

### Features

- 4 GHz to 12 GHz Frequency Range
- Gain 40 dB Typical
- Gain Flatness  $\pm 1.5$  dB max
- P1dB +10 dBm typical
- Internally Regulated
- Operates from Single +8V Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology

### Applications

- Receiver Front End
- Radar
- Communications Systems
- Microwave Radio Systems
- Test Equipment

### General Description

LA10404 is a Broadband Low Noise amplifier very low noise figure over the full frequency range. The amplifier I/Os are Internally matched to 50 Ohms. The LNA is ideal for use as Front End of receiver system, or where amplification is required without adding excessive noise in a Hi-Rel communications system for Commercial or Military applications



**Electrical Specifications**

| Parameter               | Symbol | Specification  | Conditions                    |
|-------------------------|--------|----------------|-------------------------------|
| Frequency Range         |        | 4 to 12 GHz    |                               |
| Small Signal Gain       |        | 38dB minimum   |                               |
| Gain Flatness           |        | ±2dB maximum   |                               |
| Input Power             |        | 10dBm minimum  | CW, without damage            |
| Output Power (P1dB)     |        | +10dBm typical | @ 8GHz                        |
| OIP3                    |        | 20dBm typical  | @ 8GHz Two tone F1-F2 = 10MHz |
| RF Input Impedance      |        | 2.0:1          | Reference to 50Ω VSWR         |
| RF Output Impedance     |        | 1.8:1          | Reference to 50Ω VSWR         |
| Supply Voltage Positive |        | +8V            |                               |
| Supply Current Positive |        | 130mA maximum  |                               |

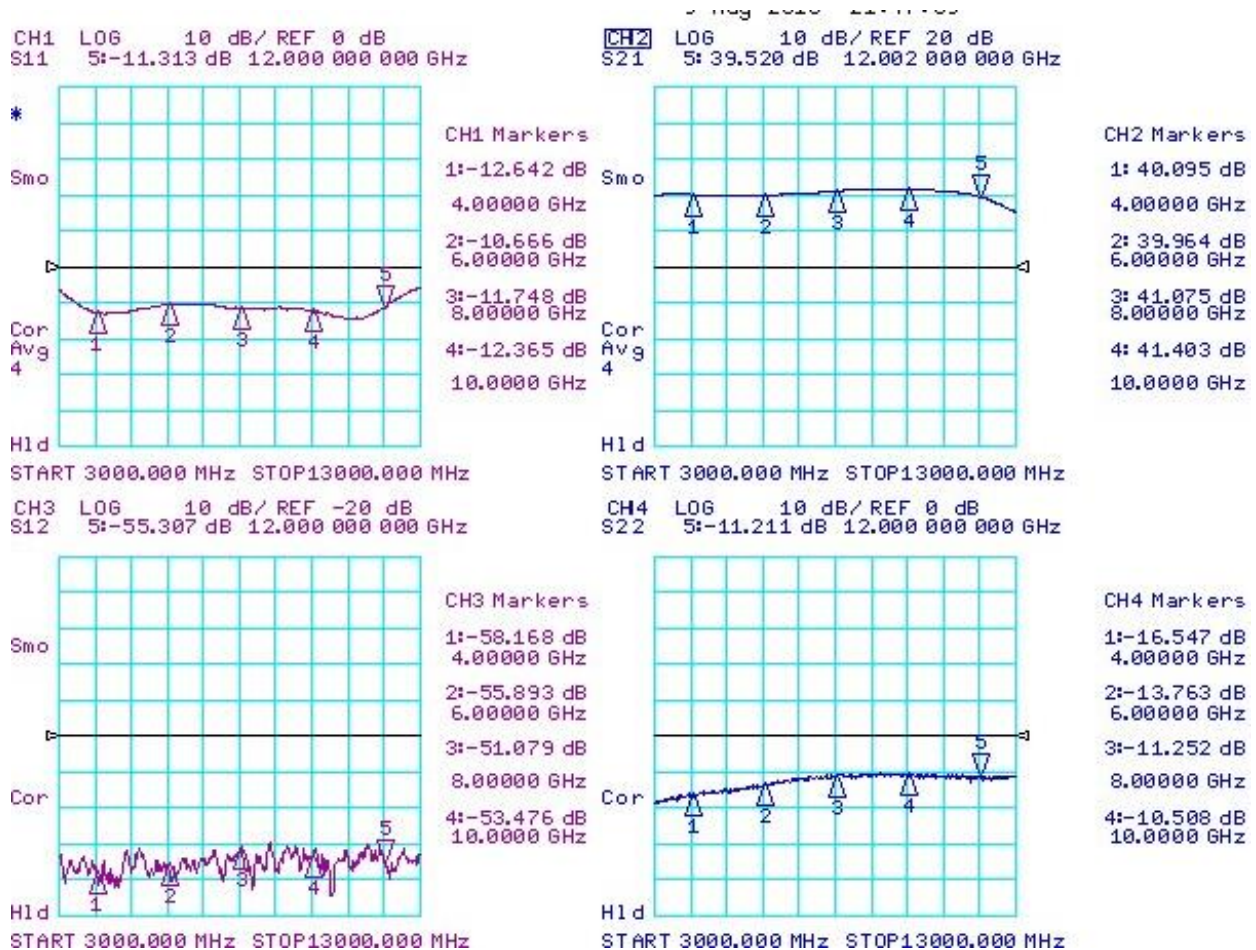
**Maximum Ratings<sup>1</sup>**

| Parameter                | Symbol         | Min. | Typ. | Max. | Units | Conditions |
|--------------------------|----------------|------|------|------|-------|------------|
| Operating Temperature    | OTR            | -40  |      | +85  | °C    |            |
| Storage Temperature      | STR            | -54  |      | +150 | °C    |            |
| RF Input power (CW)      |                |      |      | +10  | dBm   |            |
| Die J <sub>unction</sub> | T <sub>j</sub> |      |      | +150 | °C    |            |
| Positive Supply Voltage  |                |      |      | +8.5 | V     |            |

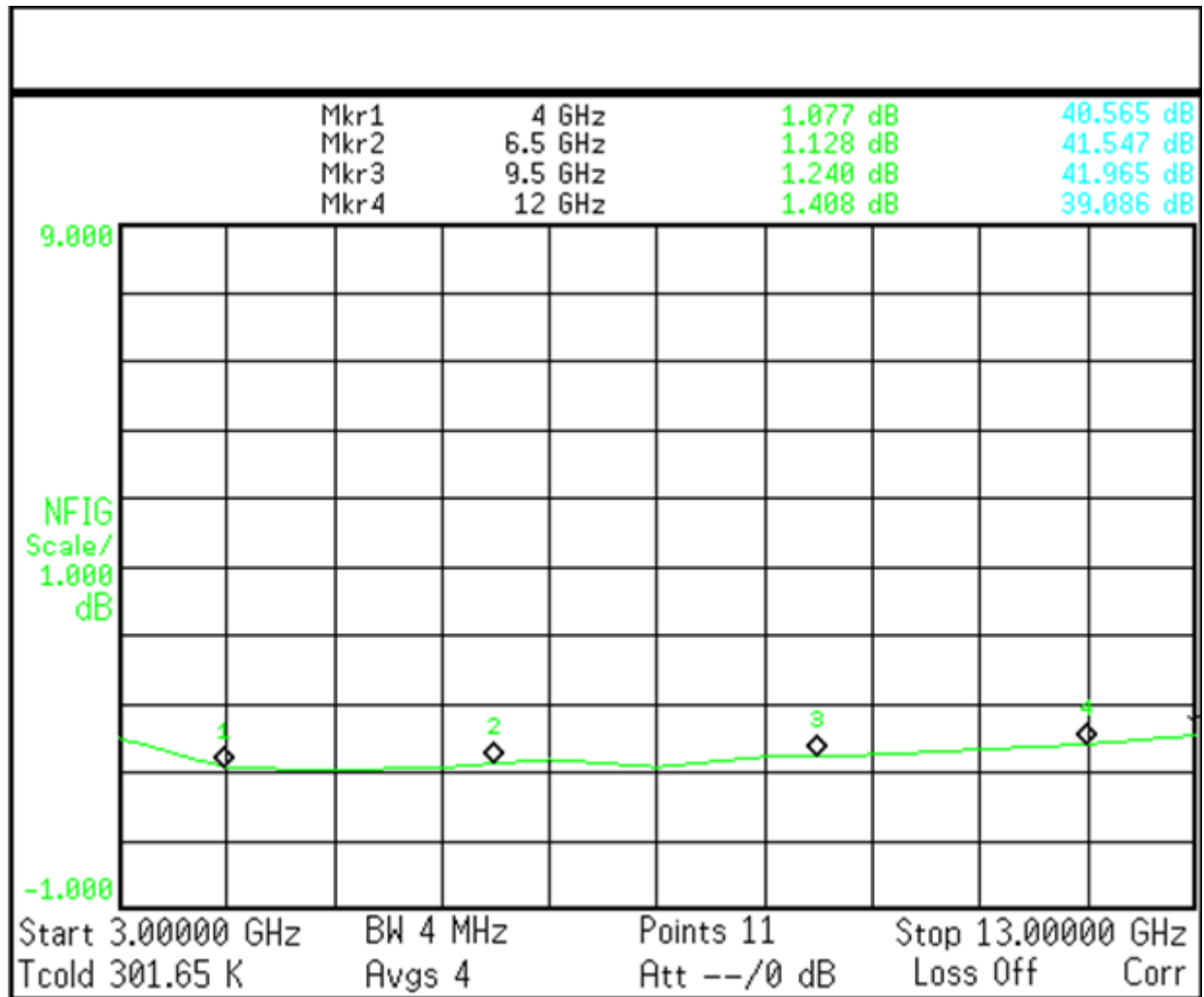
**Notes**

|        |                         |
|--------|-------------------------|
| Note 1 | Unconditional Stability |
|--------|-------------------------|

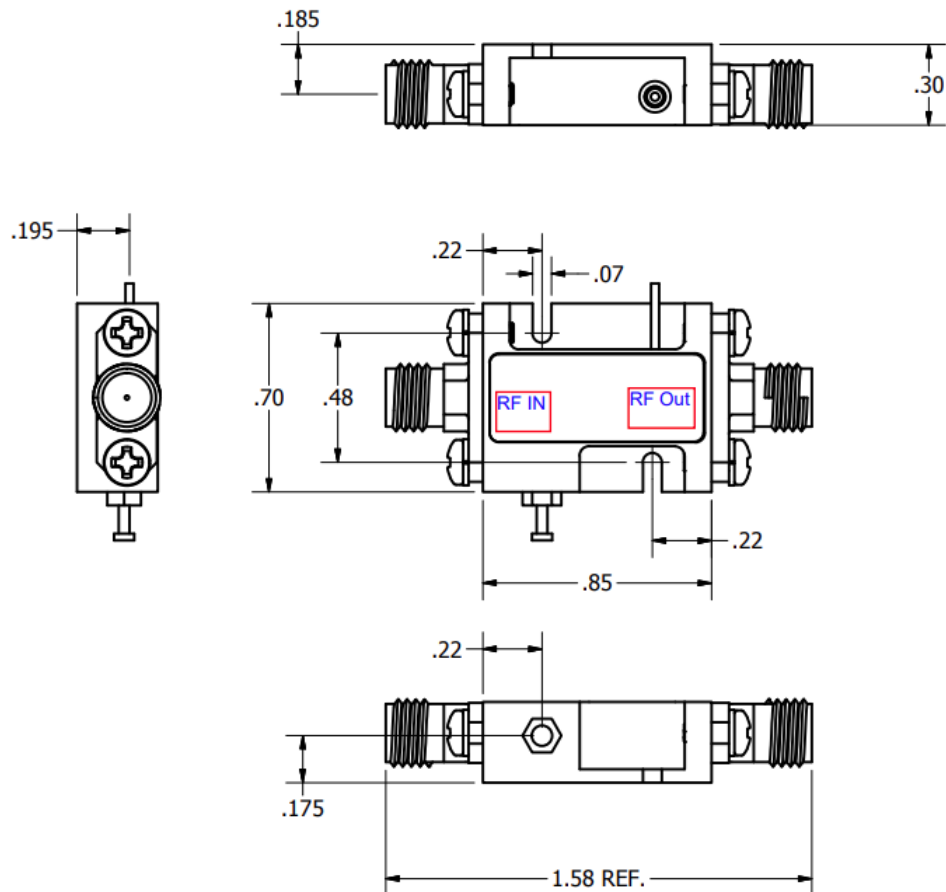
**Simulation plots**



### Noise Figure Plot



### Package Outline: SMA Connectorized (inches)



**Housing: Aluminum Gold over Nickel plated  
Removable SMA and Ground Slug**

**Note: The unit must be attached to proper heat sink**

### Revision History

| Date     | Rev | Author | Details of Revision |
|----------|-----|--------|---------------------|
| 04-16-25 | 0   | AR     | Initial Version     |