

Main Features:

- Frequency Range: 4.9 to 5.25 GHz.
- Typical values: Psat 43 dBm, Gain 44 dB
- RF connectors (I/O): SMA Female
- Temperature monitoring
- DC power source control
- Several mounting options
- Gold plated compact aluminum housing
- Hi-reliability and dedicated screening/ environmental tests available under request

ERZ-HPA-0490-0525-43

The ERZ-HPA-0490-0525-43 is a High Power Amplifier providing an output power of 43 dBm and a gain of 44 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 | 4.9 | - | 5.25 | GHz |
| Output Power (Psat) | 42 | 43 | 44 | dBm |
| Small Signal Gain | 42 | 44 | 46 | dB |
| Gain Flatness | - | ±0.5 | - | dB |
| VSWR input | 1.9:1 | 2.0:1 | 2.2:1 | - |
| VSWR output | 1.7:1 | 1.9:1 | 2.1:1 | - |
| DC Voltage | 27 | 28 | 29 | V |
| Power Consumption | - | 120 | - | W |
| RF Connectors | SMA Female IN/OUT | | | - |

Specifications at case temperature of 25°C

Saturated Output Power

Figure 1, Figure 2 and Figure 3 shows saturated output power measurement as a function of input power at room temperature (25°C).

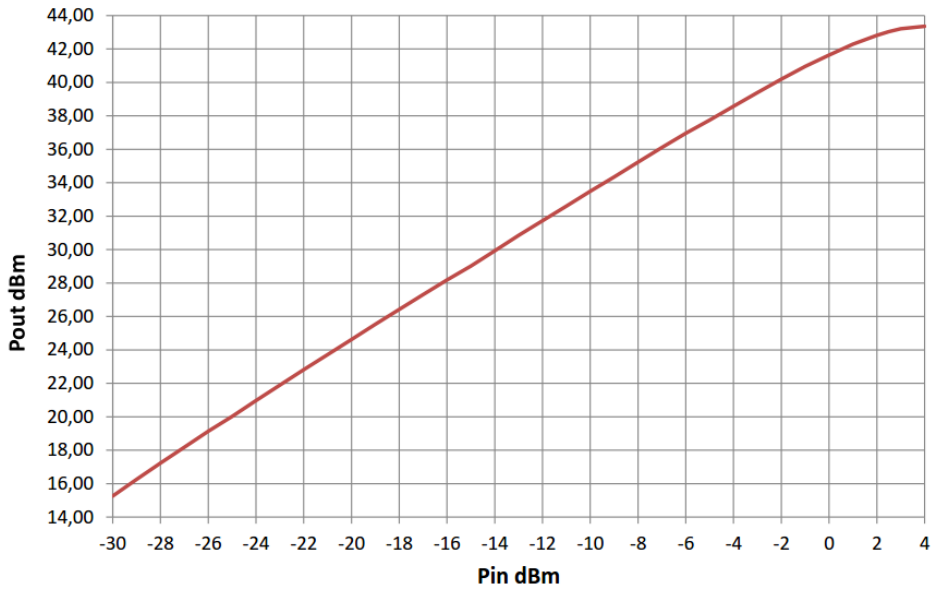


Figure 1: ERZ-HPA-0490-0525-43 Psat@4950 MHz

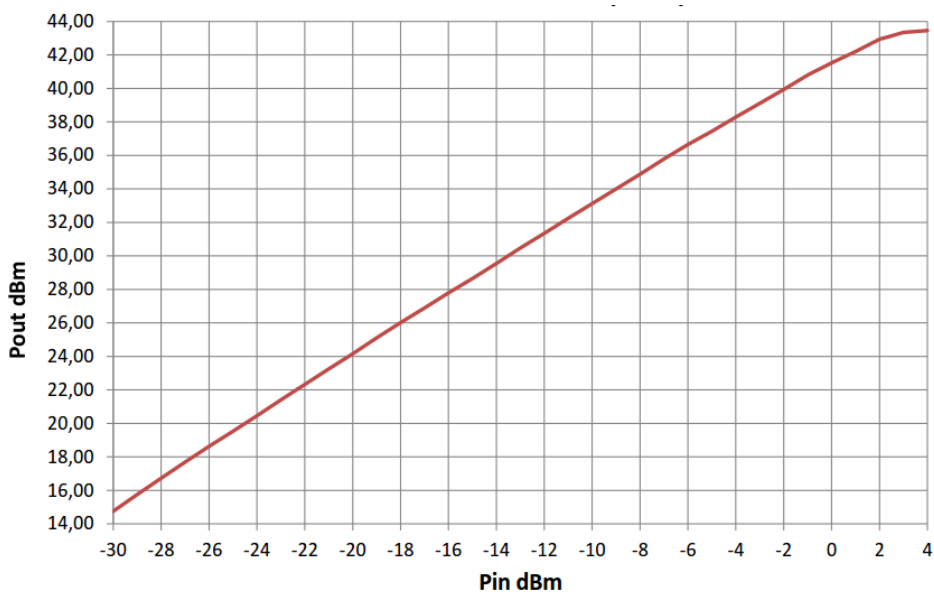


Figure 2: ERZ-HPA-0490-0525-43 Psat@5075 MHz

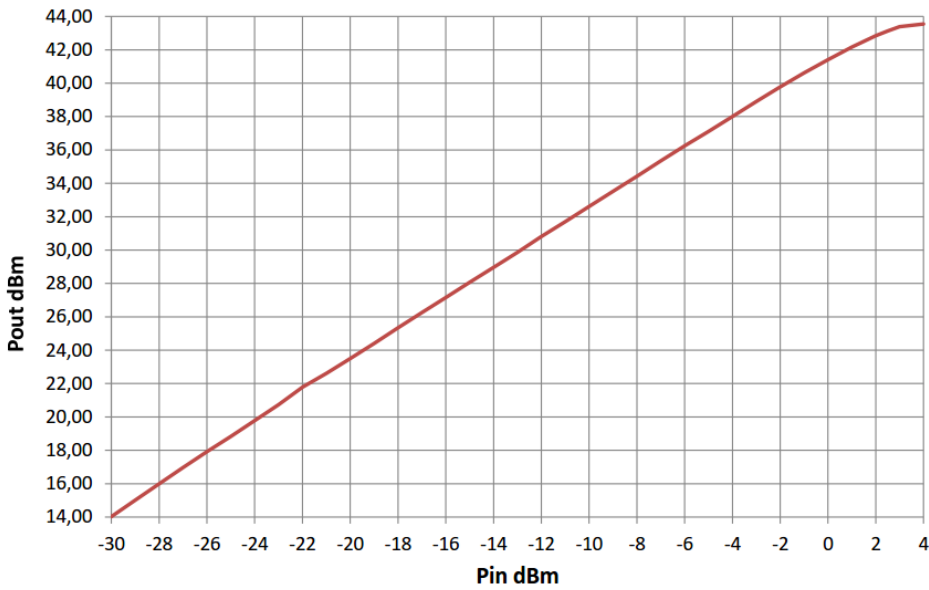


Figure 3: ERZ-HPA-0490-0525-43 Psat@5250 MHz

Small Signal Gain

Figure 4 shows small signal gain measurement as a function of frequency at room temperature (25°C).

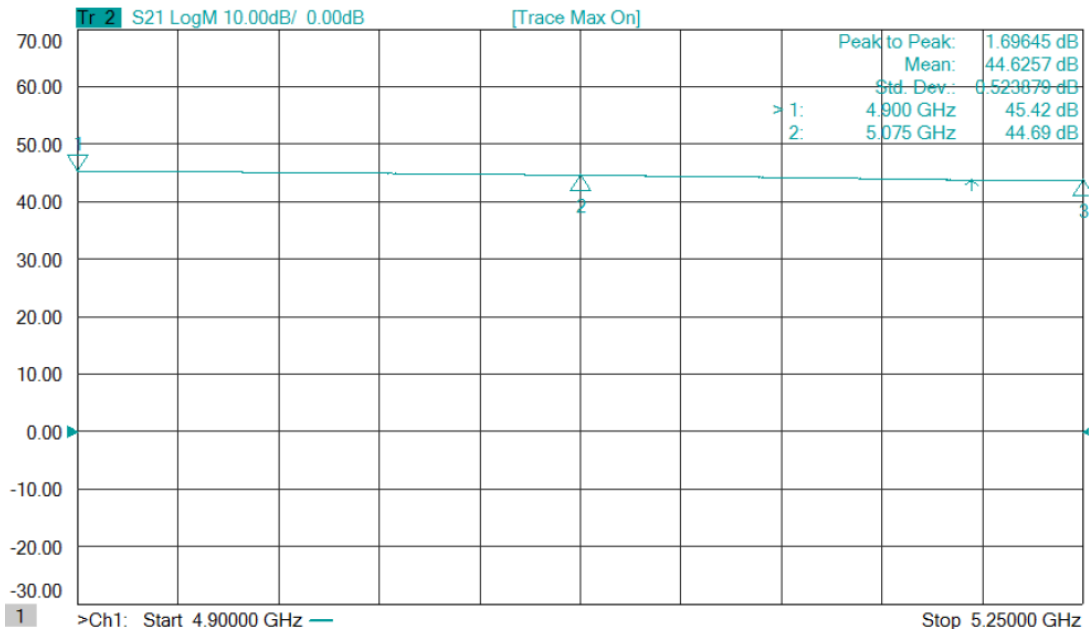


Figure 4: ERZ-HPA-0490-0525-43 Small Signal Gain

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).

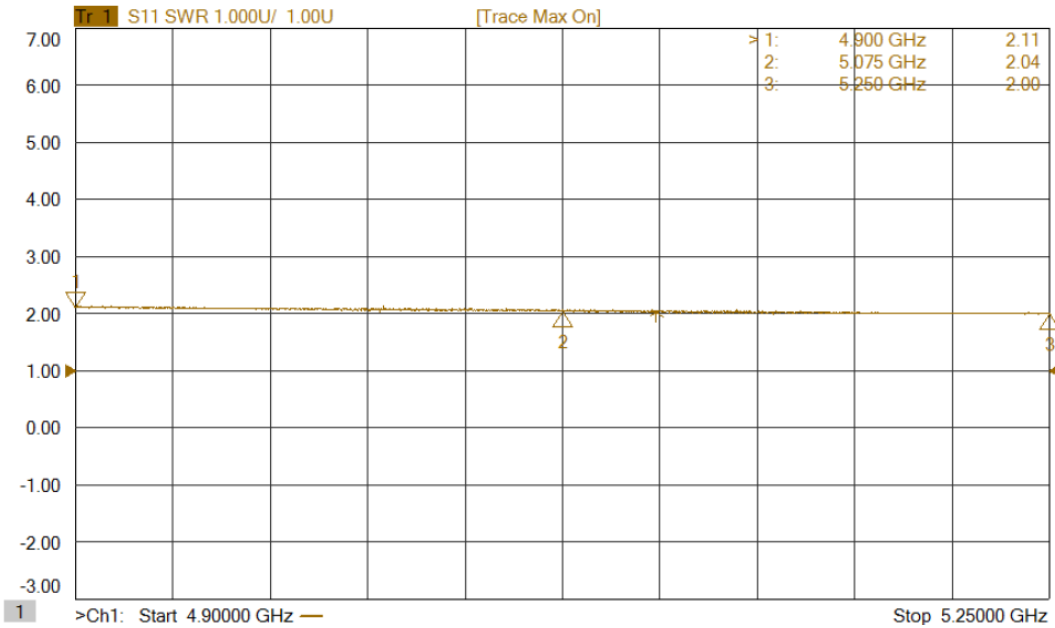


Figure 5: ERZ-HPA-0490-0525-43 Input Matching

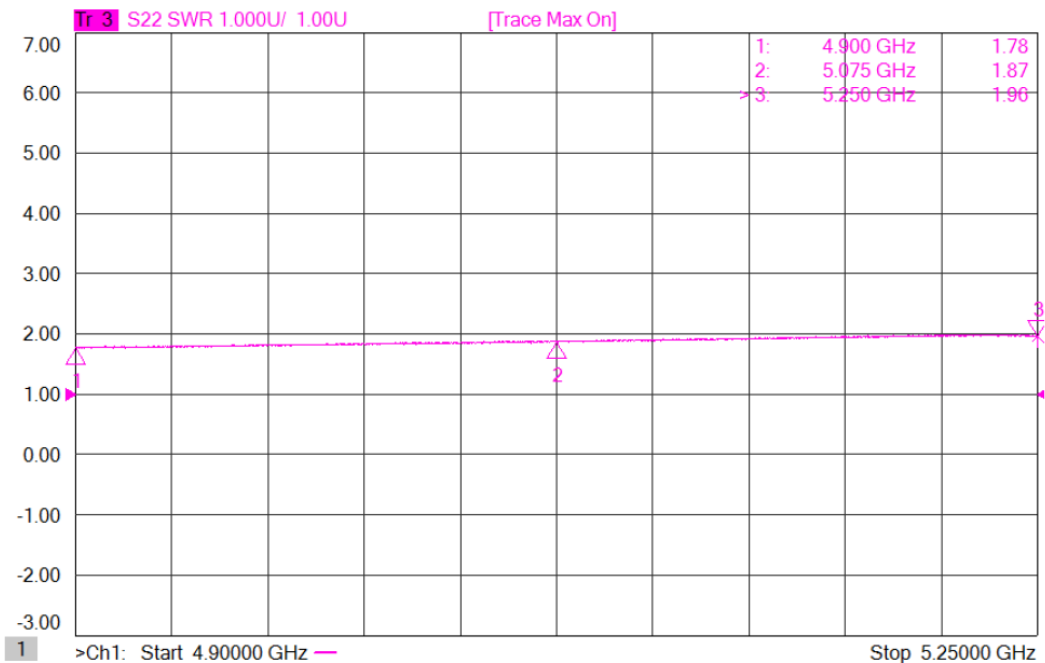


Figure 6: ERZ-HPA-0490-0525-43 Output Matching

External Electrical Interfaces

Figure 7 and tables 1 and 2 show the connectors interface for power supply and bias & temperature sensor besides the RF IN and RF OUT ports.

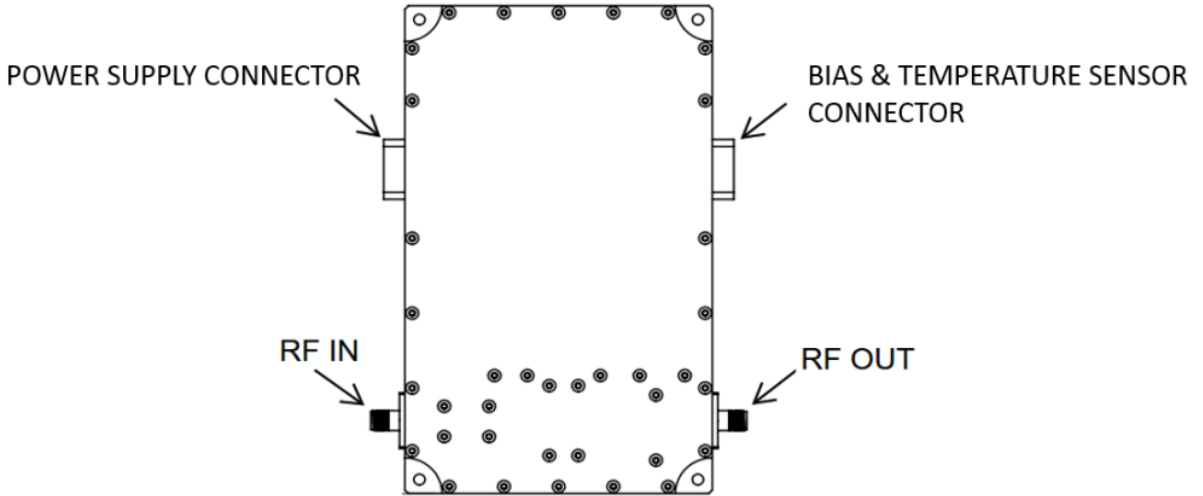
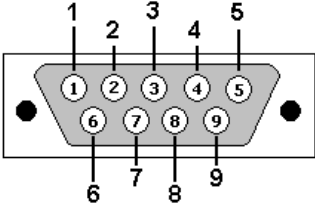


Figure 7: ERZ-HPA-0490-0525-43 Connectors Interface

| PIN | FUNCTION | IN/OUT | DESCRIPTION |
|-----|----------|--------|-------------------|
| 1 | VIN | IN | 28±1 VDC |
| 2 | VIN | IN | 28±1 VDC |
| 3 | NC | - | Not Connected |
| 4 | VIN_RTN | IN | Voltage Reference |
| 5 | VIN_RTN | IN | Voltage Reference |
| 6 | VIN | IN | 28±1 VDC |
| 7 | VIN | IN | 28±1 VDC |
| 8 | VIN_RTN | IN | Voltage Reference |
| 9 | VIN_RTN | IN | Voltage Reference |

Table 1: ERZ-HPA-0490-0525-43 Power supply connector pinout



| PIN | FUNCTION | IN/OUT | DESCRIPTION |
|-----|-------------|--------|---|
| 1 | GND | - | Ground |
| 2 | Bias Enable | IN | CMOS ($V_{IL}=0V - 1V$, $V_{IH}=3.5V - 5V$) |
| 3 | GND | - | Ground |
| 4 | Bias Status | OUT | CMOS ($V_{IL}=0V$, $V_{IH}=5V$) |
| 5 | GND | - | Ground |
| 6 | NC | - | Not Connected |
| 7 | Temperature | OUT | Analog (0 - 5V) $0^{\circ} C = 2.036V$ $\Delta V/\Delta T=25.8mV/^{\circ}C$ |
| 8 | NC | - | Not Connected |
| 9 | NC | - | Not Connected |

Table 2: ERZ-HPA-0490-0525-43 bias and temperature sensor connector pinout

State diagram

Figure 8 shows device operational modes.

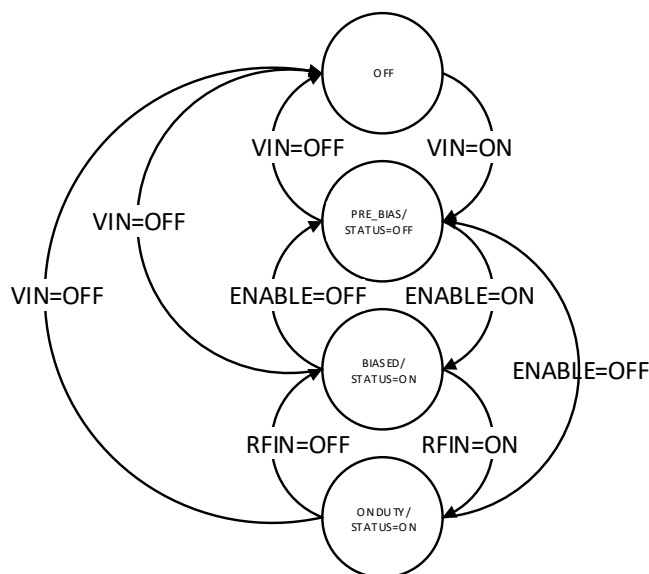


Figure 8: ERZ-HPA-0490-0525-43 State diagram

Measurements Conditions

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

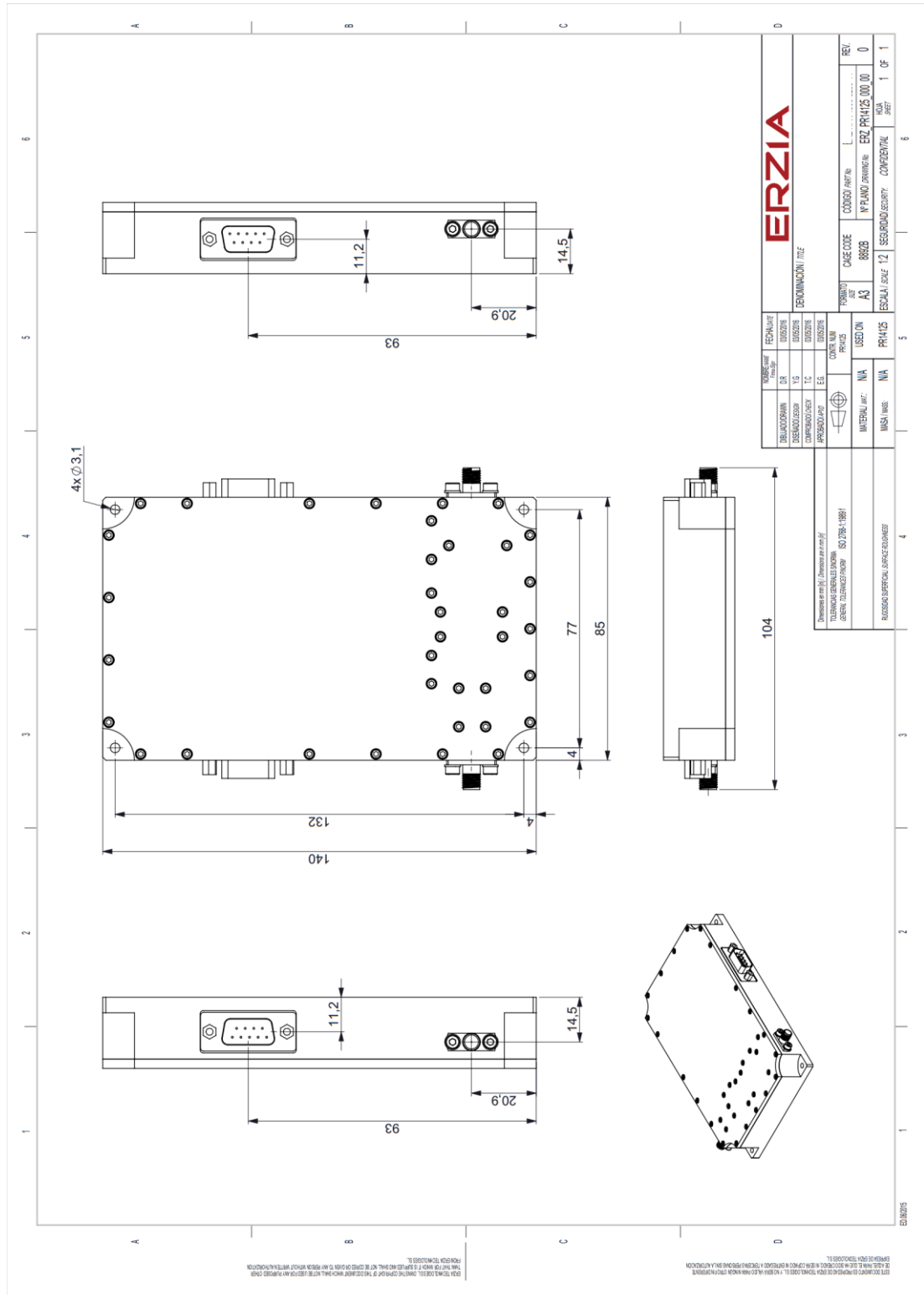
| Condition | Value |
|-----------------------------|------------|
| Temperature | 25°C ± 1°C |
| Humidity | 44% ± 10% |
| DUT Warm up time | 60 min |
| Test equipment warm up time | 16 hour |

Absolute Maximum Ratings

| Condition | Value |
|---------------------------------|---------------|
| DC Voltage | +29 VDC |
| Maximum Input Power (CW) | 3 dBm |
| Operation temperatura (at case) | -19°C to 55°C |
| Storage temperature | -40°C to 71°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.

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

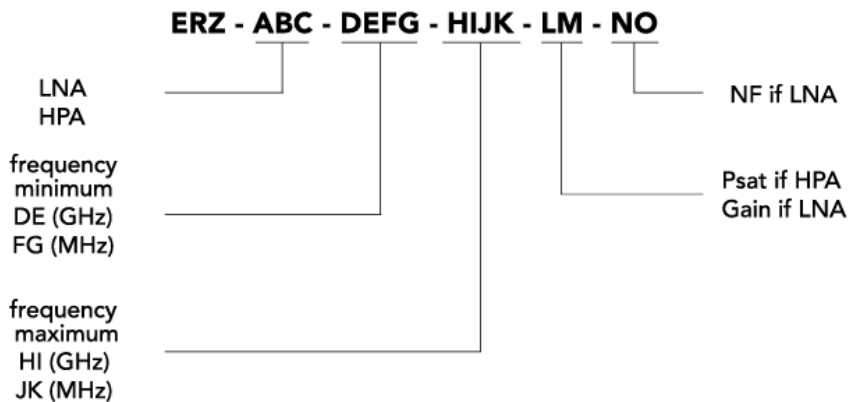
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

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

20160503_rev1.2

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