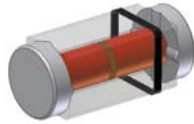


# BZT55C SERIES

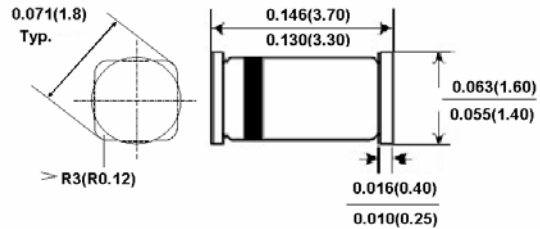
## 0.5 Watts Hermetically Sealed Glass Zener Voltage Regulators

### QUADRO MINI-MELF



### Features

- ✧ Zener voltage range 2.0 to 75 volts
- ✧ Mini-MELF package
- ✧ Surface device type mounting
- ✧ Hermetically sealed glass
- ✧ Compression Bonded Construction
- ✧ All external surfaces are corrosion resistant and terminals are readily solderable
- ✧ RoHS compliant
- ✧ Matte Tin(Sn) lead finish
- ✧ Blue color band indicates negative polarity



Dimensions in inches and (millimeters)

## Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

| Type Number                             | Symbol         | Value        | Units |
|-----------------------------------------|----------------|--------------|-------|
| Power Dissipation                       | $P_D$          | 500          | mW    |
| Operating and Storage Temperature Range | $T_J, T_{STG}$ | -65 to + 200 | °C    |

Notes: These ratings are limiting values above which the serviceability of the diode may be impaired

# RATINGS AND CHARACTERISTIC CURVES (BZT55C SERIES)

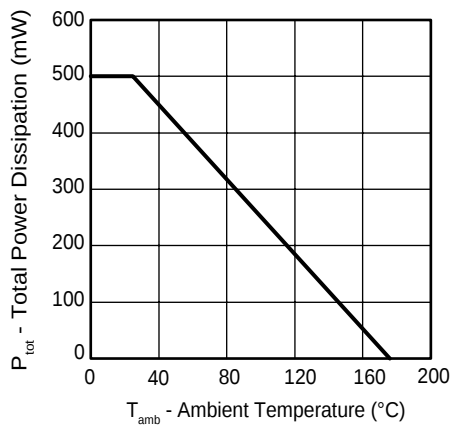


Figure 1. Total Power Dissipation vs. Ambient Temperature

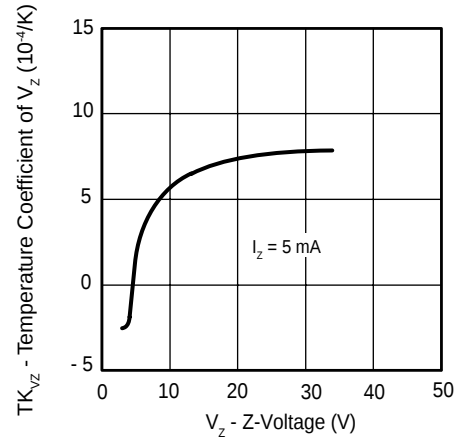


Figure 4. Temperature Coefficient of  $V_z$  vs. Z-Voltage

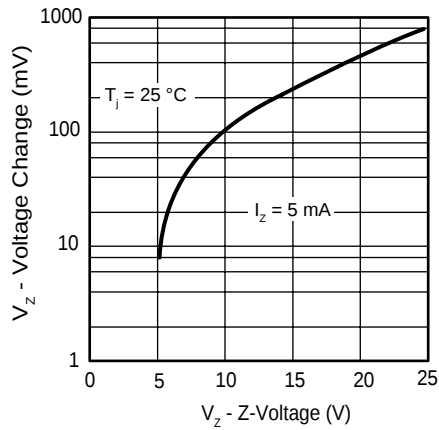


Figure 2. Typical Change of Working Voltage under Operating Conditions at  $T_{amb}=25^{\circ}\text{C}$

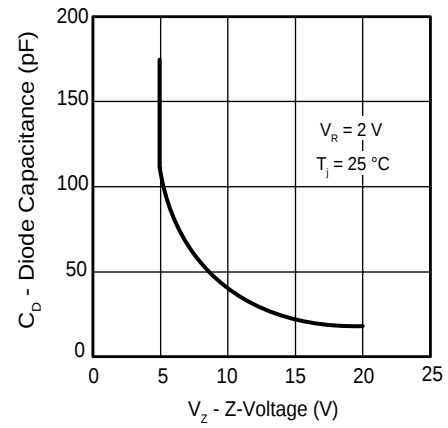


Figure 5. Diode Capacitance vs. Z-Voltage

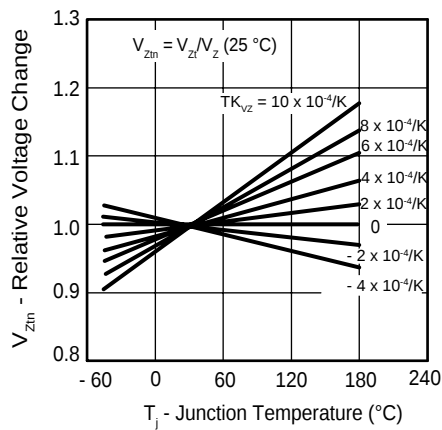


Figure 3. Typical Change of Working Voltage vs. Junction Temperature

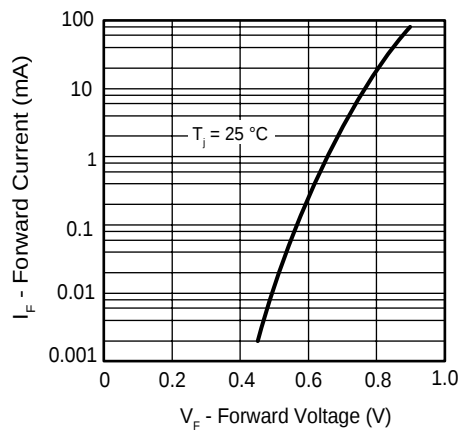


Figure 6. Forward Current vs. Forward Voltage

# RATINGS AND CHARACTERISTIC CURVES (BZT55C SERIES)

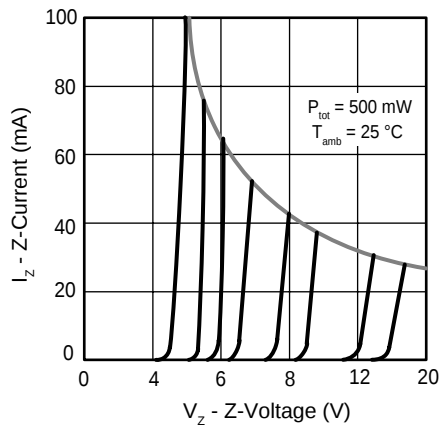


Figure 7. Z-Current vs. Z-Voltage

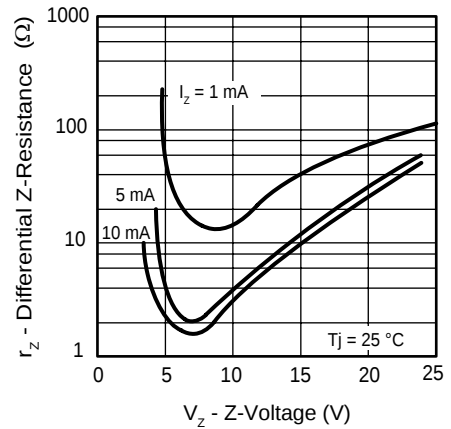


Figure 9. Differential Z-Resistance vs. Z-Voltage

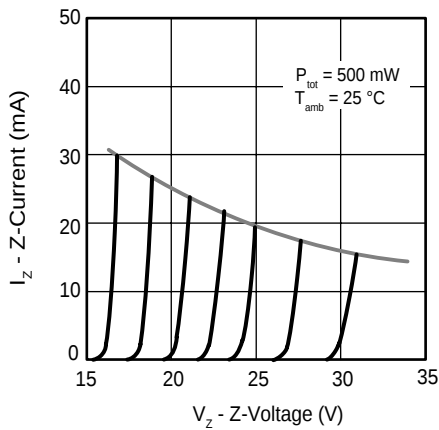


Figure 8. Z-Current vs. Z-Voltage

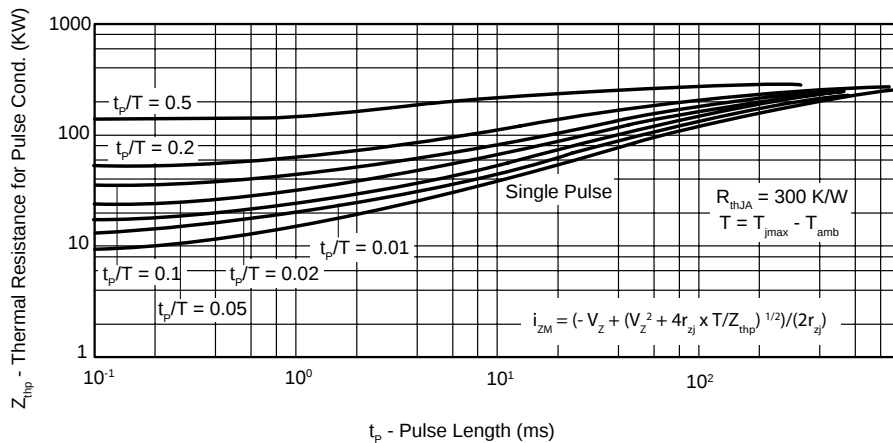


Figure 10. Thermal Response

**ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)**

| Type Number | V <sub>Z</sub> @ I <sub>ZT</sub><br>(Volts) |                           | I <sub>ZT</sub><br>mA | Z <sub>zt</sub> @ I <sub>ZT</sub><br>Ohms<br>Max | I <sub>ZK</sub><br>mA | Z <sub>ZK</sub> @ I <sub>ZK</sub><br>Ohms | I <sub>R</sub> @ V <sub>R</sub><br>uA<br>Max | V <sub>R</sub><br>V |
|-------------|---------------------------------------------|---------------------------|-----------------------|--------------------------------------------------|-----------------------|-------------------------------------------|----------------------------------------------|---------------------|
|             | V <sub>Z</sub><br>Min (V)                   | V <sub>Z</sub><br>Max (V) |                       |                                                  |                       |                                           |                                              |                     |
| BZT55C2V0   | 1.88                                        | 2.11                      | 5                     | 100                                              | 1.0                   | 600                                       | 50                                           | 1.0                 |
| BZT55C2V2   | 2.08                                        | 2.33                      | 5                     | 100                                              | 1.0                   | 600                                       | 50                                           | 1.0                 |
| BZT55C2V4   | 2.28                                        | 2.56                      | 5                     | 85                                               | 1.0                   | 600                                       | 50                                           | 1.0                 |
| BZT55C2V7   | 2.51                                        | 2.89                      | 5                     | 85                                               | 1.0                   | 600                                       | 10                                           | 1.0                 |
| BZT55C3V0   | 2.8                                         | 3.2                       | 5                     | 85                                               | 1.0                   | 600                                       | 4                                            | 1.0                 |
| BZT55C3V3   | 3.1                                         | 3.5                       | 5                     | 85                                               | 1.0                   | 600                                       | 2                                            | 1.0                 |
| BZT55C3V6   | 3.4                                         | 3.8                       | 5                     | 85                                               | 1.0                   | 600                                       | 2                                            | 1.0                 |
| BZT55C3V9   | 3.7                                         | 4.1                       | 5                     | 85                                               | 1.0                   | 600                                       | 2                                            | 1.0                 |
| BZT55C4V3   | 4.0                                         | 4.6                       | 5                     | 75                                               | 1.0                   | 600                                       | 1                                            | 1.0                 |
| BZT55C4V7   | 4.4                                         | 5.0                       | 5                     | 60                                               | 1.0                   | 600                                       | 0.5                                          | 1.0                 |
| BZT55C5V1   | 4.8                                         | 5.4                       | 5                     | 35                                               | 1.0                   | 550                                       | 0.1                                          | 1.0                 |
| BZT55C5V6   | 5.2                                         | 6.0                       | 5                     | 25                                               | 1.0                   | 450                                       | 0.1                                          | 1.0                 |
| BZT55C6V2   | 5.8                                         | 6.6                       | 5                     | 10                                               | 1.0                   | 200                                       | 0.1                                          | 2.0                 |
| BZT55C6V8   | 6.4                                         | 7.2                       | 5                     | 8                                                | 1.0                   | 150                                       | 0.1                                          | 3.0                 |
| BZT55C7V5   | 7.0                                         | 7.9                       | 5                     | 7                                                | 1.0                   | 50                                        | 0.1                                          | 5.0                 |
| BZT55C8V2   | 7.7                                         | 8.7                       | 5                     | 7                                                | 1.0                   | 50                                        | 0.1                                          | 6.2                 |
| BZT55C9V1   | 8.5                                         | 9.6                       | 5                     | 10                                               | 1.0                   | 50                                        | 0.1                                          | 6.8                 |
| BZT55C10    | 9.4                                         | 10.6                      | 5                     | 15                                               | 1.0                   | 70                                        | 0.1                                          | 7.5                 |
| BZT55C11    | 10.4                                        | 11.6                      | 5                     | 20                                               | 1.0                   | 70                                        | 0.1                                          | 8.2                 |
| BZT55C12    | 11.4                                        | 12.7                      | 5                     | 20                                               | 1.0                   | 90                                        | 0.1                                          | 9.1                 |
| BZT55C13    | 12.4                                        | 14.1                      | 5                     | 26                                               | 1.0                   | 110                                       | 0.1                                          | 10                  |
| BZT55C15    | 13.8                                        | 15.6                      | 5                     | 30                                               | 1.0                   | 110                                       | 0.1                                          | 11                  |
| BZT55C16    | 15.3                                        | 17.1                      | 5                     | 40                                               | 1.0                   | 170                                       | 0.1                                          | 12                  |
| BZT55C18    | 16.8                                        | 19.1                      | 5                     | 50                                               | 1.0                   | 170                                       | 0.1                                          | 13                  |
| BZT55C20    | 18.8                                        | 21.1                      | 5                     | 55                                               | 1.0                   | 220                                       | 0.1                                          | 15                  |
| BZT55C22    | 20.8                                        | 23.3                      | 5                     | 55                                               | 1.0                   | 220                                       | 0.1                                          | 16                  |
| BZT55C24    | 22.8                                        | 25.6                      | 5                     | 80                                               | 1.0                   | 220                                       | 0.1                                          | 18                  |
| BZT55C27    | 25.1                                        | 28.9                      | 2                     | 80                                               | 1.0                   | 220                                       | 0.1                                          | 20                  |
| BZT55C30    | 28                                          | 32                        | 2                     | 80                                               | 1.0                   | 220                                       | 0.1                                          | 22                  |
| BZT55C33    | 31                                          | 35                        | 2                     | 80                                               | 1.0                   | 220                                       | 0.1                                          | 24                  |
| BZT55C36    | 34                                          | 38                        | 2                     | 80                                               | 1.0                   | 220                                       | 0.1                                          | 27                  |
| BZT55C39    | 37                                          | 41                        | 2                     | 90                                               | 0.5                   | 500                                       | 0.1                                          | 28                  |
| BZT55C43    | 40                                          | 46                        | 2                     | 90                                               | 0.5                   | 600                                       | 0.1                                          | 32                  |
| BZT55C47    | 44                                          | 50                        | 2                     | 110                                              | 0.5                   | 700                                       | 0.1                                          | 35                  |
| BZT55C51    | 48                                          | 54                        | 2                     | 125                                              | 0.5                   | 700                                       | 0.1                                          | 38                  |
| BZT55C56    | 52                                          | 60                        | 2                     | 135                                              | 0.5                   | 1000                                      | 0.1                                          | 42                  |
| BZT55C62    | 58                                          | 66                        | 2.5                   | 150                                              | 0.5                   | 1000                                      | 0.1                                          | 47                  |
| BZT55C68    | 64                                          | 72                        | 2.5                   | 160                                              | 0.5                   | 1000                                      | 0.1                                          | 51                  |
| BZT55C75    | 70                                          | 80                        | 2.5                   | 170                                              | 0.5                   | 1000                                      | 0.1                                          | 56                  |

VF Forward Voltage = 1.0v Maximum @ IF=100mA for all types.

- Notes:
1. The type numbers listed have zener voltage min/max limits as shown.
  2. The zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an rms value equal to 10% of the dc zener current (I<sub>ZT</sub> or I<sub>ZK</sub>) is superimposed to I<sub>ZT</sub> or I<sub>ZK</sub>.