



BZX55 ...

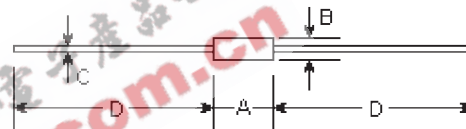
SILICON PLANAR ZENER DIODES

Features

Silicon Planar Zener Diodes

The Zener voltages are graded according to the international E 24 standard. Other voltage tolerances and higher Zener voltages on request.

DO-35



| DIM | DIMENSIONS | | | | Note |
|-----|------------|-------|-------|------|------|
| | inches | | mm | | |
| | Min. | Max. | Min. | Max. | |
| A | - | 0.154 | - | 3.9 | |
| B | - | 0.075 | - | 1.9 | φ |
| C | - | 0.020 | - | 0.52 | φ |
| D | 1.083 | - | 27.50 | - | |

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

| | Symbols | Values | Units |
|---|-----------|--------------------|-------|
| Zener current see Table "Characteristics" | | | |
| Power dissipation at $T_{amb}=25^\circ\text{C}$ | P_{tot} | 500 ⁽¹⁾ | mW |
| Junction temperature | T_j | 175 | °C |
| Storage temperature range | T_s | -55 to +175 | °C |

Note:

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

Characteristics at $T_{amb}=25^\circ\text{C}$

| | Symbols | Min. | Typ. | Max. | Units |
|--|-----------|------|------|--------------------|-------|
| Thermal resistance junction to ambient Air | R_{thA} | - | - | 0.3 ⁽¹⁾ | K/mW |
| Forward voltage at $I_F=100\text{mA}$ | V_F | - | - | 1.0 | V |

Note:

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

| Type | Zener voltage range 1) | | | Dynamic resistance | | | Reverse leakage current | | | Temp. coefficient of Zener voltage |
|-------------|------------------------|-----|----------------------------|-----------------------------------|----------|------|--------------------------------|---------|-----|------------------------------------|
| | V_{znom} | | I_{zT} for $V_{zT}^{2)}$ | r_{zT} and r_{zK} at I_{zK} | | | I_R and $I_{R^{2)}$ at V_R | | | TK_{Vz} |
| | V | mA | V | Ω | Ω | mA | μA | μA | V | %/K |
| BZX55/C 0V8 | 0.8 | 5 | 0.73 ... 0.83 | <8 | <50 | 1 | - | - | - | -0.26 ... -0.23 |
| BZX55/C 2V0 | 2.0 | 5 | 1.9 ... 2.1 | <85 | <600 | 1 | <100 | <200 | 1 | -0.09 ... -0.06 |
| BZX55/C 2V4 | 2.4 | 5 | 2.28 ... 2.56 | <85 | <600 | 1 | <50 | <100 | 1 | -0.09 ... -0.06 |
| BZX55/C 2V7 | 2.7 | 5 | 2.5 ... 2.9 | <85 | <600 | 1 | <10 | <50 | 1 | -0.09 ... -0.06 |
| BZX55/C 3V0 | 3.0 | 5 | 2.8 ... 3.2 | <85 | <600 | 1 | <4 | <40 | 1 | -0.08 ... -0.05 |
| BZX55/C 3V3 | 3.3 | 5 | 3.1 ... 3.5 | <85 | <600 | 1 | <2 | <40 | 1 | -0.08 ... -0.05 |
| BZX55/C 3V6 | 3.6 | 5 | 3.4 ... 3.8 | <85 | <600 | 1 | <2 | <40 | 1 | -0.08 ... -0.05 |
| BZX55/C 3V9 | 3.9 | 5 | 3.7 ... 4.1 | <85 | <600 | 1 | <2 | <40 | 1 | -0.08 ... -0.05 |
| BZX55/C 4V3 | 4.3 | 5 | 4.0 ... 4.6 | <75 | <600 | 1 | <1 | <20 | 1 | -0.06 ... -0.03 |
| BZX55/C 4V7 | 4.7 | 5 | 4.4 ... 5.0 | <60 | <600 | 1 | <0.5 | <10 | 1 | -0.05 ... +0.02 |
| BZX55/C 5V1 | 5.1 | 5 | 4.8 ... 5.4 | <35 | <550 | 1 | <0.1 | <2 | 1 | -0.02 ... +0.02 |
| BZX55/C 5V6 | 5.6 | 5 | 5.2 ... 6.0 | <25 | <450 | 1 | <0.1 | <2 | 1 | -0.05 ... +0.05 |
| BZX55/C 6V2 | 6.2 | 5 | 5.8 ... 6.6 | <10 | <200 | 1 | <0.1 | <2 | 2 | 0.03 ... 0.06 |
| BZX55/C 6V8 | 6.8 | 5 | 6.4 ... 7.2 | <8 | <150 | 1 | <0.1 | <2 | 3 | 0.03 ... 0.07 |
| BZX55/C 7V5 | 7.5 | 5 | 7.0 ... 7.9 | <7 | <50 | 1 | <0.1 | <2 | 5 | 0.03 ... 0.07 |
| BZX55/C 8V2 | 8.2 | 5 | 7.7 ... 8.7 | <7 | <50 | 1 | <0.1 | <2 | 6.2 | 0.03 ... 0.08 |
| BZX55/C 9V1 | 9.1 | 5 | 8.5 ... 9.6 | <10 | <50 | 1 | <0.1 | <2 | 6.8 | 0.03 ... 0.09 |
| BZX55/C 10 | 10 | 5 | 9.4 ... 10.6 | <15 | <70 | 1 | <0.1 | <2 | 7.5 | 0.03 ... 0.1 |
| BZX55/C 11 | 11 | 5 | 10.4 ... 11.6 | <20 | <70 | 1 | <0.1 | <2 | 8.2 | 0.03 ... 0.11 |
| BZX55/C 12 | 12 | 5 | 11.4 ... 12.7 | <20 | <90 | 1 | <0.1 | <2 | 9.1 | 0.03 ... 0.11 |
| BZX55/C 13 | 13 | 5 | 12.4 ... 14.1 | <26 | <110 | 1 | <0.1 | <2 | 10 | 0.03 ... 0.11 |
| BZX55/C 15 | 15 | 5 | 13.8 ... 15.6 | <30 | <110 | 1 | <0.1 | <2 | 11 | 0.03 ... 0.11 |
| BZX55/C 16 | 16 | 5 | 15.3 ... 17.1 | <40 | <170 | 1 | <0.1 | <2 | 12 | 0.03 ... 0.11 |
| BZX55/C 18 | 18 | 5 | 16.8 ... 19.1 | <50 | <170 | 1 | <0.1 | <2 | 13 | 0.03 ... 0.11 |
| BZX55/C 20 | 20 | 5 | 18.8 ... 21.2 | <55 | <220 | 1 | <0.1 | <2 | 15 | 0.03 ... 0.11 |
| BZX55/C 22 | 22 | 5 | 20.8 ... 23.3 | <55 | <220 | 1 | <0.1 | <2 | 16 | 0.04 ... 0.12 |
| BZX55/C 24 | 24 | 5 | 22.8 ... 25.6 | <80 | <220 | 1 | <0.1 | <2 | 18 | 0.04 ... 0.12 |
| BZX55/C 27 | 27 | 5 | 25.1 ... 28.9 | <80 | <220 | 1 | <0.1 | <2 | 20 | 0.04 ... 0.12 |
| BZX55/C 30 | 30 | 5 | 28 ... 32 | <80 | <220 | 1 | <0.1 | <2 | 22 | 0.04 ... 0.12 |
| BZX55/C 33 | 33 | 5 | 31 ... 35 | <80 | <220 | 1 | <0.1 | <2 | 24 | 0.04 ... 0.12 |
| BZX55/C 36 | 36 | 5 | 34 ... 38 | <80 | <220 | 1 | <0.1 | <2 | 27 | 0.04 ... 0.12 |
| BZX55/C 39 | 39 | 2.5 | 37 ... 41 | <90 | <500 | 0.5 | <0.1 | <5 | 30 | 0.04 ... 0.12 |
| BZX55/C 43 | 43 | 2.5 | 40 ... 46 | <90 | <500 | 0.5 | <0.1 | <5 | 33 | 0.04 ... 0.12 |
| BZX55/C 47 | 47 | 2.5 | 44 ... 50 | <110 | <600 | 0.5 | <0.1 | <5 | 36 | 0.04 ... 0.12 |
| BZX55/C 51 | 51 | 2.5 | 48 ... 54 | <125 | <700 | 0.5 | <0.1 | <10 | 39 | 0.04 ... 0.12 |
| BZX55/C 56 | 56 | 2.5 | 52 ... 60 | <135 | <700 | 0.5 | <0.1 | <10 | 43 | 0.04 ... 0.12 |
| BZX55/C 62 | 62 | 2.5 | 58 ... 66 | <150 | <1000 | 0.5 | <0.1 | <10 | 47 | 0.04 ... 0.12 |
| BZX55/C 68 | 68 | 2.5 | 64 ... 72 | <200 | <1000 | 0.5 | <0.1 | <10 | 51 | 0.04 ... 0.12 |
| BZX55/C 75 | 75 | 2.5 | 70 ... 79 | <250 | <1000 | 0.5 | <0.1 | <10 | 56 | 0.04 ... 0.12 |
| BZX55/C 82 | 82 | 2.5 | 77 ... 87 | <300 | <1500 | 0.25 | <0.1 | <10 | 62 | 0.05 ... 0.12 |
| BZX55/C 91 | 91 | 1 | 85 ... 96 | <450 | <2000 | 0.1 | <0.1 | <10 | 68 | 0.05 ... 0.12 |
| BZX55/C 100 | 100 | 1 | 94 ... 106 | <450 | <5000 | 0.1 | <0.1 | <10 | 75 | 0.05 ... 0.12 |
| BZX55/C 110 | 110 | 1 | 104 ... 116 | <600 | <5000 | 0.1 | <0.1 | <10 | 82 | 0.05 ... 0.12 |
| BZX55/C 120 | 120 | 1 | 114 ... 127 | <800 | <5500 | 0.1 | <0.1 | <10 | 91 | 0.05 ... 0.12 |
| BZX55/C 130 | 130 | 1 | 124 ... 141 | <950 | <6000 | 0.1 | <0.1 | <10 | 100 | 0.05 ... 0.12 |
| BZX55/C 150 | 150 | 1 | 138 ... 156 | <1250 | <6500 | 0.1 | <0.1 | <10 | 110 | 0.05 ... 0.12 |
| BZX55/C 160 | 160 | 1 | 153 ... 171 | <1400 | <7000 | 0.1 | <0.1 | <10 | 120 | 0.05 ... 0.12 |
| BZX55/C 180 | 180 | 1 | 168 ... 191 | <1700 | <8500 | 0.1 | <0.1 | <10 | 130 | 0.05 ... 0.12 |
| BZX55/C 200 | 200 | 1 | 188 ... 212 | <2000 | <10000 | 0.1 | <0.1 | <10 | 150 | 0.05 ... 0.12 |

Notes:

- (1) Tested with pulses $t_p=20ms$.
- (2) Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.
- (3) The BZX55-C0V8 is a silicon diode with operation in forward direction. Hence, the index of all parameters should be "F" instead of "Z". Connect the cathode lead to the negative pole.

RATINGS AND CHARACTERISTIC CURVES

