MILLER MMIC

MM3064

V1.0.0

GaAs pHEMT MMIC Power Amplifier 18-50GHz

Features

- **Frequency: 18-50GHz**
- **Small Signal Gain: 19dB**
- **P1dB: 18.5dBm**
- **Psat: 19.5dBm**
- **Noise Figure: 7dB**
- **Power Supply: +5V/200mA**
- **Input/Output: 50Ω**
- **Die Size: 1.96 x 1.25 x 0.1 mm**

Typical Applications

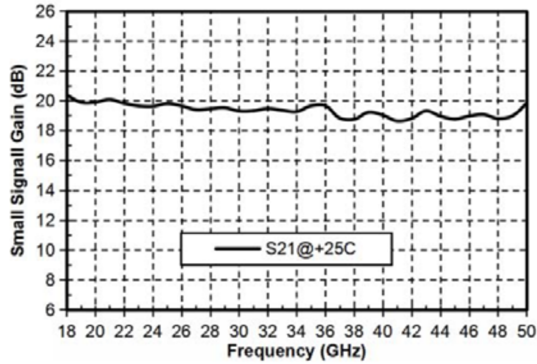
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

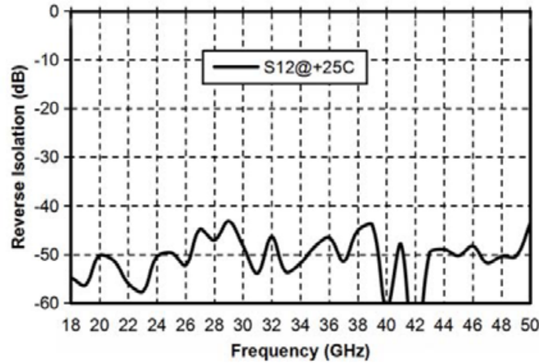
TA = +25ºC, Vd = +5V, Ids=230mA

Parameters	Min.	Typ.	Max.	Units
Frequency		18-50		GHz
Small Signal Gain		19		dB
Gain Flatness		±0.85		dB
Noise Figure		7		dB
Output 1dB Compression (P1dB)		18.5		dBm
Saturated Output Power (Psat)		19.5		dBm
Input Return Loss		15		dB
Output Return Loss		13		dB

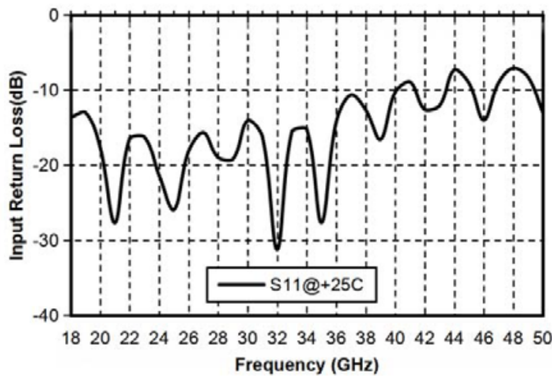
Gain vs. Frequency



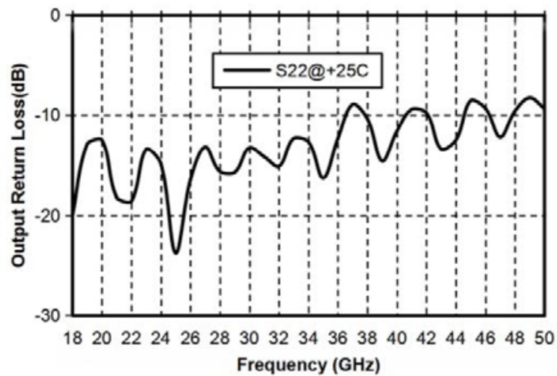
Reverse Isolation vs. Frequency



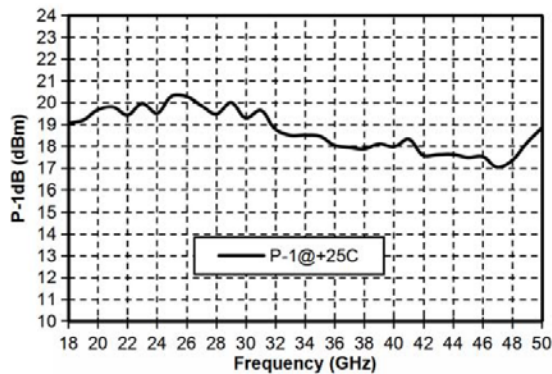
Input Return Loss vs. Frequency



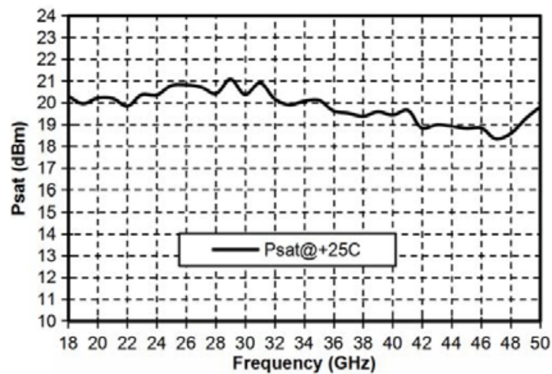
Output Return Loss vs. Frequency



P-1dB vs. Frequency

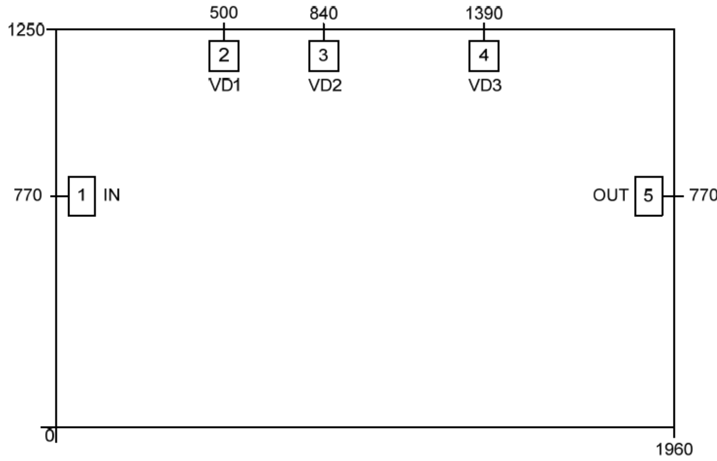


Psat vs. Frequency



Outline Drawing:

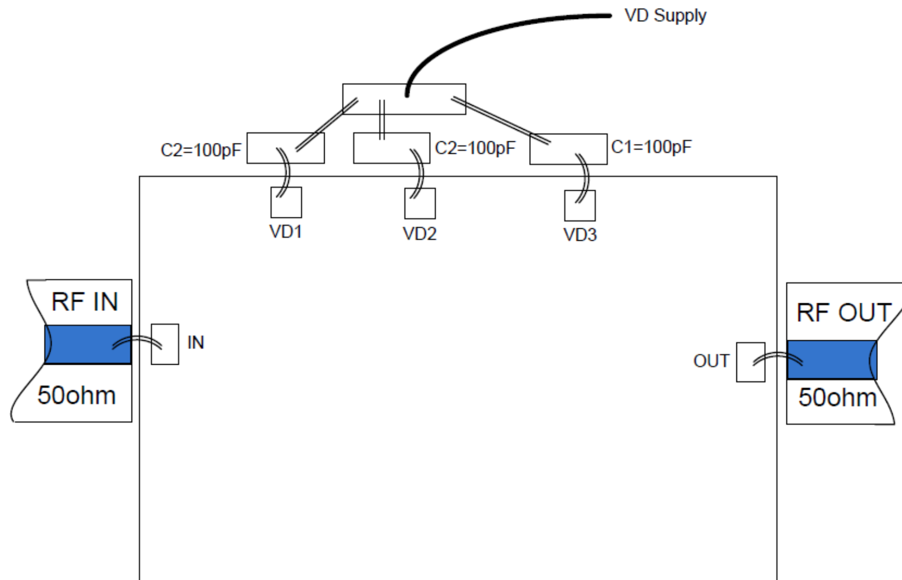
All Dimensions in um



Pad Description

PAD	Function	Description
1	RF IN	RF signal input terminal, connect to 50Ω, DC blocking capacitor not required
5	RF OUT	RF signal output terminal, connect to 50Ω, DC blocking capacitor not required
2,3,4	VD1, VD2, VD3	Amplifier drain bias, connected to external 100pF 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: +7V**
2. **Maximum input power: +20dBm**
3. **Operating temperature: -55℃ to +85℃**
4. **Storage temperature: -65℃ to +150℃**