# HZ Series

## Silicon Epitaxial Planar Zener Diode for Stabilized Power Supply

REJ03G0180-0300Z
(Previous: ADE-208-117B)
Rev.3.00
Mar.11.2004

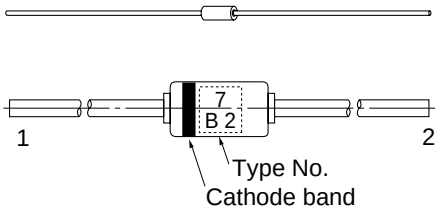
### Features

- Low leakage, low zener impedance and maximum power dissipation of 500 mW are ideally suited for stabilized power supply, etc.
- Wide spectrum from 1.6 V through 38 V of zener voltage provide flexible application.

### Ordering Information

| Type No. | Mark | Package Code |
|---|---|---|
| HZ Series | Type No. | DO-35 |

### Pin Arrangement




1. Cathode
2. Anode

## 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)

| | | Zener Voltage | | | Reverse Current | | Dynamic Resistance | |
|---|---|---|---|---|---|---|---|---|
| | | $V_Z$ (V)*[1] | | Test Condition | $I_R$ (μA) | Test Condition | $r_d$ (Ω) | Test Condition |
| Type | Grade | Min | Max | $I_Z$ (mA) | Max | $V_R$ (V) | Max | $I_Z$ (mA) |
| HZ2 | A1 | 1.6 | 1.8 | 5 | 25 | 0.5 | 100 | 5 |
| | A2 | 1.7 | 1.9 | | | | | |
| | A3 | 1.8 | 2.0 | | | | | |
| | B1 | 1.9 | 2.1 | 5 | 5 | 0.5 | 100 | 5 |
| | B2 | 2.0 | 2.2 | | | | | |
| | B3 | 2.1 | 2.3 | | | | | |
| | C1 | 2.2 | 2.4 | | | | | |
| | C2 | 2.3 | 2.5 | | | | | |
| | C3 | 2.4 | 2.6 | | | | | |
| HZ3 | A1 | 2.5 | 2.7 | 5 | 5 | 0.5 | 100 | 5 |
| | A2 | 2.6 | 2.8 | | | | | |
| | A3 | 2.7 | 2.9 | | | | | |
| | B1 | 2.8 | 3.0 | | | | | |
| | B2 | 2.9 | 3.1 | | | | | |
| | B3 | 3.0 | 3.2 | | | | | |
| | C1 | 3.1 | 3.3 | | | | | |
| | C2 | 3.2 | 3.4 | | | | | |
| | C3 | 3.3 | 3.5 | | | | | |
| HZ4 | A1 | 3.4 | 3.6 | 5 | 5 | 1.0 | 100 | 5 |
| | A2 | 3.5 | 3.7 | | | | | |
| | A3 | 3.6 | 3.8 | | | | | |
| | B1 | 3.7 | 3.9 | | | | | |
| | B2 | 3.8 | 4.0 | | | | | |
| | B3 | 3.9 | 4.1 | | | | | |
| | C1 | 4.0 | 4.2 | | | | | |
| | C2 | 4.1 | 4.3 | | | | | |
| | C3 | 4.2 | 4.4 | | | | | |
| HZ5 | A1 | 4.3 | 4.5 | 5 | 5 | 1.5 | 100 | 5 |
| | A2 | 4.4 | 4.6 | | | | | |
| | A3 | 4.5 | 4.7 | | | | | |
| | B1 | 4.6 | 4.8 | | | | | |
| | B2 | 4.7 | 4.9 | | | | | |
| | B3 | 4.8 | 5.0 | | | | | |

Note: 1. Tested with DC.

(Ta = 25°C)

| | | Zener Voltage | | | Reverse Current | | Dynamic Resistance | |
|---|---|---|---|---|---|---|---|---|
| | | $V_Z$ (V)*[1] | | Test Condition | $I_R$ (μA) | Test Condition | $r_d$ (Ω) | Test Condition |
| Type | Grade | Min | Max | $I_Z$ (mA) | Max | $V_R$ (V) | Max | $I_Z$ (mA) |
| HZ5 | C1 | 4.9 | 5.1 | 5 | 5 | 1.5 | 100 | 5 |
| | C2 | 5.0 | 5.2 | | | | | |
| | C3 | 5.1 | 5.3 | | | | | |
| HZ6 | A1 | 5.2 | 5.5 | 5 | 5 | 2.0 | 40 | 5 |
| | A2 | 5.3 | 5.6 | | | | | |
| | A3 | 5.4 | 5.7 | | | | | |
| | B1 | 5.5 | 5.8 | | | | | |
| | B2 | 5.6 | 5.9 | | | | | |
| | B3 | 5.7 | 6.0 | | | | | |
| | C1 | 5.8 | 6.1 | | | | | |
| | C2 | 6.0 | 6.3 | | | | | |
| | C3 | 6.1 | 6.4 | | | | | |
| HZ7 | A1 | 6.3 | 6.6 | 5 | 1 | 3.5 | 15 | 5 |
| | A2 | 6.4 | 6.7 | | | | | |
| | A3 | 6.6 | 6.9 | | | | | |
| | B1 | 6.7 | 7.0 | | | | | |
| | B2 | 6.9 | 7.2 | | | | | |
| | B3 | 7.0 | 7.3 | | | | | |
| | C1 | 7.2 | 7.6 | | | | | |
| | C2 | 7.3 | 7.7 | | | | | |
| | C3 | 7.5 | 7.9 | | | | | |
| HZ9 | A1 | 7.7 | 8.1 | 5 | 1 | 5.0 | 20 | 5 |
| | A2 | 7.9 | 8.3 | | | | | |
| | A3 | 8.1 | 8.5 | | | | | |
| | B1 | 8.3 | 8.7 | | | | | |
| | B2 | 8.5 | 8.9 | | | | | |
| | B3 | 8.7 | 9.1 | | | | | |
| | C1 | 8.9 | 9.3 | | | | | |
| | C2 | 9.1 | 9.5 | | | | | |
| | C3 | 9.3 | 9.7 | | | | | |
| HZ11 | A1 | 9.5 | 9.9 | 5 | 1 | 7.5 | 25 | 5 |
| | A2 | 9.7 | 10.1 | | | | | |
| | A3 | 9.9 | 10.3 | | | | | |
| | B1 | 10.2 | 10.6 | | | | | |
| | B2 | 10.4 | 10.8 | | | | | |
| | B3 | 10.7 | 11.1 | | | | | |
| | C1 | 10.9 | 11.3 | | | | | |
| | C2 | 11.1 | 11.6 | | | | | |
| | C3 | 11.4 | 11.9 | | | | | |

Note: 1. Tested with DC.

(Ta = 25°C)

| | | Zener Voltage | | | Reverse Current | | Dynamic Resistance | |
|---|---|---|---|---|---|---|---|---|
| | | $V_Z$ (V)*[1] | | Test Condition | $I_R$ (μA) | Test Condition | $r_d$ (Ω) | Test Condition |
| Type | Grade | Min | Max | $I_Z$ (mA) | Max | $V_R$ (V) | Max | $I_Z$ (mA) |
| HZ12 | A1 | 11.6 | 12.1 | 5 | 1 | 9.5 | 35 | 5 |
| | A2 | 11.9 | 12.4 | | | | | |
| | A3 | 12.2 | 12.7 | | | | | |
| | B1 | 12.4 | 12.9 | | | | | |
| | B2 | 12.6 | 13.1 | | | | | |
| | B3 | 12.9 | 13.4 | | | | | |
| | C1 | 13.2 | 13.7 | | | | | |
| | C2 | 13.5 | 14.0 | | | | | |
| | C3 | 13.8 | 14.3 | | | | | |
| HZ15 | 1 | 14.1 | 14.7 | 5 | 1 | 11.0 | 40 | 5 |
| | 2 | 14.5 | 15.1 | | | | | |
| | 3 | 14.9 | 15.5 | | | | | |
| HZ16 | 1 | 15.3 | 15.9 | 5 | 1 | 12.0 | 45 | 5 |
| | 2 | 15.7 | 16.5 | | | | | |
| | 3 | 16.3 | 17.1 | | | | | |
| HZ18 | 1 | 16.9 | 17.7 | 5 | 1 | 13.0 | 55 | 5 |
| | 2 | 17.5 | 18.3 | | | | | |
| | 3 | 18.1 | 19.0 | | | | | |
| HZ20 | 1 | 18.8 | 19.7 | 2 | 1 | 15.0 | 60 | 2 |
| | 2 | 19.5 | 20.4 | | | | | |
| | 3 | 20.2 | 21.1 | | | | | |
| HZ22 | 1 | 20.9 | 21.9 | 2 | 1 | 17.0 | 65 | 2 |
| | 2 | 21.6 | 22.6 | | | | | |
| | 3 | 22.3 | 23.3 | | | | | |
| HZ24 | 1 | 22.9 | 24.0 | 2 | 1 | 19.0 | 70 | 2 |
| | 2 | 23.6 | 24.7 | | | | | |
| | 3 | 24.3 | 25.5 | | | | | |
| HZ27 | 1 | 25.2 | 26.6 | 2 | 1 | 21.0 | 80 | 2 |
| | 2 | 26.2 | 27.6 | | | | | |
| | 3 | 27.2 | 28.6 | | | | | |
| HZ30 | 1 | 28.2 | 29.6 | 2 | 1 | 23.0 | 100 | 2 |
| | 2 | 29.2 | 30.6 | | | | | |
| | 3 | 30.2 | 31.6 | | | | | |
| HZ33 | 1 | 31.2 | 32.6 | 2 | 1 | 25.0 | 120 | 2 |
| | 2 | 32.2 | 33.6 | | | | | |
| | 3 | 33.2 | 34.6 | | | | | |
| HZ36 | 1 | 34.2 | 35.7 | 2 | 1 | 27.0 | 140 | 2 |
| | 2 | 35.3 | 36.8 | | | | | |
| | 3 | 36.4 | 38.0 | | | | | |

Note: 1. Tested with DC.
2. Type No. is as follows; HZ2B1, HZ2B2, HZ36-3.

## Main Characteristic

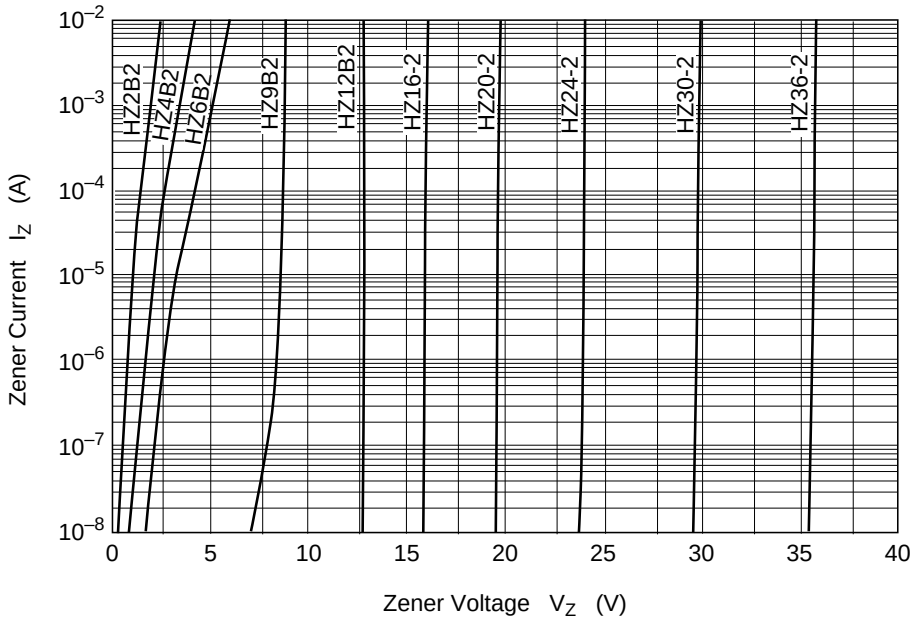



Fig.1 Zener current vs. Zener voltage

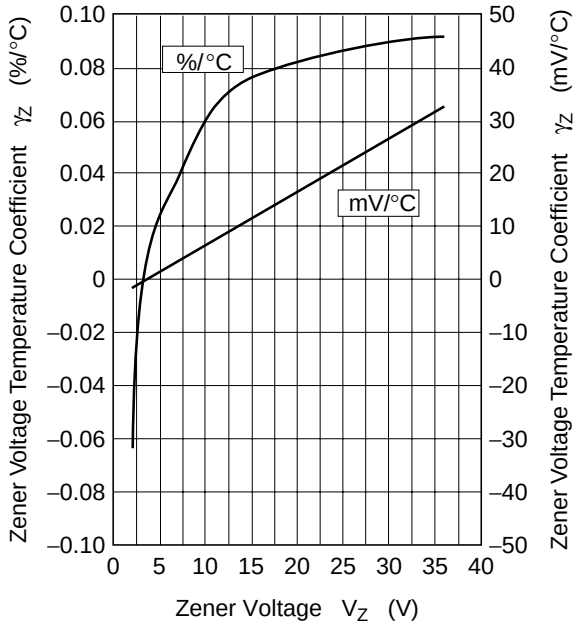



Fig.2 Temperature Coefficient vs. Zener voltage

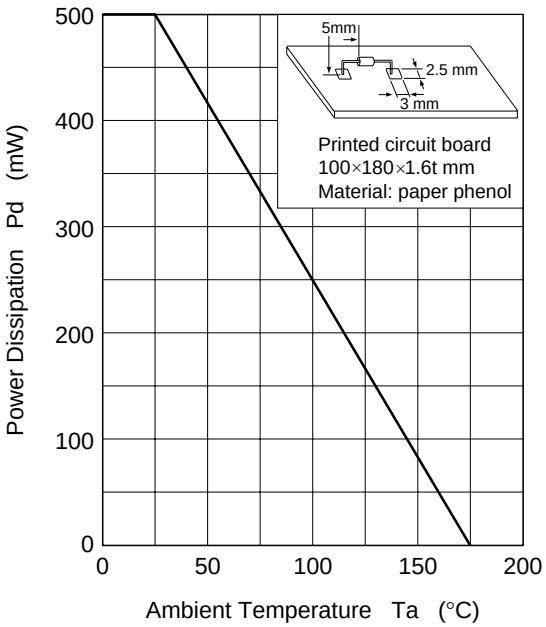
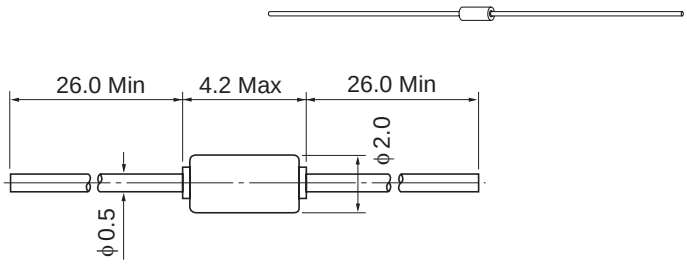



Fig.3 Power Dissipation vs. Ambient Temperature

## Package Dimensions

As of January, 2003

Unit: mm




| | |
|---|---|
| Package Code | DO-35 |
| JEDEC | Conforms |
| JEITA | Conforms |
| Mass (reference value) | 0.13 g |

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