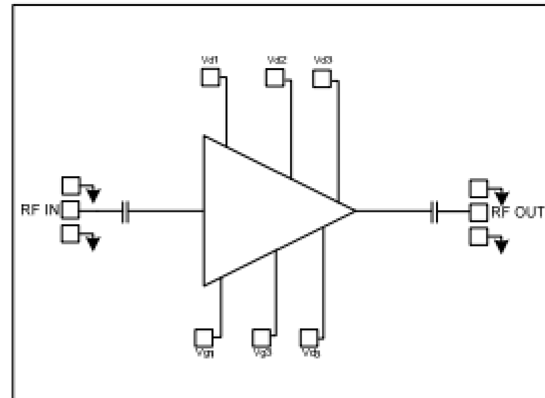
GaAs pHEMT MMIC
Power Amplifier
17-24GHz

Features

- Frequency: 17-24GHz
- Small Signal Gain: 25dB
- Gain Flatness: ±1.5dB
- P1dB: 25dBm
- Psat: 25.5dBm
- Power Supply: +5V@220mA
- Input/Output: 50Ω
- Die Size: 1.96 x 1.5 x 0.1 mm

Functional Block Diagram



Typical Applications

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

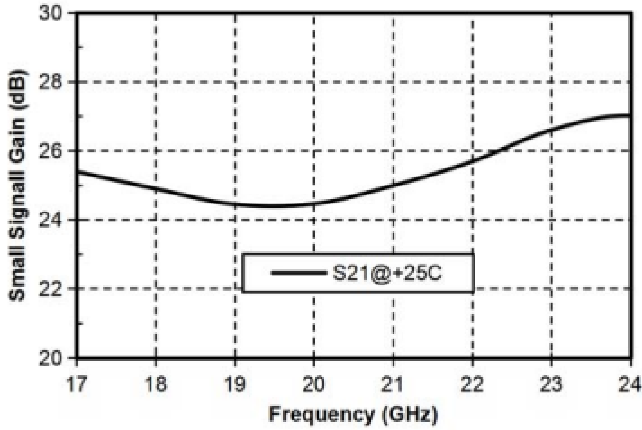
Electrical Specifications

TA = +25ºC, Vd = +5V

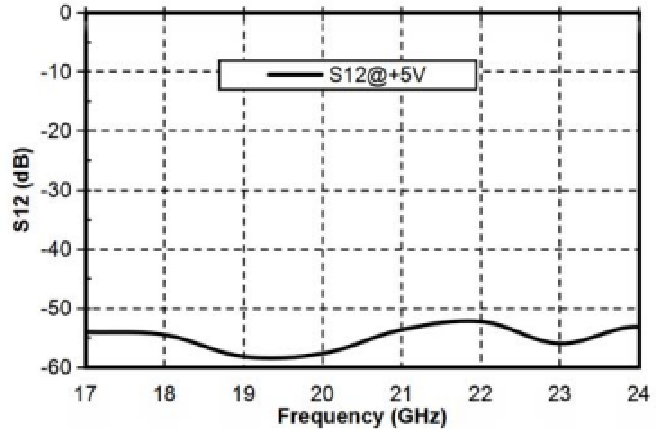
Parameters	Min.	Typ.	Max.	Units
Frequency		17-24		GHz
Small Signal Gain	24	25	27	dB
Gain Flatness		±1.5		dB
P1dB		25		dBm
Psat		25.5		dBm
Input Return Loss	10.5	15		dB
Output Return Loss	14	20		dB
Quiescent Current		220		mA
Operating Current		240	250	mA

*Adjust Vg during -2V~0V, recommended Vg is around -0.85V.

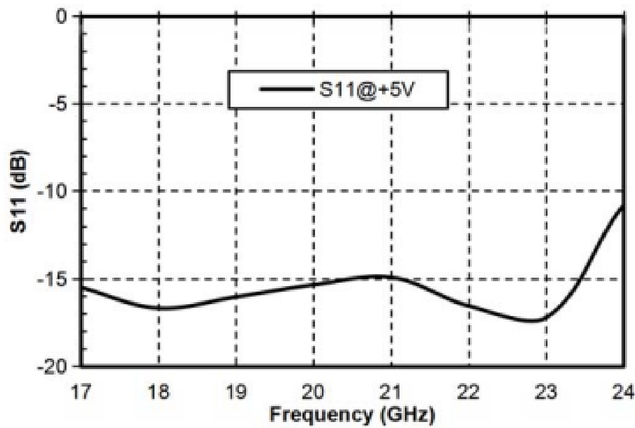
Gain vs. Frequency



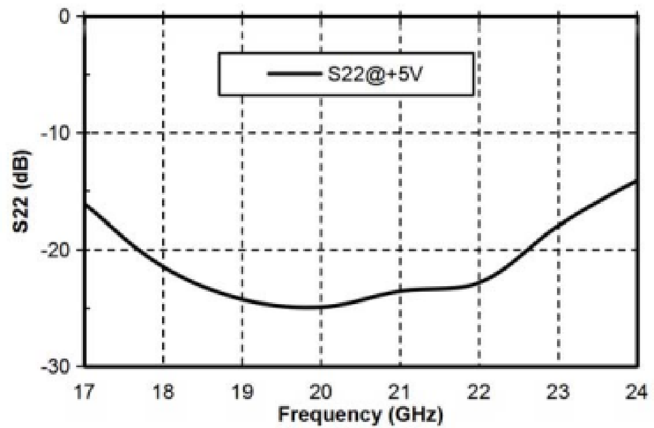
Reverse Isolation vs. Frequency



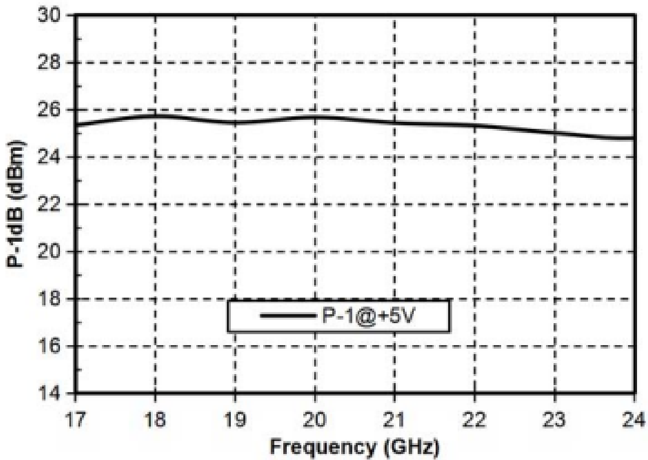
Input Return Loss vs. Frequency



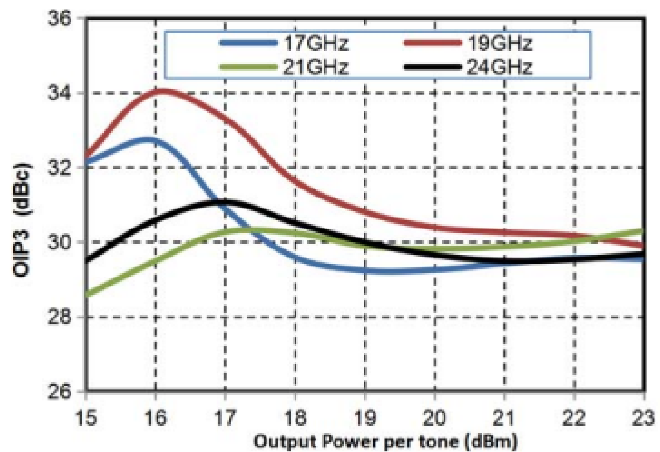
Output Return Loss vs. Frequency



P-1dB vs. Frequency

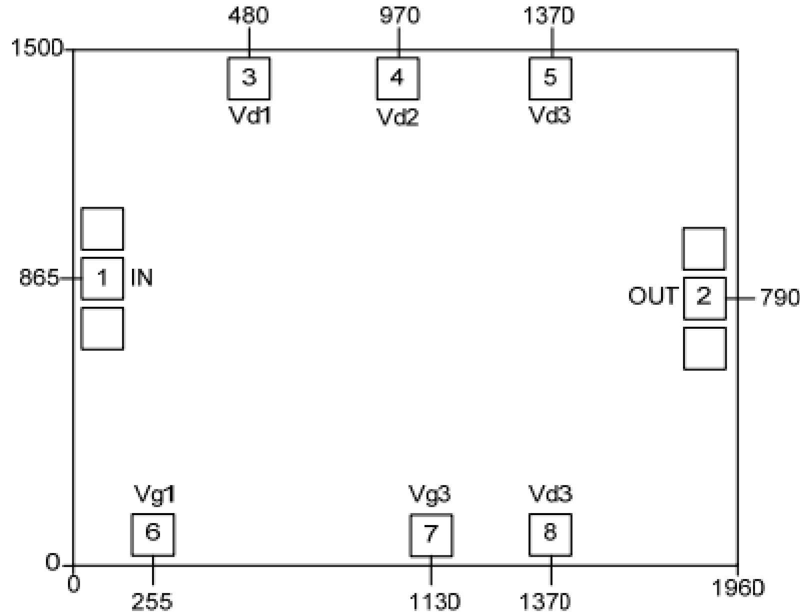


OIP3 vs. Frequency



Outline Drawing:

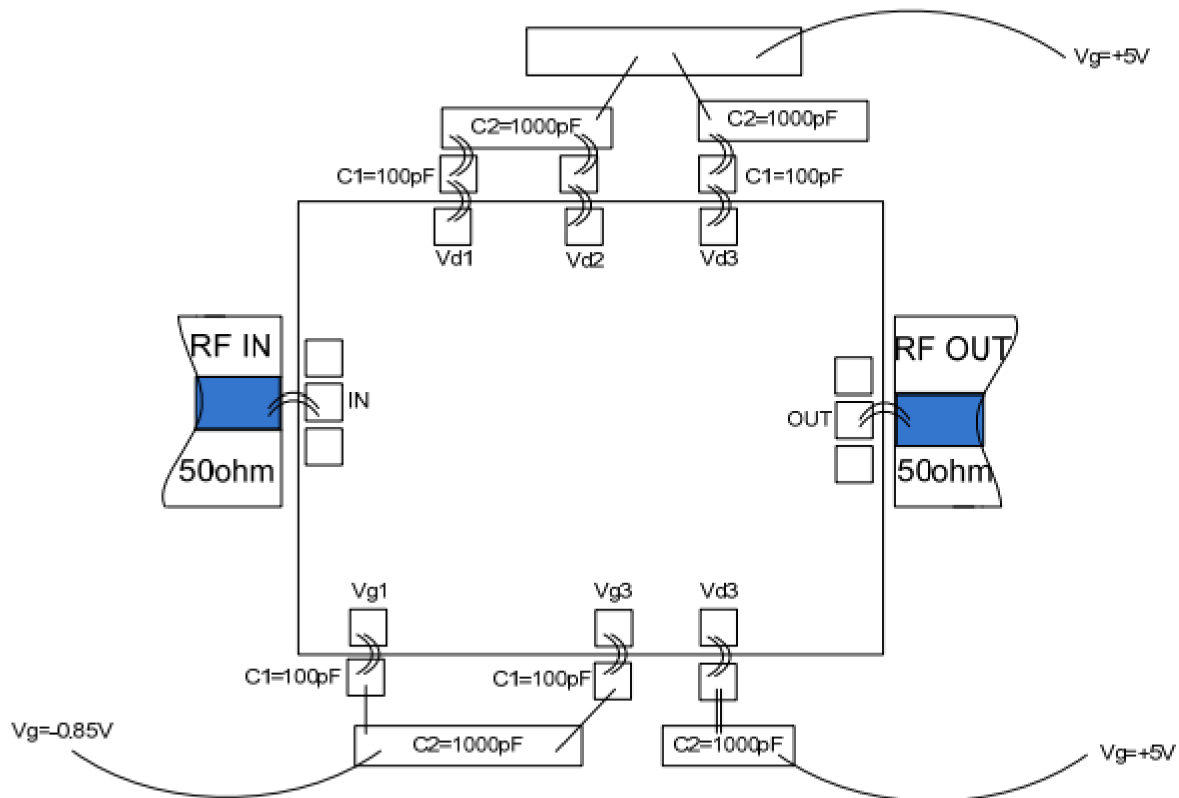
All Dimensions in um



Pad Description

PAD	Function	Description
1	RF IN	RF signal input terminal, no blocking capacitor required
2	RF OUT	RF signal output terminal, no blocking capacitor required
3,4,5,8	Vd1~Vd3	Amplifier drain bias, connected to external 100pF, 1000pF bypass capacitor
6,7	Vg1~Vg3	Amplifier gate bias, connected to external 100pF, 1000pF bypass capacitor.
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: +8V**
2. **Maximum input power: +20dBm**
3. **Operating temperature: -55℃ to +85℃**
4. **Storage temperature: -65℃ to +150℃**