5V Maximum @  $I_F = 100$  mA for all part numbers

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.

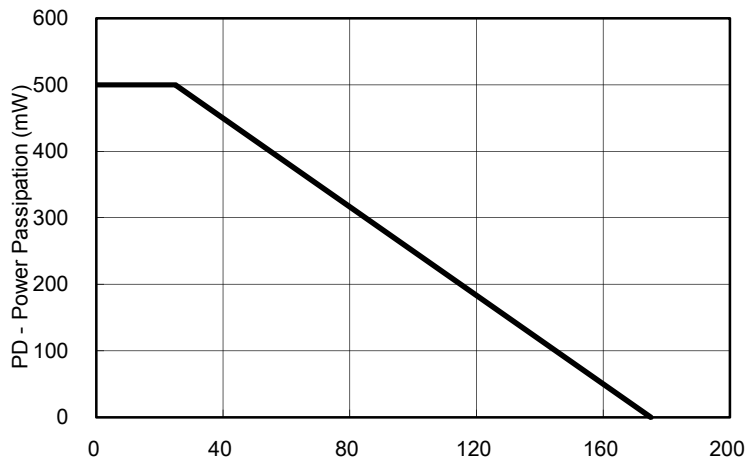
2. The device numbers listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .

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  $I_{ZK}$ .

RATINGS AND CHARACTERISTICS CURVES

Fig. 1 Power Dissipation VS. Ambient Temperature



Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature

Fig. 2 Total Capacitance

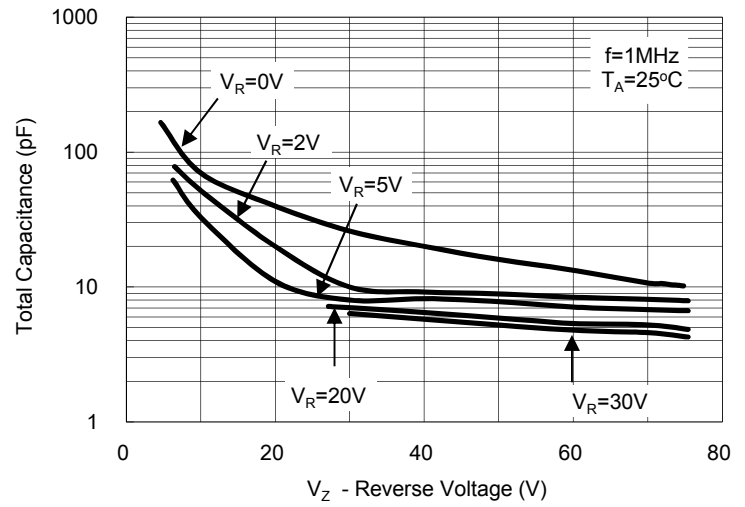


Fig. 3 Differential Impedance VS. Zener Voltage

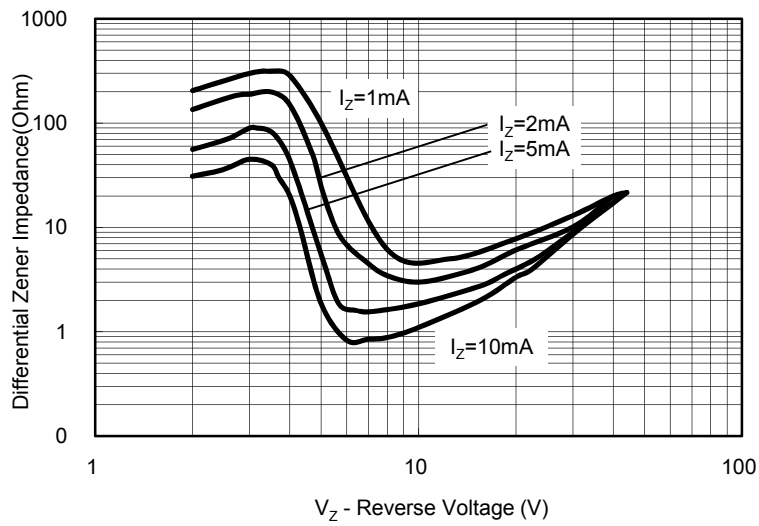


Fig. 4 Forward Current VS. Forward Voltage

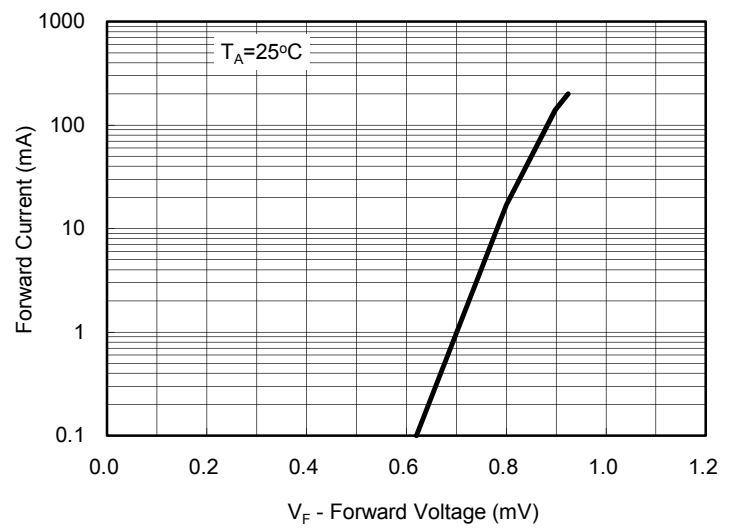


Fig. 5 Reverse Current VS. Reverse Voltage

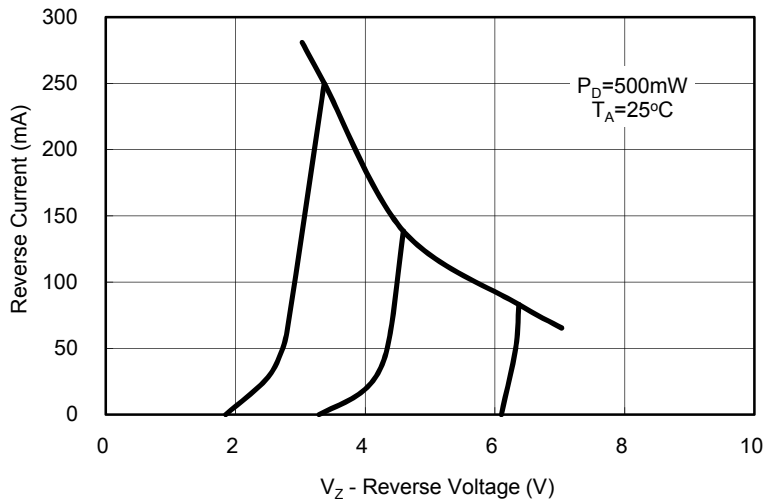
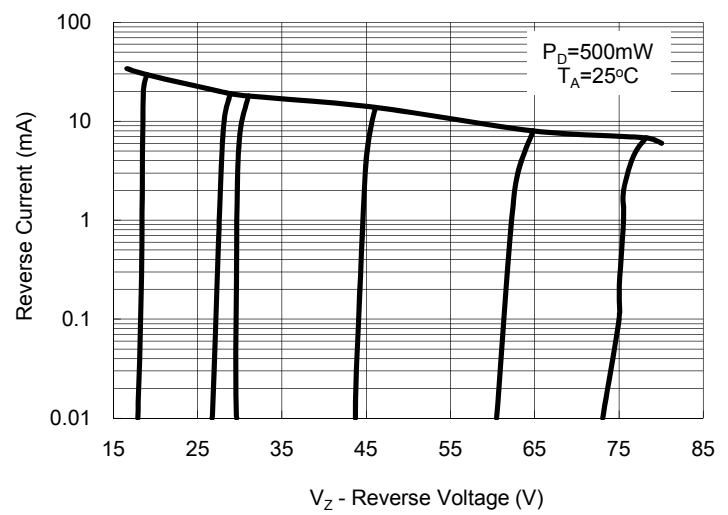


Fig. 6 Reverse Current VS. Reverse Voltage



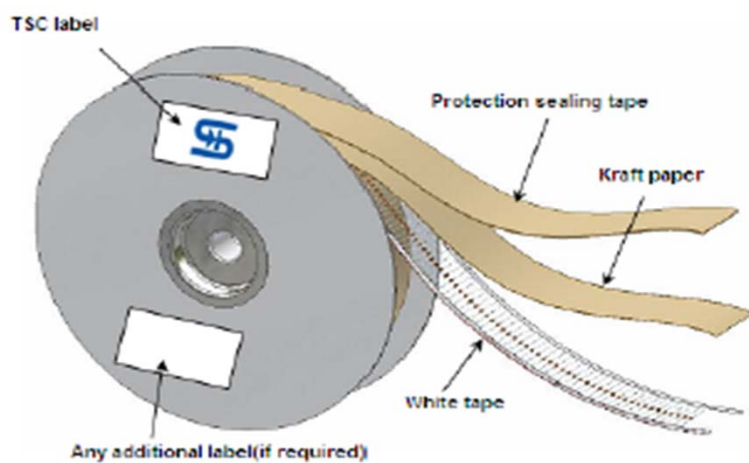
### Ordering information (Detail, example)

Part No.	Package	Packing	Packing code	Packing code (Green)	Manufacture code
BZX79CXX	DO-35	5K / Box (Ammo)	A0	A0G	(Note 2)
		10K / 14" Reel	R0	R0G	
BZX79C2V0	DO-35	5K / Box (Ammo)	A0	A0G	
BZX79C2V0	DO-35	5K / Box (Ammo)	A0	A0G	L0

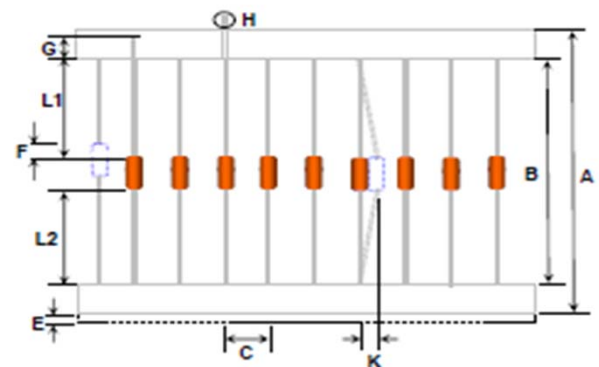
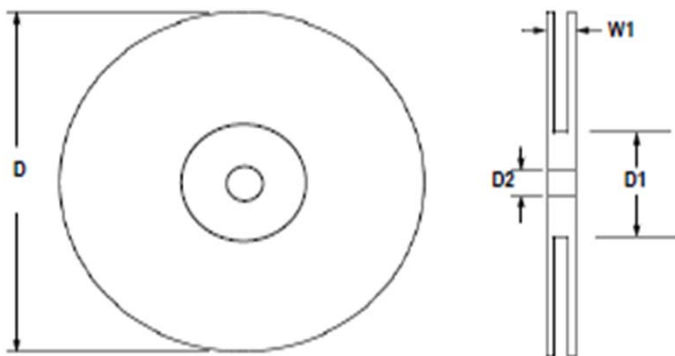
Note 1 : "xx" is Device Code from "2V0" thru "75".

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

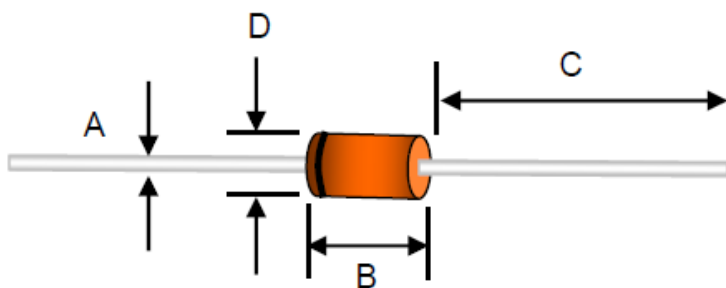
### Tape & Reel specification



Item	Symbol	Dimension (mm)
Overall width	A	64+1.69/-0.69
Tape spacing	B	52.0+/-0.69
Component pitch	C	5.08+/-0.40
Untaped lead	L1 - L2	+/-0.69
Bent	K	1.2 Max
Tape Mismatch	E	0.55(Max)
Glass offset	F	0.69(Max)
Taped lead	G	3.2 Min
Lead beyond tape	H	0
Reel outside diameter	D	260+/-3
Reel inner diameter	D1	48+/-1
Feed hole width	D2	20+/-0.5
Reel width	W1	72+3/-1



### Dimensions



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