Zener diode

Features

High reliability

Applications

Voltage stabilization

Construction

Silicon epitaxial planar

Absolute Maximum Ratings

T_j=25℃

Parameter	Test Conditions	Type	Symbol	Value	Unit
Power dissipation	l=4mm T_L≤25℃		P_V	500	mW
Z-current			I_Z	P_V/V_Z	mA
Junction temperature			T_j	175	℃
Storage temperature range			T_{stg}	-65~+175	℃

Maximum Thermal Resistance

T_j=25℃

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

Electrical Characteristics

T_j=25℃

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	I_F=10mA		V_F			0.9	V

Type	V_{Znom}	I_{ZT}	for V_{ZT} and	r_{ziT}	r_{ziK} at	I_{ZK}	I_R and	I_R at V_R	TK_{VZ}
BZX79C	V	mA	V[1]	Ω	Ω	mA	μA	V	%/K
2V4	2.4	5	2.2~2.6	<100	<600	1	<50	1	-0.09~-0.06
2V7	2.7	5	2.5~2.9	<100	<600	1	<20	1	-0.09~-0.06
3V0	3.0	5	2.8~3.2	<95	<600	1	<10	1	-0.08~-0.05
3V3	3.3	5	3.1~3.5	<95	<600	1	<5	1	-0.08~-0.05
3V6	3.6	5	3.4~3.8	<90	<600	1	<5	1	-0.08~-0.05
3V9	3.9	5	3.7~4.1	<90	<600	1	<3	1	-0.08~-0.05
4V3	4.3	5	4.0~4.6	<90	<600	1	<3	1	-0.06~-0.03
4V7	4.7	5	4.4~5.0	<80	<500	1	<3	1	-0.05~+0.02
5V1	5.1	5	4.8~5.4	<60	<480	1	<2	1	-0.02~+0.02
5V6	5.6	5	5.2~6.0	<40	<400	1	<1	1	-0.05~+0.05
6V2	6.2	5	5.8~6.6	<10	<150	1	<3	2	0.03~0.06
6V8	6.8	5	6.4~7.2	<15	<80	1	<2	3	0.03~0.07
7V5	7.5	5	7.0~7.9	<15	<80	1	<1	5	0.03~0.07
8V2	8.2	5	7.7~8.7	<15	<80	1	<0.7	6	0.03~0.08
9V1	9.1	5	8.5~9.6	<20	<100	1	<0.5	7	0.03~0.09
10	10	5	9.4~10.6	<20	<150	1	<0.2	7.5	0.03~0.1
11	11	5	10.4~11.6	<20	<150	1	<0.1	8.5	0.03~0.11
12	12	5	11.4~12.7	<25	<150	1	<0.1	9	0.03~0.11
13	13	5	12.4~14.1	<30	<170	1	<0.1	10	0.03~0.11
15	15	5	13.8~15.6	<30	<200	1	<0.05	11	0.03~0.11
16	16	5	15.3~17.1	<40	<200	1	<0.05	12	0.03~0.11
18	18	5	16.8~19.1	<45	<225	1	<0.05	13	0.03~0.11
20	20	5	18.8~21.2	<55	<225	1	<0.05	15	0.03~0.11
22	22	5	20.8~23.3	<55	<250	1	<0.05	16	0.04~0.12
24	24	5	22.8~25.6	<70	<250	1	<0.05	18	0.04~0.12
27	27	2	25.1~28.9	<80	<300[2]	1	<0.05	20	0.04~0.12
30	30	2	28~32	<80	<300[2]	1	<0.05	22	0.04~0.12
33	33	2	31~35	<80	<325[2]	1	<0.05	24	0.04~0.12
36	36	2	34~38	<90	<350[2]	1	<0.05	27	0.04~0.12
39	39	2	37~41	<130	<350[2]	0.5	<0.05	28	0.04~0.12
43	43	2	40~46	<150	<375[2]	0.5	<0.05	32	0.04~0.12
47	47	2	44~50	<170	<375[2]	0.5	<0.05	35	0.04~0.12
51	51	2	48~54	<180	<400[2]	0.5	<0.05	38	0.04~0.12
56	56	2	52~60	<200	<425[2]	0.5	<0.05	39	0.04~0.12
62	62	2	58~66	<215	<450[2]	0.5	<0.05	43	0.04~0.12
68	68	2	64~72	<240	<475[2]	0.5	<0.05	48	0.04~0.12
75	75	2	70~79	<255	<500[2]	0.5	<0.05	53	0.04~0.12

[1] Tighter tolerances available request:

BZX79B… ±2% of V_{Znom}

[2] at Iz=2.0mA

Characteristics (T_j=25℃ unless otherwise specified)

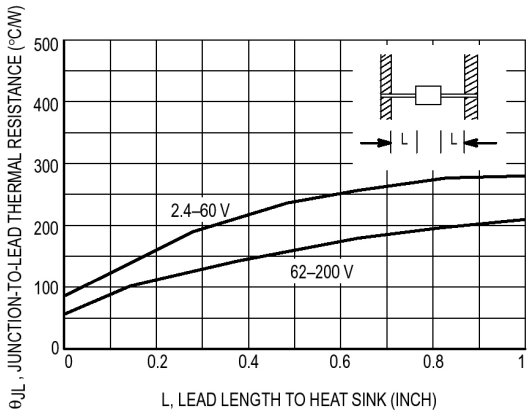


Figure 1. Typical Thermal Resistance

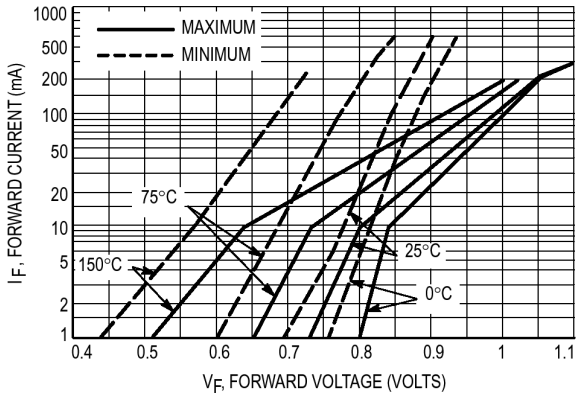
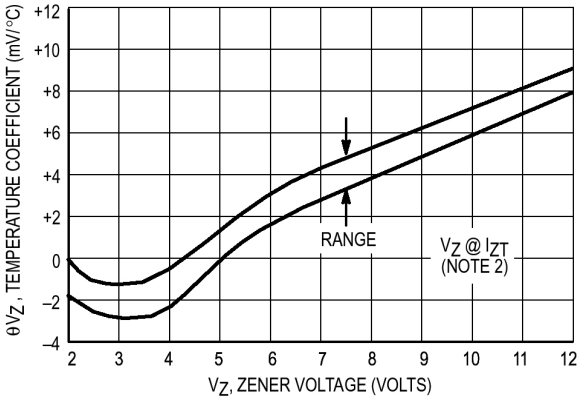


Figure 2. Typical Forward Characteristics



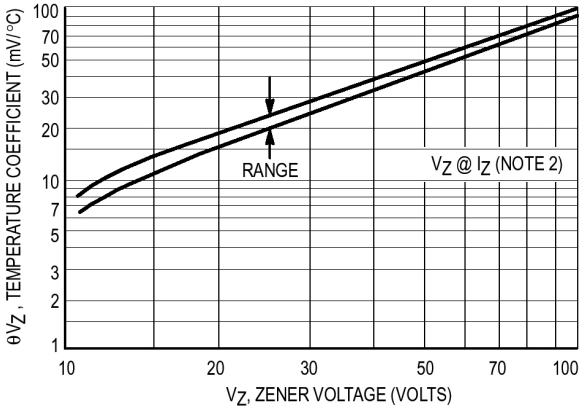


Figure 3. Temperature coefficients

(-55℃ to +150℃ temperature range; 90% of the units are in the ranges indicated.)

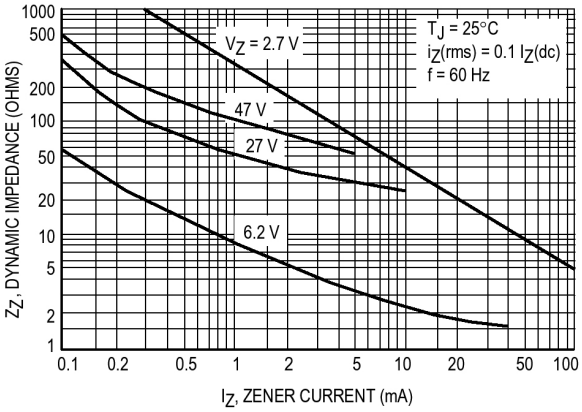


Figure 4. Effect of zener current on zener impedance

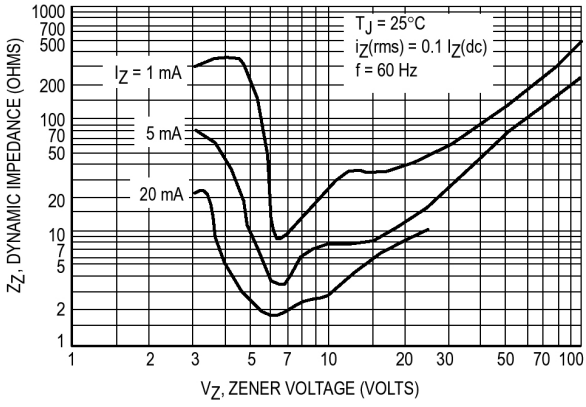


Figure 5. Effect of zener voltage on zener impedance

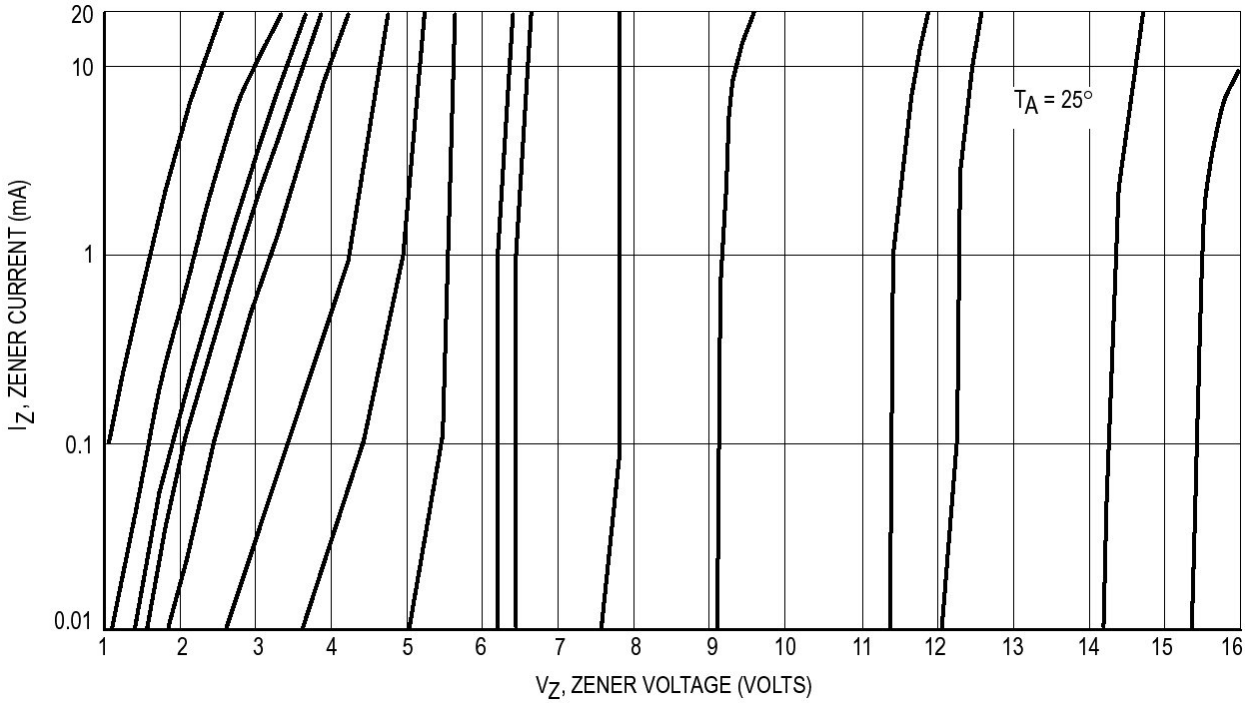


Figure 6. Zener Voltage versus Zener Current – Vz=1 thru 16 Volts

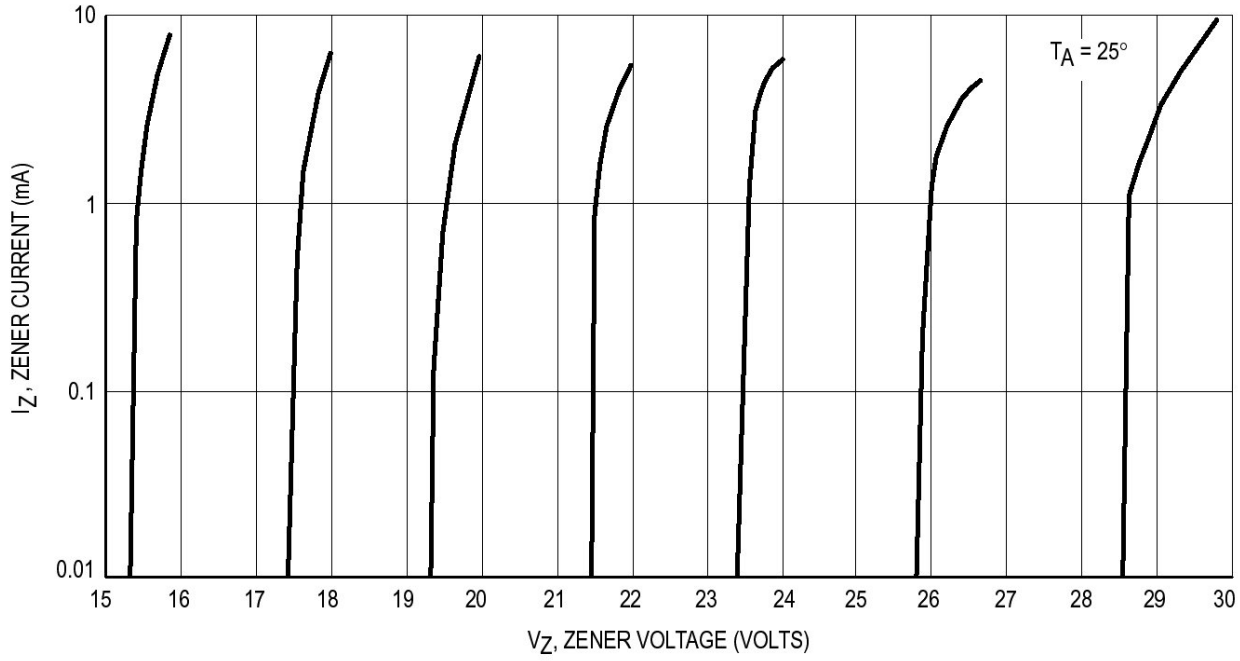


Figure 7. Zener Voltage versus Zener Current – Vz=15 thru 30 Volts

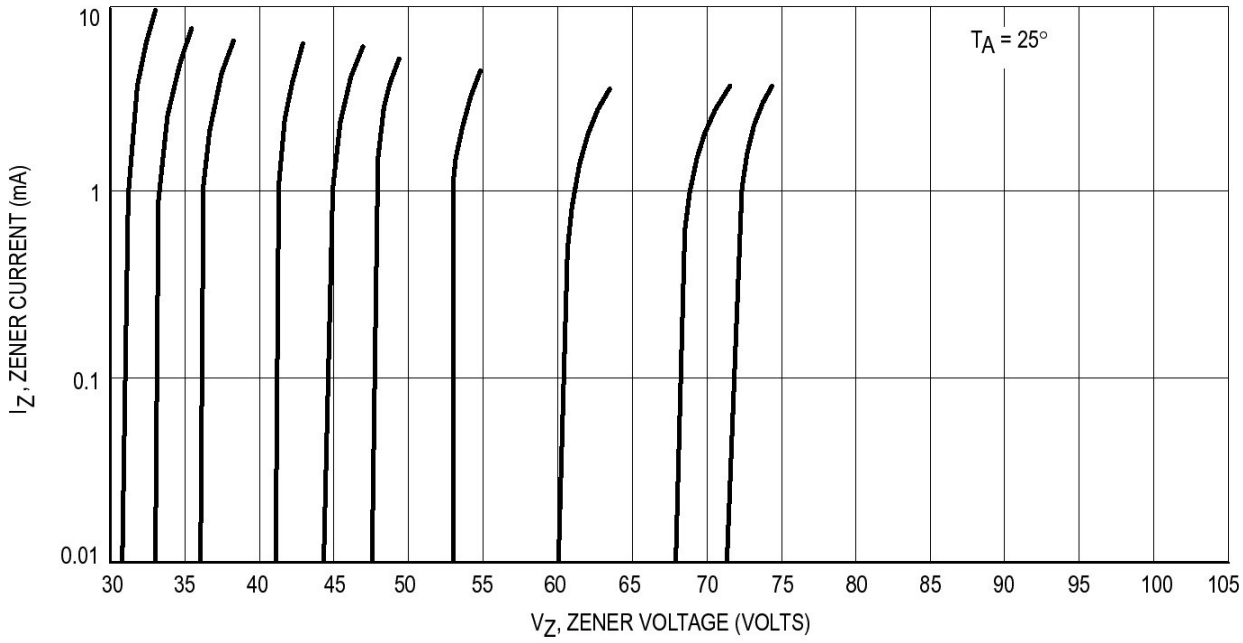
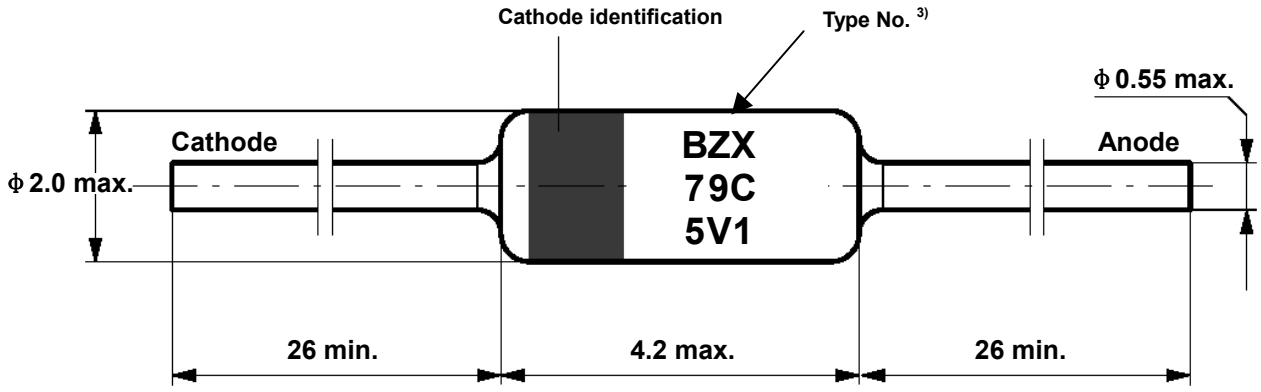


Figure 8. Zener Voltage versus Zener Current – Vz=30 thru 75 Volts

Dimensions in mm



Standard Glass Case
JEDEC DO 35

3) Type No.

BZX79 C 5V1

① ② ③

① Series name
② Tighter tolerances available request:
B ------±2% of V_{Znom}
C ------±5% of V_{Znom}
③ Zener Voltage (V_{Znom}), for example:
5V1 ------ 5.1V
12 ------ 12V