

500mW Zener Leadless Diode

RLZ Series

●Applications

Constant voltage control

●Features

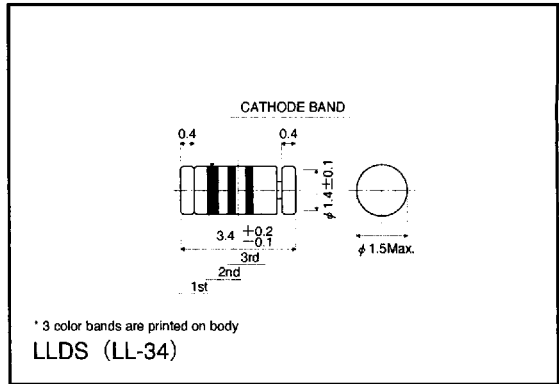
- 1) Designed for mounting on small surface areas (LLDS (LL-34))
- 2) High reliability

●Construction

Silicon epitaxial planar

●Cathode band colors

●External dimensions (Units: mm)



| Type | 1st Color Band | 2nd Color Band | 3rd Color Band | Type | 1st Color Band | 2nd Color Band | 3rd Color Band |
|---------|----------------|----------------|---|--------|----------------|----------------|---|
| RLZ 2.0 | Black | Brown | * A : Yellow B : Green C : Blue D : White | RLZ 13 | Red | Brown | * A : Yellow B : Green C : Blue D : White |
| RLZ 2.2 | Black | Red | | RLZ 15 | Red | Red | |
| RLZ 2.4 | Black | Orange | | RLZ 16 | Red | Orange | |
| RLZ 2.7 | Black | Yellow | | RLZ 18 | Red | Yellow | |
| RLZ 3.0 | Black | Green | | RLZ 20 | Red | Green | |
| RLZ 3.3 | Black | Blue | | RLZ 22 | Red | Blue | |
| RLZ 3.6 | Black | Purple | | RLZ 24 | Red | Purple | |
| RLZ 3.9 | Black | Gray | | RLZ 27 | Red | Gray | |
| RLZ 4.3 | Black | White | | RLZ 30 | Red | White | |
| RLZ 4.7 | Brown | Black | | RLZ 33 | Orange | Black | |
| RLZ 5.1 | Brown | Brown | | RLZ 36 | Orange | Brown | |
| RLZ 5.6 | Brown | Red | | RLZ 39 | Orange | Red | |
| RLZ 6.2 | Brown | Orange | RLZ 39 E | Yellow | White | Yellow | |
| RLZ 6.8 | Brown | Yellow | RLZ 39 F | Yellow | White | Green | |
| RLZ 7.5 | Brown | Green | RLZ 39 G | Yellow | White | Blue | |
| RLZ 8.2 | Brown | Blue | RLZ 43 | Orange | Orange | — | |
| RLZ 9.1 | Brown | Purple | RLZ 47 | Orange | Yellow | — | |
| RLZ 10 | Brown | Gray | RLZ 51 | Orange | Green | — | |
| RLZ 11 | Brown | White | RLZ 56 | Orange | Blue | — | |
| RLZ 12 | Red | Black | | | | | |

* Products are grouped into colors A, B, C, and D, and listed in order within each group.
For RLZ2.0A, 3rd color band is yellow.

●Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Limite | Unit |
|----------------------|--------|---------|------|
| Power dissipation | P | 500 | mW |
| Junction temperature | Tj | 175 | °C |
| Storage temperature | Tstg | -65~175 | °C |

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ROHM

Zener diodes

●Electrical characteristics (Ta=25°C)

| Type | Zener voltage | | | Operating resistance | | Rising operating resistance | | Reverse current | | |
|---------|---------------|--------|-------|----------------------|------|-----------------------------|------|---------------------------|------|--------------------|
| | Rank | Vz (V) | | Zz (Ω) | | Zzk (Ω) | | I _R (μ A) | | |
| | | Min. | Max. | I _z (mA) | Max. | I _z (mA) | Max. | I _z (mA) | Max. | V _R (V) |
| RLZ 2.0 | A | 1.880 | 2.100 | 20 | 140 | 20 | 2000 | 1 | 120 | 0.5 |
| | B | 2.020 | 2.200 | | | | | | | |
| RLZ 2.2 | A | 2.120 | 2.300 | 20 | 120 | 20 | 2000 | 1 | 120 | 0.7 |
| | B | 2.220 | 2.410 | | | | | | | |
| RLZ 2.4 | A | 2.330 | 2.520 | 20 | 100 | 20 | 2000 | 1 | 120 | 1.0 |
| | B | 2.430 | 2.630 | | | | | | | |
| RLZ 2.7 | A | 2.540 | 2.750 | 20 | 100 | 20 | 1000 | 1 | 100 | 1.0 |
| | B | 2.690 | 2.910 | | | | | | | |
| RLZ 3.0 | A | 2.850 | 3.070 | 20 | 80 | 20 | 1000 | 1 | 50 | 1.0 |
| | B | 3.010 | 3.220 | | | | | | | |
| RLZ 3.3 | A | 3.160 | 3.380 | 20 | 70 | 20 | 1000 | 1 | 20 | 1.0 |
| | B | 3.320 | 3.530 | | | | | | | |
| RLZ 3.6 | A | 3.455 | 3.695 | 20 | 60 | 20 | 1000 | 1 | 10 | 1.0 |
| | B | 3.600 | 3.845 | | | | | | | |
| RLZ 3.9 | A | 3.74 | 4.01 | 20 | 50 | 20 | 1000 | 1 | 5 | 1.0 |
| | B | 3.89 | 4.16 | | | | | | | |
| RLZ 4.3 | A | 4.04 | 4.29 | 20 | 40 | 20 | 1000 | 1 | 5 | 1.0 |
| | B | 4.17 | 4.43 | | | | | | | |
| | C | 4.30 | 4.57 | | | | | | | |
| RLZ 4.7 | A | 4.44 | 4.68 | 20 | 25 | 20 | 900 | 1 | 5 | 1.0 |
| | B | 4.55 | 4.80 | | | | | | | |
| | C | 4.68 | 4.93 | | | | | | | |
| RLZ 5.1 | A | 4.81 | 5.07 | 20 | 20 | 20 | 800 | 1 | 5 | 1.5 |
| | B | 4.94 | 5.20 | | | | | | | |
| | C | 5.09 | 5.37 | | | | | | | |
| RLZ 5.6 | A | 5.28 | 5.55 | 20 | 13 | 20 | 500 | 1 | 5 | 2.5 |
| | B | 5.45 | 5.73 | | | | | | | |
| | C | 5.61 | 5.91 | | | | | | | |
| RLZ 6.2 | A | 5.78 | 6.09 | 20 | 10 | 20 | 300 | 1 | 5 | 3.0 |
| | B | 5.96 | 6.27 | | | | | | | |
| | C | 6.12 | 6.44 | | | | | | | |
| RLZ 6.8 | A | 6.29 | 6.63 | 20 | 8 | 20 | 150 | 0.5 | 2 | 3.5 |
| | B | 6.49 | 6.83 | | | | | | | |
| | C | 6.66 | 7.01 | | | | | | | |
| RLZ 7.5 | A | 6.85 | 7.22 | 20 | 8 | 20 | 120 | 0.5 | 0.5 | 4.0 |
| | B | 7.07 | 7.45 | | | | | | | |
| | C | 7.29 | 7.67 | | | | | | | |
| RLZ 8.2 | A | 7.53 | 7.92 | 20 | 8 | 20 | 120 | 0.5 | 0.5 | 5.0 |
| | B | 7.78 | 8.19 | | | | | | | |
| | C | 8.03 | 8.45 | | | | | | | |
| RLZ 9.1 | A | 8.29 | 8.73 | 20 | 8 | 20 | 120 | 0.5 | 0.5 | 6.0 |
| | B | 8.57 | 9.01 | | | | | | | |
| | C | 8.83 | 9.30 | | | | | | | |
| RLZ 10 | A | 9.12 | 9.59 | 20 | 8 | 20 | 120 | 0.5 | 0.2 | 7.0 |
| | B | 9.41 | 9.90 | | | | | | | |
| | C | 9.70 | 10.20 | | | | | | | |
| | D | 9.94 | 10.44 | | | | | | | |
| RLZ 11 | A | 10.18 | 10.71 | 10 | 10 | 10 | 120 | 0.5 | 0.2 | 8.0 |
| | B | 10.50 | 11.05 | | | | | | | |
| | C | 10.82 | 11.38 | | | | | | | |
| RLZ 12 | A | 11.13 | 11.71 | 10 | 12 | 10 | 110 | 0.5 | 0.2 | 9.0 |
| | B | 11.44 | 12.03 | | | | | | | |
| | C | 11.74 | 12.35 | | | | | | | |
| RLZ 13 | A | 12.11 | 12.75 | 10 | 14 | 10 | 110 | 0.5 | 0.2 | 10 |
| | B | 12.55 | 13.21 | | | | | | | |
| | C | 12.99 | 13.66 | | | | | | | |

●Electrical characteristics (Ta=25°C)

| Type | Zener voltage | | | Operating resistance | | Rising operating resistance | | Reverse current | | |
|-------------------|---------------|--------|-------|----------------------|------|-----------------------------|------|---------------------|------|--------------------|
| | Rank | Vz (V) | | Zz (Ω) | | Zzk (Ω) | | I _R (μA) | | |
| | | Min. | Max. | I _Z (mA) | Max. | I _Z (mA) | Max. | I _Z (mA) | Max. | V _R (V) |
| RLZ 15 | A | 13.44 | 14.13 | 10 | 16 | 10 | 110 | 0.5 | 0.2 | 11 |
| | B | 13.89 | 14.62 | | | | | | | |
| | C | 14.35 | 15.09 | | | | | | | |
| RLZ 16 | A | 14.80 | 15.57 | 10 | 18 | 10 | 150 | 0.5 | 0.2 | 12 |
| | B | 15.25 | 16.04 | | | | | | | |
| | C | 15.69 | 16.51 | | | | | | | |
| RLZ 18 | A | 16.22 | 17.06 | 10 | 23 | 10 | 150 | 0.5 | 0.2 | 13 |
| | B | 16.82 | 17.70 | | | | | | | |
| | C | 17.42 | 18.33 | | | | | | | |
| RLZ 20 | A | 18.02 | 18.96 | 10 | 28 | 10 | 200 | 0.5 | 0.2 | 15 |
| | B | 18.63 | 19.59 | | | | | | | |
| | C | 19.23 | 20.22 | | | | | | | |
| | D | 19.72 | 20.72 | | | | | | | |
| RLZ 22 | A | 20.15 | 21.20 | 5 | 30 | 5 | 200 | 0.5 | 0.2 | 17 |
| | B | 20.64 | 21.71 | | | | | | | |
| | C | 21.08 | 22.17 | | | | | | | |
| | D | 21.52 | 22.63 | | | | | | | |
| RLZ 24 | A | 22.05 | 23.18 | 5 | 35 | 5 | 200 | 0.5 | 0.2 | 19 |
| | B | 22.61 | 23.77 | | | | | | | |
| | C | 23.12 | 24.31 | | | | | | | |
| | D | 23.63 | 24.85 | | | | | | | |
| RLZ 27 | A | 24.26 | 25.52 | 5 | 45 | 5 | 250 | 0.5 | 0.2 | 21 |
| | B | 24.97 | 26.26 | | | | | | | |
| | C | 25.63 | 26.95 | | | | | | | |
| | D | 26.29 | 27.64 | | | | | | | |
| RLZ 30 | A | 26.99 | 28.39 | 5 | 55 | 5 | 250 | 0.5 | 0.2 | 23 |
| | B | 27.70 | 29.13 | | | | | | | |
| | C | 28.36 | 29.82 | | | | | | | |
| | D | 29.02 | 30.51 | | | | | | | |
| RLZ 33 | A | 29.68 | 31.22 | 5 | 65 | 5 | 250 | 0.5 | 0.2 | 25 |
| | B | 30.32 | 31.88 | | | | | | | |
| | C | 30.90 | 32.50 | | | | | | | |
| | D | 31.49 | 33.11 | | | | | | | |
| RLZ 36 | A | 32.14 | 33.79 | 5 | 75 | 5 | 250 | 0.5 | 0.2 | 27 |
| | B | 32.79 | 34.49 | | | | | | | |
| | C | 33.40 | 35.13 | | | | | | | |
| | D | 34.01 | 35.77 | | | | | | | |
| RLZ 39 Note(3) | A | 34.68 | 36.47 | 5 | 85 | 5 | 250 | 0.5 | 0.2 | 30 |
| | B | 35.36 | 37.19 | | | | | | | |
| | C | 36.00 | 37.85 | | | | | | | |
| | D | 36.63 | 38.52 | | | | | | | |
| | E | 37.36 | 39.29 | | | | | | | |
| | F | 38.14 | 40.11 | | | | | | | |
| | G | 38.94 | 40.80 | | | | | | | |
| RLZ 43 | — | 40.00 | 45.00 | 5 | 90 | 5 | — | — | 0.2 | 33 |
| RLZ 47 | — | 44.00 | 49.00 | 5 | 90 | 5 | — | — | 0.2 | 36 |
| RLZ 51 | — | 48.00 | 54.00 | 5 | 100 | 5 | — | — | 0.2 | 39 |
| RLZ 56 | — | 53.00 | 60.00 | 5 | 110 | 5 | — | — | 0.2 | 43 |

- Note (1) The Zener voltage is measured 40 ms after power is supplied.
(2) For the Zener voltage subdivisions, the free ranks (A, B, or C) or recommended when ordering.
(3) Zener voltages between 43 and 56 are grouped together in no particular order. 39E and above are available only on special order.

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● Zener characteristic curves

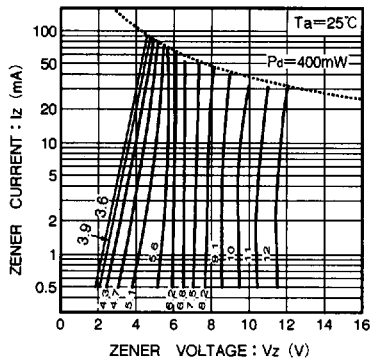


Fig. 1 RLZ3.9 ~ RLZ12 Zener characteristic

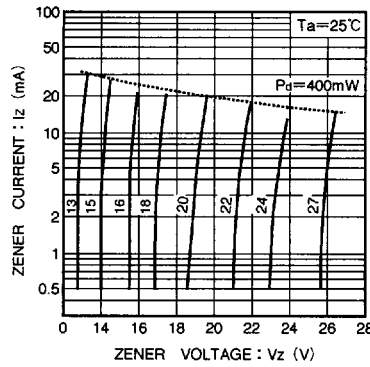


Fig. 2 RLZ13 ~ RLZ27 Zener characteristic

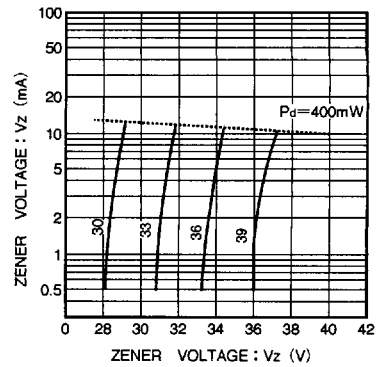


Fig. 3 RLZ30 ~ RLZ39 Zener characteristic

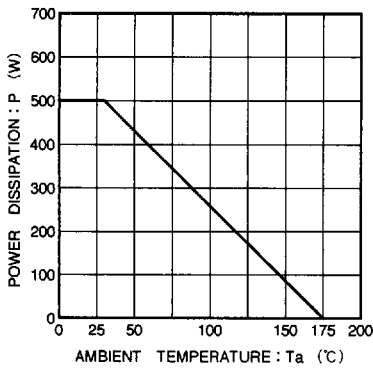


Fig. 4 Derating curve