



# 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<sub>A</sub> = 25°C unless otherwise noted

| Symbol             | Parameter  | Value       | Units |
|--------------------|--|-------------|-------|
| V <sub>RRM</sub>   | Maximum Repetitive Reverse Voltage   | 100         | V     |
| I <sub>F(AV)</sub> | Average Rectified Forward Current  | 200         | mA    |
| I <sub>FSM</sub>   | Non-repetitive Peak Forward Surge Current<br>Pulse Width = 1.0 second<br>Pulse Width = 1.0 microsecond | 1.0         | A     |
|                    |  | 4.0         | A     |
| T <sub>stg</sub>   | Storage Temperature Range  | -65 to +200 | °C    |
| T <sub>J</sub>     | 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 <sub>D</sub>   | Power Dissipation                       | 500                           | mW    |
| R <sub>θJA</sub> | Thermal Resistance, Junction to Ambient | 300                           | °C/W  |

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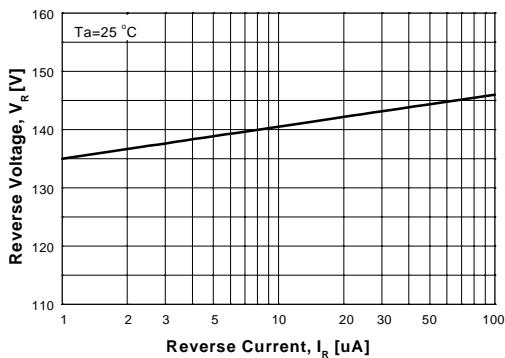
(continued)

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

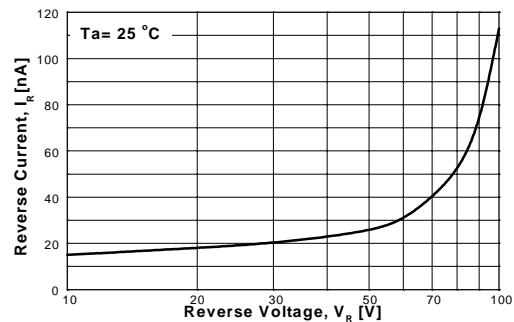
| Symbol          | Parameter             | Test Conditions   | Min   | Max  | Units                        |          |
|-----------------|-----------------------|---|---|--|------------------------------|----------|
| V <sub>R</sub>  | Breakdown Voltage     | I <sub>R</sub> = 100 μA<br>I <sub>R</sub> = 5.0 μA  | 100<br>75   |  | V<br>V                       |          |
| V <sub>F</sub>  | Forward Voltage       | 1N914B/4448<br>1N916B<br>1N914/916/4148<br>1N914A/916A<br>1N916B<br>1N914B/4448                           | I <sub>F</sub> = 5.0 mA<br>I <sub>F</sub> = 5.0 mA<br>I <sub>F</sub> = 10 mA<br>I <sub>F</sub> = 20 mA<br>I <sub>F</sub> = 20 mA<br>I <sub>F</sub> = 100 mA | 620<br>630<br>720<br>730<br>1.0<br>1.0<br>1.0<br>1.0 | mV<br>mV<br>V<br>V<br>V<br>V |          |
| I <sub>R</sub>  | Reverse Current       | V <sub>R</sub> = 20 V<br>V <sub>R</sub> = 20 V, T <sub>A</sub> = 150°C<br>V <sub>R</sub> = 75 V           |   | 25<br>50<br>5.0                                      | nA<br>μA<br>μA               |          |
| C <sub>T</sub>  | Total Capacitance     | 1N916A/B/4448<br>1N914A/B/4148  | V <sub>R</sub> = 0, f = 1.0 MHz<br>V <sub>R</sub> = 0, f = 1.0 MHz  |  | 2.0<br>4.0                   | pF<br>pF |
| t <sub>rr</sub> | Reverse Recovery Time | I <sub>F</sub> = 10 mA, V <sub>R</sub> = 6.0 V (60mA),<br>I <sub>rr</sub> = 1.0 mA, R <sub>L</sub> = 100Ω |   | 4.0  | ns                           |          |

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## Typical Characteristics

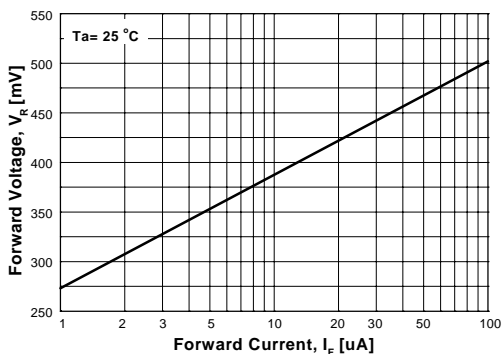


**Figure 1. Reverse Voltage vs Reverse Current**  
BV - 1.0 to 100 uA

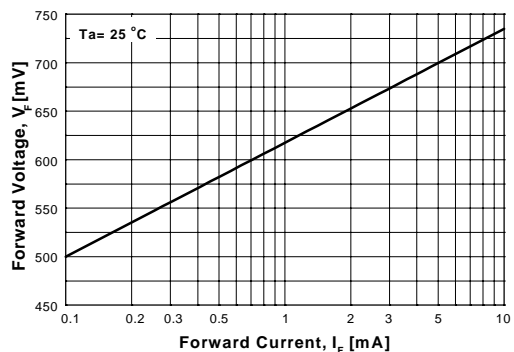


**Figure 2. Reverse Current vs Reverse Voltage**  
IR - 10 to 100 V

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 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

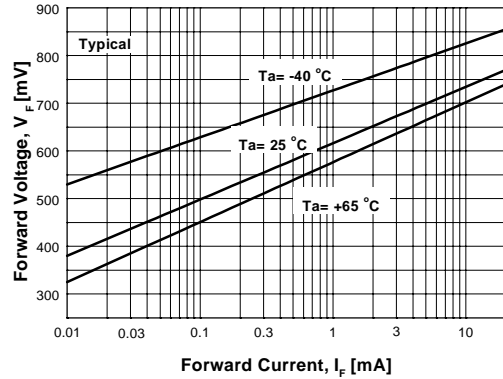


Figure 6. Forward Voltage  
vs Ambient Temperature  
VF - 0.01 - 20 mA (-40 to +65 Deg C)



Figure 7. Total Capacitance

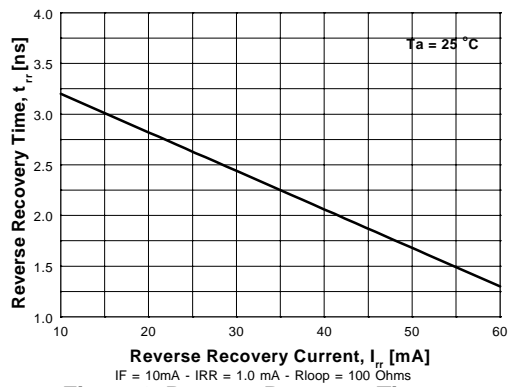


Figure 8. Reverse Recovery Time vs  
Reverse Recovery Current

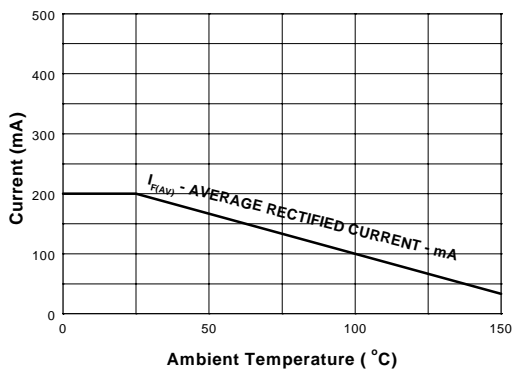


Figure 9. Average Rectified Current ( $I_{F(AV)}$ )  
versus Ambient Temperature ( $T_A$ )

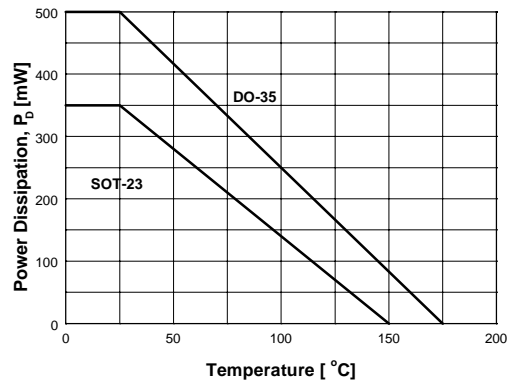


Figure 10. Power Derating Curve