



## ZD1.8 THRU ZD36

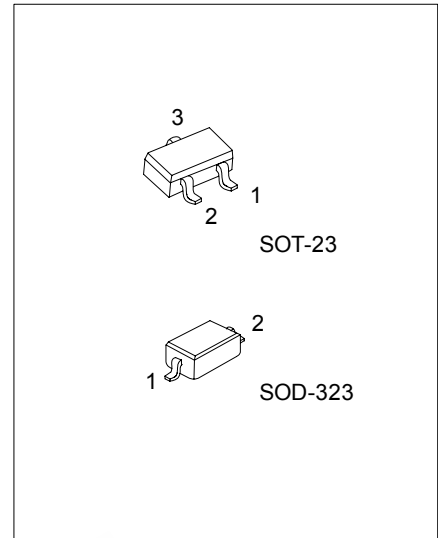
ZENER DIODE

### ZD1.8 THRU ZD36 ZENER DIODES

#### FEATURES

\*Compact, 2-pin(SOD-323) and 3-pin(SOT-23) mini-mold types for high-density mounting.

\*High demand voltage range (1.8V~36V) is manufactured on high-efficient non-wire bonding production line.



\*Pb-free plating product number: ZDxxL

#### ORDERING INFORMATION

| Order Number |                   | Package | Pin Assignment |   |   | Packing   |
|--------------|-------------------|---------|----------------|---|---|-----------|
| Normal       | Lead Free Plating |         | 1              | 2 | 3 |           |
| ZDxx-AE3-R   | ZDxxL-AE3-R       | SOT-23  | NC             | A | C | Tape Reel |
| ZDxx-CB2-R   | ZDxxL-CB2-R       | SOD-323 | A              | C | - | Tape Reel |

Note:1. Pin assignment: A: Anode C: Cathode NC: No Connection  
2. xx: Zener Voltage, refer to Marking Information.

|  |   |  |
|--|---|--|
|  | <p>(1)Packing Type<br/>(2)Package Type<br/>(3)Lead Plating<br/>(4)Zener Voltage</p> | <p>(1) R: Tape Reel<br/>(2) AE3: SOT-23, CB2: SOD-323<br/>(3) L: Lead Free Plating Blank: Pb/Sn<br/>(4) refer to Marking Information</p> |
|--|---|--|

#### MARKING INFORMATION

| PACKAGE | VOLTAGE CODE |     |    |    | MARKING |
|---------|--------------|-----|----|----|---------|
| SOT-23  | 1.8          | 5.1 | 10 | 20 |         |
|         | 2.4          | 5.6 | 11 | 22 |         |
|         | 2.5          | 6.0 | 12 | 24 |         |
|         | 3.3          | 6.2 | 13 | 25 |         |
|         | 3.9          | 6.8 | 15 | 27 |         |
| SOD-323 | 4.3          | 7.5 | 16 | 30 |         |
|         | 4.7          | 8.2 | 18 | 33 |         |
|         |              | 9.1 |    | 36 |         |
|         |              |     |    |    |         |

# ZD2.4 THRU ZD36

## ZENER DIODE

### ■ ABSOLUTE MAXIMUM RATING (Ta=25°C , unless otherwise specified)

| PARAMETER                           | SYMBOL           | RATINGS    | UNIT  |
|-------------------------------------|------------------|------------|-------|
| Total Power Dissipation (Ta=25°C)   | P <sub>D</sub>   | 225        | mW    |
| Derating above 25°C                 |                  | 1.8        | mW/°C |
| Thermal Resistance Junction-Ambient | θ <sub>JA</sub>  | 417        | °C/W  |
| Junction Temperature                | T <sub>J</sub>   | +150       | °C    |
| Storage Temperature                 | T <sub>STG</sub> | -40 ~ +150 | °C    |

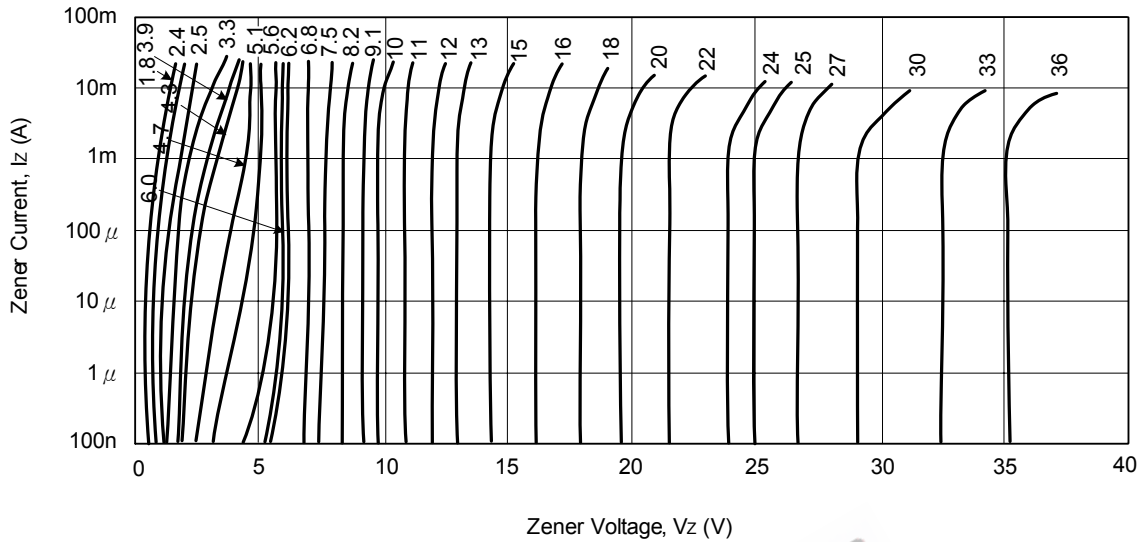
Note Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

### ■ ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

(V<sub>F</sub> = 0.9V Max @ I<sub>F</sub> = 10mA for all types.)

| Device | Marking Code | Test Current         | Zener Voltage      | Z <sub>ZK</sub> (Ω) |                     | Z <sub>ZT</sub> (Ω) |                     | I <sub>R</sub> (μA) |                     |
|--------|--------------|----------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|        |              | I <sub>ZT</sub> (mA) | V <sub>Z</sub> (V) | Max                 | I <sub>Z</sub> (mA) | Max                 | I <sub>Z</sub> (mA) | Max                 | @V <sub>R</sub> (V) |
| ZD1.8  | 1.8          | 5                    | 1.8±2.5%           | 2000                | 1.0                 | 100                 | 5                   | 20.0                | 1.0                 |
| ZD2.4  | 2.4          | 5                    | 2.4±2.5%           | 2000                | 1.0                 | 100                 | 5                   | 20.0                | 1.0                 |
| ZD2.5  | 2.5          | 5                    | 2.5±2.5%           | 2000                | 1.0                 | 100                 | 5                   | 20.0                | 1.0                 |
| ZD3.3  | 3.3          | 5                    | 3.3±2.5%           | 1000                | 1.0                 | 100                 | 5                   | 10.0                | 1.0                 |
| ZD3.9  | 3.9          | 5                    | 3.9±2.5%           | 1000                | 1.0                 | 100                 | 5                   | 5.0                 | 1.0                 |
| ZD4.3  | 4.3          | 5                    | 4.3±2.5%           | 1000                | 1.0                 | 100                 | 5                   | 5.0                 | 1.0                 |
| ZD4.7  | 4.7          | 5                    | 4.7±2.5%           | 800                 | 0.5                 | 100                 | 5                   | 2.0                 | 1.0                 |
| ZD5.1  | 5.1          | 5                    | 5.1±2.5%           | 500                 | 0.5                 | 80                  | 5                   | 2.0                 | 1.5                 |
| ZD5.6  | 5.6          | 5                    | 5.6±2.5%           | 200                 | 0.5                 | 60                  | 5                   | 1.0                 | 2.5                 |
| ZD6.0  | 6.0          | 5                    | 6.0±2.5%           | 100                 | 0.5                 | 60                  | 5                   | 1.0                 | 2.5                 |
| ZD6.2  | 6.2          | 5                    | 6.2±2.5%           | 100                 | 0.5                 | 60                  | 5                   | 1.0                 | 3.0                 |
| ZD6.8  | 6.8          | 5                    | 6.8±2.5%           | 60                  | 0.5                 | 40                  | 5                   | 0.5                 | 3.5                 |
| ZD7.5  | 7.5          | 5                    | 7.5±2.5%           | 60                  | 0.5                 | 30                  | 5                   | 0.5                 | 4.0                 |
| ZD8.2  | 8.2          | 5                    | 8.2±2.5%           | 60                  | 0.5                 | 30                  | 5                   | 0.5                 | 5.0                 |
| ZD9.1  | 9.1          | 5                    | 9.1±2.5%           | 60                  | 0.5                 | 30                  | 5                   | 0.5                 | 6.0                 |
| ZD10   | 10           | 5                    | 10±2.5%            | 60                  | 0.5                 | 30                  | 5                   | 0.1                 | 7.0                 |
| ZD11   | 11           | 5                    | 11±2.5%            | 60                  | 0.5                 | 30                  | 5                   | 0.1                 | 8.0                 |
| ZD12   | 12           | 5                    | 12±2.5%            | 80                  | 0.5                 | 30                  | 5                   | 0.1                 | 9.0                 |
| ZD13   | 13           | 5                    | 13±2.5%            | 80                  | 0.5                 | 37                  | 5                   | 0.1                 | 10.0                |
| ZD15   | 15           | 5                    | 15±2.5%            | 80                  | 0.5                 | 42                  | 5                   | 0.1                 | 11.0                |
| ZD16   | 16           | 5                    | 16±2.5%            | 80                  | 0.5                 | 50                  | 5                   | 0.1                 | 12.0                |
| ZD18   | 18           | 5                    | 18±2.5%            | 80                  | 0.5                 | 65                  | 5                   | 0.1                 | 13.0                |
| ZD20   | 20           | 5                    | 20±2.5%            | 100                 | 0.5                 | 85                  | 5                   | 0.1                 | 15.0                |
| ZD22   | 22           | 5                    | 22±2.5%            | 100                 | 0.5                 | 100                 | 5                   | 0.1                 | 17.0                |
| ZD24   | 24           | 5                    | 24±2.5%            | 120                 | 0.5                 | 120                 | 5                   | 0.1                 | 19.0                |
| ZD25   | 25           | 5                    | 25±2.5%            | 130                 | 0.5                 | 130                 | 5                   | 0.1                 | 19.0                |
| ZD27   | 27           | 5                    | 27±2.5%            | 150                 | 0.5                 | 150                 | 5                   | 0.1                 | 21.0                |
| ZD30   | 30           | 5                    | 30±2.5%            | 200                 | 0.5                 | 200                 | 5                   | 0.1                 | 23.0                |
| ZD33   | 33           | 5                    | 33±2.5%            | 250                 | 0.5                 | 250                 | 5                   | 0.1                 | 25.0                |
| ZD36   | 36           | 5                    | 36±2.5%            | 300                 | 0.5                 | 300                 | 5                   | 0.1                 | 27.0                |

## TYPICAL CHARACTERISTIC CURVES



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