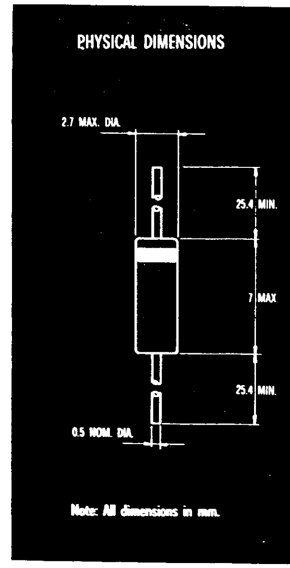
BAW 29

HOT CARRIER DIODE

SILICON PLANAR DIODE

GENERAL DESCRIPTION - The SGS - Fairchild BAW 29 Hot Carrier Diode features low leakage, high conductance and low noise figure. It is primarily intended for use as the mixer diode in UHF tuners. In addition, its outstanding switching properties make it ideal for use in ultra - fast switching detector and sampling gate applications.
This device is covered by Semiconductor Users Reliability Evaluation (SURE) Programme.



ABSOLUTE MAXIMUM RATINGS (Note 1)

Maximum Temperatures

T_{STG}	Storage Temperature	-55°C to 150°C
T_J	Operating Junction Temperature	-55°C to 125°C
T_L	Lead Temperature (Soldering, 10 s time limit)	260°C

Maximum Power Dissipation (Notes 2 and 3)

P_D	Total Dissipation at 25°C Ambient Temperature	100 mW

ELECTRICAL CHARACTERISTICS (25°C free air temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS	
V_F	Forward Voltage			0.55	V	I_F = 10 mA	
I_R	Reverse Current		50		nA	V_R = 1 V	
BV	Breakdown Voltage	5			V	I_R = 100 μA	
Q_S	Stored Charge (Note 3)		1.6		pC	I_F = 10 mA	
C_o	Capacitance		0.85	1	pF	V_R = 0 V	f = 1 MHz
NF	Noise Figure (Note 4)			10	dB	f = 890 MHz	

NOTES:

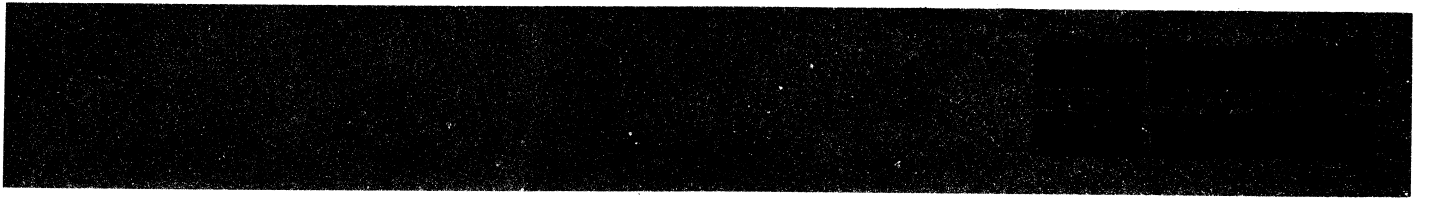
(1) These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.

(2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

(3) Measured on B - Line Electronics QS - 3 Stored Charge Meter.

(4) See test circuit.

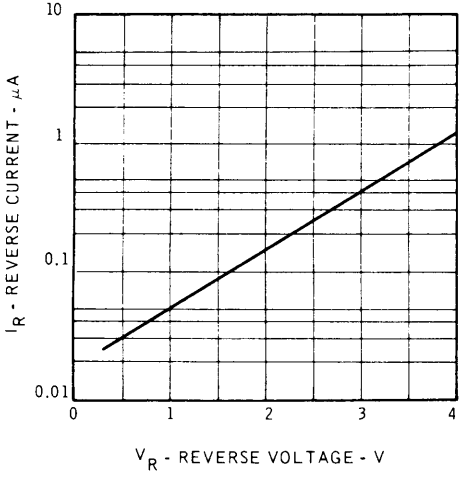
SGS FAIRCHILD



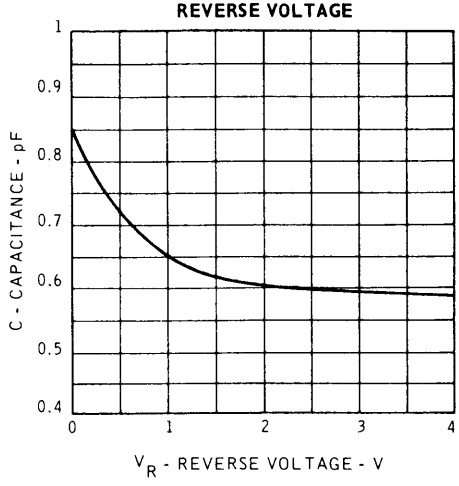
BAW 29 SGS-Fairchild Silicon Planar Diode

TYPICAL ELECTRICAL CHARACTERISTICS (25°C free air temperature unless otherwise noted)

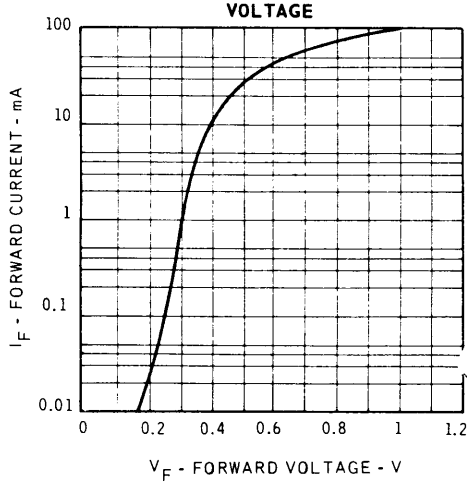
REVERSE CURRENT VERSUS REVERSE VOLTAGE



CAPACITANCE VERSUS REVERSE VOLTAGE



FORWARD CURRENT VERSUS FORWARD VOLTAGE



NOISE FIGURE TEST CIRCUIT