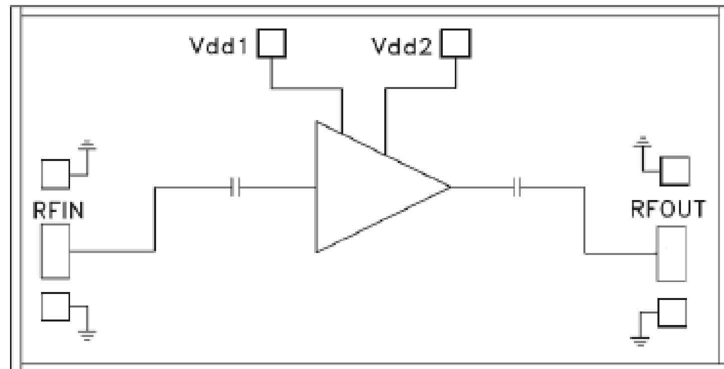
GaAs MMIC
Low Noise Amplifier
12-19GHz

Features

- Frequency: 12-19GHz
- Small Signal Gain: 19dB
- Noise Figure: 1.35dB typ.
- Noise Figure: 1.4dB max.
- P1dB: 7dBm
- Power Supply: +3.3V/25mA
- Input/Output: 50Ω
- Die Size: 1.85 x 0.9 x 0.1 mm

Functional Block Diagram



Typical Applications

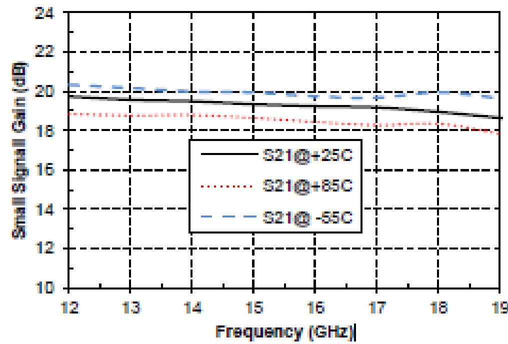
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

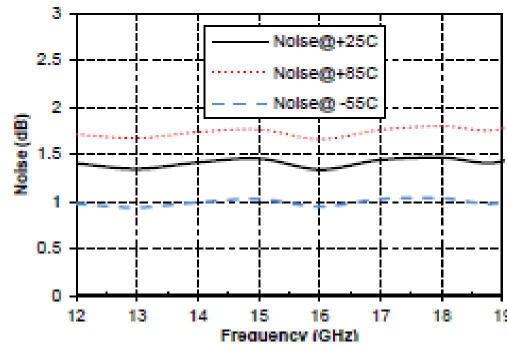
TA = +25ºC, Vd = +3.3V

Parameters	Min.	Typ.	Max.	Units
Frequency		12-19		GHz
Small Signal Gain	18.5	19	19.5	dB
Gain Flatness		±0.5		dB
Noise Figure	-	1.35	1.4	dB
Output 1dB Compression (P1dB)	6.5	7	7.5	dBm
Input Return Loss	11	12	-	dB
Output Return Loss	12	18	-	dB
Static Current		25		mA

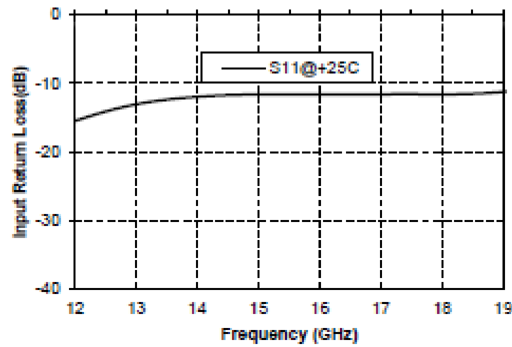
Gain vs. Frequency



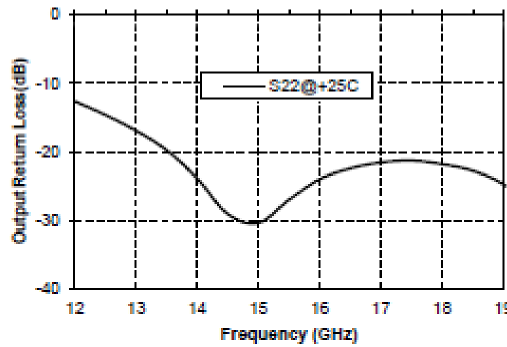
Noise Figure vs. Frequency



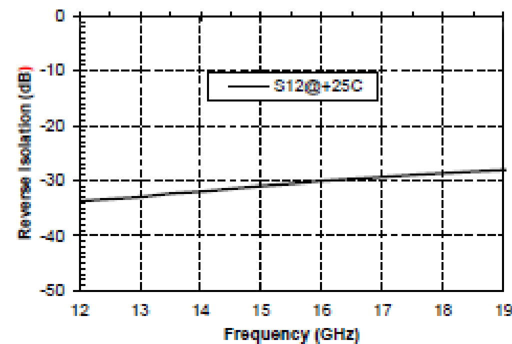
Input Return Loss vs. Frequency



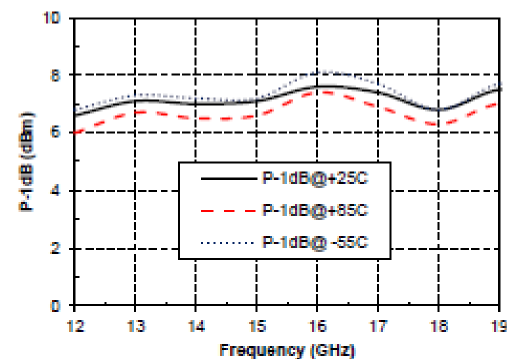
Output Return Loss vs. Frequency



Reverse Isolation vs. Frequency

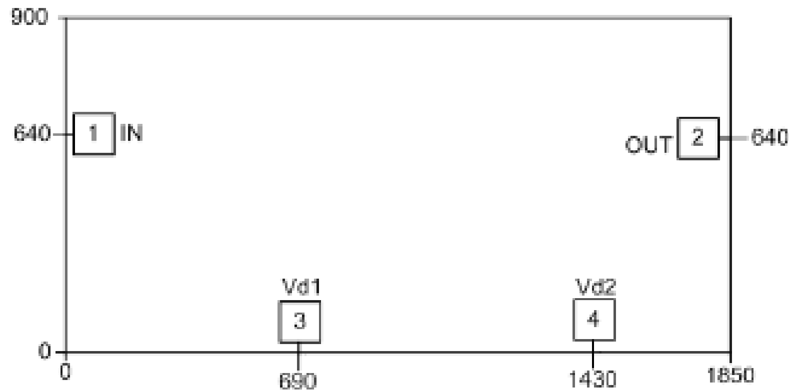


P1dB vs. Frequency



Outline Drawing:

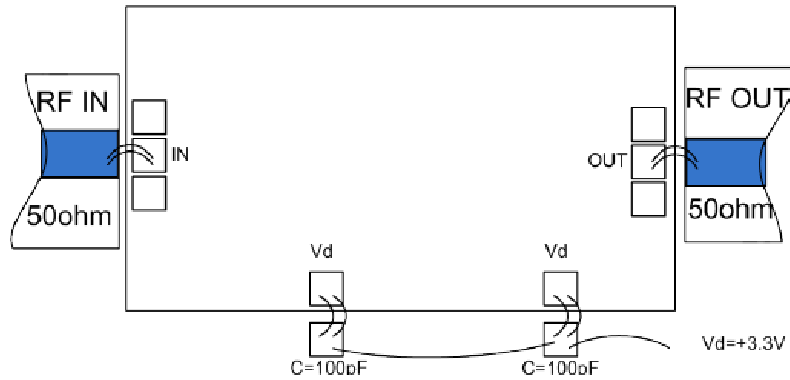
All Dimensions in µm



Pad Description

Pad	Function	Description	Equivalent Circuit
1	RF IN	RF signal input terminal, no blocking capacitor required.	RF IN
2	RF OUT	RF signal output terminal, no blocking capacitor required.	RF OUT
3	VDD	Amplifier drain bias; external 100pF bypass capacitor required.	bbV
Die bottom	GND	Die bottom must be connected to RF/DC ground.	GND

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: +5V
2. Maximum input power: +20dBm
3. Operating temperature: -55℃ to +85℃
4. Storage temperature: -65℃ to +150℃