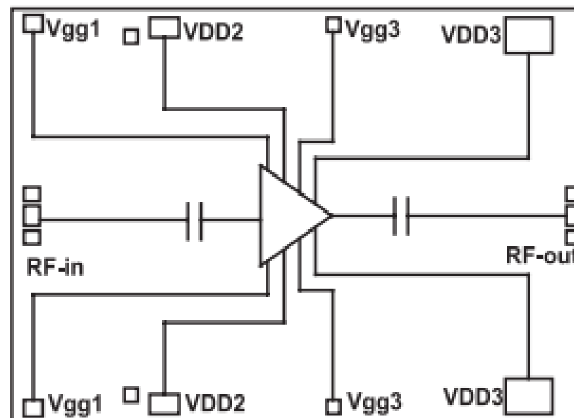
GaAs MMIC
Power Amplifier
12-18GHz

Features

- Frequency: 12-18GHz
- Gain: 22.5dB
- P1dB:+ 36dBm
- OIP3: +43dBm
- Power Supply : +8.0V@1.4A
- Die Size : 4.2 x 2.9 x 0.1 mm

Functional Block Diagram



Typical Applications

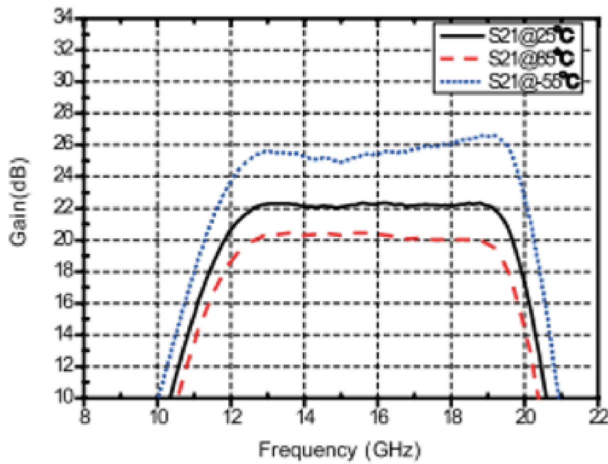
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

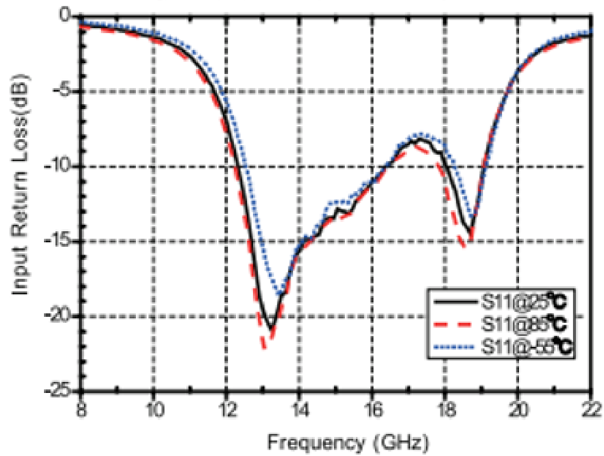
TA = +25°C, Vd1 = Vd2 = +8V, Vg1 = Vg2 = -0.7V, Id1 + Id2 = 1.5A

Parameters	Min.	Typ.	Max.	Units
Frequency		12-18		GHz
Gain		22.5	23.5	dB
P1dB		35.5		dBm
OIP3	42	43		dBm
Psat		36		dBm
PAE@Psat		24		%
Input Return Loss		10		dB
Output Return Loss		10		dB
Operating Current (@Vd = 8V)		1.5		A

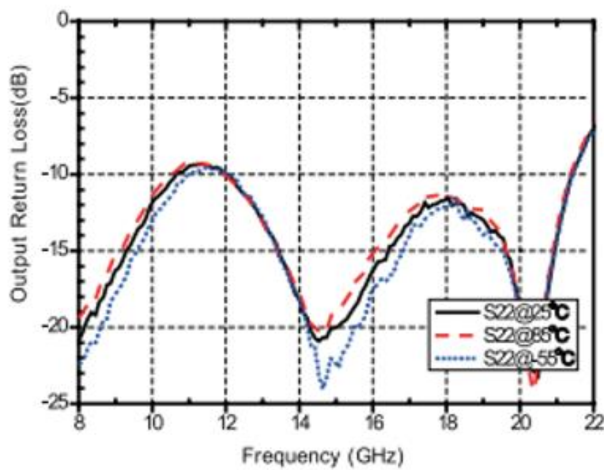
Gain vs. Frequency



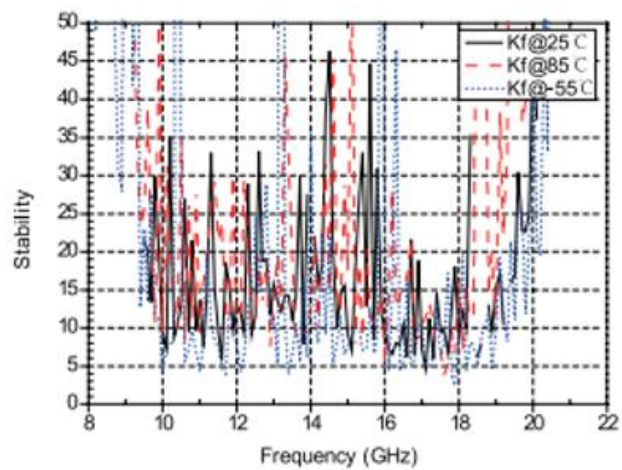
Input Return Loss vs. Frequency



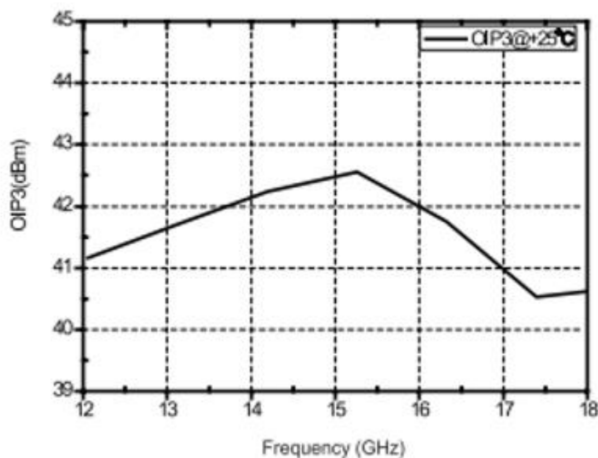
Output Return Loss vs. Frequency



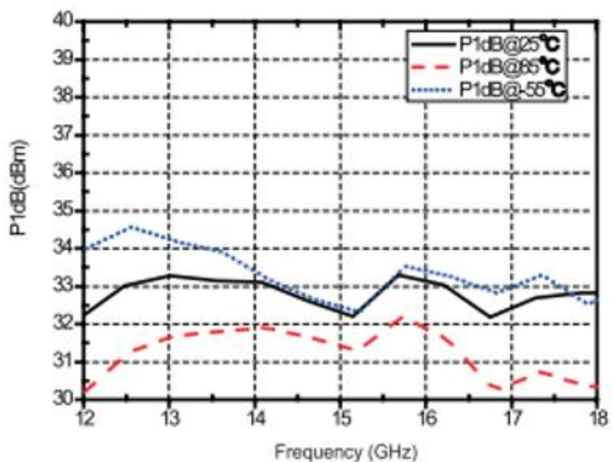
Stability vs. Frequency



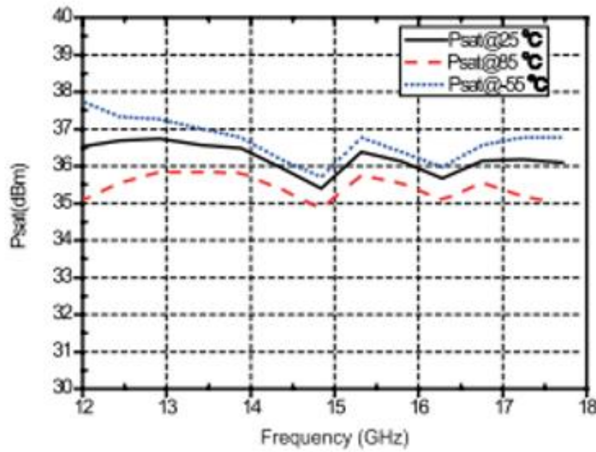
OIP3 vs. Frequency



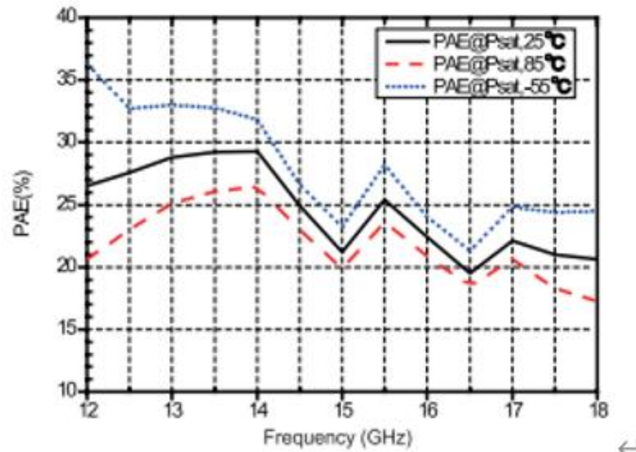
P1dB vs. Frequency



Psat vs. Frequency

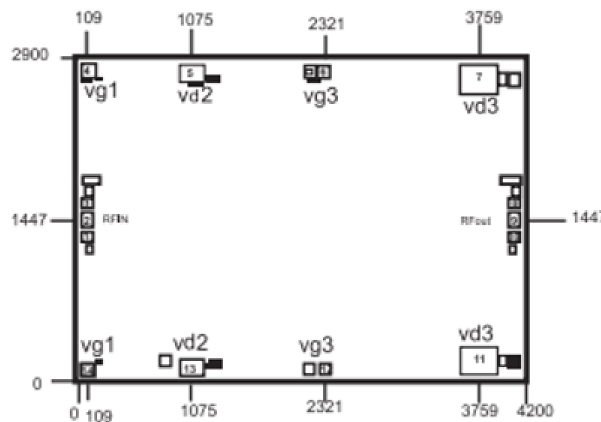


PAE vs. Frequency



Outline Drawing:

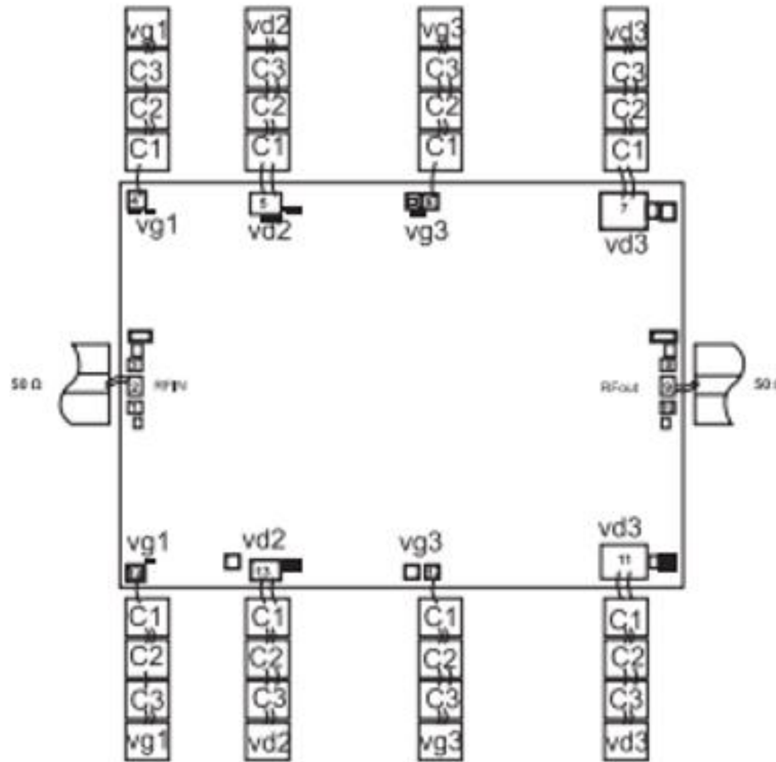
All Dimensions in μm



Pad Description

Pad	Function	Description
2	RF IN	Signal input terminal, connected to 50Ω circuit ; blocking capacitor required.
9	RF OUT	Signal output terminal, connected to 50Ω circuit ; blocking capacitor required.
5,7,13,11	Vd2/Vd3	Amplifier drain voltage
4,6,12,14	Vg1/Vg3	Amplifier gate voltage
1,3,8,10	GND	Die bottom must be connected to RF/DC ground.

Assembly Drawing (Bond testing)



*The capacitance of the peripheral capacitor：C1 = 100pF, C2 = 1000pF, C3 = 4.7uF.

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