GaAs HEMT MMIC LOW NOISE AMPLIFIER, 24 - 40 GHz

Typical Applications

This HMC-ALH369 is ideal for:

- Point-to-Point Radios
- Point-to-Multi-Point Radios
- Phased Arrays
- VSAT
- SATCOM

Features

Excellent Noise Figure: 2.0 dB

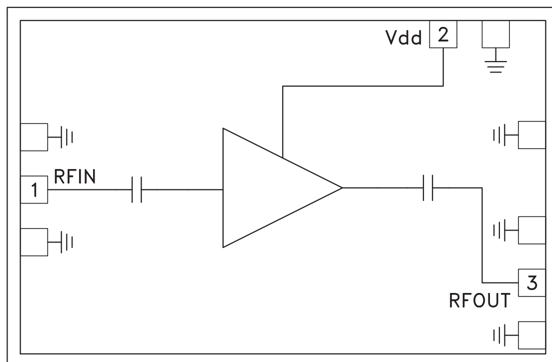
Gain: 22 dB

P1dB Output Power: +11 dBm

Supply Voltage: +5V @ 66 mA

Die Size: 2.10 x 1.37 x 0.1 mm

Functional Diagram



General Description

The HMC-ALH369 is a GaAs MMIC HEMT three stage, self-biased Low Noise Amplifier die which operates between 24 and 40 GHz. The amplifier provides 22 dB of gain, from a single bias supply of +5V @ 66 mA with a noise figure of 2 dB. The HMC-ALH369 amplifier die is ideal for integration into Multi-Chip-Modules (MCMs) due to its small size (2.88 mm²).

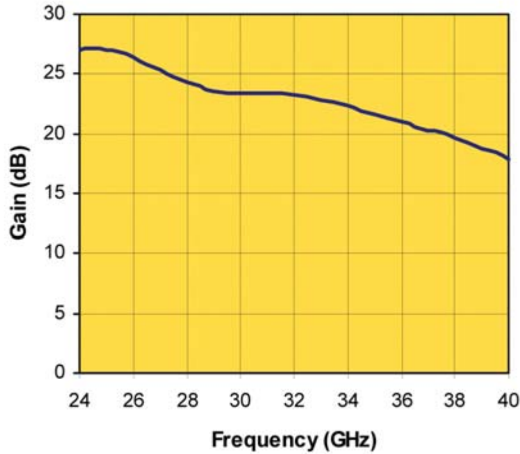
Electrical Specifications [1], T_A = +25° C, Vdd= +5V, Idd = 66mA

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range		24 - 32			32 - 40		GHz
Gain	20	22		15	17		dB
Noise Figure		2	2.5		2.1	2.5	dB
Input Return Loss		12			8		dB
Output Return Loss		12			12		dB
Output Power for 1 dB Compression	9	11		9	11		dBm
Supply Current (Idd)		66			66		mA

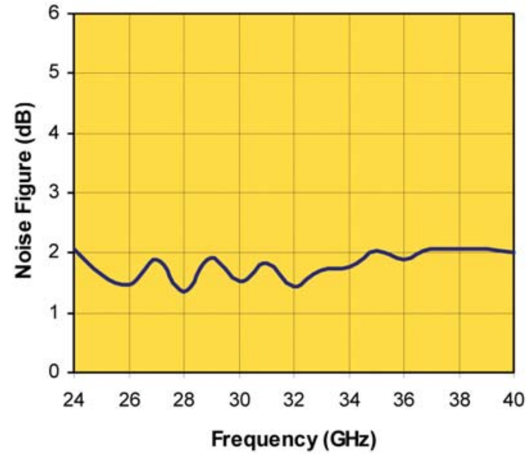
[1] Unless otherwise indicated, all measurements are from probed die

For price, delivery, and to place orders, please contact Hittite Microwave Corporation:
20 Alpha Road, Chelmsford, MA 01824 Phone: 978-250-3343 Fax: 978-250-3373
Order On-line at www.hittite.com

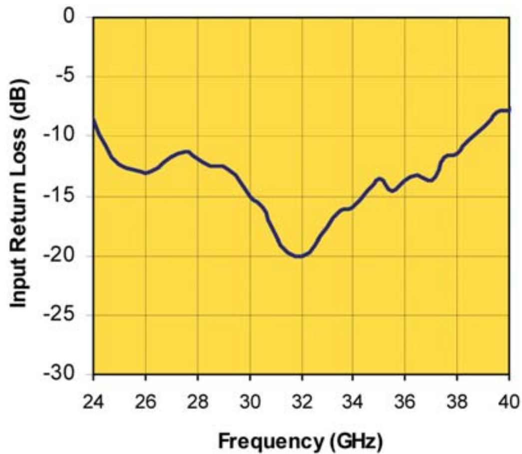
Linear Gain vs. Frequency



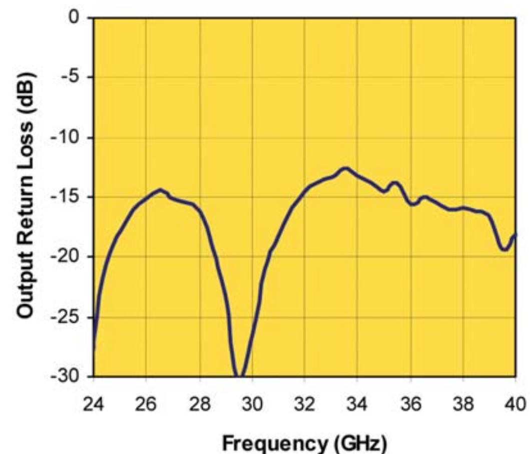
Noise Figure vs. Frequency



Input Return Loss vs. Frequency



Output Return Loss vs. Frequency



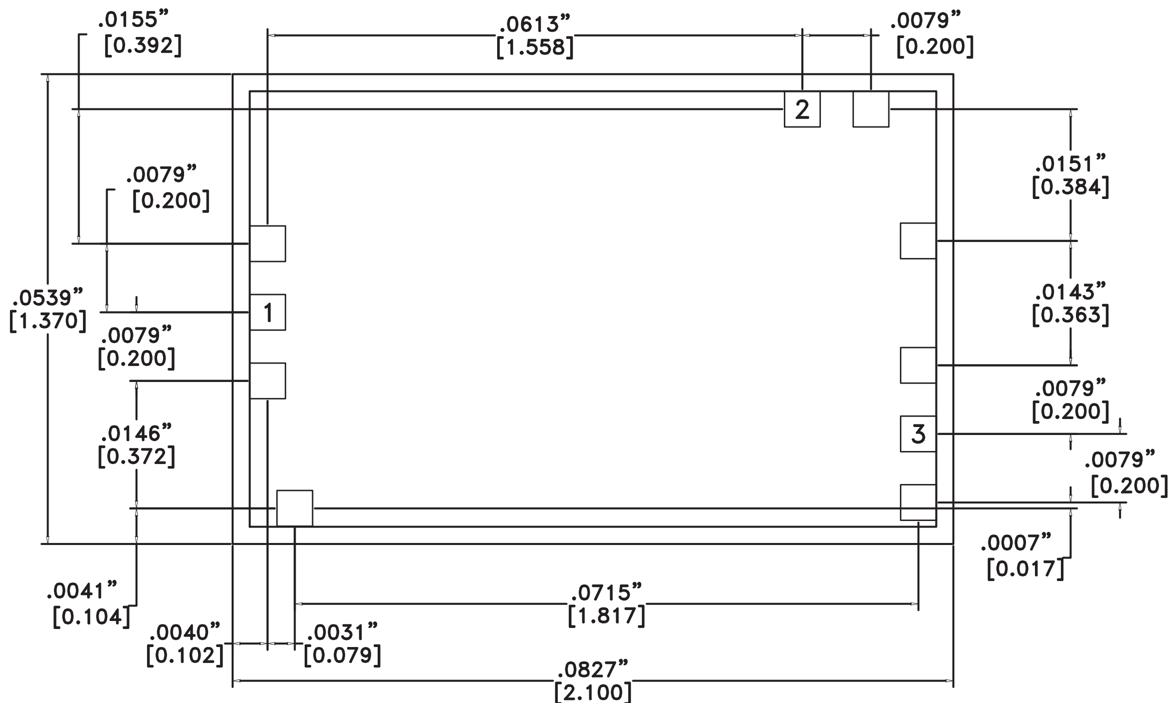
Note: Measured Performance Characteristics (Typical Performance at 25°C) Vd= 5V, Id = 66 mA

Absolute Maximum Ratings

Drain Bias Voltage	+5.5 Vdc
RF Input Power (24 - 32 GHz)	5 dBm
RF Input Power (32 - 40 GHz)	-1 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"