

1N/FDLL 914A/B / 916/A/B / 4148 / 4448

Small Signal Diode



LL-34 COLOR BAND MARKING

DEVICE	1ST BAND
FDLL914	BLACK
FDLL914A	BLACK
FDLL914B	BLACK
FDLL4148	BLACK
FDLL4448	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 $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Value	Units
V_{RRM}	Maximum Repetitive Reverse Voltage	100	V
I_O	Average Rectified Forward Current	200	mA
I_F	DC Forward Current	300	mA
I_f	Recurrent Peak Forward Current	400	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	$^\circ\text{C}$
T_J	Operating Junction Temperature	175	$^\circ\text{C}$

Note:

1. These ratings are limiting values above which the serviceability of the diode may be impaired.

Thermal Characteristics

Symbol	Parameter	Max.	Units
		1N/FDLL 914A/B / 4148 / 4448	
P_D	Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	300	$^\circ\text{C/W}$

Electrical Characteristics⁽²⁾Values are at $T_A=25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter		Test Conditions	Min.	Max.	Units
V_R	Breakdown Voltage		$I_R = 100\ \mu\text{A}$	100		V
			$I_R = 5.0\ \mu\text{A}$	75		V
V_F	Forward Voltage	1N914B/4448	$I_F = 5.0\ \text{mA}$	0.62	0.72	V
		1N916B	$I_F = 5.0\ \text{mA}$	0.63	0.73	V
		1N914 / 916 / 4148	$I_F = 10\ \text{mA}$		1.0	V
		1N914A/916A	$I_F = 20\ \text{mA}$		1.0	V
		1N916B	$I_F = 20\ \text{mA}$		1.0	V
		1N914B / 4448	$I_F = 100\ \text{mA}$		1.0	V
I_R	Reverse Leakage		$V_R = 20\ \text{V}$		0.025	μA
			$V_R = 20\ \text{V}, T_A = 150^\circ\text{C}$		50	μA
			$V_R = 75\ \text{V}$		5.0	μA
C_T	Total Capacitance	1N916A/B/4448	$V_R = 0, f = 1.0\ \text{MHz}$		2.0	pF
		1N914A/B/4148	$V_R = 0, f = 1.0\ \text{MHz}$		4.0	pF
t_{rr}	Reverse Recovery Time		$I_F = 10\ \text{mA}, V_R = 6.0\ \text{V} (600\ \text{mA})$ $I_{rr} = 1.0\ \text{mA}, R_L = 100\ \Omega$		4.0	ns

Note:2. Non-recurrent square wave $P_W = 8.3\ \text{ms}$.

Typical Performance Characteristics

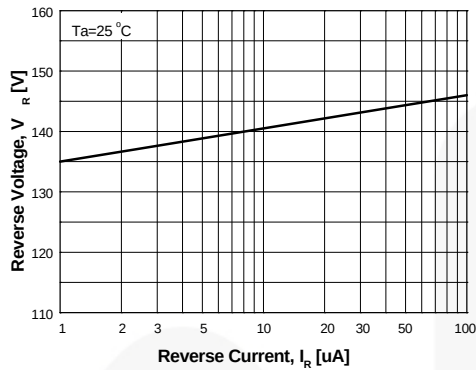


Figure 1. Reverse Voltage vs. Reverse Current
 V_R - 1.0 to 100 μA

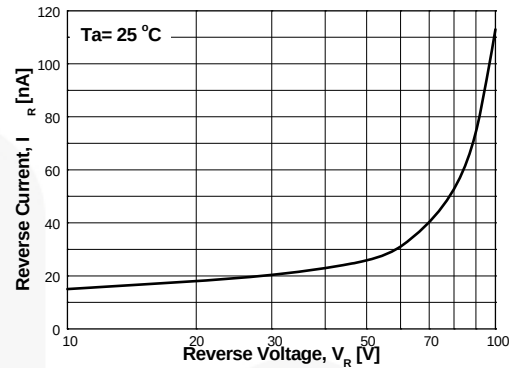


Figure 2. Reverse Current vs. Reverse Voltage
 I_R - 10 to 100 V

GENERAL RULE: The Reverse Current of a diode will approximately double for every ten (10) Degree C increase in Temperature

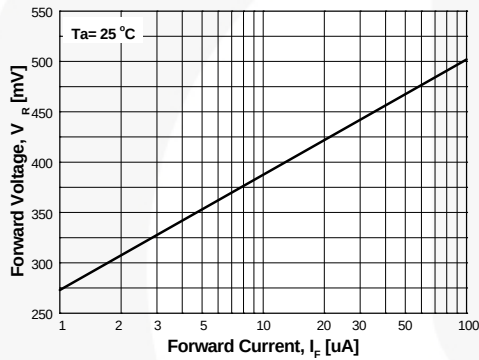


Figure 3. Forward Voltage vs. Forward Current
 V_F - 1 to 100 μA

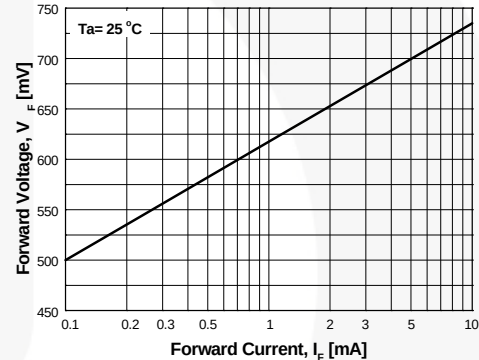


Figure 4. Forward Voltage vs. Forward Current
 V_F - 0.1 to 10 mA

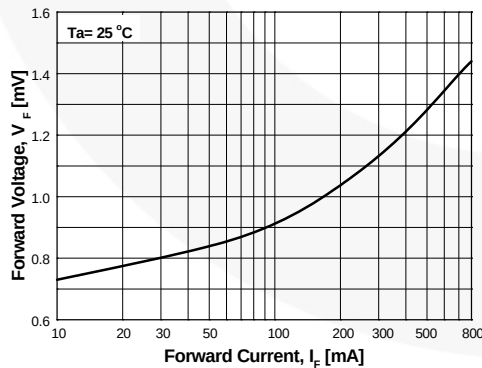


Figure 5. Forward Voltage vs. Forward Current
 V_F - 10 to 800 mA

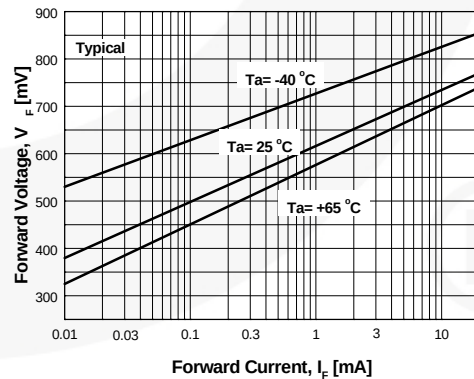


Figure 6. Forward Voltage vs. Ambient Temperature
 V_F - 0.01 - 20 mA (- 40 to +65°C)

Typical Performance Characteristics (Continued)

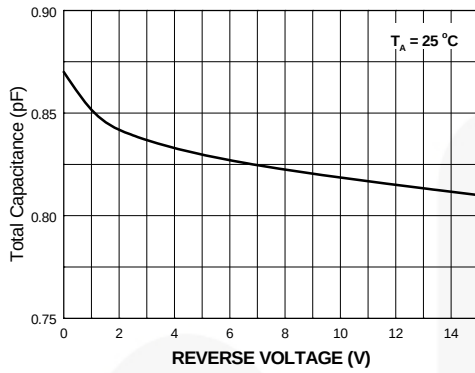


Figure 7. Total Capacitance

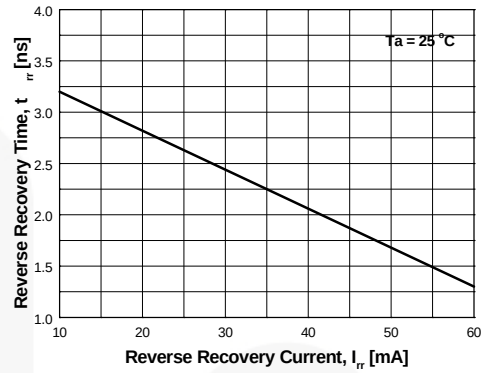


Figure 8. Reverse Recovery Time vs. Reverse Recovery Current
 $I_F = 10\text{mA}$, $I_{RR} = 1.0\text{ mA}$, $R_{loop} = 100\text{ Ohms}$

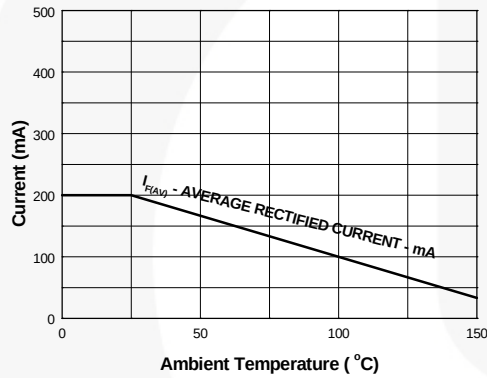


Figure 9. Average Rectified Current ($I_{F(AV)}$) vs. Ambient Temperature (T_A)

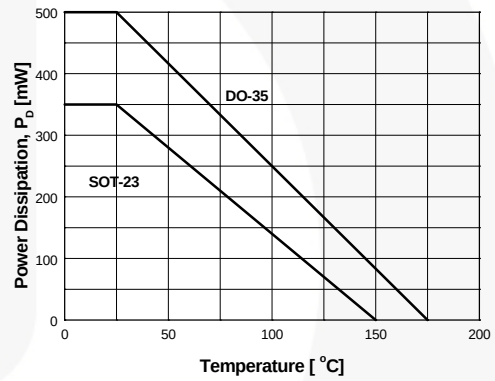
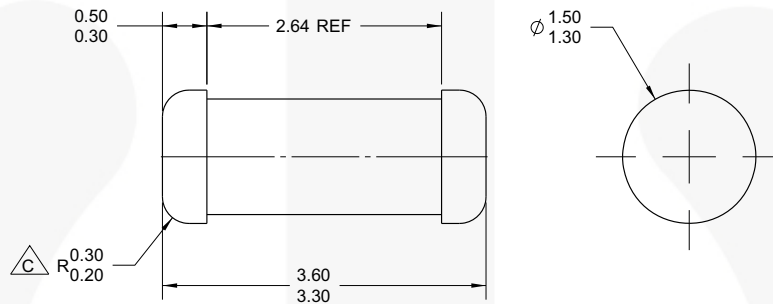


Figure 10. Power Derating Curve

Physical Dimensions

SOD-80



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) DRAWING FILE NAME: SOD80A REV01

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

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Rev. I64



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