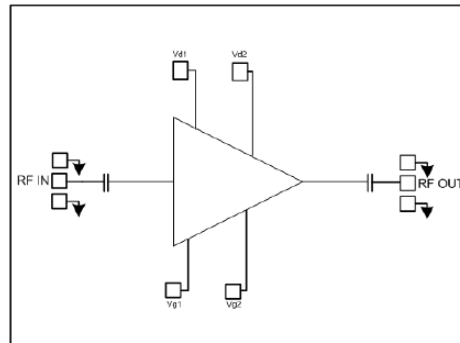


**Features**

- Frequency: 20-40GHz
- Small Signal Gain: 21dB
- Gain Flatness:  $\leq \pm 0.75$ dB
- Noise Figure: 7.0dB typ.
- P1dB: 22dBm
- Psat: 23dBm
- Power Supply: +5V/180mA
- Input/Output: 50Ω
- Die Size: 1.85 x 1.05 x 0.1 mm

**Functional Block Diagram**

**Typical Applications**

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

**Electrical Specifications**

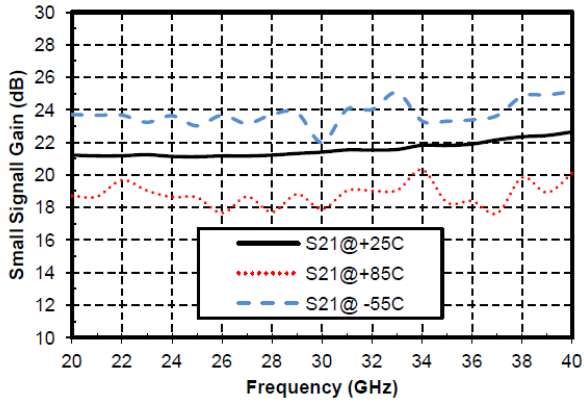
TA = +25°C, Vd = +5V

Parameters	Min.	Typ.	Max.	Units
Frequency	20-40			GHz
Small Signal Gain	21	22	24	dB
Gain Flatness		$\pm 0.75$		dB
Output 1dB Compression (P1dB)		22		dBm
Saturated Output Power (Psat)		23		dBm
Input Return Loss	16	21		dB
Output Return Loss	12	14		dB
Static Current		180		mA

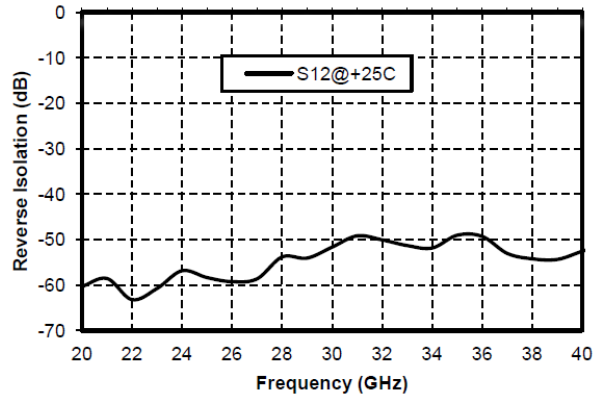
\*Adjust Vg during -2V~0V, to get 180mA current, Vg should be around -0.7V.



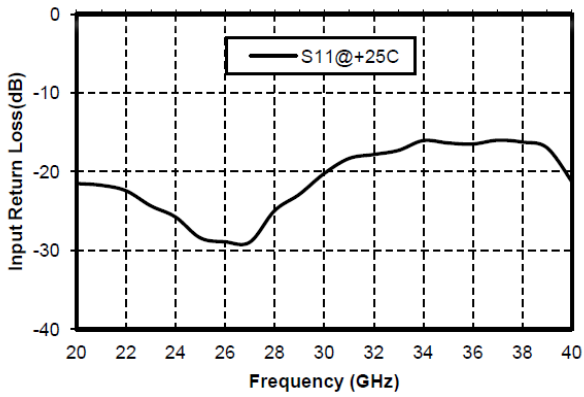
### Gain vs. Frequency



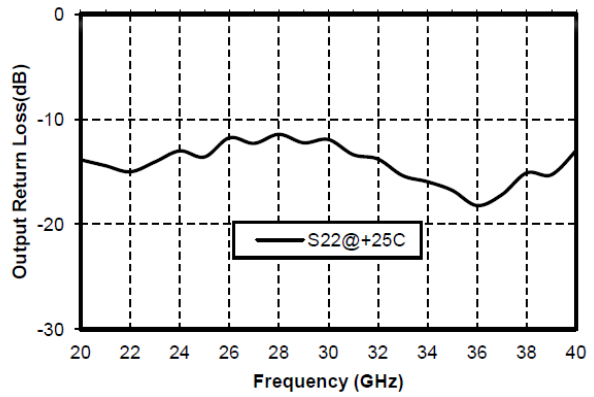
### Reverse Isolation vs. Frequency



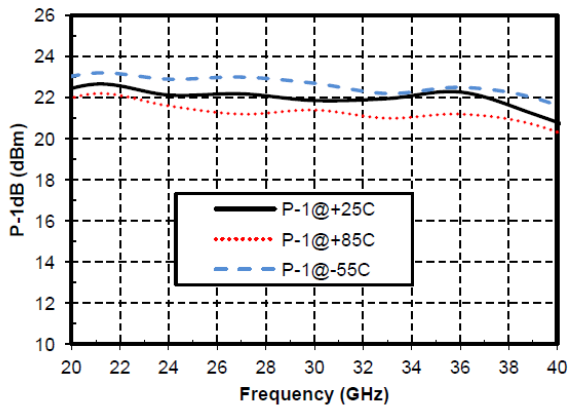
### Input Return Loss vs. Frequency



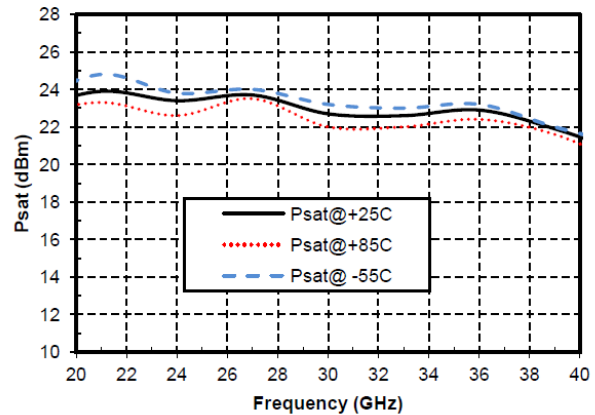
### Output Return Loss vs. Frequency



### P-1dB vs. Frequency

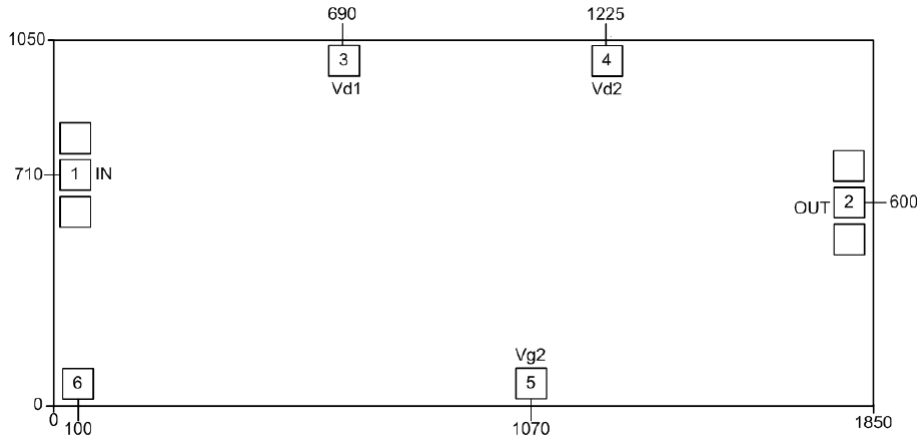


### Psat vs. Frequency





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

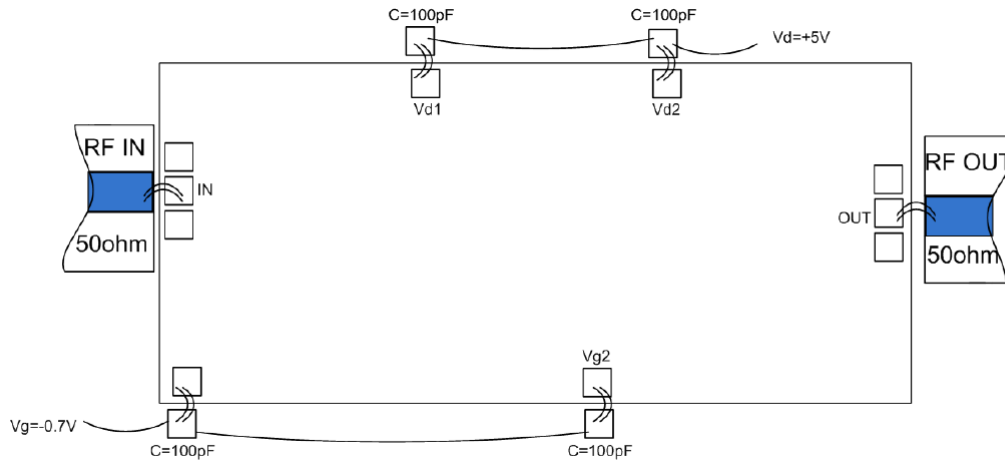


### Pad Description

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, 4	Vd1, Vd2	Amplifier drain bias, connected to external 100pF bypass capacitor.
5, 6	Vg1, Vg2	Amplifier gate 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  $\mu\text{m}^2$
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. Maximum gate voltage: -3V
3. Maximum input power: +20dBm
4. Operating temperature: -55°C to +85°C
5. Storage temperature: -65°C to +150°C