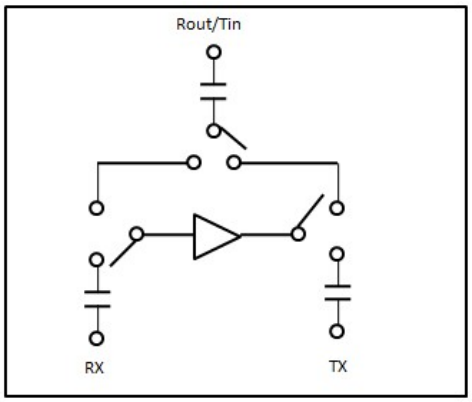
Features

Freq: 2~4GHz
Gain: 25.5dB
Noise Figure: 2dB
Output Power for 1 dB Compression:16dBm
Supply Voltage: +5V
Supply Current: 80mA
Chip Size:2.5mm×2.1mm×0.1mm

Functional Diagram



General Description

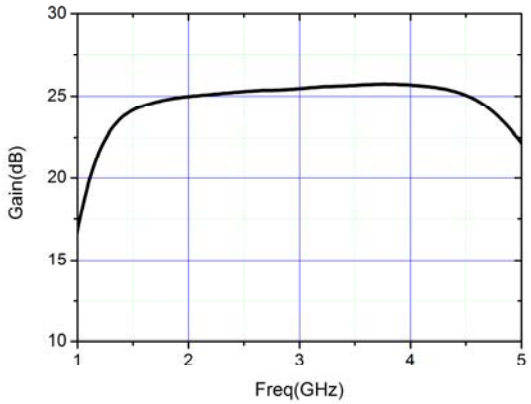
The HG113FC-1 is a GaAs pHEMT MMIC Bi-directional Amplifier operating between 2 and 4GHz. The amplifier has been optimized to provide 25.5dB gain, 2dB noise figure and 16dBm output power for 1dB compression.

Electrical Specifications(T_A=25 ℃,Vdd= +5V).

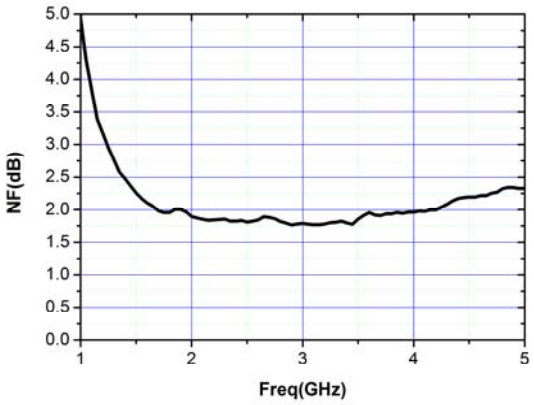
Parameter	Min.	Typ.	Max.
Freq(GHz)		2~4	
Receive Gain (dB)	—	25.5	—
Transmit Gain(dB)	—	25.5	—
Receive t VSWR	—	1.5	1.7
Transmit VSWR	—	1.5	1.8
Noise Figure(dB)	—	2	—
Output Power for 1 dB Compression(dBm)	—	16	—

Measured Performance(RX status)

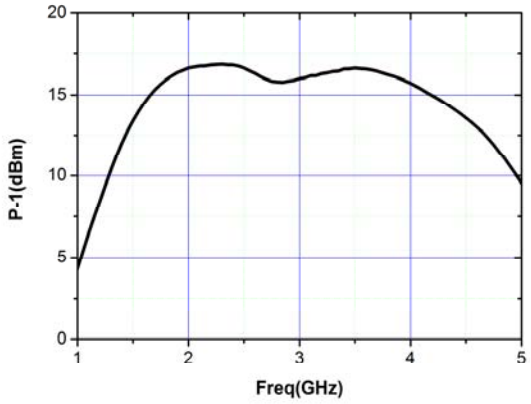
Gain



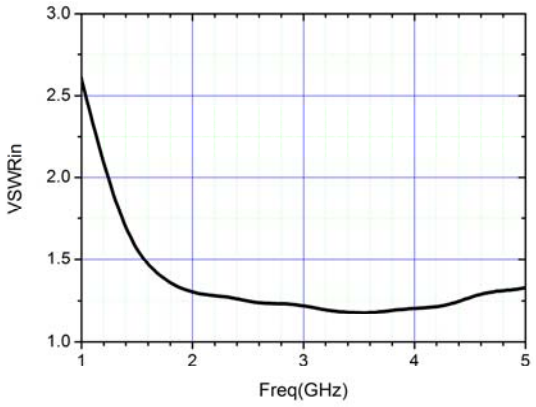
Noise Figure



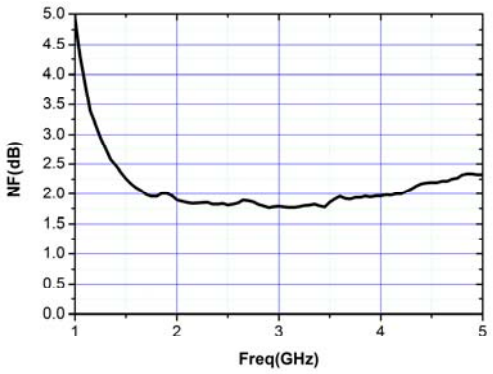
Output Power for 1dB Compression



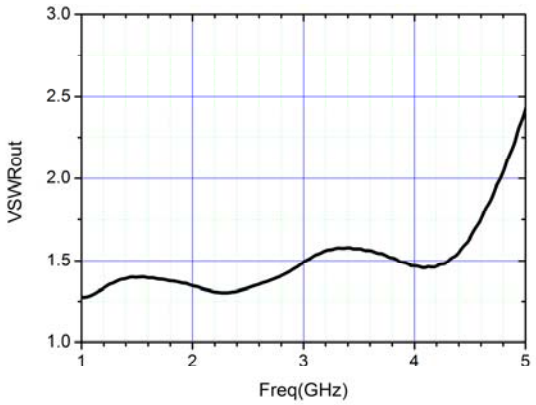
RX Input VSWR



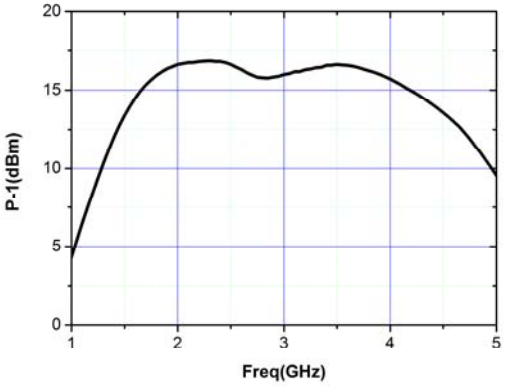
Noise Figure



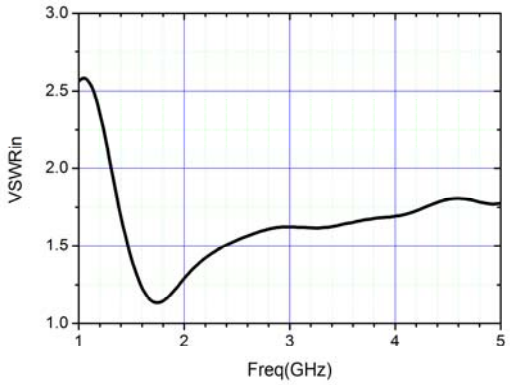
RX Output VSWR



Output Power for 1dB Compression

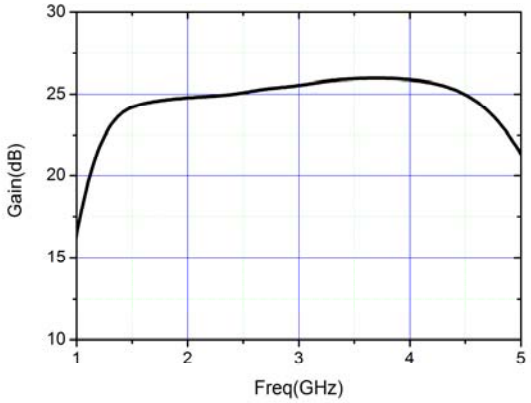


TX Input VSWR

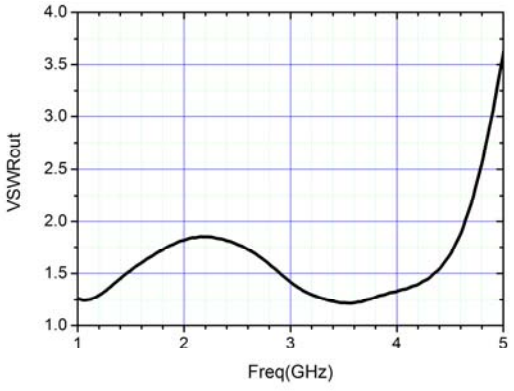


Measured Performance(TX status)

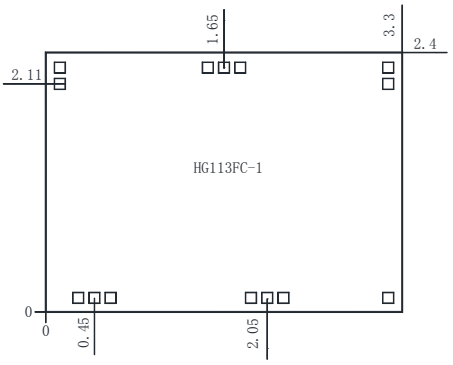
Gain



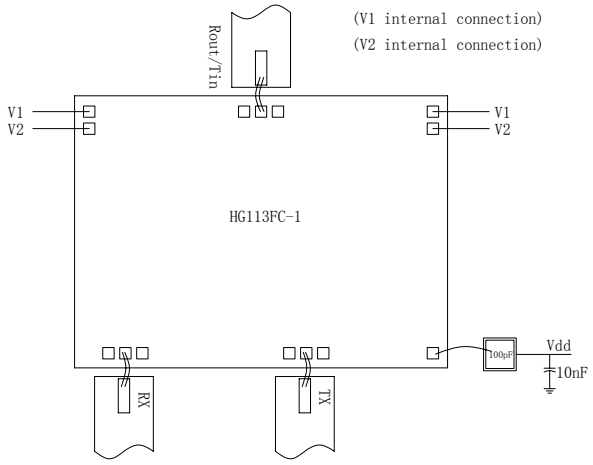
TX Output VSWR



Outline Drawing (mm)



Assembly Diagram



Truth Table

	RF1to RF2	RF2 to RF1
RX-Rout	-5V	0
Tin-TX	0	-5V

Absolute Maximum Ratings

Supply Voltage	+5.5V
RF Input Power	+18dBm
Operating Temperature	-55℃～125℃
Storage Temperature	-65℃～150℃

Notes:

1. The chip should be stored in a dry and nitrogen environment, and used in a clean environment.
2. GaAs material is brittle, can not touch the surface of the chip, must be careful when using.
3. The chip is welding with conductive adhesive or alloy (alloy temperature should not exceed 300℃, and no more than 30 sec.), and should make it fully grounded.
4. The chip microwave port and substrate gap is not exceeding 0.05mm, with Φ25μm double gold wire bonding, suggested length of gold wire 250～400μm.
5. Chip microwave port with a DC blocking capacitor.
6. The chip is sensitive to static electricity, and should be protected against static electricity during storage and use.