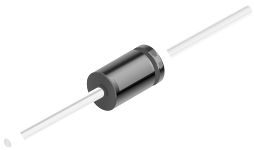
FAIRCHILD SEMICONDUCTOR®

January 2007

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



DO-35
Cathode is denoted with a black band

LL-34
THE PLACEMENT OF THE EXPANSION GAP HAS NO RELATIONSHIP TO THE LOCATION OF THE CATHODE TERMINAL

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_a=25°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 second Pulse Width = 1.0 microsecond	 1.0 4.0	 A A
T_{STG}	Storage Temperature Range	-65 to + 175	°C
T_J	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_D	Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	300	°C/W

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Electrical Characteristics*

T_A=25°C unless otherwise noted

Symbol	Parameter		Test Conditions	Min.	Max.	Units
V_R	Breakdown Voltage		I_R = 100μA I_R = 5.0μA	100 75		V V
V_F	Forward Voltage	1N914B/4448	I_F = 5.0mA	620	720	mV
		1N916B	I_F = 5.0mA	630	730	mV
		1N914/916/4148	I_F = 10mA		1.0	V
		1N914A/916A	I_F = 20mA		1.0	V
		1N916B	I_F = 20mA		1.0	V
		1N914B/4448	I_F = 100mA		1.0	V
I_R	Reverse Leakage		V_R = 20V V_R = 20V, T_A = 150°C V_R = 75V		25 50 5.0	nA μA μA
C_T	Total Capacitance 1N916A/B/4448 1N914A/B/4148		 V_R = 0, f = 1.0MHz V_R = 0, f = 1.0MHz		 2.0 4.0	 pF pF
t_{rr}	Reverse Recovery Time		I_F = 10mA, V_R = 6.0V (600mA) I_{rr} = 1.0mA, R_L = 100Ω		4.0	ns

* Non-recurrent square wave PW = 8.3ms

Typical Characteristics

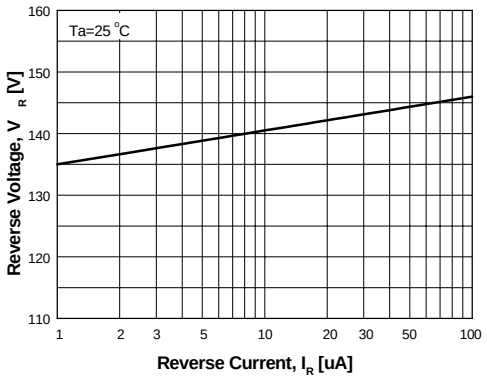
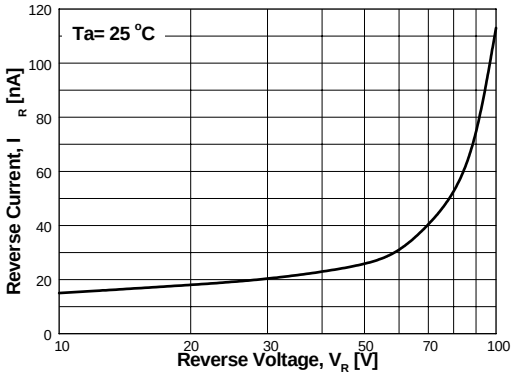


Figure 1. Reverse Voltage vs Reverse Current
BV - 1.0 to 100μA



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

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

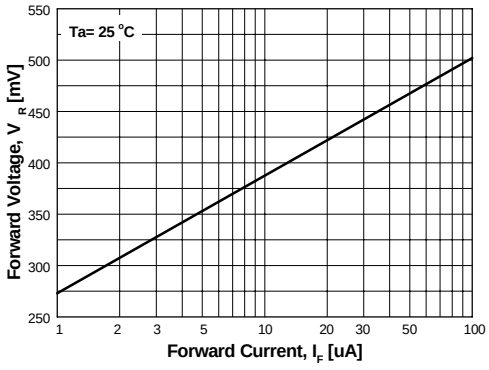


Figure 3. Forward Voltage vs Forward Current
VF - 1 to 100μA

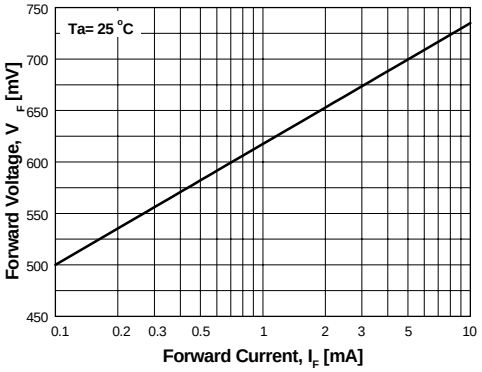


Figure 4. Forward Voltage vs Forward Current
VF - 0.1 to 10mA

Typical Characteristics (Continued)

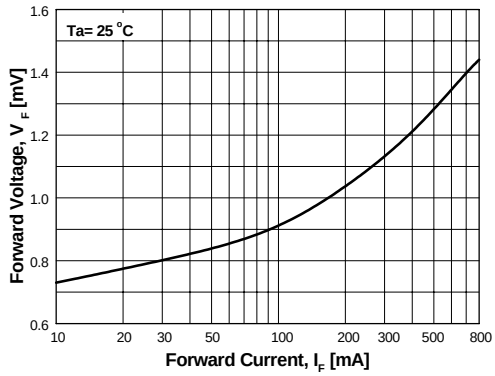


Figure 5. Forward Voltage vs Forward Current VF - 10 to 800mA

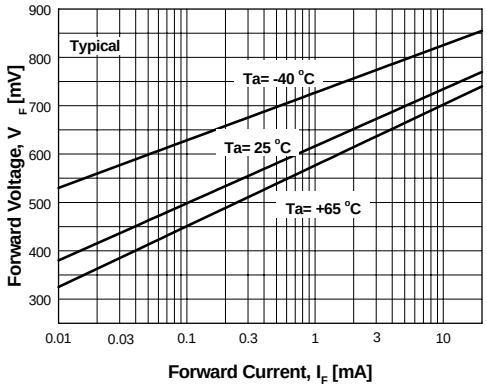


Figure 6. Forward Voltage vs Ambient Temperature VF - 0.01 - 20 mA (- 40 to +65°C)

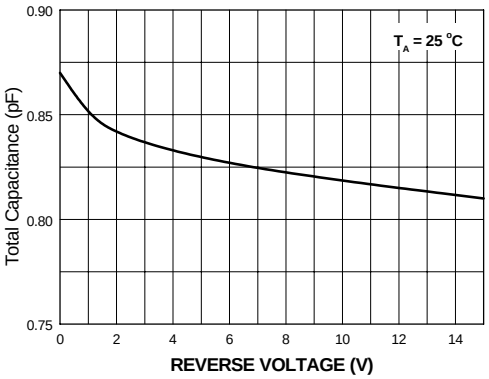
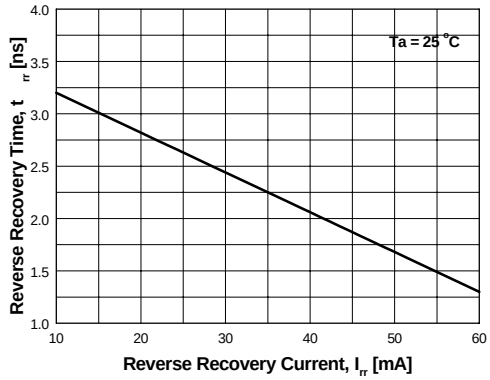


Figure 7. Total Capacitance



IF = 10mA , IRR = 1.0 mA , Rloop = 100 Ohms

Figure 8. Reverse Recovery Time vs Reverse Recovery Current

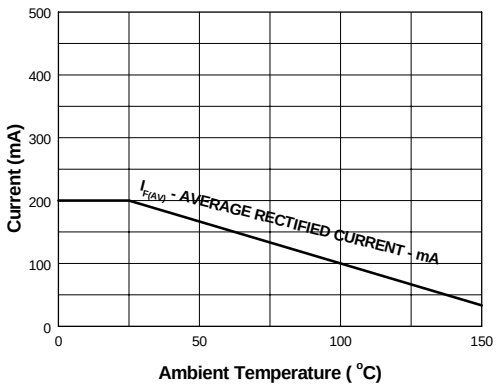


Figure 9. Average Rectified Current ($I_{F(AV)}$) vs Ambient Temperature (T_A)

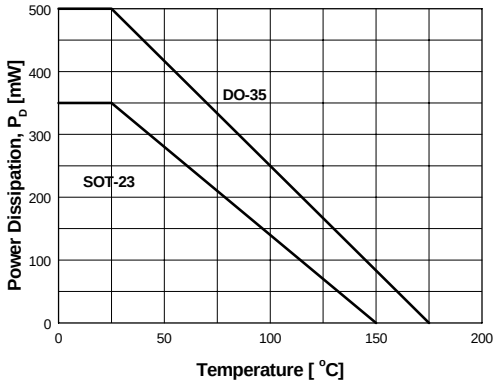


Figure 10. Power Derating Curve

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