

## HZK-L Series

Silicon Epitaxial Planar Zener Diodes for  
Stabilized Power Supply

REJ03G0019-0300Z  
(Previous: ADE-208-127B)  
Rev.3.00  
May.14.2003

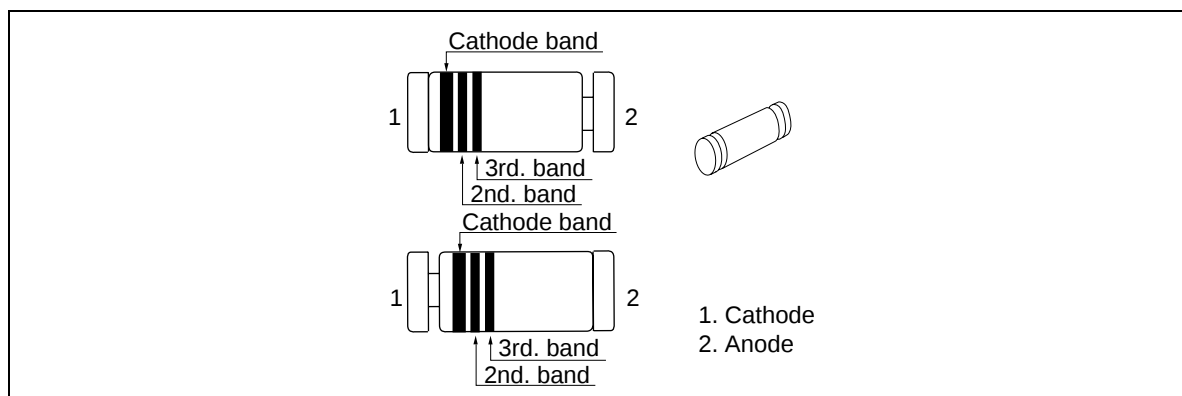
### Features

- Low leakage, low zener impedance and maximum power dissipation of 400 mW.
- Wide spectrum from 5.2V through 38V of zener voltage provide flexible application.
- LLD package is suitable for high density surface mounting and high speed assembly.

### Ordering Information

| Type No.     | Mark       | Package Code |
|--------------|------------|--------------|
| HZK-L Series | Color Code | LLD          |

### Pin Arrangement



## HZK-L Series

### Absolute Maximum Ratings

(Ta = 25°C)

| Item                 | Symbol | Value       | Unit |
|----------------------|--------|-------------|------|
| Power dissipation    | Pd *   | 400         | mW   |
| Junction temperature | Tj     | 175         | °C   |
| Storage temperature  | Tstg   | –55 to +175 | °C   |

Note: \* With P.C. Board.

### Electrical Characteristics

(Ta = 25°C)

| Type   | Grade | Zener Voltage       |      |                     | Reverse Current     |                    | Dynamic Resistance |                     |
|--------|-------|---------------------|------|---------------------|---------------------|--------------------|--------------------|---------------------|
|        |       | V <sub>z</sub> (V)* |      | Test Condition      | I <sub>R</sub> (μA) | Test Condition     | r <sub>d</sub> (Ω) | Test Condition      |
|        |       | Min                 | Max  | I <sub>z</sub> (mA) | Max                 | V <sub>R</sub> (V) | Max                | I <sub>z</sub> (mA) |
| HZK6L  | A     | 5.2                 | 5.7  | 0.5                 | 1                   | 2.0                | 150                | 0.5                 |
|        | B     | 5.5                 | 6.0  |                     |                     |                    | 80                 |                     |
|        | C     | 5.8                 | 6.4  |                     |                     |                    | 60                 |                     |
| HZK7L  | A     | 6.3                 | 6.9  | 0.5                 | 1                   | 3.5                | 60                 | 0.5                 |
|        | B     | 6.7                 | 7.3  |                     |                     |                    |                    |                     |
|        | C     | 7.2                 | 7.9  |                     |                     |                    |                    |                     |
| HZK9L  | A     | 7.7                 | 8.5  | 0.5                 | 1                   | 6.0                | 60                 | 0.5                 |
|        | B     | 8.3                 | 9.1  |                     |                     |                    |                    |                     |
|        | C     | 8.9                 | 9.7  |                     |                     |                    |                    |                     |
| HZK11L | A     | 9.5                 | 10.3 | 0.5                 | 1                   | 8.0                | 80                 | 0.5                 |
|        | B     | 10.2                | 11.1 |                     |                     |                    |                    |                     |
|        | C     | 10.9                | 11.9 |                     |                     |                    |                    |                     |
| HZK12L | A     | 11.6                | 12.7 | 0.5                 | 1                   | 10.5               | 80                 | 0.5                 |
|        | B     | 12.4                | 13.4 |                     |                     |                    |                    |                     |
|        | C     | 13.2                | 14.3 |                     |                     |                    |                    |                     |
| HZK15L |       | 14.1                | 15.5 | 0.5                 | 1                   | 13.0               | 80                 | 0.5                 |
| HZK16L |       | 15.3                | 17.1 | 0.5                 | 1                   | 14.0               | 80                 | 0.5                 |
| HZK18L |       | 16.9                | 19.0 | 0.5                 | 1                   | 15.0               | 80                 | 0.5                 |
| HZK20L |       | 18.8                | 21.1 | 0.5                 | 1                   | 18.0               | 100                | 0.5                 |
| HZK22L |       | 20.9                | 23.3 | 0.5                 | 1                   | 20.0               | 100                | 0.5                 |
| HZK24L |       | 22.9                | 25.5 | 0.5                 | 1                   | 22.0               | 120                | 0.5                 |
| HZK27L |       | 25.2                | 28.6 | 0.5                 | 1                   | 24.0               | 150                | 0.5                 |

Note: \* Tested with DC.

Type No. is as follows: HZK6AL, HZK6BL, ... HZK36L.

## HZK-L Series

### Electrical Characteristics (cont.)

| Type   | Grade | Zener Voltage |      |                | Reverse Current |                | Dynamic Resistance |                |
|--------|-------|---------------|------|----------------|-----------------|----------------|--------------------|----------------|
|        |       | $V_z$ (V)*    |      | Test Condition | $I_R$ (μA)      | Test Condition | $r_d$ (Ω)          | Test Condition |
|        |       | Min           | Max  | $I_z$ (mA)     | Max             | $V_R$ (V)      | Max                | $I_z$ (mA)     |
| HZK30L |       | 28.2          | 31.6 | 0.5            | 1               | 27.0           | 200                | 0.5            |
| HZK33L |       | 31.2          | 34.6 | 0.5            | 1               | 30.0           | 250                | 0.5            |
| HZK36L |       | 34.2          | 38.0 | 0.5            | 1               | 33.0           | 300                | 0.5            |

Note: Tested with DC.

Type No. is as follows: HZK6AL, HZK6BL, ... HZK36L.

### Mark Color Code

| Type    | Cathode Band | Second Band  | Third Band |
|---------|--------------|--------------|------------|
| HZK6AL  | Orange       | Verdure      | Pink       |
| HZK6BL  | Orange       | Verdure      | Verdure    |
| HZK6CL  | Orange       | Verdure      | Light Blue |
| HZK7AL  | Orange       | Yellow Green | Pink       |
| HZK7BL  | Orange       | Yellow Green | Verdure    |
| HZK7CL  | Orange       | Yellow Green | Light Blue |
| HZK9AL  | Orange       | Purple       | Pink       |
| HZK9BL  | Orange       | Purple       | Verdure    |
| HZK9CL  | Orange       | Purple       | Light Blue |
| HZK11AL | Orange       | Light Blue   | Pink       |
| HZK11BL | Orange       | Light Blue   | Verdure    |
| HZK11CL | Orange       | Light Blue   | Light Blue |
| HZK12AL | Orange       | White        | Pink       |
| HZK12BL | Orange       | White        | Verdure    |
| HZK12CL | Orange       | White        | Light Blue |
| HZK15L  | Yellow       | Black        | Pink       |
| HZK16L  | Yellow       | Yellow Ocher | Pink       |
| HZK18L  | Yellow       | Pink         | Pink       |
| HZK20L  | Yellow       | Orange       | Pink       |
| HZK22L  | Yellow       | Yellow       | Pink       |
| HZK24L  | Yellow       | Verdure      | Pink       |
| HZK27L  | Yellow       | Yellow Green | Pink       |
| HZK30L  | Yellow       | Purple       | Pink       |
| HZK33L  | Yellow       | Light Blue   | Pink       |
| HZK36L  | Yellow       | White        | Pink       |
| HZK30L  | Yellow       | Purple       | Pink       |
| HZK33L  | Yellow       | Light Blue   | Pink       |
| HZK36L  | Yellow       | White        | Pink       |

## Main Characteristic

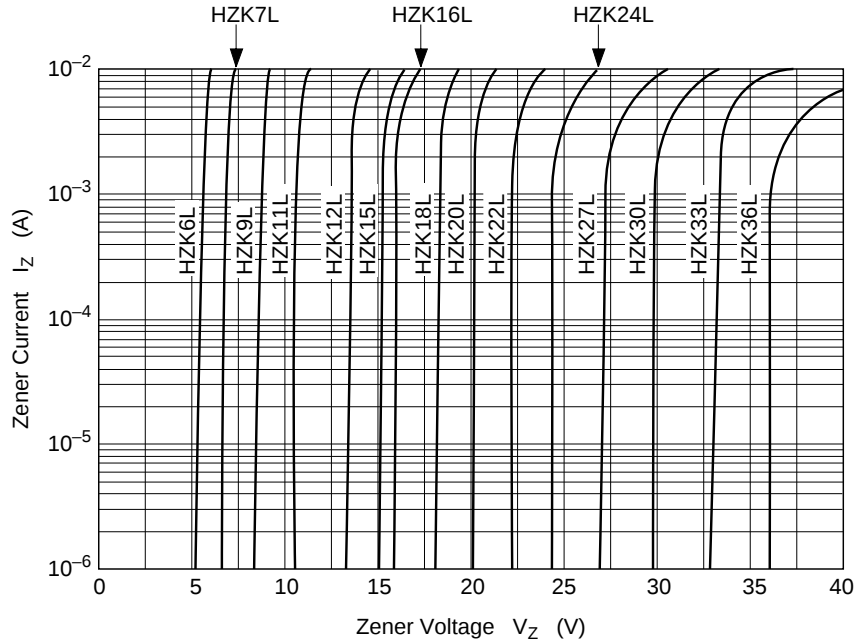


Fig.1 Zener current vs. Zener voltage

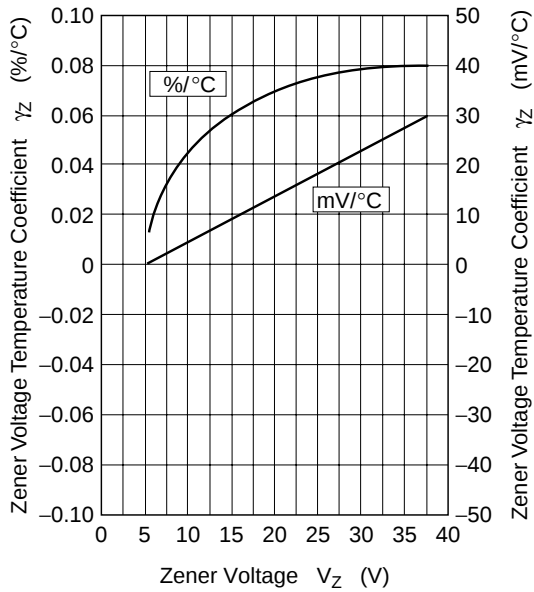


Fig.2 Temperature Coefficient vs. Zener voltage

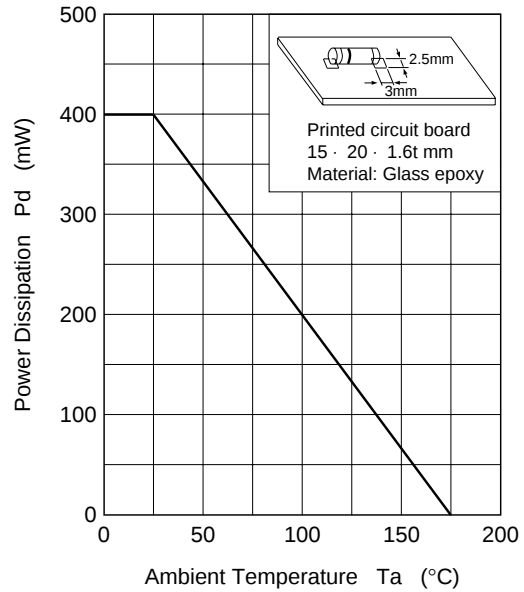
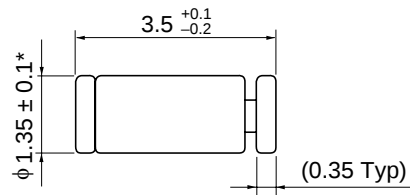


Fig.3 Power Dissipation vs. Ambient Temperature

Package Dimensions

As of January, 2003

Unit: mm



\* HSK122:  $\phi 1.4 \pm 0.1$  type

|                        |         |
|------------------------|---------|
| Package Code           | LLD     |
| JEDEC                  | —       |
| JEITA                  | —       |
| Mass (reference value) | 0.027 g |

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