HMC-ALH244

GaAs HEMT MMIC LOW NOISE AMPLIFIER, 24 - 40 GHz

Typical Applications

This HMC-ALH244 is ideal for:

- Point-to-Point Radios
- Point-to-Multi-Point Radios
- VSAT
- SATCOM

Features

Noise Figure: 3.5 dB

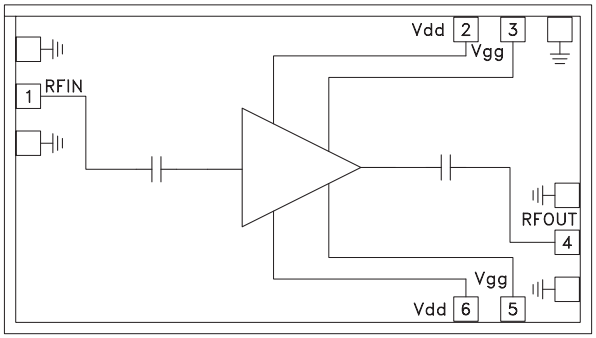
Gain: 12 dB

P1dB Output Power: +13 dBm

Supply Voltage: +4V @ 45 mA

Die Size: 2.50 x 1.4 x 0.1 mm

Functional Diagram



General Description

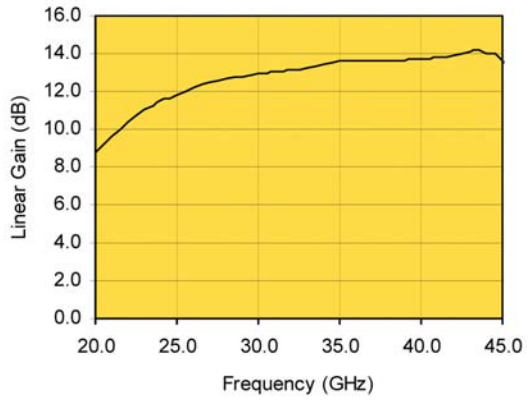
The HMC-ALH244 is a two stage GaAs MMIC HEMT Low Noise Amplifier die which operates between 24 and 40 GHz. The amplifier provides 12 dB of gain, a noise figure of 3.5 dB, and requires only 45 mA from a +4V supply voltage. The HMC-ALH244 amplifier die is ideal for integration into Multi-Chip-Modules (MCMs) due to its small size (3.5 mm²).

Electrical Specifications [1], T_A = +25° C, Vdd= 4V, Idd = 45mA [2]

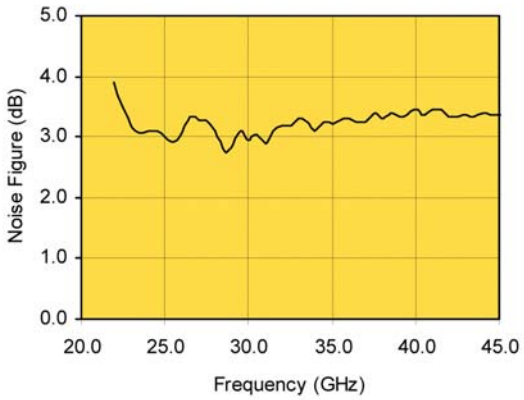
Parameter	Min.	Typ.	Max.	Units
Frequency Range		24 - 40		GHz
Gain	10	12		dB
Noise Figure		3.5	4	dB
Input Return Loss		15		dB
Output Return Loss		17		dB
Output Power for 1 dB Compression		13		dBm
Supply Current (Idd)		45	100	mA

[1] Unless otherwise indicated, all measurements are from probed die
[2] Adjust Vgg between -1V to +0.3V (-0.2V Typ.)

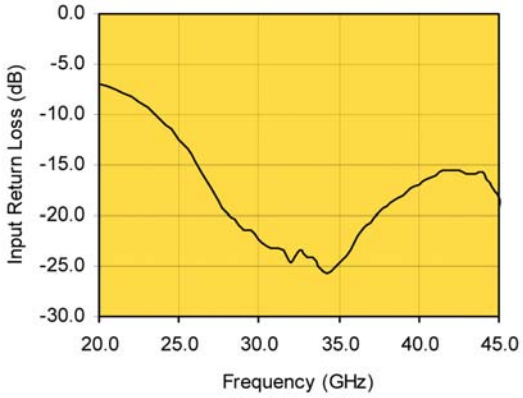
Linear Gain vs. Frequency



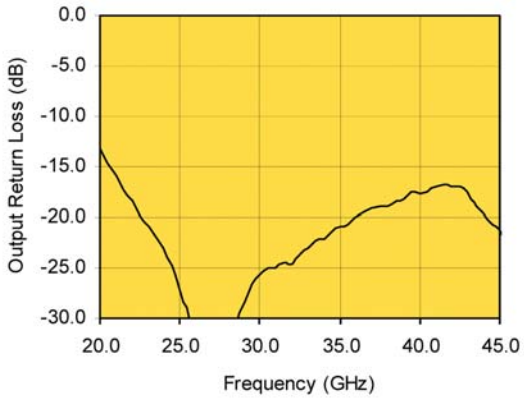
Noise Figure vs. Frequency



Input Return Loss vs. Frequency



Output Return Loss vs. Frequency



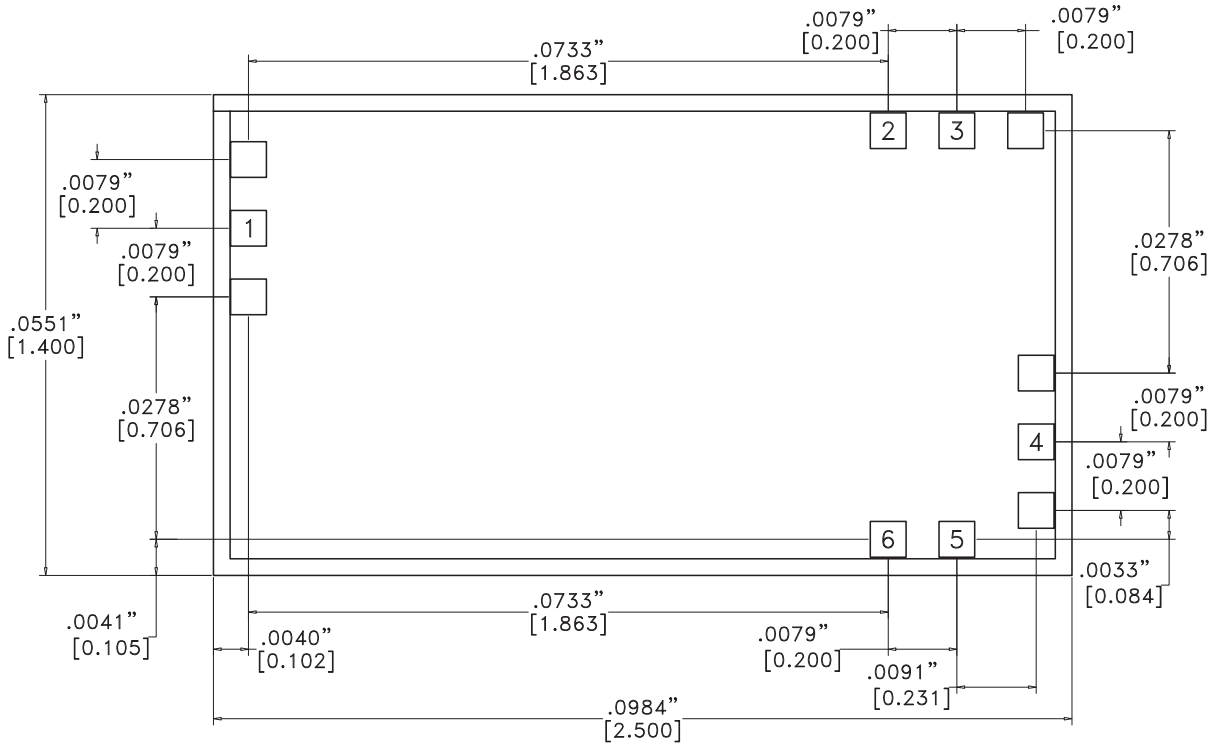
Note: Measured Performance Characteristics (Typical Performance at 25°C) Vd= 4V, Id = 45 mA

Absolute Maximum Ratings

Drain Bias Voltage	+5.5 Vdc
Gate Bias Voltage	-1 to +0.3 Vdc
RF Input Power	6 dBm
Channel Temperature	180 °C
Storage Temperature	-65 to +150 °C
Operating Temperature	-55 to +85 °C

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Outline Drawing



NOTES:

1. ALL DIMENSIONS ARE IN INCHES [MM].
2. TYPICAL BOND PAD IS .004" SQUARE.
3. BACKSIDE METALLIZATION: GOLD.
4. BACKSIDE METAL IS GROUND.
5. BOND PAD METALLIZATION: GOLD.
6. CONNECTION NOT REQUIRED FOR UNLABELED BOND PADS.
7. OVERALL DIE SIZE ±.002"