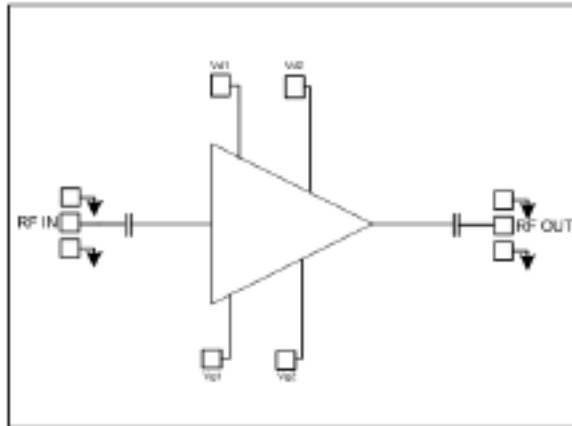


Features

- Frequency: 20-45GHz
- Small Signal Gain: 20dB
- Gain Flatness: $\leq \pm 1.25$ dB
- P1dB: 20.5dBm
- Psat: 21.5dBm
- Power Supply: +4.5V/180mA
- Input/Output: 50 Ω
- Die Size: 1.85 x 0.8 x 0.1 mm

Typical Applications

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

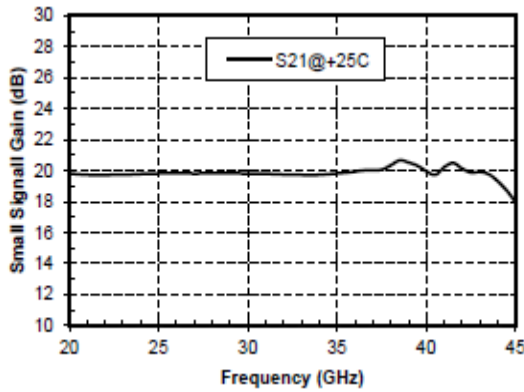
Functional Block Diagram

Electrical Specifications

TA = +25°C, Vd = +4.5V

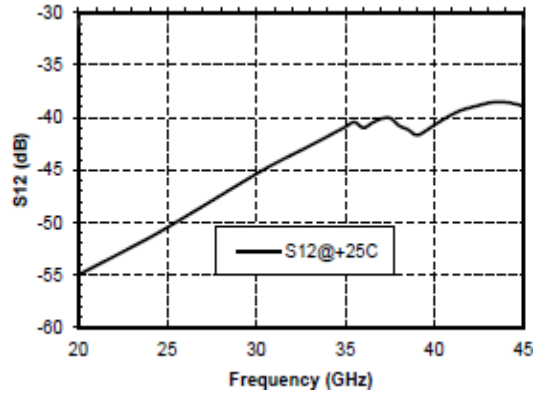
| Parameters | Min. | Typ. | Max. | Units |
|--|------------|------|------|-------|
| Frequency | 20-45 | | | GHz |
| Small Signal Gain | 18 | 20 | 20.5 | dB |
| Gain Flatness | ± 1.25 | | | dB |
| Output 1dB Compression (P1dB) | 19.5 | 20.5 | 21.5 | dBm |
| Saturated Output Power (Psat) | 20.5 | 21.5 | 22.5 | dBm |
| Input Return Loss | 10 | 21 | - | dB |
| Output Return Loss | 7 | 11 | - | dB |
| Static Current | | 180 | | mA |
| * Adjust VG (-2V-0V) to obtain device current of 180mA. (Approximately -0.75V) | | | | |



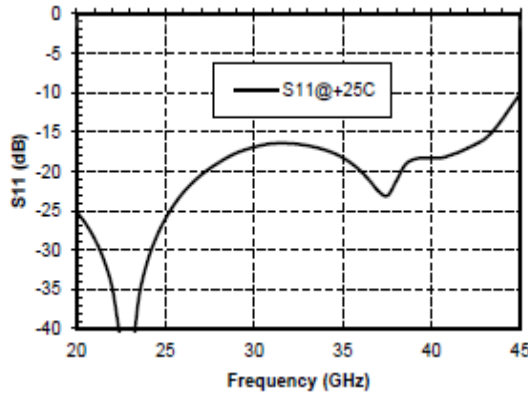
Gain vs. Frequency



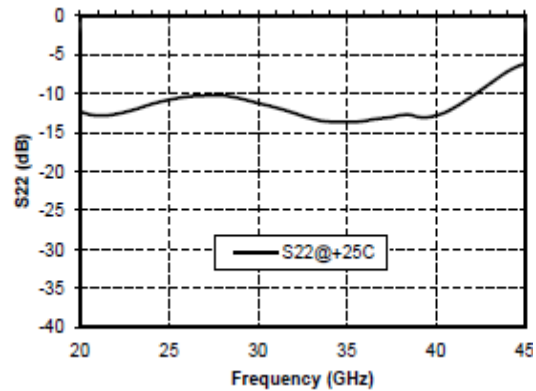
Reverse Isolation vs. Frequency



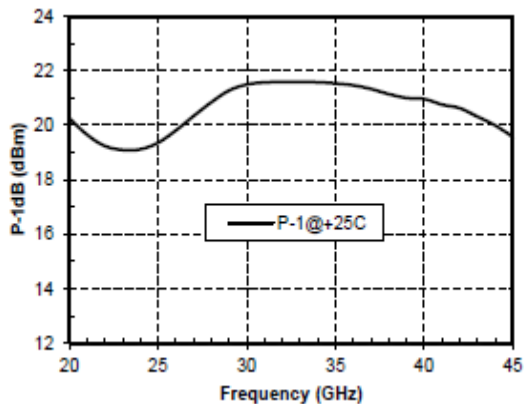
Input Return Loss vs. Frequency



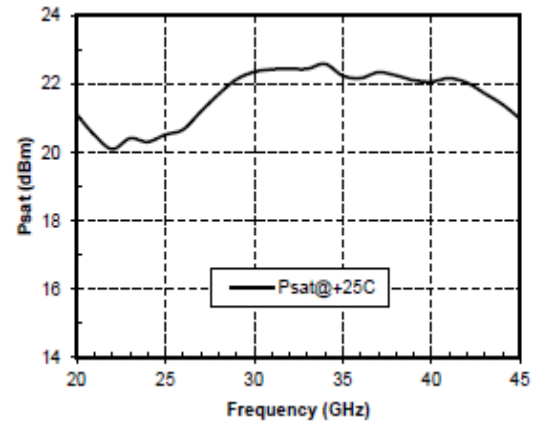
Output Return Loss vs. Frequency



P1dB vs. Frequency

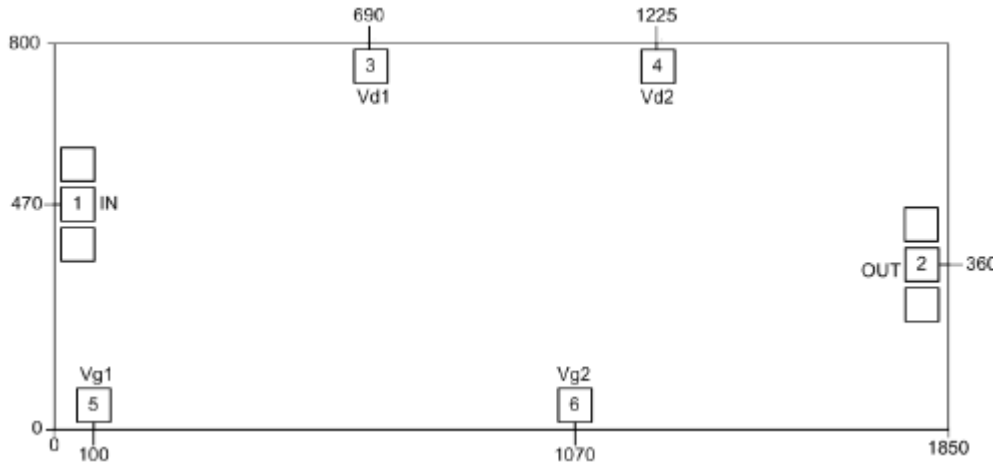


Noise Figure vs. Frequency





Outline Drawing:
All Dimensions in μm

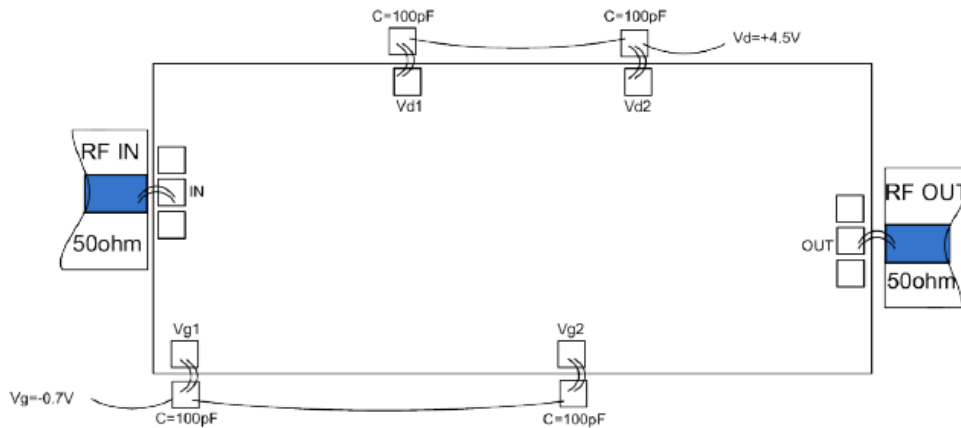


Pad Description

| 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, 4 | Vd1, Vd2 | Amplifier drain bias; external 100pF bypass capacitor required. | |
| 5, 6 | Vg1, Vg2 | Amplifier gate 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 μm^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: +8V
2. 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