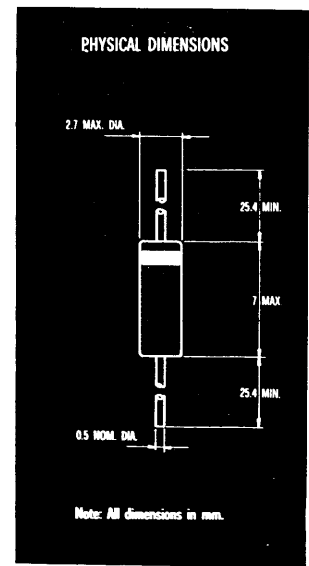


BAW 29 HOT CARRIER DIODE

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.....	$I_F = 10 \text{ mA}$
I_R	Reverse Current.....		50		nA.....	$V_R = 1 \text{ V}$
BV	Breakdown Voltage.....	5			V.....	$I_R = 100 \text{ }\mu\text{A}$
Q_S	Stored Charge (Note 3).....		1.6		pC.....	$I_F = 10 \text{ mA}$
C_o	Capacitance.....		0.85	1	pF.....	$V_R = 0 \text{ V}$ $f = 1 \text{ MHz}$
NF	Noise Figure (Note 4).....			10	dB.....	$f = 890 \text{ MHz}$

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 LONDON - MILAN - PARIS - STOCKHOLM - ST. LOUIS



SGS-FAIRCHILD LONDON - MILAN - PARIS - STOCKHOLM - STUTT GART

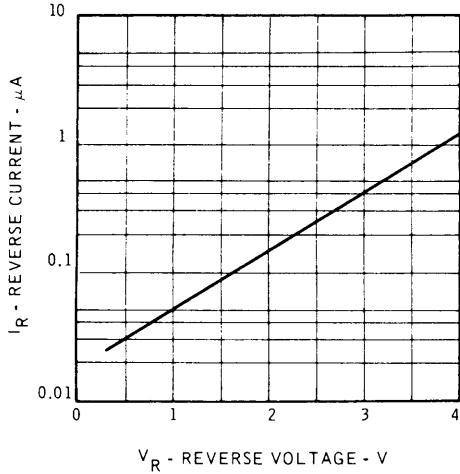


THE DEVICES DESCRIBED HEREIN ARE MANUFACTURED UNDER LICENSE AGREEMENT WITH FAIRCHILD CAMERA AND INSTRUMENT CORPORATION (U.S.A.) UNDER ONE OR MORE PATENTS ISSUED AND/OR PATENT APPLICATIONS PENDING IN FRANCE (SGDG), FEDERAL REPUBLIC OF GERMANY, ITALY, NETHERLANDS, SWITZERLAND (CORRESPONDING TO U.S. PATENTS 2971139, 2981877, 3025589, 3064167, 3108359, 3117260, AND OTHERS PENDING), MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING BRITISH PATENTS: 954854, 947520, 908605 OR 938181.

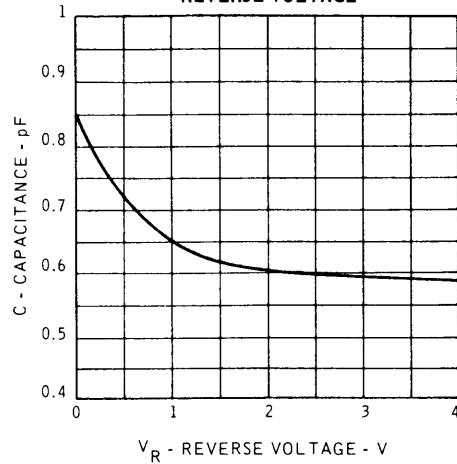
BAW 29 SGS-Fairchild Silicon Planar Diode

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

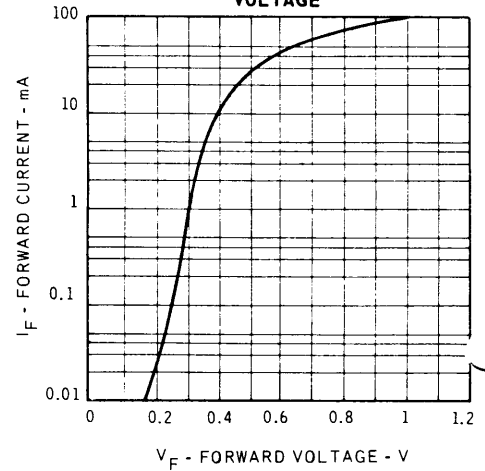
REVERSE CURRENT VERSUS
REVERSE VOLTAGE



CAPACITANCE VERSUS
REVERSE VOLTAGE



FORWARD CURRENT VERSUS FORWARD
VOLTAGE



NOISE FIGURE TEST CIRCUIT

