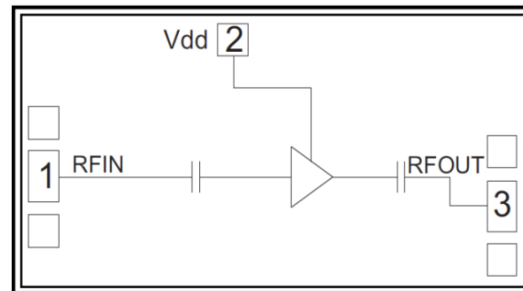


**Features**

- Single Biasing Voltage (Self Biased)
- Frequency: 18-32GHz
- Small Signal Gain: 19.5dB
- Noise Figure: 2.0dB typ./2.4dB max.
- P1dB: 10.5dBm
- Power Supply: +3.3V/65mA
- Input/Output: 50Ω
- Die Size: 1.65 x 0.8 x 0.09 mm

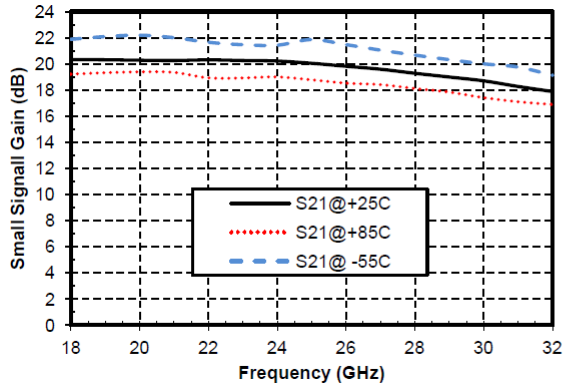
**Functional Block Diagram**

**Typical Applications**

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

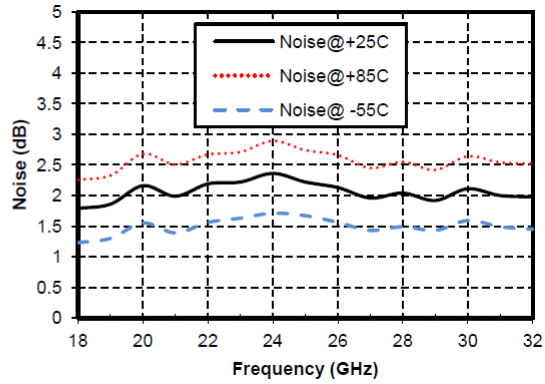
**Electrical Specifications**
**TA = +25°C, Vd = +5V**

| Parameters                           | Min.         | Typ.         | Max.       | Units      |
|--------------------------------------|--------------|--------------|------------|------------|
| <b>Frequency</b>                     | <b>18-32</b> |              |            | <b>GHz</b> |
| <b>Small Signal Gain</b>             | <b>17.5</b>  | <b>19.5</b>  | <b>20</b>  | <b>dB</b>  |
| <b>Gain Flatness</b>                 |              | <b>±1.25</b> |            | <b>dB</b>  |
| <b>Noise Figure</b>                  | <b>-</b>     | <b>2.0</b>   | <b>2.4</b> | <b>dB</b>  |
| <b>Output 1dB Compression (P1dB)</b> | <b>9</b>     | <b>10.5</b>  | <b>12</b>  | <b>dBm</b> |
| <b>Input Return Loss</b>             | <b>7</b>     | <b>12</b>    | <b>-</b>   | <b>dB</b>  |
| <b>Output Return Loss</b>            | <b>12</b>    | <b>13</b>    | <b>-</b>   | <b>dB</b>  |
| <b>Static current</b>                |              | <b>65</b>    |            | <b>mA</b>  |

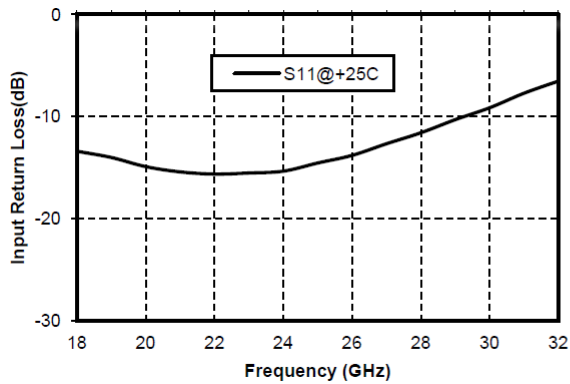
Gain vs. Frequency



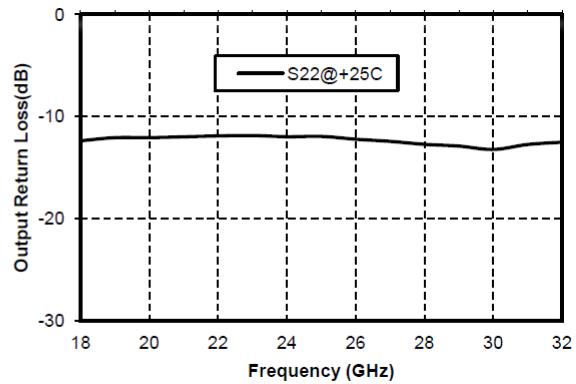
Noise Figure vs. Frequency



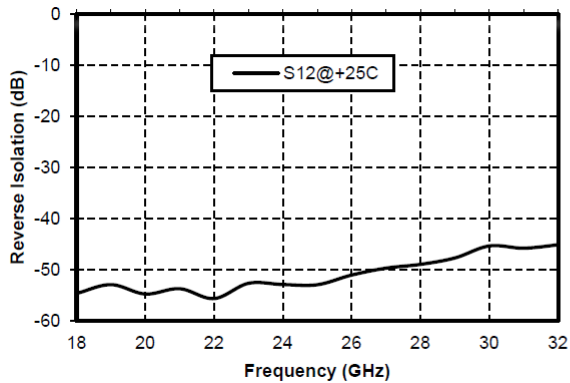
Input Return Loss vs. Frequency



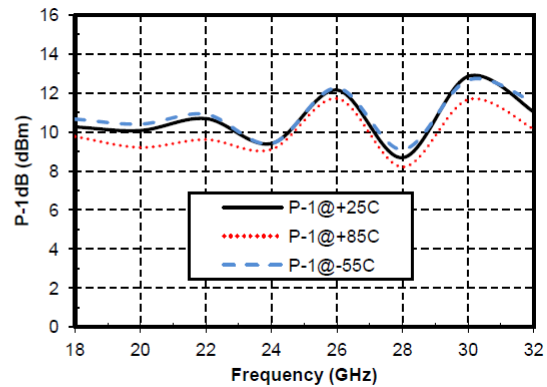
Output Return Loss vs. Frequency



Reverse Isolation vs. Frequency

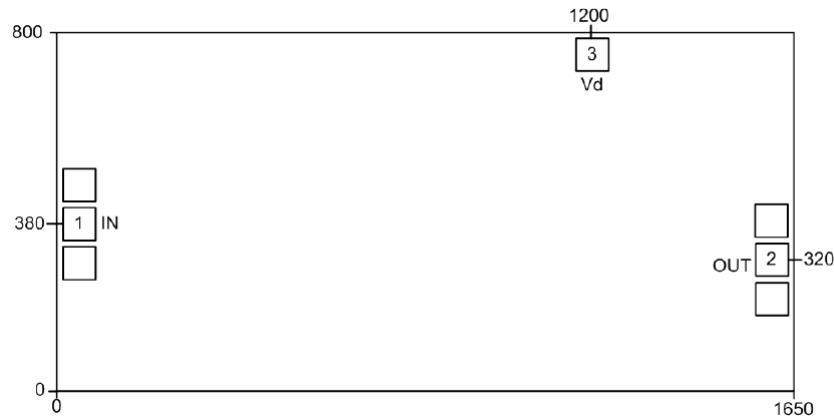


P1dB vs. Frequency





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

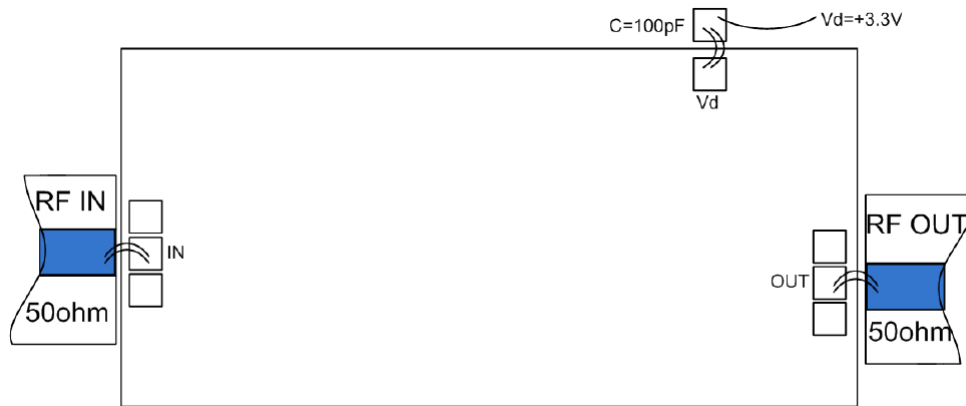


**Pad Description**

| Pad        | Function | Description   | Equivalent Circuit |
|------------|----------|---|--------------------|
| 1          | RF IN    | RF signal input terminal, no blocking capacitor required.       |                    |
| 2          | RF OUT   | RF signal output terminal, no blocking capacitor required.      |                    |
| 3          | Vd       | Amplifier drain bias; external 100pF bypass capacitor required. |                    |
| 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: +6V
2. Maximum input power: +20dBm
3. Operating temperature: -55°C to +85°C
4. Storage temperature: -65°C to +150°C