T-03-09

FAIRCHILD
A Schlumberger Company

FDH600/FDLL600
FDH666/FDLL666
Ultra Fast Diodes

- 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

If you need this device in the SOT package, an electical equivalent is available. See FDSO1200 family.

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

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

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 μs	4.0 A	4.0 A

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

SYMBOL	CHARACTERISTIC	FDH600 MIN	FDH600 MAX	FDH666 MIN	FDH666 MAX	UNITS	TEST CONDITIONS
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			μA	V_R = 50 V
					0.1	μA	V_R = 25 V
			100			μA	V_R = 50 V, T_A = 150°C
					100	μA	V_R = 25 V, T_A = 150°C
BV	Breakdown Voltage	75		40		V	I_R = 5.0 μA
t_{rr}	Reverse Recovery Time (Note 3)		4.0		4.0	ns	$I_f = I_r$ = 10 mA, R_L = 100 Ω
			6.0		6.0	ns	$I_f = I_r$ = 200 mA, R_L = 100 Ω
C	Capacitance		2.5		3.5	pF	V_R = 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_R.
4. For product family characteristic curves, refer to Chapter 4, D4.