

**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
- $V_F$ ... 1.0 V (MAX) @ 100 mA (FDH666)  
... 1.0 V (MAX) @ 200 mA (FDH600)
- $t_{rr}$ ... 4.0 ns (MAX) @  $I_f = I_r = 10$  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 FDSO1200 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
$I_O$	Average Rectified Current	200 mA	200 mA
$I_F$	Continuous Forward Current	500 mA	500 mA
$I_f$	Recurrent Peak Forward Current	600 mA	600 mA
$I_f$ (surge)	Peak Forward Surge Current		
	Pulse Width = 1.0 s	1.0 A	1.0 A
	Pulse Width = 1.0 $\mu$ s	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		
$V_F$	Forward Voltage		1.0			V	$I_F = 200$ mA
			0.92		1.0	V	$I_F = 100$ mA
			0.86		0.86	V	$I_F = 50$ mA
			0.79		0.79	V	$I_F = 10$ mA
			0.65		0.65	V	$I_F = 1.0$ mA
$I_R$	Reverse Current		0.1			$\mu$ A	$V_R = 50$ V
			100		0.1	$\mu$ A	$V_R = 25$ V
					100	$\mu$ A	$V_R = 50$ V, $T_A = 150^\circ$ C $V_R = 25$ V, $T_A = 150^\circ$ C
BV	Breakdown Voltage	75		40		V	$I_R = 5.0$ $\mu$ A
$t_{rr}$	Reverse Recovery Time (Note 3)		4.0		4.0	ns	$I_f = I_r = 10$ mA, $R_L = 100$ $\Omega$
			6.0		6.0	ns	$I_f = I_r = 200$ mA, $R_L = 100$ $\Omega$
C	Capacitance		2.5		3.5	pF	$V_R = 0$ , $f = 1.0$ MHz

**NOTES:**

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