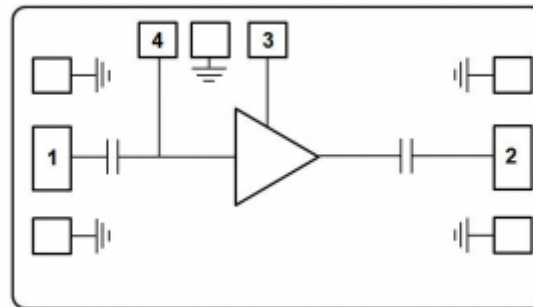


**Features**

Two operating modes (high power consumption, low power consumption)

- Single Biasing Voltage(Self Biased)
- Frequency: 0.8-18GHz
- Gain: 16.5 dB @ 45 mA; 15.5 dB @ 35 mA
- Noise Figure: 1.9 dB @ 45 mA; 1.7 dB @ 35mA
- P1dB: 18 dBm @45 mA; 17.5 dBm @ 35 mA
- Self Biasing: +5V@45mA VC suspended;
- +5V@35mA VC grounded
- Input/Output: 50Ω
- Die Size: : 1.5 × 1.0 × 0.1 mm

**Functional Block Diagram**

**Typical Applications**

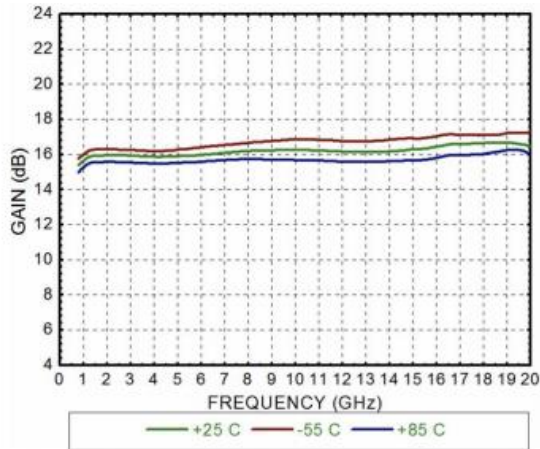
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

**Electrical Specifications**

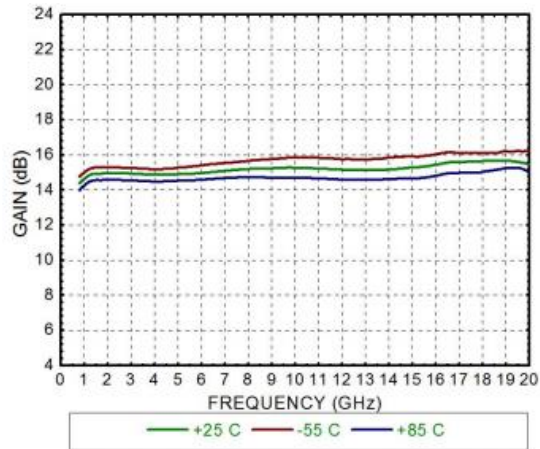
TA = +25°C, VDD = +5V

Parameters	VC Suspended			VC Grounded			Units
	Min.	Typ.	Max.	Min.	Typ.	Max.	
<b>Frequency</b>	<b>0.8-18</b>			<b>0.8-18</b>			<b>GHz</b>
<b>Gain</b>		<b>16.5</b>			<b>15.5</b>		<b>dB</b>
<b>Noise Figure</b>		<b>1.9</b>			<b>1.7</b>		<b>dB</b>
<b>Output 1dB Compression (P1dB)</b>		<b>18</b>			<b>17.5</b>		<b>dBm</b>
<b>Psat</b>		<b>19.5</b>			<b>19</b>		<b>dBm</b>
<b>Reverse Isolation</b>		<b>23</b>			<b>23</b>		<b>dB</b>
<b>Input Return Loss</b>		<b>10</b>			<b>10</b>		<b>dB</b>
<b>Output Return Loss</b>		<b>12</b>			<b>12</b>		<b>dB</b>
<b>Gain Flatness</b>		<b>±0.5</b>			<b>±0.3</b>		<b>dB</b>
<b>Operating Current</b>	<b>30</b>	<b>45</b>	<b>65</b>	<b>20</b>	<b>35</b>	<b>55</b>	<b>mA</b>

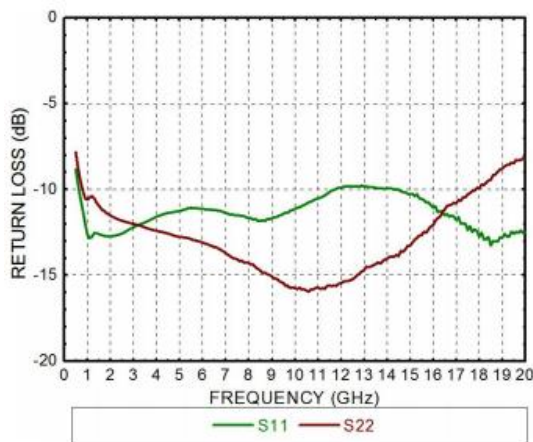
**Gain @ VC Suspended**



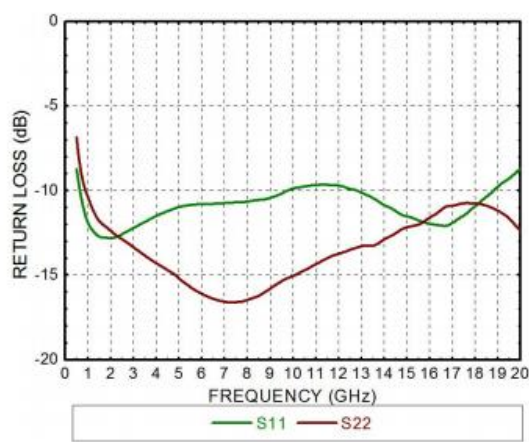
**Gain @ VC Grounded**



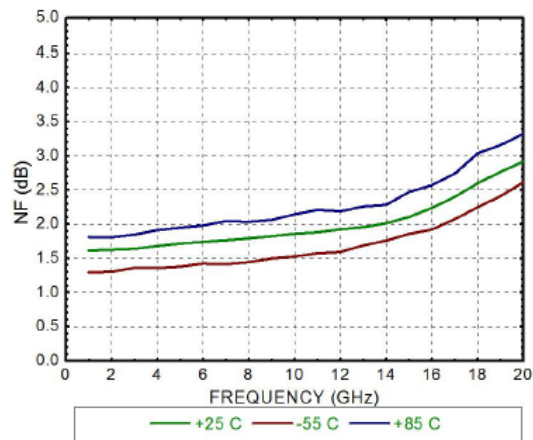
**Return Loss @ VC Suspended**



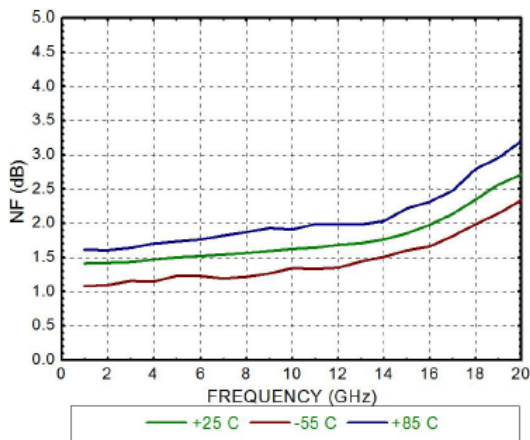
**Return Loss @ VC Grounded**



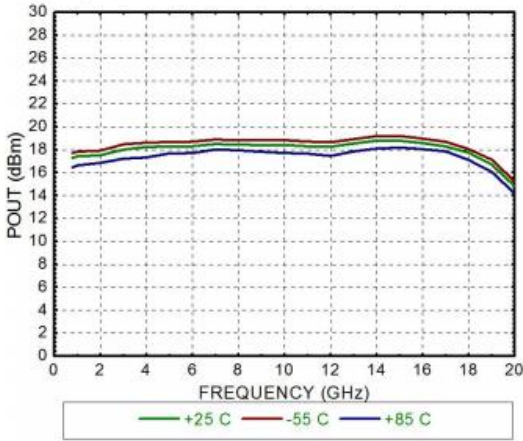
**Noise Figure @ VC Suspended**



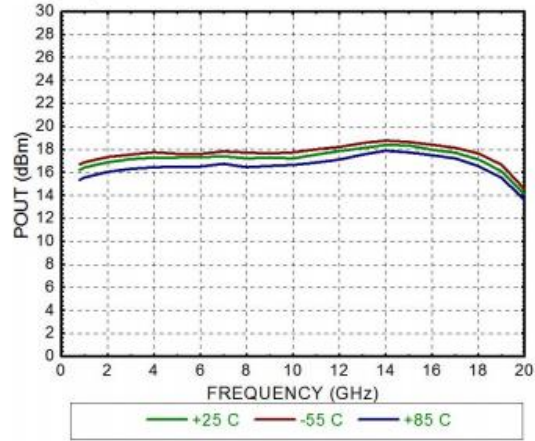
**Noise Figure @ VC Grounded**



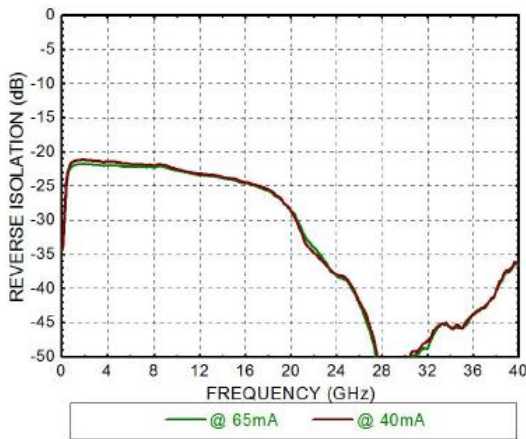
**POUT @ VC Suspended**



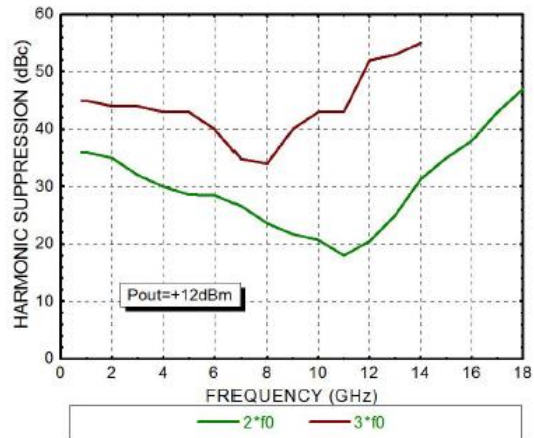
**POUT @ VC Grounded**



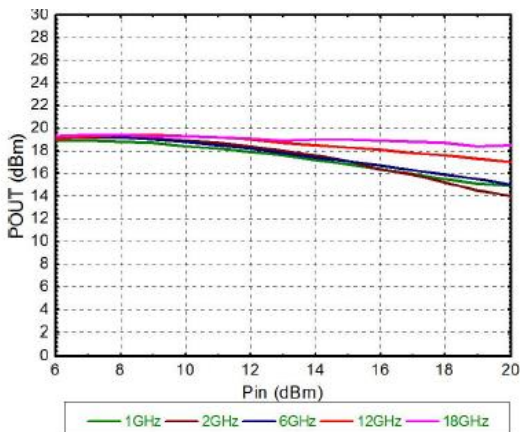
**Reverse Isolation**



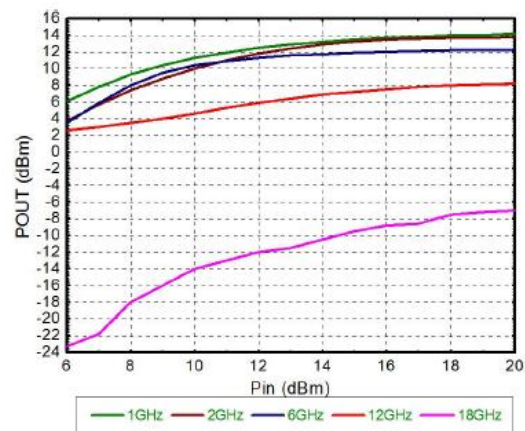
**Harmonic suppression**



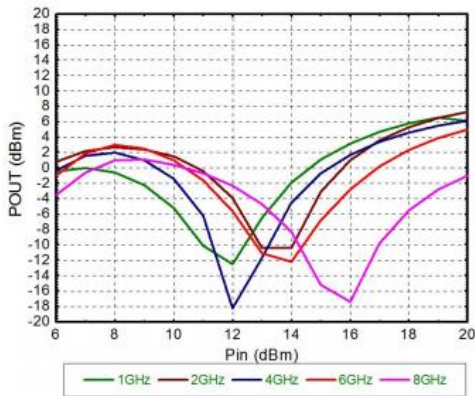
**Main Signal Depth Compression vs. Pin**



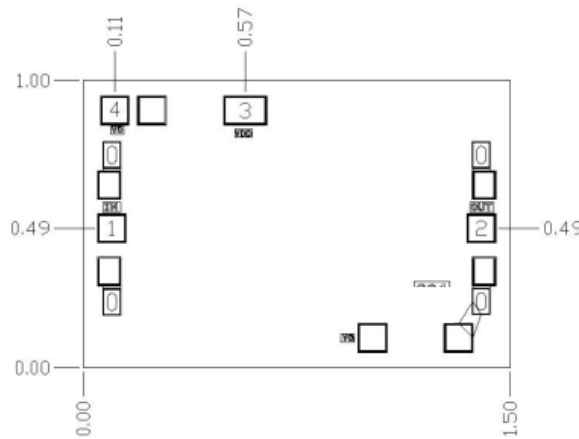
**Second harmonic Depth Compression vs. Pin**



**Third Signal Depth Compression vs. Pin**



**Outline Drawing:**  
All Dimensions in mm

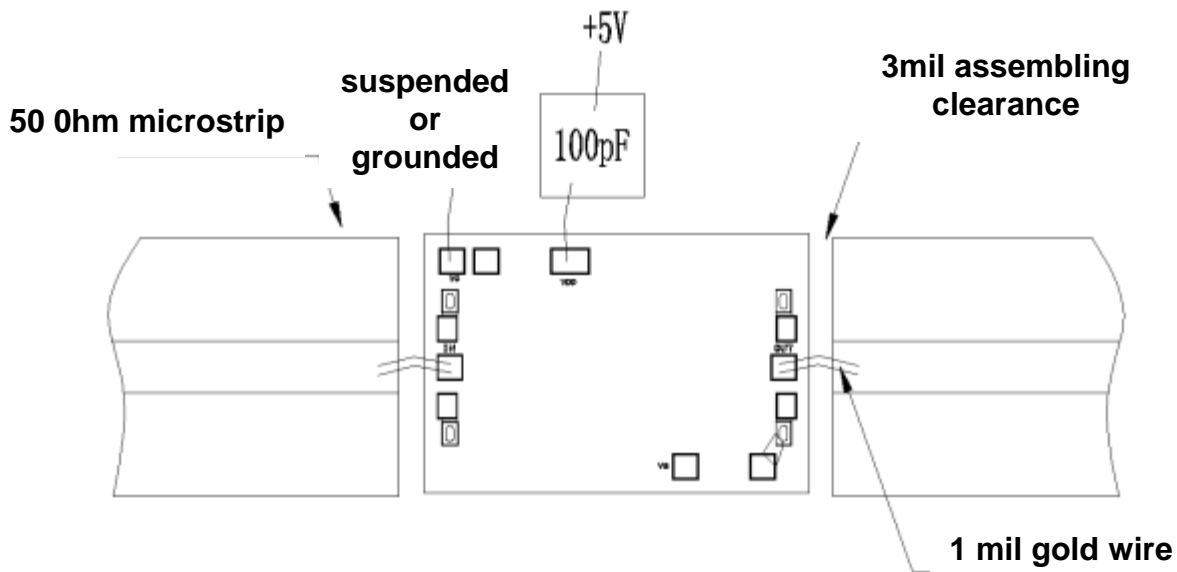


**Pad Description**

Pad	Function	Description
1	IN	This pad is AC coupling, 50 ohm matched
2	OUT	This pad is AC coupling, 50 ohm matched
3	VDD	This pad provides the power supply voltage of the amplifier and needs to be externally connected with the 100pF bypass capacitor.
4	VC	The pad can change the high/low power operating mode and can be grounded or suspended as required.
Die bottom	GND	Die bottom must be connected to RF/DC ground.



### Assembly Drawing



VC suspended is a high power mode and VC grounded is a low power mode.

#### 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. Power supply voltage: +7V
2. RF input power: +20dBm
3. Operating temperature: -55°C to +85°C
4. Storage temperature: -65°C to +150°C