MILLER MMIC

MMP113

V1.0.0

GaAs MMIC
Power Amplifier
8-12GHz

MMP113

Power Amplifier- MMIC 8-12GHz

Features

- Frequency: 8-12GHz
- Small Signal Gain: 22dB
- Gain Flatness: ±0.6dB
- P-1dB: 33.5dBm
- Psat: 34dBm
- Power Supply: +8V@550mA
- Input/Output: 50Ω
- Die Size: 2.7 x 2.0 x 0.1 mm

Typical Applications

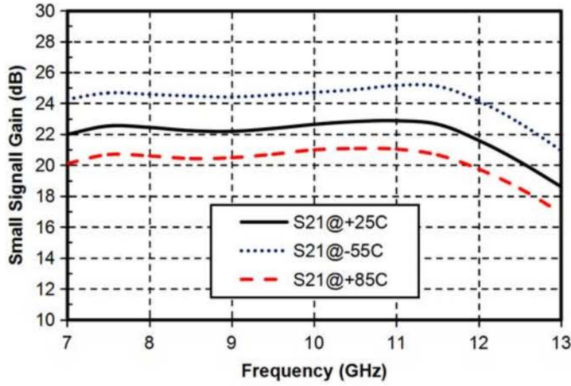
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

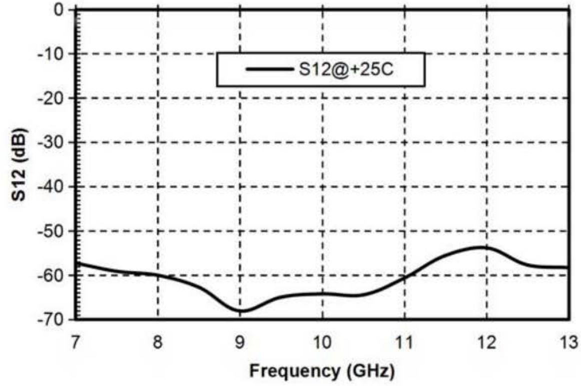
TA = +25ºC, Vd = +8V, *Ids=550mA

Parameters	Min.	Typ.	Max.	Units
Frequency		8-12		GHz
Small Signal Gain	-	22	-	dB
Gain Flatness		±0.6		dB
P-1dB	-	33.5	-	dBm
Psat	-	34	-	dBm
Input Return Loss		20		dB
Output Return Loss		10		dB
Quiescent Current		550		mA
* Adjust Vg (-2V-0V), Recommended Vg -0.75V.				

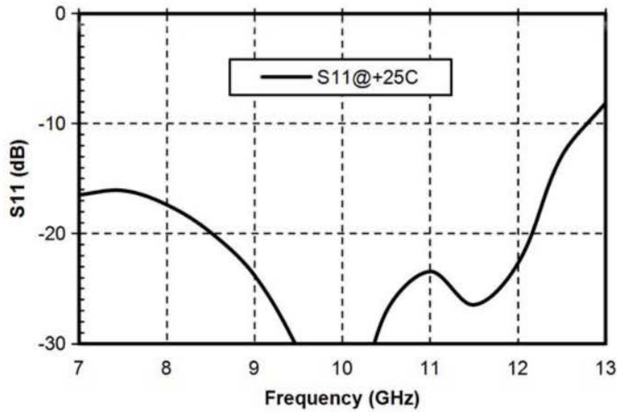
Gain vs. Frequency



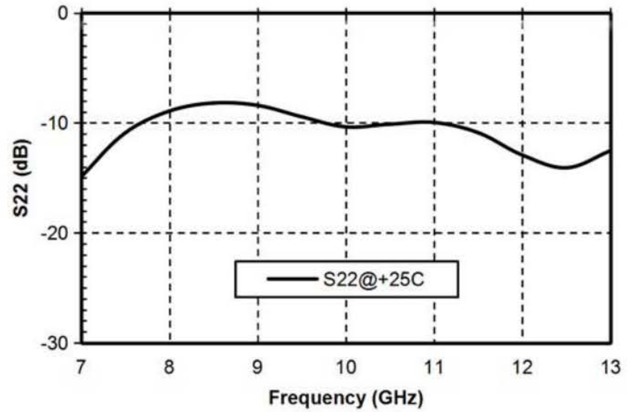
Isolation vs. Frequency



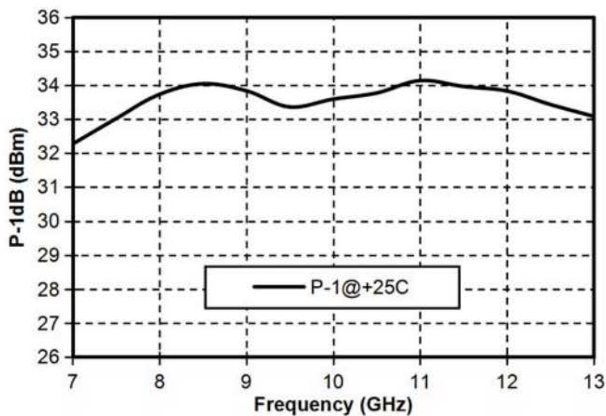
Input Return Loss vs. Frequency



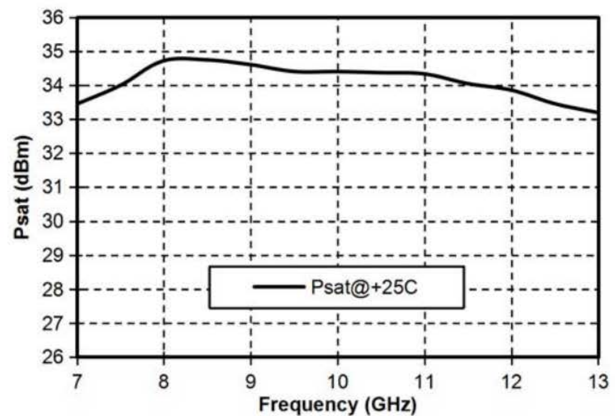
Output Return Loss vs. Frequency



P-1dB vs. Frequency

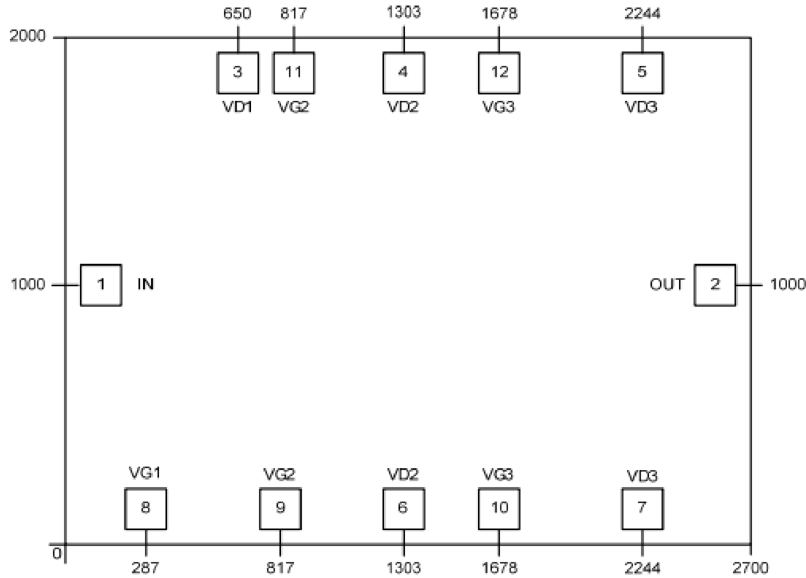


Psat vs. Frequency



Outline Drawing:

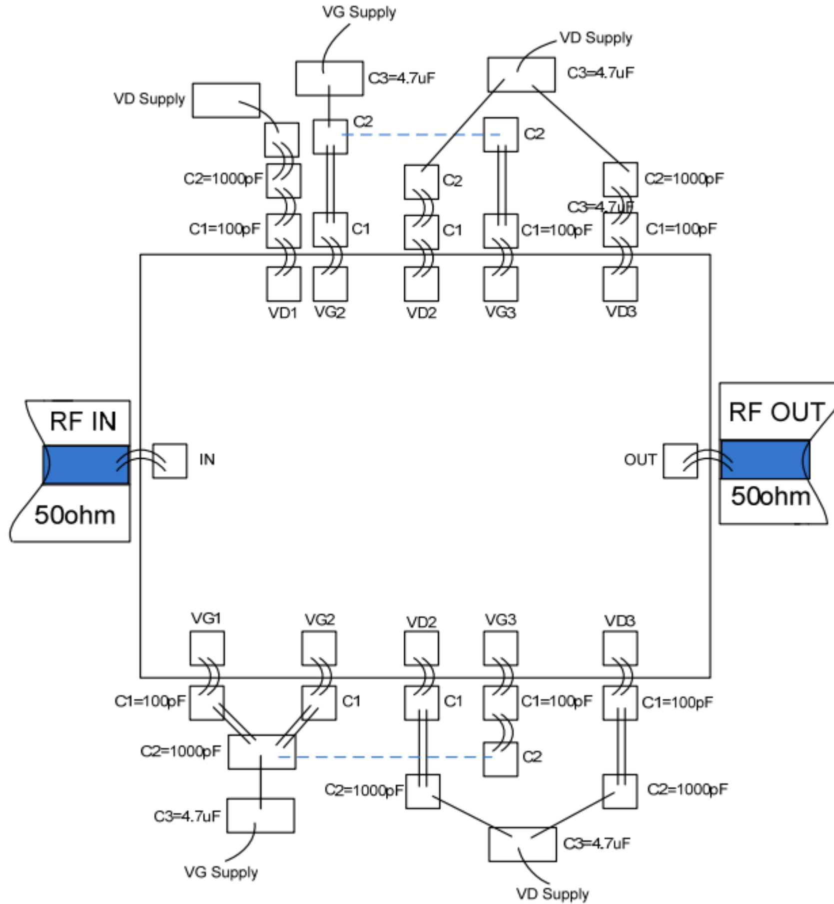
All Dimensions in µm



Pad Description

Pad	Function	Description
1	RF IN	Signal input terminal; no blocking capacitor required.
2	RF OUT	Signal output terminal; no blocking capacitor required.
3, 4, 5, 6, 7	Vd1, Vd2	Amplifier drain bias; external 100pF, 1000pF, 4.7uF bypass capacitor required.
8, 9, 10, 11, 12	Vg1, Vg2	Amplifier gate bias; external 100pF, 1000pF, 4.7uF bypass capacitor required.
Die bottom	GND	Die bottom must be connected to RF/DC ground.

Assembly Drawing



Note:
C1 100pF
C2 1000pF
C3 4.7uF

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: +10V
2. Maximum input power: +25dBm
3. Operating temperature: -55℃ to +85℃
4. Storage temperature: -65℃ to +150℃