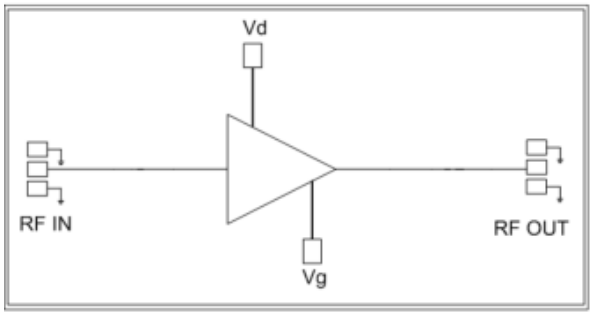
GaAs MMIC
Wide-band Amplifier
1-20GHz

Features

- Frequency: 1-20GHz
- Small Signal Gain: 12dB
- Gain Flatness: ≤±0.5dB@1-20GHz
- P1dB: 30dBm
- Psat: 31dBm
- Power Supply: +10V (+11V)/320mA
- Input/Output: 50Ω
- Die Size: 2.23 x 1.35 x 0.1 mm

Functional Block Diagram



Typical Applications

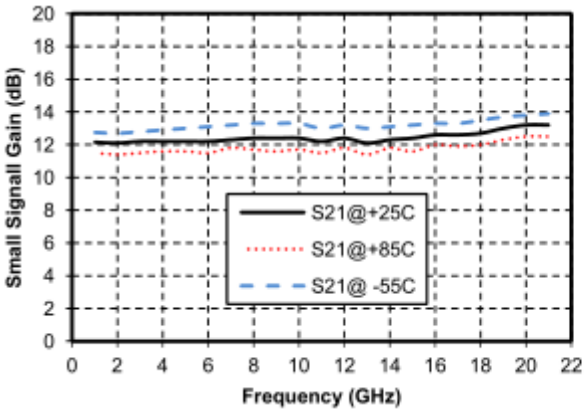
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

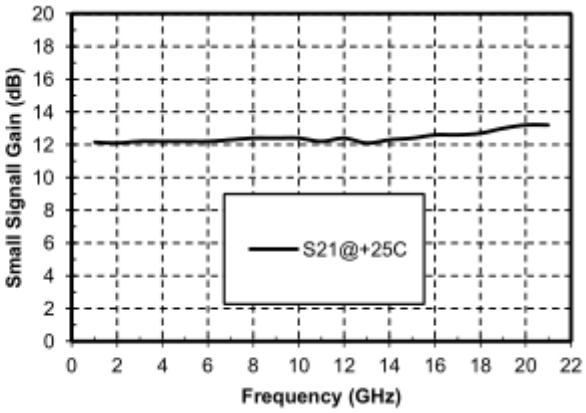
TA = +25°C, Vd = +10V(+11V), *Ids=320mA

Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency	1-18			18-20			GHz
Small Signal Gain		12			13		dB
Gain Flatness		±0.3			±0.3		dB
Output 1dB Compression (P1dB)	29.0	30	30.5	28.5	29	29.5	dBm
Saturated Output Power (Psat)		31			30		dBm
Third-order Intercept Point (IP3)		37			36		dBm
Input Return Loss		15			13		dB
Output Return Loss		20			15		dB
* Adjust VG (-2-0V) to obtain device current of 320mA.							

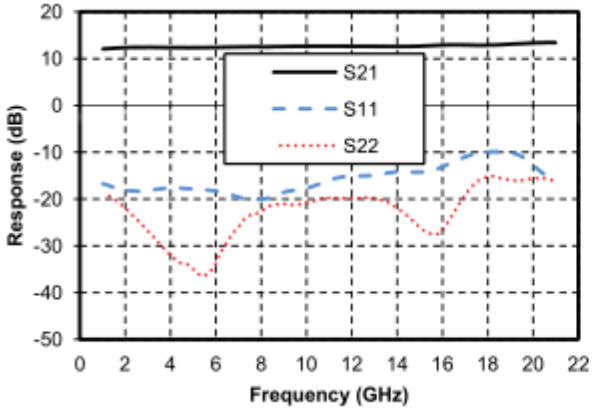
Gain vs. Frequency



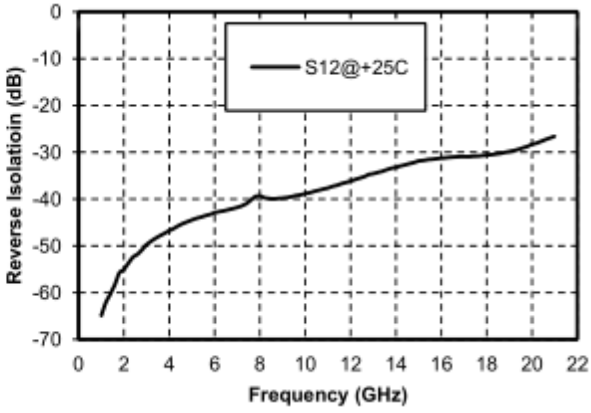
Gain vs. Frequency



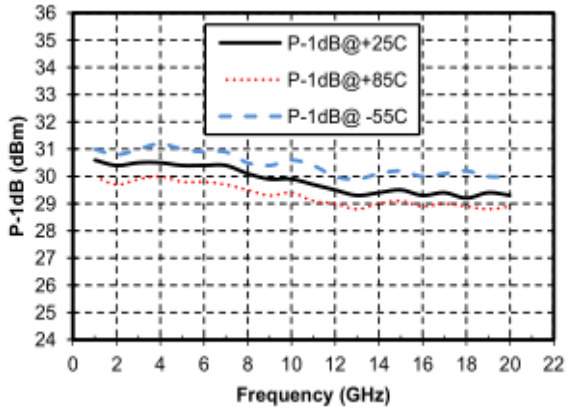
Gain&Return Loss vs. Frequency



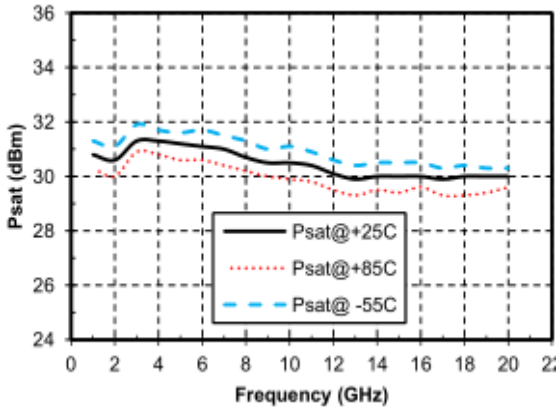
Reverse Isolation vs. Frequency



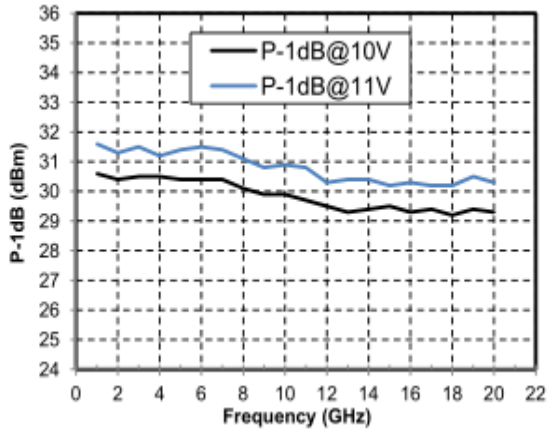
P1dB vs. Frequency@+10V



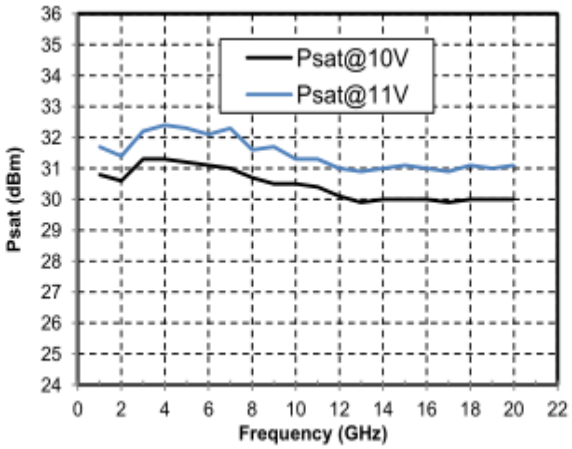
Psat vs. Frequency@+10V



P1dB vs. Voltage



Psat vs. Voltage



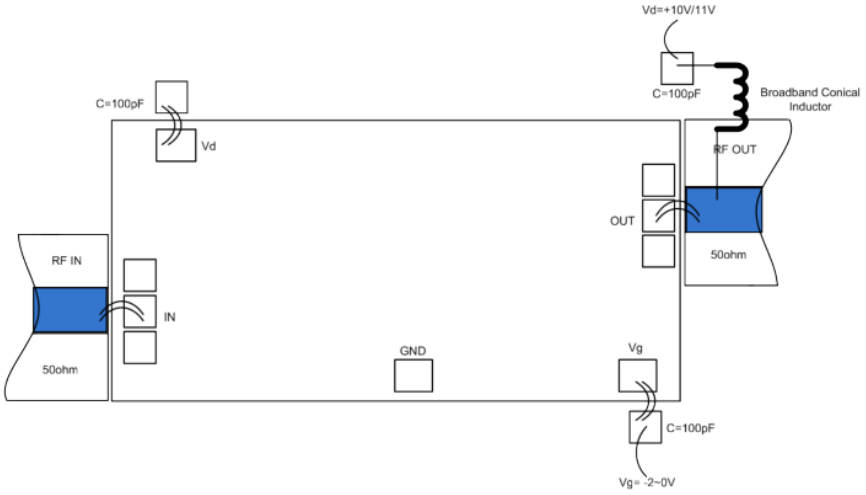
Outline Drawing:

All Dimensions in mm

Pad Description

Pad	Function	Description
1	RF IN	Signal input terminal; connected to 50Ω circuit; blocking capacitor required.
5	RF OUT	Signal output terminal; connected to 50Ω circuit; blocking capacitor required; external DC biasing network required; drain current provided. Refer to following assembly drawing or contact manufacturer.
7	Vg	Gate pad; recommended to paste bypass capacitor depending on the following assembly drawing.
8	Vd	Amplifier drain bias, connected to external 100pF bypass capacitor.
2, 3, 4, 6, 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 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: +14V
2. Maximum gate bias: -3V
3. Maximum input power: +23dBm
4. Operating temperature: -55℃ to +85℃
5. Storage temperature: -65℃ to +150℃