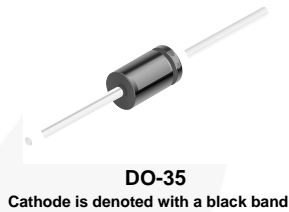


# 1N/FDLL 914A/B / 916/A/B / 4148 / 4448

## 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<sup>(1)</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	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 $\mu\text{s}$	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

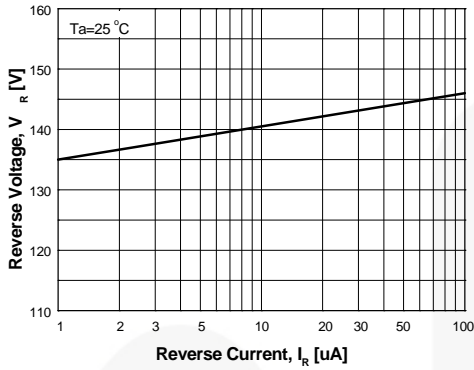
Symbol	Parameter	Max.	Units
		1N/FDLL 914A/B / 4148 / 4448	
$P_D$	Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	300	$^\circ\text{C}/\text{W}$

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

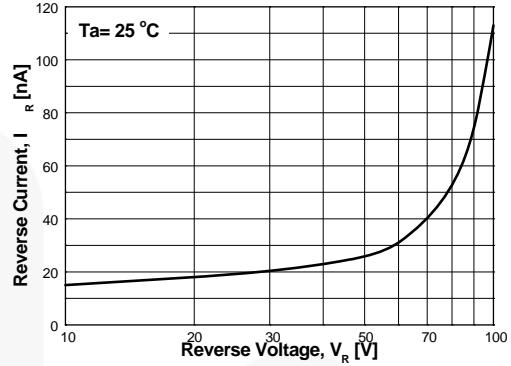
Symbol	Parameter	Test Conditions	Min.	Max.	Units	
$V_R$	Breakdown Voltage	$I_R = 100 \mu\text{A}$	100		V	
		$I_R = 5.0 \mu\text{A}$	75		V	
$V_F$	Forward Voltage	1N914B/4448	$I_F = 5.0 \text{ mA}$	0.62	0.72	V
		1N916B	$I_F = 5.0 \text{ mA}$	0.63	0.73	V
		1N914 / 916 / 4148	$I_F = 10 \text{ mA}$		1.0	V
		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	$\mu\text{A}$
			$V_R = 20 \text{ V}, T_A = 150^\circ\text{C}$		50	$\mu\text{A}$
			$V_R = 75 \text{ V}$		5.0	$\mu\text{A}$
$C_T$	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	$I_F = 10 \text{ mA}, V_R = 6.0 \text{ V (600 mA)}$ $I_{rr} = 1.0 \text{ mA}, R_L = 100 \Omega$		4.0	ns	

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

## Typical Performance Characteristics

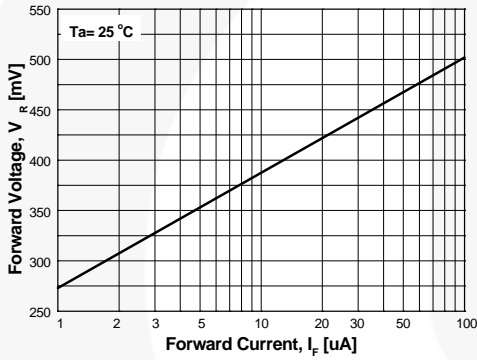


**Figure 1. Reverse Voltage vs. Reverse Current**  
 $V_R$  - 1.0 to 100  $\mu$ A

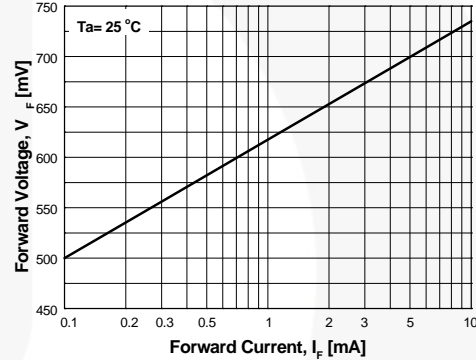


**Figure 2. Reverse Current vs. Reverse Voltage**  
 $I_R$  - 10 to 100 V

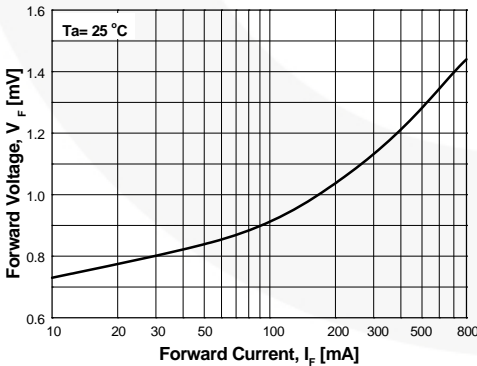
GENERAL RULE: The Reverse Current of a diode will approximately double for every ten (10) Degree C increase in Temperature



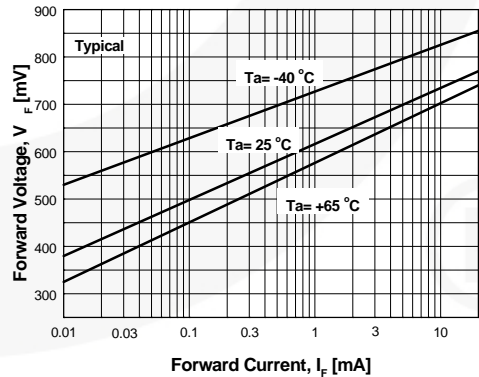
**Figure 3. Forward Voltage vs. Forward Current**  
 $V_F$  - 1 to 100  $\mu$ A



**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

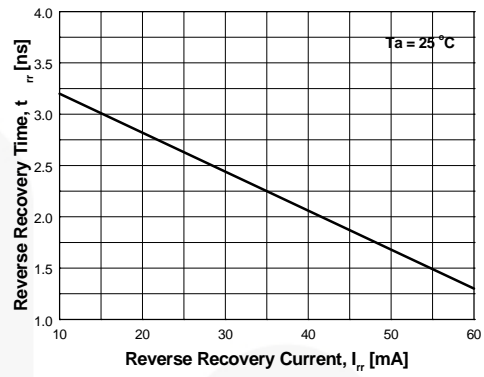


**Figure 6. Forward Voltage vs. Ambient Temperature**  
 $V_F$  - 0.01 - 20 mA (- 40 to +65°C)

Typical Performance Characteristics (Continued)



Figure 7. Total Capacitance



IF = 10mA , IRR = 1.0 mA , Rloop = 100 Ohms  
 Figure 8. Reverse Recovery Time vs. Reverse Recovery Current

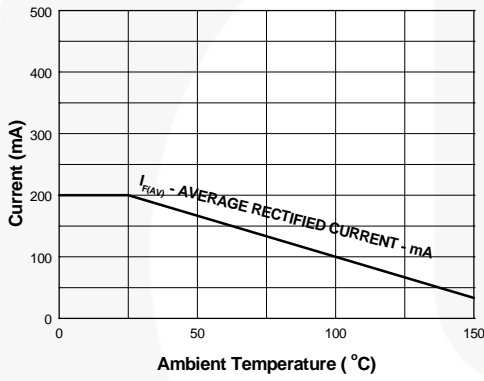


Figure 9. Average Rectified Current ( $I_{F(AV)}$ ) vs. Ambient Temperature ( $T_A$ )

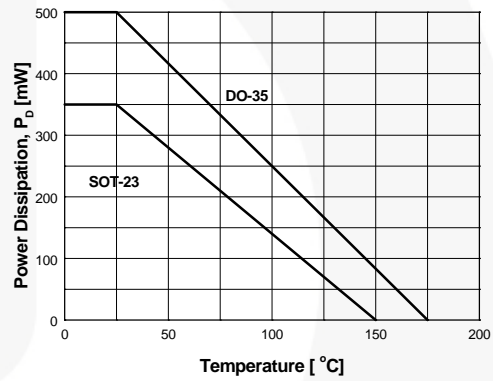


Figure 10. Power Derating Curve

## Physical 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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[http://www.fairchildsemi.com/packaging/tr/SOD80A\\_tnr.pdf](http://www.fairchildsemi.com/packaging/tr/SOD80A_tnr.pdf)



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| AccuPower™  | F-PFS™   | PowerTrench®  |  |
| AX-CAP®*  | FRFET®   | PowerXS™  | TinyBoost™  |
| BitSiC™   | Global Power Resource <sup>SM</sup>            | Programmable Active Droop™  | TinyBuck™   |
| Build it Now™   | GreenBridge™                                   | QFET®   | TinyCalc™   |
| CorePLUS™   | Green FPS™                                     | QS™   | TinyLogic®  |
| CorePOWER™  | Green FPS™ e-Series™                           | Quiet Series™   | TINYOPTO™   |
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| CTL™  | GTO™   |  | TinyPWM™  |
| Current Transfer Logic™   | IntelliMAX™                                    | Saving our world, 1mW/W/kW at a time™   | TinyWire™   |
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| Dual Cool™  | Making Small Speakers Sound Louder and Better™ | SmartMax™   | TriFault Detect™  |
| EcoSPARK®   | MegaBuck™                                      | SMART START™  | TRUECURRENT®*   |
| EfficientMax™   | MICROCOUPLER™                                  | Solutions for Your Success™   | μSerDes™  |
| ESBC™   | MicroFET™                                      | SPM®  |  |
|  | MicroPak™                                      | STEALTH™  | UHC®  |
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| FACT Quiet Series™  | MotionMax™                                     | SuperSOT™-6   | VXC™  |
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| FAST®   | OptoHi™  | SupreMOS®   | VoltagePlus™  |
| FastvCore™  | OPTOLOGIC®                                     | SyncFET™  | XS™   |
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