MILLER MMIC

MM3055

V1.0.0

GaAs pHEMT MMIC
Power Amplifier
32-42GHz

MM3055

POWER AMPLIFIER – MMIC 32-42GHz

Features

- **Frequency: 32-42GHz**
- **Small Signal Gain: 22dB**
- **P1dB: 24.5dBm**
- **Psat: 25dBm**
- **Power Supply: +5V@210mA**
- **Input/Output: 50Ω**
- **Die Size: 2.12 x 1.1 x 0.1 mm**

Typical Applications

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

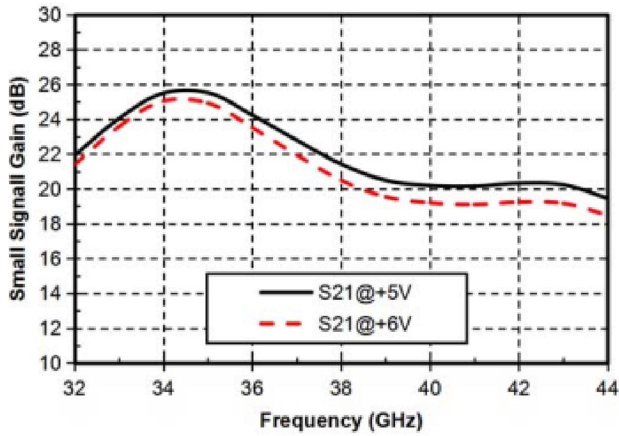
Electrical Specifications

TA = +25ºC, Vd = +5V, Ids=210mA

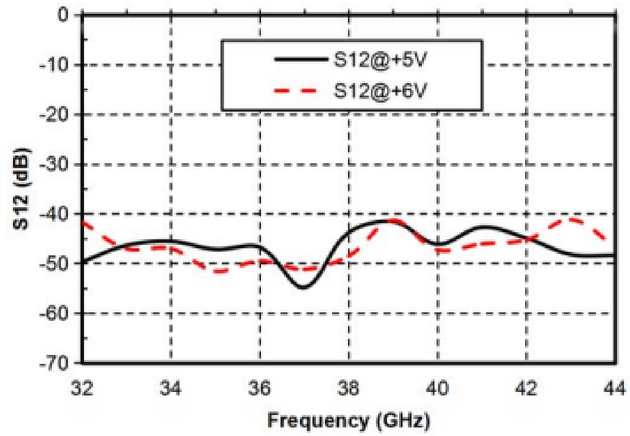
Parameters	Min.	Typ.	Max.	Units
Frequency		32-42		GHz
Small Signal Gain		22		dB
Gain Flatness		±2.5		dB
P1dB		24.5		dBm
Psat		25		dBm
Input Return Loss		13		dB
Output Return Loss		7		dB

*Adjust Vg during -2V~0V, recommended Vg is around -0.75V.

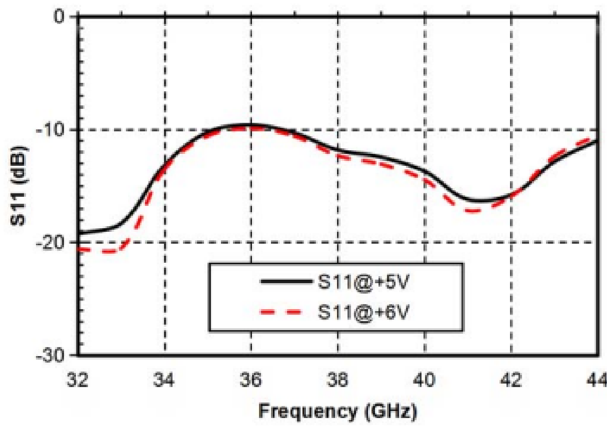
Gain vs. Frequency



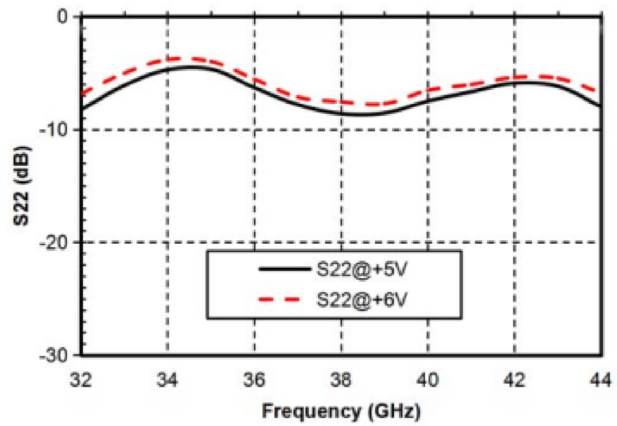
Reverse Isolation vs. Frequency



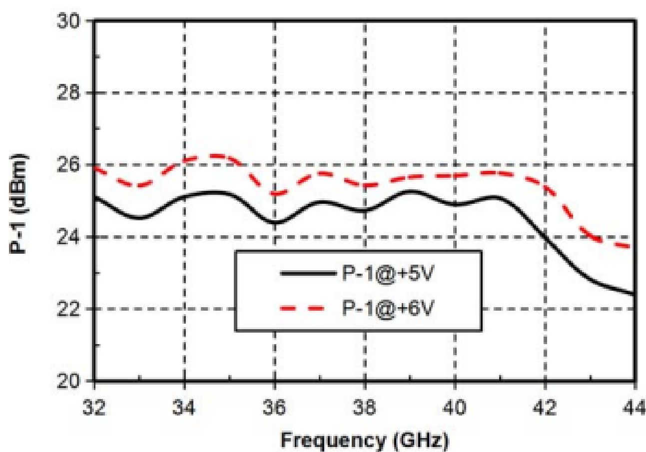
Input Return Loss vs. Frequency



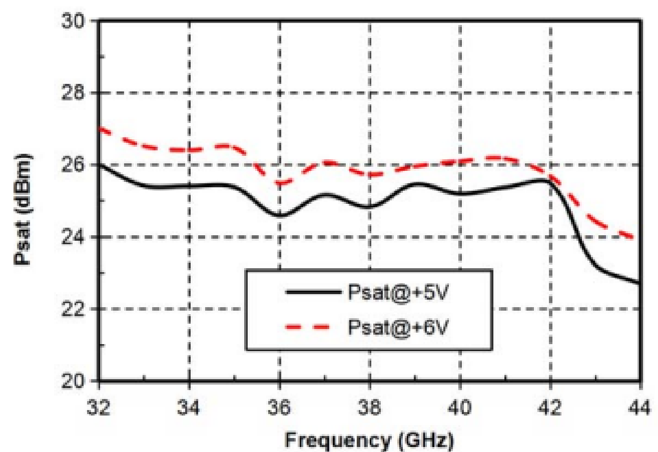
Output Return Loss vs. Frequency



P-1 vs. Frequency

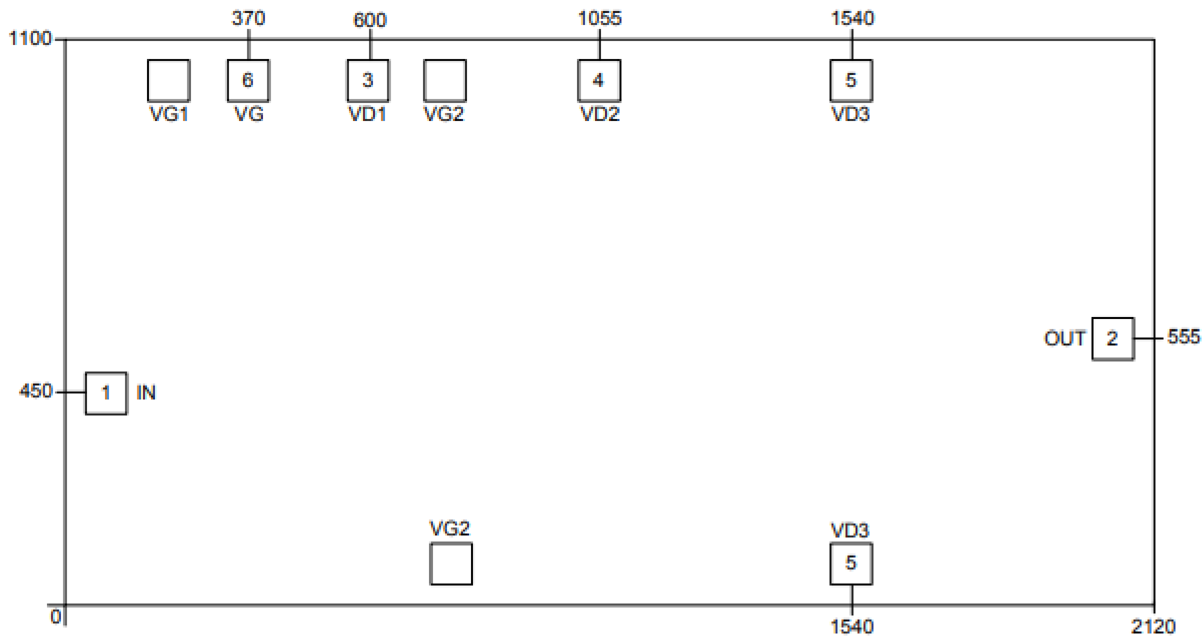


Psat vs. Frequency



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
3~5	Vd1, Vd2, Vd3	Amplifier drain bias, connected to external 10pF, 1000pF bypass capacitor.
6	Vg1	Amplifier gate bias, connected to external 10pF, 1000pF bypass capacitor.
Die Bottom	GND	Die bottom must be connected to RF/DC ground

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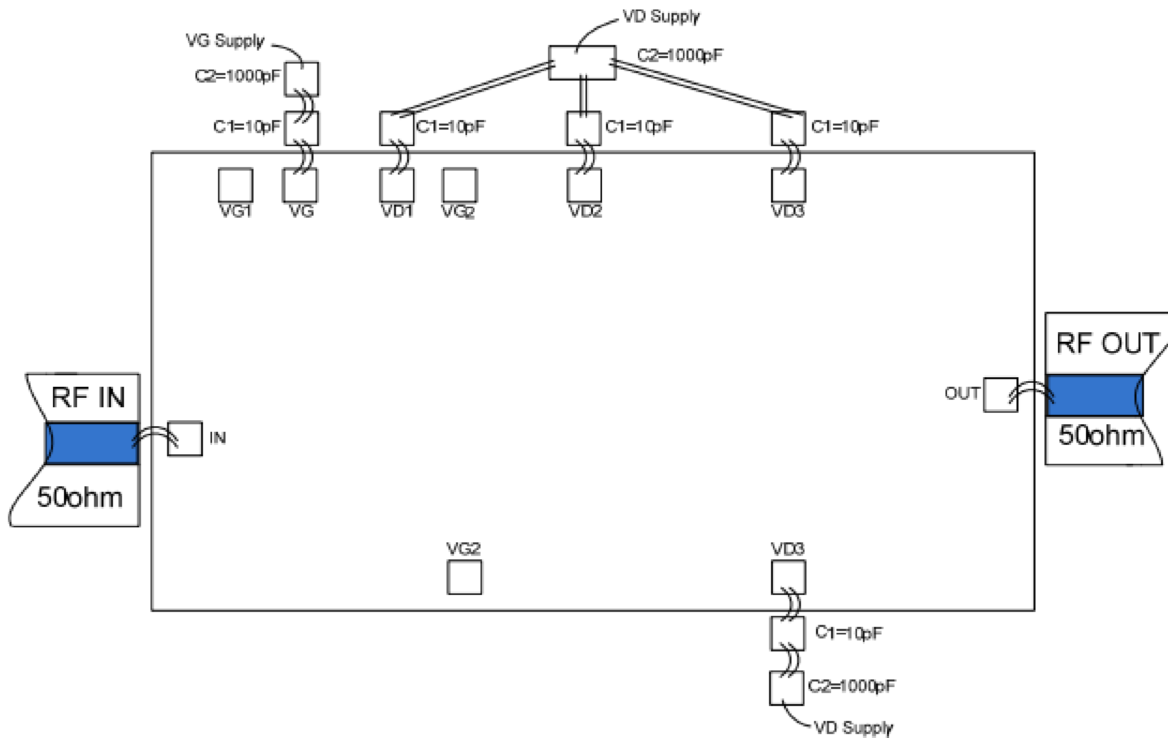
Assembly Drawing



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℃**