



# BZX85C3V3 THRU BZX85C56

## 1.3W EPITAXIAL ZENER DIODE

### FEATURES

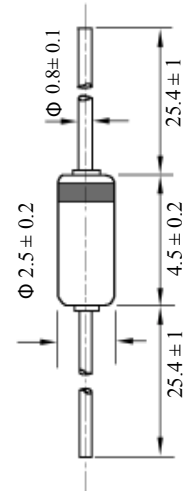
- Low profile package
- Built-in strain relief
- Low inductance
- High temperature soldering : 260°C /10 seconds at terminals
- Glass package has Underwriters Laboratory Flammability Classification
- In compliance with EU RoHS 2002/95/EC directives

### MECHANICAL DATA

- Case: Molded Glass DO-41G
- Terminals: Axial leads, solderable per MIL-STD-750, Method 2026 guaranteed
- Polarity: Color band denotes positive end
- Mounting position: Any
- Weight: 0.012 ounce, 0.336 gram



### DO-41(GLASS)



All Dimensions in mm

### ABSOLUTE MAXIMUM RATINGS(LIMITING VALUES)(TA=25°C)

|   | Symbols          | Value       | Units |
|---|------------------|-------------|-------|
| Zener current see table "Characteristics" |                  |             |       |
| Power dissipation at TA=50°C              | P <sub>tot</sub> | 1.3 1)      | W     |
| Junction temperature                      | T <sub>J</sub>   | 175         | °C    |
| Storage temperature range                 | T <sub>STG</sub> | -65 to +200 | °C    |

1)Valid provided that a distance of 8mm from case are kept at ambient temperature

### ELECTRICAL CHARACTERISTICS(TA=25°C)

|  | Symbols          | Min | Typ | Max    | Units |
|--|------------------|-----|-----|--------|-------|
| Thermal resistance junction to ambient | R <sub>thA</sub> |     |     | 170 1) | °C/W  |
| Forward voltage at IF=200mA            | V <sub>F</sub>   |     |     | 1.2    | V     |

1) Valid provided that a distance at 8mm from case are kept at ambient temperature



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| Type   | V <sub>Znom</sub> | I <sub>ZT</sub> | for V <sub>ZT</sub> and | r <sub>zjT</sub> | r <sub>zjK</sub> @ I <sub>ZK</sub> | I <sub>R</sub> @ 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   |



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## RATINGS AND CHARACTERISTIC CURVES

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

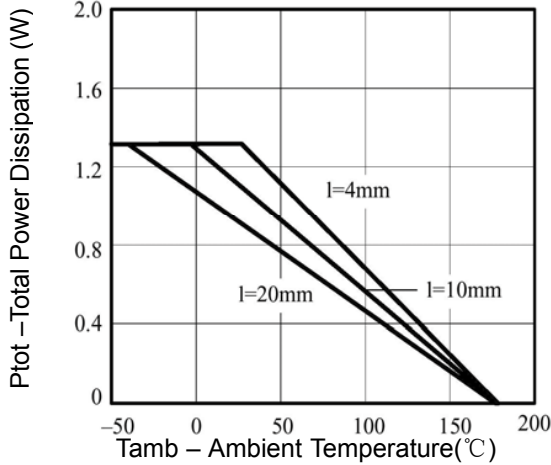


Figure1. Total Power Dissipation vs. Ambient Temperature

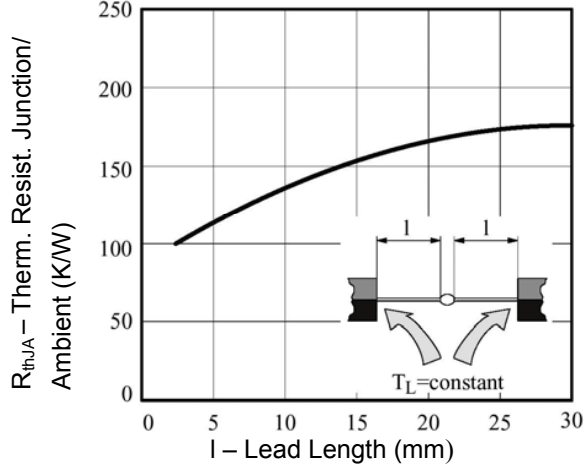


Figure2. Thermal Resistance vs. Lead Length

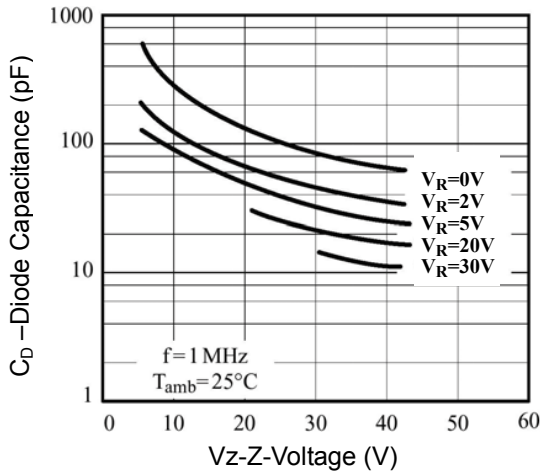


Figure3. Diode Capacitance vs. Z-Voltage

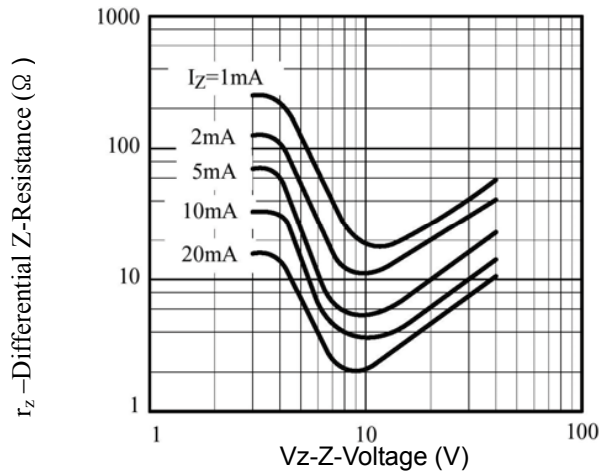


Figure4. Differential Z-Resistance vs. Z-Voltage

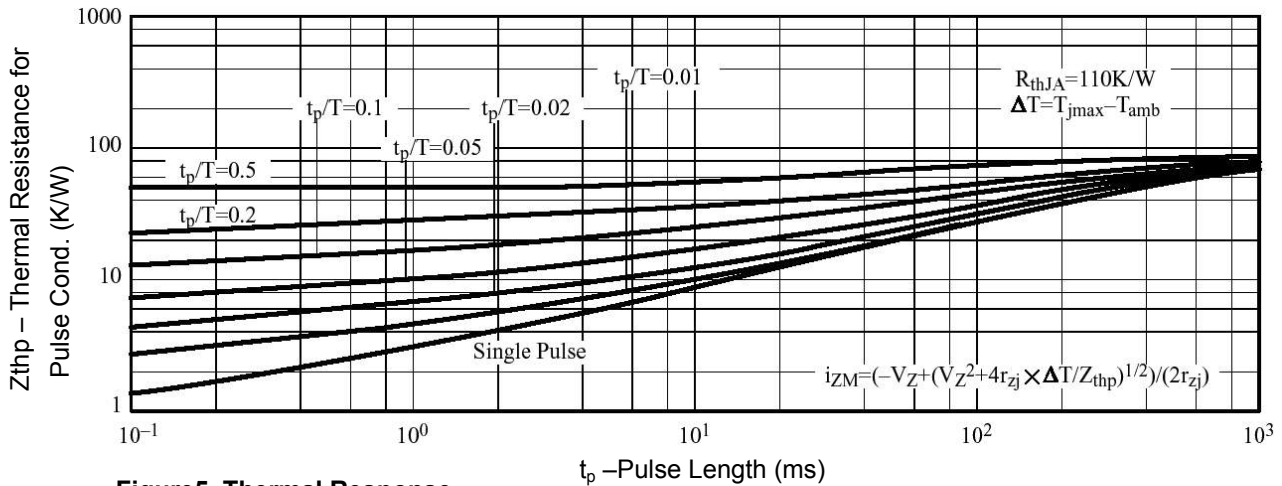


Figure5. Thermal Response