

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

PACKAGES

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

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	250 mA
	Pulse Width = 1 s	

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	$I_F = 50 \text{ mA}$
		0.80	1.00		1.00	0.81	0.95	V	$I_F = 20 \text{ mA}$
		0.77	0.94			0.76	0.88	V	$I_F = 10 \text{ mA}$
		0.64	0.79			0.64	0.74	V	$I_F = 1.0 \text{ mA}$
		0.53	0.66			0.52	0.61	V	$I_F = 0.1 \text{ mA}$
		0.41	0.53			0.42	0.50	V	$I_F = 10 \mu\text{A}$
I_R	Reverse Current				100		100	nA	$V_R = 10 \text{ V}$
					100		100	μA	$V_R = 10 \text{ V}, T_A = 150^\circ\text{C}$
			100					nA	$V_R = 12 \text{ V}$
			50		250			μA	$V_R = 12 \text{ V}, T_A = 100^\circ\text{C}$
							nA	$V_R = 15 \text{ V}$	
BV	Breakdown Voltage	15		20		20		V	$I_R = 5.0 \mu\text{A}$
C	Capacitance		1.3		0.8		1.0	pF	$V_R = 0, f = 1 \text{ MHz}$
t_{rr}	Reverse Recovery Time (Note 3)		750		750		750	ps	$I_f = I_r = 10 \text{ mA}$ $R_L = 100 \Omega$

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 $I_f = 1.0 \text{ mA}$.
4. For product family characteristic curves, refer to Chapter 4, D3.

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