



Zener diode

Features

High reliability

Applications

Voltage stabilization



Absolute Maximum Ratings

$T_j=25^{\circ}\text{C}$

Parameter	Test Conditions	Type	Symbol	Value	Unit
Power dissipation	$I=4\text{mm } T_L \leq 25^{\circ}\text{C}$		P_V	500	mW
Z-current			I_Z	P_V/V_Z	mA
Junction temperature			T_j	175	$^{\circ}\text{C}$
Storage temperature range			T_{stg}	-65~+175	$^{\circ}\text{C}$

Maximum Thermal Resistance

$T_j=25^{\circ}\text{C}$

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient	$I=4\text{mm } T_L = \text{constant}$	R_{thJA}	350	K/W

Stresses exceeding maximum ratings may damage the device. Maximum ratings are stress ratings only. Functional operation above the recommended operating conditions is not implied. Extended exposure to stresses above the recommended operating conditions may affect device reliability.

Electrical Characteristics

$T_j=25^{\circ}\text{C}$

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F=10\text{mA}$		V_F			0.9	V



Type	V _{Znom}	I _{ZT}	for V _{ZT} and	r _{ZT}	r _{ZIK} at	I _{ZK}	I _R and	I _R at	V _R	TK _{VZ}
BZX79B	V	mA	V	Ω	Ω	mA	μA	V		%/K
2V4	2.4	5	2.35~2.45	<100	<600	1	<50	1		-0.09~-0.06
2V7	2.7	5	2.65~2.75	<100	<600	1	<20	1		-0.09~-0.06
3V0	3.0	5	2.94~3.06	<95	<600	1	<10	1		-0.08~-0.05
3V3	3.3	5	3.23~3.37	<95	<600	1	<5	1		-0.08~-0.05
3V6	3.6	5	3.53~3.67	<90	<600	1	<5	1		-0.08~-0.05
3V9	3.9	5	3.82~3.98	<90	<600	1	<3	1		-0.08~-0.05
4V3	4.3	5	4.21~4.39	<90	<600	1	<3	1		-0.06~-0.03
4V7	4.7	5	4.61~4.79	<80	<500	1	<3	1		-0.05~+0.02
5V1	5.1	5	5.00~5.20	<60	<480	1	<2	1		-0.02~+0.02
5V6	5.6	5	5.49~5.71	<40	<400	1	<1	1		-0.05~+0.05
6V2	6.2	5	6.08~6.32	<10	<150	1	<3	2		0.03~0.06
6V8	6.8	5	6.66~6.94	<15	<80	1	<2	3		0.03~0.07
7V5	7.5	5	7.35~7.65	<15	<80	1	<1	5		0.03~0.07
8V2	8.2	5	8.04~8.36	<15	<80	1	<0.7	6		0.03~0.08
9V1	9.1	5	8.92~9.28	<20	<100	1	<0.5	7		0.03~0.09
10	10	5	9.8~10.2	<20	<150	1	<0.2	7.5		0.03~0.1
11	11	5	10.8~11.2	<20	<150	1	<0.1	8.5		0.03~0.11
12	12	5	11.8~12.2	<25	<150	1	<0.1	9		0.03~0.11
13	13	5	12.7~13.3	<30	<170	1	<0.1	10		0.03~0.11
15	15	5	14.7~15.3	<30	<200	1	<0.05	11		0.03~0.11
16	16	5	15.7~16.3	<40	<200	1	<0.05	12		0.03~0.11
18	18	5	17.6~18.4	<45	<225	1	<0.05	13		0.03~0.11
20	20	5	19.6~20.4	<55	<225	1	<0.05	15		0.03~0.11
22	22	5	21.6~22.4	<55	<250	1	<0.05	16		0.04~0.12
24	24	5	23.5~24.5	<70	<250	1	<0.05	18		0.04~0.12
27	27	2	26.5~27.5	<80	<300 ¹⁾	1	<0.05	20		0.04~0.12
30	30	2	29.4~30.6	<80	<300 ¹⁾	1	<0.05	22		0.04~0.12
33	33	2	32.3~33.7	<80	<325 ¹⁾	1	<0.05	24		0.04~0.12
36	36	2	35.3~36.7	<90	<350 ¹⁾	1	<0.05	27		0.04~0.12
39	39	2	38.2~39.8	<130	<350 ¹⁾	0.5	<0.05	28		0.04~0.12
43	43	2	42.1~43.9	<150	<375 ¹⁾	0.5	<0.05	32		0.04~0.12
47	47	2	46.1~47.9	<170	<375 ¹⁾	0.5	<0.05	35		0.04~0.12
51	51	2	50.0~52.0	<180	<400 ¹⁾	0.5	<0.05	38		0.04~0.12
56	56	2	54.9~57.1	<200	<425 ¹⁾	0.5	<0.05	39		0.04~0.12
62	62	2	60.8~63.2	<215	<450 ¹⁾	0.5	<0.05	43		0.04~0.12
68	68	2	66.6~69.4	<240	<475 ¹⁾	0.5	<0.05	48		0.04~0.12
75	75	2	73.5~76.5	<255	<500 ¹⁾	0.5	<0.05	53		0.04~0.12

¹⁾ at I_Z=2.0mA



Characteristics ($T_j=25^\circ\text{C}$ unless otherwise specified)

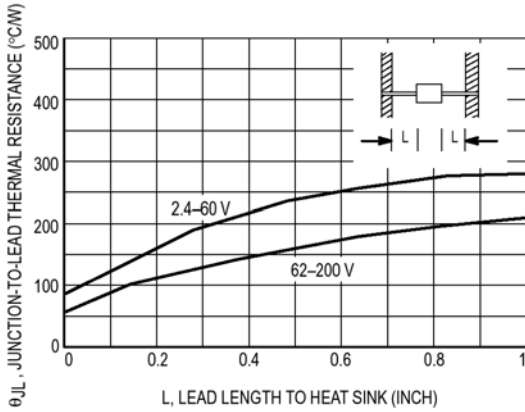


Figure 1. Typical Thermal Resistance

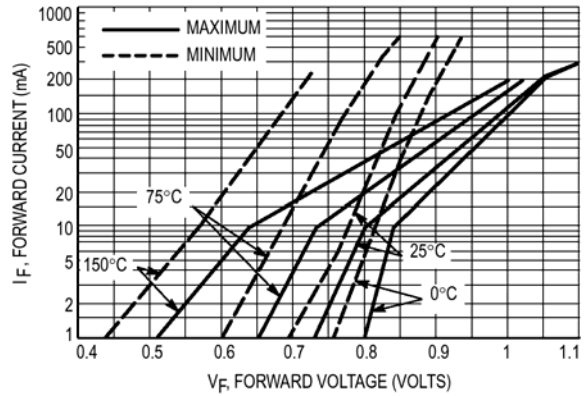


Figure 2. Typical Forward Characteristics

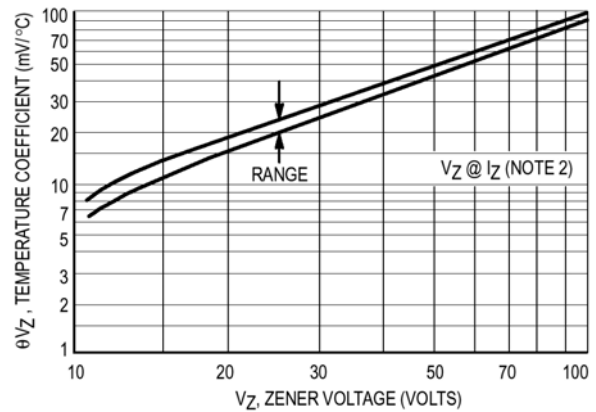
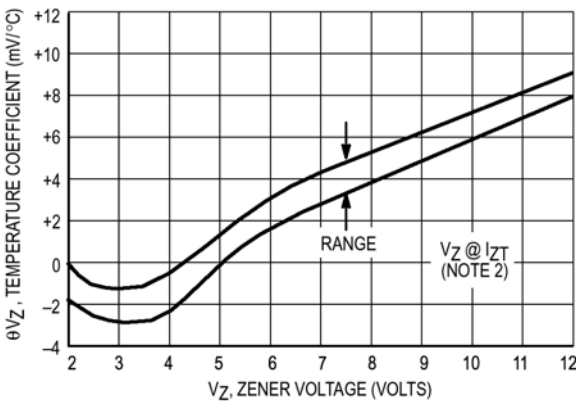


Figure 3. Temperature coefficients

(-55°C to $+150^\circ\text{C}$ temperature range; 90% of the units are in the ranges indicated.)

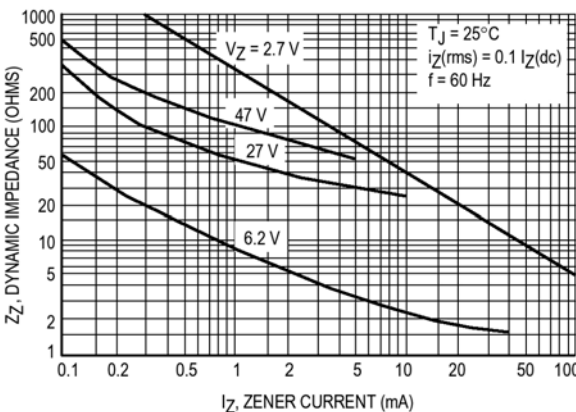


Figure 4. Effect of zener current on zener impedance

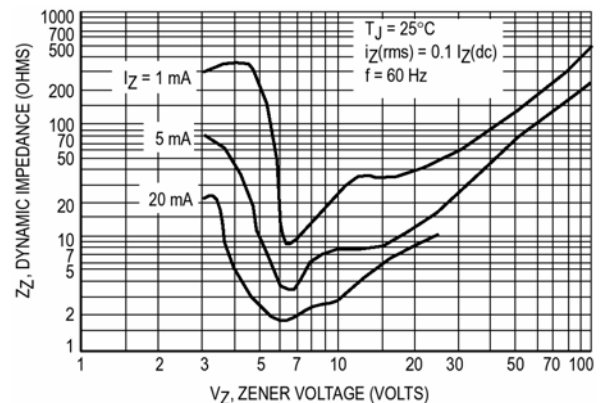


Figure 5. Effect of zener voltage on zener impedance

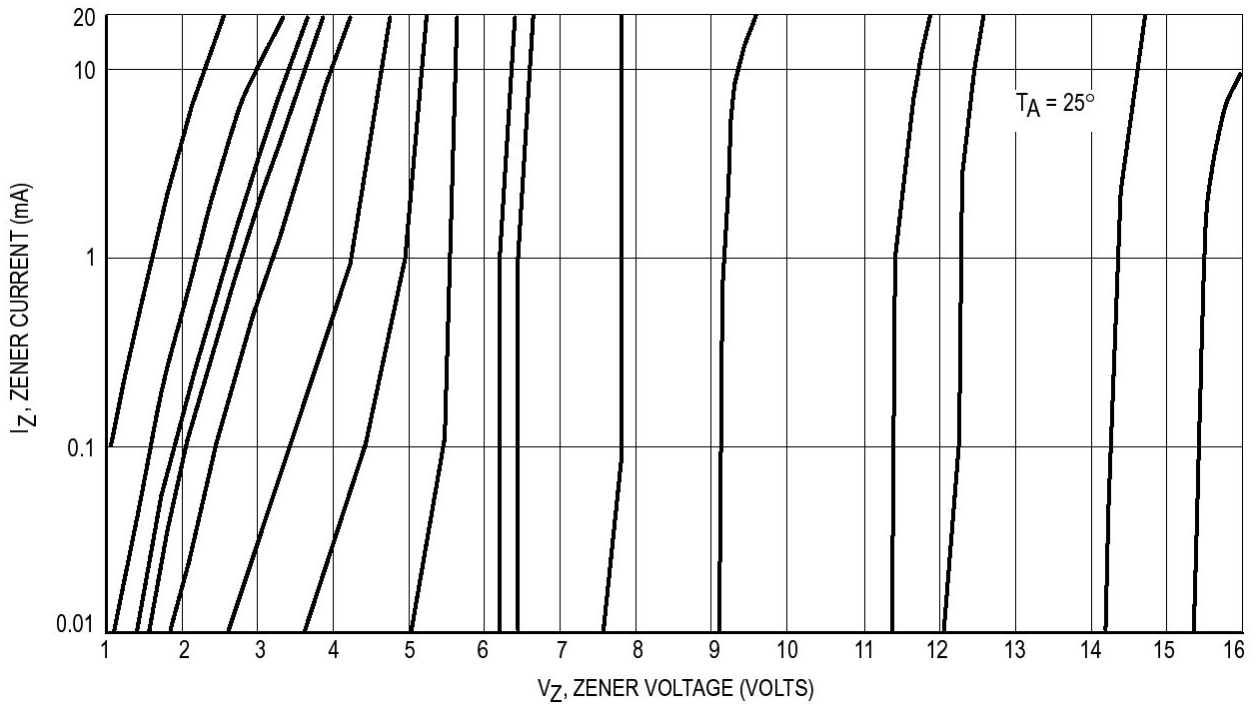


Figure 6. Zener Voltage versus Zener Current – $V_Z=1$ thru 16 Volts

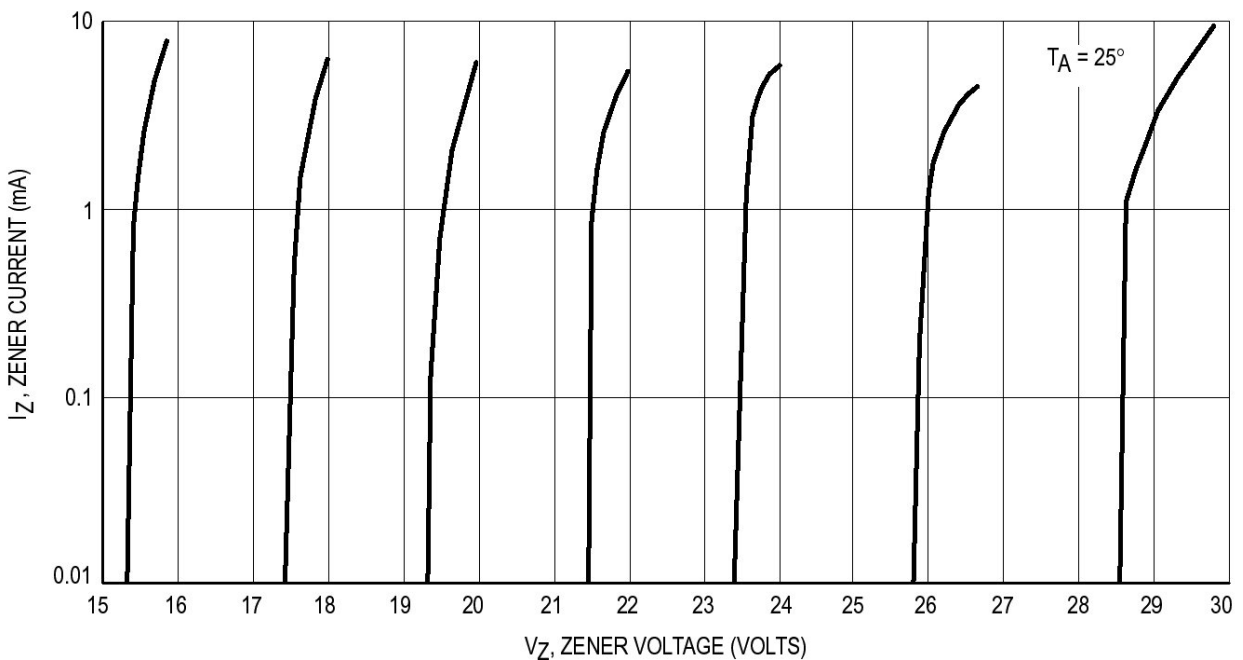


Figure 7. Zener Voltage versus Zener Current – $V_Z=15$ thru 30 Volts

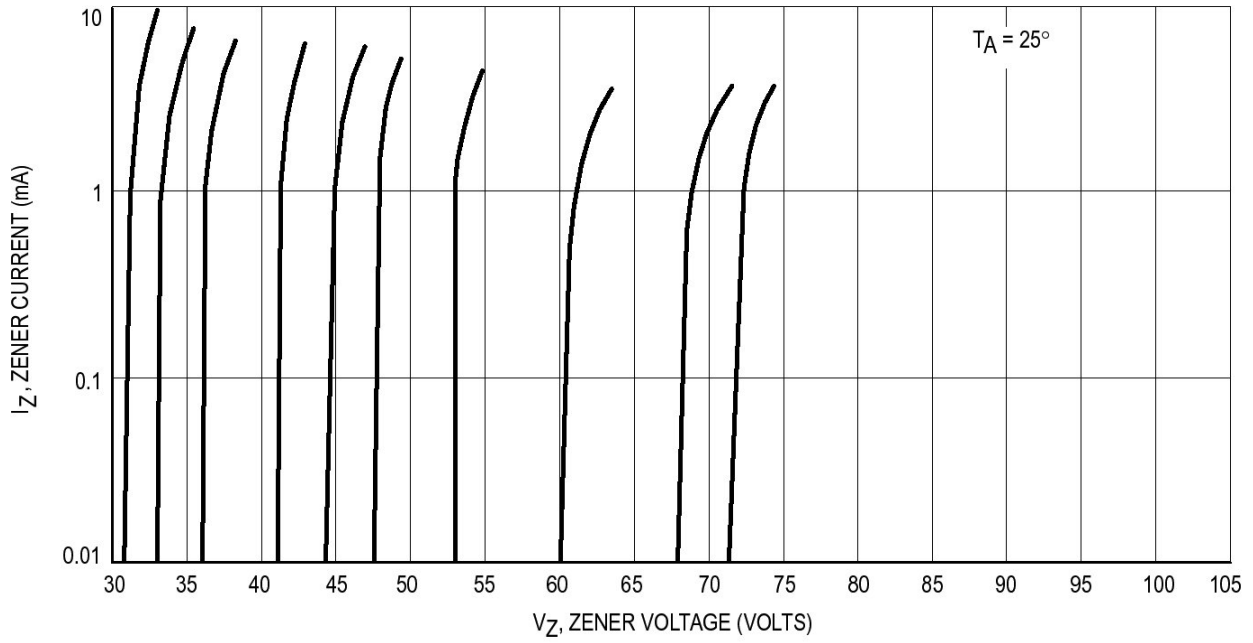
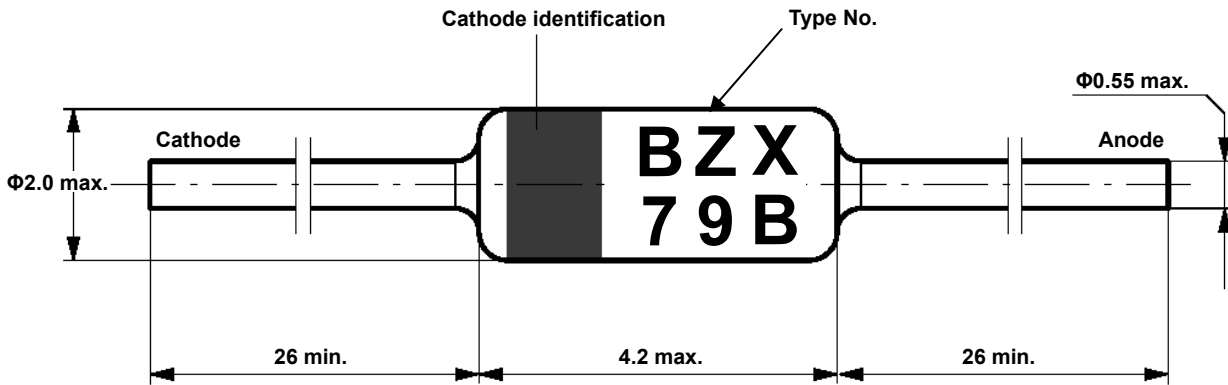


Figure 8. Zener Voltage versus Zener Current – $V_Z=30$ thru 75 Volts



Dimensions in mm



Standard Glass Case
JEDEC DO-35

Marking

