# WEITRON

**BZM55C Series**

## Surface Mount Zener Diodes

**Lead(Pb)-Free**

**SMALL SIGNAL**
**ZENER DIODES**
**0.5 WATTS**

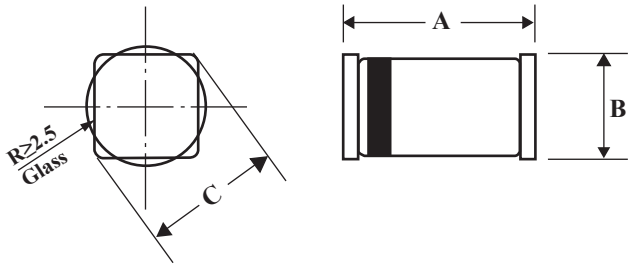
**Features:**
*500mw Power Dissipation
*General Purpose
*Ideal for Surface Mountted Application

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

**MICRO-MELF**

## 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°C Unless Otherwise Noted)

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

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

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

| Type | $V_{Znom}$ | $I_{ZT}$ | for $V_{ZT}$ and | $r_{zjT}$ | $r_{zjK}$ 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 |
| 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 |
| 82 | 82 | 2.5 | 77~87 | <300 | <2000 | 0.5 | <0.1 | <10 | 62 | 0.04~0.12 |
| 91 | 91 | 1.0 | 85~96 | <450 | <5000 | 0.1 | <0.1 | <10 | 68 | 0.04~0.12 |
| 100 | 100 | 1.0 | 94~106 | <450 | <5000 | 0.1 | <0.1 | <10 | 75 | 0.04~0.12 |

[1] Tighter tolerances available request:

BZM55B… ±2% of $V_{Znom}$

[2] at $T_j$=150℃

## Characteristics($T_A$=25˚C unless otherwise specified)

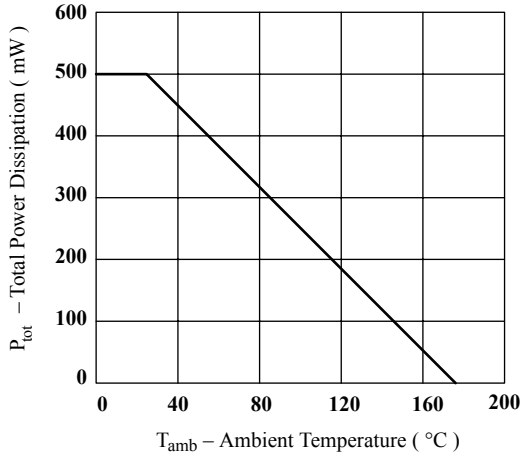



**Fig.1 Total Power Dissipation vs. Ambient Temperature**

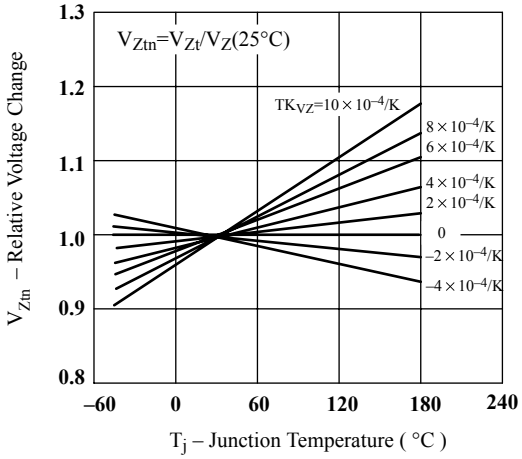



**Fig.2 Typical Change of Working Voltage vs. Junction Temperature**

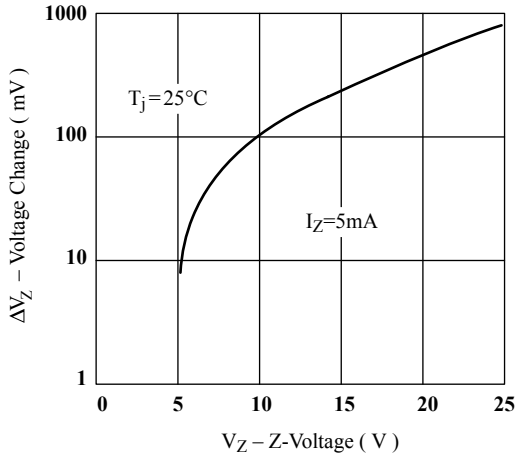



**Fig.3 Typical Change of Working Voltage under Operating Conditions at $T_{amb}$=25 ˚C**

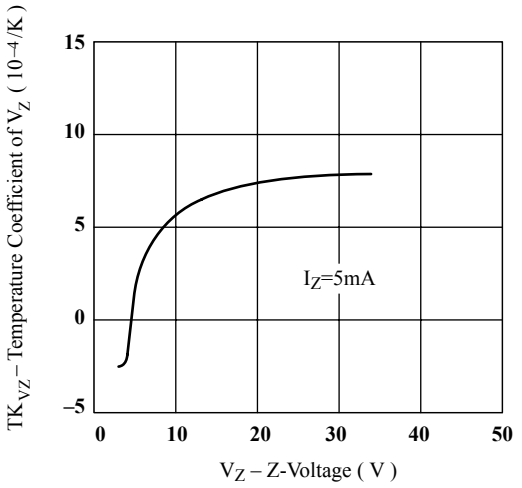



**Fig.4 Temperature Coefficient of Vz vs. Z–Voltage**

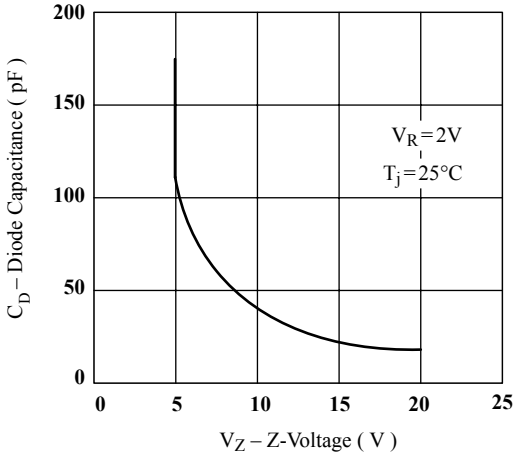



**Fig.5 Diode Capacitance vs. Z–Voltage**

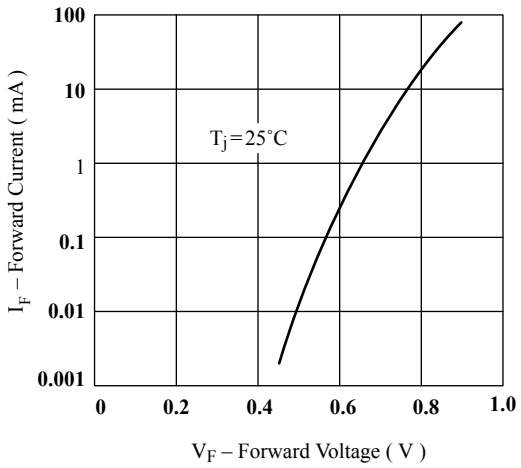



**Fig.6 Forward Current vs. Forward Voltage**

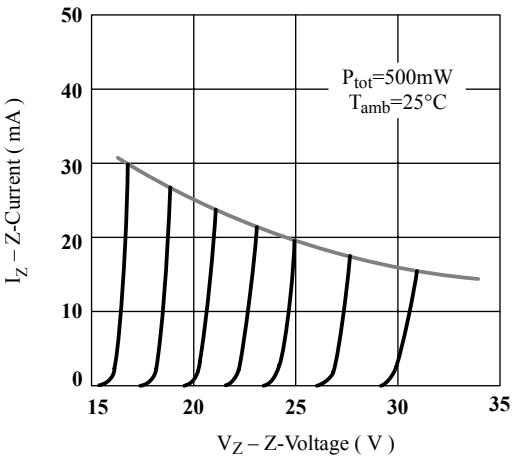



**Figure 7. Z–Current vs. Z–Voltage**

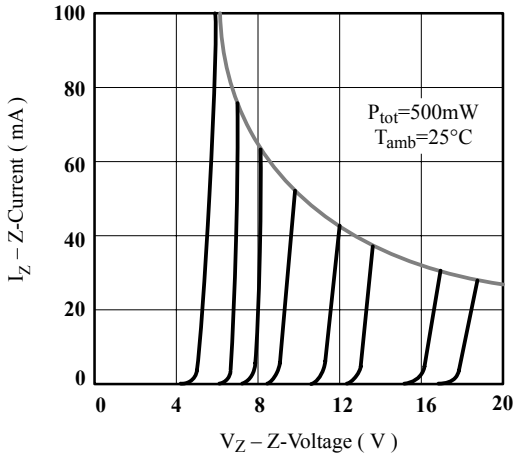



**Figure 8. Z–Current vs. Z–Voltage**

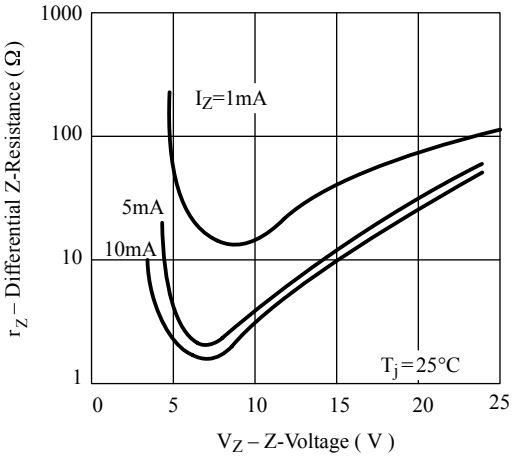



**Figure 9. Differential Z–Resistance vs. Z–Voltage**

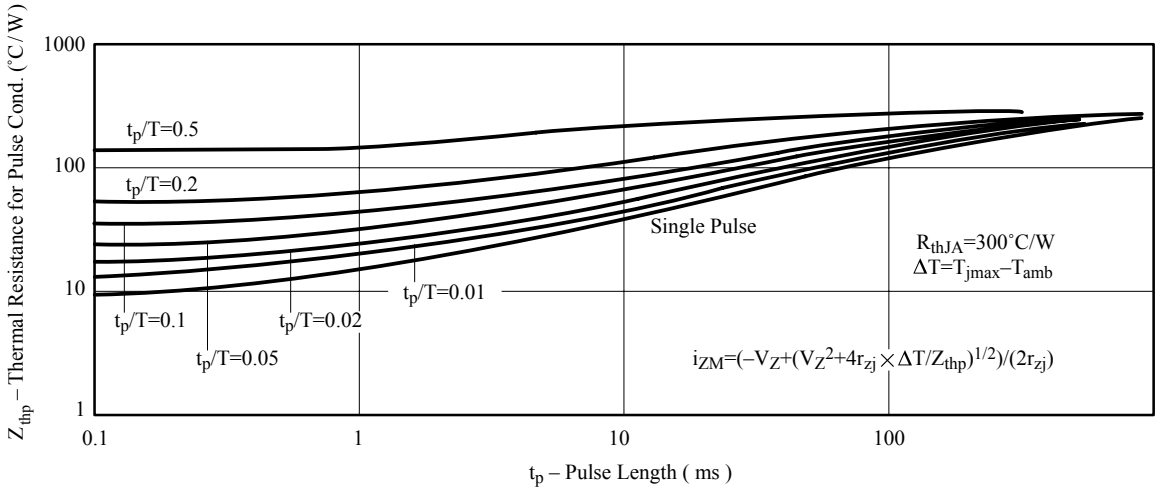



**Figure 10. Thermal Response**