

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_{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_{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 _{Znom} | I _{ZT} | for V _{ZT} and | r _{ZT} | r _{ZK} at | I _{ZK} | I _R at | V _R | TK _{VZ} |
|--------|-------------------|-----------------|-------------------------|-----------------|--------------------|-----------------|-------------------|----------------|------------------|
| BZX85C | V | mA | V ¹⁾ | 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 |

¹⁾ Tighter tolerances available request:
BZX85B... ±2% of V_{Znom}

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

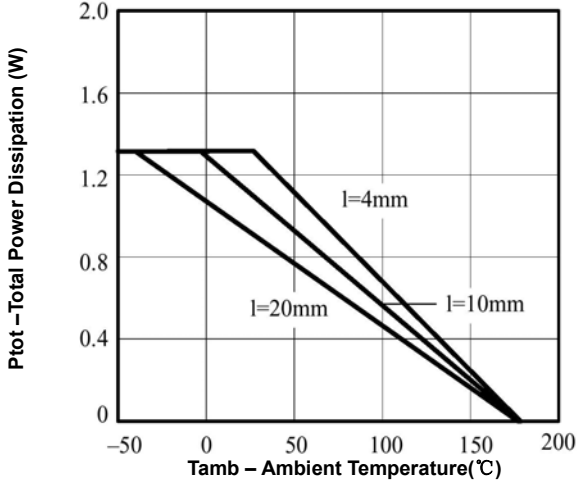


Figure1. Total Power Dissipation vs. Ambient Temperature

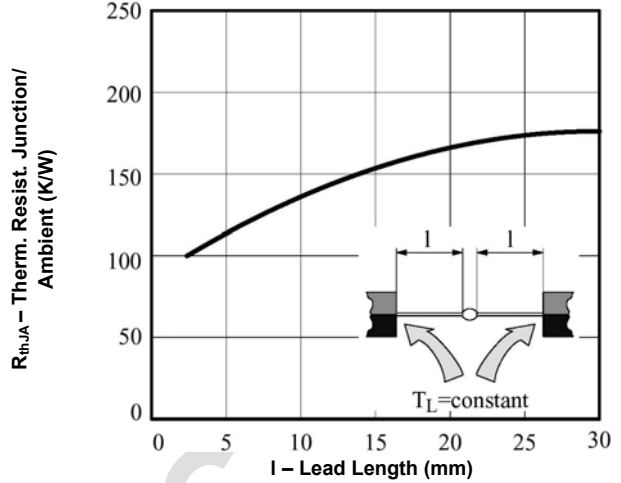


Figure2. Thermal Resistance vs. Lead Length

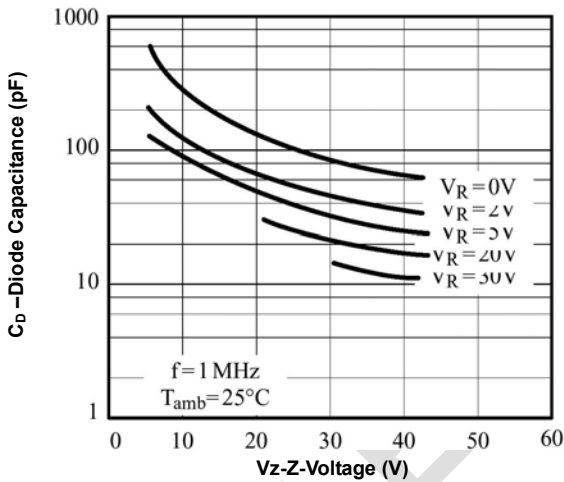


Figure3. Diode Capacitance vs. Z-Voltage

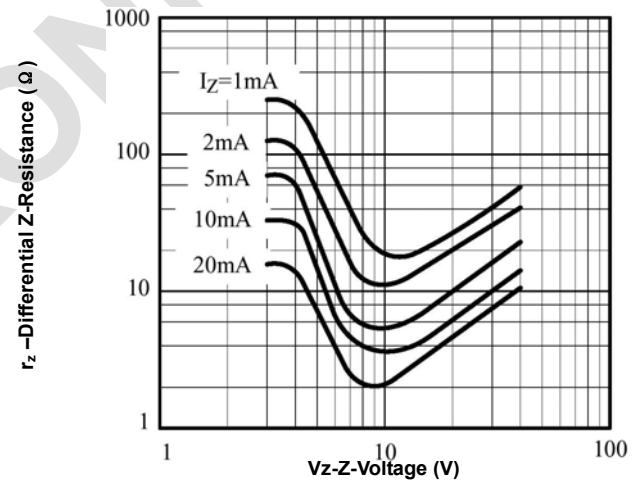


Figure4. Differential Z-Resistance vs. Z-Voltage

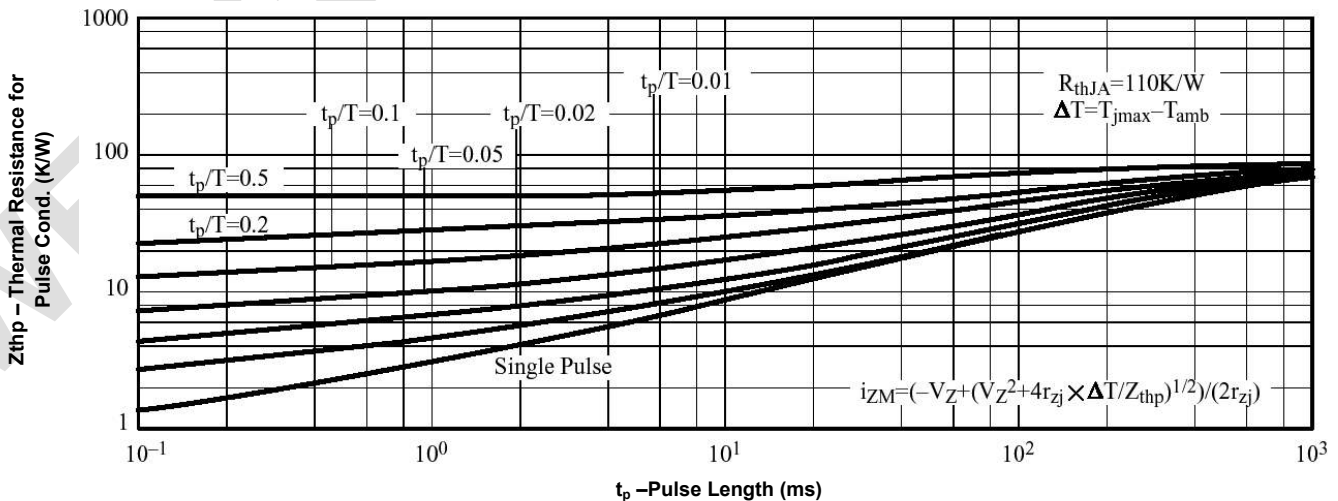
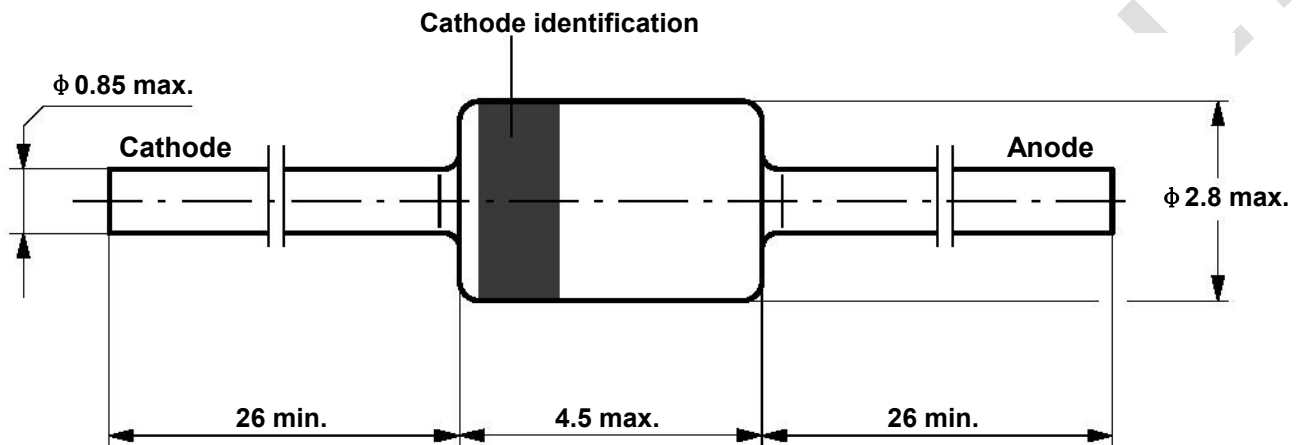


Figure5. Thermal Response

Dimensions in mm



Standard Glass Case
JEDEC DO 41