



GOOD-ARK

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BZX55 ...

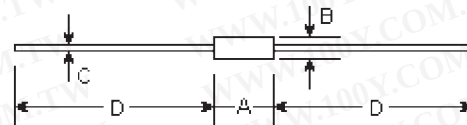
## SILICON PLANAR ZENER DIODES

### 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



| DIMENSIONS |        |       |       |      |      |
|------------|--------|-------|-------|------|------|
| DIM        | inches |       | mm    |      | Note |
|            | 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 <sup>1)</sup> | mW                 |
| Junction temperature                              | $T_j$     | 175               | $^{\circ}\text{C}$ |
| Storage temperature range                         | $T_s$     | -55 to +175       | $^{\circ}\text{C}$ |

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 <sup>1)</sup> | 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<br>TK <sub>VZ</sub> |
|-------------|------------------------|---------------------------------------------------|---------------|--------------------------------------------------------|--------|------|-------------------------------------------------------------------|------|-----|--------------------------------------------------------|
|             | V <sub>znom</sub>      | I <sub>ZT</sub> for V <sub>ZT</sub> <sup>2)</sup> |               | r <sub>zT</sub> and r <sub>zK</sub> at I <sub>ZK</sub> |        |      | I <sub>R</sub> and I <sub>R</sub> <sup>2)</sup> at V <sub>R</sub> |      |     |                                                        |
|             | V                      | mA                                                | V             | Ω                                                      | Ω      | mA   | uA                                                                | uA   | V   |                                                        |
| 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:**

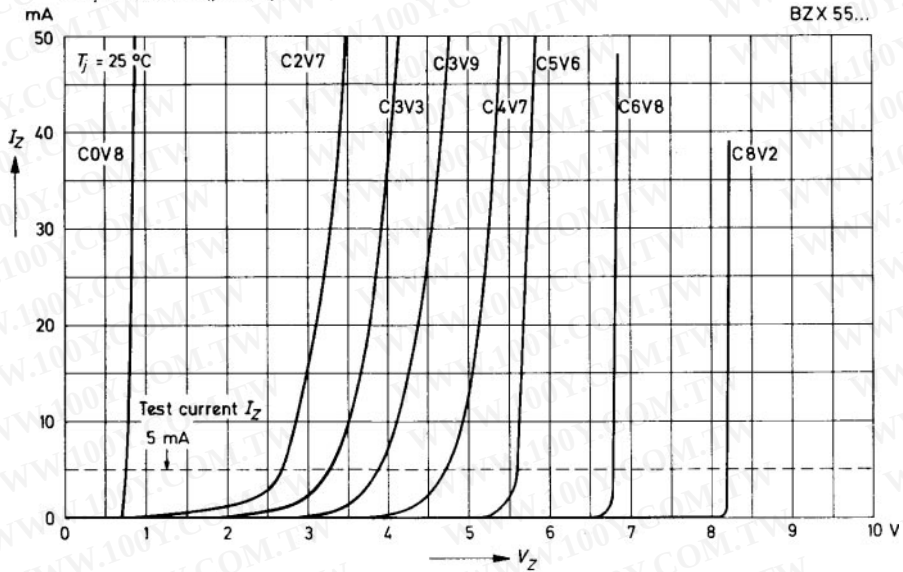
(1) Tested with pulses tp=20ms.

(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

**Breakdown characteristics**  
 at  $T_j = \text{constant}$  (pulsed)



**Breakdown characteristics**  
 at  $T_j = \text{constant}$  (pulsed)

