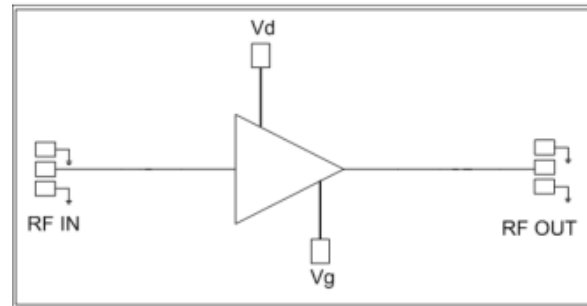


**Features**

- Frequency: 1-20GHz
- Small Signal Gain: 12dB
- Gain Flatness:  $\leq \pm 0.5\text{dB}@1-20\text{GHz}$
- P1dB: 30dBm
- Psat: 31dBm
- Power Supply: +10V (+11V)/320mA
- Input/Output: 50Ω
- Die Size: 2.23 x 1.35 x 0.1 mm

**Typical Applications**

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

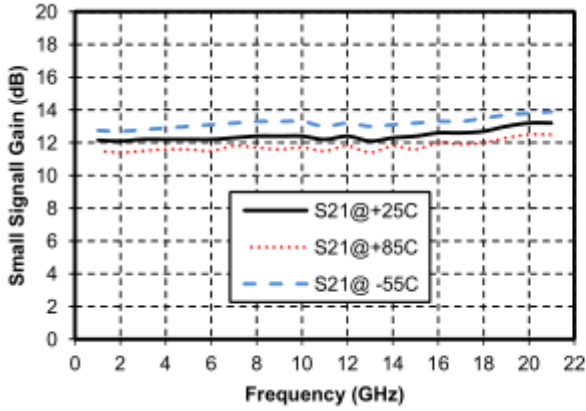
**Functional Block Diagram**

**Electrical Specifications**
**TA = +25°C, Vd = +10V(+11V), \*Ids=320mA**

Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
<b>Frequency</b>	<b>1-18</b>		<b>18-20</b>				<b>GHz</b>
<b>Small Signal Gain</b>		<b>12</b>			<b>13</b>		<b>dB</b>
<b>Gain Flatness</b>		<b>±0.3</b>			<b>±0.3</b>		<b>dB</b>
<b>Output 1dB Compression (P1dB)</b>	<b>29.0</b>	<b>30</b>	<b>30.5</b>	<b>28.5</b>	<b>29</b>	<b>29.5</b>	<b>dBm</b>
<b>Saturated Output Power (Psat)</b>		<b>31</b>			<b>30</b>		<b>dBm</b>
<b>Third-order Intercept Point (IP3)</b>		<b>37</b>			<b>36</b>		<b>dBm</b>
<b>Input Return Loss</b>		<b>15</b>			<b>13</b>		<b>dB</b>
<b>Output Return Loss</b>		<b>20</b>			<b>15</b>		<b>dB</b>

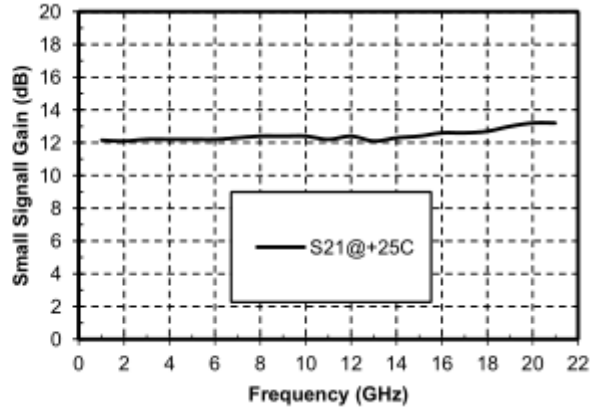
**\* Adjust VG (-2-0V) to obtain device current of 320mA.**



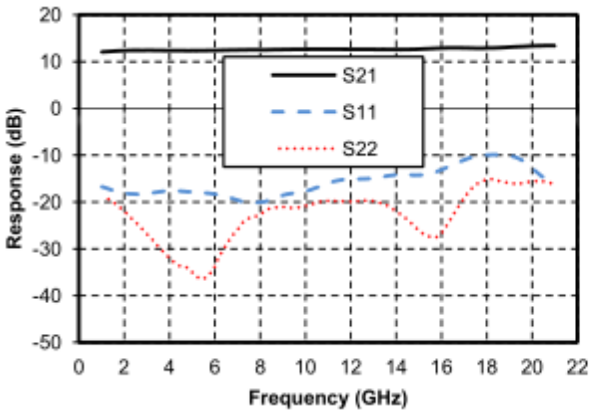
### Gain vs. Frequency



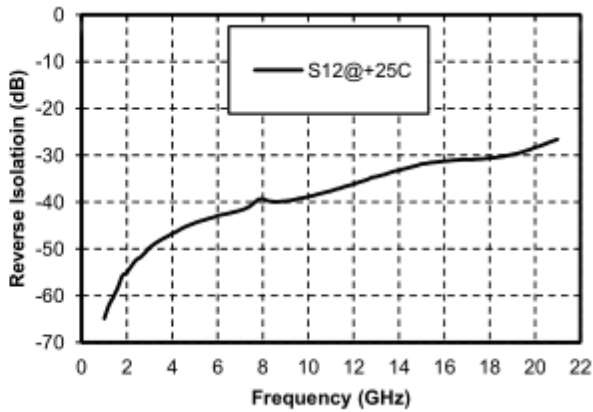
### Gain vs. Frequency



### Gain&Return Loss vs. Frequency

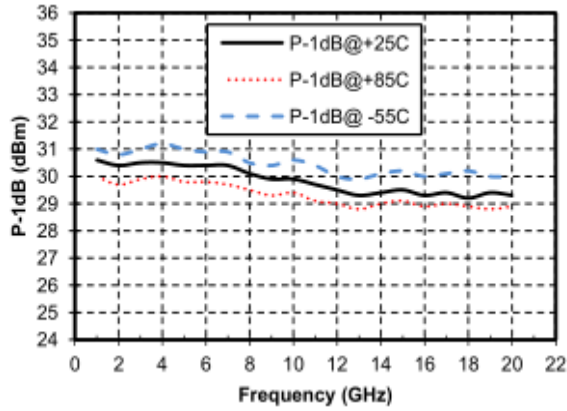


### Reverse Isolation vs. Frequency

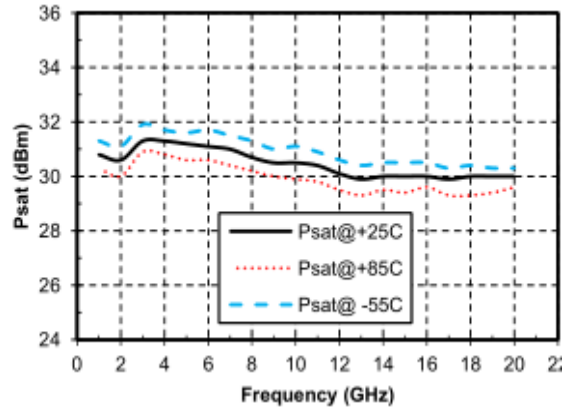




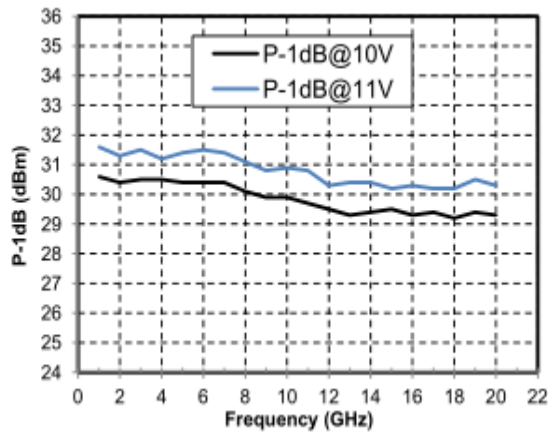
### P1dB vs. Frequency@+10V



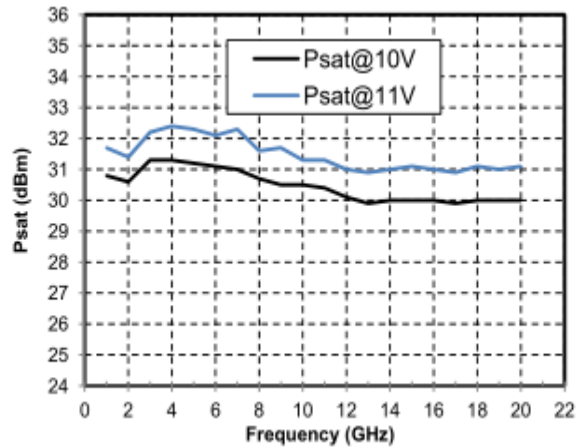
### Psat vs. Frequency@+10V



### P1dB vs. Voltage



### Psat vs. Voltage





### Outline Drawing:

All Dimensions in mm

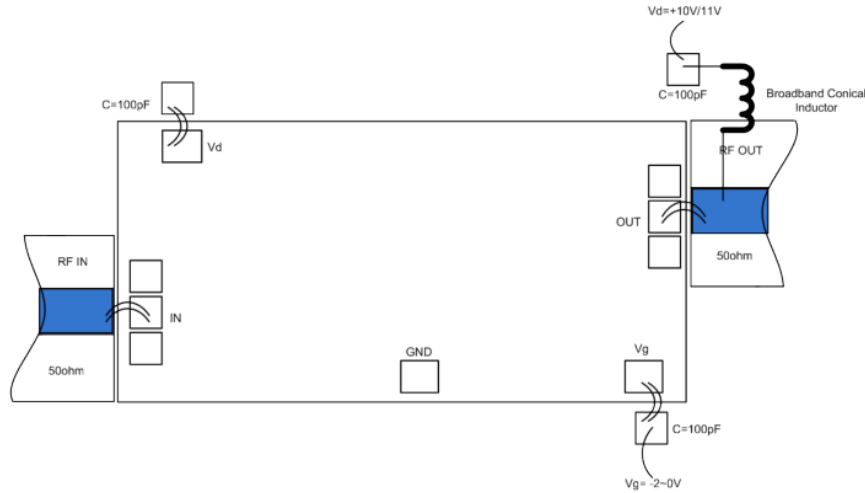


### Pad Description

Pad	Function	Description
1	RF IN	Signal input terminal; connected to 50Ω circuit; blocking capacitor required.
5	RF OUT	Signal output terminal; connected to 50Ω circuit; blocking capacitor required; external DC biasing network required; drain current provided. Refer to following assembly drawing or contact manufacturer.
7	Vg	Gate pad; recommended to paste bypass capacitor depending on the following assembly drawing.
8	Vd	Amplifier drain bias, connected to external 100pF bypass capacitor.
2, 3, 4, 6, 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: +14V
2. Maximum gate bias: -3V
3. Maximum input power: +23dBm
4. Operating temperature: -55°C to +85°C
5. Storage temperature: -65°C to +150°C