

FAIRCHILD SEMICONDUCTOR

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FAIRCHILD
A Schlumberger Company

BAV17/BAV18/BAV19
BAV20/BAV21 T.03-09
General Purpose Diodes

- $V_F \dots 1.0 \text{ V (Max) @ } 100 \text{ mA}$
- $I_R \dots 100 \text{ nA @ WIV}$

PACKAGES

BAV17	DO-35
BAV18	DO-35
BAV19	DO-35
BAV20	DO-35
BAV21	DO-35

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	500 mW
Linear Power Derating Factor (from 25°C)	3.33 mW/°C

Maximum Voltage and Currents

WIV	Working Inverse Voltage	BAV 17	20 V
		BAV 18	50 V
		BAV 19	100 V
		BAV 20	150 V
		BAV 21	200 V
I_O	Average Rectified Current		100 mA
I_F	Continuous Forward Current		300 mA
i_f	Peak Repetitive Forward Current		400 mA
$i_f(\text{surge})$	Peak Forward Surge Current		4 A
	Pulse Width=1 $\mu\text{sec.}$		1 A
	Pulse Width=1 sec.		

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

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	TEST CONDITIONS
V_F	Forward Voltage			1.00	V	$I_F=100 \text{ mA}$
				1.25	V	$I_F=200 \text{ mA}$
I_R	Reverse Current	BAV 21		100	nA	$V_R=200 \text{ V}$
				15	μA	$V_R=200 \text{ V}, T_A=100^\circ\text{C}$
		BAV 20		100	nA	$V_R=150 \text{ V}$
				15	μA	$V_R=150 \text{ V}, T_A=100^\circ\text{C}$
		BAV 19		100	nA	$V_R=100 \text{ V}$
				15	μA	$V_R=100 \text{ V}, T_A=100^\circ\text{C}$
BV	Breakdown Voltage	BAV 18		100	nA	$V_R=50 \text{ V}$
				15	μA	$V_R=50 \text{ V}, T_A=100^\circ\text{C}$
		BAV 17		100	nA	$V_R=20 \text{ V}$
				15	μA	$V_R=20 \text{ V}, T_A=100^\circ\text{C}$
		BAV 21	250			V
		200			V	$I_R=100 \mu\text{A}$
		120			V	$I_R=100 \mu\text{A}$
		60			V	$I_R=100 \mu\text{A}$
		25			V	$I_R=100 \mu\text{A}$
C	Capacitance		1.5	5.0	pF	$V_R=0, f=1 \text{ MHz}$
t_{rr}	Reverse Recovery Time (Note 3)			60	ns	$I_F=30\text{mA}, I_R=30\text{mA}, R_L=100\Omega$
d_{iff}	Differential Resistance		5.0		Ω	$I_F=10\text{mA}$

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 $I_R=3 \text{ mA}$.
4. For product family characteristic curves, refer to Chapter 4 BAV 17/18 D4, BAV 19/20/21 D1.

