

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

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
I_O	Average Rectified Current	200	mA
I_F	DC Forward Current	300	mA
I_{fr}	Recurrent Peak Forward Current	400	mA
$I_{f(surge)}$	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
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

TA = 25°C unless otherwise noted

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

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

High Conductance Fast Diode

(continued)

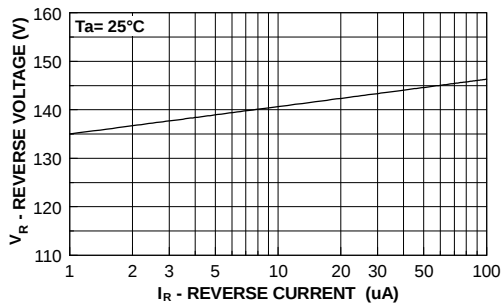
Electrical Characteristics

T_A = 25°C unless otherwise noted

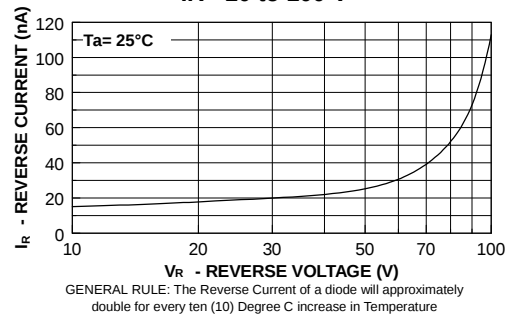
Symbol	Parameter	Test Conditions	Min	Max	Units
B _V	Breakdown Voltage	I _R = 100 μA I _R = 5.0 μA	100 75		V V
I _R	Reverse Current	V _R = 20 V V _R = 20 V, T _A = 150°C V _R = 75 V		25 50 5.0	nA μA μA
V _F	Forward Voltage	1N914B / 4448 1N916B 1N914 / 916 / 4148 1N914A / 916A 1N916B 1N914B / 4448	I _F = 5.0 mA I _F = 5.0 mA I _F = 10 mA I _F = 20 mA I _F = 30 mA I _F = 100 mA	620 630 720 730 1.0 1.0 1.0	mV mV V V V V
C _O	Diode Capacitance	1N916A/B / 4448 1N914A/B / 4148	V _R = 0, f = 1.0 MHz V _R = 0, f = 1.0 MHz	2.0 4.0	pF pF
T _{RR}	Reverse Recovery Time	I _F = 10 mA, V _R = 6.0 V (60 mA), I _{tr} = 1.0 mA, R _L = 100 Ω		4.0	nS

Typical Characteristics

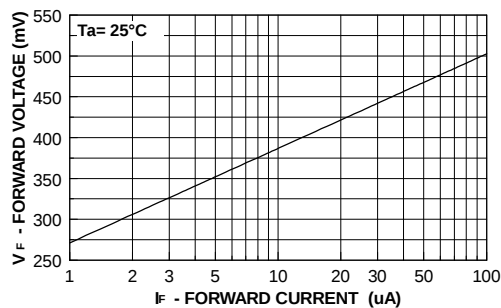
REVERSE VOLTAGE vs REVERSE CURRENT
BV - 1.0 to 100 μA



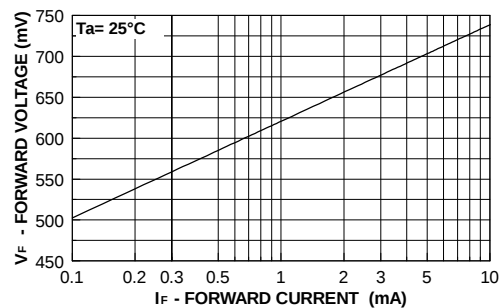
REVERSE CURRENT vs REVERSE VOLTAGE
IR - 10 to 100 V



FORWARD VOLTAGE vs FORWARD CURRENT
VF - 1 to 100 μA



FORWARD VOLTAGE vs FORWARD CURRENT
VF - 0.1 to 100 mA



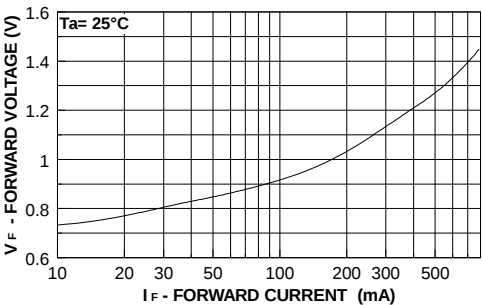
1N/FD/L 914/A/B / 916/A/B / 4148 / 4448

High Conductance Fast Diode
(continued)

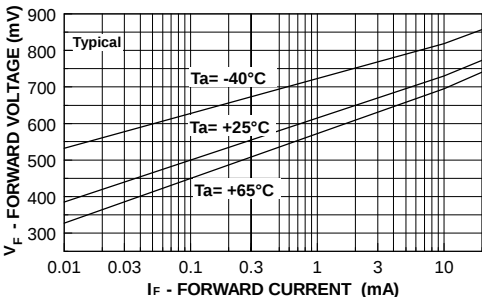
1N/FD/L 914/A/B / 916/A/B / 4148 / 4448

Typical Characteristics (continued)

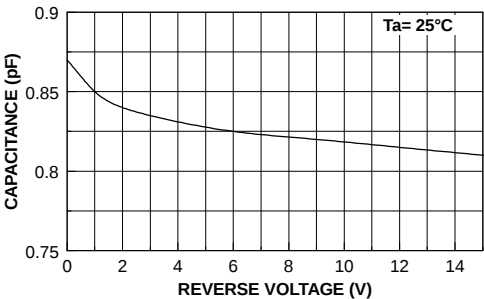
FORWARD VOLTAGE vs FORWARD CURRENT
VF - 10 to 800 mA



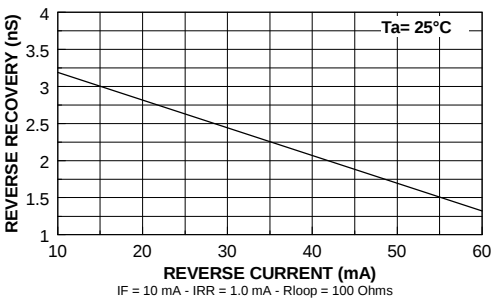
VF - 0.01 - 20 mA (-40 to +65 Deg C)
FORWARD VOLTAGE vs
AMBIENT TEMPERATURE



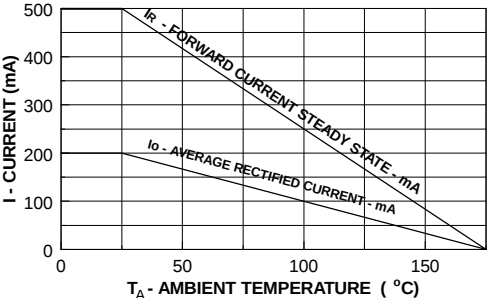
CAPACITANCE vs REVERSE VOLTAGE
VR = 0.0 to 15 V



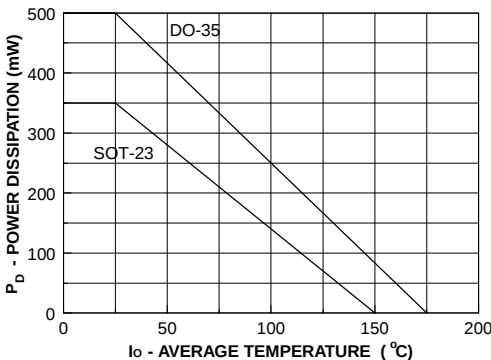
REVERSE RECOVERY TIME vs
REVERSE CURRENT



Average Rectified Current (I_o) &
Forward Current (I_F) versus
Ambient Temperature (T_A)



POWER DERATING CURVE



TRADEMARKS

The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACE ^x ™	ISOPLANAR™
CoolFET™	MICROWIRE™
CROSSVOLT™	POP™
E ² CMOS™	PowerTrench™
FACT™	QS™
FACT Quiet Series™	Quiet Series™
FAST®	SuperSOT™-3
FAST ^r ™	SuperSOT™-6
GTO™	SuperSOT™-8
HiSeC™	TinyLogic™

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.