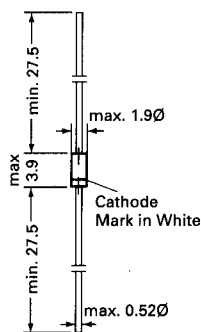


# BZX 97... SILICON PLANAR ZENER DIODES

## Silicon Epitaxial Planar Diode

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



Glass case JEDEC DO-35

Dimensions in mm

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

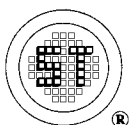
|   | Symbol    | Value             | Unit             |
|---|-----------|-------------------|------------------|
| Zener Current see Table "Characteristics"                 |           |                   |                  |
| Power Dissipation at $T_{amb} = 25\text{ }^\circ\text{C}$ | $P_{tot}$ | 500 <sup>1)</sup> | mW               |
| Junction Temperature                                      | $T_j$     | 175               | $^\circ\text{C}$ |
| Storage Temperature Range                                 | $T_s$     | -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.



**SEMTECH ELECTRONICS LTD.**  
( wholly owned subsidiary of HONEY TECHNOLOGY LTD. )



# BZX 97 ... SILICON PLANAR ZENER DIODES

| Type                  | Zener Voltage range <sup>1)</sup> |   |               | Dynamic resistance |                                     |     | Reverse leakage current |                       |                                  | Temp. coefficient of Zener Voltage |
|-----------------------|-----------------------------------|---|---------------|--------------------|-------------------------------------|-----|-------------------------|-----------------------|----------------------------------|------------------------------------|
|                       | V <sub>Znom</sub><br>V            | I <sub>ZT</sub> for V <sub>ZT</sub> <sup>3)</sup> |               | r <sub>zIT</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>                   |
|                       |                                   | mA  | V             | Ω                  | Ω                                   | mA  | μA                      | μA                    | V                                | %/K                                |
| <b>BZX 97/C 2 V 4</b> | 2.4                               | 5   | 2.28 ... 2.56 | <85                | <600                                | 1   | <10000                  | <50                   | 1                                | 135                                |
| <b>BZX 97/C 2 V 7</b> | 2.7                               | 5   | 2.5 ... 2.9   | <85                | <600                                | 1   | <10000                  | <50                   | 1                                | 135                                |
| <b>BZX 97/C 3 V 0</b> | 3.0                               | 5   | 2.8 ... 3.2   | <85                | <600                                | 1   | <4000                   | <40                   | 1                                | 125                                |
| <b>BZX 97/C 3 V 3</b> | 3.3                               | 5   | 3.1 ... 3.5   | <85                | <600                                | 1   | <2000                   | <40                   | 1                                | 115                                |
| <b>BZX 97/C 3 V 6</b> | 3.6                               | 5   | 3.4 ... 3.8   | <85                | <600                                | 1   | <2000                   | <40                   | 1                                | 105                                |
| <b>BZX 97/C 3 V 9</b> | 3.9                               | 5   | 3.7 ... 4.1   | <85                | <600                                | 1   | <2000                   | <40                   | 1                                | 95                                 |
| <b>BZX 97/C 4 V 3</b> | 4.3                               | 5   | 4.0 ... 4.6   | <75                | <600                                | 1   | <1000                   | <20                   | 1                                | 90                                 |
| <b>BZX 97/C 4 V 7</b> | 4.7                               | 5   | 4.4 ... 5.0   | <60                | <600                                | 1   | <500                    | <10                   | 1                                | 85                                 |
| <b>BZX 97/C 5 V 1</b> | 5.1                               | 5   | 4.8 ... 5.4   | <35                | <550                                | 1   | <100                    | <2                    | 1                                | 80                                 |
| <b>BZX 97/C 5 V 6</b> | 5.6                               | 5   | 5.2 ... 6.0   | <25                | <450                                | 1   | <100                    | <2                    | 1                                | 70                                 |
| <b>BZX 97/C 6 V 2</b> | 6.2                               | 5   | 5.8 ... 6.6   | <10                | <200                                | 1   | <100                    | <2                    | 2                                | 64                                 |
| <b>BZX 97/C 6 V 8</b> | 6.8                               | 5   | 6.4 ... 7.2   | <8                 | <150                                | 1   | <100                    | <2                    | 3                                | 58                                 |
| <b>BZX 97/C 7 V 5</b> | 7.5                               | 5   | 7.0 ... 7.9   | <7                 | <50                                 | 1   | <100                    | <2                    | 5                                | 53                                 |
| <b>BZX 97/C 8 V 2</b> | 8.2                               | 5   | 7.7 ... 8.7   | <7                 | <50                                 | 1   | <100                    | <2                    | 6                                | 47                                 |
| <b>BZX 97/C 9 V 1</b> | 9.1                               | 5   | 8.5 ... 9.6   | <10                | <50                                 | 1   | <100                    | <2                    | 7                                | 43                                 |
| <b>BZX 97/C 10</b>    | 10                                | 5   | 9.4 ... 10.6  | <15                | <70                                 | 1   | <100                    | <2                    | 7.5                              | 40                                 |
| <b>BZX 97/C 11</b>    | 11                                | 5   | 10.4 ... 11.6 | <20                | <70                                 | 1   | <100                    | <2                    | 8.5                              | 36                                 |
| <b>BZX 97/C 12</b>    | 12                                | 5   | 11.4 ... 12.7 | <20                | <90                                 | 1   | <100                    | <2                    | 9                                | 32                                 |
| <b>BZX 97/C 13</b>    | 13                                | 5   | 12.4 ... 14.1 | <26                | <110                                | 1   | <100                    | <2                    | 10                               | 29                                 |
| <b>BZX 97/C 15</b>    | 15                                | 5   | 13.8 ... 15.6 | <30                | <110                                | 1   | <100                    | <2                    | 11                               | 27                                 |
| <b>BZX 97/C 16</b>    | 16                                | 5   | 15.3 ... 17.1 | <40                | <170                                | 1   | <100                    | <2                    | 12                               | 24                                 |
| <b>BZX 97/C 18</b>    | 18                                | 5   | 16.8 ... 19.1 | <50                | <170                                | 1   | <100                    | <2                    | 14                               | 21                                 |
| <b>BZX 97/C 20</b>    | 20                                | 5   | 18.8 ... 21.2 | <55                | <220                                | 1   | <100                    | <2                    | 15                               | 20                                 |
| <b>BZX 97/C 22</b>    | 22                                | 5   | 20.8 ... 23.3 | <55                | <220                                | 1   | <100                    | <2                    | 17                               | 18                                 |
| <b>BZX 97/C 24</b>    | 24                                | 5   | 22.8 ... 25.6 | <80                | <220                                | 1   | <100                    | <2                    | 18                               | 16                                 |
| <b>BZX 97/C 27</b>    | 27                                | 5   | 25.1 ... 28.9 | <80                | <220                                | 1   | <100                    | <2                    | 20                               | 14                                 |
| <b>BZX 97/C 30</b>    | 30                                | 5   | 28 ... 32     | <80                | <220                                | 1   | <100                    | <2                    | 22                               | 13                                 |
| <b>BZX 97/C 33</b>    | 33                                | 5   | 31 ... 35     | <80                | <220                                | 1   | <100                    | <2                    | 24                               | 12                                 |
| <b>BZX 97/C 36</b>    | 36                                | 5   | 34 ... 38     | <90                | <250                                | 1   | <100                    | <2                    | 26                               | 11                                 |
| <b>BZX 97/C 39</b>    | 39                                | 2.5   | 37 ... 41     | <100               | <600 <sup>2)</sup>                  | 0.5 | <100                    | <2                    | 28                               | 10                                 |
| <b>BZX 97/C 43</b>    | 43                                | 2.5   | 40 ... 46     | <100               | <700 <sup>2)</sup>                  | 0.5 | <100                    | <2                    | 32                               | 9.2                                |
| <b>BZX 97/C 47</b>    | 47                                | 2.5   | 44 ... 50     | <120               | <1000 <sup>2)</sup>                 | 0.5 | <100                    | <2                    | 34                               | 8.5                                |
| <b>BZX 97/C 51</b>    | 51                                | 2.5   | 48 ... 54     | <135               | <1000 <sup>2)</sup>                 | 0.5 | <100                    | <2                    | 36                               | 7.8                                |

<sup>1)</sup> Tested with pulses t<sub>p</sub> = 20 ms.

<sup>2)</sup> Measured at I<sub>Z</sub> = 0.5 mA.

<sup>3)</sup> Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.

