

# Silicon - Diode

## **BAV19**

100V / 300mA / 500mW

General Purpose Diode

# DATASHEET

OEM – Fairchild

Source: Fairchild Databook 1978

**BAV17 • BAV18 • BAV19 • BAV20 • BAV21****GENERAL PURPOSE DIODES**

DIFFUSED SILICON PLANAR

- $V_F$  ... 1.0 V (Max) @ 100 mA
- $I_R$  ... 100 nA @ WIV

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

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

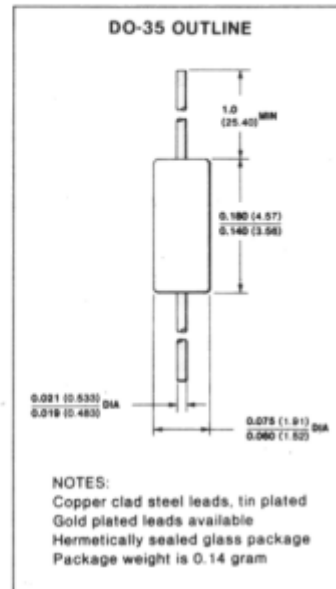
**Power Dissipation (Note 2)**

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	
	Pulse Width = 1 $\mu$ s	4 A
	Pulse Width = 1 s	1 A

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

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$V_F$	Forward Voltage			1.00	V	$I_F = 100$ mA
				1.25	V	$I_F = 200$ mA
$I_R$	Reverse Current	BAV 21		100	nA	$V_R = 200$ V
				15	$\mu$ A	$V_R = 200$ V, $T_A = 100^\circ$ C
		BAV 20		100	nA	$V_R = 150$ V
				15	$\mu$ A	$V_R = 150$ V, $T_A = 100^\circ$ C
		BAV 19		100	nA	$V_R = 100$ V
				15	$\mu$ A	$V_R = 100$ V, $T_A = 100^\circ$ C
		BAV 18		100	nA	$V_R = 50$ V
		15	$\mu$ A	$V_R = 50$ V, $T_A = 100^\circ$ C		
				100	nA	$V_R = 20$ V
				15	$\mu$ A	$V_R = 20$ V, $T_A = 100^\circ$ C
BV	Breakdown Voltage	BAV 21	250		V	$I_R = 100$ $\mu$ A
		BAV 20	200		V	$I_R = 100$ $\mu$ A
		BAV 19	120		V	$I_R = 100$ $\mu$ A
		BAV 18	60		V	$I_R = 100$ $\mu$ A
		BAV 17	25		V	$I_R = 100$ $\mu$ A
C	Capacitance		1.5	5.0	pF	$V_R = 0, f = 1$ MHz
$t_{rr}$	Reverse Recovery Time (Note 3)			50	ns	$I_F = 30$ mA, $I_R = 30$ mA, $R_L = 100\Omega$
diff	Differential Resistance		5.0		$\Omega$	$I_F = 10$ 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  $I_R = 3$  mA.
4. For product family characteristic curves, refer to Chapter 4 BAV 17/18 D4, BAV 19/20/21 D1.