



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	$I_F=50\text{mA}$		V_F			1.0	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}
BZX83C	V	mA	V	Ω	Ω	mA	μA	μA ¹⁾	V	%/K
2V7	2.7	5	2.5~2.9	<90	<600	1	<100	<50	1	-0.09~-0.06
3V0	3.0	5	2.8~3.2	<90	<600	1	<60	<40	1	-0.08~-0.05
3V3	3.3	5	3.1~3.5	<90	<600	1	<30	<40	1	-0.08~-0.05
3V6	3.6	5	3.4~3.8	<90	<600	1	<20	<40	1	-0.08~-0.05
3V9	3.9	5	3.7~4.1	<90	<600	1	<10	<40	1	-0.08~-0.05
4V3	4.3	5	4.0~4.6	<80	<600	1	<5	<20	1	-0.06~-0.03
4V7	4.7	5	4.4~5.0	<80	<600	1	<2	<10	1	-0.05~+0.02
5V1	5.1	5	4.8~5.4	<60	<550	1	<1	<2	1	-0.02~+0.02
5V6	5.6	5	5.2~6.0	<40	<450	1	<1	<2	1	-0.05~+0.05
6V2	6.2	5	5.8~6.6	<10	<200	1	<1	<2	2	0.03~0.06
6V8	6.8	5	6.4~7.2	<8	<150	1	<1	<2	3	0.03~0.07
7V5	7.5	5	7.0~7.9	<7	<50	1	<1	<2	3.5	0.03~0.07
8V2	8.2	5	7.7~8.7	<7	<50	1	<1	<2	4	0.03~0.08
9V1	9.1	5	8.5~9.6	<10	<50	1	<1	<2	5	0.03~0.09
10	10	5	9.4~10.6	<15	<70	1	<1	<2	6	0.03~0.1
11	11	5	10.4~11.6	<20	<70	1	<1	<2	8.2	0.03~0.11
12	12	5	11.4~12.7	<20	<90	1	<1	<2	9.1	0.03~0.11
13	13	5	12.4~14.1	<26	<110	1	<1	<2	10	0.03~0.11
15	15	5	13.8~15.6	<30	<110	1	<1	<2	11	0.03~0.11
16	16	5	15.3~17.1	<40	<170	1	<1	<2	12	0.03~0.11
18	18	5	16.8~19.1	<55	<170	1	<1	<2	13	0.03~0.11
20	20	5	18.8~21.2	<55	<220	1	<1	<2	15	0.03~0.11
22	22	5	20.8~23.3	<58	<220	1	<1	<2	16	0.04~0.12
24	24	5	22.8~25.6	<80	<220	1	<1	<2	18	0.04~0.12
27	27	5	25.1~28.9	<80	<220	1	<1	<2	20	0.04~0.12
30	30	5	28~32	<80	<220	1	<1	<2	22	0.04~0.12
33	33	5	31~35	<90	<220	1	<1	<2	24	0.04~0.12
36	36	5	34~38	<90	<220	1	<1	<2	27	0.04~0.12
39	39	2.5	37~41	<100	<500	0.5	<1	<5	30	0.04~0.12
43	43	2.5	40~46	<100	<600	0.5	<1	<5	33	0.04~0.12
47	47	2.5	44~50	<120	<700	0.5	<1	<5	36	0.04~0.12
51	51	2.5	48~54	<125	<700	0.5	<1	<10	39	0.04~0.12
56	56	2.5	52~60	<135	<1000	0.5	<1	<10	43	0.04~0.12
62	62	2.5	58~66	<170	<1000	0.5	<1	<10	47	0.04~0.12
68	68	2.5	64~72	<200	<1000	0.5	<1	<10	51	0.04~0.12
75	75	2.5	70~79	<250	<1500	0.5	<1	<10	56	0.04~0.12

¹⁾ at T_J=150°C



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

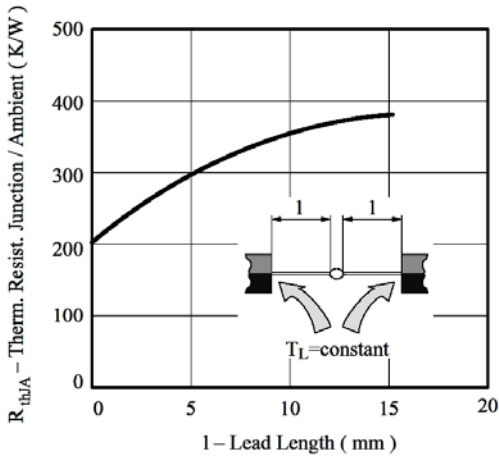


Figure 1. Thermal Resistance vs. Lead length

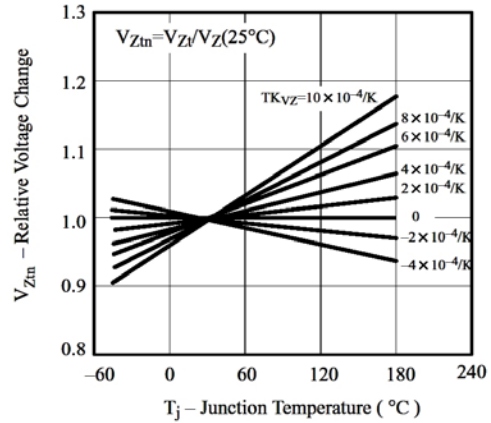


Figure 4. Typical Change of Working Voltage Vs. Junction Temperature

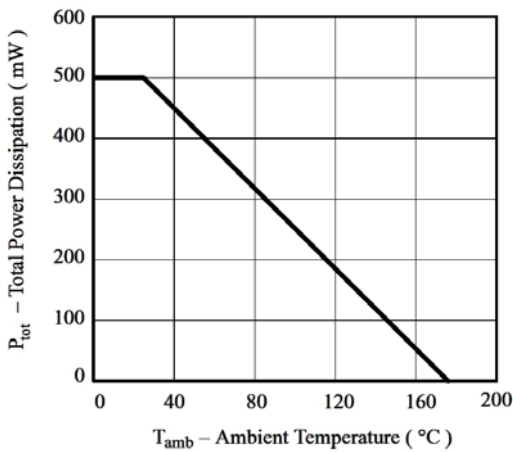


Figure 2. Total Power Dissipation vs. Ambient Temperature

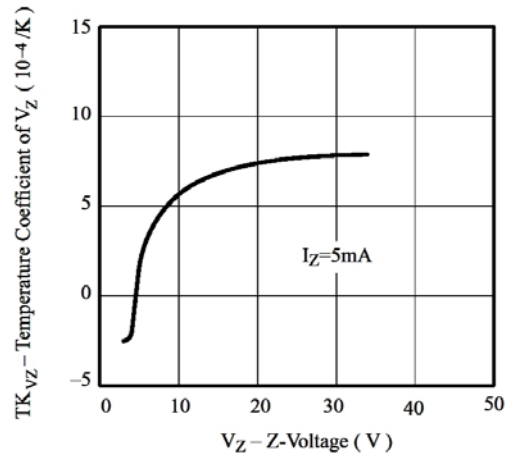


Figure 5. Temperature Coefficient of V_Z vs. Z-Voltage

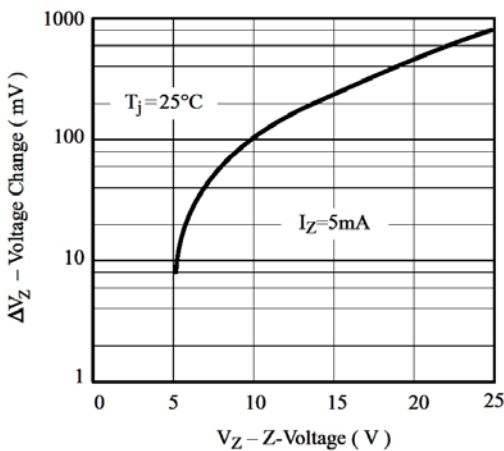


Figure 3. Typical Change of Working Voltage under Operating Conditions at $T_{amb}=25^\circ\text{C}$

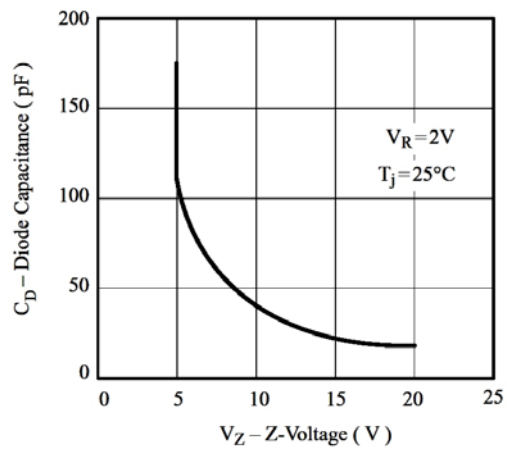


Figure 6. Diode Capacitance vs. Z-voltage

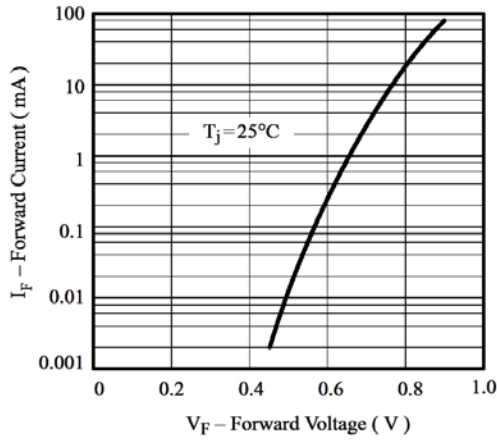


Figure 7. Forward Current vs. Forward Voltage

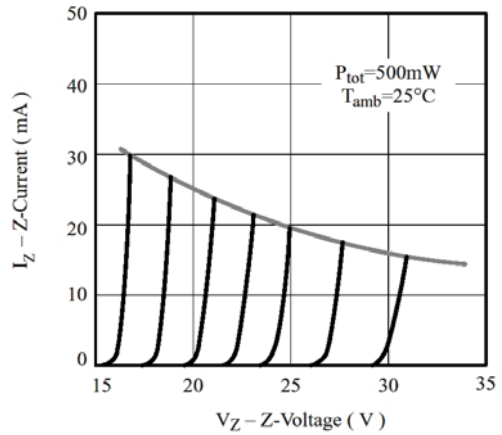


Figure 9. Z-Current vs. Z-Voltage

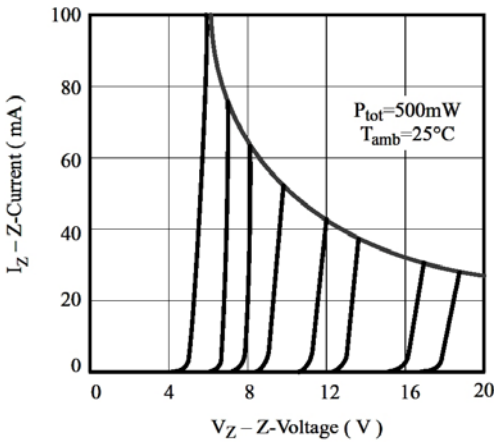


Figure 8. Z-Current vs. Z-Voltage

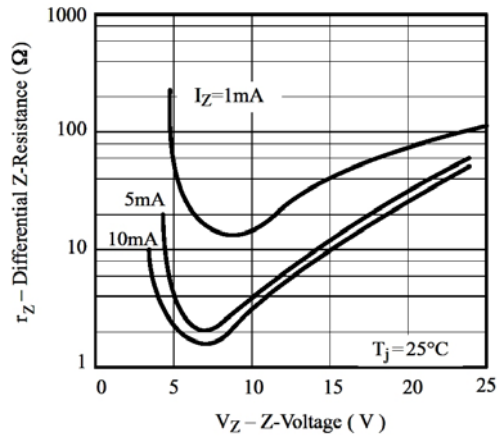


Figure 10. Differential Z-Resistance Vz vs. Z-Voltage

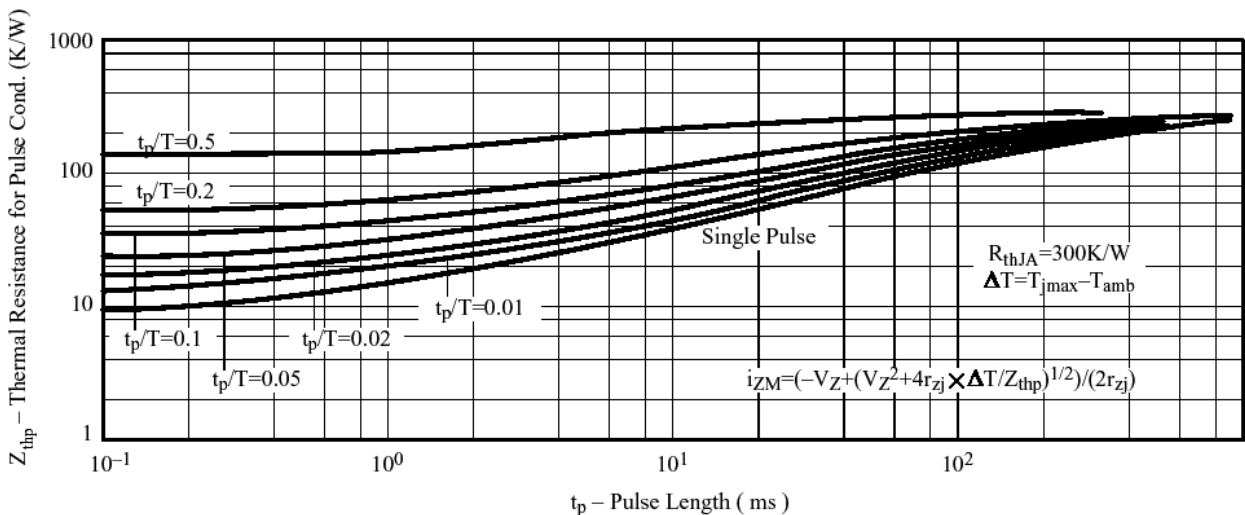
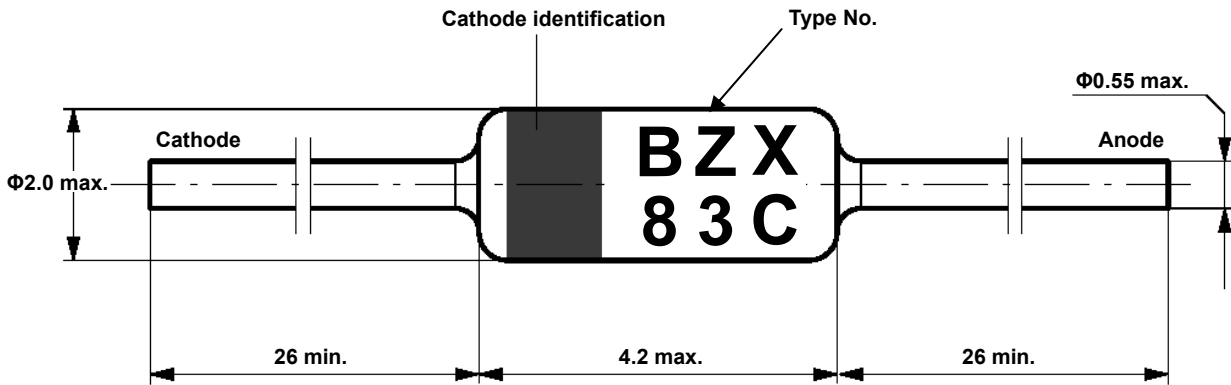


Figure 11. Thermal Response



Dimensions in mm



Standard Glass Case
JEDEC DO-35

Marking

