LOW NOISE AMPLIFIER, DC-30 GHz

Model: LF-DC-30-1606-G

PRODUCT OVERVIEW:

LF-DC-30-1606-G is a wideband GaAs distributed low noise amplifier which operates from DC to 30 GHz. The amplifier delivers around 16 dB of gain with a corresponding noise figure of 6.0 dB at 240 mA and output 1 dB compression point of 23 dBm. The **LF-DC-30-1606-G** is internally matched to 50 ohms which eliminates the need for RF port matching.

KEY FEATURES:

- Ultra Wide Band: DC-30GHz
- Gain: 16dB Typ
- Output P1dB: 23dBm Typ
- Excellent return losses
- Compliant 5x5x1.2 mm QFN package

ELECTRICAL SPECIFICATIONS: (TA=+25℃, Vd=+8V,Id=240mA):

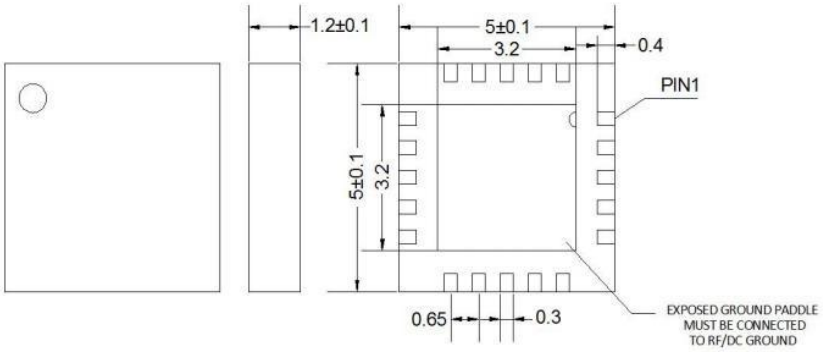
PARAMETER:	Min	Typ	Max	Units
Frequency range		DC-30		GHz
Gain		16		dB
Reverse Isolation		-40		dB
Output P1dB		23		dBm
Noise Figure		6		dB
Input Ruturn Loss		-13		dB
Output Ruturn Loss		-15		dB
DC Supply Current		240		mA

Adjust Vg=-1～0V to make ID = 240 mA, the typical value of this voltage is -0.7V

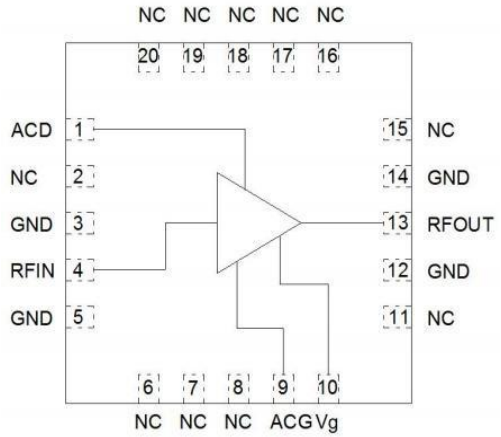
ABSOLUTE MAXIMUM RAITINGS:

Parameter	Value
RF Input Power	18 dBm
Channel temperature	150℃
Operating Temperature	-55℃ ~ +85℃
Non-operating Temperature	-65℃ ~ +150℃

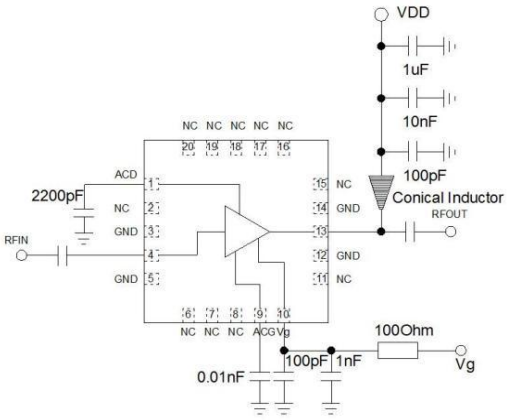
OUTLINE & PORT SIZE: **Unit: mm**



APPLICATION CURCUIT DRAWING:



SUGGESTED ASSEMBLY DRAWING:

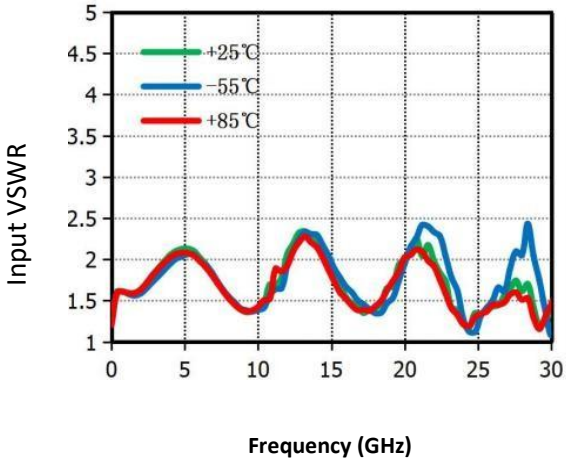


PIN	FUNCTION	PIN	FUNCTION	PIN	FUNCTION
1	LF termination	8	NC or Connect to GND	15	NC or Connect to GND
2	NC or Connect to GND	9		16	NC or Connect to GND
3		10		17	NC or Connect to GND
4		11		18	NC or Connect to GND
5		12		19	NC or Connect to GND
6	NC or Connect to GND	13		20	NC or Connect to GND
7	NC or Connect to GND	14			

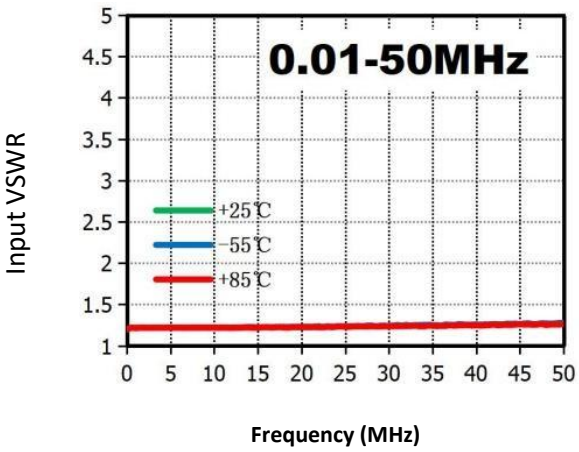
TYPICAL PERFORMANCE DATA:

Test Curves: VD=+8V; IDQ=240Ma

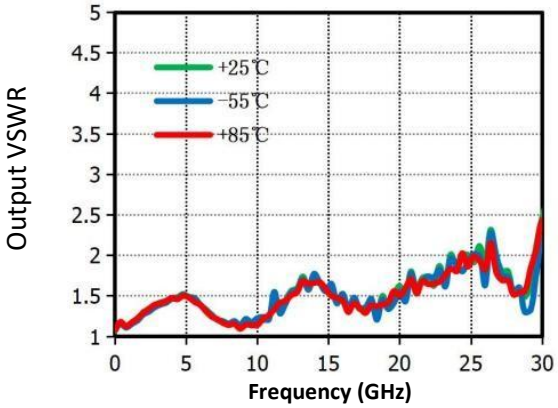
Input VSWR vs Temperature



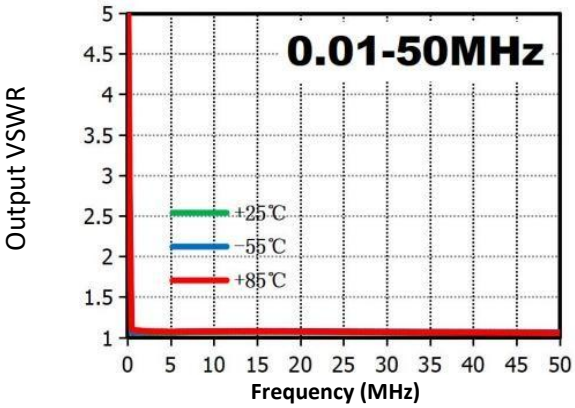
Input VSWR vs Temperature



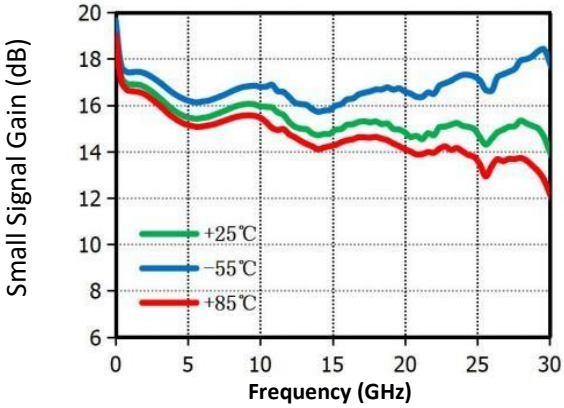
Output VSWR vs Temperature



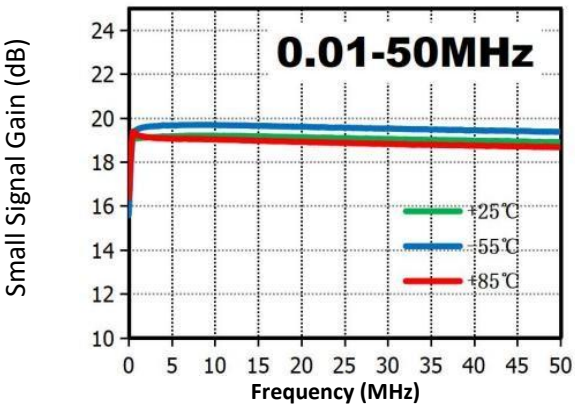
Output VSWR vs Temperature



Small Signal Gain vs Temperature



Small Signal Gain vs Temperature

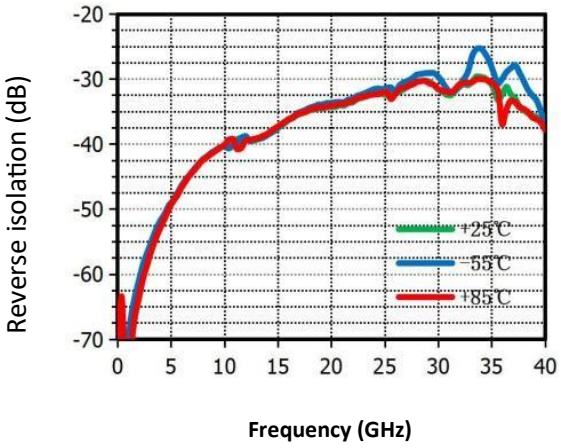


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

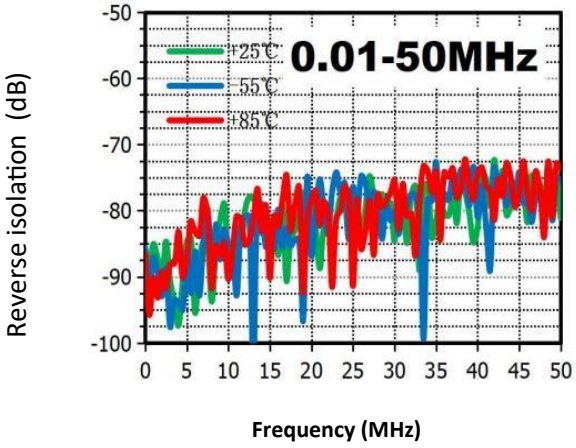
TYPICAL PERFORMANCE DATA:

Test Curves: VD=+8V;IDQ=240mA

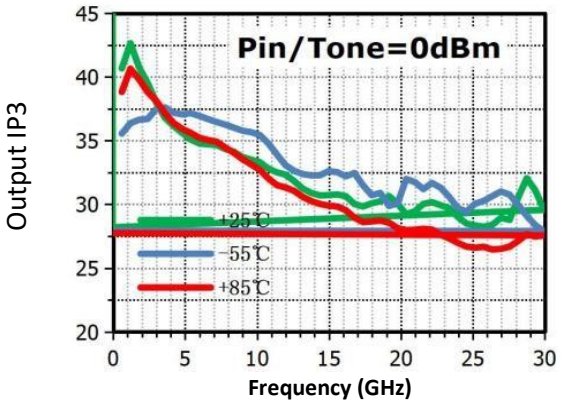
Reverse Isolation vs Temperature



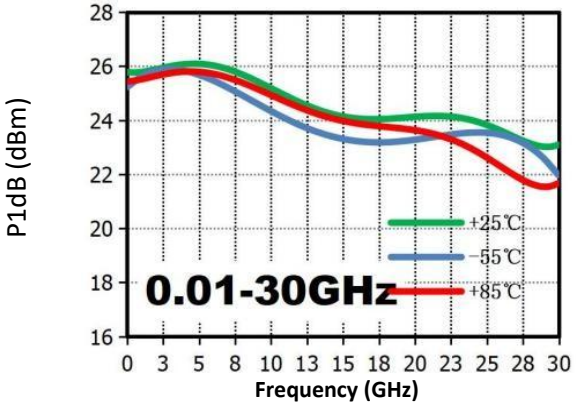
Reverse Isolation vs Temperature



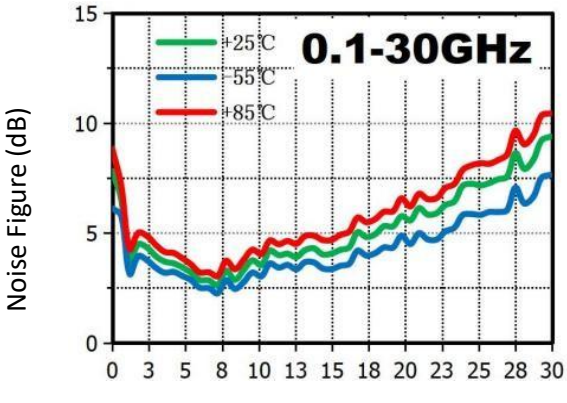
Output IP3 vs Temperature



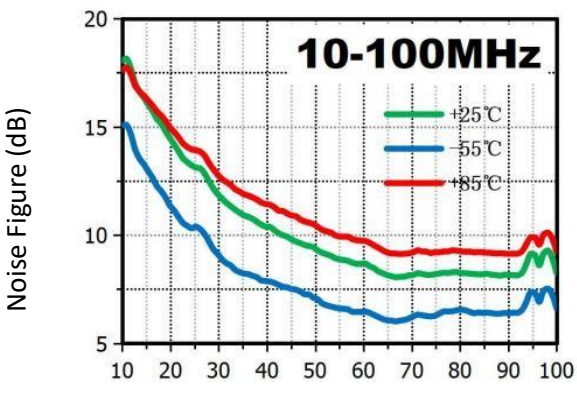
P1dB vs Temperature



Noise Figure vs Temperature



Noise Figure vs Temperature



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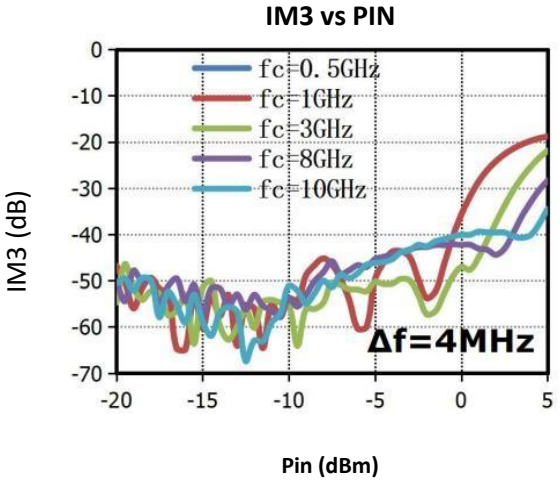
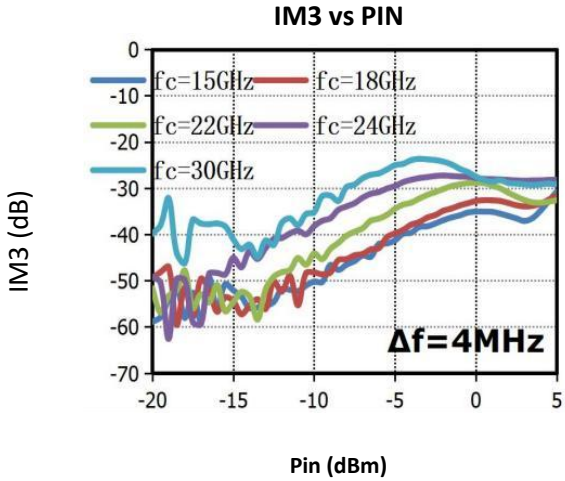
TYPICAL PERFORMANCE DATA:

Test Curves: VD=+8V; IDQ=240mA





Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

APPLICATION INFORMATION:

1. Storage: The chip must be placed in a container with electrostatic protection function and stored in nitrogen environment.
2. Cleaning: The bare chip must be operated and used in a purified environment. It is forbidden to use liquid detergent to clean the chip.
3. Electrostatic protection: Please strictly comply with ESD protection requirements to avoid electrostatic damage.
4. Routine operation: Please use vacuum chuck or precision pointed tweezers to take the chip. Avoid touching the chip surface with tools or fingers during operation.
5. Power on sequence: when power on, apply gate voltage first and then Drain voltage; When de energizing, remove the Drain voltage first and then the gate voltage.
6. Mounting operation: The chip can be installed by AuSn solder eutectic sintering or conductive adhesive bonding process. The installation surface must be clean and flat, and the gap between the chip and the input / output RF connecting line substrate shall be as small as possible.
7. Sintering process: 80 / 20 AuSn shall be used for sintering. The sintering temperature shall not exceed 300 ℃, the sintering time shall be as short as possible, not more than 20 seconds, and the friction time shall not exceed 3 seconds.
8. Bonding process: The dispensing amount of conductive adhesive shall be minimized during bonding, and the curing conditions shall refer to the data provided by the conductive adhesive manufacturer.
9. Bonding operation: Unless otherwise specified, two bonding wires (diameter 25um gold wire) are used for RF input and output, and the bonding wire shall be as short as possible.
The thermal ultrasonic bonding temperature is 150 ℃, and the ultrasonic energy is as small as possible. The pressure of spherical bonding cleaver is 40 ~ 50gf, and the pressure of wedge bonding cleaver is 18 ~ 22gf.
10. If you have any questions, please contact us at sales@lauftex.ru or visit our website http://lauftex.ru