

X=370µm Y=370µm

Features

- ◆ RF Frequency: dc to 3.5 GHz
- ◆ Gain: 18 dB typ.
- ◆ P1dB: 17 dBm
- ◆ IP3: 30 dBm
- ◆ Noise figure: 4.3 dB
- ◆ GaAs HBT technology
- ◆ Die Size: < 0.014 sq. mm

Performance Characteristics
(Ta = 25°C, Ic = 60mA)

Specification	Min	Typ	Max	Unit
Gain at 1 GHz	17	18		dB
1dB bandwidth		1.5		GHz
3 dB bandwidth		3.5		GHz
P1dB at 1 GHz		17		dBm
IP3 at 1 GHz		30		dBm
NF at 1 GHz		4		dB
Input Return Loss at 1 GHz		17		dB
Output Return Loss at 1 GHz		14		dB
Supply voltage	4.7		5.7	V
Supply current		60		mA

Applications

- ◆ Driver Amplifier
- ◆ IF Amplifier
- ◆ Cellular/PCS
- ◆ Wireless LANs

Product Description

The AHB107 monolithic HBT Darlington amplifier designed for use as a general purpose 50-ohm gain block for terrestrial use. External dc blocking capacitors determine low-frequency response, and an external bias resistor provides bias voltage flexibility.

Absolute Maximum Ratings (Ta = 25°C)

Parameter	Min	Max	Unit
Supply Current		65	mA
Supply Voltage *		6	V
Input drive level		5	dBm
Operating temperature		85	deg. C
Assy. Temperature (60 seconds)		300	deg. C

* VCC specified at bonding pad only

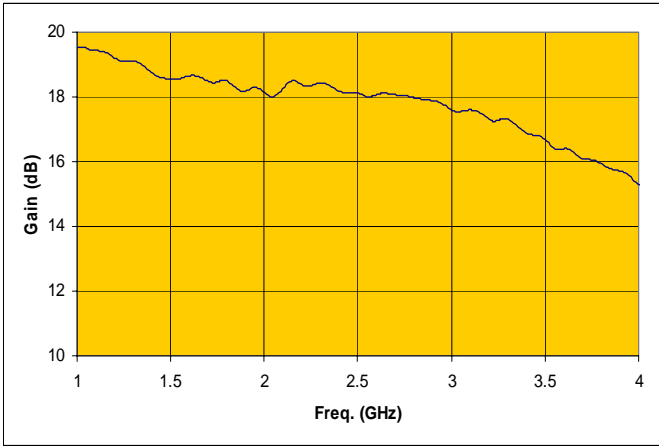
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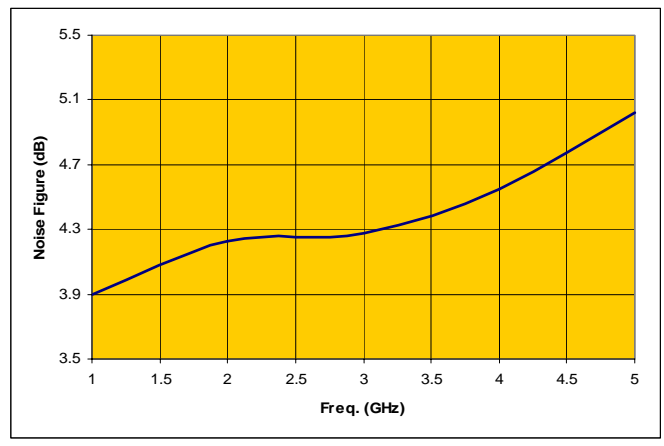
Product Datasheet **Discontinued 2/16/2006**
 Typical Performance at 25°C

Revision: February 2006

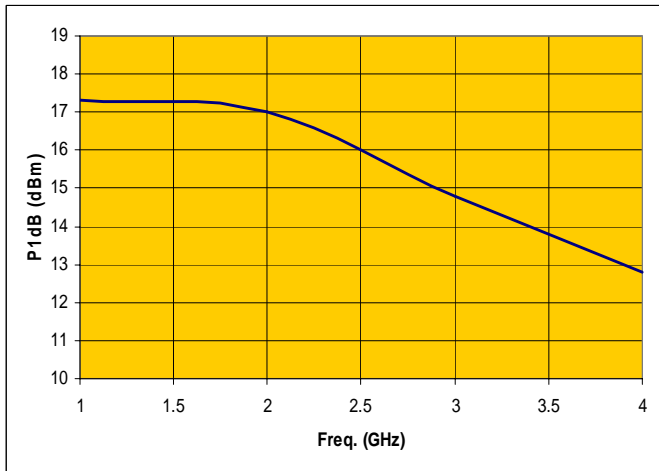
Linear Gain Versus Frequency



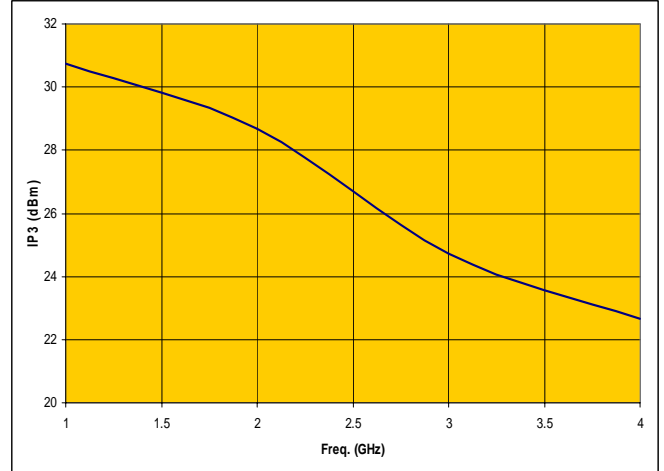
Noise Figure Versus Frequency



Power Versus Frequency



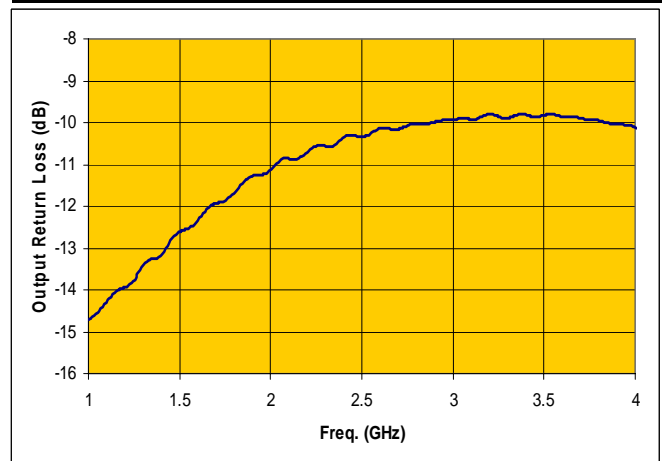
IP3 Versus Frequency



Input Return Loss Versus Frequency



Output Return Loss Versus Frequency



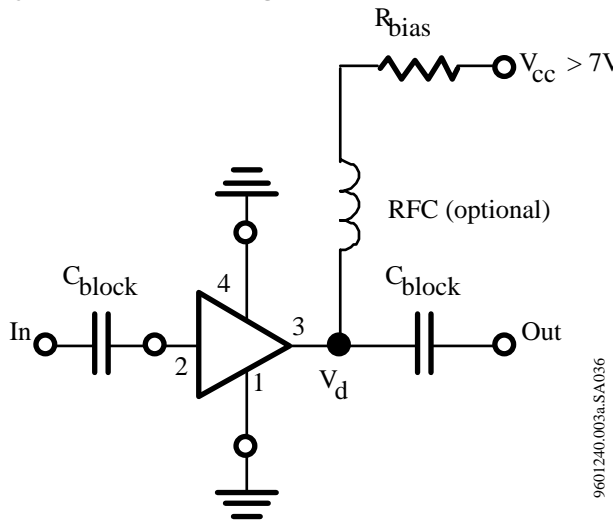
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Product Datasheet **Discontinued 2/16/2006**

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Typical Bias Configuration

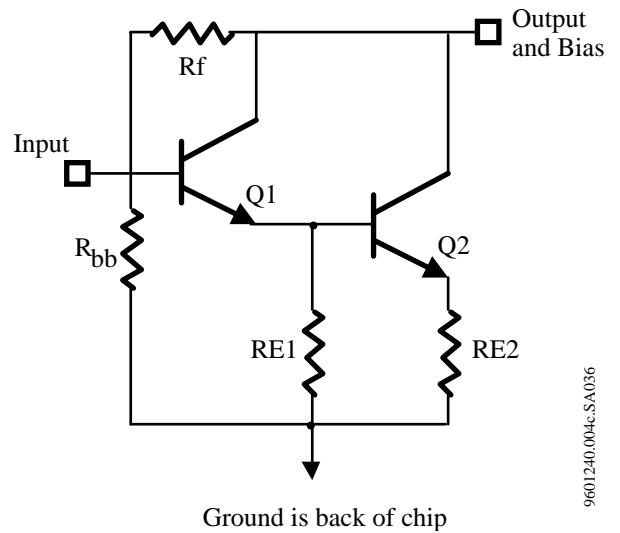


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Note

Failure to use ≥ 1.5 V drop across R_{bias} may result in excessive device current at hot temperature and/or in overdrive conditions.

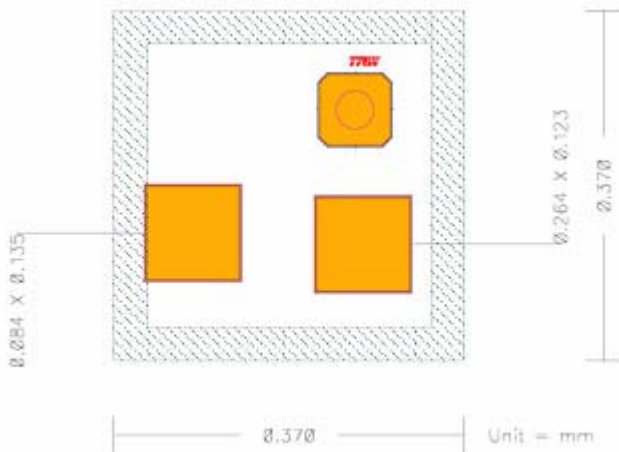
Simplified Schematic of MMIC



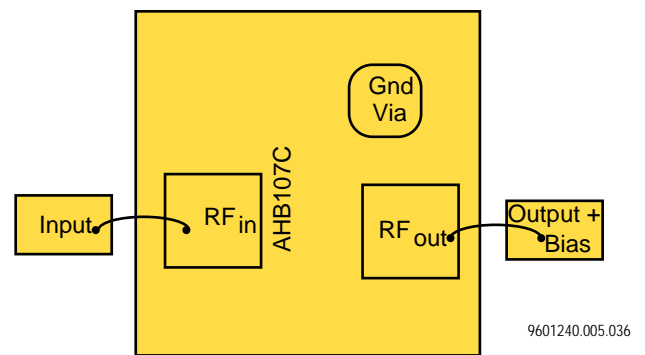
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Typical Bias Configuration

Die Size and Bond Pad Locations



Suggested Bonding Arrangement



9601240.005.036

Recommended Assembly Notes

- Chip input and output dc coupled.
- Backside of chip is ground.
- Third Pad is Ground via; do not bond.

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