Silicon Diode

1N4306

50V/300mA

DATASHEET

OEM – Fairchild

Source: Fairchild Databook 1978

Datasheet Rev. 1.3 – 02/19 – data without warranty / liability

1N4306 · 1N4307

PAIR AND QUAD ASSEMBLIES DIODES

OF SILICON PLANAR EPITAXIAL

- ΔV_F . . . 10 mV (MAX)
- C . . . 2.0 pF (MAX)

GENERAL DESCRIPTION

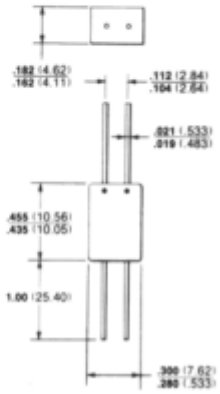
The 1N4306 and 1N4307 are epoxy encapsulated assemblies of two and four glass diodes respectively. They feature tightly matched forward voltages over broad current and temperature ranges.

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures		
Storage Temperature Range		−65°C to +150°C
Maximum Junction Operating Temperature		+150°C
Lead Temperature		+260°C
Power Dissipation (Note 2)		
Maximum Total Power Dissipation at 25°C Ambient		
Each Diode		250 mW
Encapsulated Package		500 mW
Linear Derating Factor (from 25°C)		
Each Diode		2.0 mW / °C
Encapsulated Package		4.0 mW / °C
Maximum Voltage and Currents		
WIV	Working Inverse Voltage	50 V
I_O	Average Rectified Current	200 mA
I_F	Continuous Forward Current	300 mA
i_f	Recurrent Peak Forward Current	600 mA
$i_{f(surge)}$	Peak Forward Surge Current	
	Pulse Width = 1.0 s	1.0 A
	Pulse Width = 1.0 μs	4.0 A

PACKAGE OUTLINE 308

1N4306



NOTES:
Dumet leads, tin plated
Gold plated leads available
Hermetically sealed glass diodes encapsulated in epoxy
Package weight is 0.95 gram

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

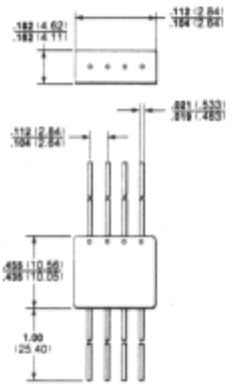
SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
BV	Breakdown Voltage	75		V	I_R = 5.0 mA
I_R	Reverse Current		50	nA	V_R = 50 V
			50	nA	V_R = 50 V, TA = 150°C
V_F	Forward Voltage	0.75	1.00	V	I_F = 50 mA
		0.67	0.81	V	I_F = 10 mA
		0.56	0.67	V	I_F = 1.0 mA
		0.44	0.55	V	I_F = 100 μA
C	Capacitance		2.0	pF	V_R = 0, f = 1 MHz
t_{rr}	Reverse Recovery Time		4.0	ns	$I_f = I_r$ = 10 mA, R_L = 100Ω Recovery to 1 mA
ΔV_F	Forward Voltage Match (Note 4)		10	mV	I_F = 0.1 to 10 mA T_A = −55°C to +125°C
			20	mV	I_F = 10 to 50 mA T_A = −55°C to +125°C

NOTES:
1. These 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. For product family characteristic curves, refer to Chapter 4, D4.
4. For test circuits, refer to Chapter 4, D18.

FAIRCHILD • PAIR AND QUAD ASSEMBLIES

PACKAGE OUTLINES 310

1N4307



NOTES:
Dumet leads, tin plated
Gold plated leads available
Hermetically sealed glass diodes encapsulated in epoxy
Package weight is 1.5 grams

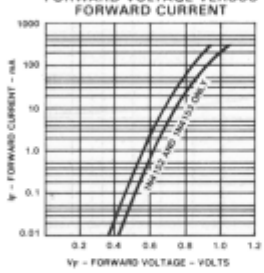
CURVE SET NUMBER D4

HIGH SPEED GENERAL PURPOSE SMALL SIGNAL DIODE

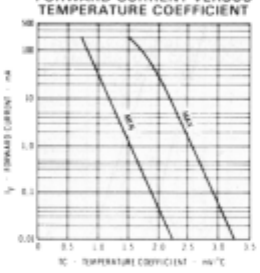
TYPICAL ELECTRICAL CHARACTERISTIC CURVES

AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE NOTED

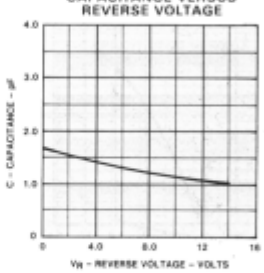
FORWARD VOLTAGE VERSUS FORWARD CURRENT



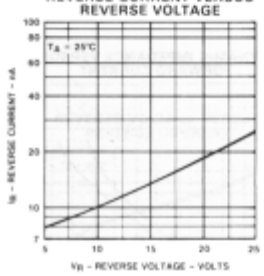
FORWARD CURRENT VERSUS TEMPERATURE COEFFICIENT



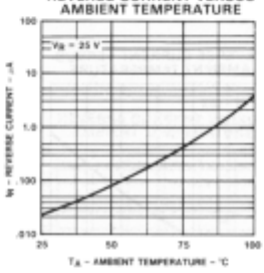
CAPACITANCE VERSUS REVERSE VOLTAGE



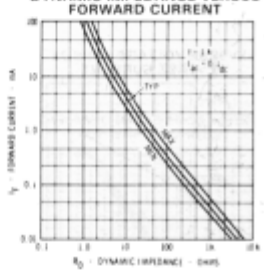
REVERSE CURRENT VERSUS REVERSE VOLTAGE



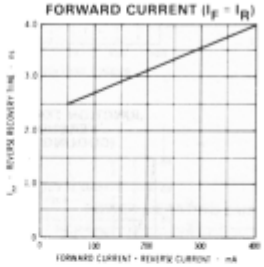
REVERSE CURRENT VERSUS AMBIENT TEMPERATURE



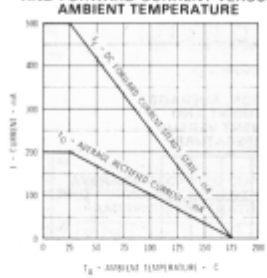
DYNAMIC IMPEDANCE VERSUS FORWARD CURRENT



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



AVERAGE RECTIFIED CURRENT AND FORWARD CURRENT VERSUS AMBIENT TEMPERATURE



POWER DERATING CURVE