

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

## Small Signal Diode



LL-34 COLOR BAND MARKING		
DEVICE	1ST BAND	2ND BAND
FDLL914	BLACK	BROWN
FDLL914A	BLACK	GRAY
FDLL914B	BROWN	BLACK
FDLL916	BLACK	RED
FDLL916A	BLACK	WHITE
FDLL916B	BROWN	BROWN
FDLL4148	BLACK	BROWN
FDLL4448	BROWN	BLACK

-1st band denotes cathode terminal and has wider width

### Absolute Maximum Ratings\* T<sub>a</sub>=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>R</sub> RM	Maximum Repetitive Reverse Voltage	100	V
I <sub>O</sub>	Average Rectified Forward Current	200	mA
I <sub>F</sub>	DC Forward Current	300	mA
i <sub>f</sub>	Recurrent Peak Forward Current	400	mA
I <sub>FSM</sub>	Non-repetitive Peak Forward Surge Current		
	Pulse Width = 1.0 second	1.0	A
	Pulse Width = 1.0 microsecond	4.0	A
T <sub>STG</sub>	Storage Temperature Range	-65 to + 175	°C
T <sub>J</sub>	Operating Junction Tempera	-65 to + 175	°C

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

**NOTES:**

- 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

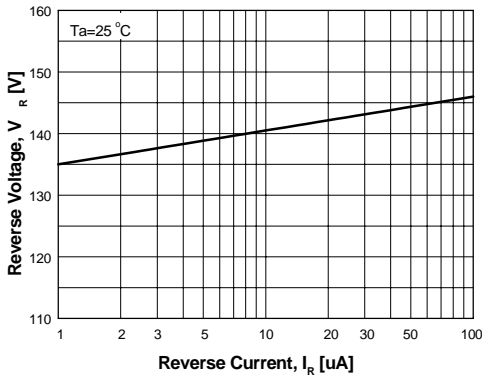
Symbol	Parameter	Max.	Units
		1N/FDLL 914/A/B / 4148 / 4448	
P <sub>D</sub>	Power Dissipation	500	mW
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	300	°C/W

**Electrical Characteristics\*** T<sub>A</sub>=25°C unless otherwise noted

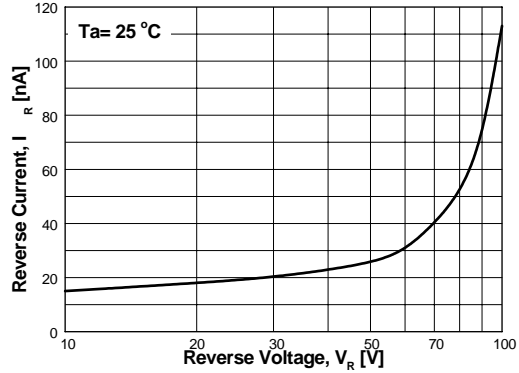
Symbol	Parameter	Test Conditions	Min.	Max.	Units
V <sub>R</sub>	Breakdown Voltage	I <sub>R</sub> = 100μA I <sub>R</sub> = 5.0μA	100 75		V V
V <sub>F</sub>	Forward Voltage	1N914B/4448 I <sub>F</sub> = 5.0mA 1N916B I <sub>F</sub> = 5.0mA 1N914/916/4148 I <sub>F</sub> = 10mA 1N914A/916A I <sub>F</sub> = 20mA 1N916B I <sub>F</sub> = 20mA 1N914B/4448 I <sub>F</sub> = 100mA	620 630	720 730 1.0 1.0 1.0 1.0	mV mV V V V V
I <sub>R</sub>	Reverse Leakage	V <sub>R</sub> = 20V V <sub>R</sub> = 20V, T <sub>A</sub> = 150°C V <sub>R</sub> = 75V		25 50 5.0	nA μA μA
C <sub>T</sub>	Total Capacitance	V <sub>R</sub> = 0, f = 1.0MHz V <sub>R</sub> = 0, f = 1.0MHz		2.0 4.0	pF pF
t <sub>rr</sub>	Reverse Recovery Time	I <sub>F</sub> = 10mA, V <sub>R</sub> = 6.0V (600mA) I <sub>rr</sub> = 1.0mA, R <sub>L</sub> = 100Ω		4.0	ns

\* Non-recurrent square wave PW = 8.3ms

**Typical Characteristics**

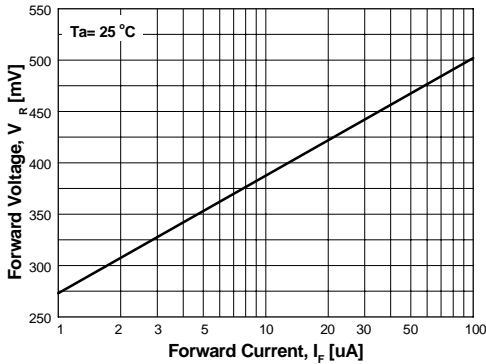


**Figure 1. Reverse Voltage vs Reverse Current**  
BV - 1.0 to 100μA

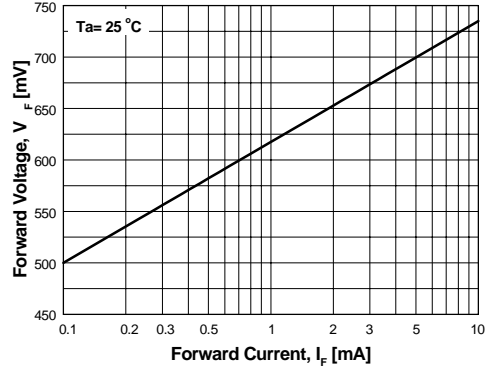


**Figure 2. Reverse Current vs Reverse Voltage**  
IR - 10 to 100V

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

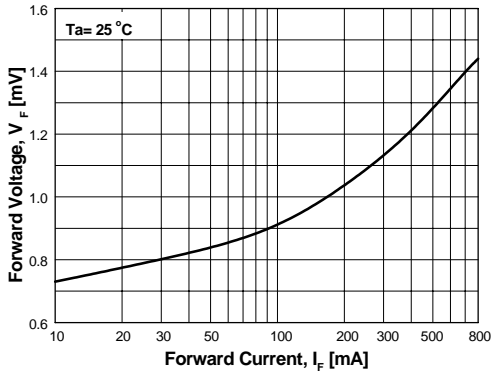


**Figure 3. Forward Voltage vs Forward Current**  
VF - 1 to 100μA

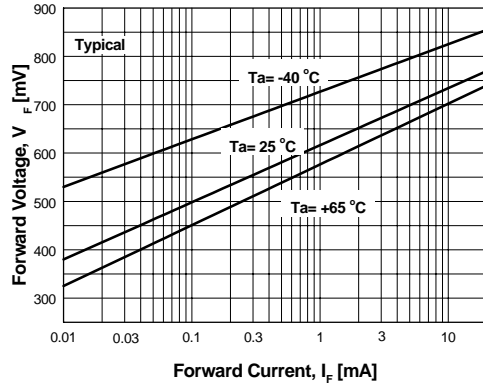


**Figure 4. Forward Voltage vs Forward Current**  
VF - 0.1 to 10mA

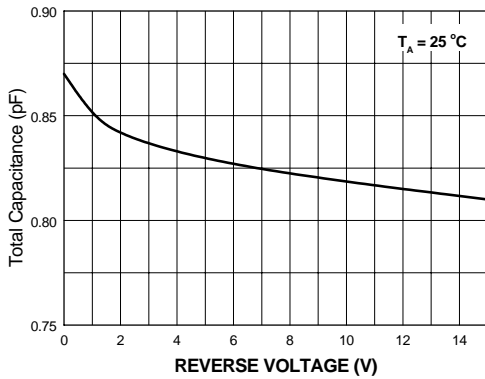
**Typical Characteristics** (Continued)



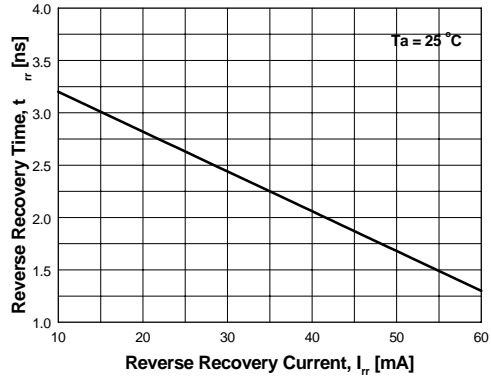
**Figure 5. Forward Voltage vs Forward Current**  
VF - 10 to 800mA



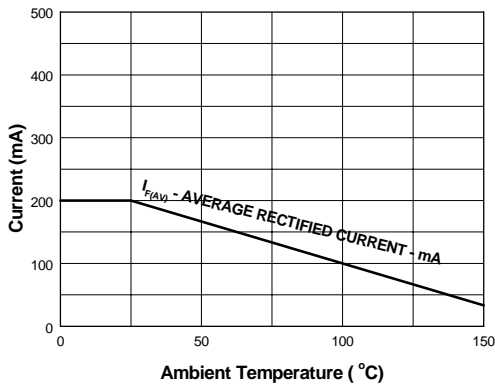
**Figure 6. Forward Voltage vs Ambient Temperature**  
VF - 0.01 - 20 mA (- 40 to +65°C)



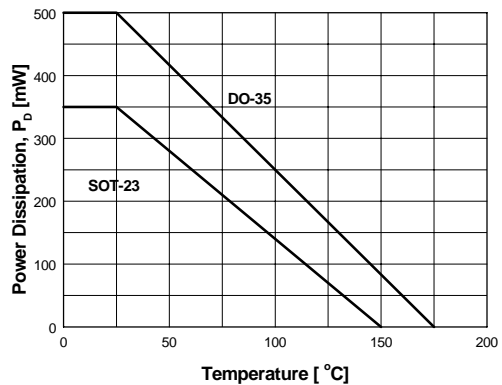
**Figure 7. Total Capacitance**



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



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



**Figure 10. Power Derating Curve**

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FASTr™	MicroPak™	QT Optoelectronics™	TinyPWM™	
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