MILLER MMIC

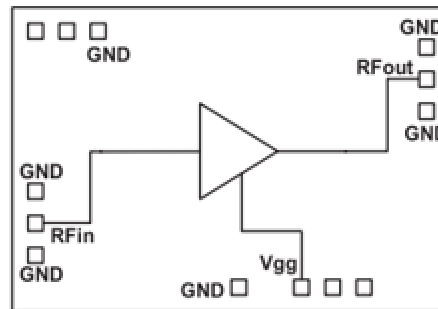
V1.0.0

GaAs MMIC
Distributed Amplifier
DC-35GHz

Features

- Frequency: DC-35GHz
- Gain: 16dB
- Noise Figure: 2dB
- P1dB: +15dBm
- Power Supply: +3V@150 mA
- I/O 50 ohm matching: VSWR<1.5

Functional Block Diagram



Typical Applications

- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

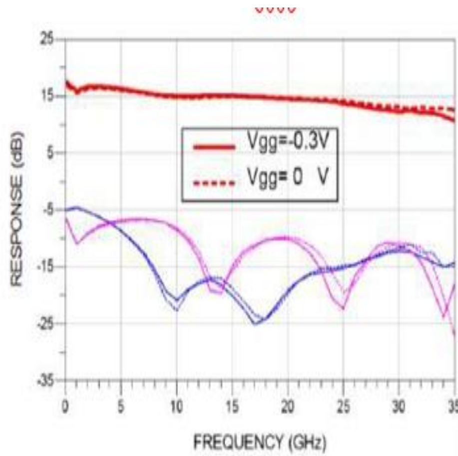
TA = +25ºC, Vdd = +3V, Vgg=-0.3V (0V also works fine) (On-wafer Measurement Results)

Parameters	Min.	Typ.	Max.	Units
Frequency	DC-35			GHz
Gain	11	16		dB
P1dB	11	16		dBm
Noise Figure	1.8	2		dB
Input Return Loss	8	10		dB
Output Return Loss	8	15		dB
Operating Current (@Vdd = 3V)		150		mA

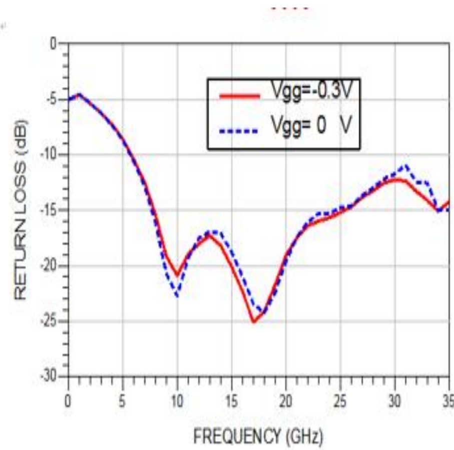
MMW015

Distributed Amplifier - MMIC DC-35GHz

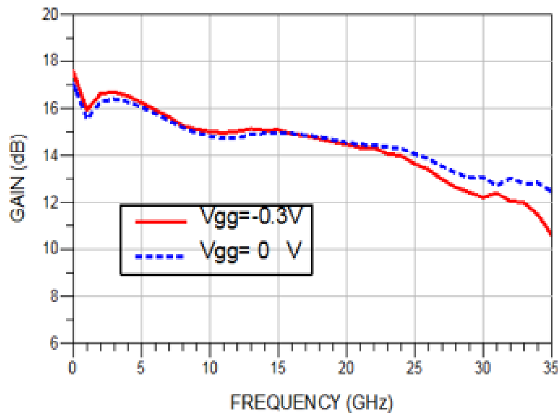
Frequency response vs. Vgg



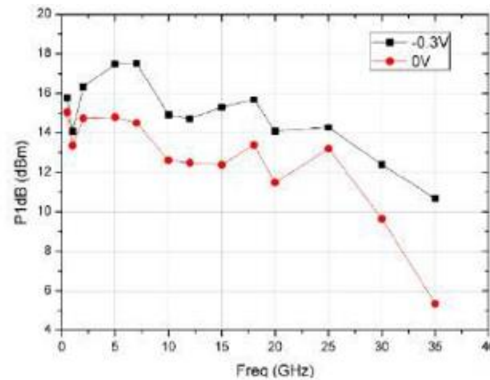
Output Return Loss vs. Vgg



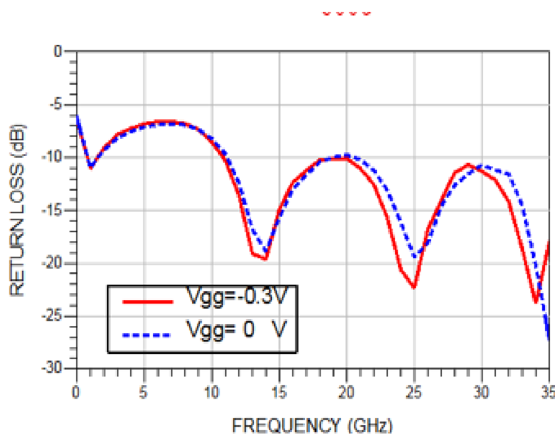
Gain vs. Vgg



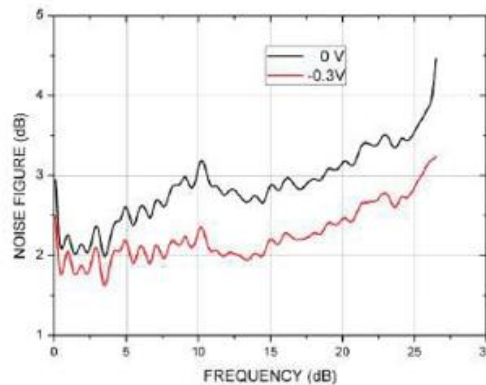
P1dB vs. Vgg



Input Return Loss vs. Vgg



Noise Figure vs. Vgg



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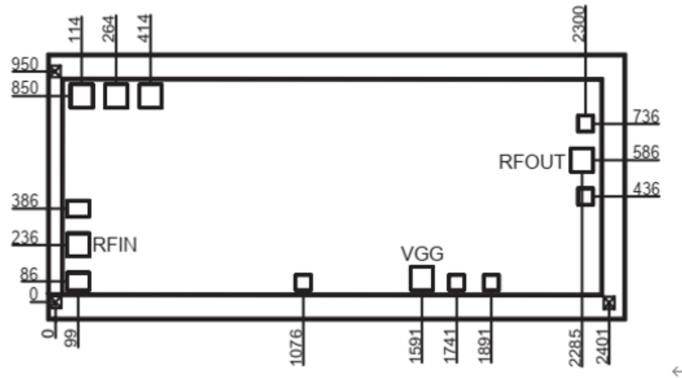
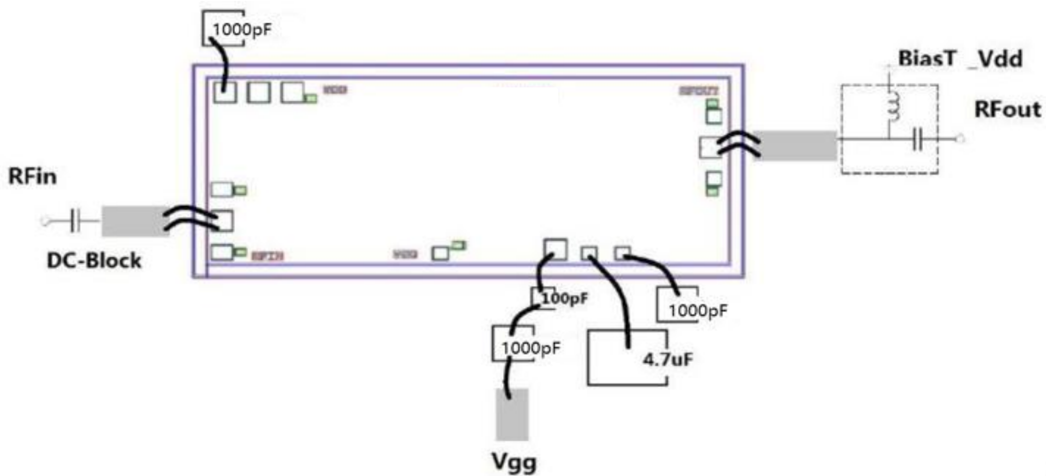
Outline Drawing:

All Dimensions in µm



Assembly Drawing (Bond testing)



Notes:

1. Die thickness: 100um
2. Typical bond pad is 100*100 µm^2
3. Bond pad metalization: Gold
4. Backside metalization: Gold
5. Backside of the die (GND)
6. No connection required for unlabeled bond pads
7. No DC Block
8. Input/Output use two 25um gold wire, length less than 250um is recommended.

Maximum Ratings:

1. Supply voltage: +3V
2. Operating temperature: -55℃ to +85℃
3. Storage temperature: -65℃ to +150℃