

RKZ-KD Series

Silicon Planar Zener Diode for Stabilized Power Supply

REJ03G1264-0200
Rev.2.00
May 09, 2008

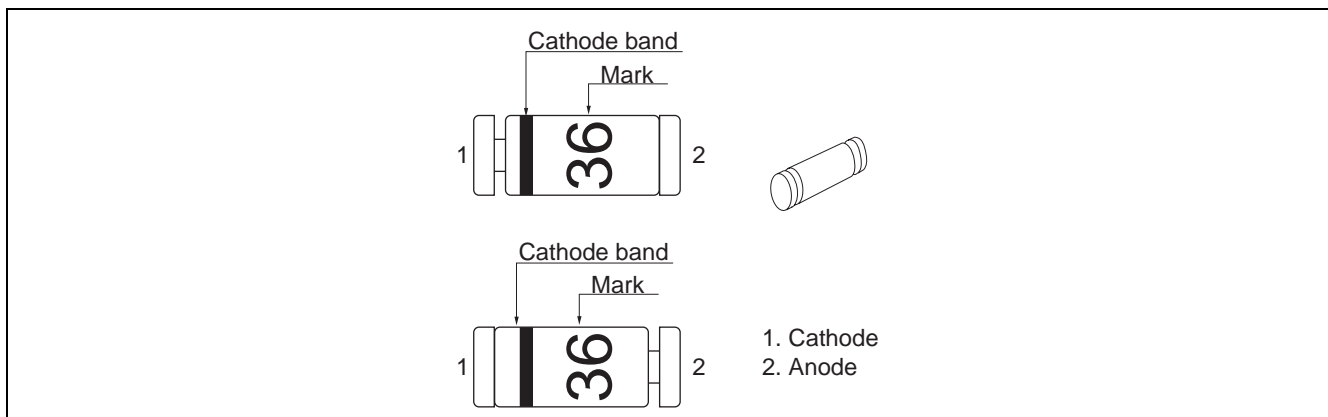
Features

- Low leakage, low zener impedance and maximum power dissipation of 500 mW.
- Wide spectrum from 1.9 V through 38 V of zener voltage provide flexible application.
- LLD Package is suitable for high density surface mounting and high speed assembly.

Ordering Information

| Part No. | Cathode band | Character Mark | Package Name | Package Code |
|---------------|------------------------------|--------------------|--------------|--------------|
| RKZ-KD Series | Same Color as Character Mark | Refer to Mark Code | LLD | GLZZ0002ZA-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)

| Part No. | Zener Voltage | | Reverse Current | | Dynamic Resistance | | |
|----------|----------------------------------|-----|---------------------|---------------------|--------------------|--------------------|---------------------|
| | V _Z (V) ⁺¹ | | 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) |
| RKZ2B1KD | 1.9 | 2.1 | 5 | 5 | 0.5 | 100 | 5 |
| RKZ2B2KD | 2.0 | 2.2 | | | | | |
| RKZ2B3KD | 2.1 | 2.3 | | | | | |
| RKZ2C1KD | 2.2 | 2.4 | | | | | |
| RKZ2C2KD | 2.3 | 2.5 | | | | | |
| RKZ2C3KD | 2.4 | 2.6 | | | | | |
| RKZ3A1KD | 2.5 | 2.7 | 5 | 5 | 0.5 | 100 | 5 |
| RKZ3A2KD | 2.6 | 2.8 | | | | | |
| RKZ3A3KD | 2.7 | 2.9 | | | | | |
| RKZ3B1KD | 2.8 | 3.0 | | | | | |
| RKZ3B2KD | 2.9 | 3.1 | | | | | |
| RKZ3B3KD | 3.0 | 3.2 | | | | | |
| RKZ3C1KD | 3.1 | 3.3 | 5 | 5 | 1.0 | 100 | 5 |
| RKZ3C2KD | 3.2 | 3.4 | | | | | |
| RKZ3C3KD | 3.3 | 3.5 | | | | | |
| RKZ4A1KD | 3.4 | 3.6 | | | | | |
| RKZ4A2KD | 3.5 | 3.7 | | | | | |
| RKZ4A3KD | 3.6 | 3.8 | | | | | |
| RKZ4B1KD | 3.7 | 3.9 | 5 | 5 | 1.5 | 100 | 5 |
| RKZ4B2KD | 3.8 | 4.0 | | | | | |
| RKZ4B3KD | 3.9 | 4.1 | | | | | |
| RKZ4C1KD | 4.0 | 4.2 | | | | | |
| RKZ4C2KD | 4.1 | 4.3 | | | | | |
| RKZ4C3KD | 4.2 | 4.4 | | | | | |
| RKZ5A1KD | 4.3 | 4.5 | 5 | 5 | 1.5 | 100 | 5 |
| RKZ5A2KD | 4.4 | 4.6 | | | | | |
| RKZ5A3KD | 4.5 | 4.7 | | | | | |
| RKZ5B1KD | 4.6 | 4.8 | | | | | |
| RKZ5B2KD | 4.7 | 4.9 | | | | | |
| RKZ5B3KD | 4.8 | 5.0 | | | | | |
| RKZ5C1KD | 4.9 | 5.1 | 5.0 | 5.2 | 5.3 | | |
| RKZ5C2KD | 5.0 | 5.2 | | | | | |
| RKZ5C3KD | 5.1 | 5.3 | | | | | |

Note: 1. Tested with DC.

| Part No. | Zener Voltage | | Reverse Current | | Dynamic Resistance | | |
|-----------|----------------------------------|------|---------------------|---------------------|--------------------|--------------------|---------------------|
| | V _Z (V) ^{*1} | | 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) |
| RKZ6A1KD | 5.2 | 5.5 | 5 | 5 | 2.0 | 40 | 5 |
| RKZ6A2KD | 5.3 | 5.6 | | | | | |
| RKZ6A3KD | 5.4 | 5.7 | | | | | |
| RKZ6B1KD | 5.5 | 5.8 | | | | | |
| RKZ6B2KD | 5.6 | 5.9 | | | | | |
| RKZ6B3KD | 5.7 | 6.0 | | | | | |
| RKZ6C1KD | 5.8 | 6.1 | | | | | |
| RKZ6C2KD | 6.0 | 6.3 | | | | | |
| RKZ6C3KD | 6.1 | 6.4 | | | | | |
| RKZ7A1KD | 6.3 | 6.6 | 5 | 1 | 3.5 | 15 | 5 |
| RKZ7A2KD | 6.4 | 6.7 | | | | | |
| RKZ7A3KD | 6.6 | 6.9 | | | | | |
| RKZ7B1KD | 6.7 | 7.0 | | | | | |
| RKZ7B2KD | 6.9 | 7.2 | | | | | |
| RKZ7B3KD | 7.0 | 7.3 | | | | | |
| RKZ7C1KD | 7.2 | 7.6 | | | | | |
| RKZ7C2KD | 7.3 | 7.7 | | | | | |
| RKZ7C3KD | 7.5 | 7.9 | | | | | |
| RKZ9A1KD | 7.7 | 8.1 | 5 | 1 | 5.0 | 20 | 5 |
| RKZ9A2KD | 7.9 | 8.3 | | | | | |
| RKZ9A3KD | 8.1 | 8.5 | | | | | |
| RKZ9B1KD | 8.3 | 8.7 | | | | | |
| RKZ9B2KD | 8.5 | 8.9 | | | | | |
| RKZ9B3KD | 8.7 | 9.1 | | | | | |
| RKZ9C1KD | 8.9 | 9.3 | | | | | |
| RKZ9C2KD | 9.1 | 9.5 | | | | | |
| RKZ9C3KD | 9.3 | 9.7 | | | | | |
| RKZ11A1KD | 9.5 | 9.9 | 5 | 1 | 7.5 | 25 | 5 |
| RKZ11A2KD | 9.7 | 10.1 | | | | | |
| RKZ11A3KD | 9.9 | 10.3 | | | | | |
| RKZ11B1KD | 10.2 | 10.6 | | | | | |
| RKZ11B2KD | 10.4 | 10.8 | | | | | |
| RKZ11B3KD | 10.7 | 11.1 | | | | | |
| RKZ11C1KD | 10.9 | 11.3 | | | | | |
| RKZ11C2KD | 11.1 | 11.6 | | | | | |
| RKZ11C3KD | 11.4 | 11.9 | | | | | |

Note: 1. Tested with DC.

| Part No. | Zener Voltage | | Reverse Current | | Dynamic Resistance | | |
|-----------|----------------------------------|------|---------------------|---------------------|--------------------|--------------------|---------------------|
| | V _Z (V) ^{*1} | | 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) |
| RKZ12A1KD | 11.6 | 12.1 | 5 | 1 | 9.5 | 35 | 5 |
| RKZ12A2KD | 11.9 | 12.4 | | | | | |
| RKZ12A3KD | 12.2 | 12.7 | | | | | |
| RKZ12B1KD | 12.4 | 12.9 | | | | | |
| RKZ12B2KD | 12.6 | 13.1 | | | | | |
| RKZ12B3KD | 12.9 | 13.4 | | | | | |
| RKZ12C1KD | 13.2 | 13.7 | | | | | |
| RKZ12C2KD | 13.5 | 14.0 | | | | | |
| RKZ12C3KD | 13.8 | 14.3 | | | | | |
| RKZ15-1KD | 14.1 | 14.7 | 5 | 1 | 11.0 | 40 | 5 |
| RKZ15-2KD | 14.5 | 15.1 | | | | | |
| RKZ15-3KD | 14.9 | 15.5 | | | | | |
| RKZ16-1KD | 15.3 | 15.9 | 5 | 1 | 12.0 | 45 | 5 |
| RKZ16-2KD | 15.7 | 16.5 | | | | | |
| RKZ16-3KD | 16.3 | 17.1 | | | | | |
| RKZ18-1KD | 16.9 | 17.7 | 5 | 1 | 13.0 | 55 | 5 |
| RKZ18-2KD | 17.5 | 18.3 | | | | | |
| RKZ18-3KD | 18.1 | 19.0 | | | | | |
| RKZ20-1KD | 18.8 | 19.7 | 2 | 1 | 15.0 | 60 | 2 |
| RKZ20-2KD | 19.5 | 20.4 | | | | | |
| RKZ20-3KD | 20.2 | 21.1 | | | | | |
| RKZ22-1KD | 20.9 | 21.9 | 2 | 1 | 17.0 | 65 | 2 |
| RKZ22-2KD | 21.6 | 22.6 | | | | | |
| RKZ22-3KD | 22.3 | 23.3 | | | | | |
| RKZ24-1KD | 22.9 | 24.0 | 2 | 1 | 19.0 | 70 | 2 |
| RKZ24-2KD | 23.6 | 24.7 | | | | | |
| RKZ24-3KD | 24.3 | 25.5 | | | | | |
| RKZ27-1KD | 25.2 | 26.6 | 2 | 1 | 21.0 | 80 | 2 |
| RKZ27-2KD | 26.2 | 27.6 | | | | | |
| RKZ27-3KD | 27.2 | 28.6 | | | | | |
| RKZ30-1KD | 28.2 | 29.6 | 2 | 1 | 23.0 | 100 | 2 |
| RKZ30-2KD | 29.2 | 30.6 | | | | | |
| RKZ30-3KD | 30.2 | 31.6 | | | | | |
| RKZ33-1KD | 31.2 | 32.6 | 2 | 1 | 25.0 | 120 | 2 |
| RKZ33-2KD | 32.2 | 33.6 | | | | | |
| RKZ33-3KD | 33.2 | 34.6 | | | | | |
| RKZ36-1KD | 34.2 | 35.7 | 2 | 1 | 27.0 | 140 | 2 |
| RKZ36-2KD | 35.3 | 36.8 | | | | | |
| RKZ36-3KD | 36.4 | 38.0 | | | | | |

Note: 1. Tested with DC.

Mark Code

| Part No. | Character Mark | Color | Part No. | Character Mark | Color | Part No. | Character Mark | Color |
|----------|----------------|-------|-----------|----------------|-------|-----------|----------------|-------|
| RKZ2B1KD | 2B | Pink | RKZ6B1KD | 6B | Pink | RKZ12B1KD | BB | Pink |
| RKZ2B2KD | 2B | Blue | RKZ6B2KD | 6B | Blue | RKZ12B2KD | BB | Blue |
| RKZ2B3KD | 2B | White | RKZ6B3KD | 6B | White | RKZ12B3KD | BB | White |
| RKZ2C1KD | 2C | Pink | RKZ6C1KD | 6C | Pink | RKZ12C1KD | BC | Pink |
| RKZ2C2KD | 2C | Blue | RKZ6C2KD | 6C | Blue | RKZ12C2KD | BC | Blue |
| RKZ2C3KD | 2C | White | RKZ6C3KD | 6C | White | RKZ12C3KD | BC | White |
| RKZ3A1KD | 3A | Pink | RKZ7A1KD | 7A | Pink | RKZ15-1KD | 15 | Pink |
| RKZ3A2KD | 3A | Blue | RKZ7A2KD | 7A | Blue | RKZ15-2KD | 15 | Blue |
| RKZ3A3KD | 3A | White | RKZ7A3KD | 7A | White | RKZ15-3KD | 15 | White |
| RKZ3B1KD | 3B | Pink | RKZ7B1KD | 7B | Pink | RKZ16-1KD | 16 | Pink |
| RKZ3B2KD | 3B | Blue | RKZ7B2KD | 7B | Blue | RKZ16-2KD | 16 | Blue |
| RKZ3B3KD | 3B | White | RKZ7B3KD | 7B | White | RKZ16-3KD | 16 | White |
| RKZ3C1KD | 3C | Pink | RKZ7C1KD | 7C | Pink | RKZ18-1KD | 18 | Pink |
| RKZ3C2KD | 3C | Blue | RKZ7C2KD | 7C | Blue | RKZ18-2KD | 18 | Blue |
| RKZ3C3KD | 3C | White | RKZ7C3KD | 7C | White | RKZ18-3KD | 18 | White |
| RKZ4A1KD | 4A | Pink | RKZ9A1KD | 9A | Pink | RKZ20-1KD | 20 | Pink |
| RKZ4A2KD | 4A | Blue | RKZ9A2KD | 9A | Blue | RKZ20-2KD | 20 | Blue |
| RKZ4A3KD | 4A | White | RKZ9A3KD | 9A | White | RKZ20-3KD | 20 | White |
| RKZ4B1KD | 4B | Pink | RKZ9B1KD | 9B | Pink | RKZ22-1KD | 22 | Pink |
| RKZ4B2KD | 4B | Blue | RKZ9B2KD | 9B | Blue | RKZ22-2KD | 22 | Blue |
| RKZ4B3KD | 4B | White | RKZ9B3KD | 9B | White | RKZ22-3KD | 22 | White |
| RKZ4C1KD | 4C | Pink | RKZ9C1KD | 9C | Pink | RKZ24-1KD | 24 | Pink |
| RKZ4C2KD | 4C | Blue | RKZ9C2KD | 9C | Blue | RKZ24-2KD | 24 | Blue |
| RKZ4C3KD | 4C | White | RKZ9C3KD | 9C | White | RKZ24-3KD | 24 | White |
| RKZ5A1KD | 5A | Pink | RKZ11A1KD | AA | Pink | RKZ27-1KD | 27 | Pink |
| RKZ5A2KD | 5A | Blue | RKZ11A2KD | AA | Blue | RKZ27-2KD | 27 | Blue |
| RKZ5A3KD | 5A | White | RKZ11A3KD | AA | White | RKZ27-3KD | 27 | White |
| RKZ5B1KD | 5B | Pink | RKZ11B1KD | AB | Pink | RKZ30-1KD | 30 | Pink |
| RKZ5B2KD | 5B | Blue | RKZ11B2KD | AB | Blue | RKZ30-2KD | 30 | Blue |
| RKZ5B3KD | 5B | White | RKZ11B3KD | AB | White | RKZ30-3KD | 30 | White |
| RKZ5C1KD | 5C | Pink | RKZ11C1KD | AC | Pink | RKZ33-1KD | 33 | Pink |
| RKZ5C2KD | 5C | Blue | RKZ11C2KD | AC | Blue | RKZ33-2KD | 33 | Blue |
| RKZ5C3KD | 5C | White | RKZ11C3KD | AC | White | RKZ33-3KD | 33 | White |
| RKZ6A1KD | 6A | Pink | RKZ12A1KD | BA | Pink | RKZ36-1KD | 36 | Pink |
| RKZ6A2KD | 6A | Blue | RKZ12A2KD | BA | Blue | RKZ36-2KD | 36 | Blue |
| RKZ6A3KD | 6A | White | RKZ12A3KD | BA | White | RKZ36-3KD | 36 | White |

Main Characteristic

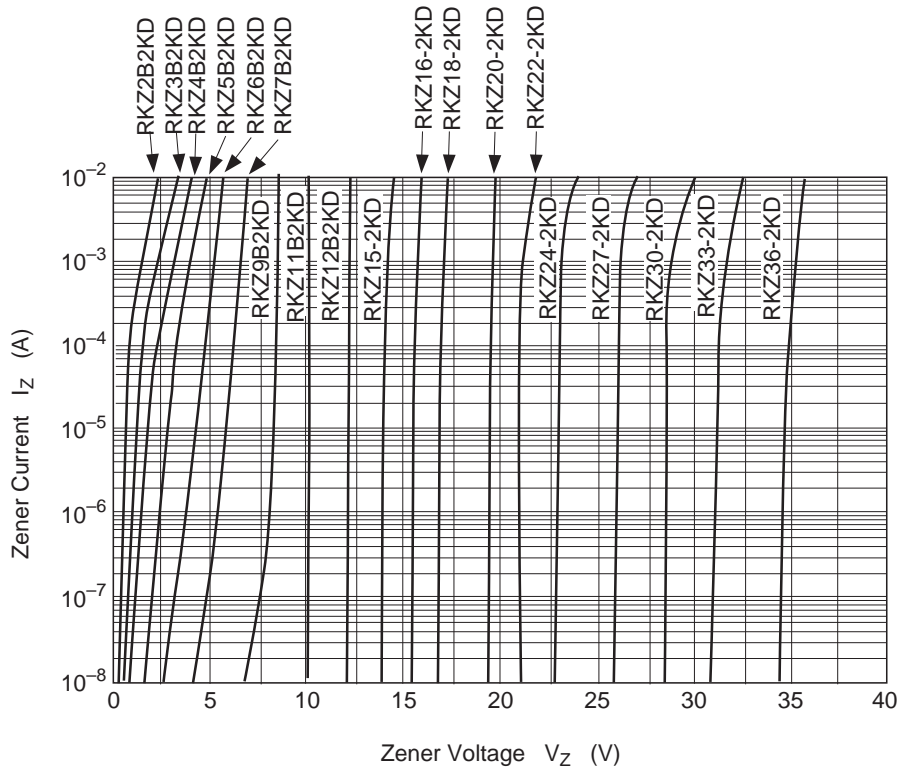


Fig.1 Zener current vs. Zener voltage

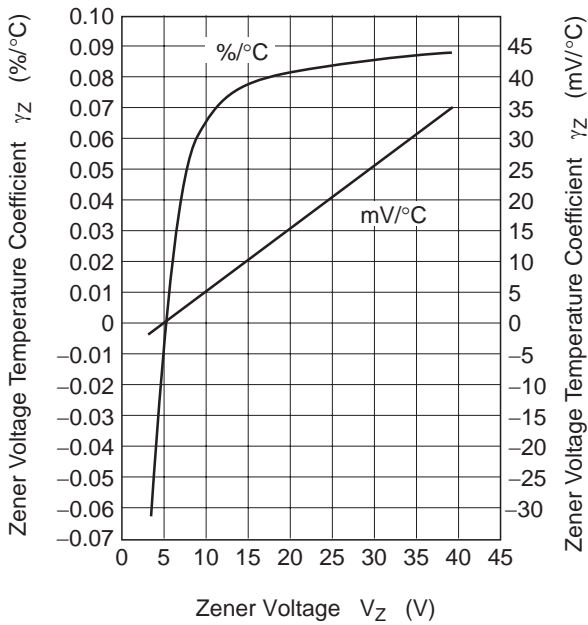


Fig.2 Temperature Coefficient vs. Zener voltage

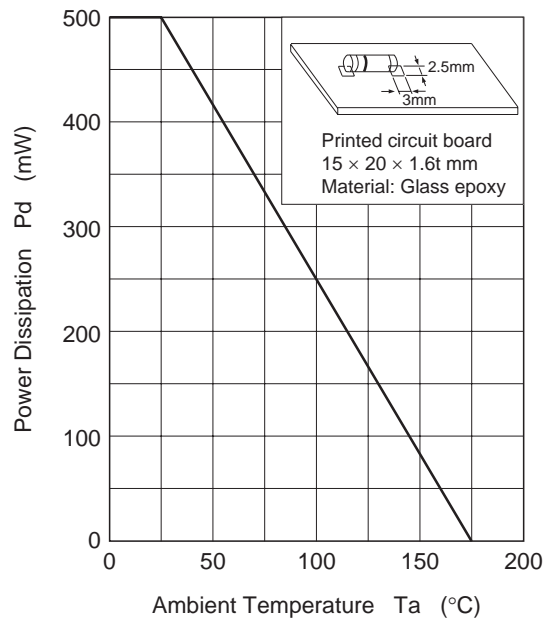
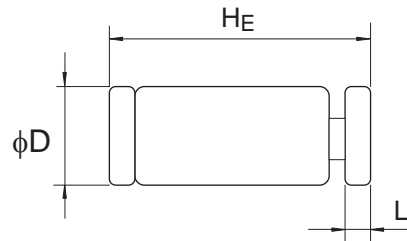


Fig.3 Power Dissipation vs. Ambient Temperature

Package Dimensions

| | | | | |
|--------------|--------------------|--------------|---------------|------------|
| Package Name | JEITA Package Code | RENESAS Code | Previous Code | MASS[Typ.] |
| LLD | — | GLZZ0002ZA-A | LLD / LLDV | 0.027g |



| Reference Symbol | Dimension in Millimeters | | |
|------------------|--------------------------|------|------|
| | Min | Nom | Max |
| ϕD | 1.25 | 1.35 | 1.45 |
| H_E | 3.30 | 3.50 | 3.60 |
| L | - | 0.35 | - |

Notes:

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