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February 2016

# FDH300 / FDH300A / FDLL300A / FDH333 / FDLL333 High Conductance Low Leakage Diode



| LL-34 COLOR BAND MARKING |          |
|--------------------------|----------|
| DEVICE                   | 1ST BAND |
| FDLL300A                 | WHITE    |
| FDLL333                  | WHITE    |

-1st band denotes cathode terminal and has wider width

## Ordering Information

| Part Number | Top Mark | Package          | Packing Method |
|-------------|----------|------------------|----------------|
| FDH300TR    | H300     | DO-204AH (DO-35) | Tape and Reel  |
| FDH300A     | H300A    | DO-204AH (DO-35) | Bulk           |
| FDH300ATR   | H300A    | DO-204AH (DO-35) | Tape and Reel  |
| FDH333      | H333     | DO-204AH (DO-35) | Bulk           |
| FDH333TR    | H333     | DO-204AH (DO-35) | Tape and Reel  |
| FDLL300A    | WHITE    | SOD-80 2L        | Tape and Reel  |
| FDLL333     | WHITE    | SOD-80 2L        | Tape and Reel  |

## Absolute Maximum Ratings<sup>(1), (2)</sup>

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  $T_A = 25^\circ\text{C}$  unless otherwise noted.

| Symbol    | Parameter                                 | Value                           | Unit             |
|-----------|---|---------------------------------|------------------|
| $W_{IV}$  | Working Inverse Voltage                   | 125                             | 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              |
|           |   | Pulse Width = 1.0 $\mu\text{s}$ | 4.0              |
| $T_{STG}$ | Storage Temperature Range                 | -65 to +200                     | $^\circ\text{C}$ |
| $T_J$     | Operating Junction Temperature            | 175                             | $^\circ\text{C}$ |

### Notes:

1. These ratings are based on a maximum junction temperature of  $175^\circ\text{C}$ .
2. These are steady-state limits. Fairchild Semiconductor should be consulted on applications involving pulsed or low-duty-cycle operations.

FDH300 / FDH300A / FDLL300A / FDH333 / FDLL333 — High Conductance Low Leakage Diode

### Thermal Characteristics

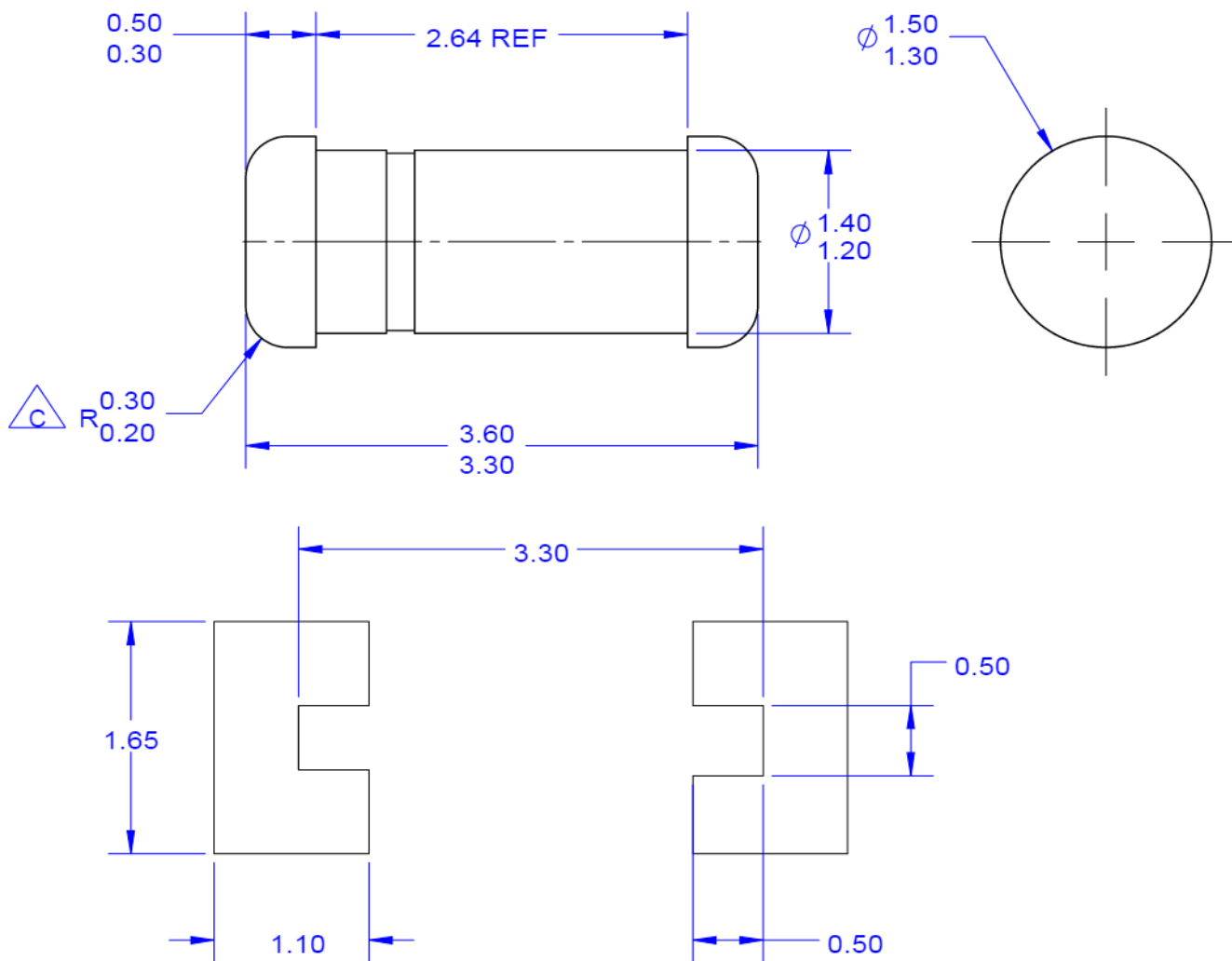
Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

| Symbol          | Parameter                               | Max. | Unit                      |
|-----------------|---|------|---------------------------|
| $P_D$           | Total Device Dissipation                | 500  | mW                        |
|                 | Derate Above $25^\circ\text{C}$         | 3.33 | mW/ $^\circ\text{C}$      |
| $R_{\theta JA}$ | Thermal Resistance, Junction-to-Ambient | 300  | $^\circ\text{C}/\text{W}$ |

### Electrical Characteristics

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

| Symbol                 | Parameter         | Conditions                     | Min.   | Max. | Unit |               |
|------------------------|-------------------|--------------------------------|--|------|------|---------------|
| $V_R$                  | Breakdown Voltage | $I_R = 100 \mu\text{A}$        | 150  |      | V    |               |
| $V_F$                  | Forward Voltage   | FDH300 / FDH300A / FDLL300A    | $I_F = 1.0 \text{ mA}$                         |      | 680  | mV            |
|                        |                   | FDH300                         | $I_F = 5.0 \text{ mA}$                         |      | 750  | mV            |
|                        |                   | FDH300A / FDLL300A             | $I_F = 5.0 \text{ mA}$                         |      | 760  | mV            |
|                        |                   | FDH300 / FDH300A / FDLL300A    | $I_F = 10 \text{ mA}$                          |      | 800  | mV            |
|                        |                   | FDH300                         | $I_F = 50 \text{ mA}$                          |      | 880  | mV            |
|                        |                   | FDH300A / FDLL300A             | $I_F = 50 \text{ mA}$                          |      | 890  | mV            |
|                        |                   | FDH300 / FDH300A / FDLL300A    | $I_F = 100 \text{ mA}$                         |      | 920  | mV            |
|                        |                   | FDH300 / FDH300A / FDLL300A    | $I_F = 200 \text{ mA}$                         |      | 1.0  | V             |
|                        |                   | FDH333 / FDLL333               | $I_F = 50 \text{ mA}$                          | 800  | 890  | mV            |
|                        |                   |                                | $I_F = 100 \text{ mA}$                         | 830  | 940  | mV            |
|                        |                   |                                | $I_F = 150 \text{ mA}$                         | 860  | 970  | mV            |
|                        |                   |                                | $I_F = 200 \text{ mA}$                         | 0.87 | 1.05 | V             |
| $I_F = 250 \text{ mA}$ | 0.88              |                                | 1.08   | V    |      |               |
| $I_R$                  | Reverse Current   | FDH300 / FDH300A / FDLL300A    | $V_R = 125 \text{ V}$                          |      | 1.0  | nA            |
|                        |                   |                                | $V_R = 125 \text{ V}, T_A = 150^\circ\text{C}$ |      | 3.0  | $\mu\text{A}$ |
|                        |                   | FDH333 / FDLL333               | $V_R = 125 \text{ V}$                          |      | 3.0  | nA            |
|                        |                   |                                | $V_R = 125 \text{ V}, T_A = 100^\circ\text{C}$ |      | 500  | nA            |
| $C_O$                  | Diode Capacitance | $V_R = 0, f = 1.0 \text{ MHz}$ |  | 6.0  | pF   |               |



### LAND PATTERN RECOMMENDATION

NOTES: UNLESS OTHERWISE SPECIFIED

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

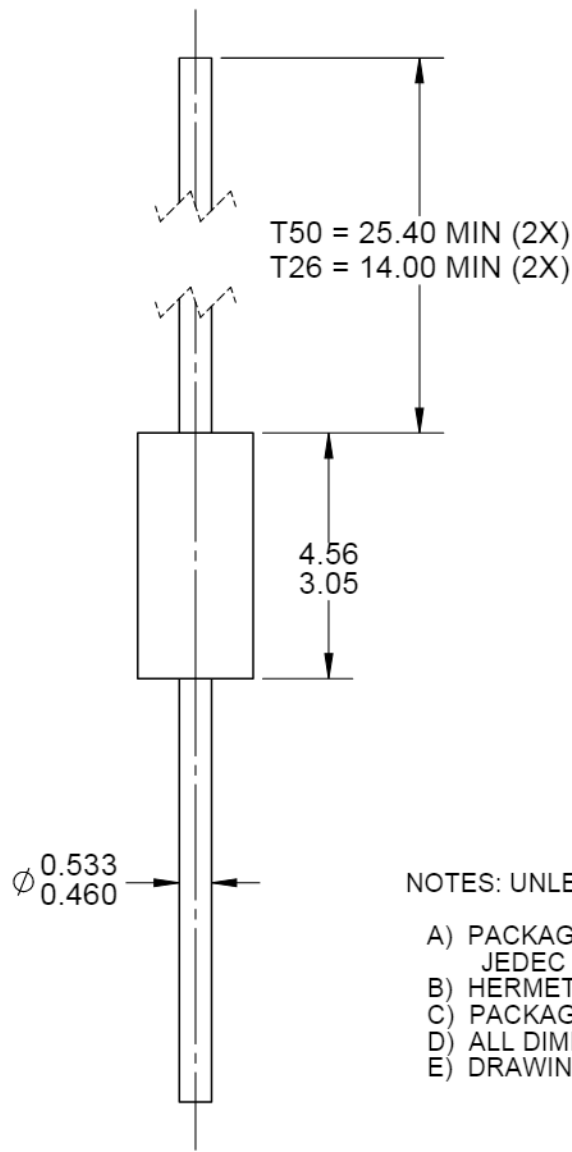
B) ALL DIMENSIONS ARE IN MILLIMETERS.

 CORNER RADIUS IS OPTIONAL.

D) LAND PATTERN RECOMMENDATION PER IPC DIOMELF3414N

E) DRAWING FILE NAME: SOD80A REV3






NOTES: UNLESS OTHERWISE SPECIFIED

- A) PACKAGE STANDARD REFERENCE:  
JEDEC DO-204, VARIATION AH.
- B) HERMETICALLY SEALED GLASS PACKAGE.
- C) PACKAGE WEIGHT IS 0.137 GRAM.
- D) ALL DIMENSIONS ARE IN MILLIMETERS.
- E) DRAWING FILE NAME: DO35AREV03



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