GaAs pHEMT MMIC
Power Amplifier
9-20GHz

Features
- Frequency: 9-20GHz
- Small Signal Gain: 26dB
- P1dB: 28dBm@+5V, 29.5dBm@+6V
- Psat: 28.5dBm@+5V, 30dBm@+6V
- Power Supply: +5V/520mA,+6V/470mA
- Input/Output: 50Ω
- Die Size: 2.55 x 1.15 x 0.1 mm

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

Electrical Specifications
TA = +25ºC, Vd = +5V, Ids=520mA

Parameters	Min.	Typ.	Max.	Units
Frequency		9-20		GHz
Small Signal Gain	25	26	28	dB
Gain Flatness		±1.5		dB
Output 1dB Compression (P1dB)	26	28	-	dBm
Saturated Output Power (Psat)	26.5	28.5	-	dBm
Input Return Loss		17		dB
Output Return Loss		15		dB

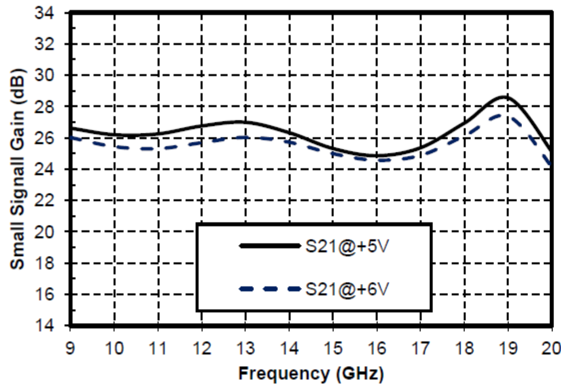
*Adjust Vg during -2V~0V, recommended Vg is around -0.85V.

Electrical Specifications
TA = +25ºC, Vd = +6V, Ids=470mA

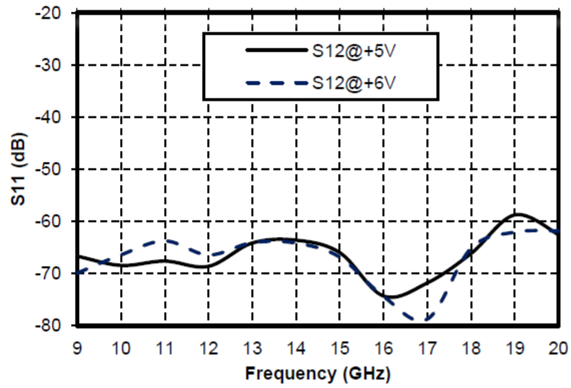
Parameters	Min.	Typ.	Max.	Units
Frequency		9-20		GHz
Small Signal Gain	24	25.5	27	dB
Gain Flatness		±1.5		dB
Output 1dB Compression (P1dB)	28.5	29.5	-	dBm
Saturated Output Power (Psat)	29	30	-	dBm
Input Return Loss		17		dB
Output Return Loss		15		dB

*Adjust Vg during -2V~0V, recommended Vg is around -0.9V.

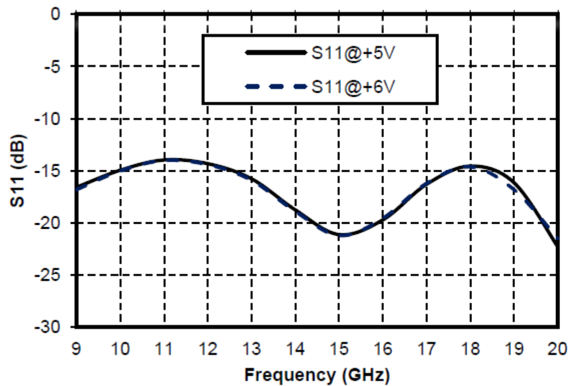
Gain vs. Frequency



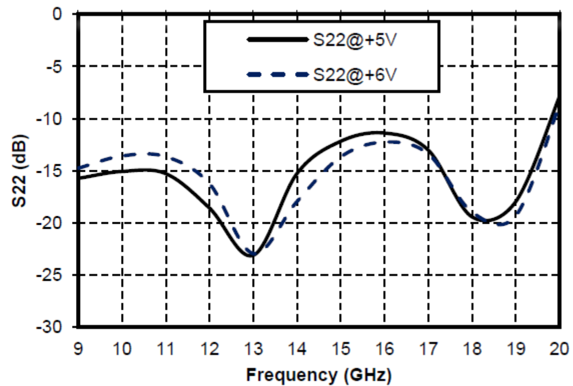
Reverse Isolation vs. Frequency



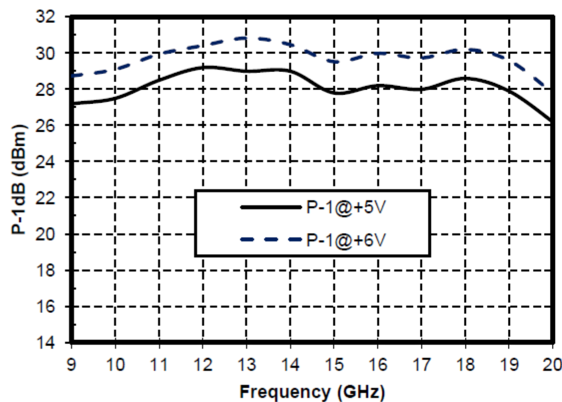
Input Return Loss vs. Frequency



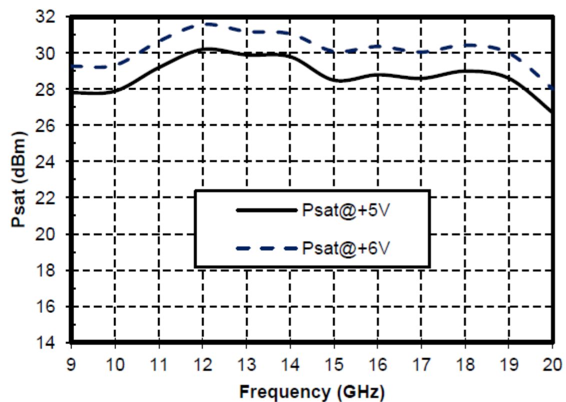
Output Return Loss vs. Frequency



P-1dB vs. Frequency

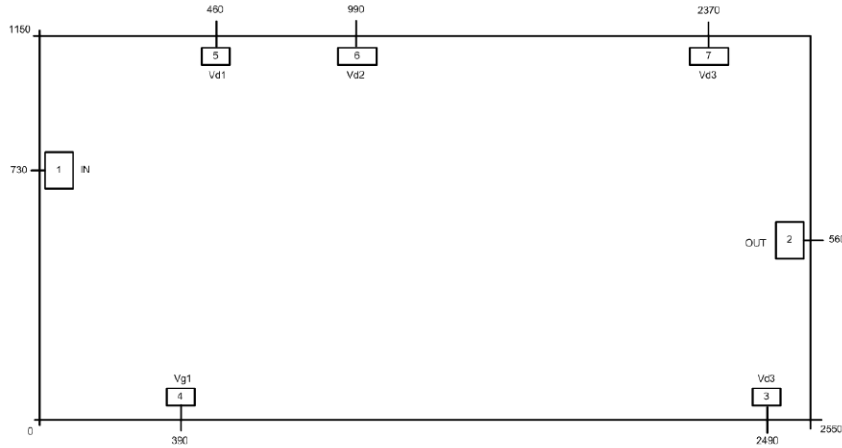


Psat vs. Frequency



Outline Drawing:

All Dimensions in um



Pad Description

PAD	Function	Description
1	RF IN	RF signal input terminal, connect to 50Ω, no blocking capacitor required
2	RF OUT	RF signal output terminal, connect to 50Ω, no blocking capacitor required
3,5,6,7	VD1~3	Amplifier drain bias, connected to external 100pF, 1000pF and 100nF bypass capacitor.
4	VG	Amplifier gate bias, connected to external 100pF, 1000pF and 100nF bypass capacitor.
Die Bottom	GND	Die bottom must be connected to RF/DC ground

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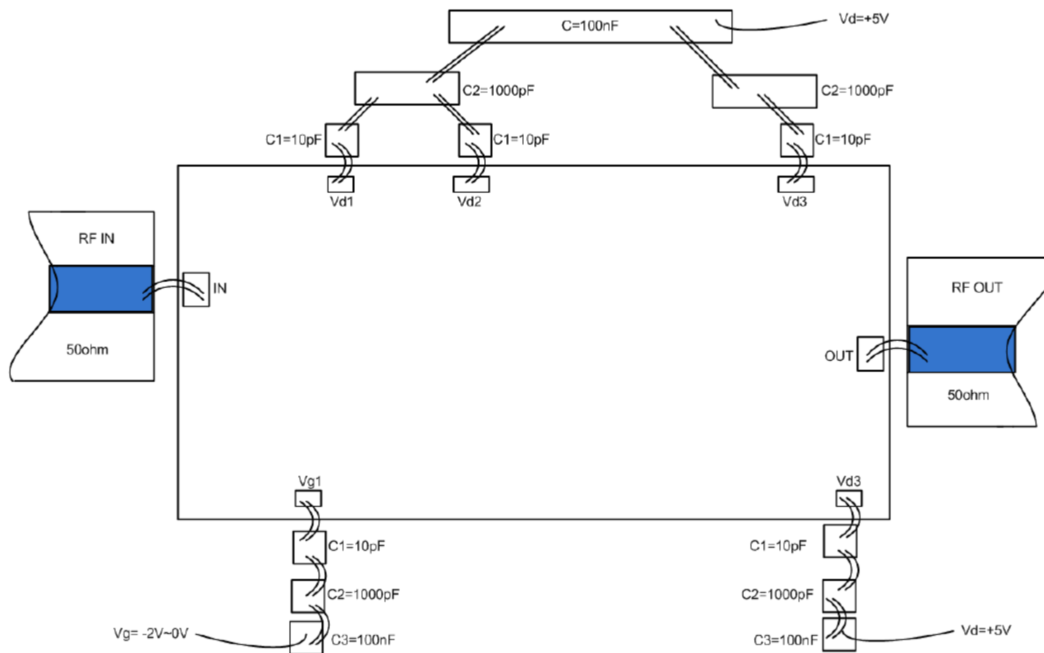
Assembly Drawing



Notes:
1. Die thickness: 100um
2. Typical bond pad is 100*100 µm^2
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: +8V
2. Maximum gate voltage: -3V
3. Maximum input power: +20dBm
4. Operating temperature: -55℃ to +85℃
5. Storage temperature: -65℃ to +150℃