MILLER MMIC

MMP111

V1.0.0

GaAs MMIC
Power Amplifier
26-34GHz

MMP111

Power Amplifier- MMIC 26-34GHz

Features

- Frequency: 26-34GHz
- Small Signal Gain: 25.5dB
- P-1dB: 33dBm
- Psat: 33.5dBm
- Power Supply: +6V/1300mA
- Input/Output: 50Ω
- Die Size: 2.6 x 2.44 x 0.1 mm

Typical Applications

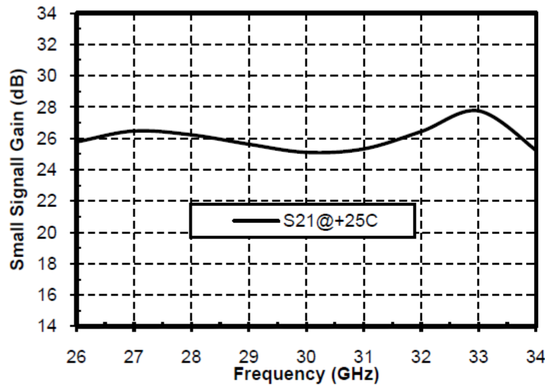
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

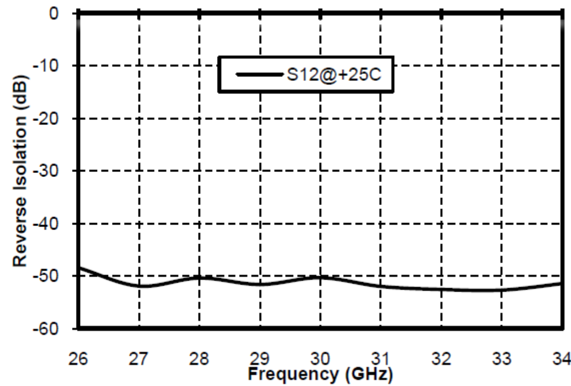
TA = +25°C, Vd = +6V, Vg=-0.8V, Ids=1300mA

Parameters	Min.	Typ.	Max.	Units
Frequency		26-34		GHz
Small Signal Gain	25	25.5	27.5	dB
Gain Flatness		±1.25		dB
P-1dB	32.5	33	34	dBm
Psat	33	33.5	34	dBm
OIP3@30GHz with 24dBm/tone		35.5		dBm
Input Return Loss	8	14	-	dB
Output Return Loss	8	11	-	dB
Quiescent Current		520		mA
* Adjust VG (-2V-0V), Recommended gate voltage -0.8V.				

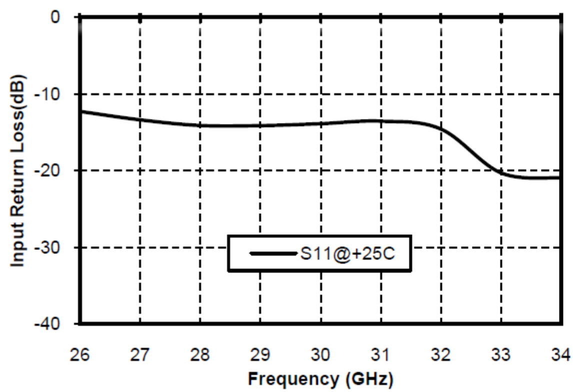
Gain vs. Frequency



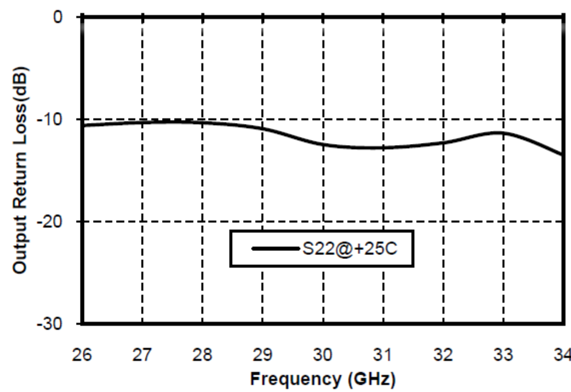
Isolation vs. Frequency



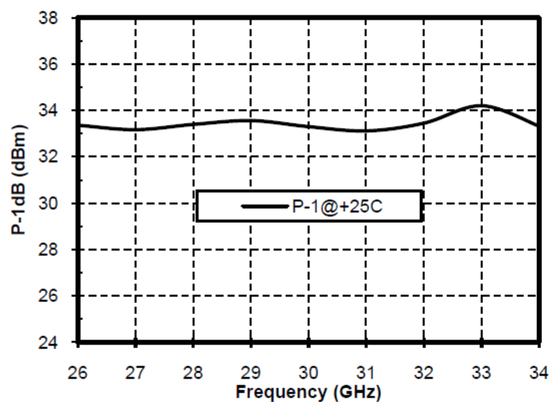
Input Return Loss vs. Frequency



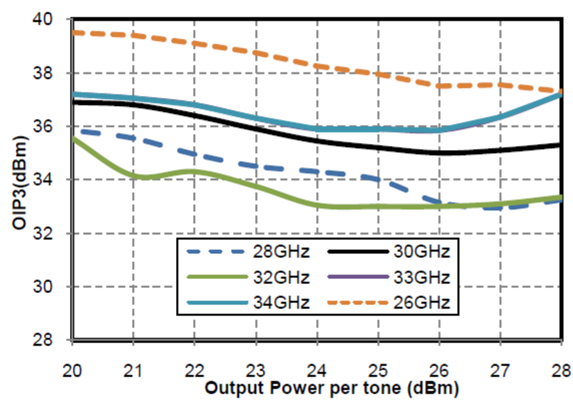
Output Return Loss vs. Frequency



P-1dB vs. Frequency

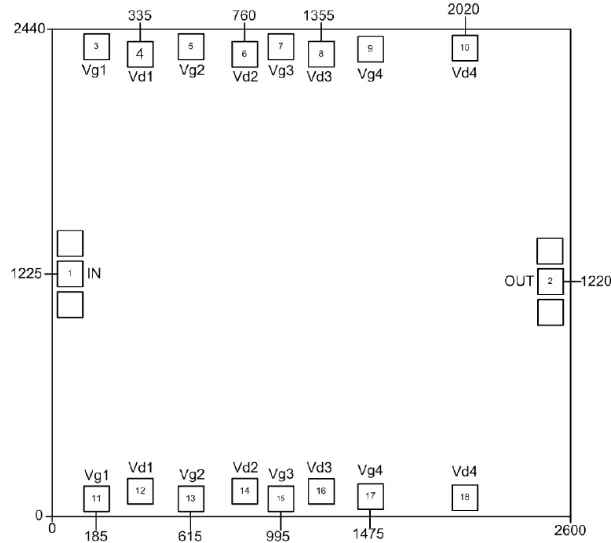


OIP3 vs. Frequency



Outline Drawing:

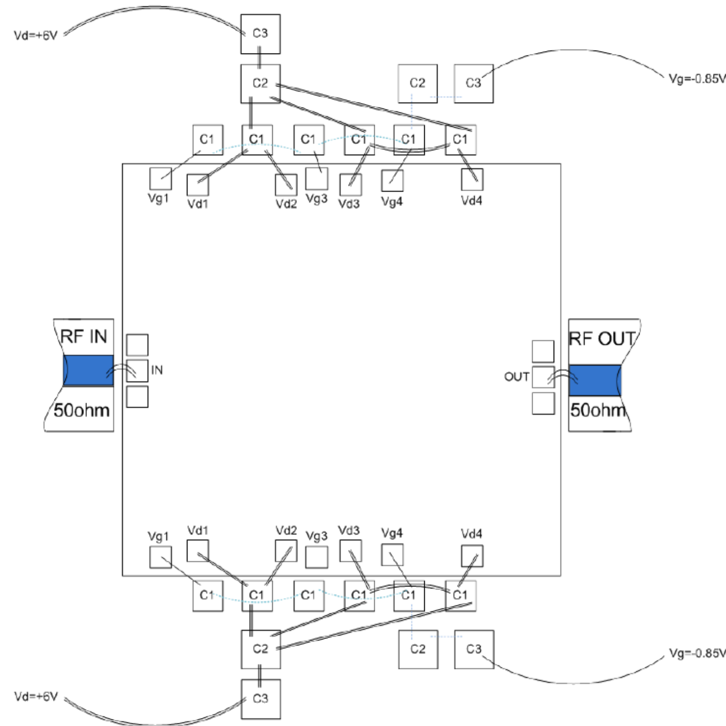
All Dimensions in μm



Pad Description

Pad	Function	Description
1	RF IN	Signal input terminal, connected to 50Ω circuit; no blocking capacitor required.
2	RF OUT	Signal output terminal, connected to 50Ω circuit; no blocking capacitor required.
3, 5, 7, 9, 11, 13, 15, 17	VG1-4	Amplifier gate bias; external 100pF, 1000pF, 4.7uF bypass capacitor required.
4, 6, 8, 10, 12, 14, 16, 18	VD1-4	Amplifier drain 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: +9V
2. Maximum gate bias: -3V
3. Maximum input power: +25dBm
4. Operating temperature: -55℃ to +85℃
5. Storage temperature: -65℃ to +150℃