

X=370µm Y=370µm

Features

- ◆ RF Frequency: dc to 7 GHz
- ◆ Gain: 14 dB typ.
- ◆ P1dB: 16 dBm
- ◆ IP3: 30 dBm
- ◆ Noise figure: 5.1 dB
- ◆ GaAs HBT technology
- ◆ Die Size: < 0.14 sq. mm

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

Specification	Min	Typ	Max	Unit
Gain at 1 GHz	11	14		dB
1dB bandwidth		5		GHz
3 dB bandwidth		7.0		GHz
P1dB at 1 GHz		16		dBm
IP3 at 1 GHz		30		dBm
NF at 1 GHz		5.1		dB
Input Return Loss at 1 GHz		12		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 AHB108 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 gives bias voltage flexibility.

Absolute Maximum Ratings (Ta = 25°C)

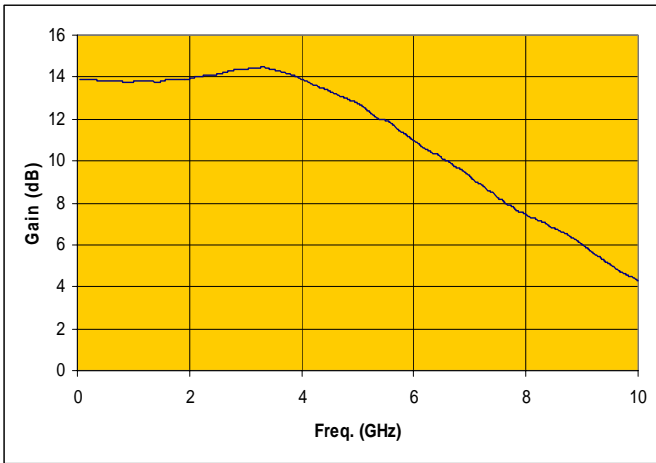
Parameter	Min	Max	Unit
Supply Current		65	mA
Supply Voltage *		6	V
Input drive level		7	dBm
Operating temperature		85	deg. C
Assy. Temperature (60 seconds)		300	deg. C

* VCC specified at bonding pad only

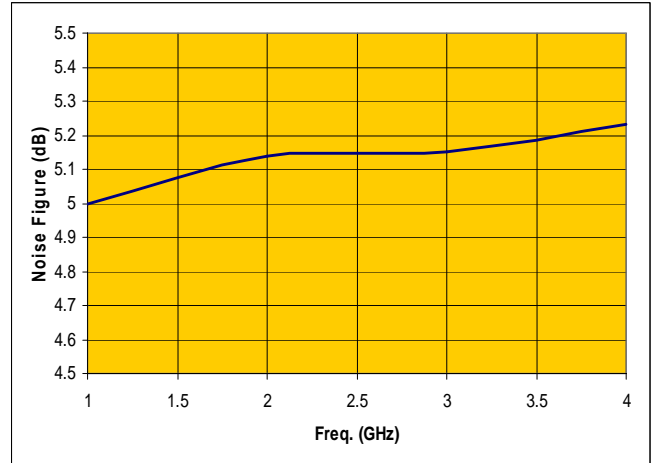
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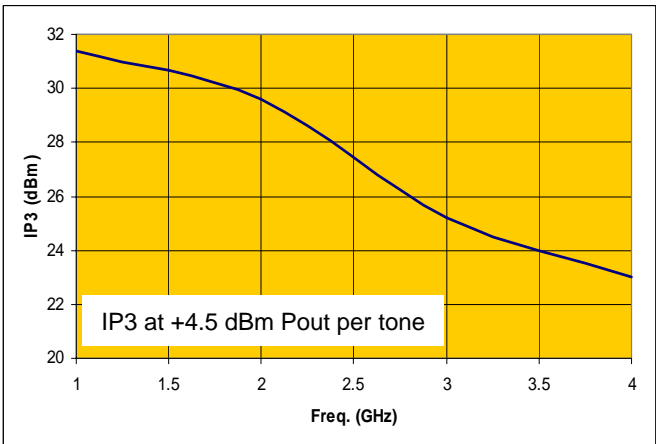
Linear Gain Versus Frequency



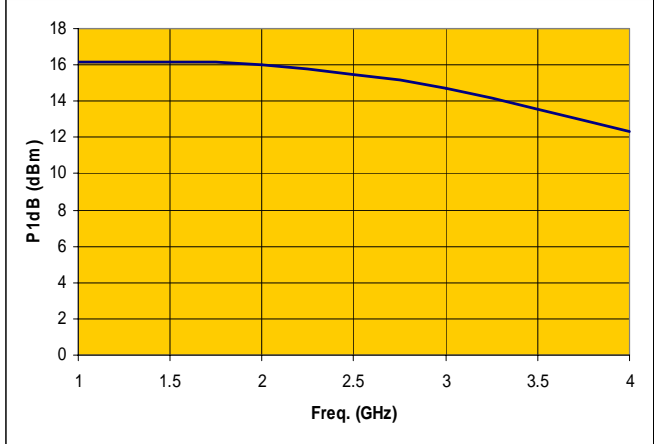
Noise Figure Versus Frequency



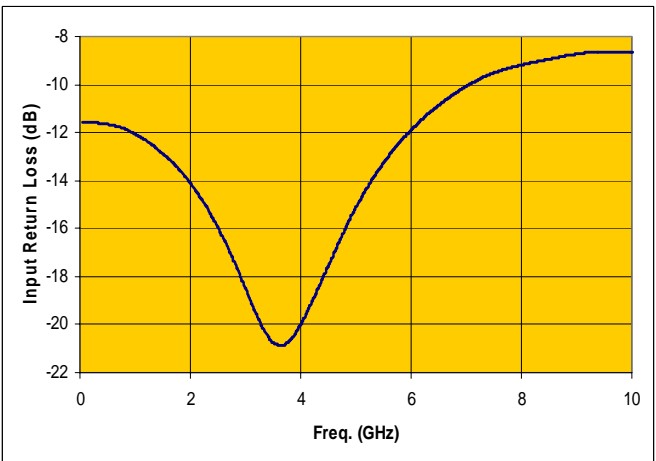
IP3 Versus Frequency



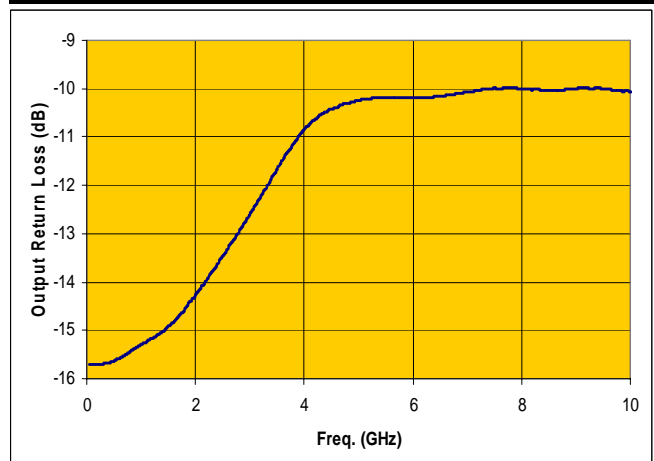
P1dB Versus Frequency



Input Return Loss Versus Frequency



Output Return Loss Versus Frequency



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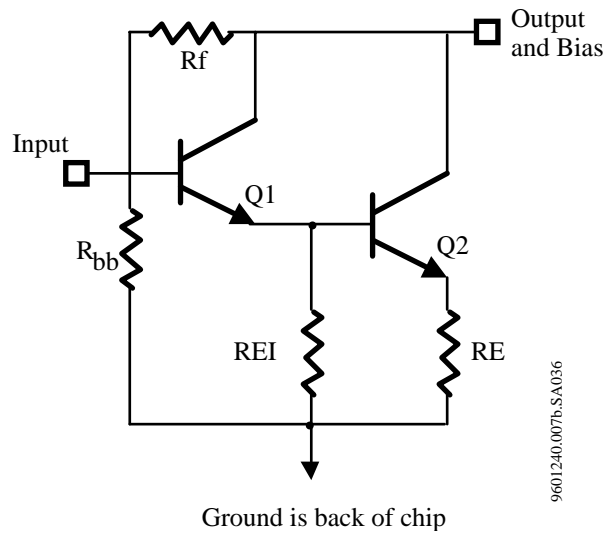
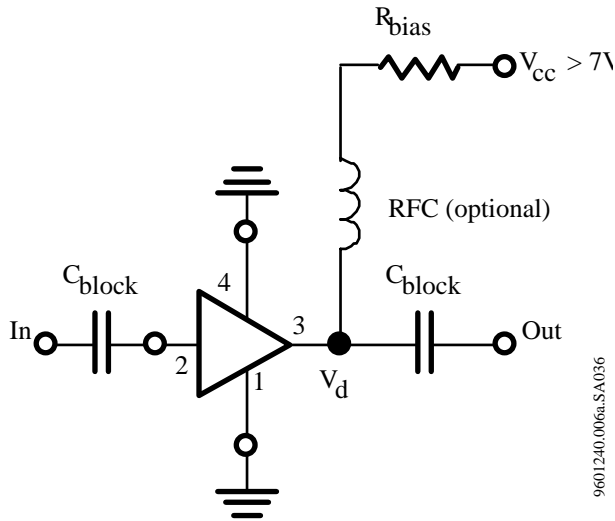


Product Datasheet **Discontinued 2/16/2006**

Revision: February 2006

Typical Bias Configuration

Simplified Schematic of MMIC

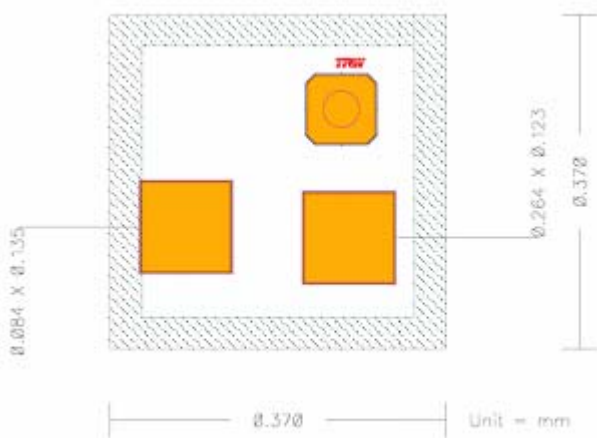


Note

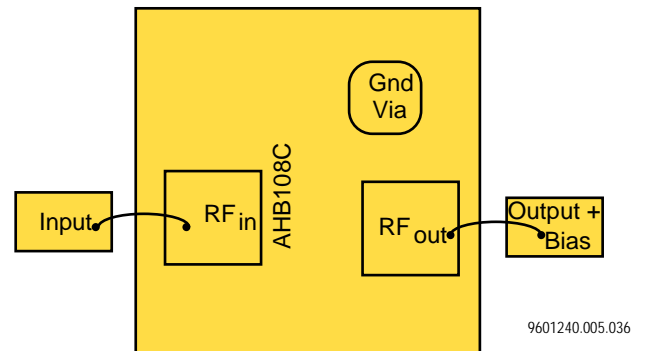
Failure to use ≥ 1.5 V drop across R_{bias} may result in excessive device current at hot temperature and/or in overdrive conditions.

Typical Bias Configuration

Die Size and Bond Pad Locations



Suggested Bonding Arrangement



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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