

Product Features

- 0.01 to 4GHz
- +20 dBm P-1dB at 2GHz
- +40 dBm OIP3 at 2GHz
- 12 dB Gain at 2GHz
- 4.5 dB Noise Figure
- Internally-Matched to 50 Ω
- SOT-89 Lead-Free/green package
- Available as bare die

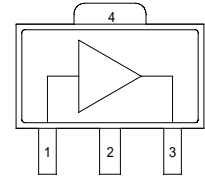
Product Description

The GSA804-89 is a 50 Ohm matched General Purpose Gain Block Amplifier that covers the 1MHz to 4GHz frequency range with 12 dB nominal gain at 2GHz.

The GSA804-89 is a Darlington pair amplifier fabricated with high reliability InGaP/GaAs Heterojunction Bipolar Transistor (HBT) process. It only requires DC blocking capacitors, a bias stabilization resistor, Rbias, and a single RF choke for operation. The amplifier is ideal for wireless and test equipment applications. It is in a lead free/green RoHS compliant SOT-89 Surface Mount Transistor package.

This broadband RFIC can be used for current and next generation test equipment and wireless applications to 4GHz

Package



Function	Pin No.
Input	1
Output/Bias	3
Ground	2,4

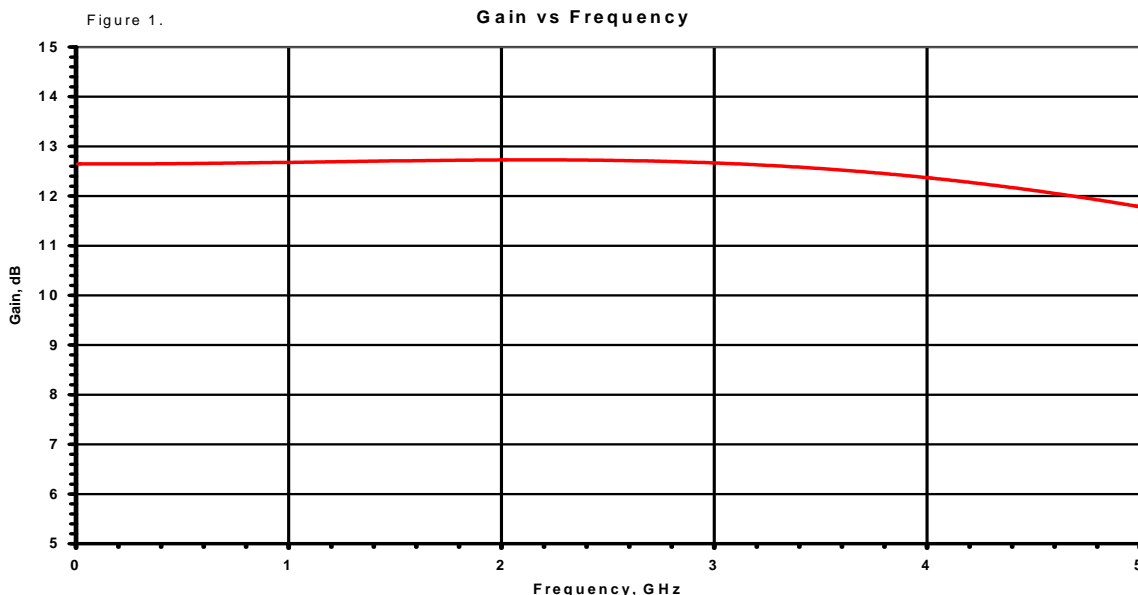
Applications

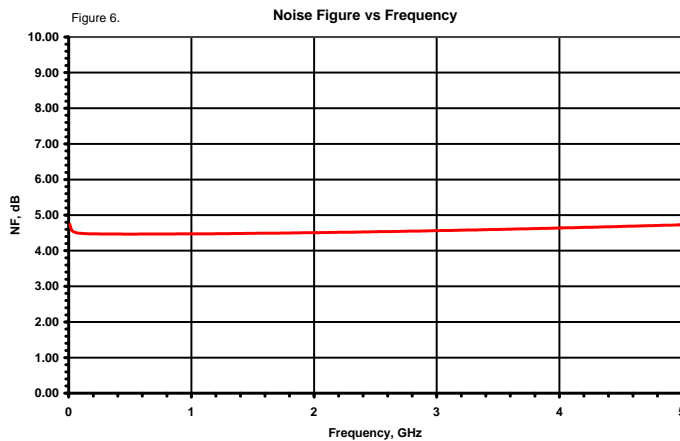
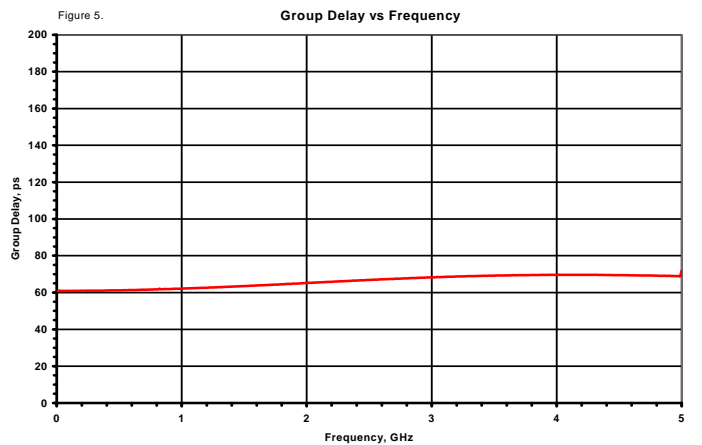
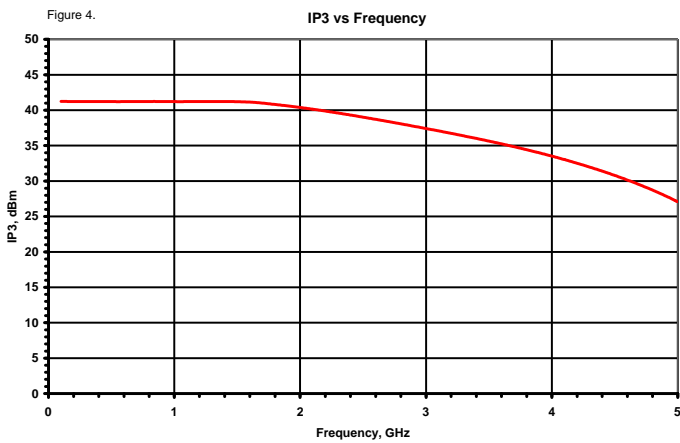
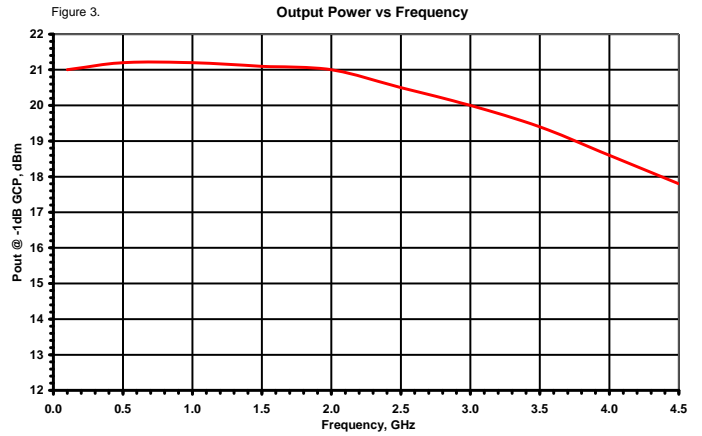
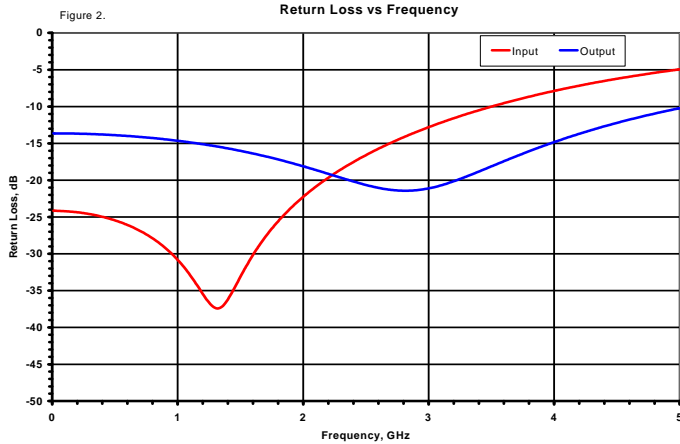
- Mobile infrastructure
- ISM
- WLAN
- RFID
- Test Equipment

Specifications (1)

Parameter	Units	Min	Typ	Max
-3dB Bandwidth	MHz	0.01		6000
Test Frequency	MHz		2000	
Gain	dB	12	12.5	
Pout @ -1dB GCP	dBm		+20	
Input Return Loss	dB		15	
Output Return Loss	dB		15	
OIP3	dBm		40	
Noise Figure	dB		4.5	
Operating Current	mA		95	

1. Test conditions unless otherwise specified: 25°C, Supply Voltage = +8.00V, Rbias=11Ω, 50 Ohm System

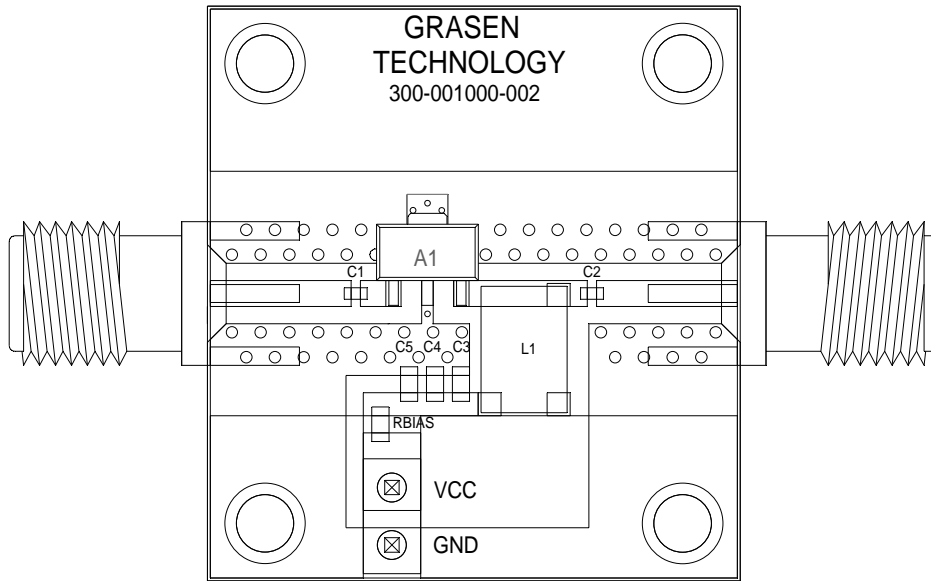




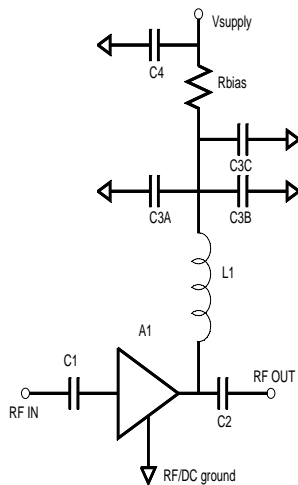
Absolute Maximum Ratings

Parameter	Rating
Case Temperature, Operating	-40 to +85 °C
Storage Temperature	-55 to +150 °C
Device Current	150mA
RF Input Power, continuous	+13 dBm
Junction Temperature	250 °C

Operation of this device above any of these parameters will cause permanent damage.



Evaluation Board

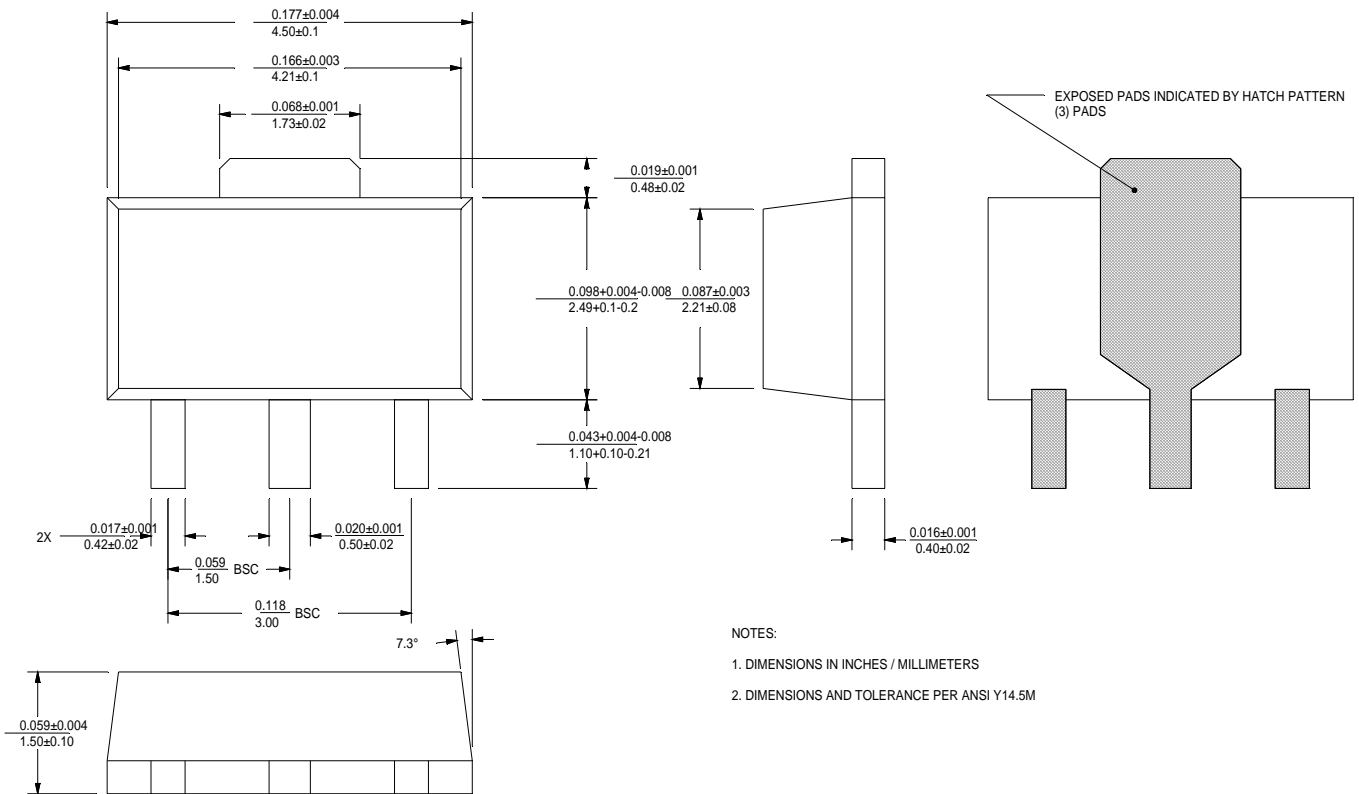


Application Schematic

Parts List: ($V_{supply} = 8.00V_{dc}$)

Rbias	11 Ohms	00805 size
C1, C2	10nF	0402 ATC520L103KT16T
C3A	10pF	0603
C3B	220pF	0603
C3C	0.1uF	0603
C4	4.7uF	1210
L1	8uH	Coilcraft BCS-802JLC

Note that Rbias is required for DC current stability with temperature.



SOT-89 Package outline

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