

FAIRCHILD SEMICONDUCTOR

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FAIRCHILD

A Schlumberger Company

**BAY82/1N4244
1N4376** T.03-09

Ultra Fast Switching Diodes

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

ABSOLUTE MAXIMUM RATINGS (Note 1)**Temperatures**

Storage Temperature Range
Maximum Junction Operating Temperature
Lead Temperature

-65°C to +200°C
+175°C
+260°C

Power Dissipation (Note 2)

Maximum Total Power Dissipation at 25°C Ambient
Linear Power Derating Factor (from 25°C)

250 mW
1.67 mW/°C

Maximum Voltage and Currents

WIV Working Inverse Voltage
 I_O Average Rectified Current
 I_F Continuous Forward Current
 I_F Peak Repetitive Forward Current
 I_F (surge) Peak Forward Surge Current
Pulse Width = 1 s

10 V (12 V BAY82)
50 mA
150 mA
150 mA
250 mA

PACKAGES

BAY82 DO-7
1N4244 DO-7
1N4376 DO-7

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		250			μ A	$V_R = 12$ V, $T_A = 100^\circ$ C
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:

- These ratings are limiting values above which the serviceability of the diode may be impaired.
- These are steady state limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.
- Recovery to $I_F = 1.0$ mA.
- For product family characteristic curves, refer to Chapter 4, D3.