

# Zener diode

## UDZ Series

●Features

- 1) Extremely compact, 2-pin mini-mold type for high-density mounting. (UMD2)
- 2) High reliability.
- 3) Compatible with chip mounter for automated production.

●Construction

Silicon epitaxial planar

●Absolute maximum ratings (Ta = 25°C)

| Parameter             | Symbol | Limits   | Unit |
|-----------------------|--------|----------|------|
| Power dissipation     | P      | 200      | mW   |
| Junction temperature  | Tj     | 150      | °C   |
| Storage temperature   | Tstg   | −55~+150 | °C   |
| Operating temperature | Topr   | −55~+150 | °C   |

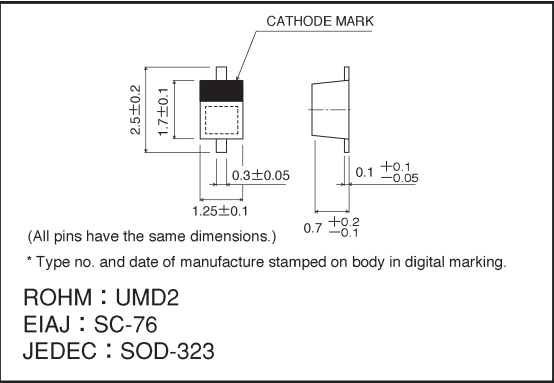
●Markings (TYPE No.)

| Product name | Type No. | Product name | Type No. | Product name | Type No. |
|--------------|----------|--------------|----------|--------------|----------|
| UDZ 2.0B     | 0 2      | UDZ 5.6B     | C 2      | UDZ 16B      | 5 5      |
| UDZ 2.2B     | 1 2      | UDZ 6.2B     | E 2      | UDZ 18B      | 6 5      |
| UDZ 2.4B     | 2 2      | UDZ 6.8B     | F 2      | UDZ 20B      | 7 5      |
| UDZ 2.7B     | 3 2      | UDZ 7.5B     | H 2      | UDZ 22B      | 8 5      |
| UDZ 3.0B     | 4 2      | UDZ 8.2B     | J 2      | UDZ 24B      | 9 5      |
| UDZ 3.3B     | 5 2      | UDZ 9.1B     | L 2      | UDZ 27B      | A 5      |
| UDZ 3.6B     | 6 2      | UDZ 10B      | 0 5      | UDZ 30B      | C 5      |
| UDZ 3.9B     | 7 2      | UDZ 11B      | 1 5      | UDZ 33B      | E 5      |
| UDZ 4.3B     | 8 2      | UDZ 12B      | 2 5      | UDZ 36B      | F 5      |
| UDZ 4.7B     | 9 2      | UDZ 13B      | 3 5      | —            | —        |
| UDZ 5.1B     | A 2      | UDZ 15B      | 4 5      | —            | —        |

(Ex.) UDZ 2.0B



●External dimensions (Units: mm)



## ●Electrical characteristics (Ta = 25°C)

| Type     | Zener voltage subdivision |        |                     | Operating resistance |                     | Rising operating resistance |                     | Reverse current     |                    |
|----------|---------------------------|--------|---------------------|----------------------|---------------------|-----------------------------|---------------------|---------------------|--------------------|
|          | Vz (V)                    |        |                     | Zz (Ω)               |                     | Zzk (Ω)                     |                     | I <sub>R</sub> (μA) |                    |
|          | Min.                      | Max.   | I <sub>Z</sub> (mA) | Max.                 | I <sub>Z</sub> (mA) | Max.                        | I <sub>Z</sub> (mA) | Max.                | V <sub>R</sub> (V) |
| UDZ 2.0B | 2.020                     | 2.200  | 5                   | 100                  | 5                   | 1000                        | 0.5                 | 120                 | 0.5                |
| UDZ 2.2B | 2.220                     | 2.410  | 5                   | 100                  | 5                   | 1000                        | 0.5                 | 120                 | 0.7                |
| UDZ 2.4B | 2.430                     | 2.630  | 5                   | 100                  | 5                   | 1000                        | 0.5                 | 120                 | 1.0                |
| UDZ 2.7B | 2.690                     | 2.910  | 5                   | 110                  | 5                   | 1000                        | 0.5                 | 100                 | 1.0                |
| UDZ 3.0B | 3.010                     | 3.220  | 5                   | 120                  | 5                   | 1000                        | 0.5                 | 50                  | 1.0                |
| UDZ 3.3B | 3.320                     | 3.530  | 5                   | 120                  | 5                   | 1000                        | 0.5                 | 20                  | 1.0                |
| UDZ 3.6B | 3.600                     | 3.845  | 5                   | 100                  | 5                   | 1000                        | 1.0                 | 10                  | 1.0                |
| UDZ 3.9B | 3.890                     | 4.160  | 5                   | 100                  | 5                   | 1000                        | 1.0                 | 5                   | 1.0                |
| UDZ 4.3B | 4.170                     | 4.430  | 5                   | 100                  | 5                   | 1000                        | 1.0                 | 5                   | 1.0                |
| UDZ 4.7B | 4.550                     | 4.750  | 5                   | 100                  | 5                   | 800                         | 0.5                 | 2                   | 1.0                |
| UDZ 5.1B | 4.980                     | 5.200  | 5                   | 80                   | 5                   | 500                         | 0.5                 | 2                   | 1.5                |
| UDZ 5.6B | 5.490                     | 5.730  | 5                   | 60                   | 5                   | 200                         | 0.5                 | 1                   | 2.5                |
| UDZ 6.2B | 6.060                     | 6.330  | 5                   | 60                   | 5                   | 100                         | 0.5                 | 1.0                 | 3.0                |
| UDZ 6.8B | 6.650                     | 6.930  | 5                   | 40                   | 5                   | 60                          | 0.5                 | 0.5                 | 3.5                |
| UDZ 7.5B | 7.280                     | 7.600  | 5                   | 30                   | 5                   | 60                          | 0.5                 | 0.5                 | 4.0                |
| UDZ 8.2B | 8.020                     | 8.360  | 5                   | 30                   | 5                   | 60                          | 0.5                 | 0.5                 | 5.0                |
| UDZ 9.1B | 8.850                     | 9.230  | 5                   | 30                   | 5                   | 60                          | 0.5                 | 0.5                 | 6.0                |
| UDZ 10B  | 9.770                     | 10.210 | 5                   | 30                   | 5                   | 60                          | 0.5                 | 0.1                 | 7.0                |
| UDZ 11B  | 10.760                    | 11.220 | 5                   | 30                   | 5                   | 60                          | 0.5                 | 0.1                 | 8.0                |
| UDZ 12B  | 11.740                    | 12.240 | 5                   | 30                   | 5                   | 80                          | 0.5                 | 0.1                 | 9.0                |
| UDZ 13B  | 12.910                    | 13.490 | 5                   | 37                   | 5                   | 80                          | 0.5                 | 0.1                 | 10.0               |
| UDZ 15B  | 14.340                    | 14.980 | 5                   | 42                   | 5                   | 80                          | 0.5                 | 0.1                 | 11.0               |
| UDZ 16B  | 15.850                    | 16.510 | 5                   | 50                   | 5                   | 80                          | 0.5                 | 0.1                 | 12.0               |
| UDZ 18B  | 17.560                    | 18.350 | 5                   | 65                   | 5                   | 80                          | 0.5                 | 0.1                 | 13.0               |
| UDZ 20B  | 19.520                    | 20.390 | 5                   | 85                   | 5                   | 100                         | 0.5                 | 0.1                 | 15.0               |
| UDZ 22B  | 21.540                    | 22.470 | 5                   | 100                  | 5                   | 100                         | 0.5                 | 0.1                 | 17.0               |
| UDZ 24B  | 23.720                    | 24.780 | 5                   | 120                  | 5                   | 120                         | 0.5                 | 0.1                 | 19.0               |
| UDZ 27B  | 26.190                    | 27.530 | 5                   | 150                  | 5                   | 150                         | 0.5                 | 0.1                 | 21.0               |
| UDZ 30B  | 29.190                    | 30.690 | 5                   | 200                  | 5                   | 200                         | 0.5                 | 0.1                 | 23.0               |
| UDZ 33B  | 32.150                    | 33.790 | 5                   | 250                  | 5                   | 250                         | 0.5                 | 0.1                 | 25.0               |
| UDZ 36B  | 35.070                    | 36.870 | 5                   | 300                  | 5                   | 300                         | 0.5                 | 0.1                 | 27.0               |

1. The Zener voltage (V<sub>Z</sub>) is measured 40 ms after power is supplied.2. The operating resistances (Z<sub>Z</sub>, Z<sub>ZK</sub>) are measured by superimposing a minute alternating current on the regulated current (I<sub>Z</sub>).

●Electrical characteristic curves (Ta=25°C unless specified otherwise)

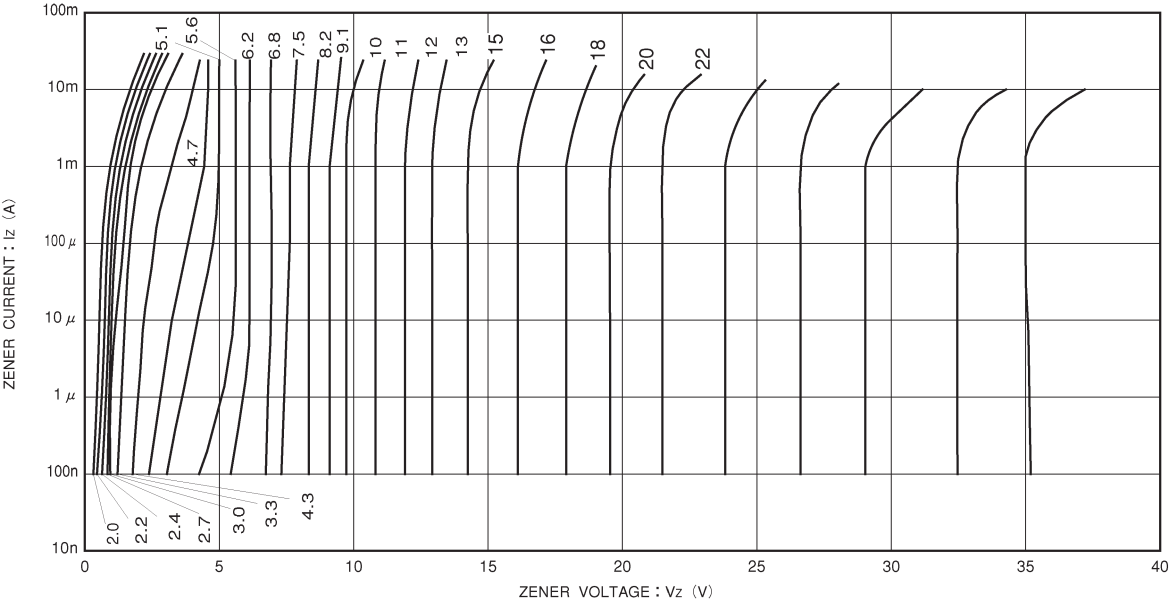


Fig. 1 Zener voltage characteristics

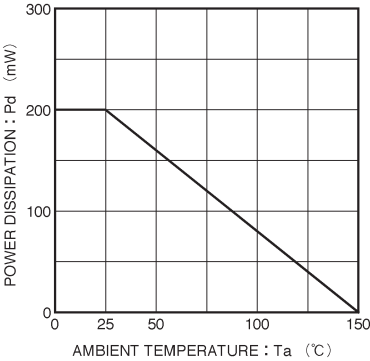


Fig. 2 Derating curve

Zener diodes