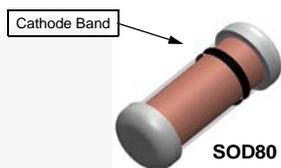




February 2015

LL4148 Small Signal Diode



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		mV
		$I_R = 5.0 \mu\text{A}$	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

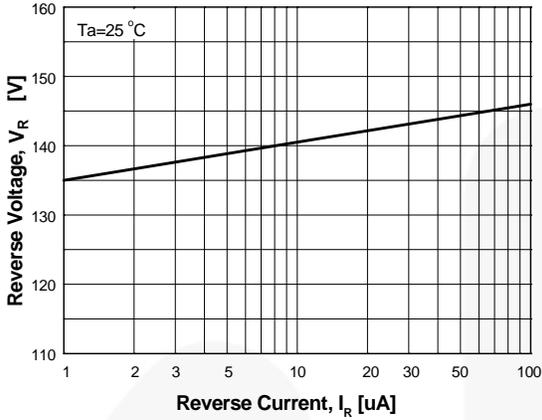


Figure 1. Reverse Voltage vs. Reverse Current
 V_R - 1.0 to 100 μA

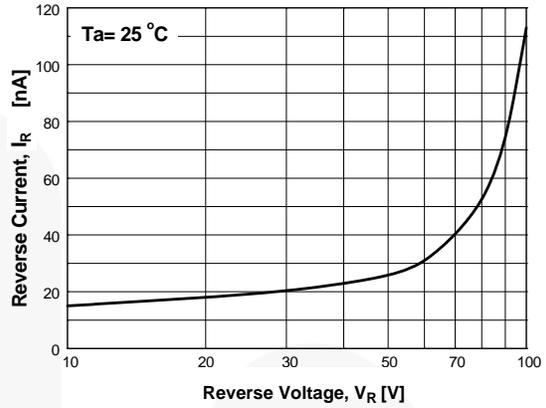


Figure 2. Reverse Current vs. Reverse Voltage
 I_R - 10 to 100 V

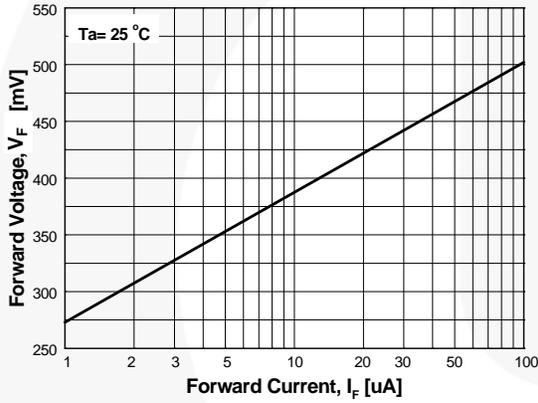


Figure 3. Forward Voltage vs. Forward Current
 V_F - 1 to 100 μA

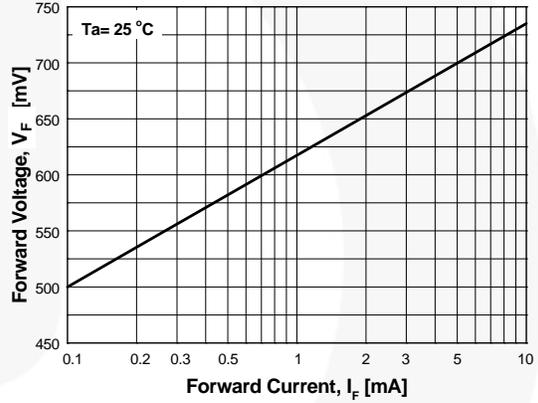


Figure 4. Forward Voltage vs. Forward Current
 V_F - 0.1 to 10 mA

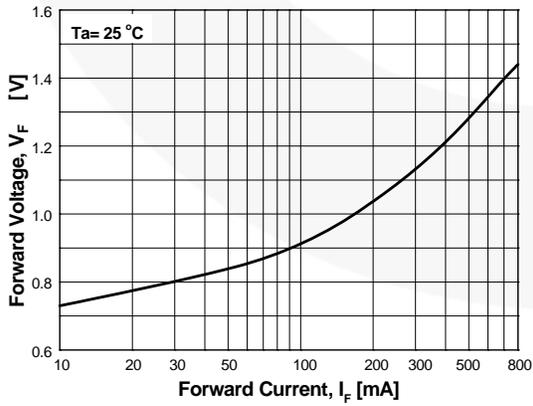


Figure 5. Forward Voltage vs. Forward Current
 V_F - 10 to 800 mA

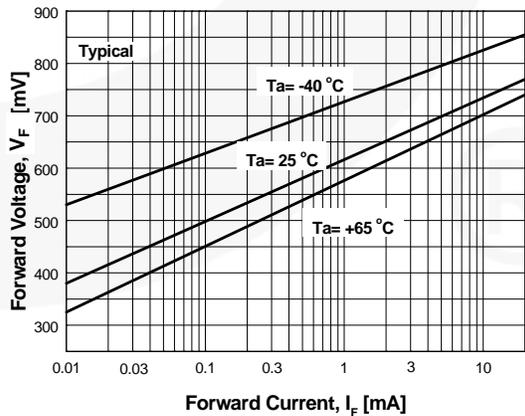


Figure 6. Forward Voltage vs. Ambient Temperature
 V_F - 0.01 - 20 mA (-40 to +65 °C)

Typical Performance Characteristics (Continued)

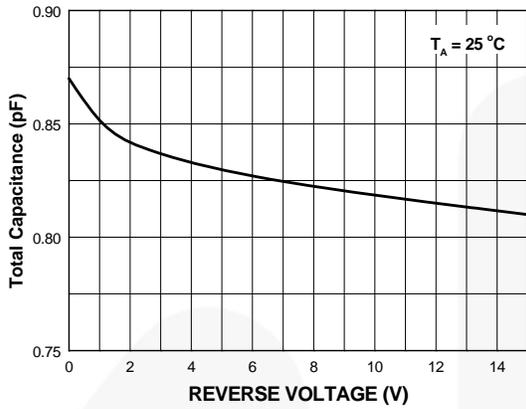


Figure 7. Total Capacitance

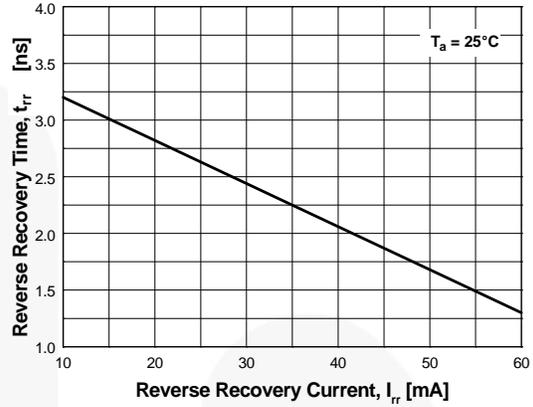


Figure 8. Reverse Recovery Time vs. Reverse Recovery Current

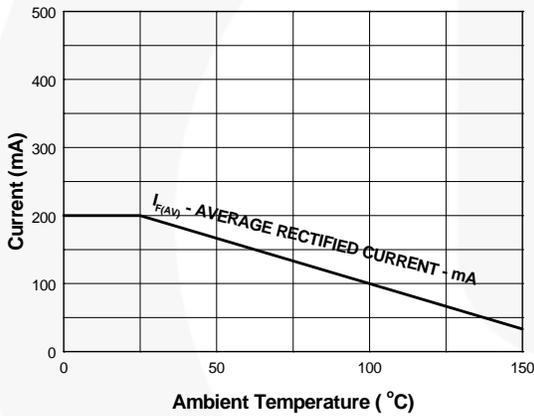


Figure 9. Average Rectified Current ($I_{F(AV)}$) vs. Ambient Temperature (T_A)

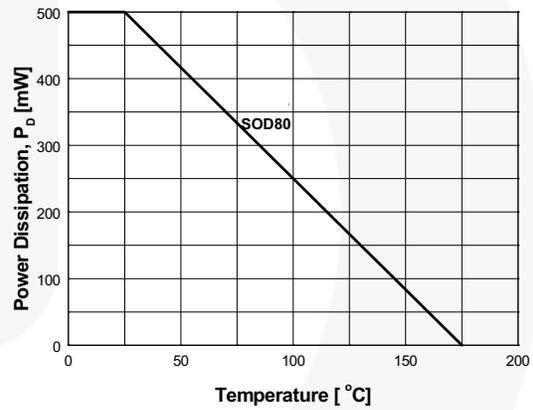
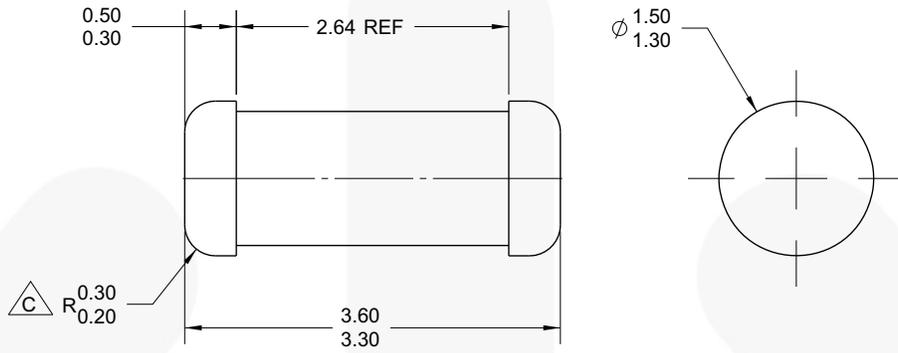


Figure 10. Power Derating Curve

Physical Dimension



- 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 11. 2-TERMINAL, SOD-80, JEDEC DO-213AC, MINI-MELF





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