ERZIA

DATASHEET

High Power Amplifier

ERZ-HPA-0480-0490-47

Main Features:

- Frequency Range: 4.8 to 4.9 GHz.
- Typical values: Pout 47 dBm, Gain 27 dB.
- RF connectors (I/O): SMA Female.
- Solder filtered pins for DC connection.
- Several mounting options.
- Compact aluminum housing.
- Hi-reliability and dedicated screening/ environmental tests available under request

ERZ-HPA-0480-0490-47

The ERZ-HPA-0480-0490-47 is a High Power Amplifier providing an output power of 47 dBm and a gain of 27 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	4.8	-	4.9	GHz
Output Power (Psat)	46	47	48	dBm
Output Power (P1dB)	37	38	39	dBm
Small Signal Gain	26	27	28	dB
Gain Flatness	-	±0.1	-	dB
Noise Figure	7	8	9	dB
VSWR input	1.0:1	1.1:1	1.5:1	-
VSWR output	1.5:1	1.6:1	1.8:1	-
RF ON/OFF time	-	125	-	ns
DC Voltage	22	24	28	V
Power Consumption (@Psat)	-	150	-	W
RF Connectors	SMA Female IN/OUT			-

Specifications at case temperature of 25°C

Output Power at Saturation

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

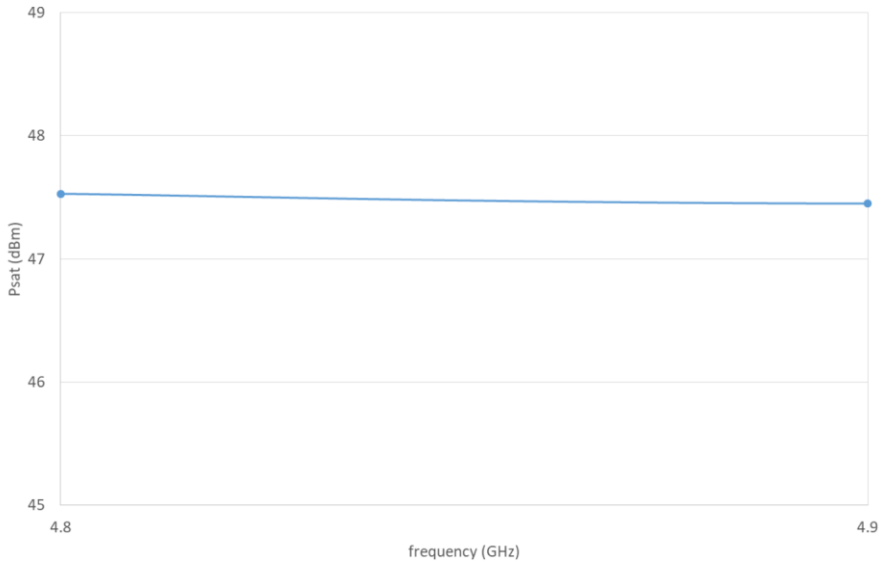


Figure 1: ERZ-HPA-0480-0490-47 Psat

Figure 2 shows output power measurement as a function of Pin at room temperature (25°C).

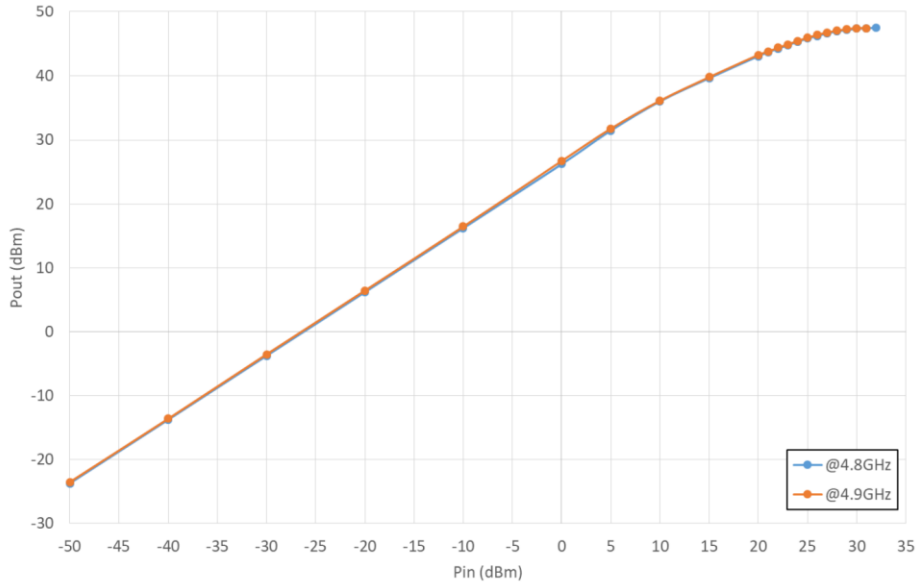


Figure 2: ERZ-HPA-0480-0490-47 Pout vs Pin

Small Signal Gain

Figure 3 shows small signal gain measurement as a function of frequency at room temperature (25°C).

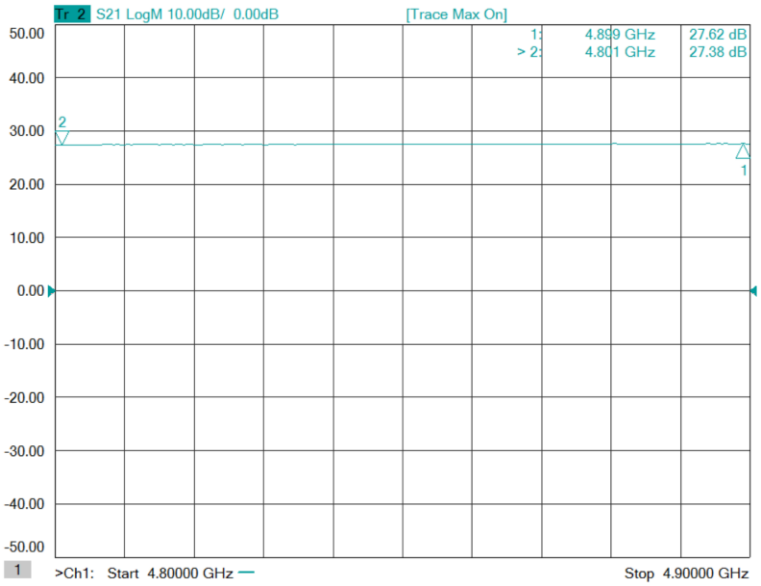


Figure 3: ERZ-HPA-0480-0490-47 Small Signal Gain

Noise Figure

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

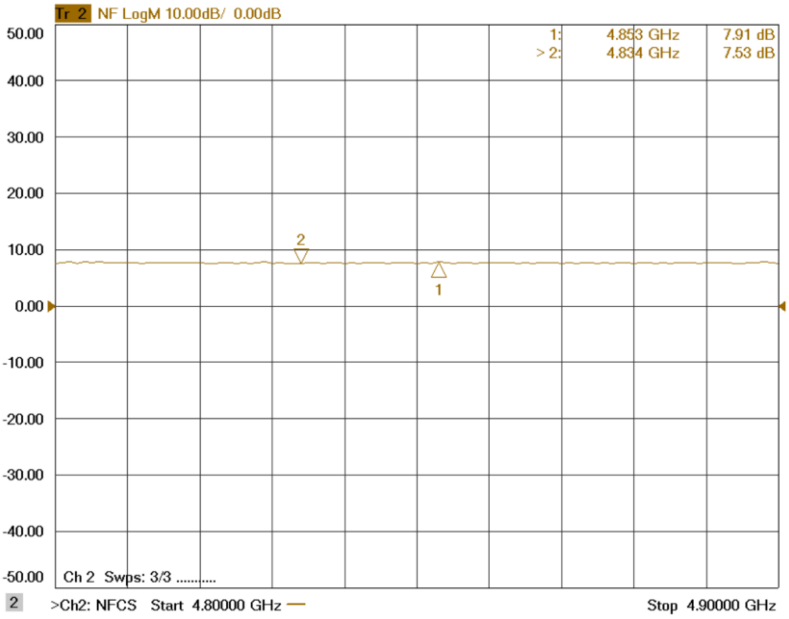


Figure 4: ERZ-HPA-0480-0490-47 Noise Figure

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).

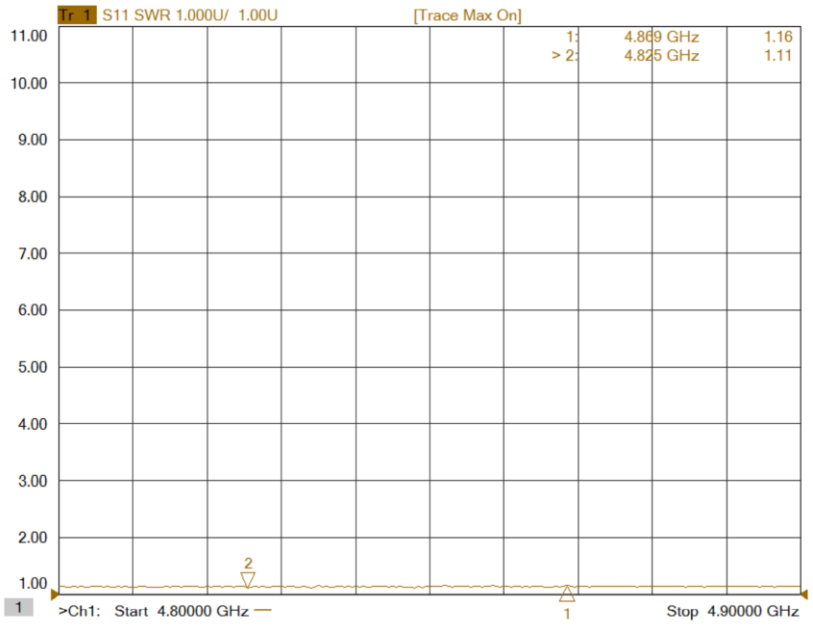


Figure 5: ERZ-HPA-0480-0490-47 Input Matching

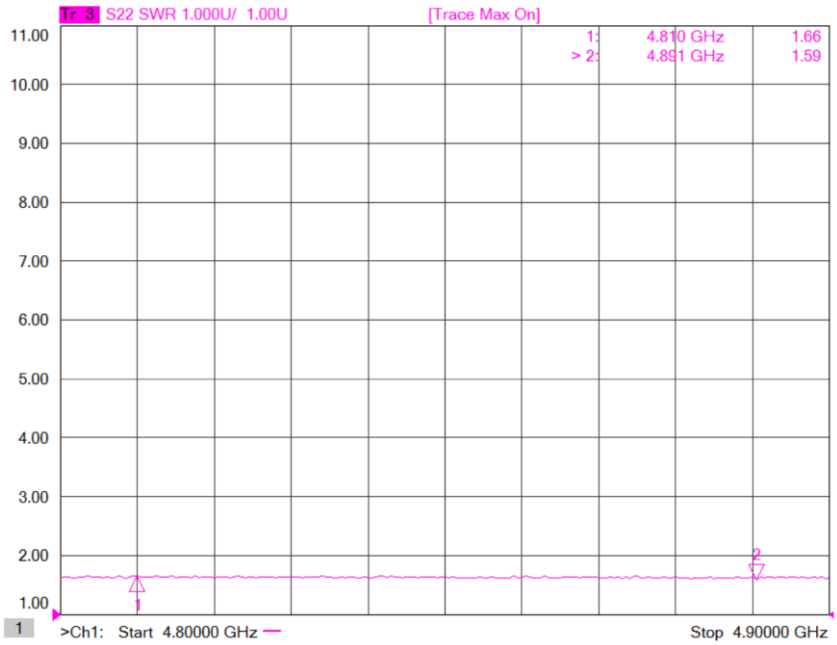


Figure 6: ERZ-HPA-0480-0490-47 Output Matching

RF ON/OFF Time

Figure 7 and Figure 8 show RF ON/OFF time at room temperature (25°C).

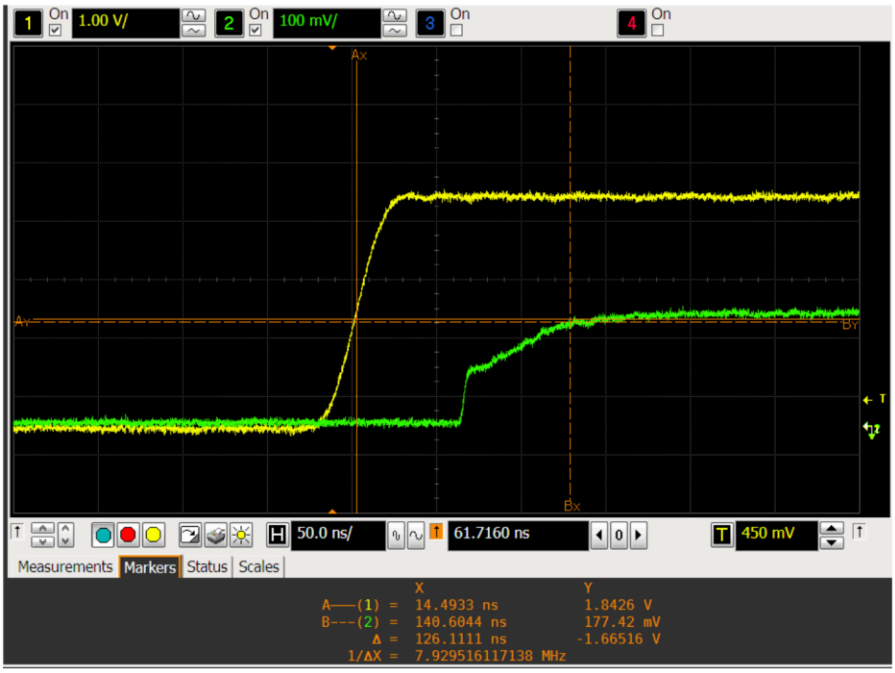


Figure 7: ERZ-HPA-0480-0490-47 RF ON Time

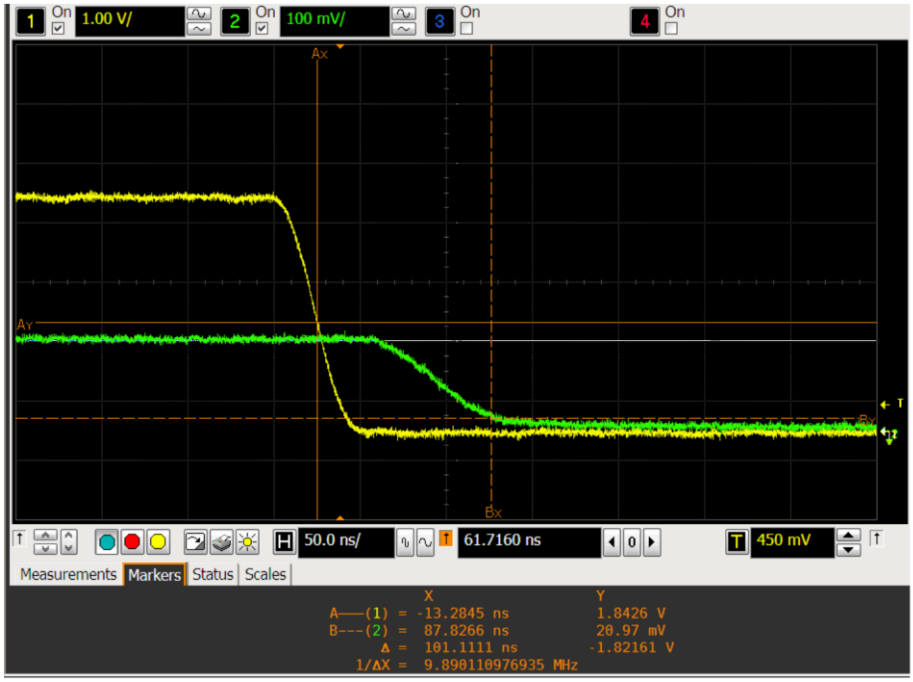
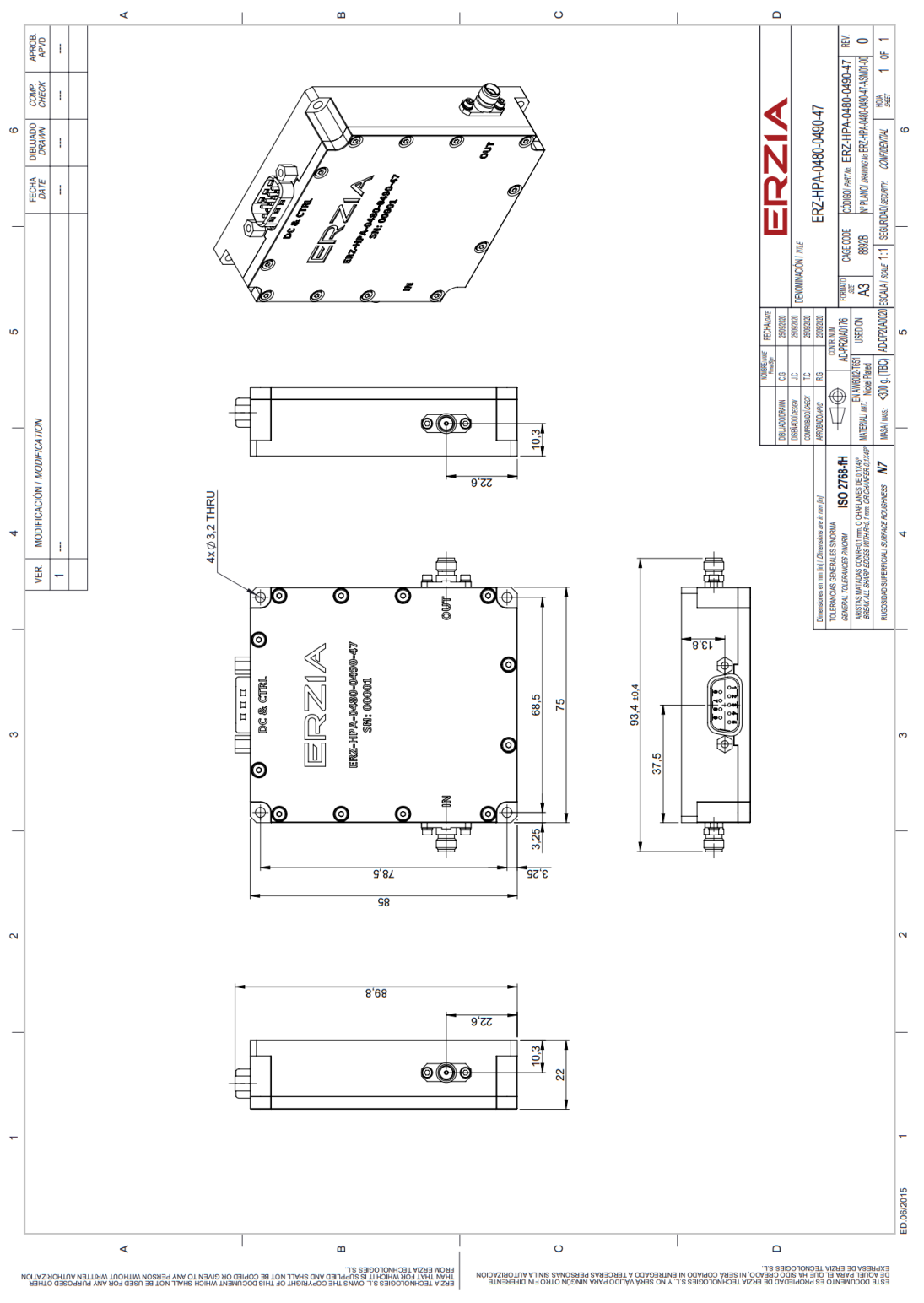


Figure 8: ERZ-HPA-0480-0490-47 RF OFF Time

Mechanics and Housing



DC & Control Interface

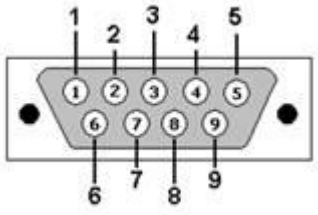
Power supply characteristics

- Input Voltage: 24 ±4 VDC

Control characteristics

- TTL command Enable (Amplifier ON/OFF function)
- TTL command Mute (Fast RF switch ON/OFF).
- Temperature monitoring.

Table below shows D-sub 9 connector (Male) pinout:



D-sub 9 Connector (Front view)

PIN	LABEL	SIGNAL	DESCRIPTION
1	VCC	+24V Power Source	Power Supply
2	VCC	+24V Power Source	Power Supply
3	GND	Ground	Ground
4	EN	TTL Enable signal	Amplifier ON/OFF function OFF (0V to 0.8V) ON (2V to 5.5V)
5	TEMP	Temperature Monitor	Vo = −11.69 mV/°C × T + 1.8663 V
6	PGND	Power Ground	Power Ground
7	PGND	Power Ground	Power Ground
8	GND	Ground	Ground
9	MUTE	TTL Mute signal	Fast RF switch ON/OFF OFF (0V to 0.8V) ON (2V to 5.5V)

Absolute Maximum Ratings

Condition	Value
DC Voltage	+28 VDC
Maximum Input Power (CW)	32 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:	-40 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.

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

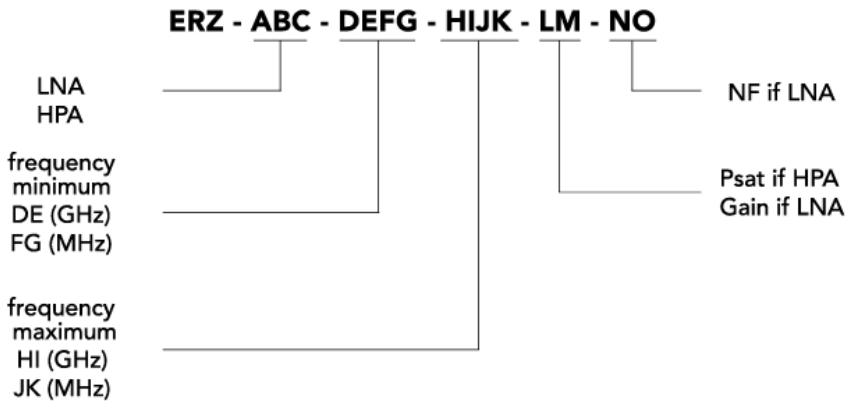
Most of ERZIA´s products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

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



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