

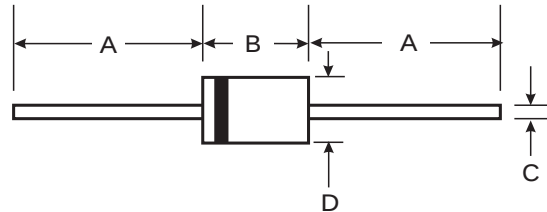


# BZX55C2V4 - BZX55C75

## SILICON EPITAXIAL PLANAR ZENER DIODE

### Features

- Very Sharp Reverse Characteristic
- Low Reverse Current Level
- Very High Stability
- Low Noise



### Mechanical Data

- Case: DO-35, Glass
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Approx. Weight: 0.13 grams

| DO-35                |       |      |
|----------------------|-------|------|
| Dim                  | Min   | Max  |
| A                    | 25.40 | —    |
| B                    | —     | 4.00 |
| C                    | —     | 0.60 |
| D                    | —     | 2.00 |
| All Dimensions in mm |       |      |

### Maximum Ratings and Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic                              | Symbol          | Value       | Unit             | Test Condition                                |
|---------------------------------------------|-----------------|-------------|------------------|-----------------------------------------------|
| Power Dissipation                           | $P_d$           | 500         | mW               | Lead length = 4.0mm, $T_L = 25^\circ\text{C}$ |
| Zener Current                               | $I_Z$           | $P_d/V_Z$   | mA               |                                               |
| Thermal Resistance, Junction to Ambient Air | $R_{\theta JA}$ | 300         | K/W              | Lead length = 4.0mm, $T_L = \text{constant}$  |
| Forward Voltage                             | $V_F$           | 1.5         | V                | $I_F = 200\text{mA}$                          |
| Operating and Storage Temperature Range     | $T_J, T_{STG}$  | -65 to +175 | $^\circ\text{C}$ |                                               |

| Type Number | Nominal Zener Voltage |      | Zener Voltage Range | Zener Impedance     | Zener Impedance     |      | Leakage Current @ $V_R$      |                               |       | Temperature Coefficient |
|-------------|-----------------------|------|---------------------|---------------------|---------------------|------|------------------------------|-------------------------------|-------|-------------------------|
|             | $V_Z$ @ $I_{ZT}$      |      | $V_Z$ @ $I_{ZT}$    | $Z_{ZT}$ @ $I_{ZT}$ | $Z_{ZT}$ @ $I_{ZK}$ |      | $I_R$ @ $T=25^\circ\text{C}$ | $I_R$ @ $T=150^\circ\text{C}$ | $V_R$ |                         |
|             | (V)                   | (mA) | (V)                 | ( $\Omega$ )        | ( $\Omega$ )        | (mA) | ( $\mu\text{A}$ )            | ( $\mu\text{A}$ )             | (V)   | (%/K)                   |
| BZX55C2V4   | 2.4                   | 5.0  | 2.28 to 2.56        | < 85                | < 600               | 1.0  | < 50                         | < 100                         | 1.0   | -0.09 to -0.06          |
| BZX55C2V7   | 2.7                   | 5.0  | 2.5 to 2.9          | < 85                | < 600               | 1.0  | < 10                         | < 50                          | 1.0   | -0.09 to -0.06          |
| BZX55C3V0   | 3.0                   | 5.0  | 2.8 to 3.2          | < 85                | < 600               | 1.0  | < 4.0                        | < 40                          | 1.0   | -0.08 to -0.05          |
| BZX55C3V3   | 3.3                   | 5.0  | 3.1 to 3.5          | < 85                | < 600               | 1.0  | < 2.0                        | < 40                          | 1.0   | -0.08 to -0.05          |
| BZX55C3V6   | 3.6                   | 5.0  | 3.4 to 3.8          | < 85                | < 600               | 1.0  | < 2.0                        | < 40                          | 1.0   | -0.08 to -0.05          |
| BZX55C3V9   | 3.9                   | 5.0  | 3.7 to 4.1          | < 85                | < 600               | 1.0  | < 2.0                        | < 40                          | 1.0   | -0.08 to -0.05          |
| BZX55C4V3   | 4.3                   | 5.0  | 4.0 to 4.6          | < 75                | < 600               | 1.0  | < 1.0                        | < 20                          | 1.0   | -0.06 to - 0.03         |
| BZX55C4V7   | 4.7                   | 5.0  | 4.4 to 5.0          | < 60                | < 600               | 1.0  | < 0.5                        | < 10                          | 1.0   | -0.05 to +0.02          |
| BZX55C5V1   | 5.1                   | 5.0  | 4.8 to 5.4          | < 35                | < 550               | 1.0  | < 0.1                        | < 2.0                         | 1.0   | -0.02 to + 0.02         |
| BZX55C5V6   | 5.6                   | 5.0  | 5.2 to 6.0          | < 25                | < 450               | 1.0  | < 0.1                        | < 2.0                         | 1.0   | -0.05 to +0.05          |
| BZX55C6V2   | 6.2                   | 5.0  | 5.8 to 6.6          | < 10                | < 200               | 1.0  | < 0.1                        | < 2.0                         | 2.0   | 0.03 to 0.06            |
| BZX55C6V8   | 6.8                   | 5.0  | 6.4 to 7.2          | < 8.0               | < 150               | 1.0  | < 0.1                        | < 2.0                         | 3.0   | 0.03 to 0.07            |
| BZX55C7V5   | 7.5                   | 5.0  | 7.0 to 7.9          | < 7.0               | < 50                | 1.0  | < 0.1                        | < 2.0                         | 5.0   | 0.03 to 0.07            |
| BZX55C8V2   | 8.2                   | 5.0  | 7.7 to 8.7          | < 7.0               | < 50                | 1.0  | < 0.1                        | < 2.0                         | 6.2   | 0.03 to 0.08            |
| BZX55C9V1   | 9.1                   | 5.0  | 8.5 to 9.6          | < 10                | < 50                | 1.0  | < 0.1                        | < 2.0                         | 6.8   | 0.03 to 0.09            |
| BZX55C10    | 10                    | 5.0  | 9.4 to 10.6         | < 15                | < 70                | 1.0  | < 0.1                        | < 2.0                         | 7.5   | 0.03 to 0.10            |
| BZX55C11    | 11                    | 5.0  | 10.4 to 11.6        | < 20                | < 70                | 1.0  | < 0.1                        | < 2.0                         | 8.2   | 0.03 to 0.11            |
| BZX55C12    | 12                    | 5.0  | 11.4 to 12.7        | < 20                | < 90                | 1.0  | < 0.1                        | < 2.0                         | 9.1   | 0.03 to 0.11            |
| BZX55C13    | 13                    | 5.0  | 12.4 to 14.1        | < 26                | < 110               | 1.0  | < 0.1                        | < 2.0                         | 10    | 0.03 to 0.11            |
| BZX55C15    | 15                    | 5.0  | 13.8 to 15.6        | < 30                | < 110               | 1.0  | < 0.1                        | < 2.0                         | 11    | 0.03 to 0.11            |
| BZX55C16    | 16                    | 5.0  | 15.3 to 17.1        | < 40                | < 170               | 1.0  | < 0.1                        | < 2.0                         | 12    | 0.03 to 0.11            |
| BZX55C18    | 18                    | 5.0  | 16.8 to 19.1        | < 50                | < 170               | 1.0  | < 0.1                        | < 2.0                         | 13    | 0.03 to 0.11            |
| BZX55C20    | 20                    | 5.0  | 18.8 to 21.2        | < 55                | < 220               | 1.0  | < 0.1                        | < 2.0                         | 15    | 0.03 to 0.11            |
| BZX55C22    | 22                    | 5.0  | 20.8 to 23.3        | < 55                | < 220               | 1.0  | < 0.1                        | < 2.0                         | 16    | 0.04 to 0.12            |
| BZX55C24    | 24                    | 5.0  | 22.8 to 25.6        | < 80                | < 220               | 1.0  | < 0.1                        | < 2.0                         | 18    | 0.04 to 0.12            |
| BZX55C27    | 27                    | 5.0  | 25.1 to 28.9        | < 80                | < 220               | 1.0  | < 0.1                        | < 2.0                         | 20    | 0.04 to 0.12            |
| BZX55C30    | 30                    | 5.0  | 28 to 32            | < 80                | < 220               | 1.0  | < 0.1                        | < 2.0                         | 22    | 0.04 to 0.12            |
| BZX55C33    | 33                    | 5.0  | 31 to 35            | < 80                | < 220               | 1.0  | < 0.1                        | < 2.0                         | 24    | 0.04 to 0.12            |
| BZX55C36    | 36                    | 5.0  | 34 to 38            | < 80                | < 220               | 1.0  | < 0.1                        | < 2.0                         | 27    | 0.04 to 0.12            |
| BZX55C39    | 39                    | 2.5  | 37 to 41            | < 90                | < 500               | 0.5  | < 0.1                        | < 5.0                         | 30    | 0.04 to 0.12            |
| BZX55C43    | 43                    | 2.5  | 40 to 46            | < 90                | < 600               | 0.5  | < 0.1                        | < 5.0                         | 33    | 0.04 to 0.12            |
| BZX55C47    | 47                    | 2.5  | 44 to 50            | < 110               | < 700               | 0.5  | < 0.1                        | < 5                           | 36    | 0.04 to 0.12            |
| BZX55C51    | 51                    | 2.5  | 48 to 54            | < 125               | < 700               | 0.5  | < 0.1                        | < 10                          | 39    | 0.04 to 0.12            |
| BZX55C56    | 56                    | 2.5  | 52 to 60            | < 135               | < 1000              | 0.5  | < 0.1                        | < 10                          | 43    | 0.04 to 0.12            |
| BZX55C62    | 62                    | 2.5  | 58 to 66            | < 150               | < 1000              | 0.5  | < 0.1                        | < 10                          | 47    | 0.04 to 0.12            |
| BZX55C68    | 68                    | 2.5  | 64 to 72            | < 200               | < 1000              | 0.5  | < 0.1                        | < 10                          | 51    | 0.04 to 0.12            |
| BZX55C75    | 75                    | 2.5  | 70 to 79            | < 250               | < 1500              | 0.5  | < 0.1                        | < 10                          | 56    | 0.04 to 0.12            |

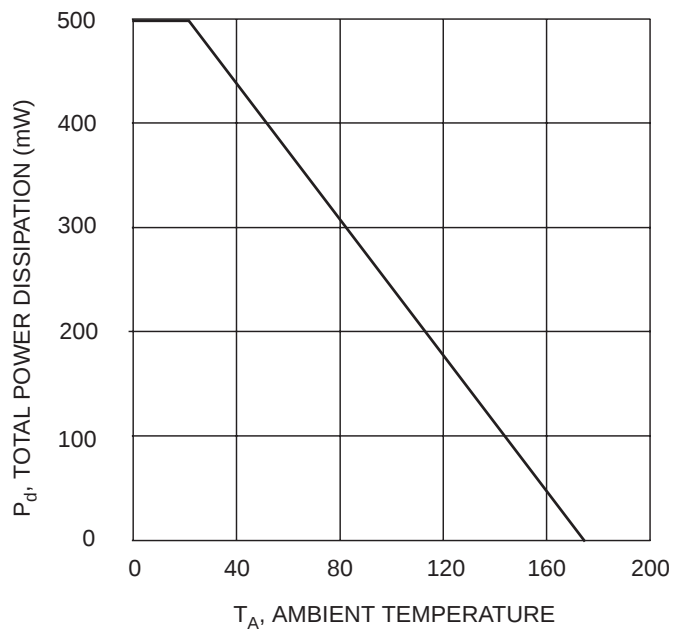


Fig. 1, Power Dissipation vs Ambient Temperature

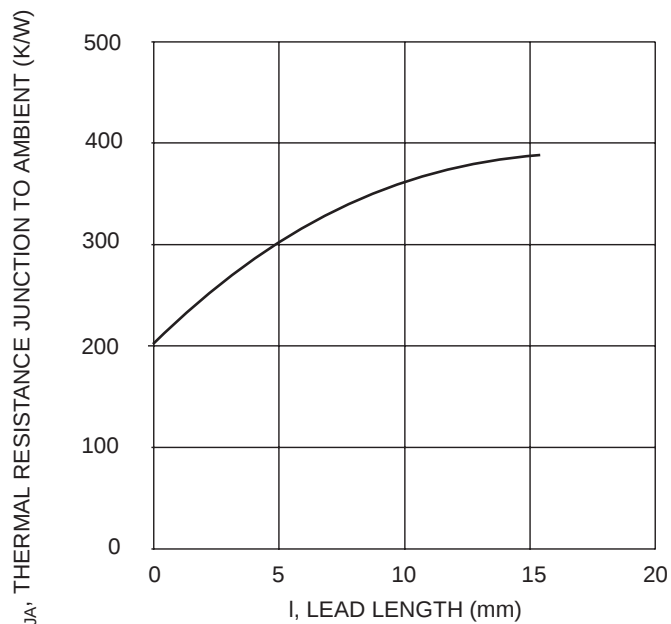


Fig. 2, Thermal Resistance vs Lead Length

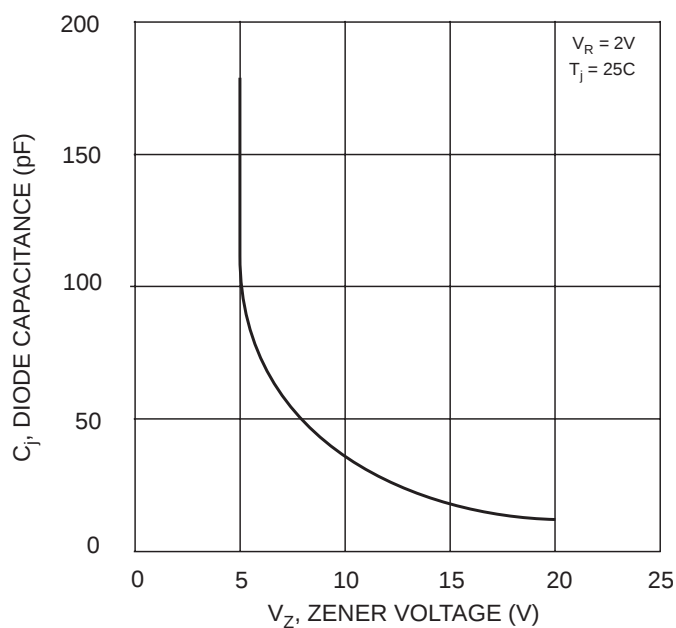


Fig. 3, Diode Capacitance vs Zener Voltage

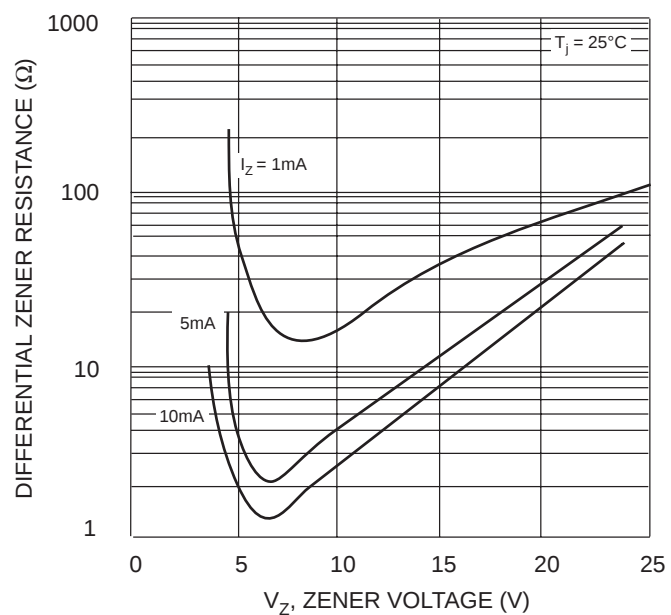


Fig. 4, Differential Zener Impedance