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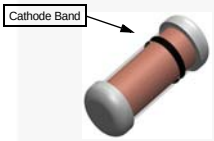
FAIRCHILD SEMICONDUCTOR®

April 2013

# FDH 400 / FDLL 400
# High Voltage General Purpose Diode

**DO-35**
**Cathode is denoted with a black band**




**SOD80**

**LL-34**

THE PLACEMENT OF THE EXPANSION GAP HAS NO RELATIONSHIP TO THE LOCATION OF THE CATHODE TERMINAL

**LL-34 COLOR BAND MARKING**

| DEVICE | 1ST BAND |
|---|---|
| FDLL400 | BLACK |

**-1st band denotes cathode terminal and has wider width**

## Absolute Maximum Ratings(1)

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A$ = 25°C unless otherwise noted.

| Symbol | Parameter | | Value | Units |
|---|---|---|---|---|
| $W_{IV}$ | Working Inverse Voltage | | 150 | V |
| $I_O$ | Average Rectified Forward Current | | 200 | mA |
| $I_F$ | DC Forward Current | | 500 | mA |
| $i_f$ | Recurrent Peak Forward Current | | 600 | mA |
| $I_{FSM}$ | Non-repetitive Peak Forward Surge Current | Pulse Width = 1.0 s | 1.0 | A |
| | | Pulse Width = 1.0 µs | 4.0 | A |
| $T_{STG}$ | Storage Temperature Range | | -65 to +200 | °C |
| $T_J$ | Operating Junction Temperature | | 175 | °C |

**Note:**

1. These ratings are limiting values above which the serviceability of the diode may be impaired.
   These ratings are bansed on a maximum junction temperature of 200°C.
   These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

## Thermal Characteristics

Values are at $T_A$ = 25°C unless otherwise noted.

| Symbol | Parameter | Max. | Units |
|---|---|---|---|
| | | FDH / FDLL 400 | |
| $P_D$ | Power Dissipation | 500 | mW |
| | Derate above 25°C | 3.33 | mW/°C |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 300 | °C/W |

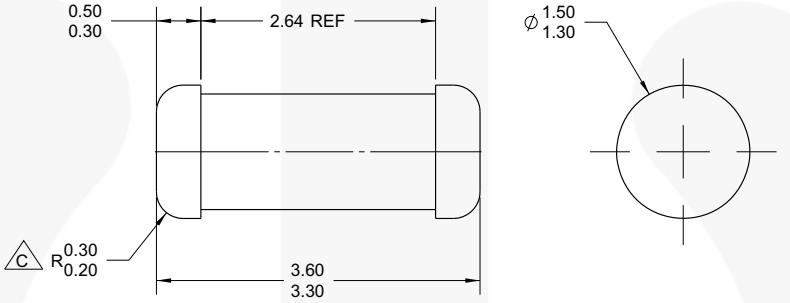
## Electrical Characteristics

Values are at $T_A$ = 25°C unless otherwise noted.

| Symbol | Parameter | | Test Conditions | Min. | Max. | Units |
|---|---|---|---|---|---|---|
| $V_R$ | Breakdown Voltage | FDH / FDLL 400 | $I_R$= 100 µA | 200 | | V |
| $V_F$ | Forward Voltage | FDH / FDLL 400 | $I_F$= 200 mA | | 1.0 | V |
| | | | $I_F$= 300 mA | | 1.1 | V |
| $I_R$ | Reverse Leakage | FDH / FDLL 400 | $V_R$= 150 V | | 100 | **n**A |
| | | | $V_R$= 150 V, $T_A$= 150°C | | 100 | **µ**A |
| $C_O$ | Diode Capacitance | FDH / FDLL 400 | $V_R$ = 0, f = 1.0 MHz | | 2.0 | pF |
| $t_{rr}$ | Reverse Recovery Time | FDH / FDLL 400 | $I_F$ = $I_R$ = 30 mA, $I_{rr}$ = 3.0 mA, $R_L$ = 100 Ω | | 50 | ns |

## Physical Dimensions

SOD-80




NOTES: UNLESS OTHERWISE SPECIFIED

A) PACKAGE STANDARD REFERENCE: JEDEC DO-213, VARIATION AC.

B) ALL DIMENSIONS ARE IN MILLIMETERS.

C CORNER RADIUS IS OPTIONAL.

D) DRAWING FILE NAME: SOD80A REV01

**Figure 1. 2-TERMINAL, SOD-80, JEDEC DO-213AC, MINI-MELF**

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## Physical Dimensions (Continued)

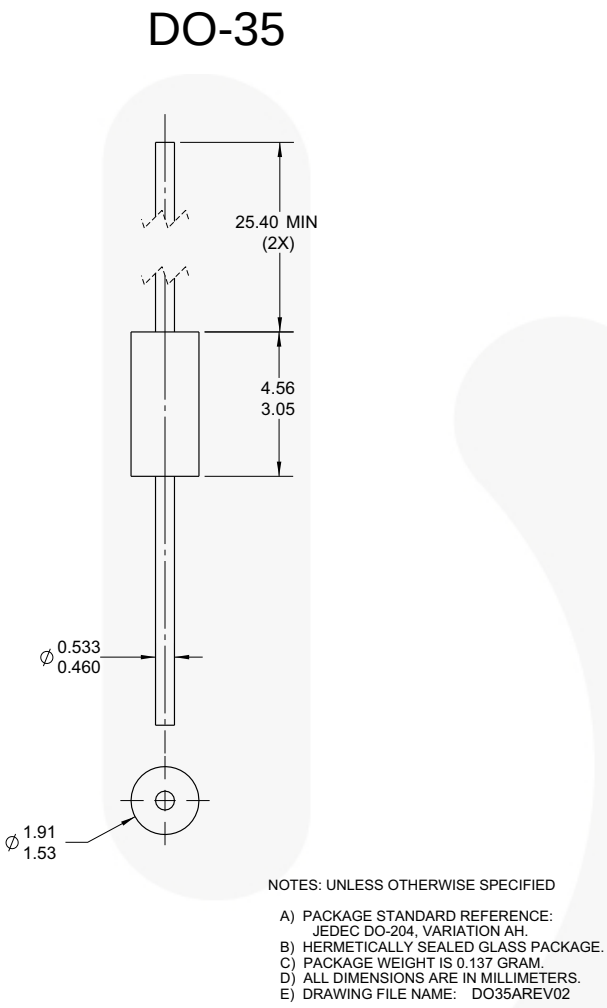


**Figure 2. AXIAL LEADED, GLASS, JEDEC DO204, VARIATION AH (ACTIVE)**

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| No Identification Needed | Full Production | Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design. |
| Obsolete | Not In Production | Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only. |

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