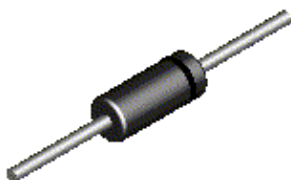


1N4150 / FDLL4150



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 |
| FDLL4150 | BLACK | ORANGE |

High Conductance Ultra Fast Diode

Sourced from Process 1R. See MMBD1201-1205 for characteristics.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|----------------|--------------------------------|-------------|-------|
| W_{IV} | Working Inverse Voltage | 50 | V |
| I_O | Average Rectified Current | 200 | mA |
| I_F | DC Forward Current | 400 | mA |
| i_f | Recurrent Peak Forward Current | 600 | mA |
| $i_{f(surge)}$ | Peak Forward Surge Current | | |
| | Pulse width = 1.0 second | 1.0 | A |
| | Pulse width = 1.0 microsecond | 4.0 | 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 4150 | |
| P_D | Total Device Dissipation Derate above 25°C | 500 | mW |
| | | 3.33 | mW/°C |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 300 | °C/W |

High Conductance Ultra Fast Diode

(continued)

Electrical Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Conditions | Min | Max | Units |
|----------|-----------------------|--|----------------------------------|---------------------------------|---------------------------|
| B_V | Breakdown Voltage | $I_R = 5.0 \mu\text{A}$ | 75 | | V |
| I_R | Reverse Current | $V_R = 50 \text{ V}$ $V_R = 50 \text{ V}, T_A = 150^\circ\text{C}$ | | 100 100 | nA μA |
| V_F | Forward Voltage | $I_F = 1.0 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 50 \text{ mA}$ $I_F = 100 \text{ mA}$ $I_F = 200 \text{ mA}$ | 540 660 760 820 0.87 | 620 740 860 920 1.0 | mV mV mV mV V |
| C_O | Diode Capacitance | $V_R = 0, f = 1.0 \text{ MHz}$ | | 2.5 | pF |
| T_{RR} | Reverse Recovery Time | $I_F = I_R = 10 \text{ mA-}200 \text{ mA}, R_L = 100\Omega$ $I_F = I_R = 200 \text{ mA-}400 \text{ mA}, R_L = 100\Omega$ | | 4.0 6.0 | nS nS |
| T_{FR} | Forward Recovery Time | $I_F = 200 \text{ mA}, V_{FR} = 1.0 \text{ V}$ | | 10 | nS |

1N4150 / FDLL4150

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| E ² CMOS™ | PowerTrench™ |
| FACT™ | QS™ |
| FACT Quiet Series™ | Quiet Series™ |
| FAST® | SuperSOT™-3 |
| FASTr™ | SuperSOT™-6 |
| GTO™ | SuperSOT™-8 |
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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. |
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