



June 2015

# 1N/FDLL 914/A/B / 916/A/B / 4148 / 4448 Small Signal Diode



SOD-80 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**

## Ordering Information

Part Number	Marking	Package	Packing Method
1N914	914	DO-204AH (DO-35)	Bulk
1N914_T50A	914	DO-204AH (DO-35)	Ammo
1N914TR	914	DO-204AH (DO-35)	Tape and Reel
1N914ATR	914A	DO-204AH (DO-35)	Tape and Reel
1N914B	914B	DO-204AH (DO-35)	Bulk
1N914BTR	914B	DO-204AH (DO-35)	Tape and Reel
1N916	916	DO-204AH (DO-35)	Bulk
1N916A	916A	DO-204AH (DO-35)	Bulk
1N916B	916B	DO-204AH (DO-35)	Bulk
1N4148	4148	DO-204AH (DO-35)	Bulk
1N4148TA	4148	DO-204AH (DO-35)	Ammo
1N4148_T26A	4148	DO-204AH (DO-35)	Ammo
1N4148_T50A	4148	DO-204AH (DO-35)	Ammo
1N4148TR	4148	DO-204AH (DO-35)	Tape and Reel
1N4148_T50R	4148	DO-204AH (DO-35)	Tape and Reel
1N4448	4448	DO-204AH (DO-35)	Bulk
1N4448TR	4448	DO-204AH (DO-35)	Tape and Reel
FDLL914	Black	SOD-80	Tape and Reel
FDLL914A	Black	SOD-80	Tape and Reel
FDLL914B	Black	SOD-80	Tape and Reel
FDLL4148	Black	SOD-80	Tape and Reel
FDLL4148_D87Z	Black	SOD-80	Tape and Reel
FDLL4448	Black	SOD-80	Tape and Reel
FDLL4448_D87Z	Black	SOD-80	Tape and Reel

1N/FDLL 914/A/B / 916/A/B / 4148 / 4448 — Small Signal Diode

## 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	Unit	
$V_{RRM}$	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 Range	-55 to +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.	Unit
		1N/FDLL 914/A/B / 916/A/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	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	
$V_F$	Forward Voltage	914B / 4448	$I_F = 5.0 \text{ mA}$	0.62	0.72	V
		916B	$I_F = 5.0 \text{ mA}$	0.63	0.73	V
		914 / 916 / 4148	$I_F = 10 \text{ mA}$		1.0	V
		914A / 916A	$I_F = 20 \text{ mA}$		1.0	V
		916B	$I_F = 20 \text{ mA}$		1.0	V
		914B / 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	916/916A/916B/4448	$V_R = 0, f = 1.0 \text{ MHz}$	2.0	pF	
		914/914A/914B/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



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



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



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:DO35AREV02


Figure 11. AXIAL LEADED, GLASS, JEDEC DO204, VARIATION AH, DO-204AH (DO-35)

**Physical Dimensions** (Continued)



**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



**Figure 12. 2-TERMINAL, SOD-80, JEDEC DO-213AC, MINI-MELF**



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Rev. 174

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