FAIRCHILD
A Schlumberger Company

FD700/FDLL700
FD777/FDLL777
Ultra Fast Diodes

T-03-09

- C...1.0 pF (MAX) @ V_R = 0, f = 1.0 MHz (FD 700)
- t_{rr}...700 ps (MAX) @ $I_f = I_r$ = 10 mA, R_L = 100 Ω (FD 700)
- CONTROLLED FORWARD CONDUCTANCE

PACKAGES

FD700	DO-7
FD777	DO-7
FDLL700	LL-34
FDLL777	LL-34

If you need this device in the SOT package, an electical equivalent is available. See FDSO1700 family.

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ABSOLUTE MAXIMUM RATINGS (Note 1)

		FD700	FD777
Temperatures			
Storage Temperature Range		−65°C to +200°C	−65°C to +200°C
Max Junction Operating Temperature		+175°C	+175°C
Lead Temperature		+260°C	+260°C
Power Dissipation			
Maximum Total Dissipation at 25°C Ambient		250 mW	250 mW
Linear Derating Factor (from 25°C)		1.67 mW/°C	1.67 mW/°C
Maximum Voltages and Currents			
WIV	Working Inverse Voltage	20 V	8.0 V
I_O	Average Rectified Current	50 mA	50 mA
I_F	Forward Current Steady State dc	150 mA	150 mA
I_f	Recurrent Peak Forward Current	150 mA	150 mA
I_f (surge)	Peak Forward Surge Current Pulse Width = 1.0 s	250 mA	250 mA

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

SYMBOL	CHARACTERISTIC	FD700 MIN	FD700 MAX	FD777 MIN	FD777 MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage	0.89	1.10	0.89	1.35	V	I_F = 50 mA
		0.81	0.95	0.81	1.00	V	I_F = 20 mA
		0.76	0.88	0.76	0.94	V	I_F = 10 mA
		0.64	0.74	0.64	0.79	V	I_F = 1.0 mA
		0.52	0.61	0.52	0.64	V	I_F = 0.1 mA
		0.42	0.50	0.42	0.53	V	I_F = 0.01 mA
BV	Breakdown Voltage	30		15		V	I_R = 5.0 μA
I_R	Reverse Current		50			nA	V_R = 20 V
					100	nA	V_R = 8.0 V
			50			μA	V_R = 20 V, T_A = 150°C
					50	μA	V_R = 8.0 V, T_A = 150°C
τ	Minority Carrier Lifetime		450		450	ps	(see Note 2)
t_{rr}	Reverse Recovery Time (Note 3)		700		750	ps	$I_f = I_r$ = 10 mA, R_L = 100 Ω
C	Capacitance		1.0		1.3	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. Measured as suggested by S. M. Krakauer, IRE Proceedings, Volume 60, July 1962, pp. 1674 - 1675.
3. Recovery to 0.1 I_R.
4. For product family characteristic curves, refer to Chapter 4, D3.