



### Main Features:

- Frequency Range: 0.7 to 3 GHz.
- Typical values: Gain 20 dB, NF 0.7 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-0070-0300-20-0.7

The ERZ-LNA-0070-0300-20-0.7 is a Low Noise Amplifier providing a gain greater than 20 dB with a noise figure lower than 1 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           | 0.7               | -     | 3     | GHz   |
| Output Power (P1dB) | 18                | 20    | 22    | dBm   |
| Gain                | 20                | 22    | 24    | dB    |
| Noise Figure        | 0.6               | 0.7   | 1.0   | dB    |
| VSWR input          | 1.7:1             | 1.8:1 | 2.5:1 | -     |
| VSWR output         | 1.0:1             | 1.2:1 | 1.5:1 | -     |
| DC Voltage          | 9                 | 12    | 15    | V     |
| Power Consumption   | -                 | 0.4   | -     | W     |
| Connectors          | SMA Female IN/OUT |       |       | -     |

Specifications at case temperature of 25°C

### 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).

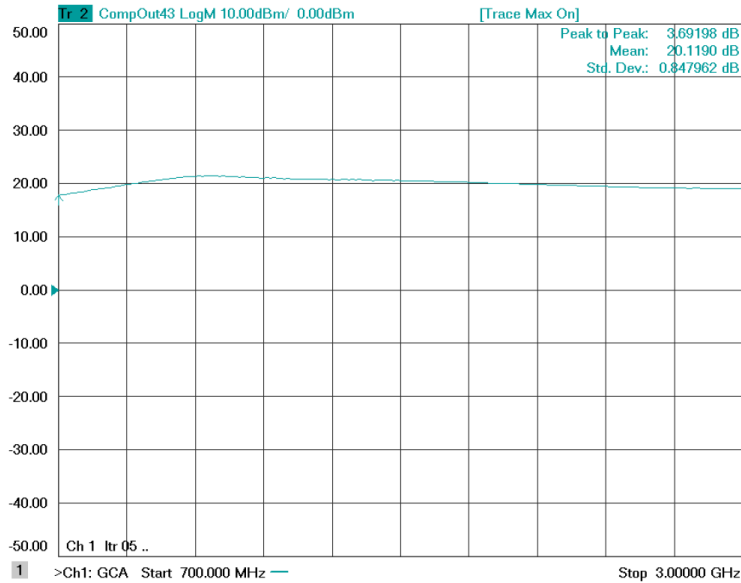


Figure 1: ERZ-LNA-0070-0300-20-0.7 P1dB

### Small Signal Gain

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

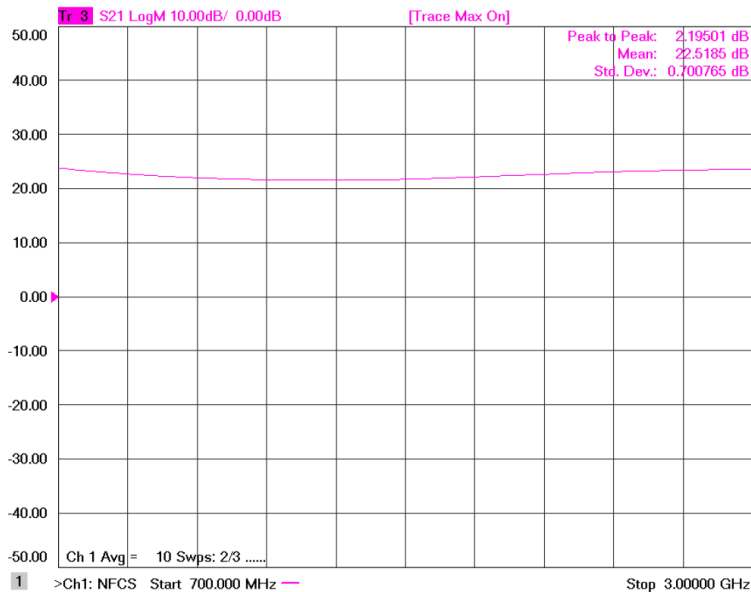


Figure 2: ERZ-LNA-0070-0300-20-0.7 Small Signal Gain

### Noise Figure

Figure 3 shows the noise figure measured as a function of frequency at room temperature (25°C).

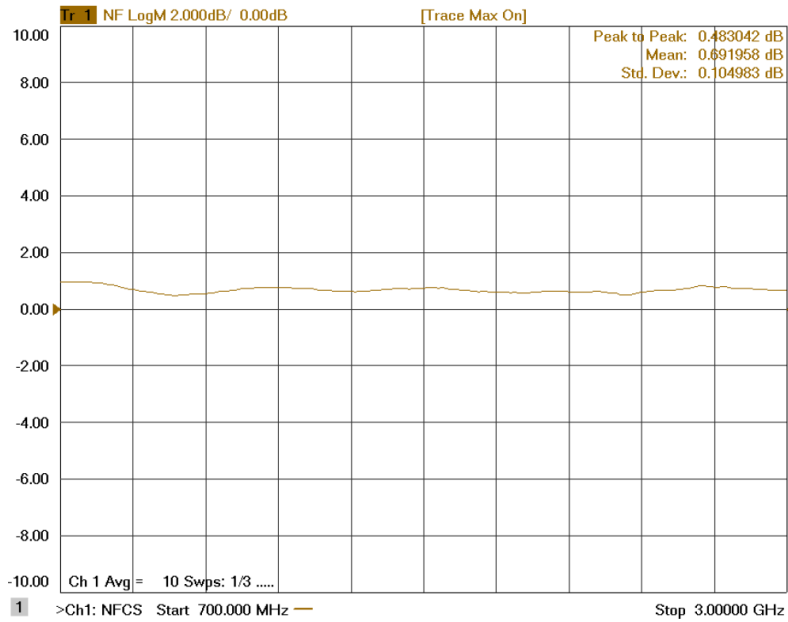


Figure 3: ERZ-LNA-0070-0300-20-0.7 Noise Figure

### 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).

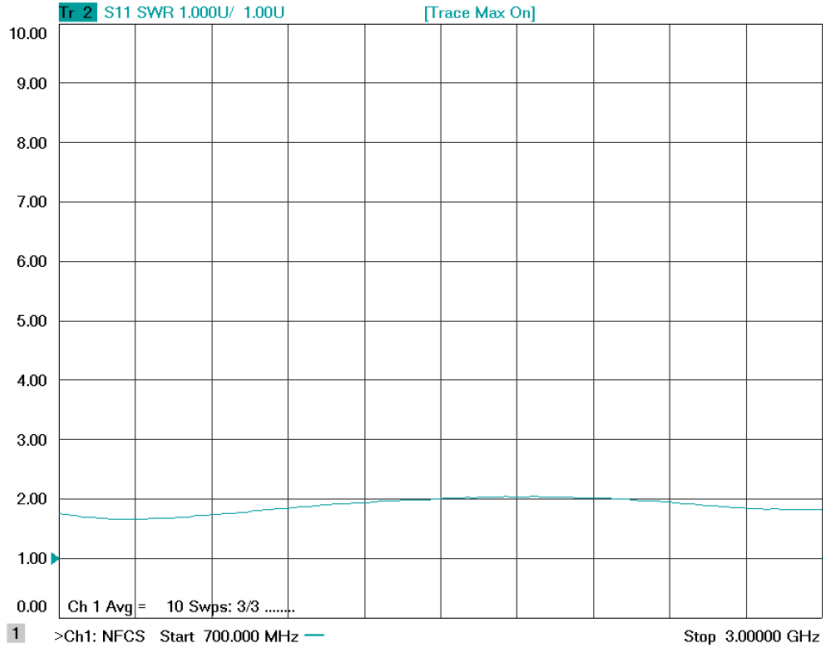


Figure 4: ERZ-LNA-0070-0300-20-0.7 Input Matching

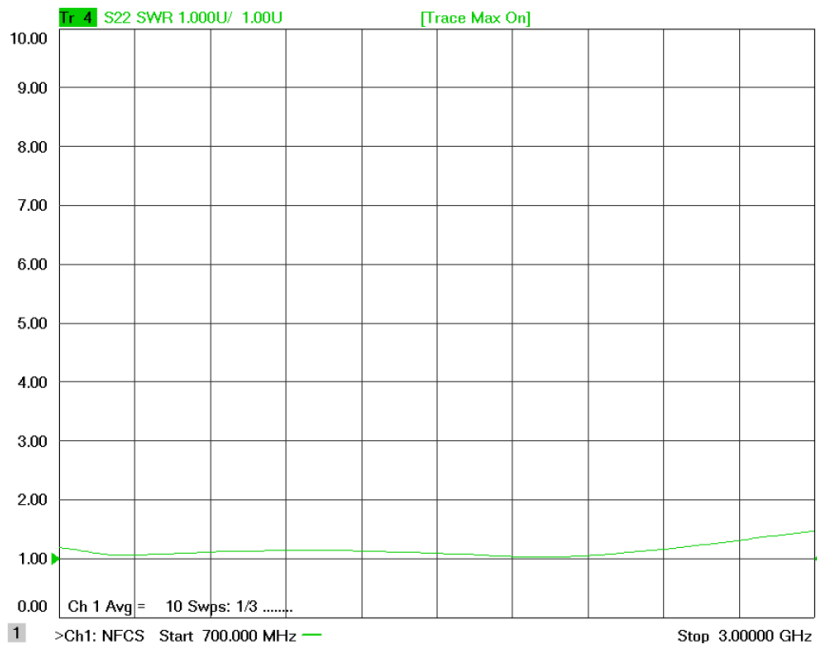


Figure 5: ERZ-LNA-0070-0300-20-0.7 Output Matching

### Absolute Maximum Ratings

| Condition                       | Value         |
|---------------------------------|---------------|
| DC Voltage                      | 12 +/-3 VDC   |
| Maximum Input Power (CW)        | 30 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)

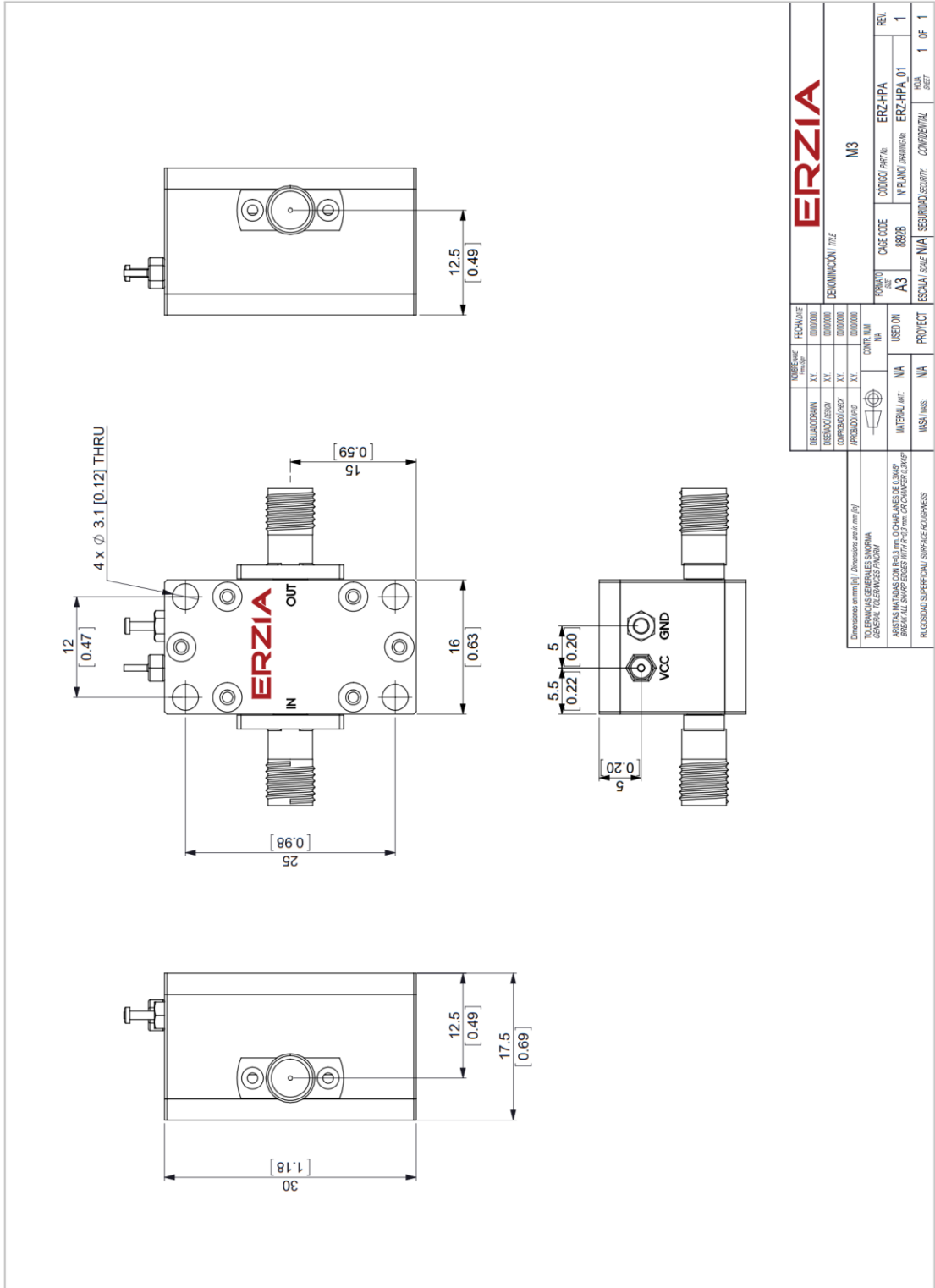
|                        |                    |                              |
|------------------------|--------------------|------------------------------|
| Operating Temperature: | -45 to +85 °C      | (MIL-STD-810F, method 520.2) |
| Storage Temperature:   | -55 to 125 °C      | (MIL-STD-810F, method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



|   |  |                     |                  |
|---|--|---------------------|------------------|
|   |  | <b>M3</b>           |                  |
| VERSIONE<br>DESCRIZIONE<br>COMPAGNIA<br>APPROVATO         | DATA<br>00/00/00<br>00/00/00<br>00/00/00<br>00/00/00   | DENOMINAZIONE<br>M3 | REVISIONE<br>1   |
| TIPOLOGIA<br>M3   | STATO<br>NA  | CODICE<br>8802B     | REVISIONE<br>1   |
| TOLLERANZE GENERALI<br>ARRETRATI<br>RUGOSITÀ SUPERFICIALE | DIMENSIONI<br>0.125<br>0.25<br>0.5<br>1<br>2<br>3<br>4<br>5<br>6<br>8<br>10<br>12<br>15<br>20<br>25<br>30<br>40<br>50<br>60<br>80<br>100 | MATERIALI<br>NA     | PROTEZIONE<br>NA |
| DIMENSIONI IN mm (in) / Dimensiones en mm (in)            | TOLLERANZE GENERALI<br>ARRETRATI<br>RUGOSITÀ SUPERFICIALE  | MATERIALI<br>NA     | PROTEZIONE<br>NA |
| DIMENSIONI IN mm (in) / Dimensiones en mm (in)            | TOLLERANZE GENERALI<br>ARRETRATI<br>RUGOSITÀ SUPERFICIALE  | MATERIALI<br>NA     | PROTEZIONE<br>NA |

## 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

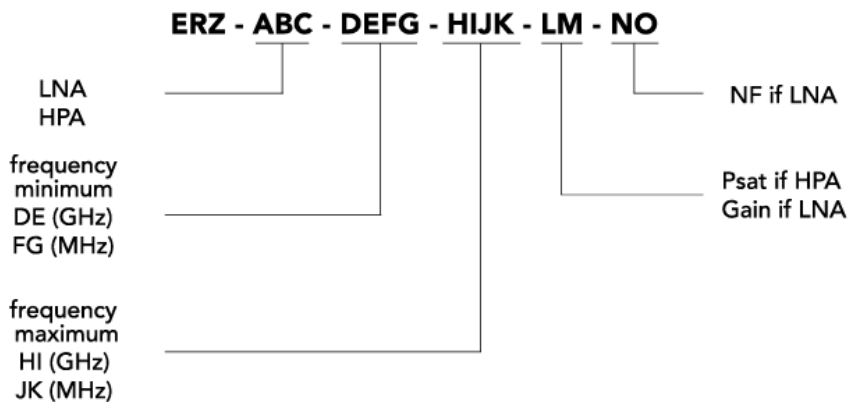
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

## 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

20150407\_rev1.1

Copyright © 2015 Erzia Technologies. All rights reserved. This information is commercial and indicative, subject to change without notice

Tel: +34 942 29 13 42

[sales.rf@erzia.com](mailto:sales.rf@erzia.com)

[www.erzia.com](http://www.erzia.com)