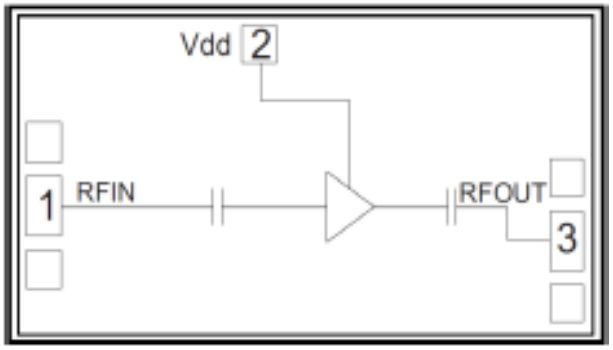
GaAs MMIC
Low Noise Amplifier
8-12GHz

Features

- Frequency: 8-12GHz
- Small Signal Gain: 29dB (positive slope)
- Noise Figure: 1.0 dB max.
- P1dB: 3dBm
- Power supply: +5V/10mA
- Input/Output: 50Ω
- Die Size: 2.25 x 0.95 x 0.09 mm

Functional Block Diagram



Typical Applications

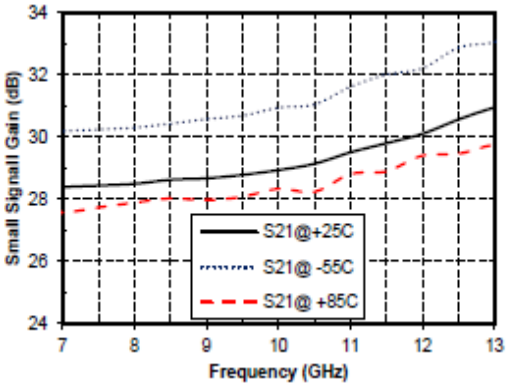
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

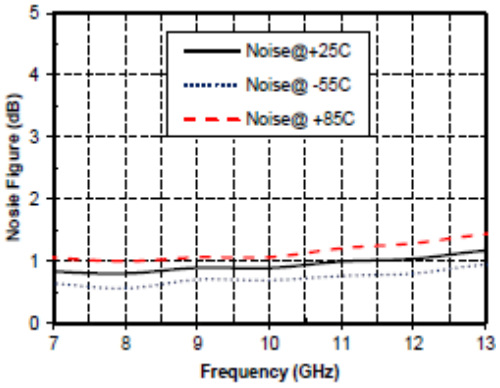
TA = +25°C, Vd = +5V

Parameters	Min.	Typ.	Max.	Units
Frequency		8-12		GHz
Small Signal Gain	-	29	-	dB
Gain Flatness		±1.0		dB
Noise Figure	-	-	1.0	dB
Output 1dB Compression (P1dB)	2	3	5	dBm
P-3dB	3	5	7	dBm
Input Return Loss	18	25	-	dB
Output Return Loss	15	15	-	dB
Static current		10		mA

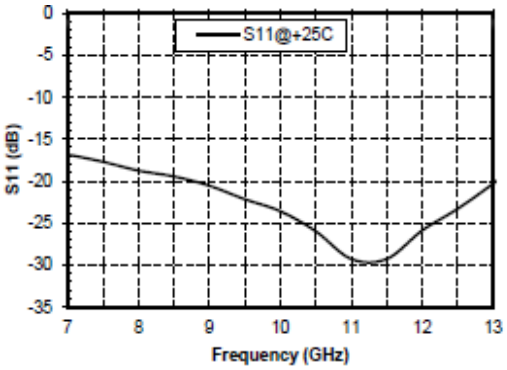
Gain vs. Frequency



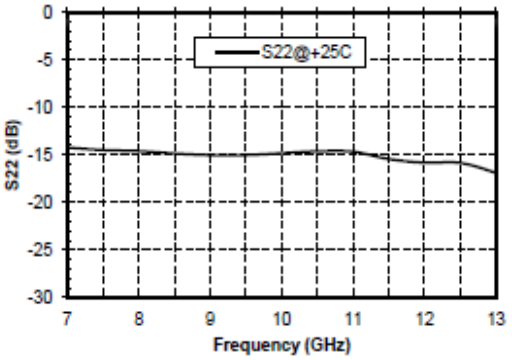
Noise Figure vs. Frequency



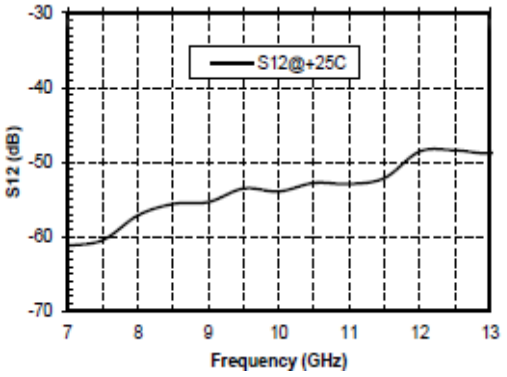
Input Return Loss vs. Frequency



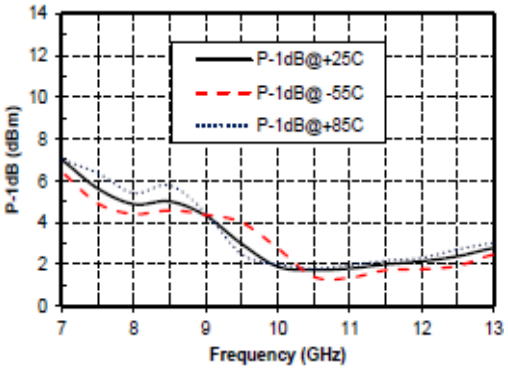
Output Return Loss vs. Frequency



Reverse Isolation vs. Frequency

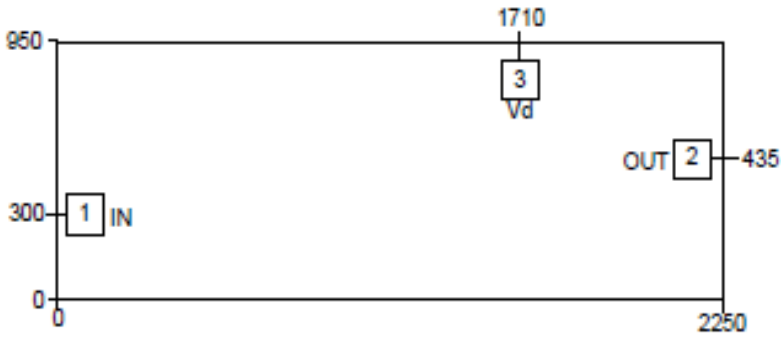


P1dB vs. Frequency

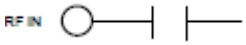
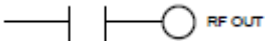
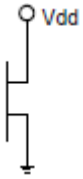


Outline Drawing:

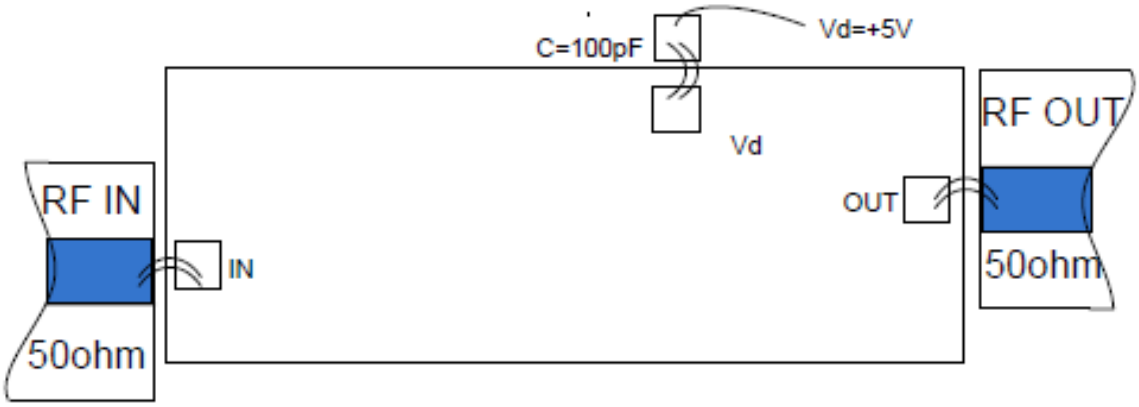
All Dimensions in µm



Pad Description

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

Assembly Drawing



Notes:
1. Die thickness: 100um
2. Typical bond pad is 100*100 μm²
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℃