FAIRCHILD
SEMICONDUCTOR®

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

DO-35

LL-34

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	BLACK	GRAY
FDLL914B	BROWN	BLACK
FDLL916	BLACK	RED
FDLL916A	BLACK	WHITE
FDLL916B	BROWN	BROWN
FDLL4148	BLACK	BROWN
FDLL4448	BROWN	BLACK

Small Signal Diode

Absolute Maximum Ratings*

T_A = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{RRM}	Maximum Repetitive Reverse Voltage	100	V
$I_{F(AV)}$	Average Rectified Forward Current	200	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 +200	°C
T_J	Operating Junction Temperature	175	°C

*These ratings are limiting values above which the serviceability of any semiconductor device 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	Characteristic	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

Small Signal Diode
(continued)

Electrical Characteristics
T_A = 25°C unless otherwise noted

Symbol	Parameter		Test Conditions	Min	Max	Units
V_R	Breakdown Voltage		I_R = 100 µA	100		V
			I_R = 5.0 µA	75		V
V_F	Forward Voltage	**1N914B/4448**	I_F = 5.0 mA	620	720	mV
		1N916B	I_F = 5.0 mA	630	730	mV
		1N914/916/4148	I_F = 10 mA		1.0	V
		1N914A/916A	I_F = 20 mA		1.0	V
		1N916B	I_F = 20 mA		1.0	V
		1N914B/4448	I_F = 100 mA		1.0	V
I_R	Reverse Current		V_R = 20 V		25	nA
			V_R = 20 V, T_A = 150°C		50	µA
			V_R = 75 V		5.0	µA
C_T	Total Capacitance					
		1N916A/B/4448	V_R = 0, f = 1.0 MHz		2.0	pF
		1N914A/B/4148	V_R = 0, f = 1.0 MHz		4.0	pF
t_{rr}	Reverse Recovery Time		I_F = 10 mA, V_R = 6.0 V (60mA), I_{rr} = 1.0 mA, R_L = 100Ω		4.0	ns

Typical Characteristics

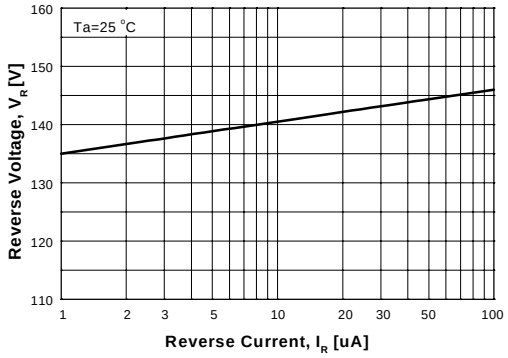
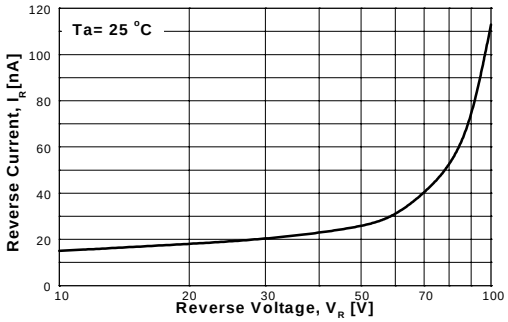


Figure 1. Reverse Voltage vs Reverse Current
BV - 1.0 to 100 uA



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 100 V

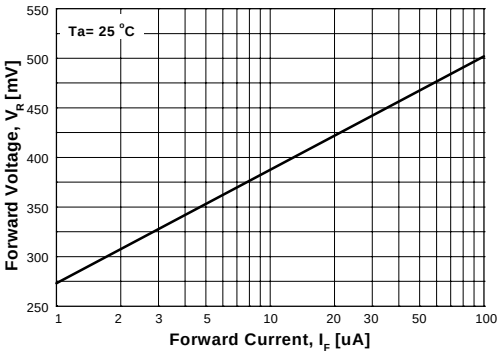


Figure 3. Forward Voltage vs Forward Current
VF - 1 to 100 uA

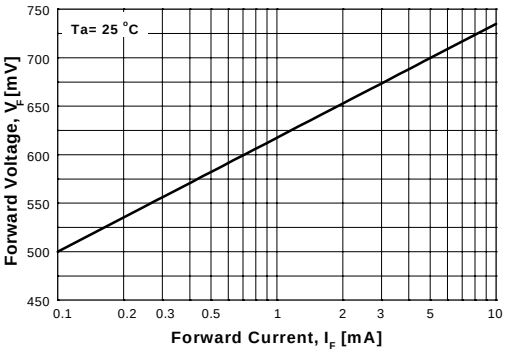


Figure 4. Forward Voltage vs Forward Current
VF - 0.1 to 10 mA

Typical Characteristics (continued)

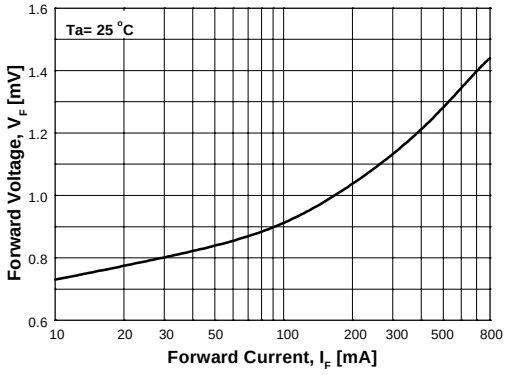


Figure 5. Forward Voltage vs Forward Current VF - 10 to 800 mA

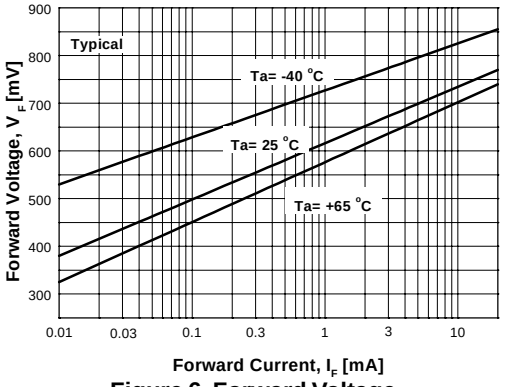


Figure 6. Forward Voltage vs Ambient Temperature VF - 0.01 - 20 mA (-40 to +65 Deg C)

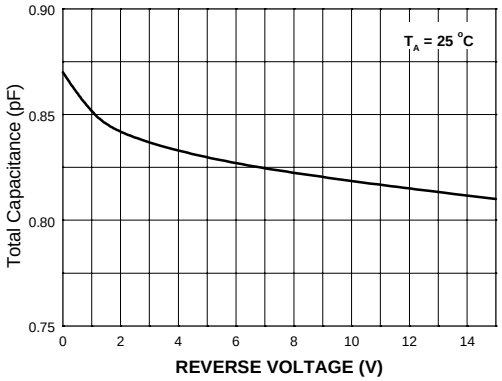


Figure 7. Total Capacitance

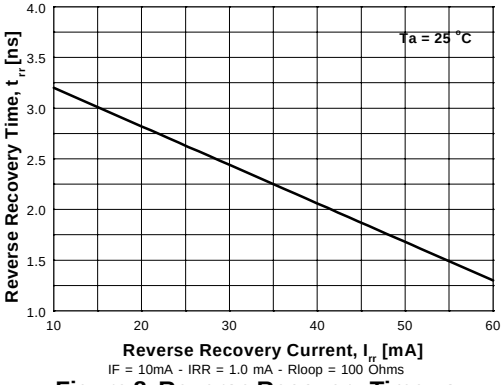


Figure 8. Reverse Recovery Time vs Reverse Recovery Current

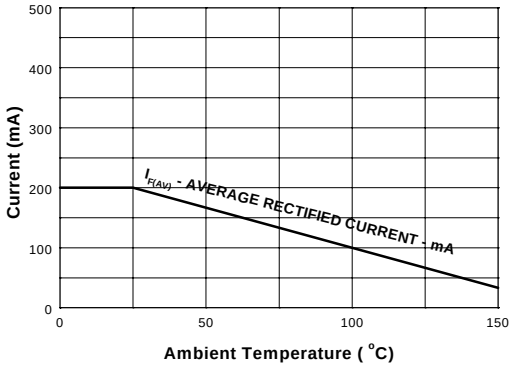


Figure 9. Average Rectified Current ($I_{F(AV)}$) versus Ambient Temperature (T_A)

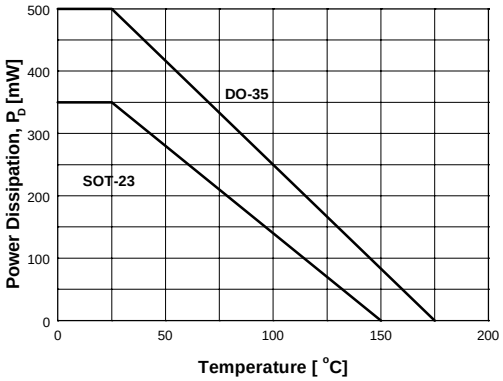


Figure 10. Power Derating Curve