

Surface Mount Zener Diodes

(Pb) Lead(Pb)-Free

Features:

- *500mw Power Dissipation
- *General Purpose
- *Ideal for Surface Mounted Application

Mechanical Data:

- *Case : MICRO-MELF Glass Case
- *Weight : Approx 0.01g

**SMALL SIGNAL
ZENER DIODES
0.5 WATTS**



MICRO-MELF Outline Dimensions

Unit:mm

MICRO-MELF		
Dim	Min	Max
A	2.0	1.8
B	1.20	1.30
C	1.35	1.35

Maximum Ratings and Electrical Characteristics ($T_A=25^{\circ}\text{C}$ Unless Otherwise Noted)

Characteristics	Symbol	Value	Unit
Power Dissipation, $R_{\theta JA} \leq 300^{\circ}\text{C/W}$	P_D	500	mW
Z-Current	I_Z	P_D/V_Z	mA
Thermal Resistance Junction to Ambient ⁽¹⁾	$R_{\theta JA}$	500	$^{\circ}\text{C/W}$
Forward Voltage @ $I_F=200\text{mA}$	V_F	1.5	V
Operation Junction Temperature Range	T_J	175	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-65 to +175	$^{\circ}\text{C}$

Note: 1. On pc board 50 mm x 50mm x 1.6mm

Electrical Characteristics (T_A=25 °C unless otherwise noted, V_F=1.5 V Max. @I_F=200mA for all types)

Type	V _{Znom}	I _{ZT} for V _{ZT} and r _{zT}	r _{zk} at I _{ZK}	I _R and I _R at V _R	TK _{VZ}					
BZM55C...	V	mA	V ¹⁾	Ω	Ω	mA	μA	μA ²⁾	V	%/K
2V4	2.4	5	2.28 to 2.56	< 85	< 600	1	< 100	< 50	1	-0.09 to -0.06
2V7	2.7	5	2.5 to 2.9	< 85	< 600	1	< 10	< 50	1	-0.09 to -0.06
3V0	3.0	5	2.8 to 3.2	< 90	< 600	1	< 4	< 40	1	-0.08 to -0.05
3V3	3.3	5	3.1 to 3.5	< 90	< 600	1	< 2	< 40	1	-0.08 to -0.05
3V6	3.6	5	3.4 to 3.8	< 90	< 600	1	< 2	< 40	1	-0.08 to -0.05
3V9	3.9	5	3.7 to 4.1	< 90	< 600	1	< 2	< 40	1	-0.08 to -0.05
4V3	4.3	5	4.0 to 4.6	< 90	< 600	1	< 1	< 20	1	-0.06 to -0.03
4V7	4.7	5	4.4 to 5.0	< 80	< 600	1	< 0.5	< 10	1	-0.05 to +0.02
5V1	5.1	5	4.8 to 5.4	< 60	< 550	1	< 0.1	< 2	1	-0.02 to +0.02
5V6	5.6	5	5.2 to 6.0	< 40	< 450	1	< 0.1	< 2	1	-0.05 to +0.05
6V2	6.2	5	5.8 to 6.6	< 10	< 200	1	< 0.1	< 2	2	0.03 to 0.06
6V8	6.8	5	6.4 to 7.2	< 8	< 150	1	< 0.1	< 2	3	0.03 to 0.07
7V5	7.5	5	7.0 to 7.9	< 7	< 50	1	< 0.1	< 2	5	0.03 to 0.07
8V2	8.2	5	7.7 to 8.7	< 7	< 50	1	< 0.1	< 2	6.2	0.03 to 0.08
9V1	9.1	5	8.5 to 9.6	< 10	< 50	1	< 0.1	< 2	6.8	0.03 to 0.09
10	10	5	9.4 to 10.6	< 15	< 70	1	< 0.1	< 2	7.5	0.03 to 0.1
11	11	5	10.4 to 11.6	< 20	< 70	1	< 0.1	< 2	8.2	0.03 to 0.11
12	12	5	11.4 to 12.7	< 20	< 90	1	< 0.1	< 2	9.1	0.03 to 0.11
13	13	5	12.4 to 14.1	< 26	< 110	1	< 0.1	< 2	10	0.03 to 0.11
15	15	5	13.8 to 15.6	< 30	< 110	1	< 0.1	< 2	11	0.03 to 0.11
16	16	5	15.3 to 17.1	< 40	< 170	1	< 0.1	< 2	12	0.03 to 0.11
18	18	5	16.8 to 19.1	< 50	< 170	1	< 0.1	< 2	13	0.03 to 0.11
20	20	5	18.8 to 21.2	< 55	< 220	1	< 0.1	< 2	15	0.03 to 0.11
22	22	5	20.8 to 23.3	< 55	< 220	1	< 0.1	< 2	16	0.04 to 0.12
24	24	5	22.8 to 25.6	< 80	< 220	1	< 0.1	< 2	18	0.04 to 0.12
27	27	5	25.1 to 28.9	< 80	< 220	1	< 0.1	< 2	20	0.04 to 0.12
30	30	5	28 to 32	< 80	< 220	1	< 0.1	< 2	22	0.04 to 0.12
33	33	5	31 to 35	< 80	< 220	1	< 0.1	< 2	24	0.04 to 0.12
36	36	5	34 to 38	< 80	< 220	1	< 0.1	< 2	27	0.04 to 0.12
39	39	2.5	37 to 41	< 90	< 500	1	< 0.1	< 5	30	0.04 to 0.12
43	43	2.5	40 to 46	< 90	< 600	0.5	< 0.1	< 5	33	0.04 to 0.12
47	47	2.5	44 to 50	< 110	< 700	0.5	< 0.1	< 5	36	0.04 to 0.12
51	51	2.5	48 to 54	< 125	< 700	0.5	< 0.1	< 10	39	0.04 to 0.12
56	56	2.5	52 to 60	< 135	< 1000	0.5	< 0.1	< 10	43	0.04 to 0.12
62	62	2.5	58 to 66	< 150	< 1000	0.5	< 0.1	< 10	47	0.04 to 0.12
68	68	2.5	64 to 72	< 200	< 1000	0.5	< 0.1	< 10	51	0.04 to 0.12
75	75	2.5	70 to 79	< 250	< 1500	0.5	< 0.1	< 10	56	0.04 to 0.12

1) Tighter tolerances available request:

BZM55A... ±1% OF V_{Znom}

BZM55B... ±2% OF V_{Znom}

BZM55F... ±3% OF V_{Znom}

2) at T_j= 150 °C

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

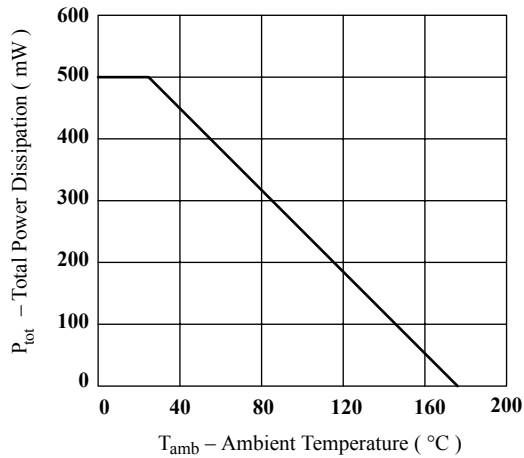


Fig.1 Total Power Dissipation vs. Ambient Temperature

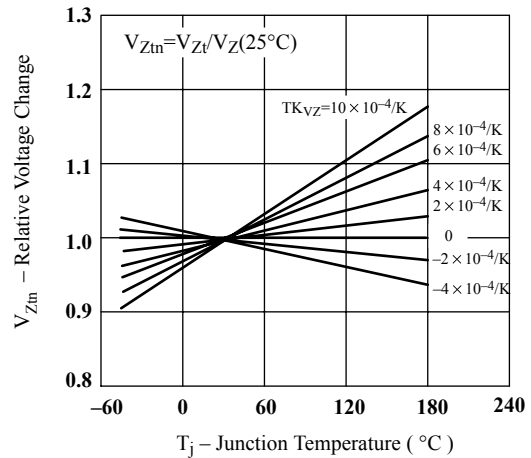


Fig.2 Typical Change of Working Voltage vs. Junction Temperature

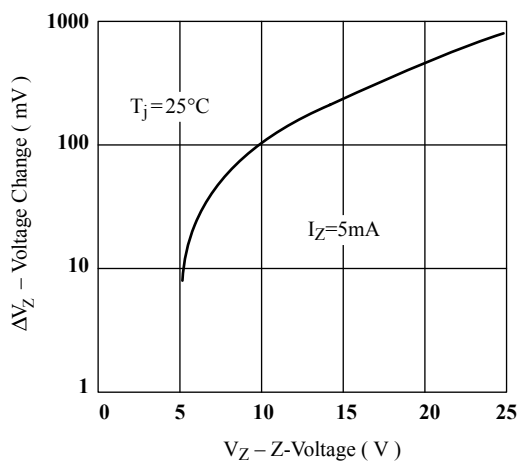


Fig.3 Typical Change of Working Voltage under Operating Conditions at $T_{\text{amb}}=25^\circ\text{C}$

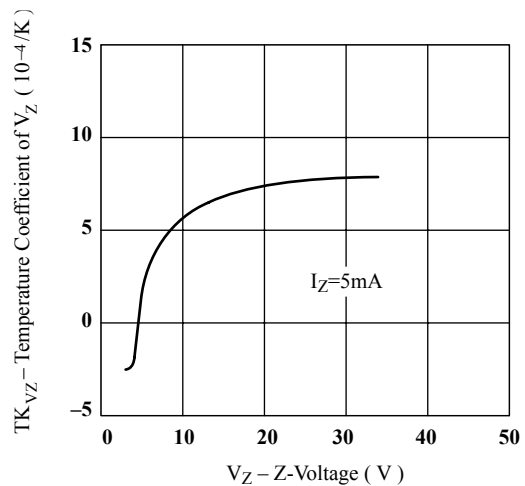


Fig.4 Temperature Coefficient of V_Z vs. Z-Voltage

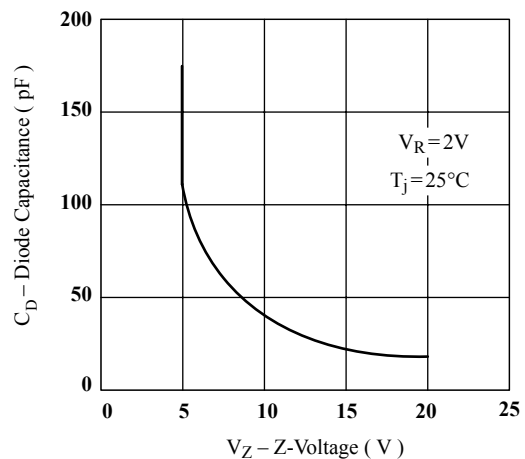


Fig.5 Diode Capacitance vs. Z-Voltage

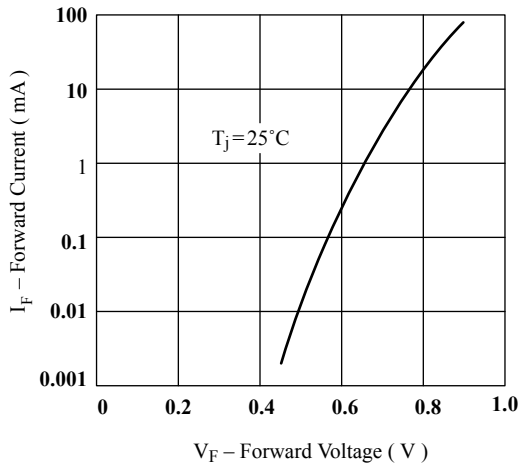


Fig.6 Forward Current vs. Forward Voltage

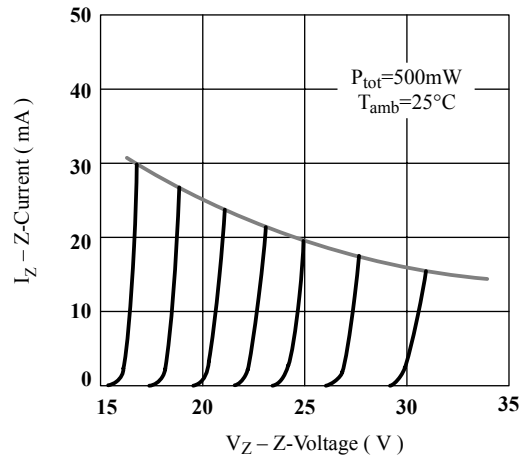


Figure 7. Z-Current vs. Z-Voltage

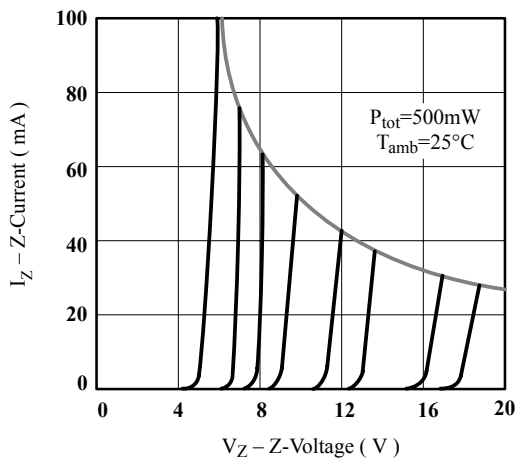


Figure 8. Z-Current vs. Z-Voltage

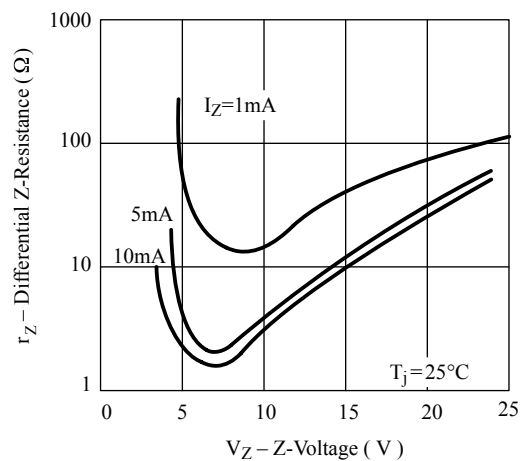


Figure 9. Differential Z-Resistance vs. Z-Voltage

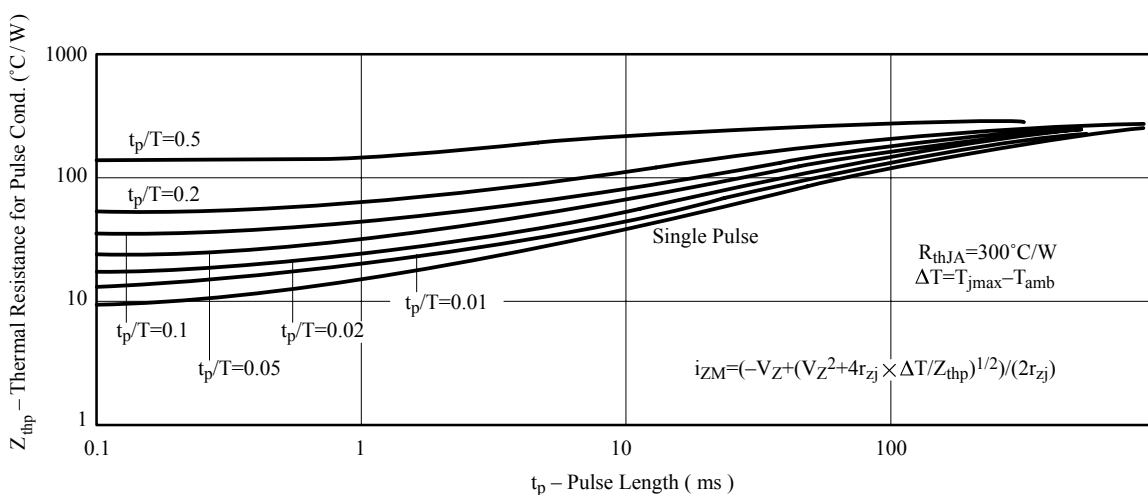


Figure 10. Thermal Response