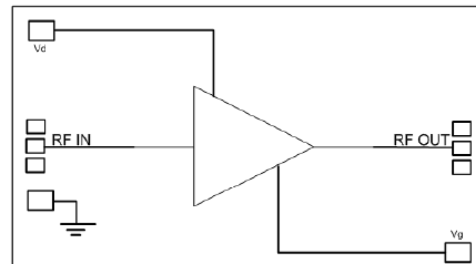
GaAs MMIC
Low Noise Amplifier
0.1-18GHz

Features

- Frequency: 0.1-18GHz
- Small Signal Gain: 15.5dB
- Noise Figure: 1.5dB typ.
- P1dB: 17dBm
- Power Supply: +5V/35mA
- Input/Output: 50Ω
- Die Size: 0.995 x 0.8 x 0.1 mm

Functional Block Diagram



Typical Applications

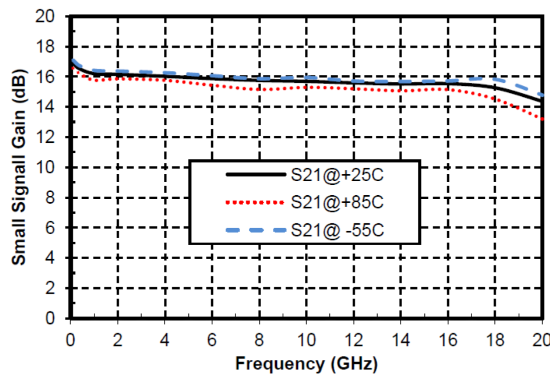
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

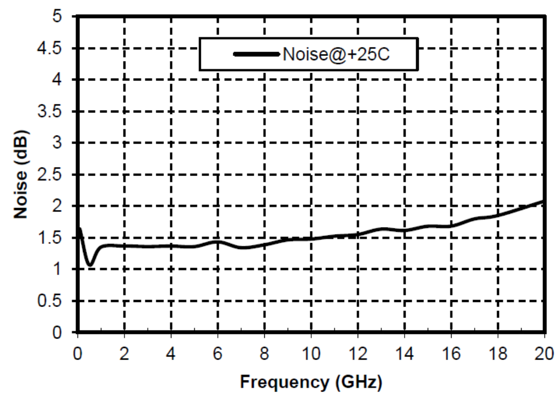
TA = +25ºC, Vd = +5V, Vg=+0.6V

Parameters	Min.	Typ.	Max.	Units
Frequency		0.1-18		GHz
Small Signal Gain		15.5		dB
Gain Flatness		±0.8		dB
Noise Figure	-	1.5	2.0	dB
Output 1dB Compression (P1dB)		17		dBm
Psat		18		dBm
Input Return Loss		17		dB
Output Return Loss		18		dB
Static current		35		mA

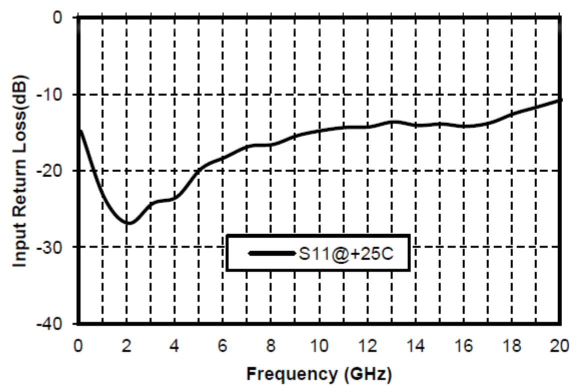
Gain vs. Frequency



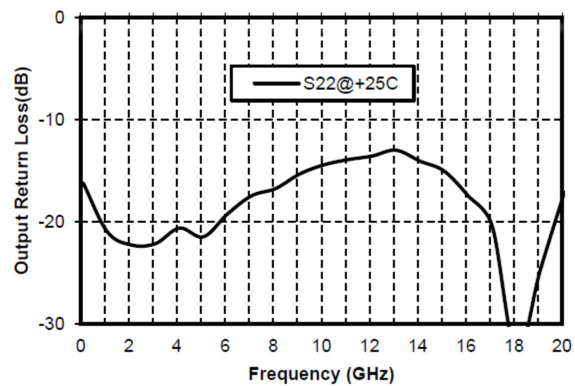
Noise Figure vs. Frequency



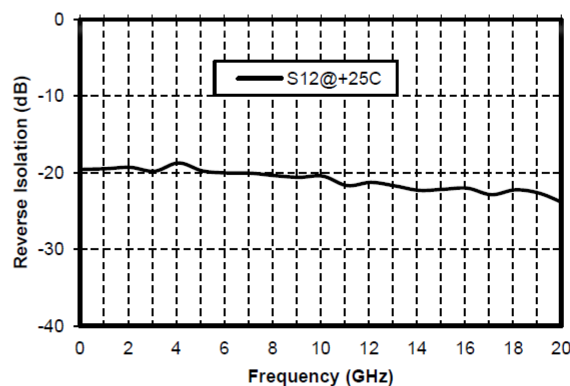
Input Return Loss vs. Frequency



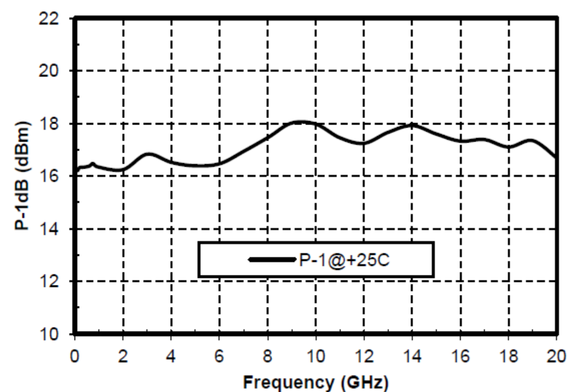
Output Return Loss vs. Frequency



Reverse Isolation vs. Frequency

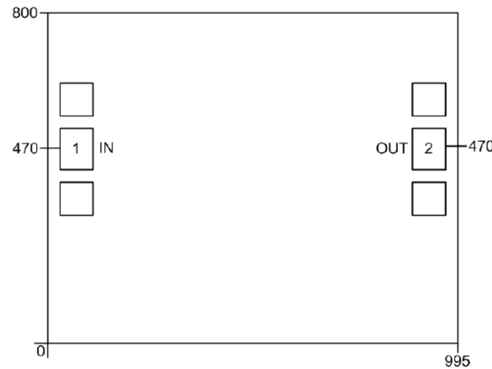


P1dB vs. Frequency



Outline Drawing:

All Dimensions in µm



Pad Description

Pad	Function	Description
1	RF IN, Vg	RF signal input terminal; Amplifier gate bias, external 1kΩ and 8kΩ resistors required; DC blocking capacitor required.
2	RF OUT, Vd	RF signal output terminal; Amplifier drain bias, external inductor and 100pF bypass capacitor required; DC blocking capacitor required.
Die bottom	GND	Die bottom must be connected to RF/DC ground.

MILLER MMIC

MML084

V1.0.0

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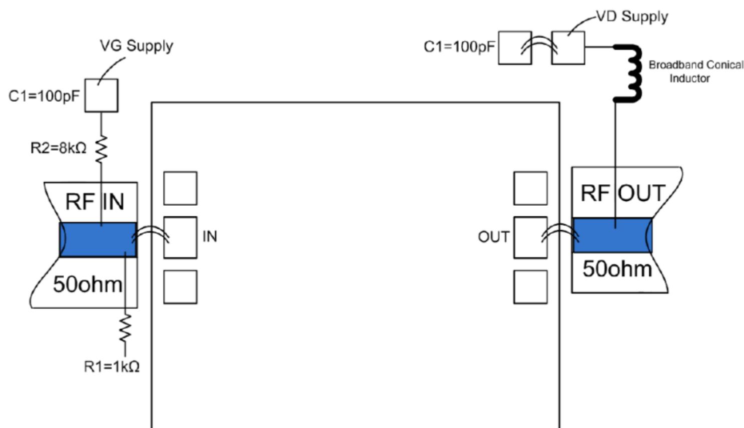
Assembly Drawing



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

Maximum Ratings:

1. Maximum drain voltage: +7V
2. Maximum input power: +20dBm
3. Operating temperature: -55℃ to +85℃
4. Storage temperature: -65℃ to +150℃

MML084

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