

Discrete POWER & Signal **Technologies**

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





THE PLACEMENT OF THE EXPANSION GAP HAS NO RELATIONSHIP TO THE LOCATION OF THE CATHODE TERMINAL

COLOR BAND MARKING DEVICE 1ST BAND 2ND BAND FDLL914 BLACK BROWN FDLL914A FDLL914B BLACK BROWN GRAY BLACK FDLL916 FDLL916A BLACK BLACK RED WHITE BROWN BLACK BROWN FDLL916B FDLL4148 **BROWN** FDLL4448

High Conductance Fast Diode

Sourced from Process D3.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
W _{IV}	Working Inverse Voltage	75	V
Io	Average Rectified Current	200	mA
I _F	DC Forward Current	300	mA
İf	Recurrent Peak Forward Current	400	mA
İf(surge)	Peak Forward Surge Current Pulse width = 1.0 second Pulse width = 1.0 microsecond	1.0 4.0	A A
T _{stg}	Storage Temperature Range	-65 to +200	°C
TJ	Operating Junction Temperature	175	°C

^{*}These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

1) These ratings are based on a maximum junction temperature of 200 degrees C.

2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		1N/FDLL 914/A/B / 4148 / 4448	
P _D	Total Device Dissipation	500	mW
	Derate above 25°C	3.33	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	300	°C/W

High Conductance Fast Diode

(continued)

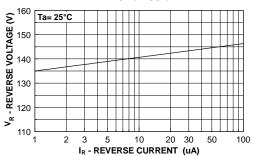
Electrical Characteristics

TA = 25°C unless otherwise noted

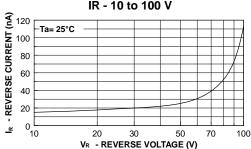
Symbol	Parameter	Test Conditions	Min	Max	Units
B _V	Breakdown Voltage	$I_R = 100 \mu A$	100		V
		$I_{R} = 5.0 \mu\text{A}$	75		V
I _R	Reverse Current	V _R = 20 V		25	nA
		$V_R = 20 \text{ V}, T_A = 150^{\circ}\text{C}$		50	μΑ
		V _R = 75 V		5.0	μA
V _F	Forward Voltage 1N914B / 4448	$I_F = 5.0 \text{ mA}$	620	720	mV
	1N916B	$I_F = 5.0 \text{ mA}$	630	730	mV
	1N914 / 916 / 4148	$I_F = 10 \text{ mA}$		1.0	V
	1N914A / 916A	$I_F = 20 \text{ mA}$		1.0	V
	1N916B	$I_F = 30 \text{ mA}$		1.0	V
	1N914B / 4448	$I_F = 100 \text{ mA}$		1.0	V
Co	Diode Capacitance				
	1N916/A/B / 4448	$V_R = 0$, $f = 1.0 \text{ MHz}$		2.0	pF
	1N914/A/B / 4148	$V_R = 0$, $f = 1.0 \text{ MHz}$		4.0	pF
T_RR	Reverse Recovery Time	$I_F = 10 \text{ mA}, V_R = 6.0 \text{ V } (60 \text{ mA}),$		4.0	nS
		$I_{rr} = 1.0 \text{ mA}, R_L = 100 \Omega$			

Typical Characteristics

REVERSE VOLTAGE vs REVERSE CURRENT BV - 1.0 to 100 uA

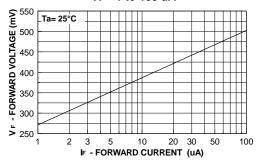


REVERSE CURRENT vs REVERSE VOLTAGE IR - 10 to 100 V

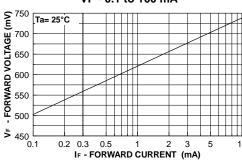


GENERAL RULE: The Reverse Current of a diode will approximat double for every ten (10) Degree C increase in Temperature

FORWARD VOLTAGE vs FORWARD CURRENT VF - 1 to 100 uA



FORWARD VOLTAGE vs FORWARD CURRENT VF - 0.1 to 100 mA

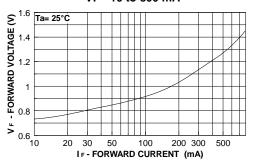


High Conductance Fast Diode

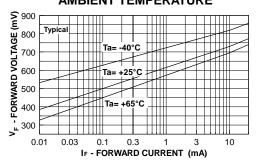
(continued)

Typical Characteristics (continued)

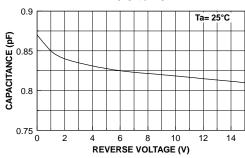
FORWARD VOLTAGE vs FORWARD CURRENT VF - 10 to 800 mA



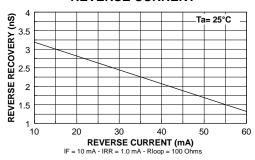
VF - 0.01 - 20 mA (-40 to +65 Deg C) FORWARD VOLTAGE vs AMBIENT TEMPERATURE



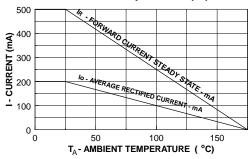
CAPACITANCE vs REVERSE VOLTAGE VR = 0.0 to 15 V



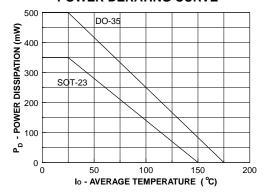
REVERSE RECOVERY TIME vs REVERSE CURRENT



Average Rectified Current (Io) & Forward Current (I) versus Ambient Temperature (TA)



POWER DERATING CURVE



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