



## Features

MiniMELF case especially for automatic insertion. The Zener voltages are graded according to the international E24 standard.

Smaller voltage tolerances and higher Zener voltages are upon request.

These diodes are also available in DO-35 case with the type designation HBZX55C...



LL-34

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

| Parameter                       | Symbol           | Value         | Unit             |
|---------------------------------|------------------|---------------|------------------|
| Power Dissipation <sup>1)</sup> | $P_{\text{tot}}$ | 500           | mW               |
| Junction Temperature            | $T_j$            | 175           | $^\circ\text{C}$ |
| Storage Temperature Range       | $T_{\text{stg}}$ | - 55 to + 175 | $^\circ\text{C}$ |

## Thermal Characteristics

| Parameter  | Symbol                | Max. | Unit               |
|--|-----------------------|------|--------------------|
| Thermal Resistance Junction to Ambient <sup>1)</sup> | $R_{\theta\text{JA}}$ | 300  | $^\circ\text{C/W}$ |

<sup>1)</sup> Valid provided that electrodes are kept at ambient temperature.



**Characteristics at  $T_a = 25\text{ }^\circ\text{C}$**

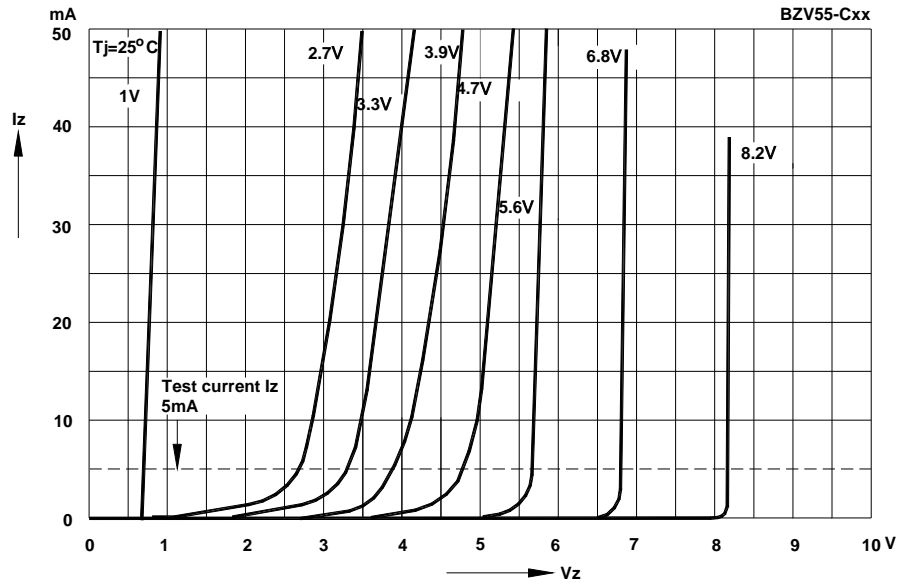
| Type                    | Zener Voltage Range <sup>1)</sup> |                 |                     | Dynamic Resistance            |                               |                     | Reverse Leakage Current                                    |   |                 | Temp. Coefficient of Zener Voltage |
|-------------------------|-----------------------------------|-----------------|---------------------|-------------------------------|-------------------------------|---------------------|--|---|-----------------|------------------------------------|
|                         | $V_{Znom}$<br>(V)                 | $V_{ZT}$<br>(V) | at $I_{ZT}$<br>(mA) | $Z_{ZT}$<br>Max. ( $\Omega$ ) | $Z_{ZK}$<br>Max. ( $\Omega$ ) | at $I_{ZK}$<br>(mA) | $T_a = 25\text{ }^\circ\text{C}$<br>Max. ( $\mu\text{A}$ ) | $T_a = 125\text{ }^\circ\text{C}$<br>Max. ( $\mu\text{A}$ ) | at $V_R$<br>(V) |                                    |
| HBZV55-C1 <sup>2)</sup> | 0.75                              | 0.7...0.8       | 5                   | 8                             | 50                            | 1                   | -  | -   | -               | -0.26...-0.23                      |
| HBZV55-C2V0             | 2                                 | 1.8...2.15      | 5                   | 85                            | 600                           | 1                   | 100  | 200   | 1               | -0.09...-0.06                      |
| HBZV55-C2V2             | 2.2                               | 2.08...2.33     | 5                   | 85                            | 600                           | 1                   | 75   | 160   | 1               | -0.09...-0.06                      |
| HBZV55-C2V4             | 2.4                               | 2.28...2.56     | 5                   | 85                            | 600                           | 1                   | 50   | 100   | 1               | -0.09...-0.06                      |
| HBZV55-C2V7             | 2.7                               | 2.5...2.9       | 5                   | 85                            | 600                           | 1                   | 10   | 50  | 1               | -0.09...-0.06                      |
| HBZV55-C3V0             | 3                                 | 2.8...3.2       | 5                   | 85                            | 600                           | 1                   | 4  | 40  | 1               | -0.08...-0.05                      |
| HBZV55-C3V3             | 3.3                               | 3.1...3.5       | 5                   | 85                            | 600                           | 1                   | 2  | 40  | 1               | -0.08...-0.05                      |
| HBZV55-C3V6             | 3.6                               | 3.4...3.8       | 5                   | 85                            | 600                           | 1                   | 2  | 40  | 1               | -0.08...-0.05                      |
| HBZV55-C3V9             | 3.9                               | 3.7...4.1       | 5                   | 85                            | 600                           | 1                   | 2  | 40  | 1               | -0.08...-0.05                      |
| HBZV55-C4V3             | 4.3                               | 4...4.6         | 5                   | 75                            | 600                           | 1                   | 1  | 20  | 1               | -0.06...-0.03                      |
| HBZV55-C4V7             | 4.7                               | 4.4...5         | 5                   | 60                            | 600                           | 1                   | 0.5  | 10  | 1               | -0.05...+0.02                      |
| HBZV55-C5V1             | 5.1                               | 4.8...5.4       | 5                   | 35                            | 550                           | 1                   | 0.1  | 2   | 1               | -0.02...+0.02                      |
| HBZV55-C5V6             | 5.6                               | 5.2...6         | 5                   | 25                            | 450                           | 1                   | 0.1  | 2   | 1               | -0.05...+0.05                      |
| HBZV55-C6V2             | 6.2                               | 5.8...6.6       | 5                   | 10                            | 200                           | 1                   | 0.1  | 2   | 2               | 0.03...0.06                        |
| HBZV55-C6V8             | 6.8                               | 6.4...7.2       | 5                   | 8                             | 150                           | 1                   | 0.1  | 2   | 3               | 0.03...0.07                        |
| HBZV55-C7V5             | 7.5                               | 7...7.9         | 5                   | 7                             | 50                            | 1                   | 0.1  | 2   | 5               | 0.03...0.07                        |
| HBZV55-C8V2             | 8.2                               | 7.7...8.7       | 5                   | 7                             | 50                            | 1                   | 0.1  | 2   | 6.2             | 0.03...0.08                        |
| HBZV55-C9V1             | 9.1                               | 8.5...9.6       | 5                   | 10                            | 50                            | 1                   | 0.1  | 2   | 6.8             | 0.03...0.09                        |
| HBZV55-C10              | 10                                | 9.4...10.6      | 5                   | 15                            | 70                            | 1                   | 0.1  | 2   | 7.5             | 0.03...0.1                         |
| HBZV55-C11              | 11                                | 10.4...11.6     | 5                   | 20                            | 70                            | 1                   | 0.1  | 2   | 8.2             | 0.03...0.11                        |
| HBZV55-C12              | 12                                | 11.4...12.7     | 5                   | 20                            | 90                            | 1                   | 0.1  | 2   | 9.1             | 0.03...0.11                        |
| HBZV55-C13              | 13                                | 12.4...14.1     | 5                   | 26                            | 110                           | 1                   | 0.1  | 2   | 10              | 0.03...0.11                        |
| HBZV55-C15              | 15                                | 13.8...15.6     | 5                   | 30                            | 110                           | 1                   | 0.1  | 2   | 11              | 0.03...0.11                        |
| HBZV55-C16              | 16                                | 15.3...17.1     | 5                   | 40                            | 170                           | 1                   | 0.1  | 2   | 12              | 0.03...0.11                        |
| HBZV55-C18              | 18                                | 16.8...19.1     | 5                   | 50                            | 170                           | 1                   | 0.1  | 2   | 13              | 0.03...0.11                        |
| HBZV55-C20              | 20                                | 18.8...21.2     | 5                   | 55                            | 220                           | 1                   | 0.1  | 2   | 15              | 0.03...0.11                        |
| HBZV55-C22              | 22                                | 20.8...23.3     | 5                   | 55                            | 220                           | 1                   | 0.1  | 2   | 16              | 0.04...0.12                        |
| HBZV55-C24              | 24                                | 22.8...25.6     | 5                   | 80                            | 220                           | 1                   | 0.1  | 2   | 18              | 0.04...0.12                        |
| HBZV55-C27              | 27                                | 25.1...28.9     | 5                   | 80                            | 220                           | 1                   | 0.1  | 2   | 20              | 0.04...0.12                        |
| HBZV55-C30              | 30                                | 28...32         | 5                   | 80                            | 220                           | 1                   | 0.1  | 2   | 22              | 0.04...0.12                        |
| HBZV55-C33              | 33                                | 31...35         | 5                   | 80                            | 220                           | 1                   | 0.1  | 2   | 24              | 0.04...0.12                        |
| HBZV55-C36              | 36                                | 34...38         | 5                   | 80                            | 220                           | 1                   | 0.1  | 2   | 27              | 0.04...0.12                        |
| HBZV55-C39              | 39                                | 37...41         | 2.5                 | 90                            | 500                           | 0.5                 | 0.1  | 5   | 30              | 0.04...0.12                        |
| HBZV55-C43              | 43                                | 40...46         | 2.5                 | 90                            | 500                           | 0.5                 | 0.1  | 5   | 33              | 0.04...0.12                        |
| HBZV55-C47              | 47                                | 44...50         | 2.5                 | 110                           | 600                           | 0.5                 | 0.1  | 5   | 36              | 0.04...0.12                        |
| HBZV55-C51              | 51                                | 48...54         | 2.5                 | 125                           | 700                           | 0.5                 | 0.1  | 10  | 39              | 0.04...0.12                        |
| HBZV55-C56              | 56                                | 52...60         | 2.5                 | 135                           | 700                           | 0.5                 | 0.1  | 10  | 43              | 0.04...0.12                        |
| HBZV55-C62              | 62                                | 58...66         | 2.5                 | 150                           | 1000                          | 0.5                 | 0.1  | 10  | 47              | 0.04...0.12                        |
| HBZV55-C68              | 68                                | 64...72         | 2.5                 | 200                           | 1000                          | 0.5                 | 0.1  | 10  | 51              | 0.04...0.12                        |
| HBZV55-C75              | 75                                | 70...79         | 2.5                 | 250                           | 1000                          | 0.5                 | 0.1  | 10  | 56              | 0.04...0.12                        |

<sup>1)</sup> Tested with pulses  $t_p = 20\text{ ms}$ .

<sup>2)</sup> The ZMM1 is a silicon diode with operation in forward direction. Hence, the index of all parameters should be "F" instead of "Z". Connect the cathode electrode to the negative pole.

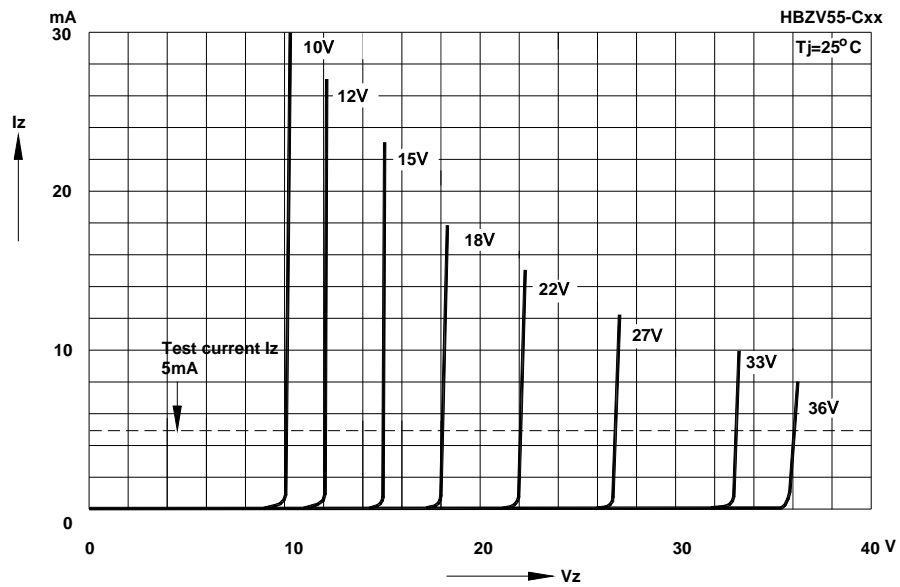


### Typical Characteristics



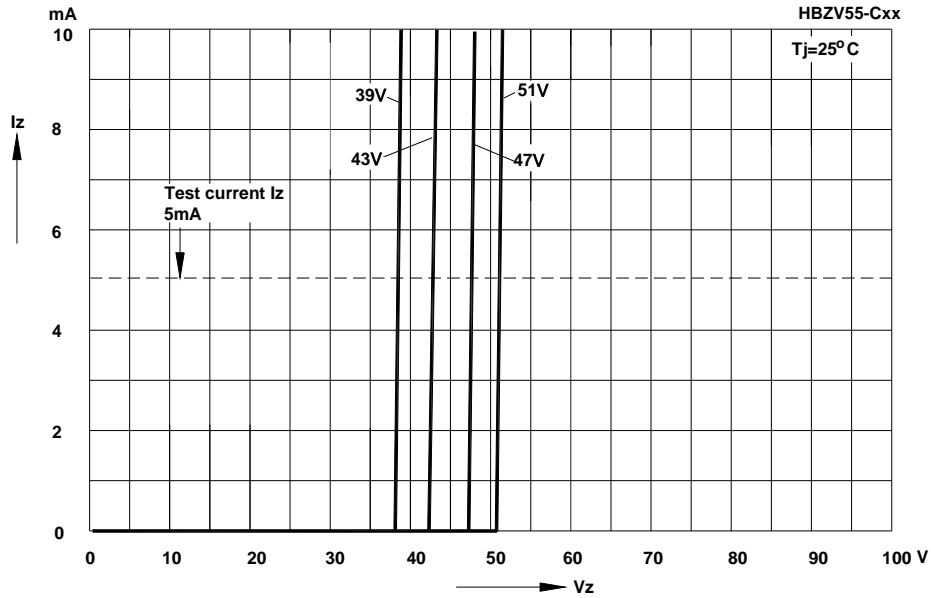
### Breakdown characteristics

$T_j = \text{constant (pulsed)}$

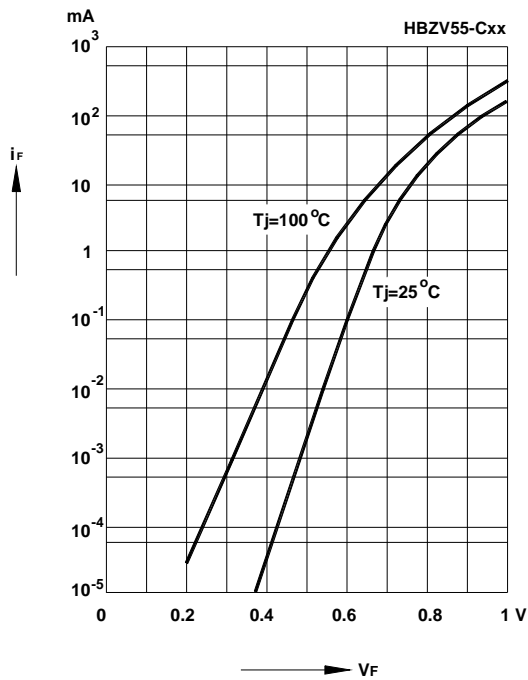




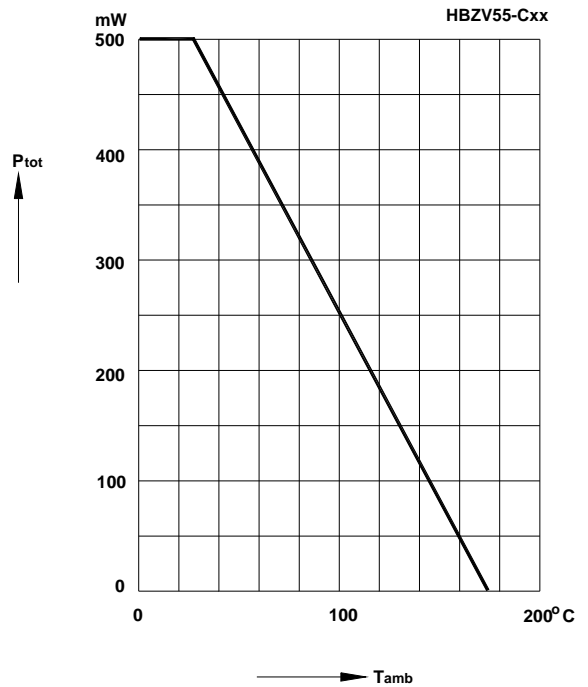
**Breakdown characteristics**  
 $T_j = \text{constant (pulsed)}$



**Forward characteristics**

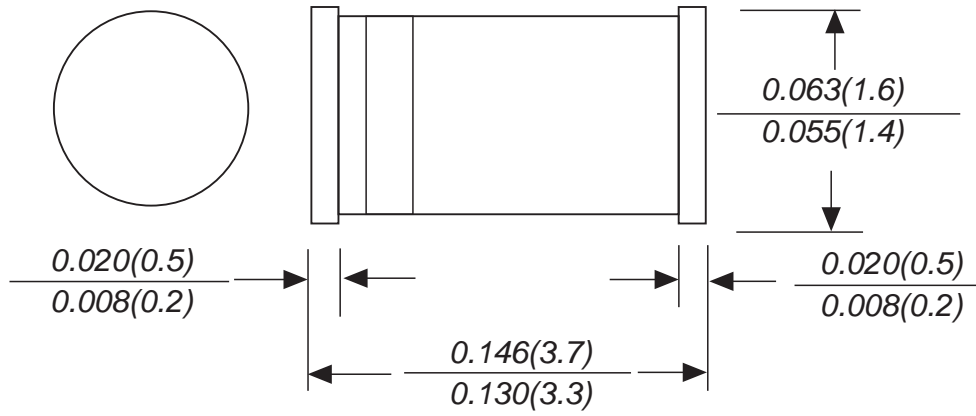


**Admissible power dissipation versus ambient temperature**  
Valid provided that electrodes are kept at ambient temperature.





**LL-34 Package Information**



*Dimensions in inches and (millimeters)*



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