

# Zener diode

## Features

1. High reliability
2. Low reverse current
3. Very sharp reverse characteristic

## Applications

Voltage stabilization

## Absolute Maximum Ratings

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

Parameter	Test Conditions	Type	Symbol	Value	Unit
Power dissipation	$l=4\text{mm } T_L \leq 25^{\circ}\text{C}$		$P_V$	1.3	W
Junction temperature			$T_j$	175	$^{\circ}\text{C}$
Storage temperature range			$T_{\text{stg}}$	-65~+175	$^{\circ}\text{C}$

## Maximum Thermal Resistance

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

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient	$l=4\text{mm } , T_L = \text{constant}$	$R_{\text{thJA}}$	110	K/W

## Electrical Characteristics

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

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F=200\text{mA}$		$V_F$			1	V

Type	V <sub>Znom</sub>	I <sub>ZT</sub>	for V <sub>ZT</sub> and	r <sub>ZT</sub>	r <sub>ZK</sub> at	I <sub>ZK</sub>	I <sub>R</sub> at	V <sub>R</sub>	TK <sub>VZ</sub>
BZX85C	V	mA	V <sup>1)</sup>	Ω	Ω	mA	μA	V	%/K
2V7	2.7	80	2.5~2.9	<20	<400	1	<150	1	-0.09~-0.06
3V0	3.0	80	2.8~3.2	<20	<400	1	<100	1	-0.08~-0.05
3V3	3.3	80	3.1~3.5	<20	<400	1	<40	1	-0.08~-0.05
3V6	3.6	60	3.4~3.8	<20	<500	1	<20	1	-0.08~-0.05
3V9	3.9	60	3.7~4.1	<15	<500	1	<10	1	-0.08~-0.05
4V3	4.3	50	4.0~4.6	<13	<500	1	<3	1	-0.06~-0.03
4V7	4.7	45	4.4~5.0	<13	<500	1	<3	1	-0.05~+0.02
5V1	5.1	45	4.8~5.4	<10	<500	1	<1	1	-0.02~+0.02
5V6	5.6	45	5.2~6.0	<7	<400	1	<1	1	-0.05~+0.05
6V2	6.2	35	5.8~6.6	<4	<300	1	<1	2	0.03~0.06
6V8	6.8	35	6.4~7.2	<3.5	<300	1	<1	3	0.03~0.07
7V5	7.5	35	7.0~7.9	<3	<200	0.5	<1	5	0.03~0.07
8V2	8.2	25	7.7~8.7	<5	<200	0.5	<1	6.2	0.03~0.08
9V1	9.1	25	8.5~9.6	<5	<200	0.5	<1	6.8	0.03~0.09
10	10	25	9.4~10.6	<7	<200	0.5	<0.5	7.5	0.03~0.1
11	11	20	10.4~11.6	<8	<300	0.5	<0.5	8.2	0.03~0.11
12	12	20	11.4~12.7	<9	<350	0.5	<0.5	9.1	0.03~0.11
13	13	20	12.4~14.1	<10	<400	0.5	<0.5	10	0.03~0.11
15	15	15	13.8~15.6	<15	<500	0.5	<0.5	11	0.03~0.11
16	16	15	15.3~17.1	<15	<500	0.5	<0.5	12	0.03~0.11
18	18	15	16.8~19.1	<20	<500	0.5	<0.5	13	0.03~0.11
20	20	10	18.8~21.2	<24	<600	0.5	<0.5	15	0.03~0.11
22	22	10	20.8~23.3	<25	<600	0.5	<0.5	16	0.04~0.12
24	24	10	22.8~25.6	<25	<600	0.5	<0.5	18	0.04~0.12
27	27	8	25.1~28.9	<30	<750	0.25	<0.5	20	0.04~0.12
30	30	8	28~32	<30	<1000	0.25	<0.5	22	0.04~0.12
33	33	8	31~35	<35	<1000	0.25	<0.5	24	0.04~0.12
36	36	8	34~38	<40	<1000	0.25	<0.5	27	0.04~0.12
39	39	6	37~41	<50	<1000	0.25	<0.5	30	0.04~0.12
43	43	6	40~46	<50	<1000	0.25	<0.5	33	0.04~0.12
47	47	4	44~50	<90	<1500	0.25	<0.5	36	0.04~0.12
51	51	4	48~54	<115	<1500	0.25	<0.5	39	0.04~0.12
56	56	4	52~60	<120	<2000	0.25	<0.5	43	0.04~0.12
62	62	4	58~66	<125	<2000	0.25	<0.5	47	0.04~0.12
68	68	4	64~72	<130	<2000	0.25	<0.5	51	0.04~0.12
75	75	4	70~79	<135	<2000	0.25	<0.5	56	0.04~0.12

<sup>1)</sup> Tighter tolerances available request:  
BZX85B... ±2% of V<sub>Znom</sub>

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

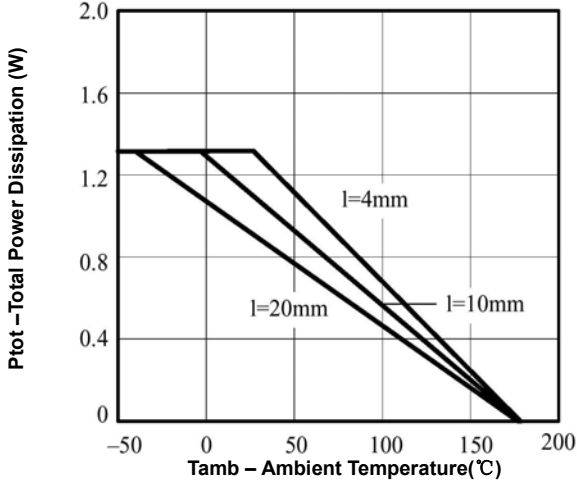


Figure1. Total Power Dissipation vs. Ambient Temperature

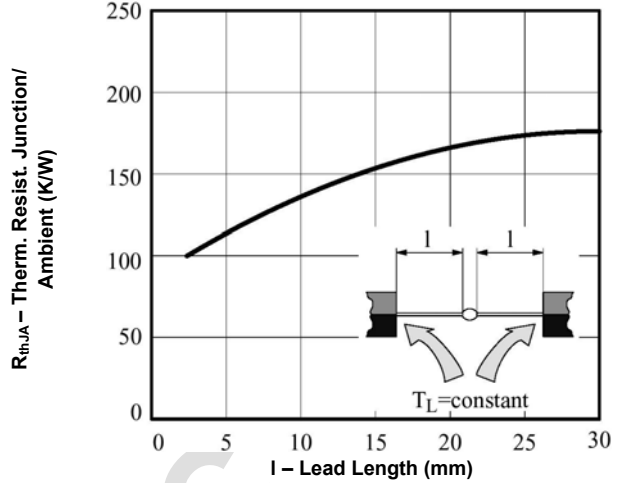


Figure2. Thermal Resistance vs. Lead Length

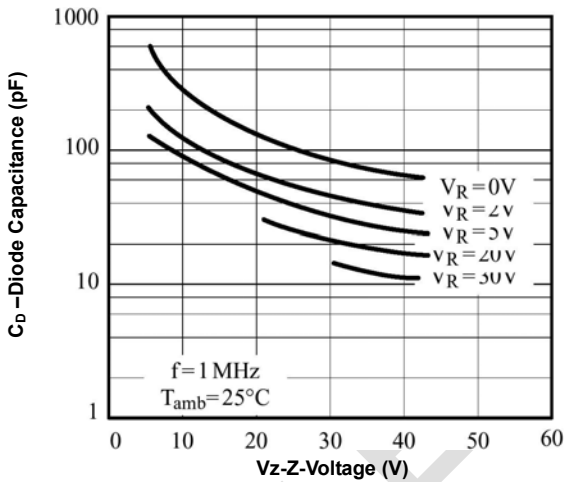


Figure3. Diode Capacitance vs. Z-Voltage

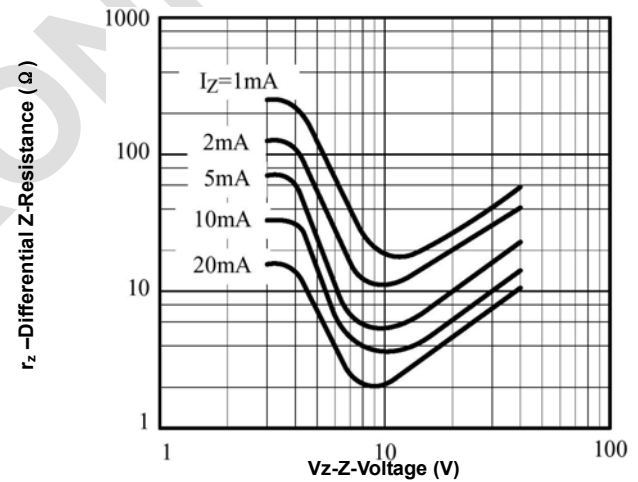


Figure4. Differential Z-Resistance vs. Z-Voltage

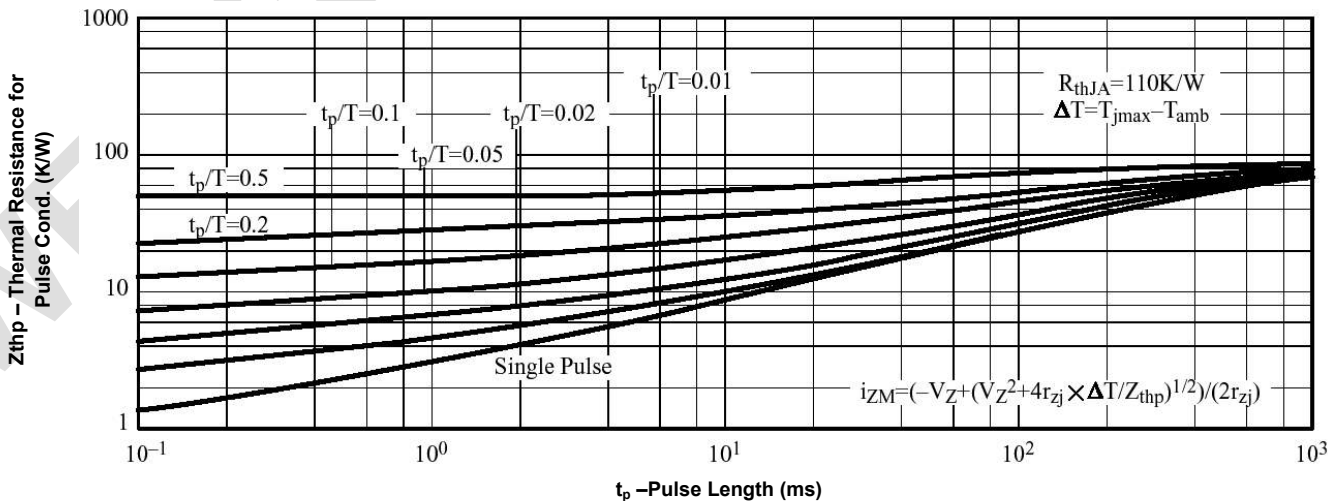
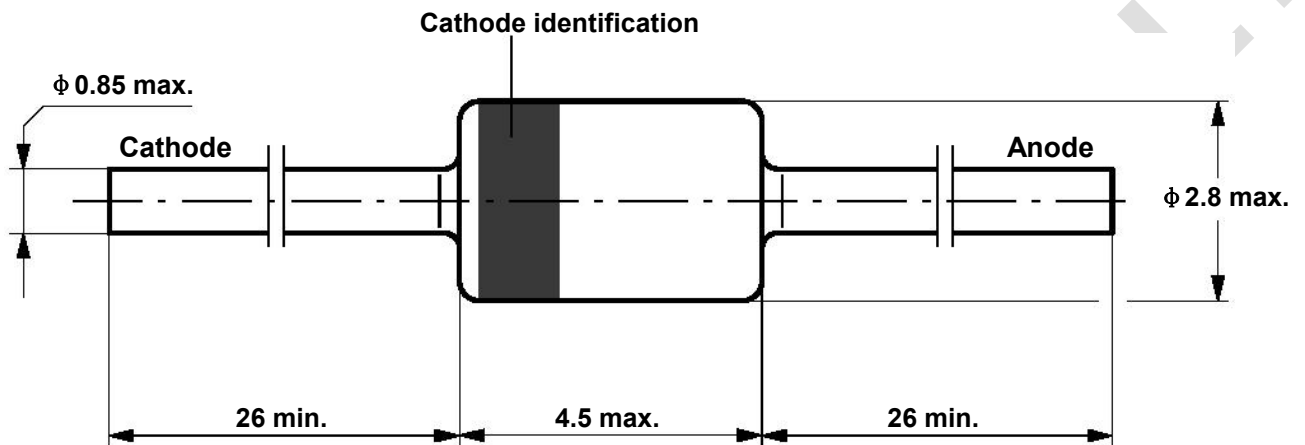


Figure5. Thermal Response

### Dimensions in mm



Standard Glass Case  
JEDEC DO 41