

**Features**

- Frequency: 18-42GHz
- Small Signal Gain: 19.5dB
- Gain Flatness:  $\pm 0.75$ dB
- P1dB: 24.5dBm
- Psat: 25.5dBm
- Power Supply: +5V@400mA
- Input/Output: 50 $\Omega$
- Die Size: 2.78 x 1.77 x 0.1 mm

**Typical Applications**

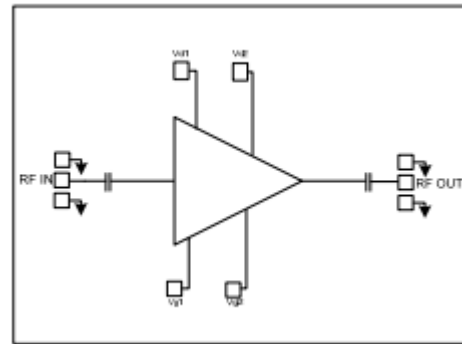
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

**Electrical Specifications**

TA = +25°C, Vd = +5V

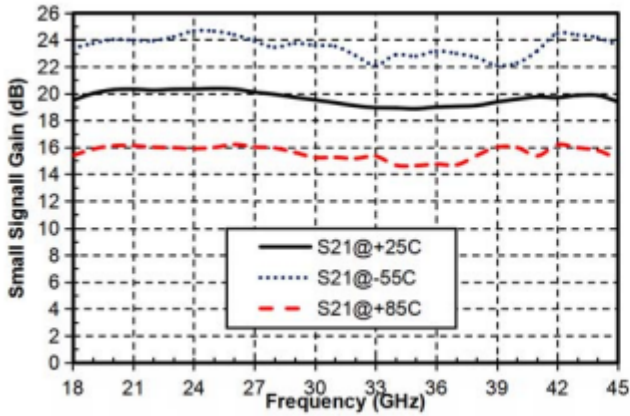
Parameters	Min.	Typ.	Max.	Units
<b>Frequency</b>		<b>18-42</b>		<b>GHz</b>
<b>Small Signal Gain</b>	<b>18.5</b>	<b>19.5</b>	<b>20</b>	<b>dB</b>
<b>Gain Flatness</b>		<b><math>\pm 0.75</math></b>		<b>dB</b>
<b>P1dB</b>		<b>24.5</b>		<b>dBm</b>
<b>Psat</b>		<b>25.5</b>		<b>dBm</b>
<b>Input Return Loss</b>	<b>13</b>	<b>18</b>		<b>dB</b>
<b>Output Return Loss</b>	<b>18</b>	<b>26</b>		<b>dB</b>
<b>Quiescent Current</b>		<b>400</b>		<b>mA</b>

\*By tuning the Vg terminal voltage -2V~0V, up to 400mA, Vg terminal voltage is expected to -0.7V.

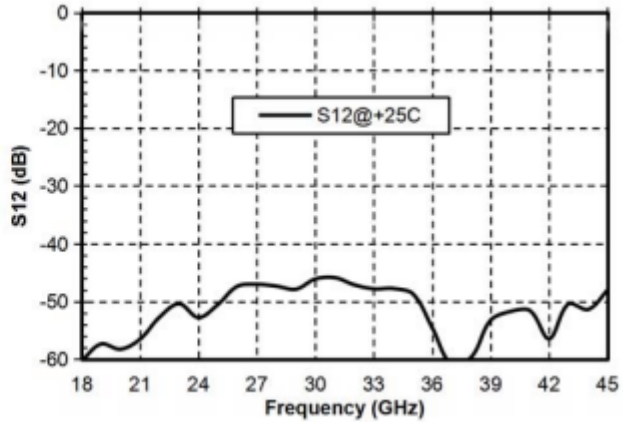
**Functional Block Diagram**




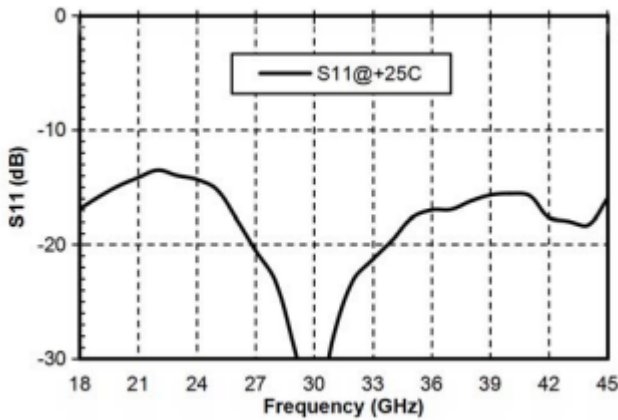
### Gain vs. Frequency



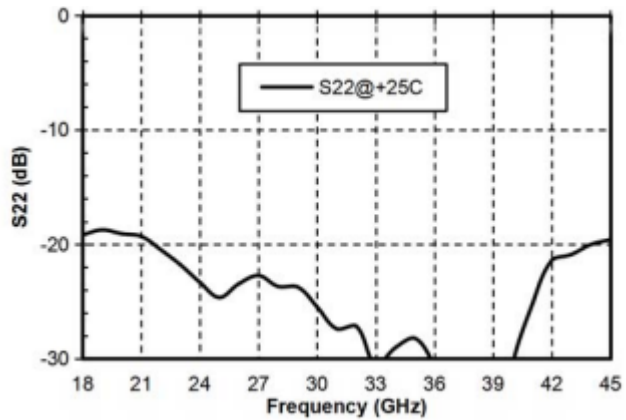
### Reverse Isolation vs. Frequency



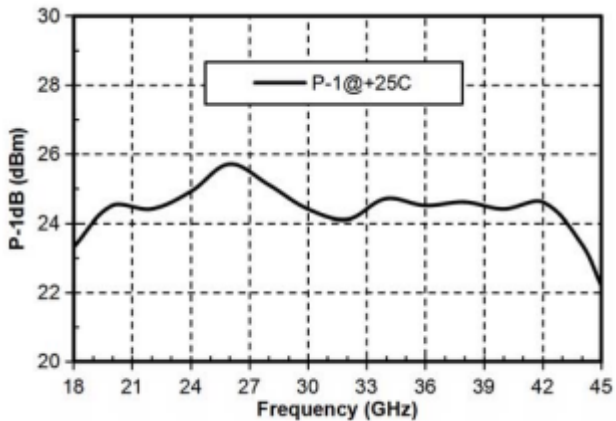
### Input Return Loss vs. Frequency



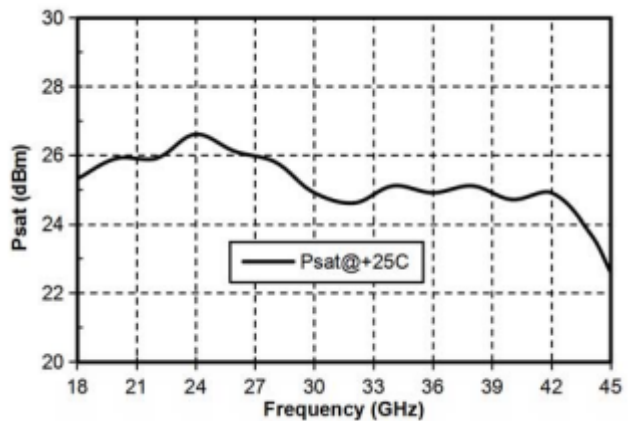
### Output Return Loss vs. Frequency



### P-1dB vs. Frequency

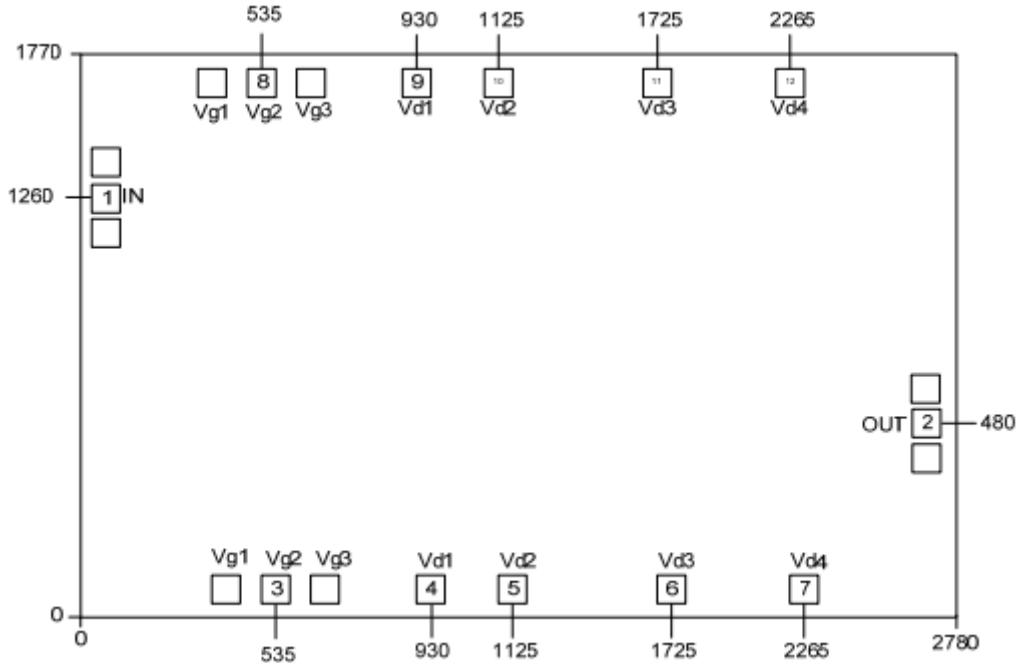


### Psat vs. Frequency





**Outline Drawing:**  
All Dimensions in  $\mu\text{m}$

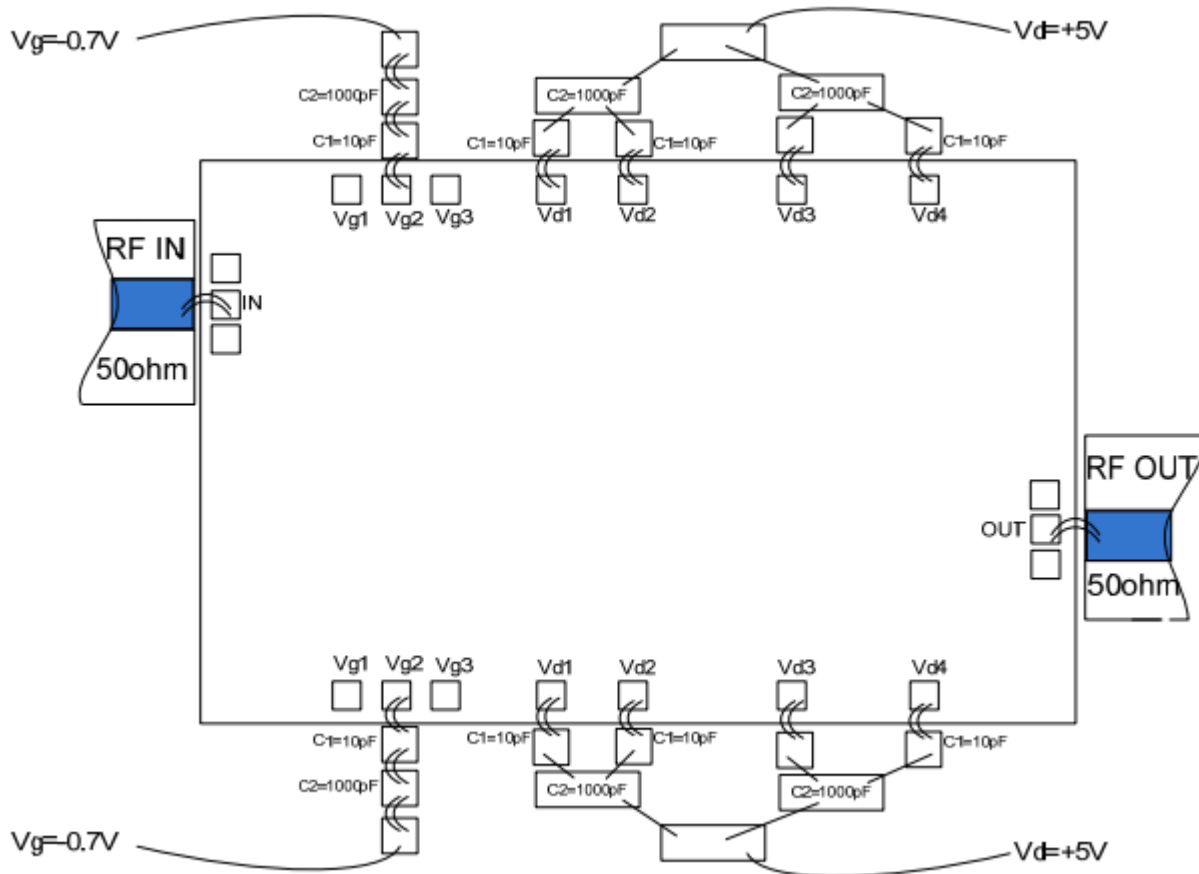


**Pad Description**

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
3,8	Vg2	Amplifier drain bias, connected to external 10pF, 1000pF bypass capacitor.
4,5,6,7,9,10,11,12	Vd1~Vd4	Amplifier gate bias, connected to external 10pF, 1000pF 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  $\mu\text{m}^2$
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: +7V
2. 5/5000 Maximum gate bias: -3V
3. Maximum input power: +20dBm
4. Operating temperature: -55°C to +85°C
5. Storage temperature: -65°C to +150°C