



### Main Features:

- Frequency Range: 2 to 45 GHz.
- Typical values: Gain 14 dB, NF 6 dB.
- RF connectors (I/O): 2.4 mm.
- 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-0200-4500-15-4

The ERZ-LNA-0200-4500-15-4 is a Low Noise Amplifier providing a gain of 14 dB with a noise figure of 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           | 2                    | -     | 45    | GHz   |
| Output Power (P1dB) | 9                    | 17    | 24    | dBm   |
| Small Signal Gain   | 11                   | 14    | 18    | dB    |
| Gain Flatness       | -                    | ±2.5  | -     | dB    |
| Noise Figure        | 3                    | 6     | 9.5   | dB    |
| VSWR input          | 1.1:1                | 1.8:1 | 2.5:1 | -     |
| VSWR output         | 1.1:1                | 2.0:1 | 3.0:1 | -     |
| DC Voltage          | 9                    | 12    | 15    | V     |
| Power Consumption   | -                    | 1.5   | -     | W     |
| RF Connectors       | 2.4 mm Female IN/OUT |       |       | -     |

Specifications at a case temperature of 25°C at 12V.

### Output Power at 1 dB Compression

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

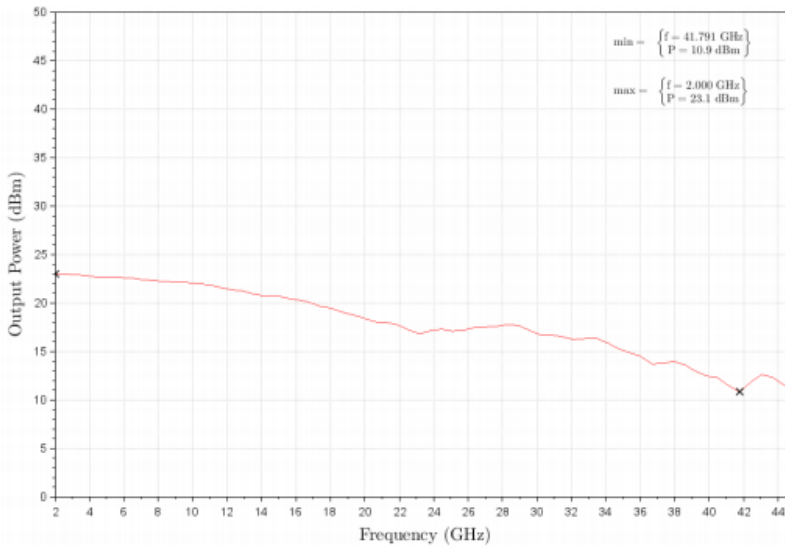


Figure 1: ERZ-LNA-0200-4500-15-4 P1dB

### Small Signal Gain

Figure 2 shows the small signal gain measured as a function of frequency at different temperatures.

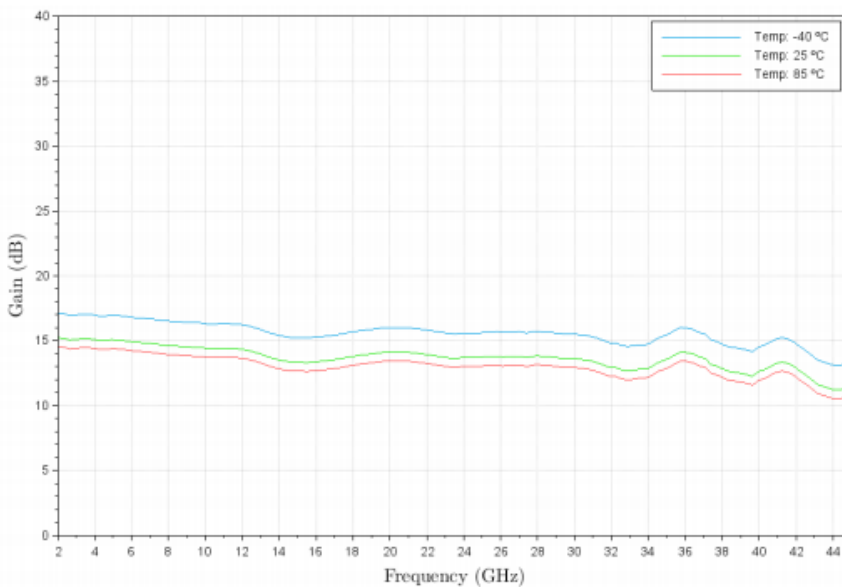


Figure 2: ERZ-LNA-0200-4500-15-4 Small Signal Gain

### Noise Figure

Figure 3 shows noise figure behavior at room temperature (25°C).

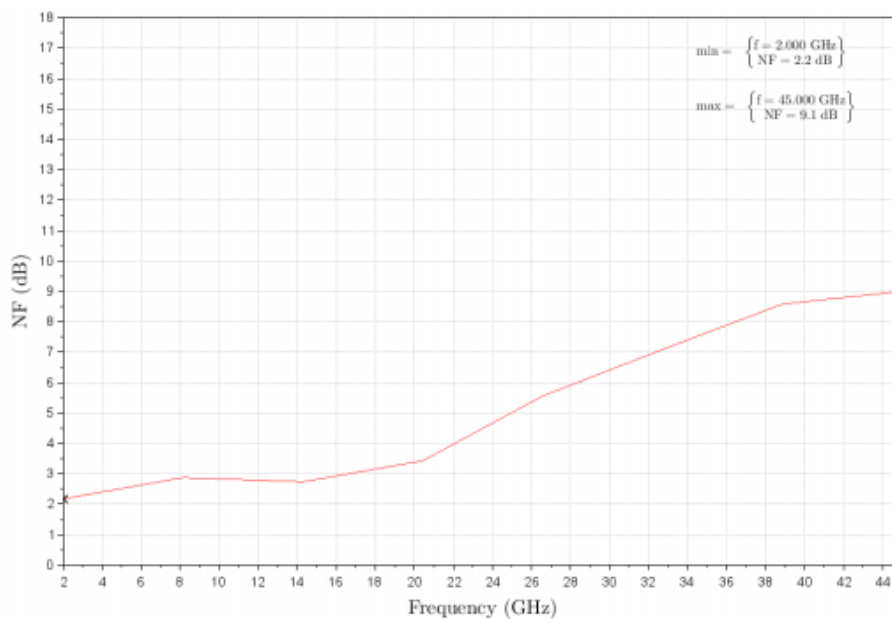


Figure 3: ERZ-LNA-0200-4500-15-4 Noise Figure

### Input and Output Matching

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

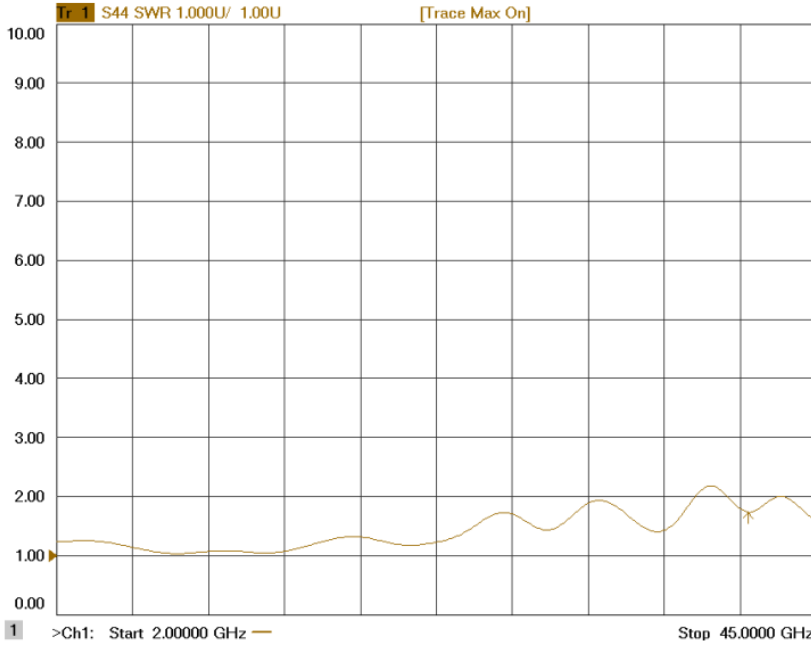


Figure 4: ERZ-LNA-0200-4500-15-4 Input Matching

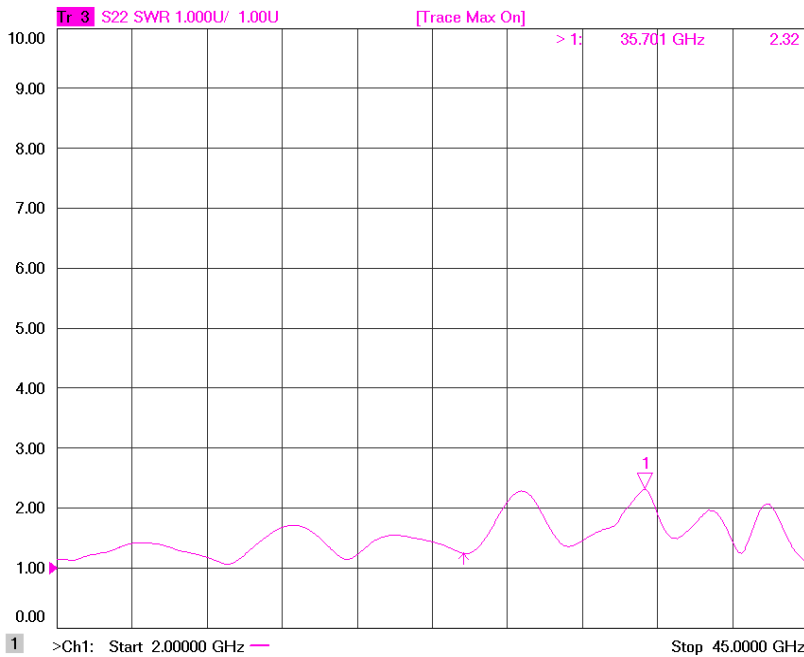


Figure 5: ERZ-LNA-0200-4500-30-2.5 Output Matching

### Absolute Maximum Ratings

| Condition                       | Value        |
|---------------------------------|--------------|
| DC Voltage                      | 12 +/-3 VDC  |
| Maximum Input Power (CW)        | 10 dBm       |
| Operation temperature (at case) | -45 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)

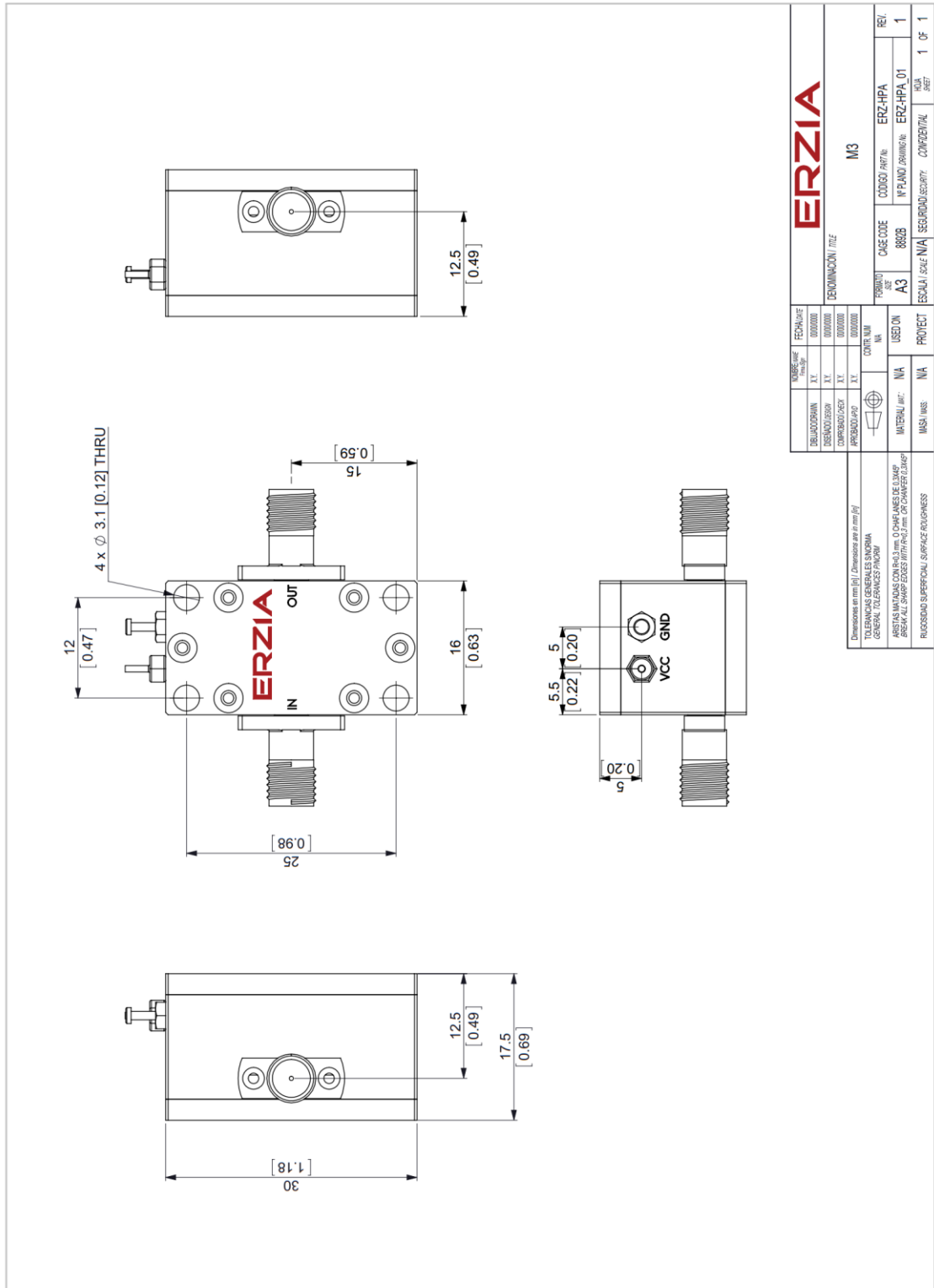
|                        |                    |                              |
|------------------------|--------------------|------------------------------|
| Operating Temperature: | -45 to +85 °C      | (MIL-STD-810F, method 520.2) |
| Storage Temperature:   | -55 to 125 °C      | (MIL-STD-810F, method 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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