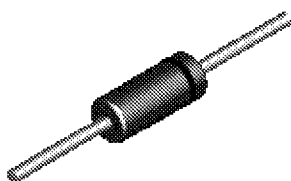


FDH / FDLL 600



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 |
| FDLL600 | RED | WHITE |

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 |
|-----------------|---|--------------|-------|
| | | FDH/FDLL 600 | |
| 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

TA = 25°C unless otherwise noted

| Symbol | Parameter | Test Conditions | Min | Max | Units |
|-----------------|-----------------------|--|-----|---------------------------------|---------------------------|
| B _V | Breakdown Voltage | I _R = 5.0 μA | 75 | | V |
| I _R | Reverse Current | V _R = 50 V V _R = 50 V, T _A = 150°C | | 100 100 | nA μA |
| V _F | Forward Voltage | I _F = 1.0 mA I _F = 10 mA I _F = 50 mA I _F = 100 mA I _F = 200 mA | | 650 790 860 920 1.0 | mV mV mV mV V |
| C _O | Diode Capacitance | V _R = 0, f = 1.0 MHz | | 2.5 | pF |
| T _{RR} | Reverse Recovery Time | I _F = I _R = 10 mA, I _{rr} = 1.0 mA, R _L = 100 Ω I _F = I _R = 200 mA, I _{rr} = 20 mA, R _L = 100 Ω | | 4.0 6.0 | nS nS |

FDH600 / FDLL600

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| CoolFET™ | MICROWIRE™ |
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| E ² CMOS™ | PowerTrench™ |
| FACT™ | QS™ |
| FACT Quiet Series™ | Quiet Series™ |
| FAST® | SuperSOT™-3 |
| FASTr™ | SuperSOT™-6 |
| GTO™ | SuperSOT™-8 |
| HiSeC™ | TinyLogic™ |

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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. |
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