Silicon – Diode

FDH666

25V/200mA

DATASHEET

OEM – Fairchild

Source: Fairchild Databook 1978

Datasheet Rev. 1.3 – 03/19 - data without warranty / liability

FDH600 • FDH666

ULTRA FAST DIODES

DIFFUSED SILICON PLANAR EPITAXIAL

- **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**

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

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

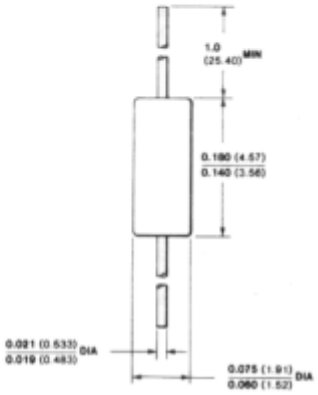
Power Dissipation (Note 2)

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

DO-35 OUTLINE



NOTES:
Copper clad steel leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.14 gram

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			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.

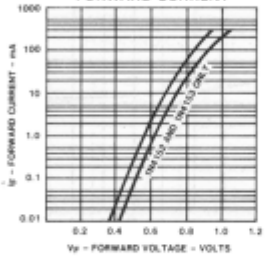
CURVE SET NUMBER D4

HIGH SPEED GENERAL PURPOSE SMALL SIGNAL DIODE

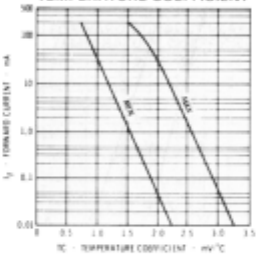
TYPICAL ELECTRICAL CHARACTERISTIC CURVES

AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED

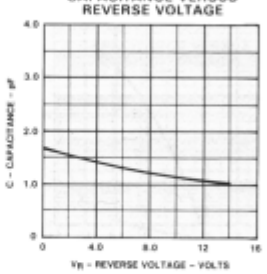
FORWARD VOLTAGE VERSUS FORWARD CURRENT



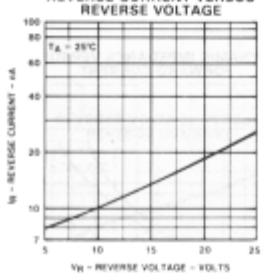
FORWARD CURRENT VERSUS TEMPERATURE COEFFICIENT



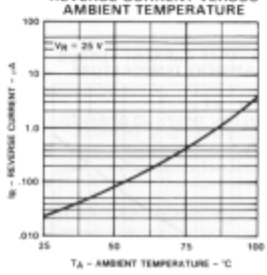
CAPACITANCE VERSUS REVERSE VOLTAGE



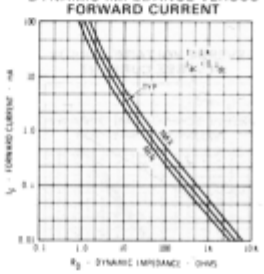
REVERSE CURRENT VERSUS REVERSE VOLTAGE



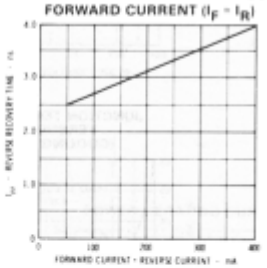
REVERSE CURRENT VERSUS AMBIENT TEMPERATURE



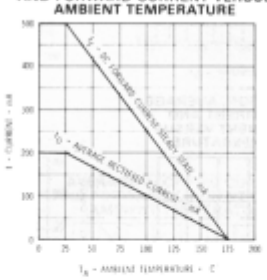
DYNAMIC IMPEDANCE VERSUS FORWARD CURRENT



REVERSE RECOVERY TIME VERSUS FORWARD CURRENT ($I_F = I_R$)



AVERAGE RECTIFIED CURRENT AND FORWARD CURRENT VERSUS AMBIENT TEMPERATURE



POWER DERATING CURVE