

Silicon – Diode

FDH600

50V/200mA

DATASHEET

OEM – Fairchild

Source: Fairchild Databook 1978

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

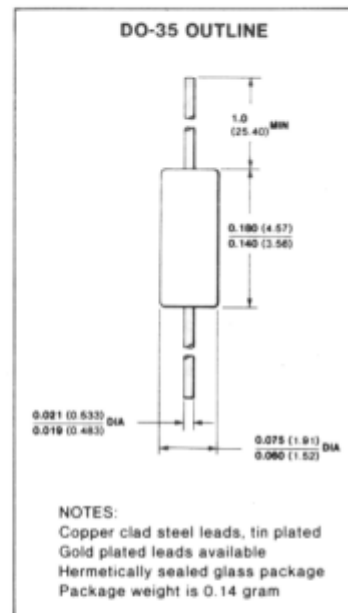
Storage Temperature Range	-65°C to +200°C
Maximum Junction Operating Temperature	+175°C
Lead Temperature	+260°C

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_T Recurrent Peak Forward Current	600 mA	600 mA
$I_T(\text{surge})$ Peak Forward Surge Current		
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μ s	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		1.0	V	$I_F = 200$ mA
			0.92		0.86	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		0.1	μ A	$V_R = 50$ V
			100		100	μ A	$V_R = 25$ V
						μ A	$V_R = 50$ V, $T_A = 150^\circ$ C
						μ A	$V_R = 25$ V, $T_A = 150^\circ$ C
BV	Breakdown Voltage	75		40		V	$I_R = 5.0$ μ A
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

