



### Main Features:

- Frequency Range: 1 to 3.1 GHz.
- Typical values: NF 1.6 dB, Gain 30 dB
- RF connectors (I/O): SMA Female
- Solder filtered pins for DC connection
- Several mounting options
- Gold plated compact aluminum housing
- Hi-reliability and dedicated screening/ environmental tests available under request

### ERZ-LNA-0100-0310-30-2

The ERZ-LNA-0100-0310-30-2 is a Low Noise Amplifier providing a gain of 30 dB and a noise figure of 1.6 dB. The compact size and modularity makes it ideal for a wide range of applications.

### Typical applications:

- Industrial / Laboratory
- Satcom / Telecom
- Space / Aerospace / Military

### Performance

| Parameter           | Value             |       |       | Units |
|---------------------|-------------------|-------|-------|-------|
|                     | Min               | Typ   | Max   |       |
| Frequency           | 1.0               | -     | 3.1   | GHz   |
| Output Power (P1dB) | 17                | 19    | 21    | dBm   |
| Small Signal Gain   | 29                | 30    | 32    | dB    |
| Gain Flatness       | -                 | ±0.5  | -     | dB    |
| Noise Figure        | 1.5               | 1.6   | 2.0   | dB    |
| VSWR input          | 1.7:1             | 1.8:1 | 2.0:1 | -     |
| VSWR output         | 1.3:1             | 1.4:1 | 1.8:1 | -     |
| DC Voltage          | 10                | 15    | 20    | V     |
| Power Consumption   | -                 | 1.2   | -     | W     |
| Connectors          | SMA Female IN/OUT |       |       | -     |

Specifications at case temperature of 25°C at 15V.

### Output Power at 1 dB Compression

Figure 1-1 shows output power at 1dB compression measurement as a function of frequency at room temperature (25°C).

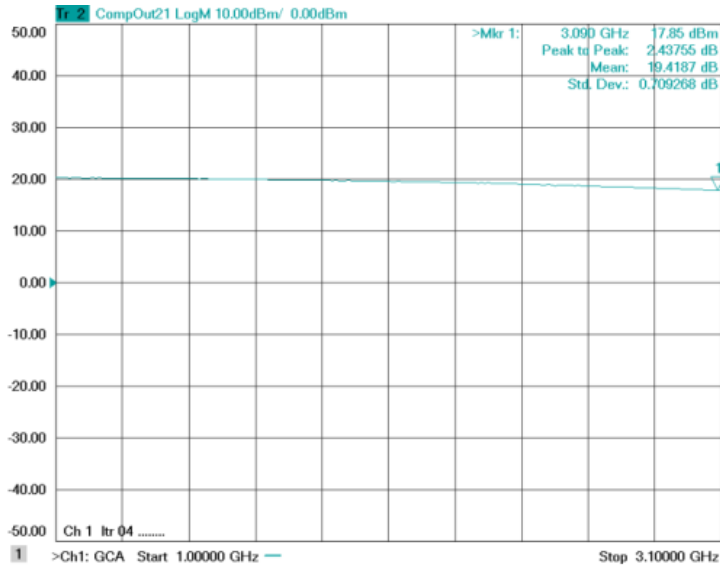


Figure 1-1: ERZ-LNA-0100-0310-30-2 P1dB

### Small Signal Gain

Figure 1-2 shows small signal gain measurement as a function of frequency at room temperature (25°C).

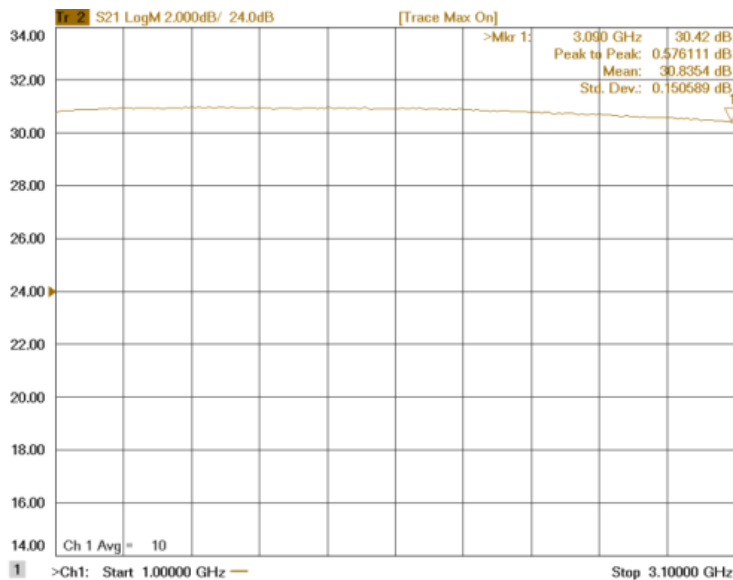


Figure 1-2: ERZ-LNA-0100-0310-30-2 Small Signal Gain

### Noise Figure

Figure 1-3 shows noise figure measurement as a function of frequency at room temperature (25°C).

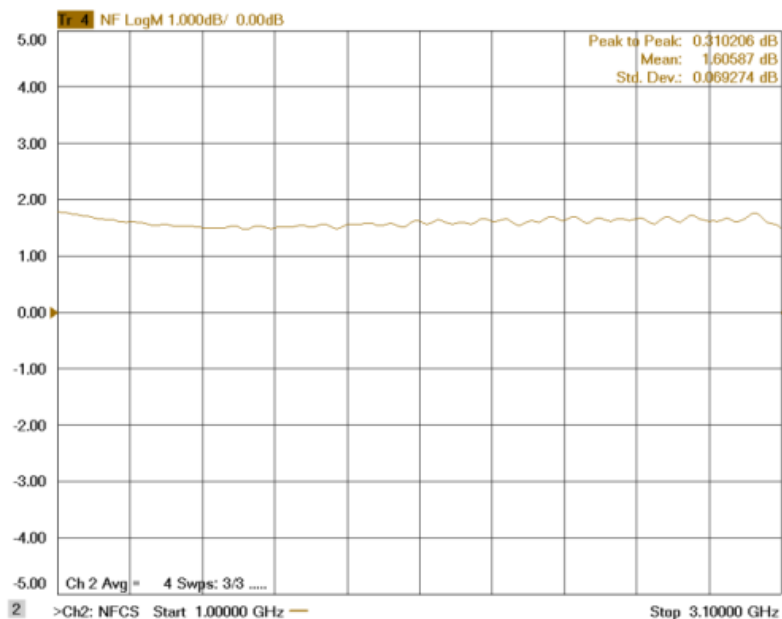


Figure 1-3: ERZ-LNA-0100-0310-30-2 Noise Figure

### Input and Output Matching

Figure 1-4 and Figure 1-5 show input (S11) and output (S22) VSWR as a function of frequency at room temperature (25°C).

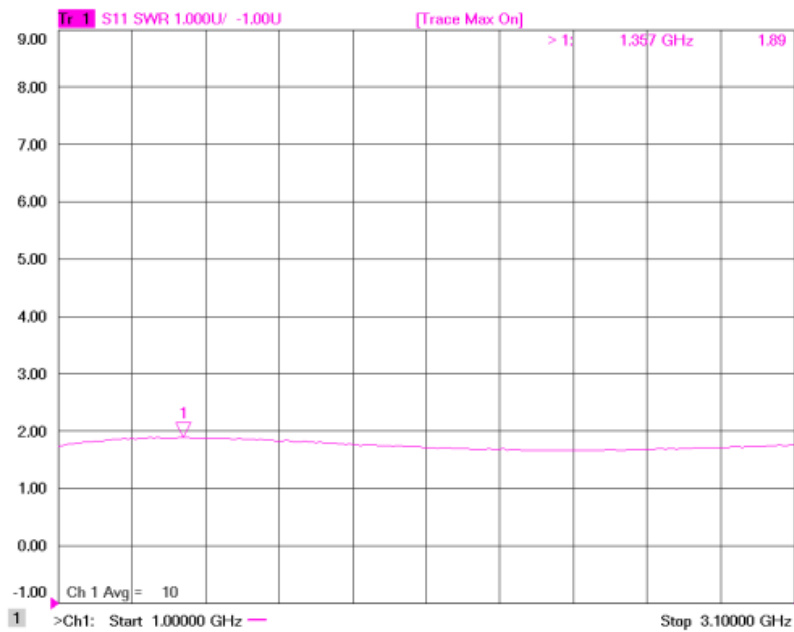


Figure 1-4: ERZ-LNA-0100-0310-30-2 Input Matching

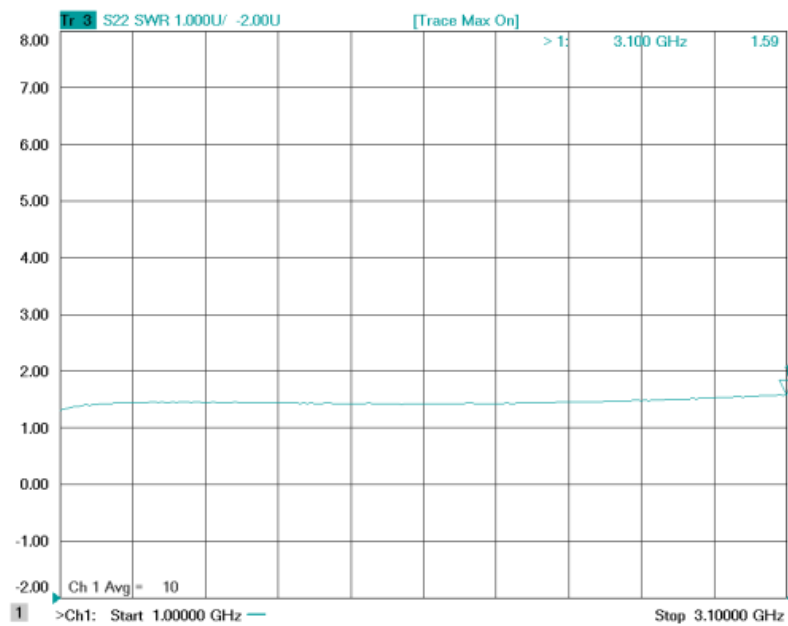


Figure 1-5: ERZ-LNA-0100-0310-30-2 Output Matching

### Absolute Maximum Ratings

| Condition                       | Value         |
|---------------------------------|---------------|
| DC Voltage                      | 12 +/-3 VDC   |
| Maximum Input Power (CW)        | 10 dBm        |
| Operation temperature (at case) | -40 to 85 °C  |
| Storage temperature             | -55 to 125 °C |

- Stress above these ratings may cause permanent damage to the device.
- It is final user responsibility to maintain the amplifier within the specified ranges.

### Measurements Conditions

All measurements provided in this report were performed at the following conditions:

| Condition   | Value         |
|---|---------------|
| Temperature (DUT ON)  | 25 °C ± 1°C   |
| Humidity  | 44% ± 10%     |
| DUT Warm up time  | 30 min        |
| DUT minimum operation time                                  | 24 hours      |
| Test equipment warm up time                                 | 2 hours       |
| Additional temperature cycles in climatic chamber (DUT OFF) | -40°C to 85°C |

### Environmental Specifications (By Design)

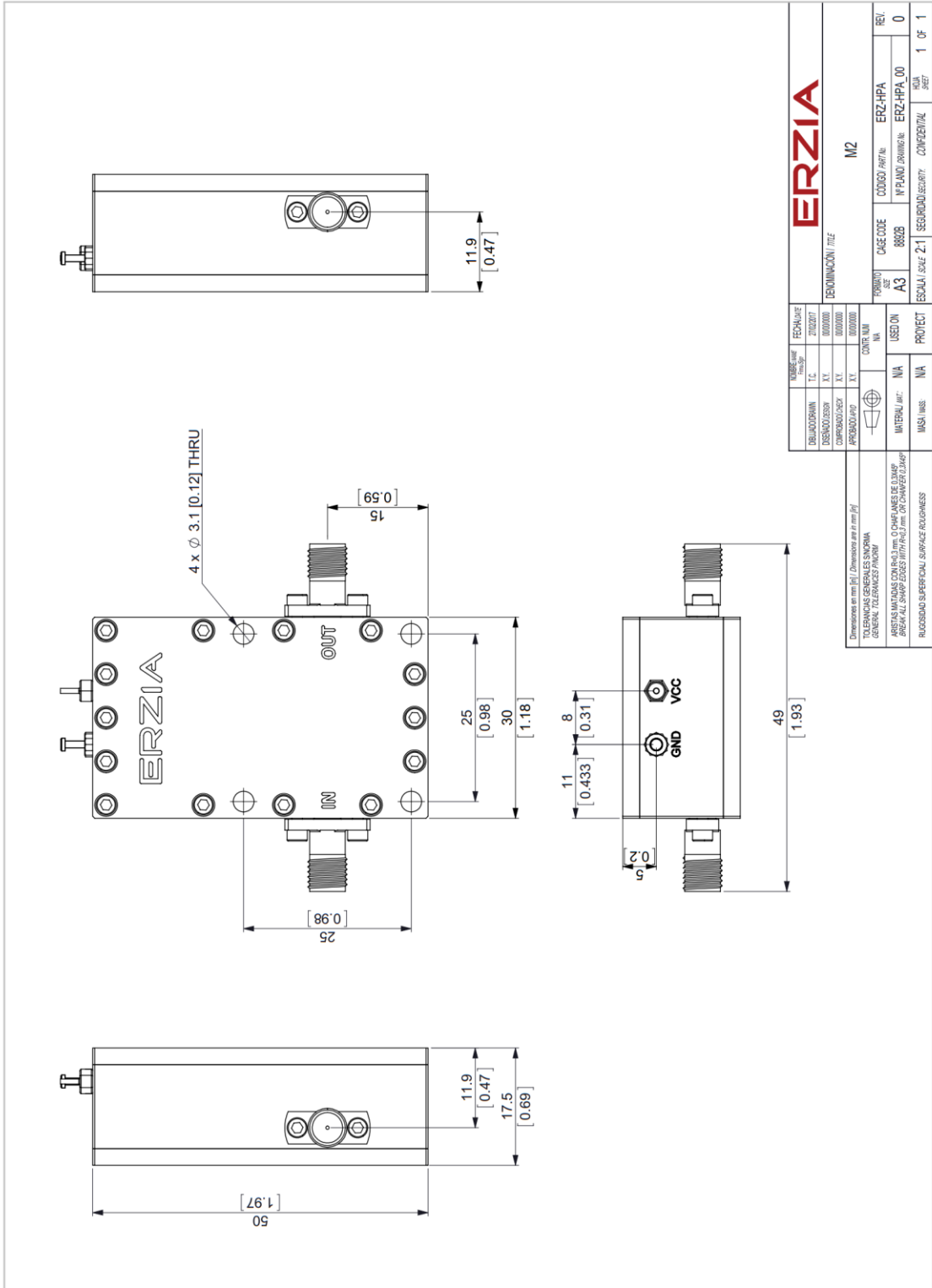
|                        |                    |                              |
|------------------------|--------------------|------------------------------|
| Operating Temperature: | -45 to +85 °C      | (MIL-STD-810F, method 520.2) |
| Storage Temperature:   | -55 to 125 °C      | (MIL-STD-810F, method 520.2) |
| Vibration:             | 8g rms             | (MIL-STD-810F, method 514.5) |
| Shock:                 | 20g,11ms,saw-tooth | (MIL-STD-810F, method 516.5) |
| Acceleration:          | 15g                | (MIL-STD-810F, method 513.5) |

### RoHS & REACH Compliance

This part is compliant with EU 2011/65/UE RoHS (Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment) and REACH (Registration, Evaluation, Authorization and restriction of Chemical substances) directives.



### Mechanics and Housing



### Documentation and Test Reports

All modules are at least delivered with: Electrical Test Report, Certificate of Conformance, Certificate of Acceptance and Origin. Optionally, units can be environmentally tested (temperature, vibration...).

### Option (HS): Heat Sink

A heat sink (HS) can be provided to allow the operation of Power Amplifiers. Please note that most power amplifiers need heat sink or appropriate heat dissipation strategy.

### Space / Military Usage

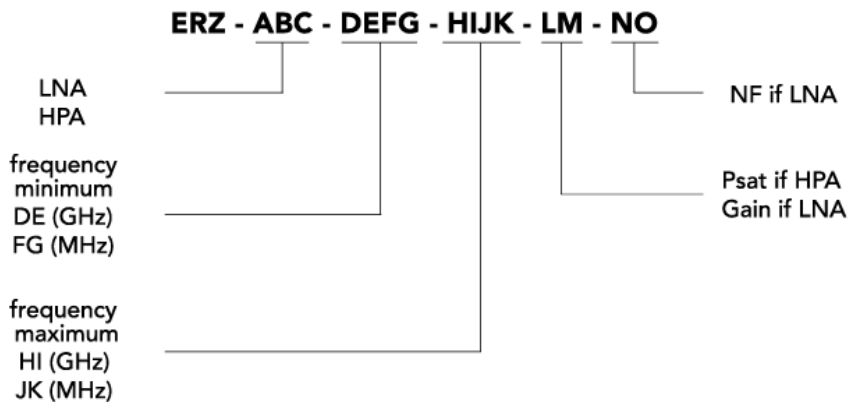
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

### Customization and Extended Performances

ERZIA can fully design or adapt one of the existing RF amplifiers designs according to your specifications. Please contact us for additional information.

### Model Number Codification

#### MODEL NUMBER



# ERZIA

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