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=200mA		V_F			1.5	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}
BZX55C	V	mA	V[1]	Ω	Ω	mA	μA	μA[2]	V	%/K
2V0	2.0	5	1.9~2.1	100	<600	1	<150	<300	1	-0.09~-0.06
2V2	2.2	5	2.09~2.31	100	<600	1	<150	<300	1	-0.09~-0.06
2V4	2.4	5	2.28~2.56	<85	<600	1	<50	<100	1	-0.09~-0.06
2V7	2.7	5	2.5~2.9	<85	<600	1	<10	<50	1	-0.09~-0.06
3V0	3.0	5	2.8~3.2	<85	<600	1	<4	<40	1	-0.08~-0.05
3V3	3.3	5	3.1~3.5	<85	<600	1	<2	<40	1	-0.08~-0.05
3V6	3.6	5	3.4~3.8	<85	<600	1	<2	<40	1	-0.08~-0.05
3V9	3.9	5	3.7~4.1	<85	<600	1	<2	<40	1	-0.08~-0.05
4V3	4.3	5	4.0~4.6	<75	<600	1	<1	<20	1	-0.06~-0.03
4V7	4.7	5	4.4~5.0	<60	<600	1	<0.5	<10	1	-0.05~+0.02
5V1	5.1	5	4.8~5.4	<35	<550	1	<0.1	<2	1	-0.02~+0.02
5V6	5.6	5	5.2~6.0	<25	<450	1	<0.1	<2	1	-0.05~+0.05
6V2	6.2	5	5.8~6.6	<10	<200	1	<0.1	<2	2	0.03~0.06
6V8	6.8	5	6.4~7.2	<8	<150	1	<0.1	<2	3	0.03~0.07
7V5	7.5	5	7.0~7.9	<7	<50	1	<0.1	<2	5	0.03~0.07
8V2	8.2	5	7.7~8.7	<7	<50	1	<0.1	<2	6.2	0.03~0.08
9V1	9.1	5	8.5~9.6	<10	<50	1	<0.1	<2	6.8	0.03~0.09
10	10	5	9.4~10.6	<15	<70	1	<0.1	<2	7.5	0.03~0.1
11	11	5	10.4~11.6	<20	<70	1	<0.1	<2	8.2	0.03~0.11
12	12	5	11.4~12.7	<20	<90	1	<0.1	<2	9.1	0.03~0.11
13	13	5	12.4~14.1	<26	<110	1	<0.1	<2	10	0.03~0.11
15	15	5	13.8~15.6	<30	<110	1	<0.1	<2	11	0.03~0.11
16	16	5	15.3~17.1	<40	<170	1	<0.1	<2	12	0.03~0.11
18	18	5	16.8~19.1	<50	<170	1	<0.1	<2	13	0.03~0.11
20	20	5	18.8~21.2	<55	<220	1	<0.1	<2	15	0.03~0.11
22	22	5	20.8~23.3	<55	<220	1	<0.1	<2	16	0.04~0.12
24	24	5	22.8~25.6	<80	<220	1	<0.1	<2	18	0.04~0.12
27	27	5	25.1~28.9	<80	<220	1	<0.1	<2	20	0.04~0.12
30	30	5	28~32	<80	<220	1	<0.1	<2	22	0.04~0.12
33	33	5	31~35	<80	<220	1	<0.1	<2	24	0.04~0.12
36	36	5	34~38	<80	<220	1	<0.1	<2	27	0.04~0.12
39	39	2.5	37~41	<90	<500	0.5	<0.1	<5	30	0.04~0.12
43	43	2.5	40~46	<90	<600	0.5	<0.1	<5	33	0.04~0.12
47	47	2.5	44~50	<110	<700	0.5	<0.1	<5	36	0.04~0.12
51	51	2.5	48~54	<125	<700	0.5	<0.1	<10	39	0.04~0.12
56	56	2.5	52~60	<135	<1000	0.5	<0.1	<10	43	0.04~0.12
62	62	2.5	58~66	<150	<1000	0.5	<0.1	<10	47	0.04~0.12
68	68	2.5	64~72	<200	<1000	0.5	<0.1	<10	51	0.04~0.12
75	75	2.5	70~79	<250	<1500	0.5	<0.1	<10	56	0.04~0.12

[1] Tighter tolerances available request:

BZX55A… ±1% of V_{Znom}

BZX55B… ±2% of V_{Znom}

[2] at T_j=150℃

Characteristics (T_j=25℃ unless otherwise specified)

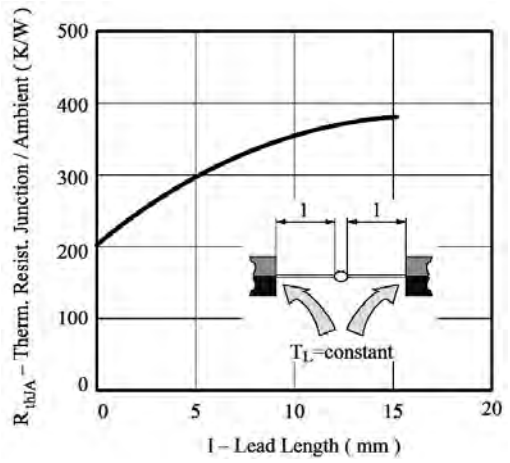


Figure 1. Thermal Resistance vs. Lead length

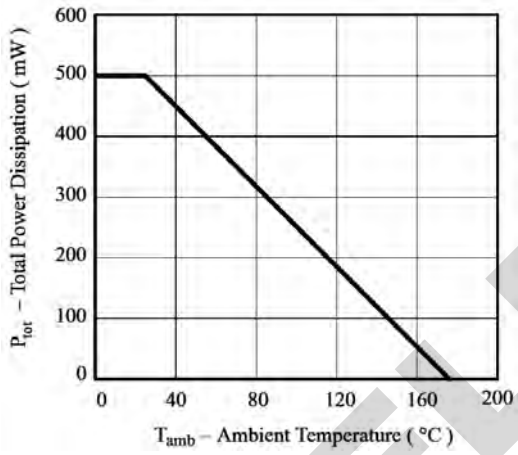


Figure 2. Total Power Dissipation vs. Ambient Temperature

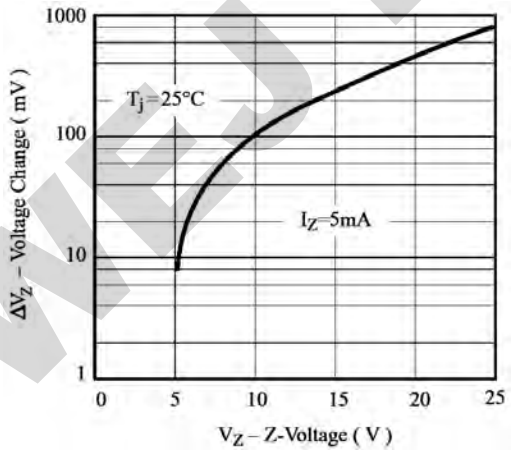


Figure 3. Typical Change of Working Voltage under Operating Conditions at T_{amb}=25℃

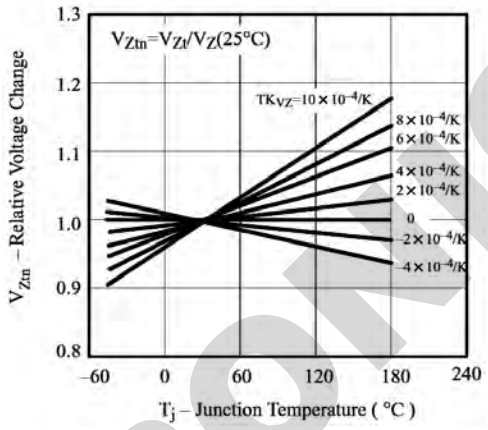


Figure 4. Typical Change of Working Voltage Vs. Junction Temperature

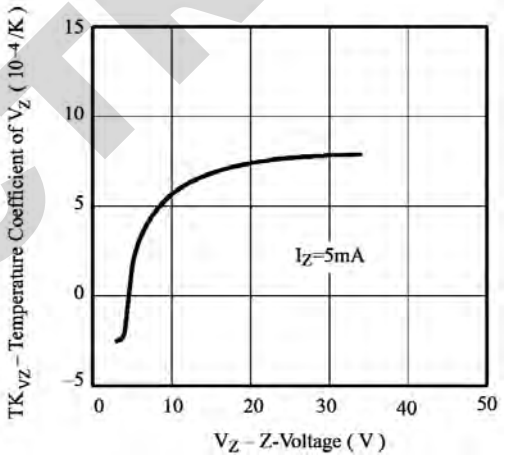


Figure 5. Temperature Coefficient of Vz vs. Z-Voltage

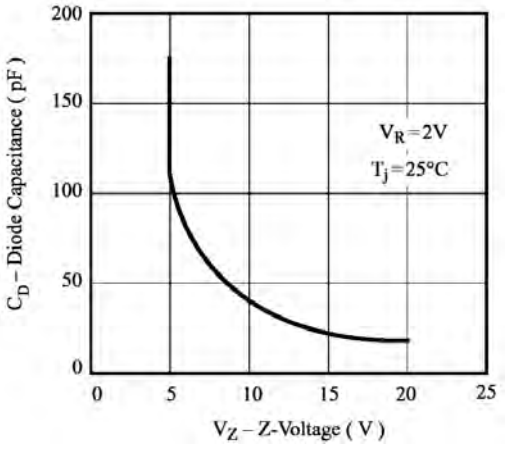


Figure 6. Diode Capacitance vs. Z-voltage

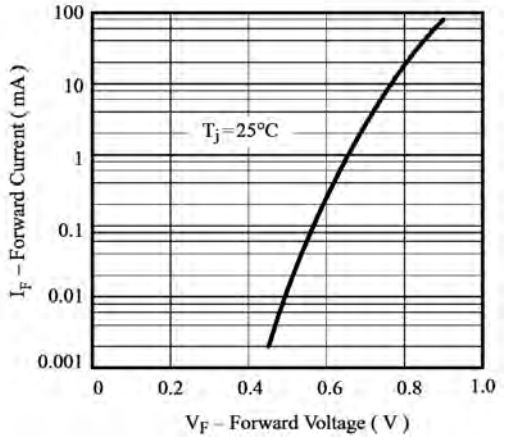


Figure 7. Forward Current vs. Forward Voltage

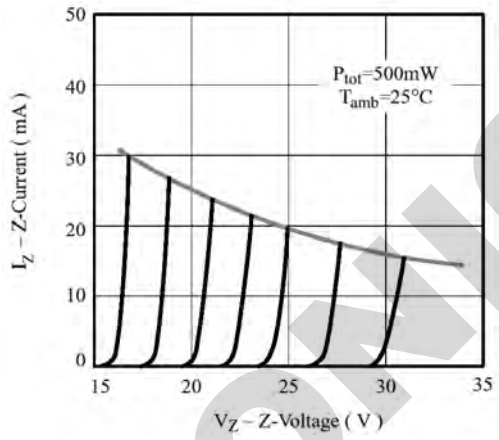


Figure 9. Z-Current vs. Z-Voltage

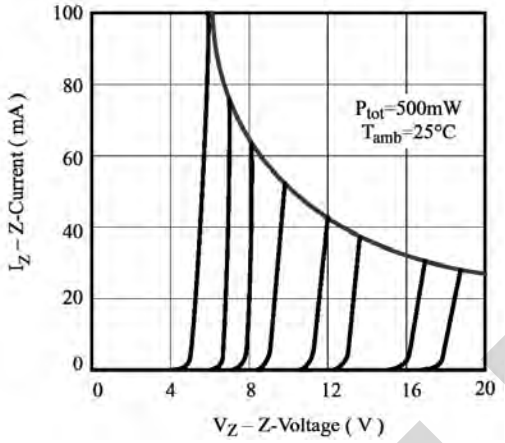


Figure 8. Z-Current vs. Z-Voltage

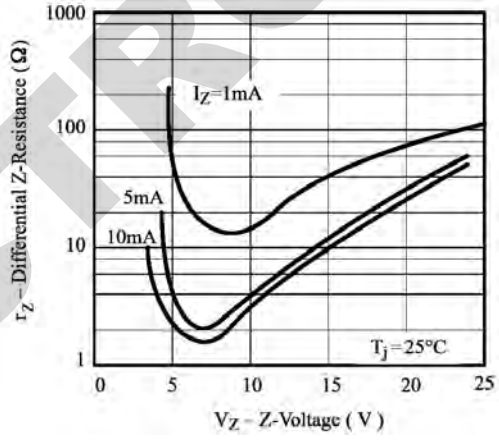


Figure 10. Differential Z-Resistance Vz vs. Z-Voltage

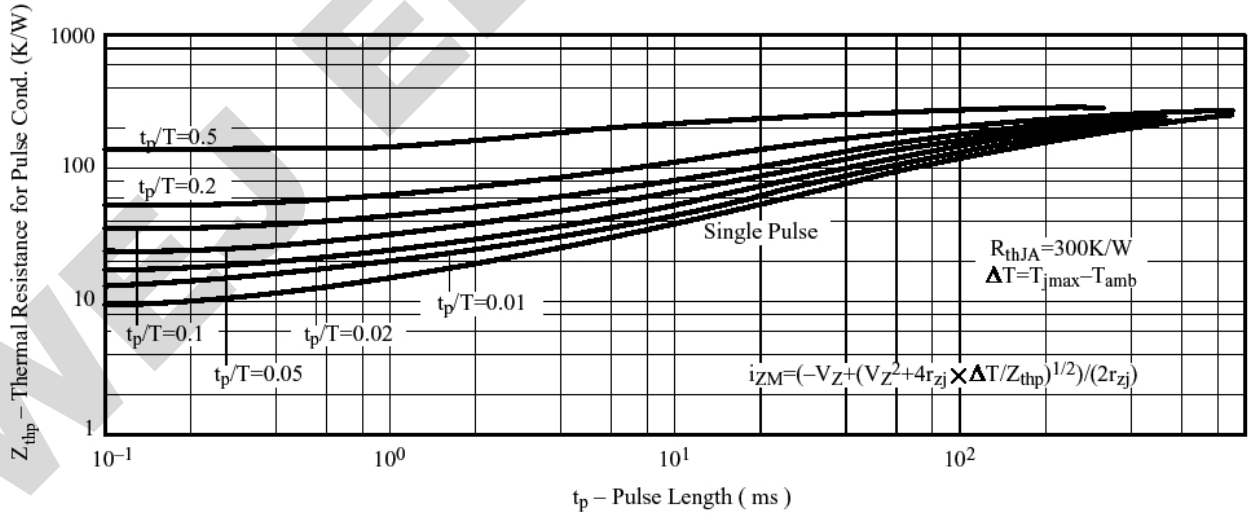
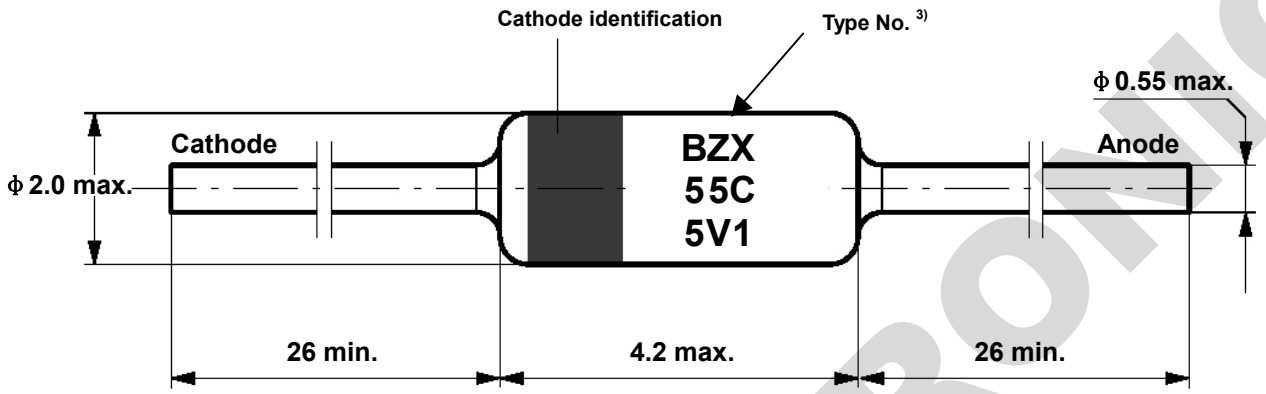


Figure 11. Thermal Response

Dimensions in mm



Standard Glass Case
JEDEC DO 35

3) Type No.

BZX55 C 5V1

① ② ③

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