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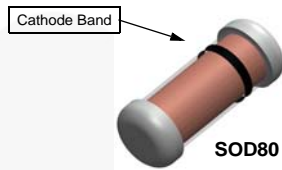
Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

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January 2016

LL4148 Small Signal Diode



The 1st Band indicates the cathode band

Ordering Information

| Part Number | Device Marking | Package | Packing Method |
|-------------|--------------------|-----------|--------------------------------------|
| LL4148 | Color Band Marking | SOD-80 2L | Tape and Reel, 7 inch Reel, 2500 pcs |

Absolute Maximum Ratings^{(1), (2)}

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 |
|-------------|---|---------------------------------|------------------|
| V_{RRM} | Maximum Repetitive Reverse Voltage | 100 | V |
| $I_{F(AV)}$ | Average Rectified Forward Current | 200 | mA |
| I_f | Recurrent Peak Forward Current | 500 | mA |
| I_{FSM} | Non-Repetitive Peak Forward Surge Current | Pulse Width = 1.0 s | 1.0 |
| | | Pulse Width = 1.0 μs | 2.0 |
| T_{STG} | Storage Temperature Range | -65 to +200 | $^\circ\text{C}$ |
| T_J | Operating Junction Temperature Range | -55 to +175 | $^\circ\text{C}$ |

Notes:

1. These ratings are based on a maximum junction temperature of 200°C .
2. These are steady-state limits. Fairchild Semiconductor should be consulted on applications involving pulsed or low-duty-cycle operations.

Thermal Characteristics⁽³⁾

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

| Symbol | Parameter | Value | Unit |
|-----------------|---|-------|---------------------------|
| P_D | Power Dissipation | 500 | mW |
| $R_{\theta JA}$ | Thermal Resistance, Junction-to-Ambient | 300 | $^\circ\text{C}/\text{W}$ |

Note:

3. JEDEC Standard 51-3 method (PCB Board size 76 x 114 x 0.6Tmm³)

Electrical Characteristics

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

| Symbol | Parameter | Conditions | Min. | Max. | Unit |
|----------|-----------------------|---|------|------|---------------|
| V_R | Breakdown Voltage | $I_R = 100 \mu\text{A}$ | 100 | | V |
| | | $I_R = 5.0 \mu\text{A}$ | 75 | | |
| V_F | Forward Voltage | $I_F = 10 \text{ mA}$ | | 1.0 | V |
| I_R | Reverse Leakage | $V_R = 20 \text{ V}$ | | 25 | nA |
| | | $V_R = 20 \text{ V}, T_A = 150^\circ\text{C}$ | | 50 | μA |
| C_T | Total Capacitance | $V_R = 0, f = 1.0 \text{ MHz}$ | | 4.0 | pF |
| t_{rr} | Reverse Recovery Time | $I_F = 10 \text{ mA}, V_R = 6.0 \text{ V (60 mA)}, I_{rr} = 1.0 \text{ mA}, R_L = 100 \Omega$ | | 4.0 | ns |

Typical Performance Characteristics

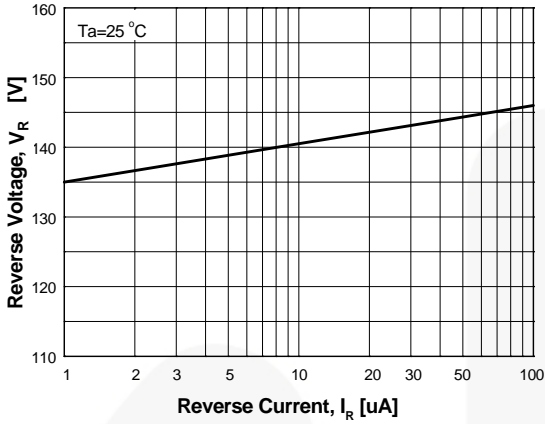


Figure 1. Reverse Voltage vs. Reverse Current V_R - 1.0 to 100 μ A

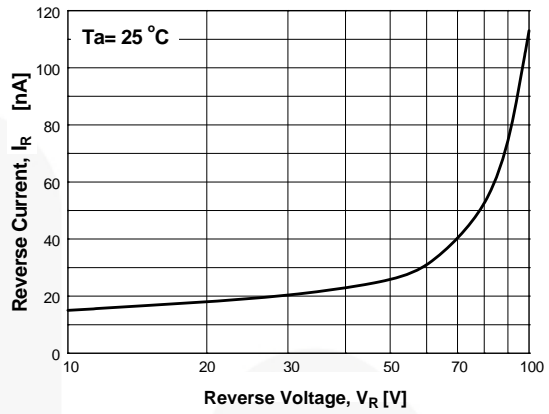


Figure 2. Reverse Current vs. Reverse Voltage I_R - 10 to 100 V

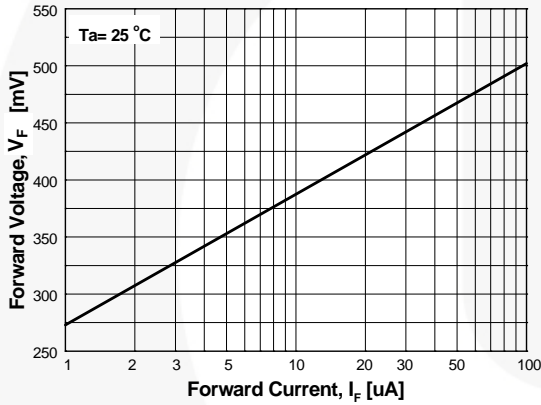


Figure 3. Forward Voltage vs. Forward Current V_F - 1 to 100 μ A

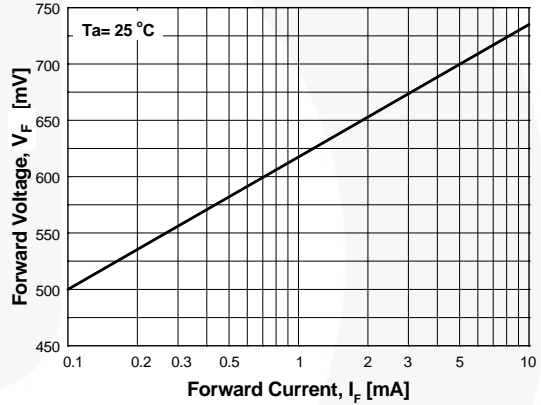


Figure 4. Forward Voltage vs. Forward Current V_F - 0.1 to 10 mA

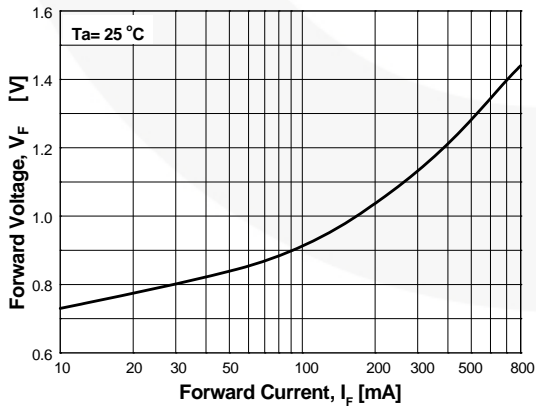


Figure 5. Forward Voltage vs. Forward Current V_F - 10 to 800 mA

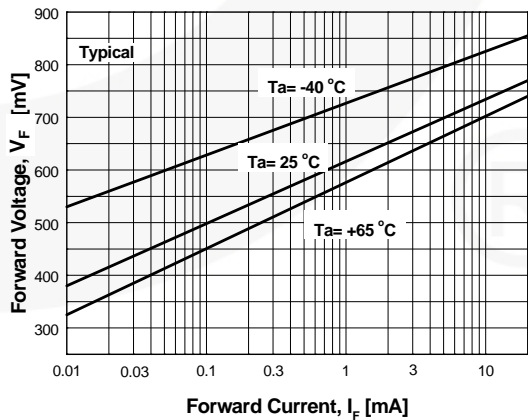


Figure 6. Forward Voltage vs. Ambient Temperature V_F - 0.01 - 20 mA (-40 to +65 °C)

Typical Performance Characteristics (Continued)

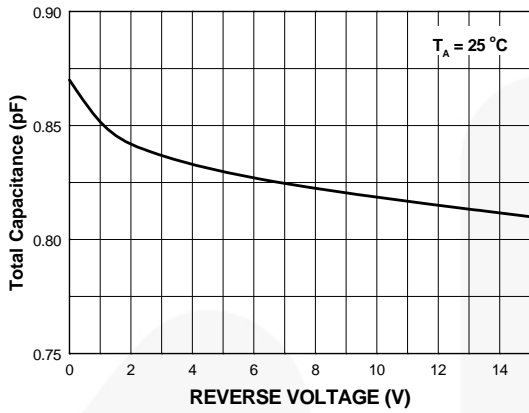


Figure 7. Total Capacitance

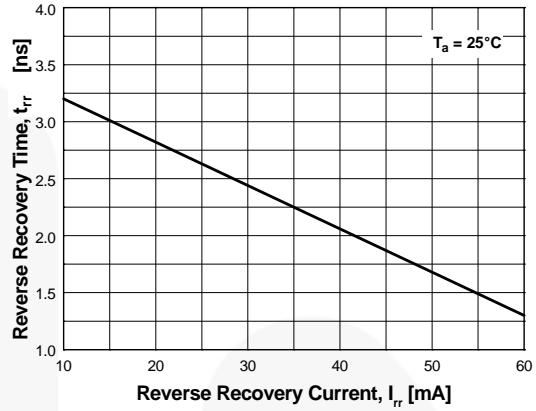


Figure 8. Reverse Recovery Time vs. Reverse Recovery Current

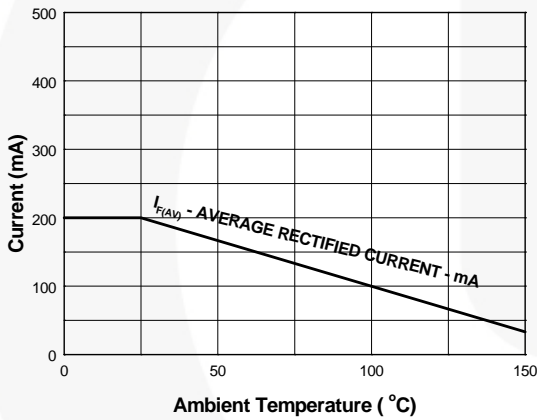


Figure 9. Average Rectified Current ($I_{F(AV)}$) vs. Ambient Temperature (T_A)

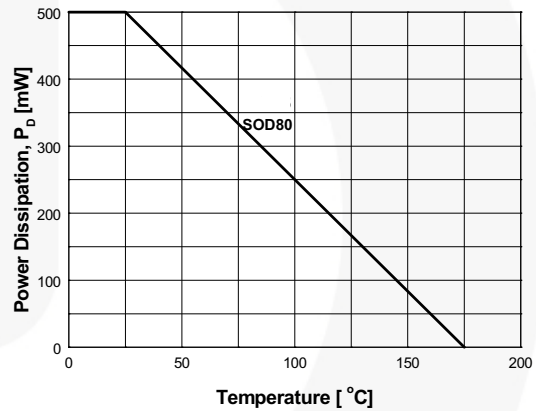
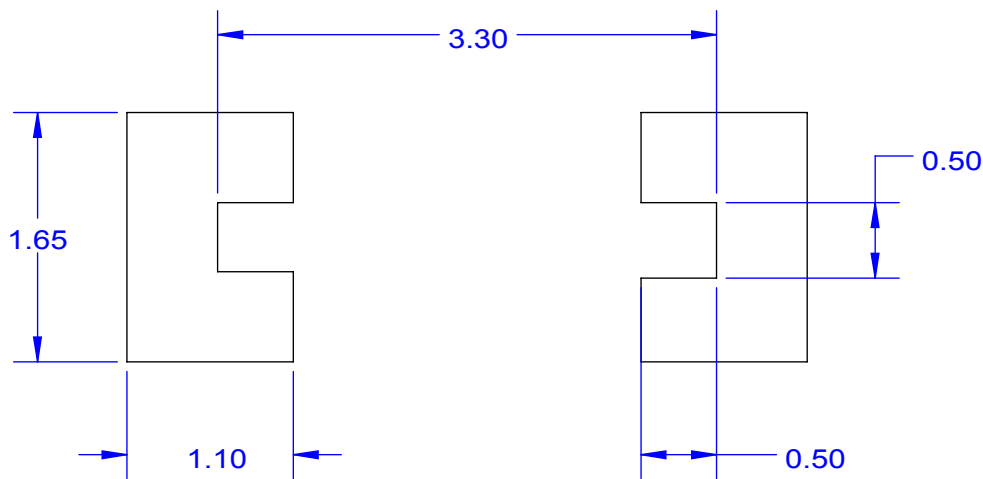
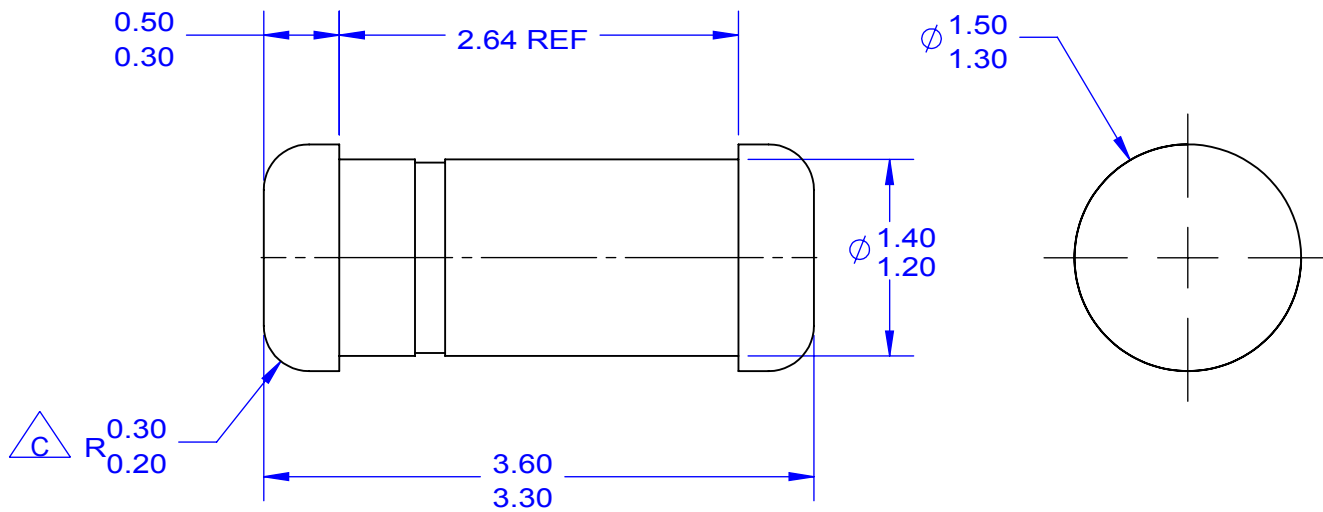


Figure 10. Power Derating Curve



LAND PATTERN RECOMMENDATION

NOTES: UNLESS OTHERWISE SPECIFIED

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

B) ALL DIMENSIONS ARE IN MILLIMETERS.

$\triangle C$ CORNER RADIUS IS OPTIONAL.

D) LAND PATTERN RECOMMENDATION PER IPC DIOMELF3414N

E) DRAWING FILE NAME: SOD80A REV3



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