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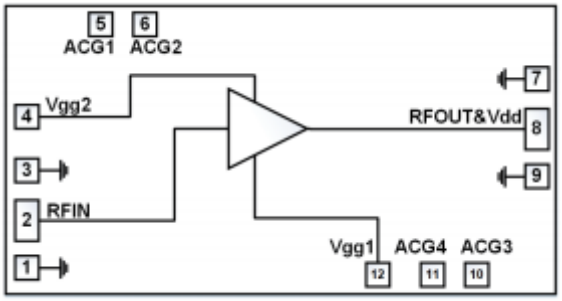
GaAs MMIC
Distributed Power Amplifier
DC-20GHz

Features

- **Frequency: DC-20GHz**
- **Gain: 17dB**
- **P1dB: +23dBm**
- **Power supply: +8V@160mA**
- **Die Size: 3040 x 1400 µm**

Functional Block Diagram



Typical Applications

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

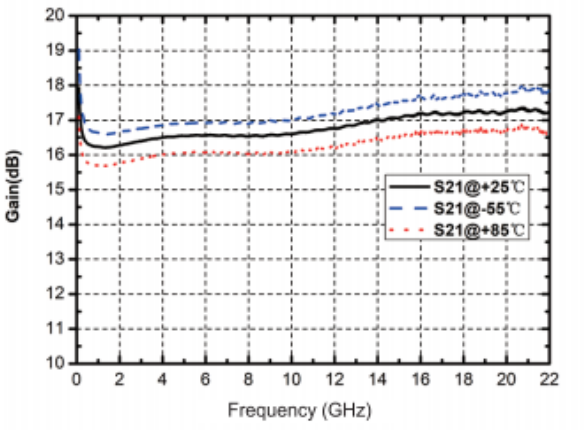
Electrical Specifications

TA = +25ºC, Vdd = +8V, Vgg2 = +4.5V, Idd = 160mA (Quiescent current*)

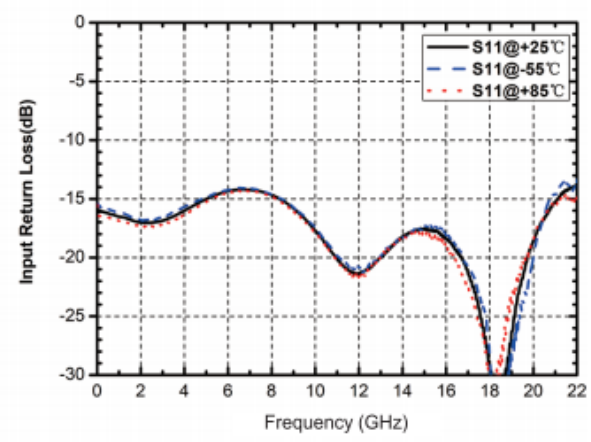
Parameters	Min.	Typ.	Max.	Units
Frequency		**DC-20**		**GHz**
Gain		**17**		**dB**
P1dB		**23**		**dBm**
Psat		**24**		**dBm**
OIP3		**32**		**dBm**
Input Return Loss		**15**		**dB**
Output Return Loss		**15**		**dB**
Quiescent Operating Current (Vdd = +8V, Vgg2 = +4.5V, Vgg1 = +0.45V typical value)		**160**		**mA**

*Adjust Vgg1 to the range of 0V~0.6V and adjust it to the typical value of working current Idd=160mA

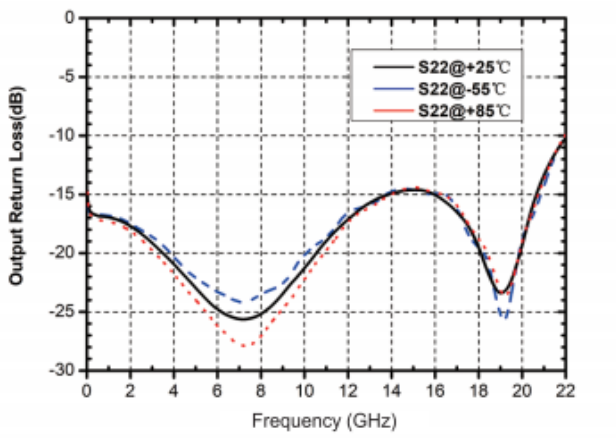
Gain vs. Frequency



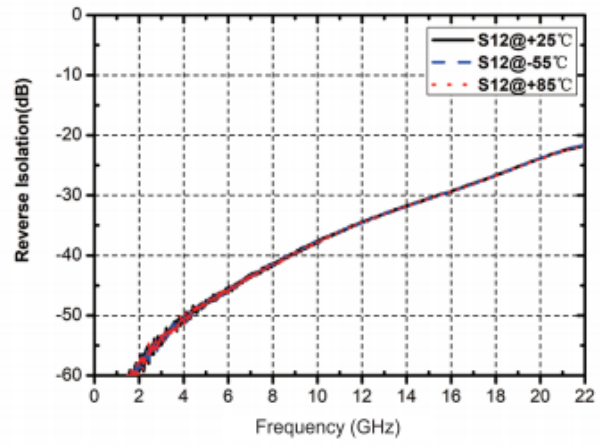
Input Return Loss vs. Frequency



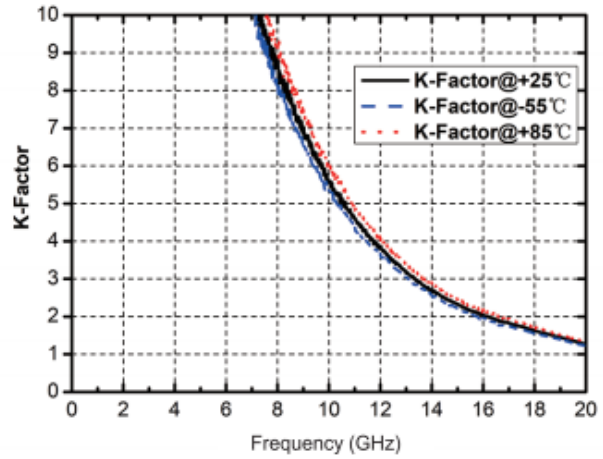
Output Return Loss vs. Frequency



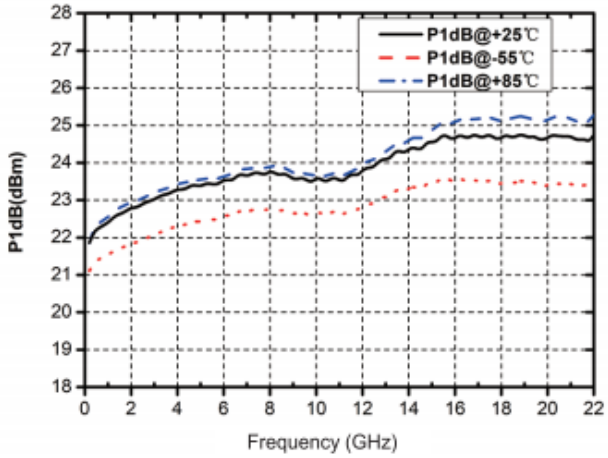
Reverse Isolation vs. Frequency



K-Factor vs. Frequency



P-1dB vs. Frequency



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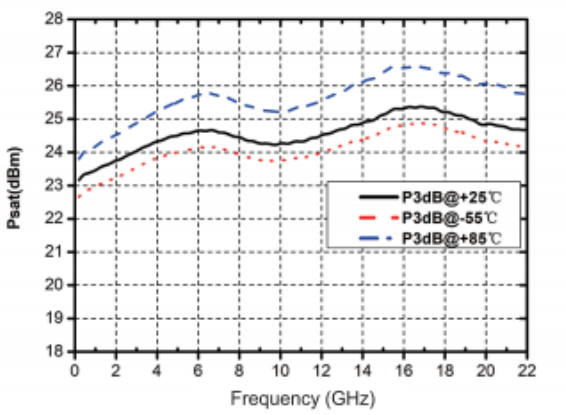
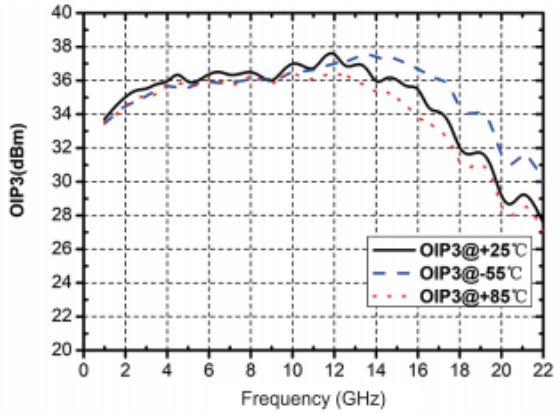
Psat vs. Frequency

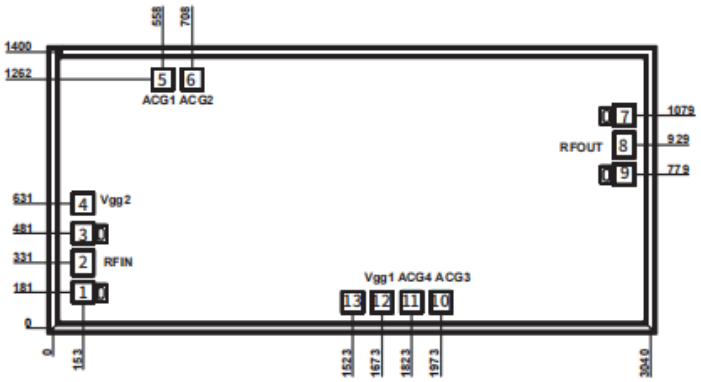


OIP3 vs. Frequency



Outline Drawing:

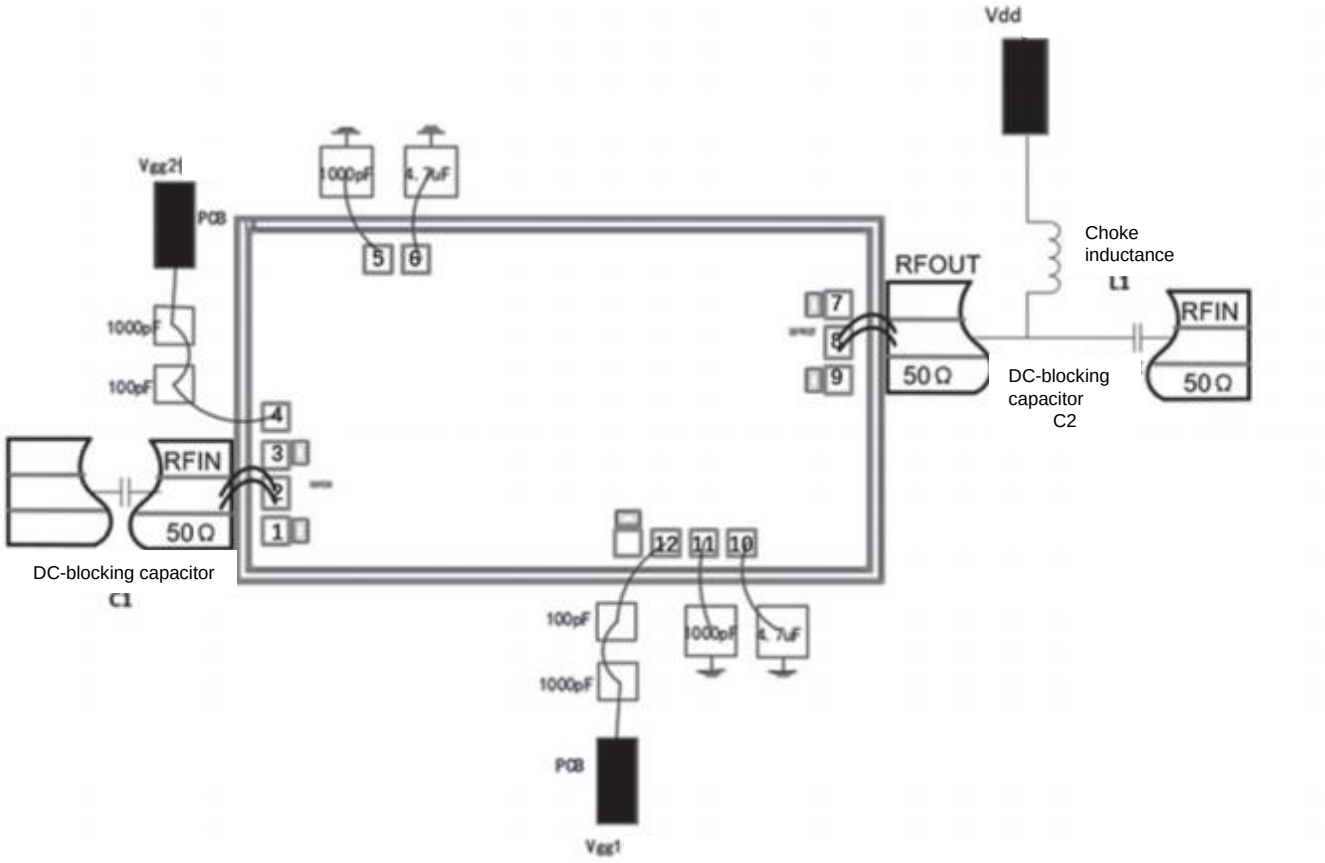
All Dimensions in um



Pad Description

PAD	Function	Description
1,3,7,9,13	GND	Die bottom must be connected to RF/DC ground
2	RF IN	RF signal input terminal, no blocking capacitor required, 50 ohm matched
4	Vgg2	Amplifier gate power supply 2, +4.5V power supply required
5,6	ACG1, ACG2	Low-frequency filtering, external bypass capacitor required
8	RF OUT&Vdd	RF signal output terminal, which requires DC bias to provide the amplifier Idd drain current
10,11	ACG3, ACG4	Low-frequency filtering, external bypass capacitor required
12	Vgg1	Amplifier gate power supply 1

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. Supply voltage: 9V
2. Maximum input power: +15dBm
3. Operating temperature: -55℃ to +85℃
4. Storage temperature: -65℃ to +150℃