

# HZ-N Series

## Silicon Planar Zener Diode for Stabilized Power Supply

REJ03G1625-0100

Rev.1.00

Mar 25, 2008

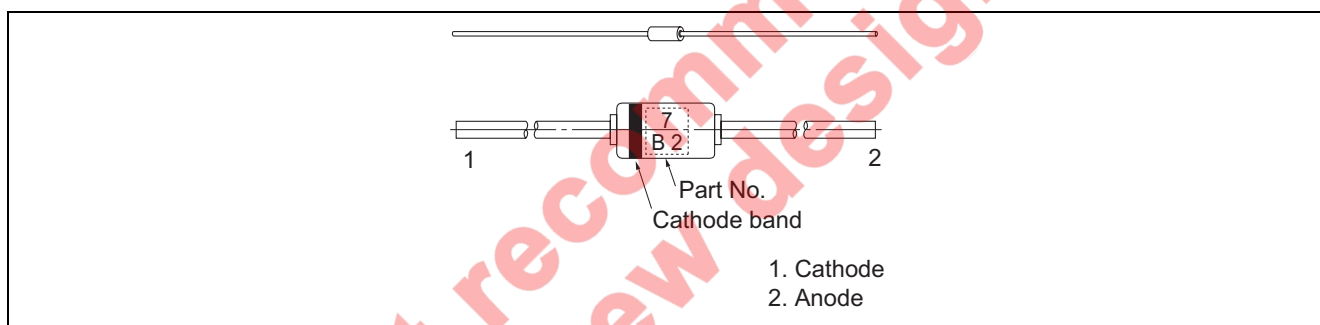
### Features

- Low leakage, low zener impedance and maximum power dissipation of 500 mW are ideally suited for stabilized power supply, etc.
- Wide spectrum from 1.9 V through 38 V of zener voltage provide flexible application.

### Ordering Information

| Part No.    | Cathode band | Package Name | Package Code |
|-------------|--------------|--------------|--------------|
| HZ-N Series | Black        | DO-35        | GRZZ0002ZB-A |

### Pin Arrangement



## Absolute Maximum Ratings

(Ta = 25°C)

| Item                 | Symbol | Value       | Unit |
|----------------------|--------|-------------|------|
| Power dissipation    | Pd     | 500         | mW   |
| Junction temperature | Tj     | 175         | °C   |
| Storage temperature  | Tstg   | -55 to +175 | °C   |

## Electrical Characteristics

(Ta = 25°C)

| Type | Grade | Zener Voltage         |     | Reverse Current     |                     | Dynamic Resistance |                    |
|------|-------|-----------------------|-----|---------------------|---------------------|--------------------|--------------------|
|      |       | V <sub>Z</sub> (V) *1 |     | Test Condition      |                     | Test Condition     |                    |
|      |       | Min                   | Max | I <sub>Z</sub> (mA) | I <sub>R</sub> (μA) | V <sub>R</sub> (V) | r <sub>d</sub> (Ω) |
| HZ2  | B1-N  | 1.9                   | 2.1 | 5                   | 5                   | 0.5                | 100                |
|      | B2-N  | 2.0                   | 2.2 |                     |                     |                    |                    |
|      | B3-N  | 2.1                   | 2.3 |                     |                     |                    |                    |
|      | C1-N  | 2.2                   | 2.4 |                     |                     |                    |                    |
|      | C2-N  | 2.3                   | 2.5 |                     |                     |                    |                    |
|      | C3-N  | 2.4                   | 2.6 |                     |                     |                    |                    |
| HZ3  | A1-N  | 2.5                   | 2.7 | 5                   | 5                   | 0.5                | 100                |
|      | A2-N  | 2.6                   | 2.8 |                     |                     |                    |                    |
|      | A3-N  | 2.7                   | 2.9 |                     |                     |                    |                    |
|      | B1-N  | 2.8                   | 3.0 |                     |                     |                    |                    |
|      | B2-N  | 2.9                   | 3.1 |                     |                     |                    |                    |
|      | B3-N  | 3.0                   | 3.2 |                     |                     |                    |                    |
|      | C1-N  | 3.1                   | 3.3 |                     |                     |                    |                    |
|      | C2-N  | 3.2                   | 3.4 |                     |                     |                    |                    |
|      | C3-N  | 3.3                   | 3.5 |                     |                     |                    |                    |
| HZ4  | A1-N  | 3.4                   | 3.6 | 5                   | 5                   | 1.0                | 100                |
|      | A2-N  | 3.5                   | 3.7 |                     |                     |                    |                    |
|      | A3-N  | 3.6                   | 3.8 |                     |                     |                    |                    |
|      | B1-N  | 3.7                   | 3.9 |                     |                     |                    |                    |
|      | B2-N  | 3.8                   | 4.0 |                     |                     |                    |                    |
|      | B3-N  | 3.9                   | 4.1 |                     |                     |                    |                    |
|      | C1-N  | 4.0                   | 4.2 |                     |                     |                    |                    |
|      | C2-N  | 4.1                   | 4.3 |                     |                     |                    |                    |
|      | C3-N  | 4.2                   | 4.4 |                     |                     |                    |                    |
| HZ5  | A1-N  | 4.3                   | 4.5 | 5                   | 5                   | 1.5                | 100                |
|      | A2-N  | 4.4                   | 4.6 |                     |                     |                    |                    |
|      | A3-N  | 4.5                   | 4.7 |                     |                     |                    |                    |
|      | B1-N  | 4.6                   | 4.8 |                     |                     |                    |                    |
|      | B2-N  | 4.7                   | 4.9 |                     |                     |                    |                    |
|      | B3-N  | 4.8                   | 5.0 |                     |                     |                    |                    |
|      | C1-N  | 4.9                   | 5.1 | 5                   | 5                   | 1.5                | 100                |
|      | C2-N  | 5.0                   | 5.2 |                     |                     |                    |                    |
|      | C3-N  | 5.1                   | 5.3 |                     |                     |                    |                    |

Note: 1. Tested with DC.

| Type | Grade | Zener Voltage         |      | Reverse Current     |                     | Dynamic Resistance |                    |
|------|-------|-----------------------|------|---------------------|---------------------|--------------------|--------------------|
|      |       | V <sub>Z</sub> (V) *1 |      | Test Condition      | I <sub>R</sub> (μA) | Test Condition     | r <sub>d</sub> (Ω) |
|      |       | Min                   | Max  | I <sub>Z</sub> (mA) | Max                 | V <sub>R</sub> (V) | Max                |
| HZ6  | A1-N  | 5.2                   | 5.5  | 5                   | 5                   | 2.0                | 40                 |
|      | A2-N  | 5.3                   | 5.6  |                     |                     |                    |                    |
|      | A3-N  | 5.4                   | 5.7  |                     |                     |                    |                    |
|      | B1-N  | 5.5                   | 5.8  |                     |                     |                    |                    |
|      | B2-N  | 5.6                   | 5.9  |                     |                     |                    |                    |
|      | B3-N  | 5.7                   | 6.0  |                     |                     |                    |                    |
|      | C1-N  | 5.8                   | 6.1  |                     |                     |                    |                    |
|      | C2-N  | 6.0                   | 6.3  |                     |                     |                    |                    |
|      | C3-N  | 6.1                   | 6.4  |                     |                     |                    |                    |
| HZ7  | A1-N  | 6.3                   | 6.6  | 5                   | 1                   | 3.5                | 15                 |
|      | A2-N  | 6.4                   | 6.7  |                     |                     |                    |                    |
|      | A3-N  | 6.6                   | 6.9  |                     |                     |                    |                    |
|      | B1-N  | 6.7                   | 7.0  |                     |                     |                    |                    |
|      | B2-N  | 6.9                   | 7.2  |                     |                     |                    |                    |
|      | B3-N  | 7.0                   | 7.3  |                     |                     |                    |                    |
|      | C1-N  | 7.2                   | 7.6  |                     |                     |                    |                    |
|      | C2-N  | 7.3                   | 7.7  |                     |                     |                    |                    |
|      | C3-N  | 7.5                   | 7.9  |                     |                     |                    |                    |
| HZ9  | A1-N  | 7.7                   | 8.1  | 5                   | 1                   | 5.0                | 20                 |
|      | A2-N  | 7.9                   | 8.3  |                     |                     |                    |                    |
|      | A3-N  | 8.1                   | 8.5  |                     |                     |                    |                    |
|      | B1-N  | 8.3                   | 8.7  |                     |                     |                    |                    |
|      | B2-N  | 8.5                   | 8.9  |                     |                     |                    |                    |
|      | B3-N  | 8.7                   | 9.1  |                     |                     |                    |                    |
|      | C1-N  | 8.9                   | 9.3  |                     |                     |                    |                    |
|      | C2-N  | 9.1                   | 9.5  |                     |                     |                    |                    |
|      | C3-N  | 9.3                   | 9.7  |                     |                     |                    |                    |
| HZ11 | A1-N  | 9.5                   | 9.9  | 5                   | 1                   | 7.5                | 25                 |
|      | A2-N  | 9.7                   | 10.1 |                     |                     |                    |                    |
|      | A3-N  | 9.9                   | 10.3 |                     |                     |                    |                    |
|      | B1-N  | 10.2                  | 10.6 |                     |                     |                    |                    |
|      | B2-N  | 10.4                  | 10.8 |                     |                     |                    |                    |
|      | B3-N  | 10.7                  | 11.1 |                     |                     |                    |                    |
|      | C1-N  | 10.9                  | 11.3 |                     |                     |                    |                    |
|      | C2-N  | 11.1                  | 11.6 |                     |                     |                    |                    |
|      | C3-N  | 11.4                  | 11.9 |                     |                     |                    |                    |
| HZ12 | A1-N  | 11.6                  | 12.1 | 5                   | 1                   | 9.5                | 35                 |
|      | A2-N  | 11.9                  | 12.4 |                     |                     |                    |                    |
|      | A3-N  | 12.2                  | 12.7 |                     |                     |                    |                    |
|      | B1-N  | 12.4                  | 12.9 |                     |                     |                    |                    |
|      | B2-N  | 12.6                  | 13.1 |                     |                     |                    |                    |
|      | B3-N  | 12.9                  | 13.4 |                     |                     |                    |                    |
|      | C1-N  | 13.2                  | 13.7 |                     |                     |                    |                    |
|      | C2-N  | 13.5                  | 14.0 |                     |                     |                    |                    |
|      | C3-N  | 13.8                  | 14.3 |                     |                     |                    |                    |

Note: 1. Tested with DC.

| Type | Grade | Zener Voltage                     |      | Reverse Current     |                     | Dynamic Resistance |                    |
|------|-------|-----------------------------------|------|---------------------|---------------------|--------------------|--------------------|
|      |       | V <sub>Z</sub> (V) * <sup>1</sup> |      | Test Condition      |                     | Test Condition     |                    |
|      |       | Min                               | Max  | I <sub>Z</sub> (mA) | I <sub>R</sub> (μA) | V <sub>R</sub> (V) | r <sub>d</sub> (Ω) |
| HZ15 | -1-N  | 14.1                              | 14.7 | 5                   | 1                   | 11                 | 40                 |
|      | -2-N  | 14.5                              | 15.1 |                     |                     |                    |                    |
|      | -3-N  | 14.9                              | 15.5 |                     |                     |                    |                    |
| HZ16 | -1-N  | 15.3                              | 15.9 | 5                   | 1                   | 12                 | 45                 |
|      | -2-N  | 15.7                              | 16.5 |                     |                     |                    |                    |
|      | -3-N  | 16.3                              | 17.1 |                     |                     |                    |                    |
| HZ18 | -1-N  | 16.9                              | 17.7 | 5                   | 1                   | 13                 | 55                 |
|      | -2-N  | 17.5                              | 18.3 |                     |                     |                    |                    |
|      | -3-N  | 18.1                              | 19.0 |                     |                     |                    |                    |
| HZ20 | -1-N  | 18.8                              | 19.7 | 2                   | 1                   | 15                 | 60                 |
|      | -2-N  | 19.5                              | 20.4 |                     |                     |                    |                    |
|      | -3-N  | 20.2                              | 21.1 |                     |                     |                    |                    |
| HZ22 | -1-N  | 20.9                              | 21.9 | 2                   | 1                   | 17                 | 65                 |
|      | -2-N  | 21.6                              | 22.6 |                     |                     |                    |                    |
|      | -3-N  | 22.3                              | 23.3 |                     |                     |                    |                    |
| HZ24 | -1-N  | 22.9                              | 24.0 | 2                   | 1                   | 19                 | 70                 |
|      | -2-N  | 23.6                              | 24.7 |                     |                     |                    |                    |
|      | -3-N  | 24.3                              | 25.5 |                     |                     |                    |                    |
| HZ27 | -1-N  | 25.2                              | 26.6 | 2                   | 1                   | 21                 | 80                 |
|      | -2-N  | 26.2                              | 27.6 |                     |                     |                    |                    |
|      | -3-N  | 27.2                              | 28.6 |                     |                     |                    |                    |
| HZ30 | -1-N  | 28.2                              | 29.6 | 2                   | 1                   | 23                 | 100                |
|      | -2-N  | 29.2                              | 30.6 |                     |                     |                    |                    |
|      | -3-N  | 30.2                              | 31.6 |                     |                     |                    |                    |
| HZ33 | -1-N  | 31.2                              | 32.6 | 2                   | 1                   | 25                 | 120                |
|      | -2-N  | 32.2                              | 33.6 |                     |                     |                    |                    |
|      | -3-N  | 33.2                              | 34.6 |                     |                     |                    |                    |
| HZ36 | -1-N  | 34.2                              | 35.7 | 2                   | 1                   | 27                 | 140                |
|      | -2-N  | 35.3                              | 36.8 |                     |                     |                    |                    |
|      | -3-N  | 36.4                              | 38.0 |                     |                     |                    |                    |

Notes: 1. Tested with DC.

2. Part No. is as follows; HZ2B1-N, HZ2B2-N, HZ36-3-N.

## Main Characteristic

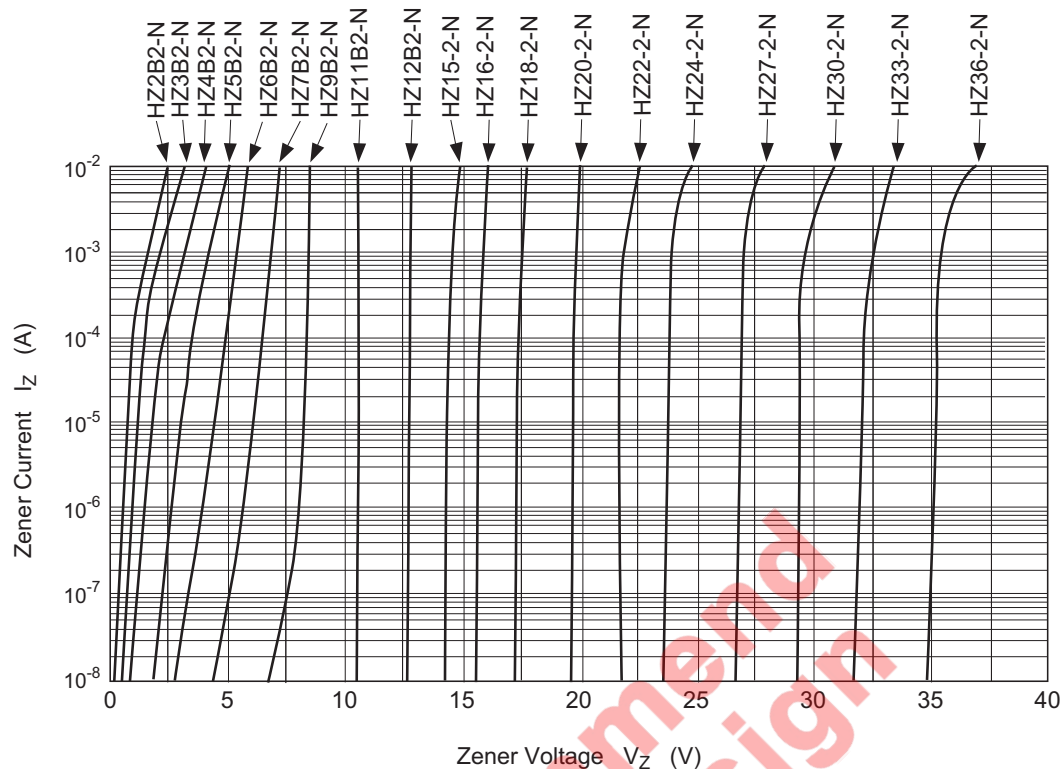


Fig.1 Zener current vs. Zener voltage

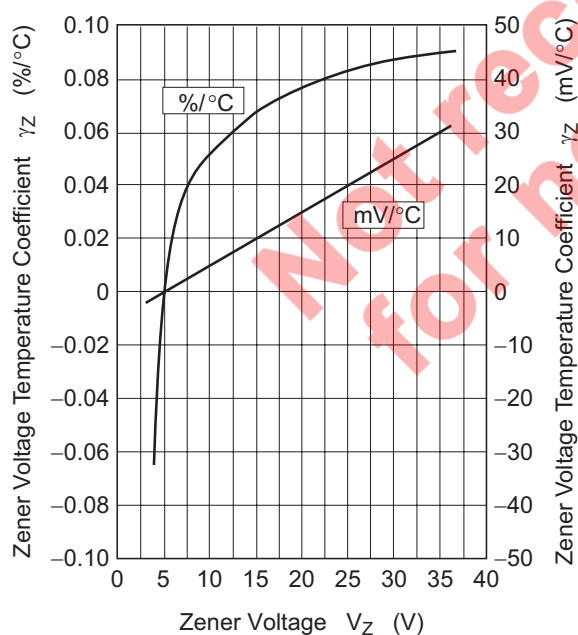


Fig.2 Temperature Coefficient vs. Zener voltage

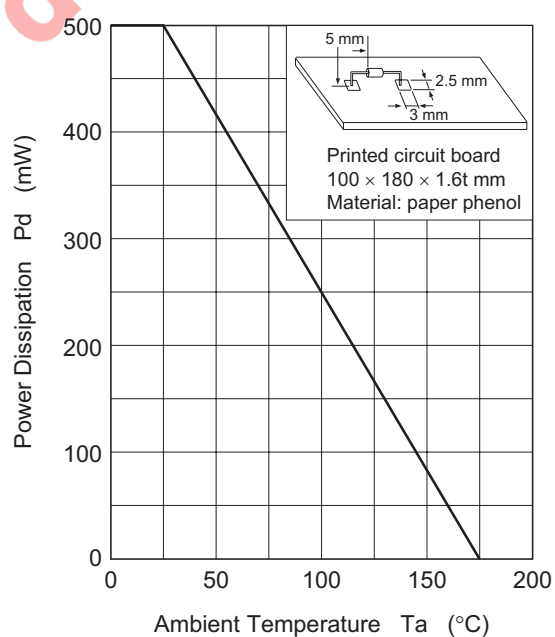
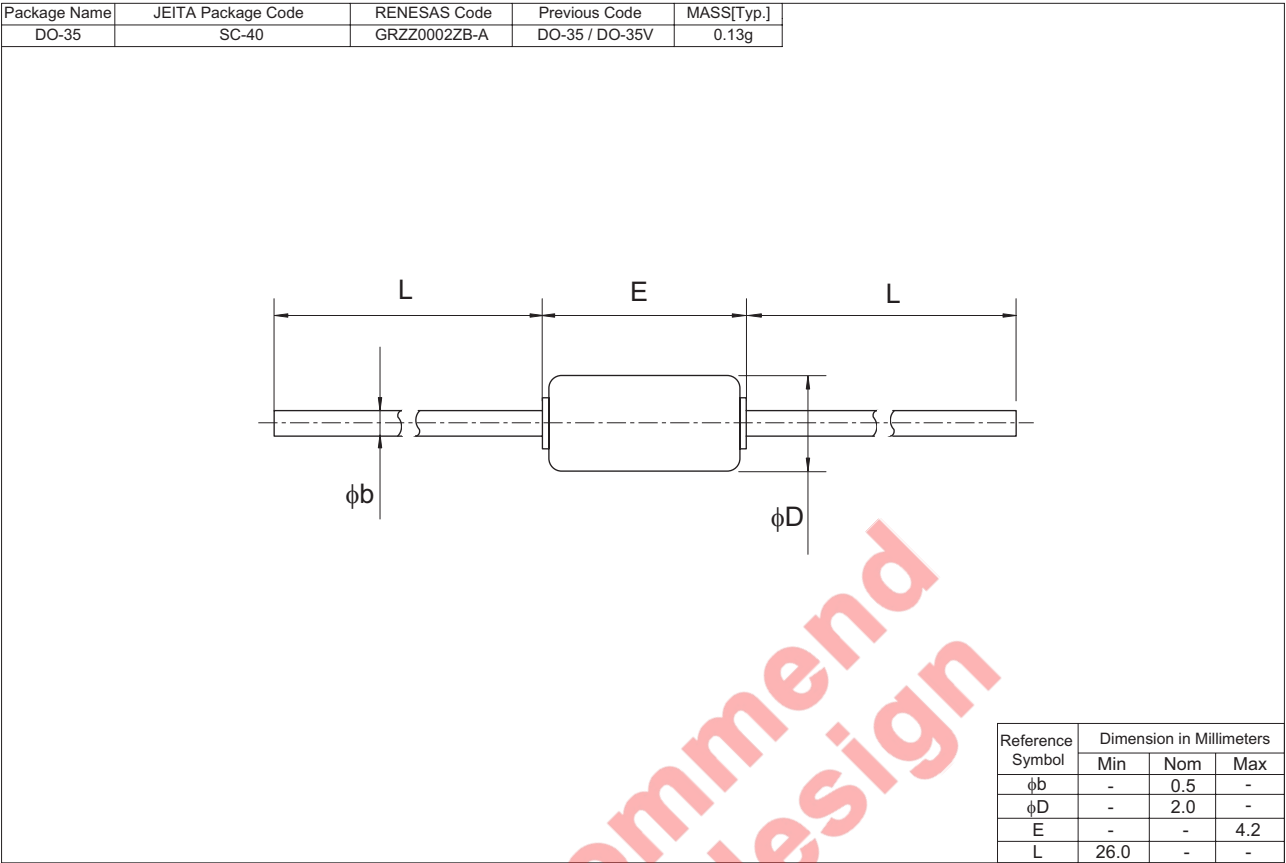


Fig.3 Power Dissipation vs. Ambient Temperature

Package Dimensions



Notes:

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