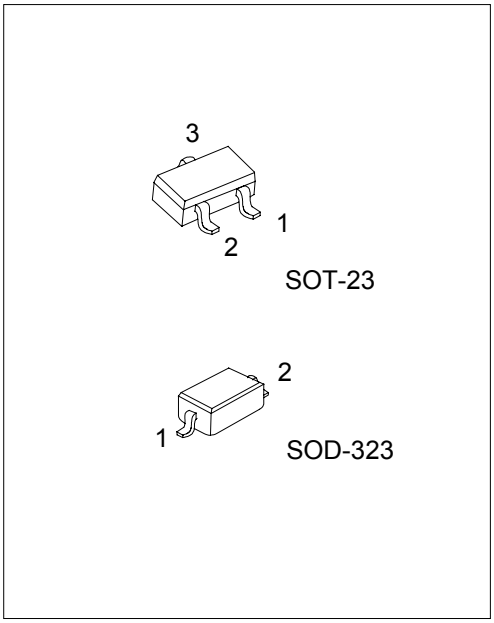
# ZD2.4 THRU ZD36

***ZENER DIODE***

## ZD2.4 THRU ZD36 ZENER DIODES




*Pb-free plating product number: ZDxxL

### ■ FEATURES

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

*High demand voltage range (2.4V~36V) is manufactured on high-efficient non-wire bonding production line.

### ■ ORDERING INFORMATION

| Order Number | | Package | Pin | | | Packing |
|---|---|---|---|---|---|---|
| Normal | Lead Free Plating | | 1 | 2 | 3 | |
| ZDxx-AE3-R | ZDxxL-AE3-R | SOT-23 | + | - | N | Tape Reel |
| ZDxx-CL2-R | ZDxxL-CL2-R | SOD-323 | + | - | | Tape Reel |

Note:1.Pin assignment: +: Anode -: Cathode N: No Connection
2.xx: Zenar Voltage, refer to Marking Information.

| | |
|---|---|
| ZDxxL-AE3-R<br>(1)Packing Type<br>(2)Package Type<br>(3)Lead Plating<br>(4)Zenar Voltage | (1) R: Tape Reel<br>(2) AE3: SOT-23, CL2: SOD-323<br>(3) L: Lead Free Plating, Blank: Pb/Sn<br>(4) refer to Marking Information |

### ■ MARKING INFORMATION

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


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

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---|---|---|---|
| Total Power Dissipation (Ta=25℃) | $P_D$ | 225 | mW |
| Derating above 25℃ | | 1.8 | mW/℃ |
| Thermal Resistance Junction-Ambient | $\theta_{JA}$ | 417 | ℃/W |
| Junction Temperature | $T_J$ | +150 | ℃ |
| Storage Temperature | $T_{STG}$ | -40 ~ +150 | ℃ |

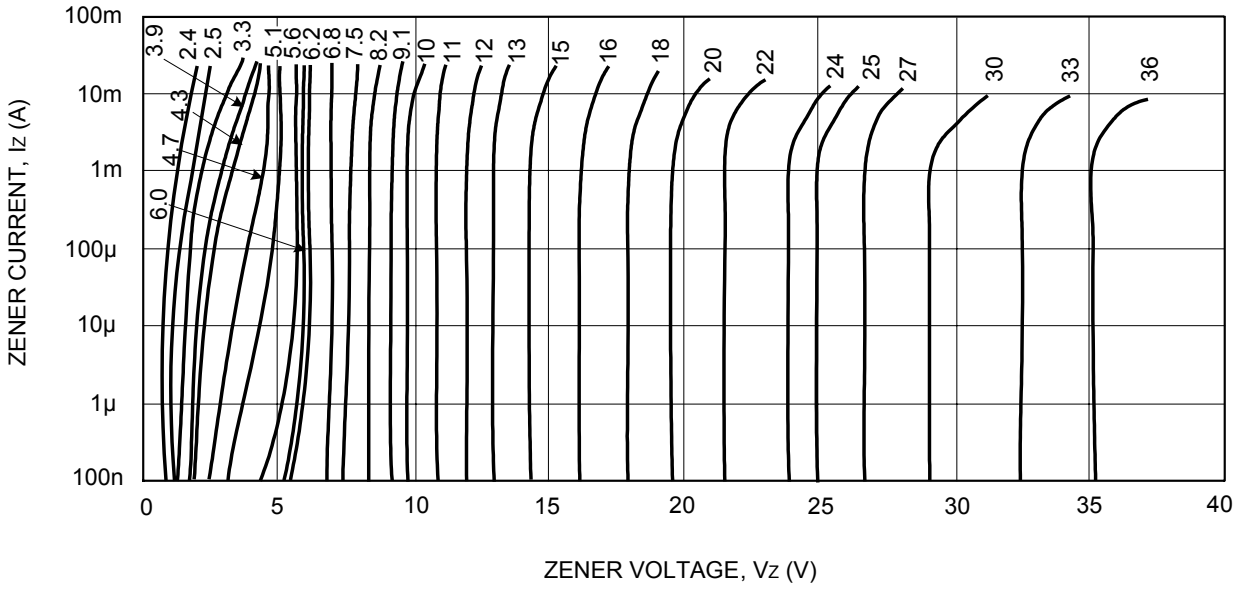
Note Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

($V_F$ = 0.9V Max @ $I_F$ = 10mA for all types.)

| Device | Marking Code | Test Current | Zener Voltage | $Z_{ZK}$ (Ω) | | $Z_{ZT}$(Ω) | | $I_R$ (μA) | |
|---|---|---|---|---|---|---|---|---|---|
| | | $I_{ZT}$(mA) | $V_Z$ (V) | Max | $I_Z$(mA) | Max | $I_Z$(mA) | Max | @$V_R$ (V) |
| 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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