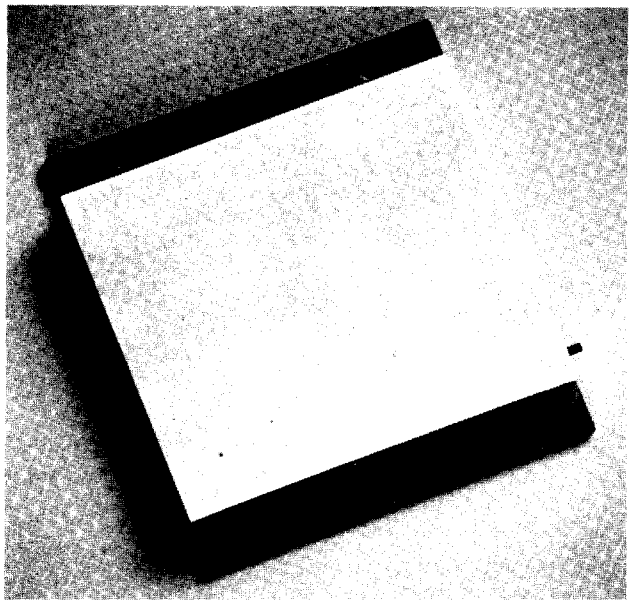
Data Sheet
April 1994

AT&T Microelectronics

1229A Modular Wide Dynamic Range RF Amplifier



The 1229A Modular Wide Dynamic Range RF Amplifier.

Features

- Covers the common cellular bands
- Frequency range of 700 MHz to 1000 MHz
- 17.5 dB gain
- 47.5 dBm third-order intercept point
- 3.5 dB noise figure
- 1.20:1 VSWR
- Unconditionally stable
- Self-contained; no external components required

Description

The 1229A is a modular amplifier designed to mount to a customer's chassis and interface directly with a printed-wiring board or microstrip circuit. It is a Class A, two-stage, balanced amplifier that exhibits the combination of exceptional linearity, low noise figure, excellent impedance match, and high efficiency.

The amplifier is completely self-contained with all matching, dc blocking, bypassing, and bias circuitry included. The amplifier is immune to thermal runaway problems and is unconditionally stable. Typical applications include broadband driver or output stages in cellular radio transmitters, and other cellular radio or PCN applications requiring excellent multitone intermodulation performance.

Description (continued)

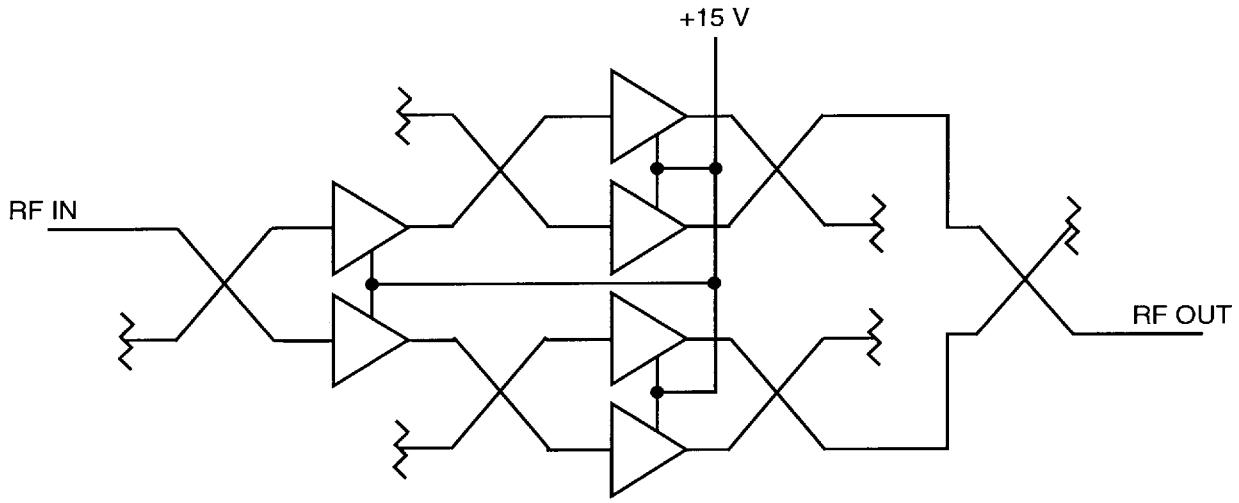


Figure 1. 1229A Block Diagram

Absolute Maximum Ratings

Stresses in excess of the Absolute Maximum Ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to Absolute Maximum Ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Min	Max	Unit
Baseplate Temperature*	—	—	90	°C
Input Voltage	—	—	17	V
RF Signal Input	INPUT	—	20	dBm

* The maximum baseplate temperature recommended for reliable operation is 75 °C. This corresponds to a maximum junction temperature of 160 °C. Estimated device MTBF at this temperature is 500,000 hours.

Electrical Characteristics (at 25 °C)

Parameter	Symbol	Min	Typ	Max	Unit
Frequency Range	Fo	700	—	1000	MHz
Gain	G	16.5	17.5	19	dB
Noise Figure	NF	—	3.5	4.5	dB
Input/Output Return Loss	—	18	25	—	dB
Third-Order Intercept Point	IP3	45	47.5	—	dBm
1 dB Compression Point	P1dB	32	33	—	dBm
Supply Voltage*	Vcc	14.75	15.0	15.25	V
Supply Current	—	700	725	770	mA

* The 1229A may be operated at 12 V with minor performance loss.

Electrical Characteristics (continued)

These are typical performance curves at 25 °C.

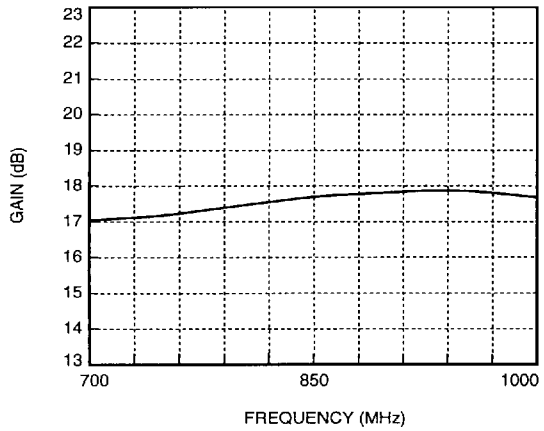


Figure 2. Gain

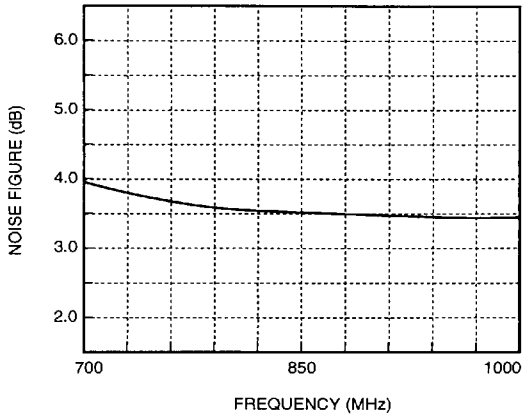


Figure 5. Noise

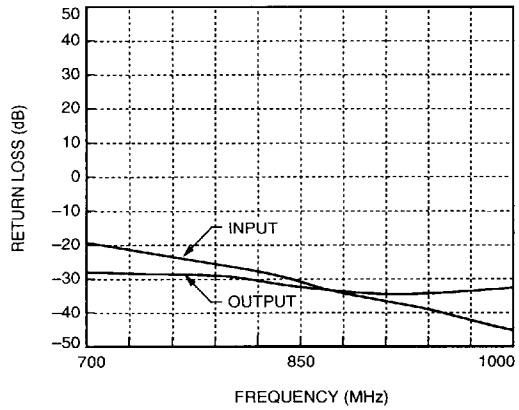


Figure 3. Input Return Loss and Output Return Loss

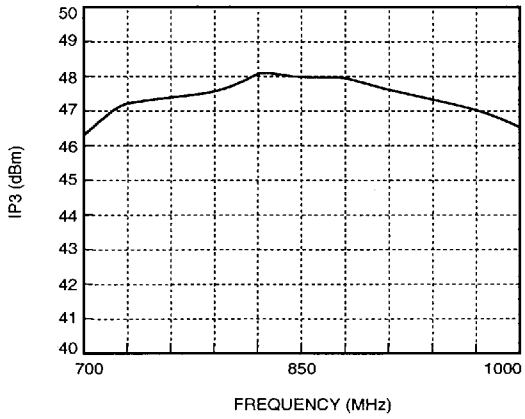


Figure 6. Third-Order Intercept Point (IP3)

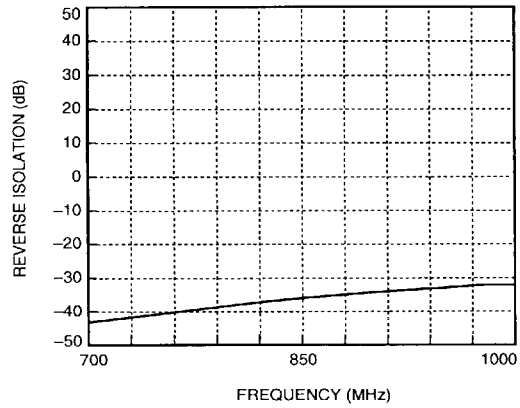


Figure 4. Reverse Isolation

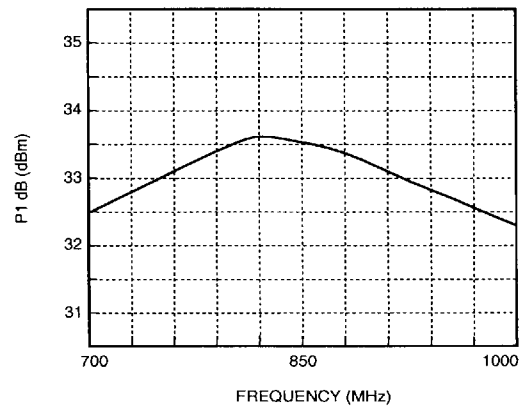
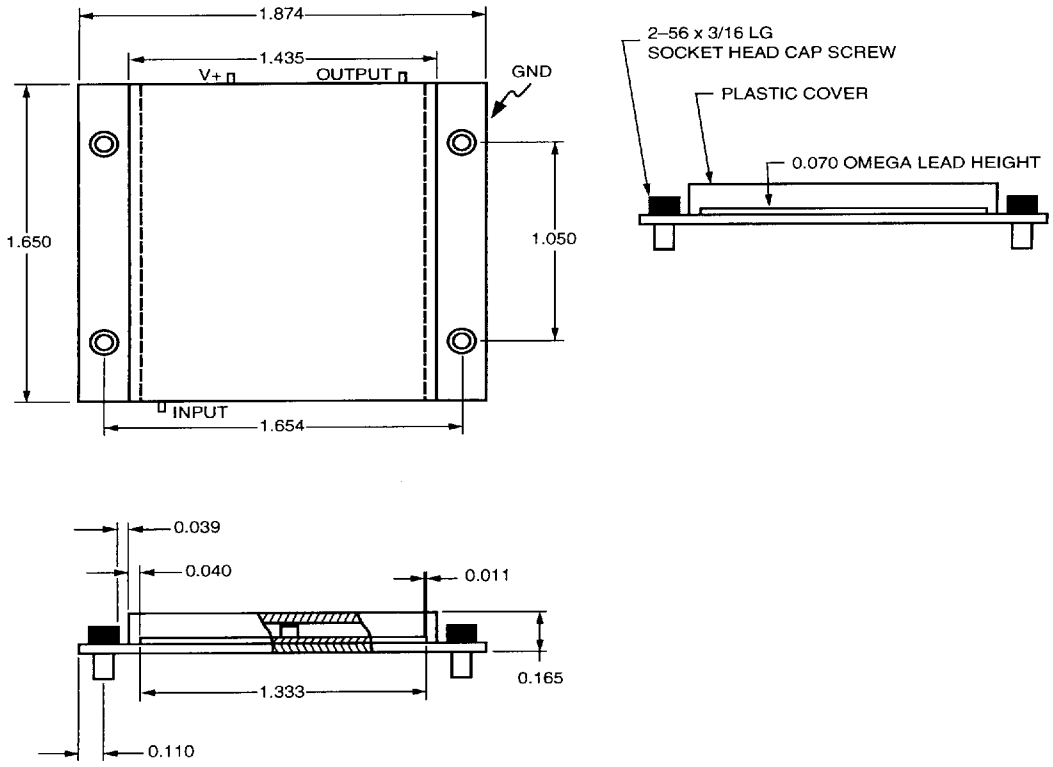


Figure 7. 1 dB Compression Point (P1dB)

Outline Diagram

1229A Amplifier

Controlling dimensions are in inches.



Ordering Information

Code	Frequency Range* (MHz)	Part Number
1229A	700 to 1000	107227597

* Designs for other bands ranging from 300 MHz to 3000 MHz are available upon request.

For additional information, contact your AT&T Account Manager or the following:

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