

Silicon - Diode

BAY82

12V / 150mA / 250mW

Ultra Fast Switching Diode

DATASHEET

OEM – Fairchild

Source: Fairchild Databook 1978

BAY82 • 1N4244 • 1N4376

ULTRA-FAST SWITCHING DIODES

DIFFUSED SILICON PLANAR

- t_{rr} ... 750 ps (MAX)
- C ... 0.8 pF (MAX) 1N4244

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

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

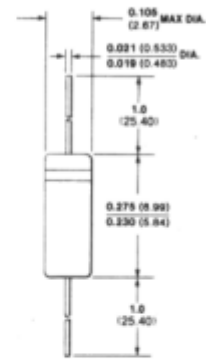
Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient	250 mW
Linear Power Derating Factor (from 25°C)	1.67 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	10 V (12 V BAY82)
I_O	Average Rectified Current	50 mA
I_F	Continuous Forward Current	150 mA
i_f	Peak Repetitive Forward Current	150 mA
$i_f(\text{surge})$	Peak Forward Surge Current Pulse Width = 1 s	250 mA

DO-7 OUTLINE



NOTES:

Dumet leads, tin plated
Gold plated leads available
Hermetically sealed glass package
Package weight is 0.19 gram

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

SYMBOL	CHARACTERISTIC	BAY82		1N4244		1N4376		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX	MIN	MAX		
V_F	Forward Voltage	0.90	1.35			0.89	1.10	V	$I_F = 50$ mA
		0.80	1.00		1.00	0.81	0.95	V	$I_F = 20$ mA
		0.77	0.94			0.76	0.88	V	$I_F = 10$ mA
		0.64	0.79			0.64	0.74	V	$I_F = 1.0$ mA
		0.53	0.66			0.52	0.61	V	$I_F = 0.1$ mA
		0.41	0.53			0.42	0.50	V	$I_F = 10$ μ A
I_R	Reverse Current				100		100	nA	$V_R = 10$ V
					100		100	μ A	$V_R = 10$ V, $T_A = 150^\circ$ C
			100					nA	$V_R = 12$ V
			50					μ A	$V_R = 12$ V, $T_A = 100^\circ$ C
					250			nA	$V_R = 15$ V
BV	Breakdown Voltage	15		20		20		V	$I_R = 5.0$ μ A
C	Capacitance		1.3		0.8		1.0	pF	$V_R = 0$, $f = 1$ MHz
t_{rr}	Reverse Recovery Time (Note 3)		750		750		750	ps	$I_f = I_r = 10$ mA $R_L = 100$ Ω

NOTES:

1. These ratings are limiting values above which the serviceability of the diode 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 $I_f = 1.0$ mA.
4. For product family characteristic curves, refer to Chapter 4, DS.