

## Surface Mount Zener Diode

## BZT55C51

## Features

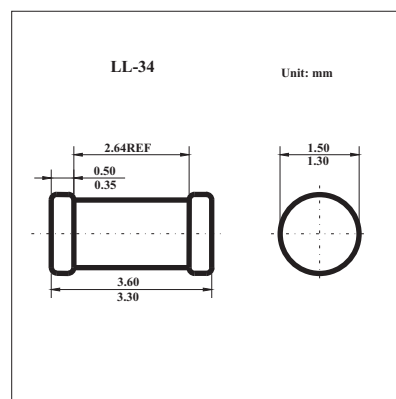
500mW Power Dissipation

Low reverse current level

Very high stability

Low noise

Ideal for Surface Mounted Application

Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$ 

| Parameter                                            | Symbol          | Rating      | Unit               |
|------------------------------------------------------|-----------------|-------------|--------------------|
| Power Dissipation (Note 1)                           | $P_D$           | 500         | mW                 |
| Forward Voltage @ $I_F = 200\text{mA}$               | $V_F$           | 1.5         | V                  |
| Thermal Resistance, Junction to Ambient Air (Note 1) | $R_{\theta JA}$ | 300         | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range              | $T_J, T_{STG}$  | -65 to +175 | $^\circ\text{C}$   |

Notes: 1. Valid provided that electrodes are kept at ambient temperature.

Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

| Type     | Zener Voltage Range (Note 2) |         |         |          | Maximum Zener Impedance |                   |          | Maximum Reverse Current |    |
|----------|------------------------------|---------|---------|----------|-------------------------|-------------------|----------|-------------------------|----|
|          | $V_Z @ I_{ZT}$               |         |         | $I_{ZT}$ | $Z_{ZT} @ I_{ZT}$       | $Z_{ZK} @ I_{ZK}$ | $I_{ZK}$ | $I_R @ V_R$             |    |
|          | Nom (V)                      | Min (V) | Max (V) | mA       | $\Omega$                | $\Omega$          | mA       | $\mu\text{A}$           | V  |
| BZT55C51 | 51                           | 48      | 54      | 2.5      | 125                     | 700               | 0.5      | 0.1                     | 39 |

Notes: 2. Tested with pulses,  $T_p = 100\text{ms}$ .

## BZT55C51

## ■ Typical Characteristics

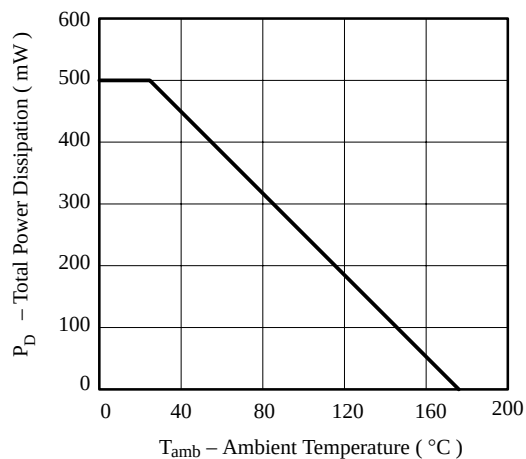


Figure 1. Total Power Dissipation vs. Ambient Temperature

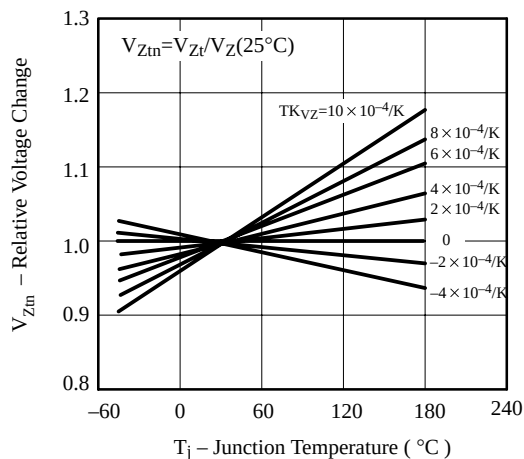


Figure 2. Typical Change of Working Voltage vs. Junction Temperature

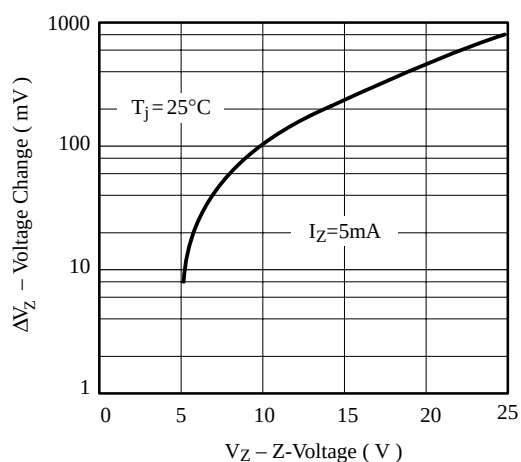
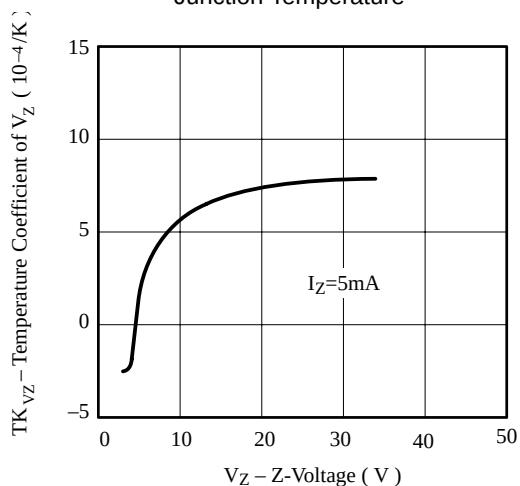
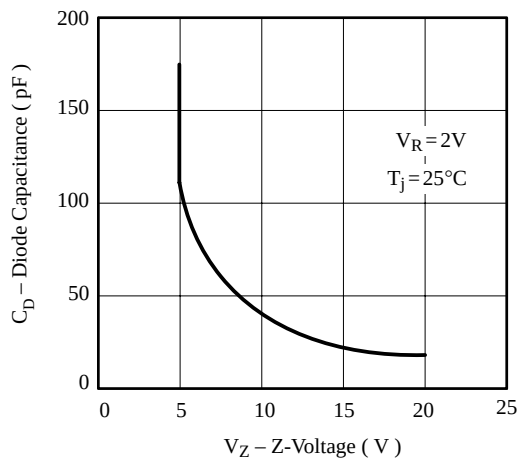
Figure 3. Typical Change of Working Voltage under Operating Conditions at  $T_{amb}=25^{\circ}\text{C}$ Figure 4. Temperature Coefficient of  $V_Z$  vs. Z-Voltage

Figure 5. Diode Capacitance vs. Z-Voltage

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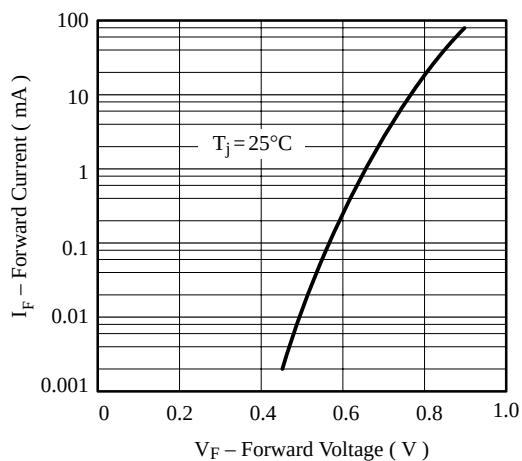


Figure 6. Forward Current vs. Forward Voltage

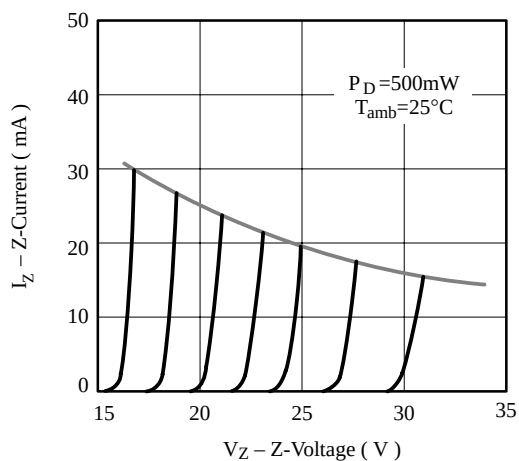


Figure 7. Z-Current vs. Z-Voltage

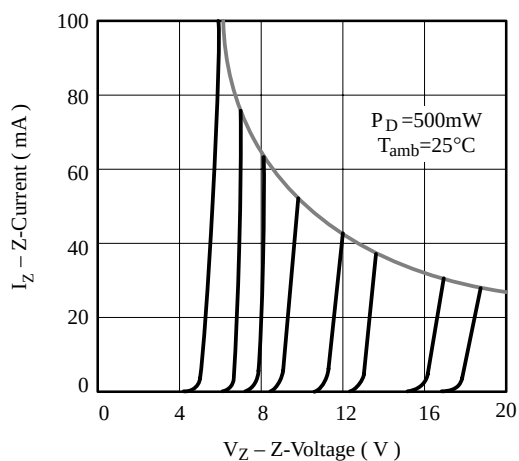


Figure 8. Z-Current vs. Z-Voltage

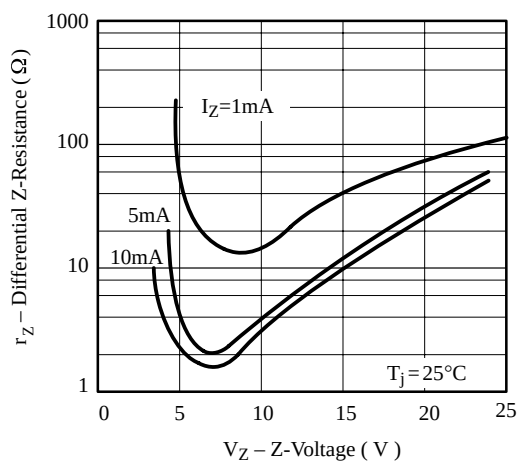


Figure 9. Differential Z-Resistance vs. Z-Voltage

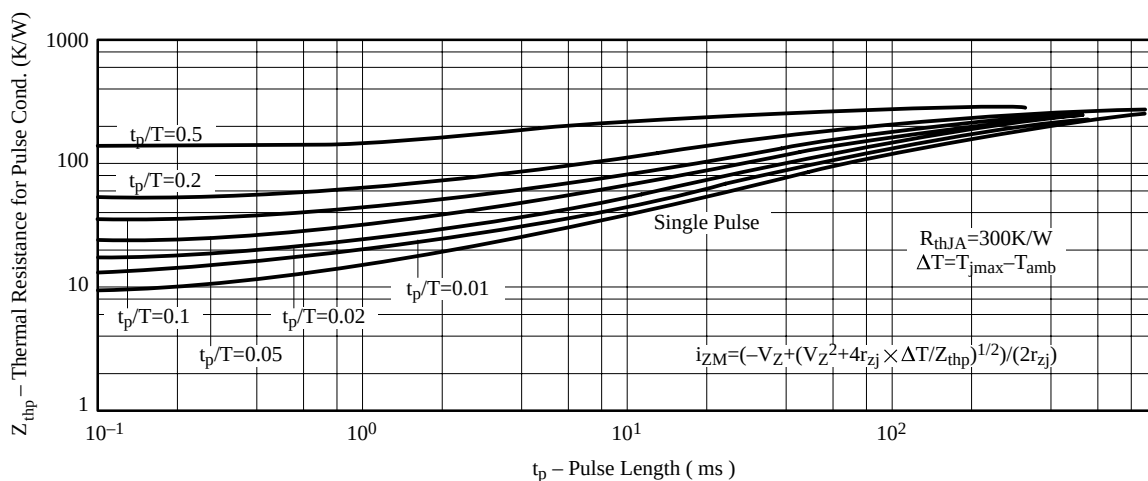


Figure 10. Thermal Response