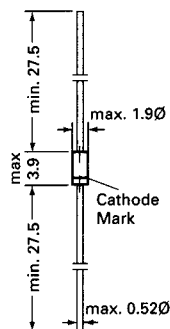


# BZX 55... SILICON PLANAR ZENER DIODES

## 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.



Glass case JEDEC DO-35

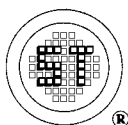
Dimensions in mm

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

|                                                                                                          | Symbol    | Value             | Unit               |
|----------------------------------------------------------------------------------------------------------|-----------|-------------------|--------------------|
| Zener Current see Table " Characteristics "                                                              |           |                   |                    |
| Power Dissipation at $T_{amb} = 25\text{ }^{\circ}\text{C}$                                              | $P_{tot}$ | 500 <sup>1)</sup> | mW                 |
| Junction Temperature                                                                                     | $T_j$     | 175               | $^{\circ}\text{C}$ |
| Storage Temperature Range                                                                                | $T_{stg}$ | -55 to + 175      | $^{\circ}\text{C}$ |
| <sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case. |           |                   |                    |

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

|                                                                                                          | Symbol    | Min. | Typ | Max               | Unit |
|----------------------------------------------------------------------------------------------------------|-----------|------|-----|-------------------|------|
| Thermal Resistance<br>Junction to Ambient Air                                                            | $R_{thA}$ | -    | -   | 0.3 <sup>1)</sup> | K/mW |
| Forward Voltage<br>at $I_F = 100\text{ mA}$                                                              | $V_F$     | -    | -   | 1                 | V    |
| <sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case. |           |      |     |                   |      |



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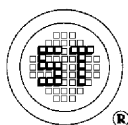
# BZX 55 ... SILICON PLANAR ZENER DIODES

| Type                         | Zener Voltage range <sup>1)</sup> |                                                   |               | Dynamic resistance |                                     |      | Reverse leakage current                                                     |      |                  | Temp.<br>coefficient of<br>Zener Voltage |
|------------------------------|-----------------------------------|---------------------------------------------------|---------------|--------------------|-------------------------------------|------|-----------------------------------------------------------------------------|------|------------------|------------------------------------------|
|                              | V <sub>Znom</sub>                 | I <sub>ZT</sub> for V <sub>ZT</sub> <sup>2)</sup> |               | r <sub>zT</sub>    | r <sub>zjK</sub> at I <sub>ZK</sub> |      | T <sub>a</sub> =25°C T <sub>a</sub> =125°C I <sub>R</sub> at V <sub>R</sub> |      | TK <sub>VZ</sub> |                                          |
|                              |                                   | V                                                 | mA            | V                  | Ω                                   | Ω    | mA                                                                          | μA   | μA               | V                                        |
| BZX 55/C 0 V 8 <sup>3)</sup> | 0.8                               | 5                                                 | 0.73 ... 0.83 | <8                 | <50                                 | 1    | --                                                                          | --   | --               | -0.26 ... -0.23                          |
| BZX 55/C 2 V 0               | 2.0                               | 5                                                 | 1.9 ... 2.1   | <85                | <600                                | 1    | <100                                                                        | <200 | 1                | -0.09 ... -0.06                          |
| BZX 55/C 2 V 2               | 2.2                               | 5                                                 | 2.08 ... 2.33 | <85                | <600                                | 1    | <75                                                                         | <160 | 1                | -0.09 ... -0.06                          |
| BZX 55/C 2 V 4               | 2.4                               | 5                                                 | 2.28 ... 2.56 | <85                | <600                                | 1    | <50                                                                         | <100 | 1                | -0.09 ... -0.06                          |
| BZX 55/C 2 V 7               | 2.7                               | 5                                                 | 2.5 ... 2.9   | <85                | <600                                | 1    | <10                                                                         | <50  | 1                | -0.09 ... -0.06                          |
| BZX 55/C 3 V 0               | 3.0                               | 5                                                 | 2.8 ... 3.2   | <85                | <600                                | 1    | <4                                                                          | <40  | 1                | -0.08 ... -0.05                          |
| BZX 55/C 3 V 3               | 3.3                               | 5                                                 | 3.1 ... 3.5   | <85                | <600                                | 1    | <2                                                                          | <40  | 1                | -0.08 ... -0.05                          |
| BZX 55/C 3 V 6               | 3.6                               | 5                                                 | 3.4 ... 3.8   | <85                | <600                                | 1    | <2                                                                          | <40  | 1                | -0.08 ... -0.05                          |
| BZX 55/C 3 V 9               | 3.9                               | 5                                                 | 3.7 ... 4.1   | <85                | <600                                | 1    | <2                                                                          | <40  | 1                | -0.08 ... -0.05                          |
| BZX 55/C 4 V 3               | 4.3                               | 5                                                 | 4.0 ... 4.6   | <75                | <600                                | 1    | <1                                                                          | <20  | 1                | -0.06 ... -0.03                          |
| BZX 55/C 4 V 7               | 4.7                               | 5                                                 | 4.4 ... 5.0   | <60                | <600                                | 1    | <0.5                                                                        | <10  | 1                | -0.05 ... +0.02                          |
| BZX 55/C 5 V 1               | 5.1                               | 5                                                 | 4.8 ... 5.4   | <35                | <550                                | 1    | <0.1                                                                        | <2   | 1                | -0.02 ... +0.02                          |
| BZX 55/C 5 V 6               | 5.6                               | 5                                                 | 5.2 ... 6.0   | <25                | <450                                | 1    | <0.1                                                                        | <2   | 1                | -0.05 ... +0.05                          |
| BZX 55/C 6 V 2               | 6.2                               | 5                                                 | 5.8 ... 6.6   | <10                | <200                                | 1    | <0.1                                                                        | <2   | 2                | 0.03 ... 0.06                            |
| BZX 55/C 6 V 8               | 6.8                               | 5                                                 | 6.4 ... 7.2   | <8                 | <150                                | 1    | <0.1                                                                        | <2   | 3                | 0.03 ... 0.07                            |
| BZX 55/C 7 V 5               | 7.5                               | 5                                                 | 7.0 ... 7.9   | <7                 | <50                                 | 1    | <0.1                                                                        | <2   | 5                | 0.03 ... 0.07                            |
| BZX 55/C 8 V 2               | 8.2                               | 5                                                 | 7.7 ... 8.7   | <7                 | <50                                 | 1    | <0.1                                                                        | <2   | 6.2              | 0.03 ... 0.08                            |
| BZX 55/C 9 V 1               | 9.1                               | 5                                                 | 8.5 ... 9.6   | <10                | <50                                 | 1    | <0.1                                                                        | <2   | 6.8              | 0.03 ... 0.09                            |
| BZX 55/C 10                  | 10                                | 5                                                 | 9.4 ... 10.6  | <15                | <70                                 | 1    | <0.1                                                                        | <2   | 7.5              | 0.03 ... 0.1                             |
| BZX 55/C 11                  | 11                                | 5                                                 | 10.4 ... 11.6 | <20                | <70                                 | 1    | <0.1                                                                        | <2   | 8.2              | 0.03 ... 0.11                            |
| BZX 55/C 12                  | 12                                | 5                                                 | 11.4 ... 12.7 | <20                | <90                                 | 1    | <0.1                                                                        | <2   | 9.1              | 0.03 ... 0.11                            |
| BZX 55/C 13                  | 13                                | 5                                                 | 12.4 ... 14.1 | <26                | <110                                | 1    | <0.1                                                                        | <2   | 10               | 0.03 ... 0.11                            |
| BZX 55/C 15                  | 15                                | 5                                                 | 13.8 ... 15.6 | <30                | <110                                | 1    | <0.1                                                                        | <2   | 11               | 0.03 ... 0.11                            |
| BZX 55/C 16                  | 16                                | 5                                                 | 15.3 ... 17.1 | <40                | <170                                | 1    | <0.1                                                                        | <2   | 12               | 0.03 ... 0.11                            |
| BZX 55/C 18                  | 18                                | 5                                                 | 16.8 ... 19.1 | <50                | <170                                | 1    | <0.1                                                                        | <2   | 13               | 0.03 ... 0.11                            |
| BZX 55/C 20                  | 20                                | 5                                                 | 18.8 ... 21.2 | <55                | <220                                | 1    | <0.1                                                                        | <2   | 15               | 0.03 ... 0.11                            |
| BZX 55/C 22                  | 22                                | 5                                                 | 20.8 ... 23.3 | <55                | <220                                | 1    | <0.1                                                                        | <2   | 16               | 0.04 ... 0.12                            |
| BZX 55/C 24                  | 24                                | 5                                                 | 22.8 ... 25.6 | <80                | <220                                | 1    | <0.1                                                                        | <2   | 18               | 0.04 ... 0.12                            |
| BZX 55/C 27                  | 27                                | 5                                                 | 25.1 ... 28.9 | <80                | <220                                | 1    | <0.1                                                                        | <2   | 20               | 0.04 ... 0.12                            |
| BZX 55/C 30                  | 30                                | 5                                                 | 28 ... 32     | <80                | <220                                | 1    | <0.1                                                                        | <2   | 22               | 0.04 ... 0.12                            |
| BZX 55/C 33                  | 33                                | 5                                                 | 31 ... 35     | <80                | <220                                | 1    | <0.1                                                                        | <2   | 24               | 0.04 ... 0.12                            |
| BZX 55/C 36                  | 36                                | 5                                                 | 34 ... 38     | <80                | <220                                | 1    | <0.1                                                                        | <2   | 27               | 0.04 ... 0.12                            |
| BZX 55/C 39                  | 39                                | 2.5                                               | 37 ... 41     | <90                | <500                                | 0.5  | <0.1                                                                        | <5   | 30               | 0.04 ... 0.12                            |
| BZX 55/C 43                  | 43                                | 2.5                                               | 40 ... 46     | <90                | <500                                | 0.5  | <0.1                                                                        | <5   | 33               | 0.04 ... 0.12                            |
| BZX 55/C 47                  | 47                                | 2.5                                               | 44 ... 50     | <110               | <600                                | 0.5  | <0.1                                                                        | <5   | 36               | 0.04 ... 0.12                            |
| BZX 55/C 51                  | 51                                | 2.5                                               | 48 ... 54     | <125               | <700                                | 0.5  | <0.1                                                                        | <10  | 39               | 0.04 ... 0.12                            |
| BZX 55/C 56                  | 56                                | 2.5                                               | 52 ... 60     | <135               | <700                                | 0.5  | <0.1                                                                        | <10  | 43               | 0.04 ... 0.12                            |
| BZX 55/C 62                  | 62                                | 2.5                                               | 58 ... 66     | <150               | <1000                               | 0.5  | <0.1                                                                        | <10  | 47               | 0.04 ... 0.12                            |
| BZX 55/C 68                  | 68                                | 2.5                                               | 64 ... 72     | <200               | <1000                               | 0.5  | <0.1                                                                        | <10  | 51               | 0.04 ... 0.12                            |
| BZX 55/C 75                  | 75                                | 2.5                                               | 70 ... 79     | <250               | <1000                               | 0.5  | <0.1                                                                        | <10  | 56               | 0.04 ... 0.12                            |
| BZX 55/C 82                  | 82                                | 2.5                                               | 77 ... 87     | <300               | <1500                               | 0.25 | <0.1                                                                        | <10  | 62               | 0.05 ... 0.12                            |
| BZX 55/C 91                  | 91                                | 1                                                 | 85 ... 96     | <450               | <2000                               | 0.1  | <0.1                                                                        | <10  | 68               | 0.05 ... 0.12                            |
| BZX 55/C 100                 | 100                               | 1                                                 | 94 ... 106    | <450               | <5000                               | 0.1  | <0.1                                                                        | <10  | 75               | 0.05 ... 0.12                            |
| BZX 55/C 110                 | 110                               | 1                                                 | 104 ... 116   | <600               | <5000                               | 0.1  | <0.1                                                                        | <10  | 82               | 0.05 ... 0.12                            |
| BZX 55/C 120                 | 120                               | 1                                                 | 114 ... 127   | <800               | <5500                               | 0.1  | <0.1                                                                        | <10  | 91               | 0.05 ... 0.12                            |
| BZX 55/C 130                 | 130                               | 1                                                 | 124 ... 141   | <950               | <6000                               | 0.1  | <0.1                                                                        | <10  | 100              | 0.05 ... 0.12                            |
| BZX 55/C 150                 | 150                               | 1                                                 | 138 ... 156   | <1250              | <6500                               | 0.1  | <0.1                                                                        | <10  | 110              | 0.05 ... 0.12                            |
| BZX 55/C 160                 | 160                               | 1                                                 | 153 ... 171   | <1400              | <7000                               | 0.1  | <0.1                                                                        | <10  | 120              | 0.05 ... 0.12                            |
| BZX 55/C 180                 | 180                               | 1                                                 | 168 ... 191   | <1700              | <8500                               | 0.1  | <0.1                                                                        | <10  | 130              | 0.05 ... 0.12                            |
| BZX 55/C 200                 | 200                               | 1                                                 | 188 ... 212   | <2000              | <10000                              | 0.1  | <0.1                                                                        | <10  | 150              | 0.05 ... 0.12                            |

<sup>1)</sup> Tested with pulses  $t_p = 20$  ms.

<sup>2)</sup> Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.

<sup>3)</sup> 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.

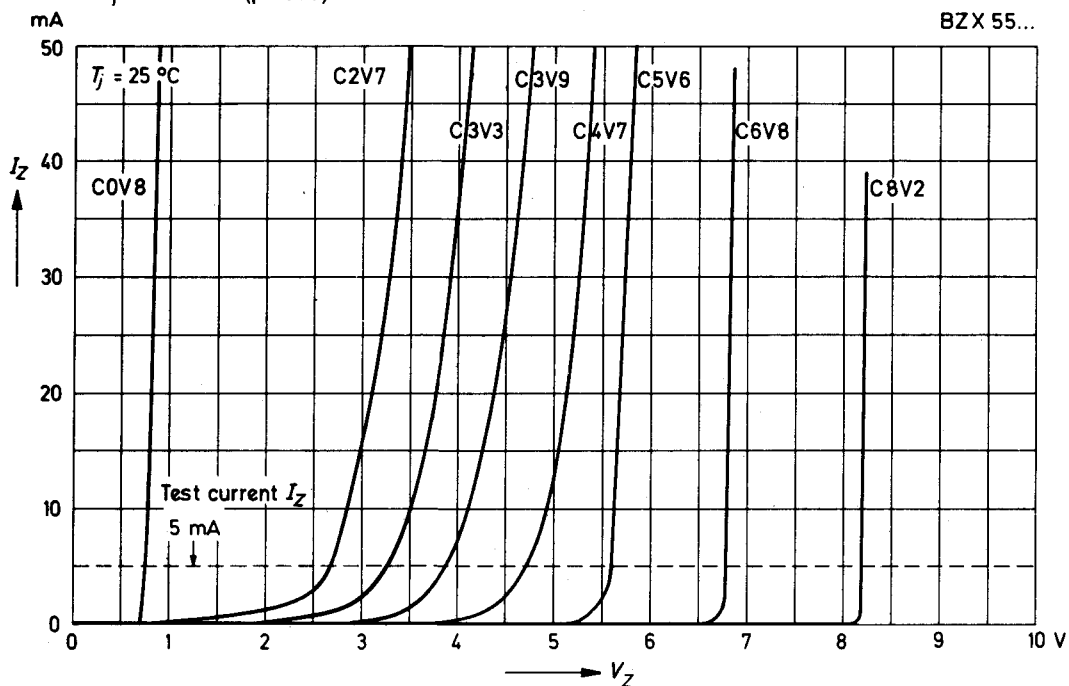


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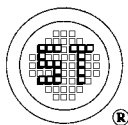
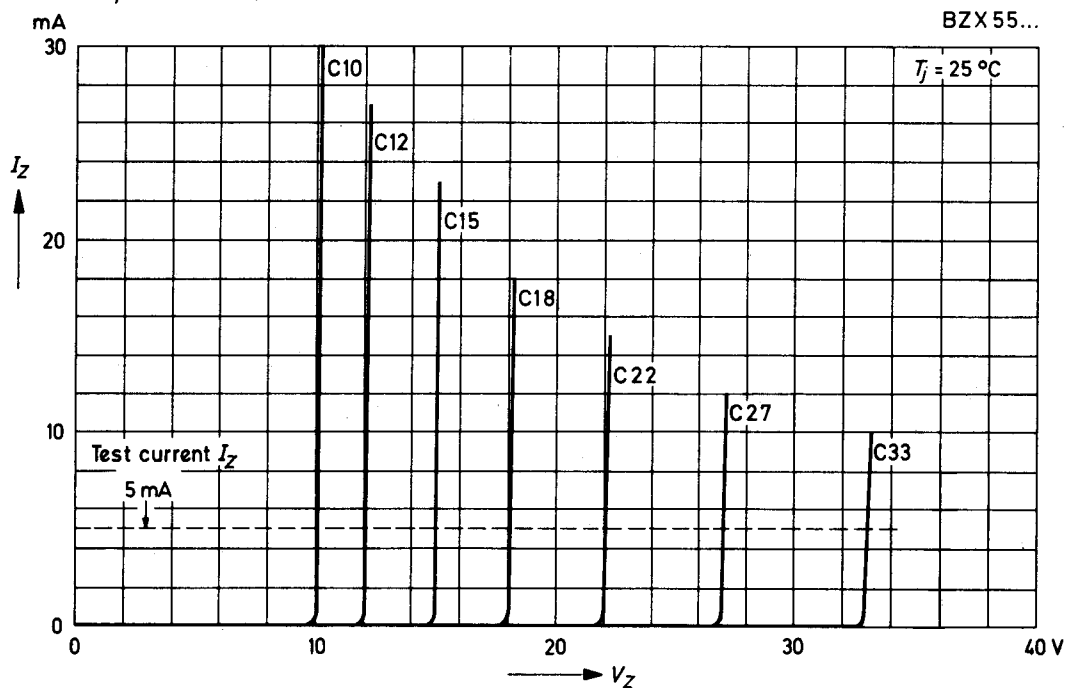


# BZX 55... SILICON PLANAR ZENER DIODES

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



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



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