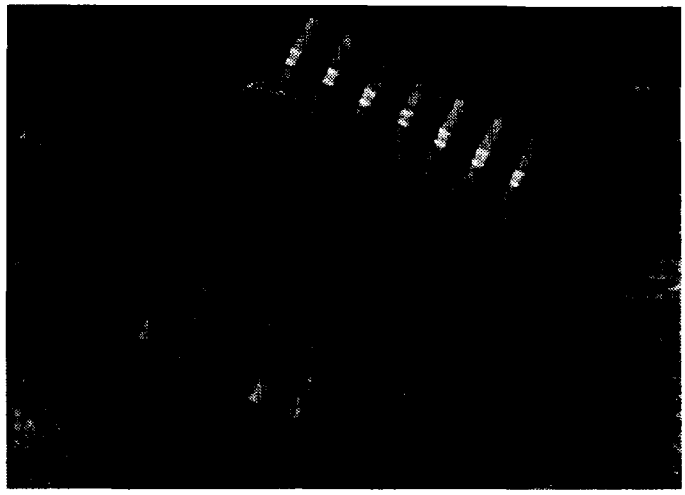
MPS-0924A9-88

800 to 1000 MHz Receiver Amplifier

Features

- 1.5 dB NF and 38 dBm IP3
- Frequency Range of 800 to 1000 MHz
- 18 dB with Excellent Flatness
- Single Positive Bias
- Unconditionally Stable

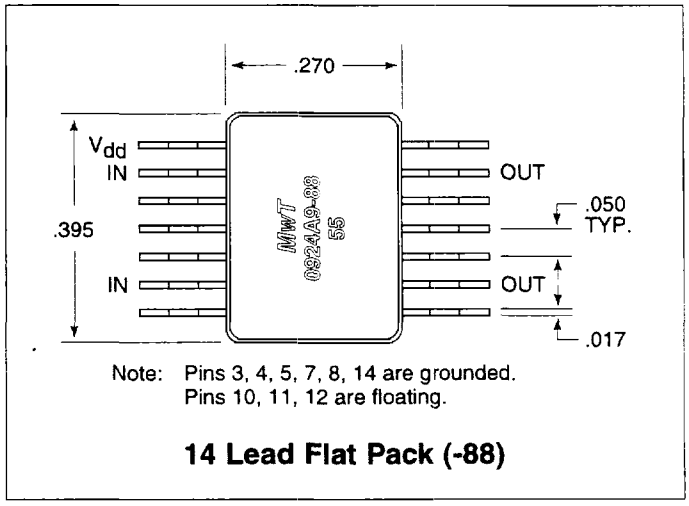


Description

The MPS-0924A9-88 is a low noise high dynamic range amplifier module designed to meet the ultra-linear receiver requirements for digitally modulated or multi carrier cellular applications. Paired amplifier stages in a surface mount package are externally hybrid combined (see application circuit) to produce a balanced amplifier which has an excellent noise figure (1.5 dB) and a very high IP3 (+38 dBm) relative to the DC power applied (1.2 Watts). Employing self-biased GaAs MESFETs, each gain module is self-contained with all bias circuitry included. Other hybrid combined performance parameters include high gain (18 dB), excellent flatness over the operating bandwidth (±0.5 dB), very low input and output return losses (-20 dB), and high output power at 1dB compression point (24 dBm).

Typical applications for this device include: receiver stages for single channel and multi-carrier linear amplifiers used in AMPS, TACS, NMT, IS-54, IS-95, PDC and GSM systems. It is also useful for micro-cell or pico-cell receiver amplifier stages where multi carrier configurations require low noise performance and excellent multi tone inter modulation characteristics.

Outline Diagram



Note: Pins 3, 4, 5, 7, 8, 14 are grounded.
Pins 10, 11, 12 are floating.

14 Lead Flat Pack (-88)

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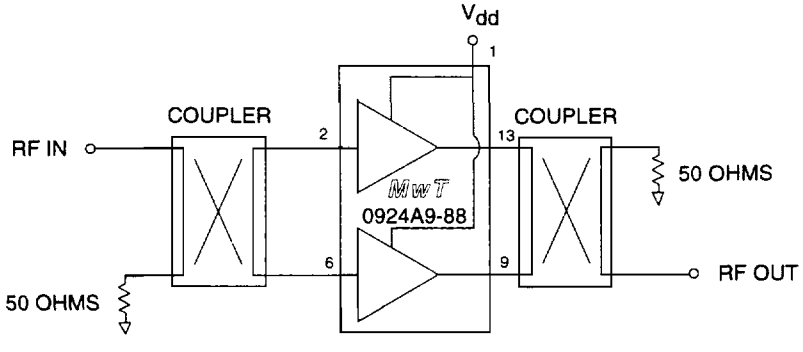
Electrical Characteristics at 25°C*, V_{dd} = 6.0 V

Symbol	Parameter	Unit	Minimum	Typical	Maximum
Freq	Frequency Range	MHz	800		1000
SSG	Small Signal Gain	dB	16	18	
NF	Noise Figure	dB		1.5	2.0
P1dB	Output Power at 1 dB Compression Point	dBm	+23.0	+24.0	
IP3	Third-order Intercept	dBm	+35.0	+38.0	
VSWR	Input/Output VSWR				1.2
ΔGOF	Gain Variation over Frequency	dB			±0.5
ΔGOT	Gain Variation over Temperature	dB/°C		-.01	
I_{dd}	Power Supply Current	mA		200	300
$Ø_{jc}$	Thermal Resistance	°C/W	55		

Absolute Maximum Ratings

Symbol	Parameter	Unit	Continuous Max	Absolute Max
V_{dd}	Bias Voltage	V	7.0	9.0
T_C	Case Temperature	°C	+85	+110
T_{ch}	Channel Temperature	°C	+150	+175

Application Circuit



Required External Components:
Anaren Couper PN# 1D1304-3 2ea.
Termination Resistor 50 Ohms 1/8 Watt

Notes:
1. Two tone tests at Pout = +10 dBm for each tone; centered at 900 MHz with 20 MHz separation.
2. Chip to Package bottom.
3. Exposure to absolute maximum ratings for extended periods of time may cause permanent damage.
* Tested in a configuration shown in the appplication circuit.