

**FAIRCHILD**

A Schlumberger Company

**FDH600/FDLL600**  
**FDH666/FDLL666**  
Ultra Fast Diodes

T-03-09

- C... 2.5 pF (MAX) FDH600, 3.5 pF (MAX) FDH666
- V<sub>F</sub>... 1.0 V (MAX) @ 100 mA (FDH666)  
... 1.0 V (MAX) @ 200 mA (FDH600)
- t<sub>rr</sub>... 4.0 ns (MAX) @ I<sub>f</sub> = I<sub>r</sub> = 10 mA

**PACKAGES**

FDH600	DO-35
FDH666	DO-35
FDLL600	LL-34
FDLL666	LL-34

**ABSOLUTE MAXIMUM RATINGS (Note 1)**

**Temperatures**

Storage Temperature Range	-65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

If you need this device in the SOT package, an electrical equivalent is available. See FDS01200 family.

**Power Dissipation (Note 2)**

Maximum Total Dissipation at 25°C Ambient	500 mW
Linear Derating Factor (from 25°C)	3.33 mW/°C

**Maximum Voltage and Currents**

		FDH 600	FDH 666
WIV	Working Inverse Voltage	50 V	25 V
I <sub>O</sub>	Average Rectified Current	200 mA	200 mA
I <sub>F</sub>	Continuous Forward Current	500 mA	500 mA
I <sub>f</sub>	Recurrent Peak Forward Current	600 mA	600 mA
I <sub>f</sub> (surge)	Peak Forward Surge Current		
	Pulse Width = 1.0 s	1.0 A	1.0 A
	Pulse Width = 1.0 μs	4.0 A	4.0 A

**ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)**

SYMBOL	CHARACTERISTIC	FDH600		FDH666		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX		
V <sub>F</sub>	Forward Voltage		1.0			V	I <sub>F</sub> = 200 mA
			0.92		1.0	V	I <sub>F</sub> = 100 mA
			0.86		0.86	V	I <sub>F</sub> = 50 mA
			0.79		0.79	V	I <sub>F</sub> = 10 mA
			0.65		0.65	V	I <sub>F</sub> = 1.0 mA
I <sub>R</sub>	Reverse Current		0.1			μA	V <sub>R</sub> = 50 V
			100		0.1	μA	V <sub>R</sub> = 25 V
					100	μA	V <sub>R</sub> = 50 V, T <sub>A</sub> = 150°C V <sub>R</sub> = 25 V, T <sub>A</sub> = 150°C
BV	Breakdown Voltage	75		40		V	I <sub>R</sub> = 5.0 μA
t <sub>rr</sub>	Reverse Recovery Time (Note 3)		4.0		4.0	ns	I <sub>f</sub> = I <sub>r</sub> = 10 mA, R <sub>L</sub> = 100 Ω
			6.0		6.0	ns	I <sub>f</sub> = I <sub>r</sub> = 200 mA, R <sub>L</sub> = 100 Ω
C	Capacitance		2.5		3.5	pF	V <sub>R</sub> = 0, f = 1.0 MHz

**NOTES:**

1. The maximum ratings are limiting values above which life or satisfactory performance may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
3. Recovery to 0.1 I<sub>R</sub>.
4. For product family characteristic curves, refer to Chapter 4, D4.