



Zener diode

Features

1. Small surface mounting type
2. High reliability



Applications

Voltage stabilization

Construction

Silicon epitaxial planar

Absolute Maximum Ratings

$T_j=25\text{ }^{\circ}\text{C}$

| Parameter | Test Conditions | Type | Symbol | Value | Unit |
|---------------------------|-------------------------------|------|-----------|----------|--------------------|
| Power dissipation | $R_{thJA} \leq 300\text{K/W}$ | | P_V | 500 | mW |
| Junction temperature | | | T_j | 175 | $^{\circ}\text{C}$ |
| Storage temperature range | | | T_{stg} | -65~+175 | $^{\circ}\text{C}$ |

Stresses exceeding maximum ratings may damage the device. Maximum ratings are stress ratings only. Functional operation above the recommended operating conditions is not implied. Extended exposure to stresses above the recommended operating conditions may affect device reliability.



Electrical Characteristics

T_j=25°C

| Type | Zener voltage | | | Operating resistance | | Rising operating resistance | | Reverse current | | |
|----------|---------------|--------------------|------|----------------------|---------------------|-----------------------------|---------------------|---------------------|---------------------|--------------------|
| | Rank | V _z (V) | | I _z (mA) | Z _{zt} (Ω) | | Z _{zk} (Ω) | | I _R (μA) | |
| | | Min. | Max. | | Max. | I _z (mA) | Max. | I _z (mA) | Max. | V _R (V) |
| LLZJ 2.0 | A | 1.88 | 2.10 | 5 | 100 | 5 | 1000 | 0.5 | 120 | 0.5 |
| | B | 2.02 | 2.20 | | | | | | | |
| LLZJ 2.2 | A | 2.12 | 2.30 | 5 | 100 | 5 | 1000 | 0.5 | 100 | 0.7 |
| | B | 2.22 | 2.41 | | | | | | | |
| LLZJ 2.4 | A | 2.33 | 2.52 | 5 | 100 | 5 | 1000 | 0.5 | 120 | 1.0 |
| | B | 2.43 | 2.63 | | | | | | | |
| LLZJ 2.7 | A | 2.54 | 2.75 | 5 | 110 | 5 | 1000 | 0.5 | 100 | 1.0 |
| | B | 2.69 | 2.91 | | | | | | | |
| LLZJ 3.0 | A | 2.85 | 3.07 | 5 | 120 | 5 | 1000 | 0.5 | 50 | 1.0 |
| | B | 3.01 | 3.22 | | | | | | | |
| LLZJ 3.3 | A | 3.16 | 3.38 | 5 | 120 | 5 | 1000 | 0.5 | 20 | 1.0 |
| | B | 3.32 | 3.53 | | | | | | | |
| LLZJ 3.6 | A | 3.46 | 3.69 | 5 | 100 | 5 | 1000 | 1 | 10 | 1.0 |
| | B | 3.60 | 3.84 | | | | | | | |
| LLZJ 3.9 | A | 3.74 | 4.01 | 5 | 100 | 5 | 1000 | 1 | 5 | 1.0 |
| | B | 3.89 | 4.16 | | | | | | | |
| LLZJ 4.3 | A | 4.04 | 4.29 | 5 | 100 | 5 | 1000 | 1 | 5 | 1.0 |
| | B | 4.17 | 4.43 | | | | | | | |
| | C | 4.30 | 4.57 | | | | | | | |
| LLZJ 4.7 | A | 4.44 | 4.68 | 5 | 90 | 5 | 900 | 1 | 5 | 1.0 |
| | B | 4.55 | 4.80 | | | | | | | |
| | C | 4.68 | 4.93 | | | | | | | |
| LLZJ 5.1 | A | 4.81 | 5.07 | 5 | 80 | 5 | 800 | 1 | 5 | 1.5 |
| | B | 4.94 | 5.20 | | | | | | | |
| | C | 5.09 | 5.37 | | | | | | | |
| LLZJ 5.6 | A | 5.28 | 5.55 | 5 | 60 | 5 | 500 | 1 | 5 | 2.5 |
| | B | 5.45 | 5.73 | | | | | | | |
| | C | 5.61 | 5.91 | | | | | | | |
| LLZJ 6.2 | A | 5.78 | 6.09 | 5 | 60 | 5 | 300 | 1 | 5 | 3.0 |
| | B | 5.96 | 6.27 | | | | | | | |
| | C | 6.12 | 6.44 | | | | | | | |
| LLZJ 6.8 | A | 6.29 | 6.63 | 5 | 20 | 5 | 150 | 0.5 | 2 | 3.5 |
| | B | 6.49 | 6.83 | | | | | | | |
| | C | 6.66 | 7.01 | | | | | | | |
| LLZJ 7.5 | A | 6.85 | 7.22 | 5 | 20 | 5 | 120 | 0.5 | 0.5 | 4.0 |
| | B | 7.07 | 7.45 | | | | | | | |
| | C | 7.29 | 7.67 | | | | | | | |
| LLZJ 8.2 | A | 7.53 | 7.92 | 5 | 20 | 5 | 120 | 0.5 | 0.5 | 5.0 |
| | B | 7.78 | 8.19 | | | | | | | |
| | C | 8.03 | 8.45 | | | | | | | |
| LLZJ 9.1 | A | 8.29 | 8.73 | 5 | 25 | 5 | 120 | 0.5 | 0.5 | 6.0 |
| | B | 8.57 | 9.01 | | | | | | | |
| | C | 8.83 | 9.30 | | | | | | | |

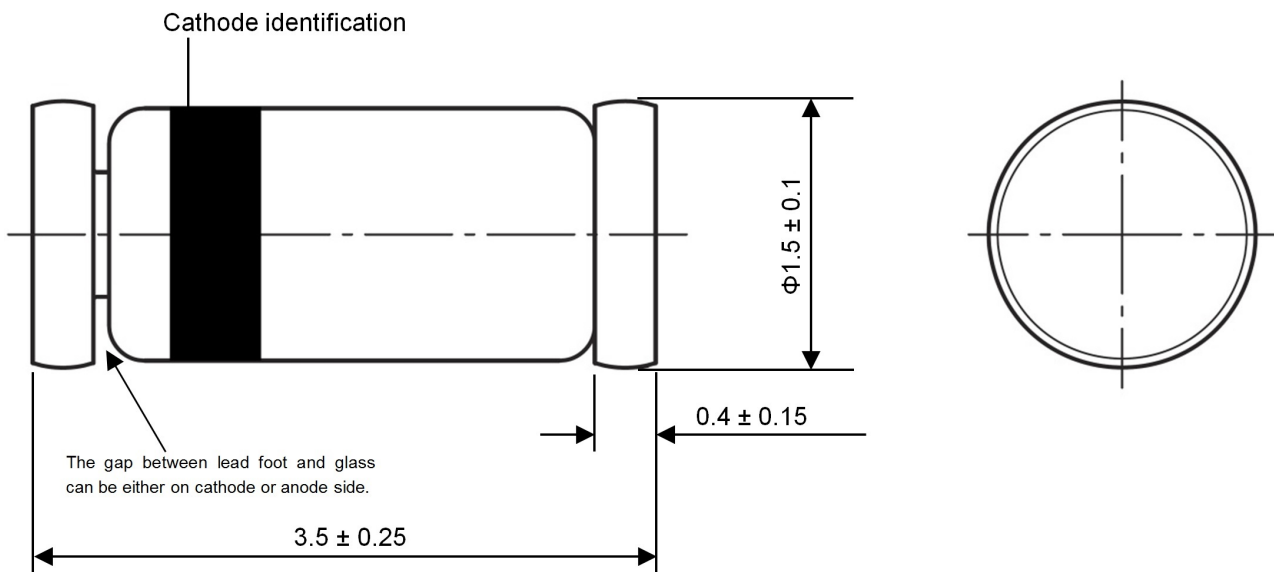


| Type | Zener voltage | | | | Operating resistance | | Rising operating resistance | | Reverse current | |
|---------|---------------|--------|-------|---------|----------------------|---------|-----------------------------|---------|---------------------------|--------------------|
| | Rank | Vz (V) | | Iz (mA) | Zzt (Ω) | | Zzk (Ω) | | I _R (μ A) | |
| | | Min. | Max. | | Max. | Iz (mA) | Max. | Iz (mA) | Max. | V _R (V) |
| LLZJ 10 | A | 9.12 | 9.59 | 5 | 30 | 5 | 120 | 0.5 | 0.2 | 7.0 |
| | B | 9.41 | 9.90 | | | | | | | |
| | C | 9.70 | 10.20 | | | | | | | |
| | D | 9.94 | 10.44 | | | | | | | |
| LLZJ 11 | A | 10.18 | 10.71 | 5 | 30 | 5 | 120 | 0.5 | 0.2 | 8.0 |
| | B | 10.50 | 11.05 | | | | | | | |
| | C | 10.82 | 11.38 | | | | | | | |
| LLZJ 12 | A | 11.13 | 11.71 | 5 | 30 | 5 | 110 | 0.5 | 0.2 | 9.0 |
| | B | 11.44 | 12.03 | | | | | | | |
| | C | 11.74 | 12.35 | | | | | | | |
| LLZJ 13 | A | 12.11 | 12.75 | 5 | 35 | 5 | 110 | 0.5 | 0.2 | 10 |
| | B | 12.55 | 13.21 | | | | | | | |
| | C | 12.99 | 13.66 | | | | | | | |
| LLZJ 15 | A | 13.44 | 14.13 | 5 | 40 | 5 | 110 | 0.5 | 0.2 | 11 |
| | B | 13.89 | 14.62 | | | | | | | |
| | C | 14.35 | 15.09 | | | | | | | |
| LLZJ 16 | A | 14.80 | 15.57 | 5 | 40 | 5 | 150 | 0.5 | 0.2 | 12 |
| | B | 15.25 | 16.04 | | | | | | | |
| | C | 15.69 | 16.51 | | | | | | | |
| LLZJ 18 | A | 16.22 | 17.06 | 5 | 45 | 5 | 150 | 0.5 | 0.2 | 13 |
| | B | 16.82 | 17.70 | | | | | | | |
| | C | 17.42 | 18.33 | | | | | | | |
| LLZJ 20 | A | 18.20 | 18.96 | 5 | 55 | 5 | 200 | 0.5 | 0.2 | 15 |
| | B | 18.63 | 19.59 | | | | | | | |
| | C | 19.23 | 20.22 | | | | | | | |
| | D | 19.72 | 20.72 | | | | | | | |
| LLZJ 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 | | | | | | | |
| LLZJ 24 | A | 22.05 | 23.18 | 5 | 35 | 5 | 200 | 0.5 | 0.2 | 19 |
| | B | 22.61 | 23.77 | | | | | | | |
| | C | 23.12 | 24.13 | | | | | | | |
| | D | 23.63 | 24.85 | | | | | | | |
| LLZJ 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 | | | | | | | |
| LLZJ 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 | | | | | | | |



| Type | Zener voltage | | | | Operating resistance | | Rising operating resistance | | Reverse current | |
|---------|---------------|--------|-------|---------|----------------------|---------|-----------------------------|---------|-----------------|--------|
| | Rank | Vz (V) | | Iz (mA) | Zzt (Ω) | | Zzk (Ω) | | IR (μA) | |
| | | Min. | Max. | | Max. | Iz (mA) | Max. | Iz (mA) | Max. | VR (V) |
| LLZJ 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 | | | | | | | |
| LLZJ 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 | | | | | | | |
| LLZJ 39 | 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 | | | | | | | |

Dimensions in mm



Glass Case
 Mini Melf / SOD-80
 JEDEC DO-213 AA