ERZIA
DATASHEET

# Low Noise Amplifier

ERZ-LNA-1700-2400-25-2.5

## Main Features:

- Frequency Range: 17 to 24 GHz.
- Typical values: Gain 26 dB, NF 2.5 dB
- RF connectors (I/O): 2.92 mm Female
- Solder filtered pins for DC connection
- Several mounting options
- Gold platted compact aluminum housing
- Hi-reliability and dedicated screening/ environmental tests available under request

## ERZ-LNA-1700-2400-25-2.5

The ERZ-LNA-1700-2400-25-2.5 is a Low Noise Amplifier providing a gain of 26 dB with a noise figure of 2.5 dB. The compact size and modularity makes it ideal for a wide range of applications.

## Typical applications:

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

## Performance

| Parameter | Value | | | Units |
|---|---|---|---|---|
| | Min | Typ | Max | |
| Frequency | 17 | - | 24 | GHz |
| Output Power (P1dB) | 13 | 15 | 16 | dBm |
| Small Signal Gain | 24 | 26 | 28 | dB |
| Gain Flatness | - | ±2.0 | - | dB |
| Noise Figure | 2 | 2.5 | 2.8 | dB |
| VSWR input | 1.0:1 | 2.0:1 | 2.5:1 | - |
| VSWR output | 1.8:1 | 2.0:1 | 3.0:1 | - |
| DC Voltage | 9 | 12 | 15 | V |
| Power Consumption | - | 0.5 | - | W |
| RF Connectors | 2.92 mm Female IN/OUT | | | - |

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

## Output Power at 1 dB Compression

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

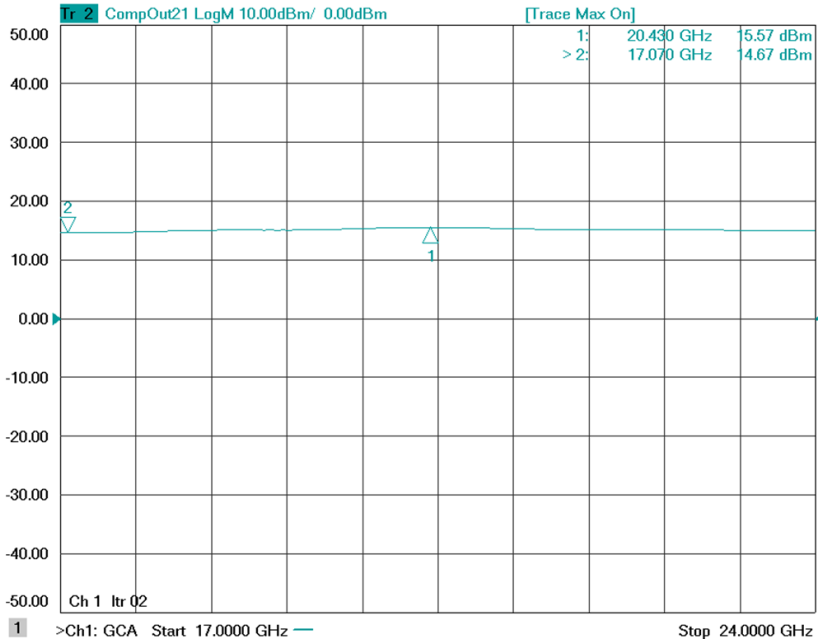



Figure 1: ERZ-LNA-1700-2400-25-2.5 P1dB

## Small Signal Gain

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

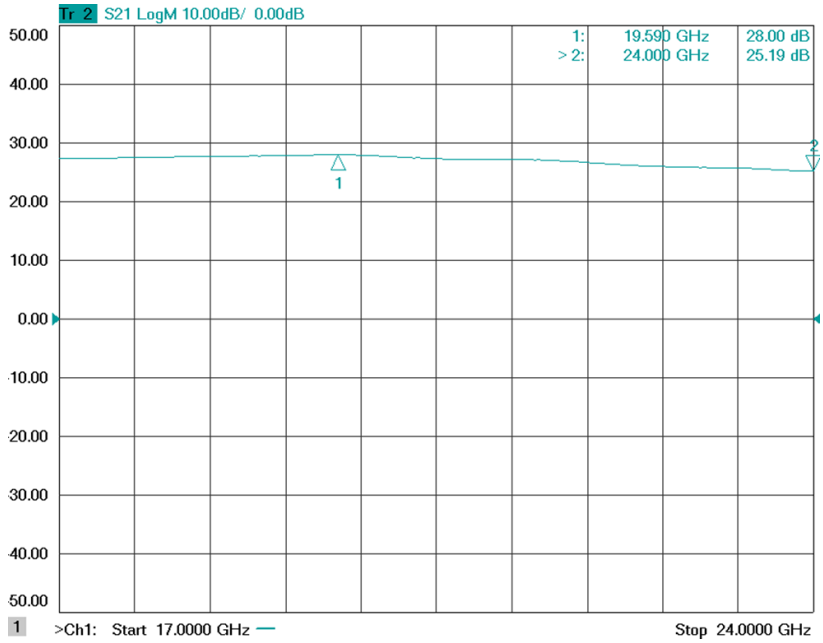



Figure 2: ERZ-LNA-1700-2400-25-2.5 Small Signal Gain

## Small Signal Gain Vs Temperature

Figure 3 shows small signal gain measurement as a function of frequency at low (-35°C), room (25°C) and high (70°C) temperatures.

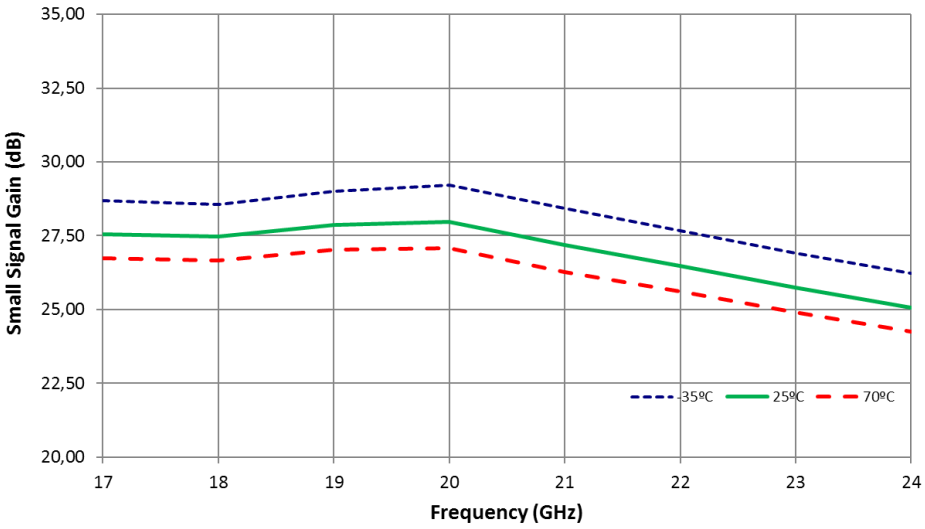



Figure 3: ERZ-LNA-1700-2400-25-2.5 Small Signal Gain Vs Temperature

## Noise Figure

Figure 4 shows the noise figure measurement as a function of frequency at room temperature (25°C).

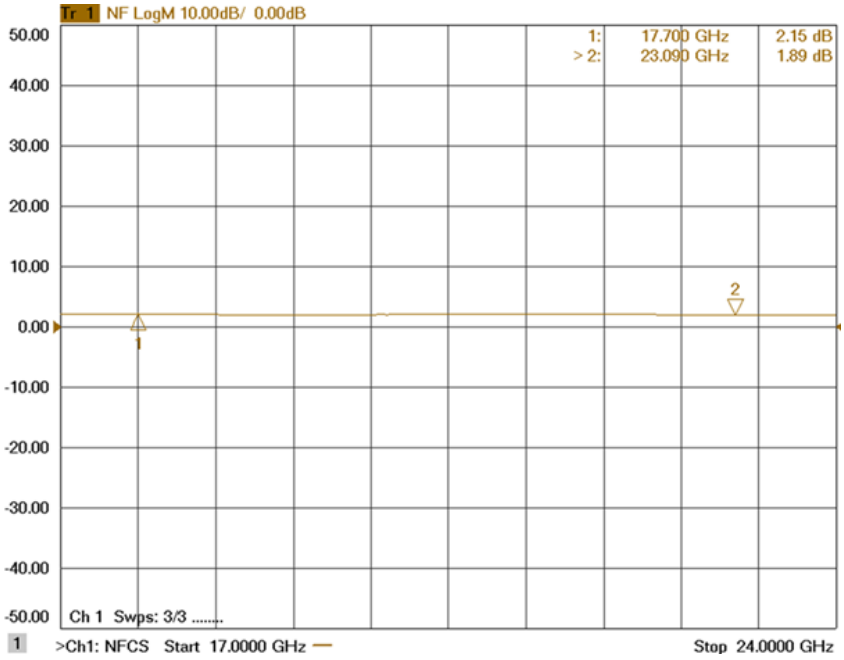



Figure 4: ERZ-LNA-1700-2400-25-2.5 Noise Figure

## Input and Output Matching

Figure 5 and Figure 6 show input (S11) and output (S22) VSWR as a function of frequency at room temperature (25°C).

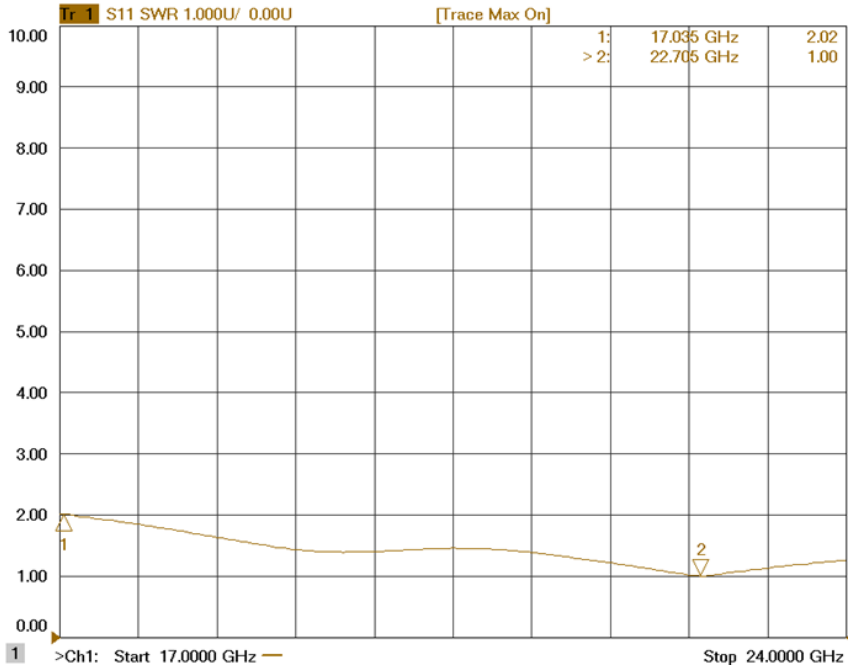



Figure 5: ERZ-LNA-1700-2400-25-2.5 Input Matching

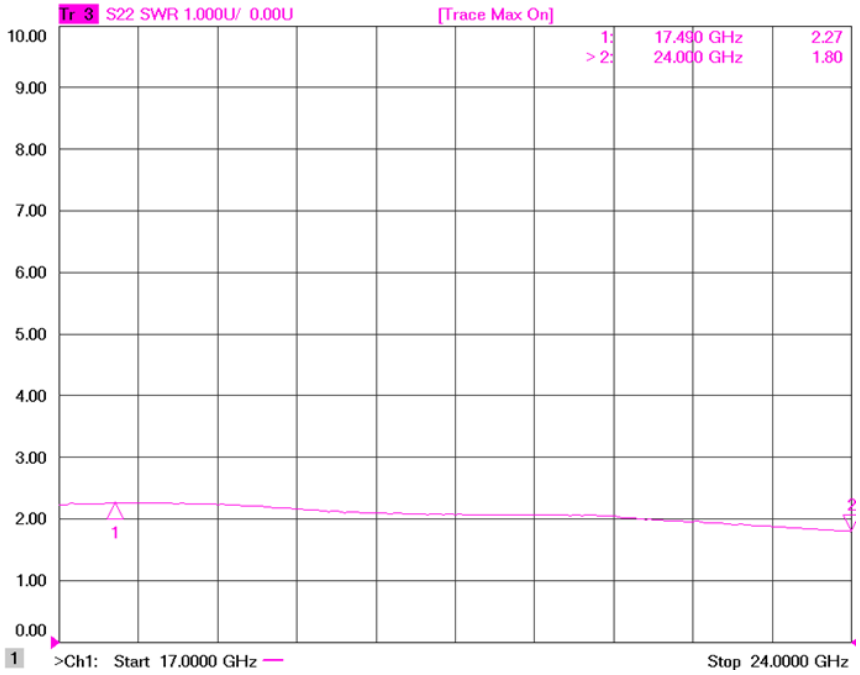



Figure 6: ERZ-LNA-1700-2400-25-2.5 Output Matching

## Absolute Maximum Ratings

| Condition | Value |
|---|---|
| DC Voltage | +15 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 |

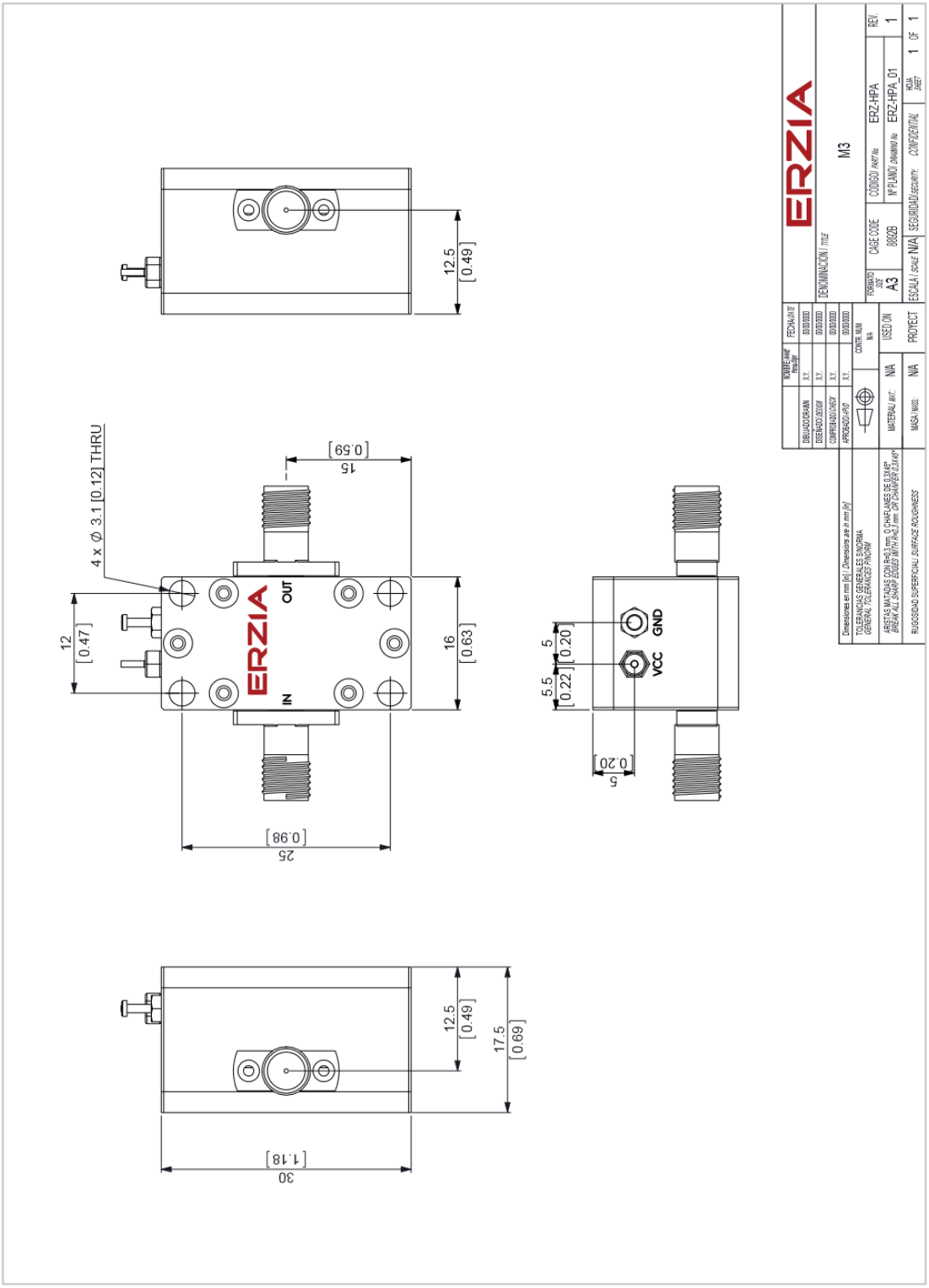
## Environmental Specifications (By Design)

| | | |
|---|---|---|
| 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 / Hi-Rel Usage

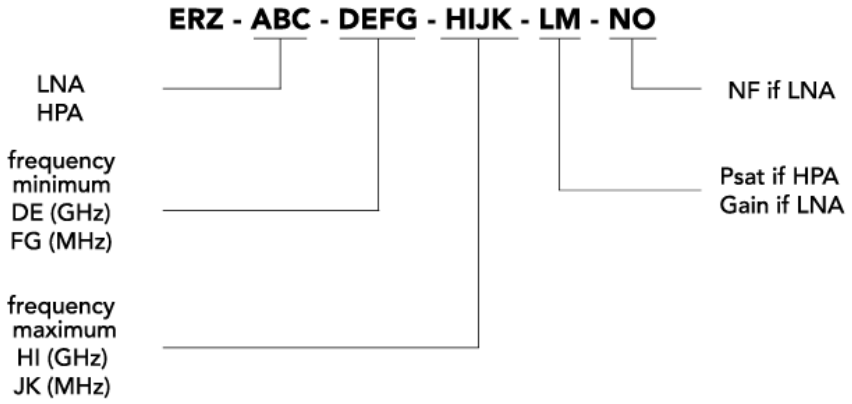
Most of ERZIA´s products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, or specific hi-reliability usage.

## 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



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