



### Main Features:

- Frequency Range: 6 to 18 GHz.
- Typical values: Psat 40 dBm, Gain 47 dB
- RF connectors (I/O): SMA Female
- D-sub 9 connector for DC connection
- Several mounting options
- Gold plated compact aluminum housing
- Hi-reliability and dedicated screening/ environmental tests available under request

### ERZ-HPA-0600-1800-40

The ERZ-HPA-0600-1800-40 is a pulsed High Power Amplifier providing an output power of 40 dBm with a 10% duty cycle a gain of 47 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	6	-	18	GHz
Output Power (Psat) (10% duty cycle)	39	40	45	dBm
Small Signal Gain	42	47	51	dB
Gain Flatness	-	±3	-	dB
Noise Figure	-	-	-	dB
VSWR input	1.2:1	1.6:1	2.8:1	-
VSWR output	1.1:1	1.6:1	2.5:1	-
DC Voltage	28	32	36	V
Power Consumption (@Psat)	-	87	-	W
RF Connectors	SMA Female IN/OUT			-

Specifications at a case temperature of 25°C

### Saturated Output Power

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

RF input signal characteristics:

- Pulse period: 100us
- Pulse width: 10 us

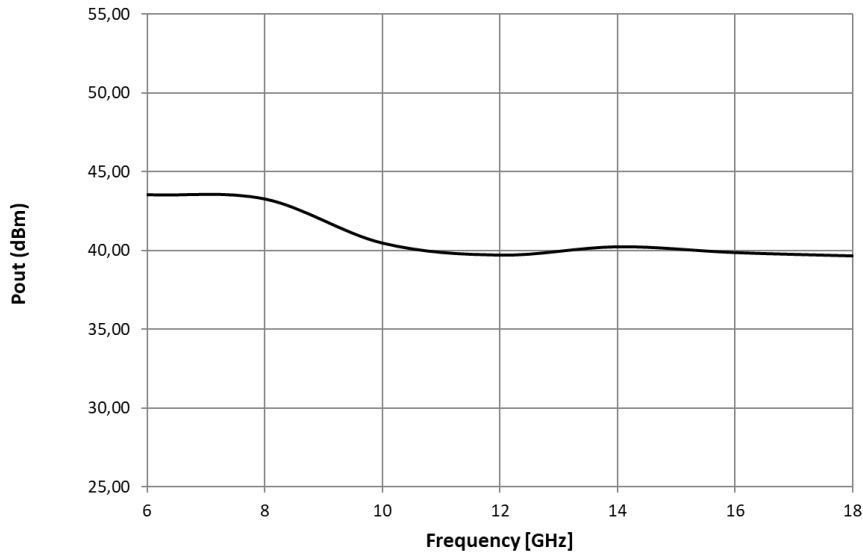


Figure 1: ERZ-HPA-0600-1800-40 Psat over frequency

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

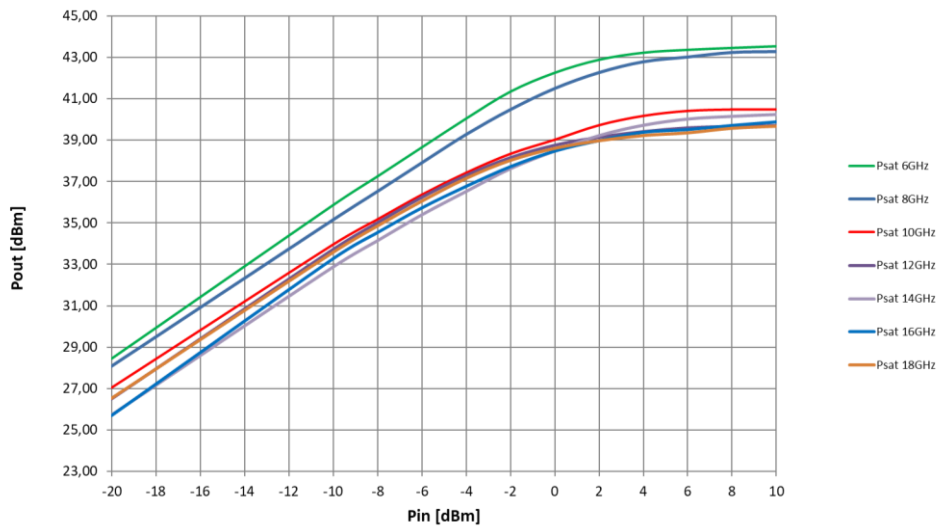


Figure 2: ERZ-HPA-0600-1800-40 Psat Vs Pin

### Small Signal Gain

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

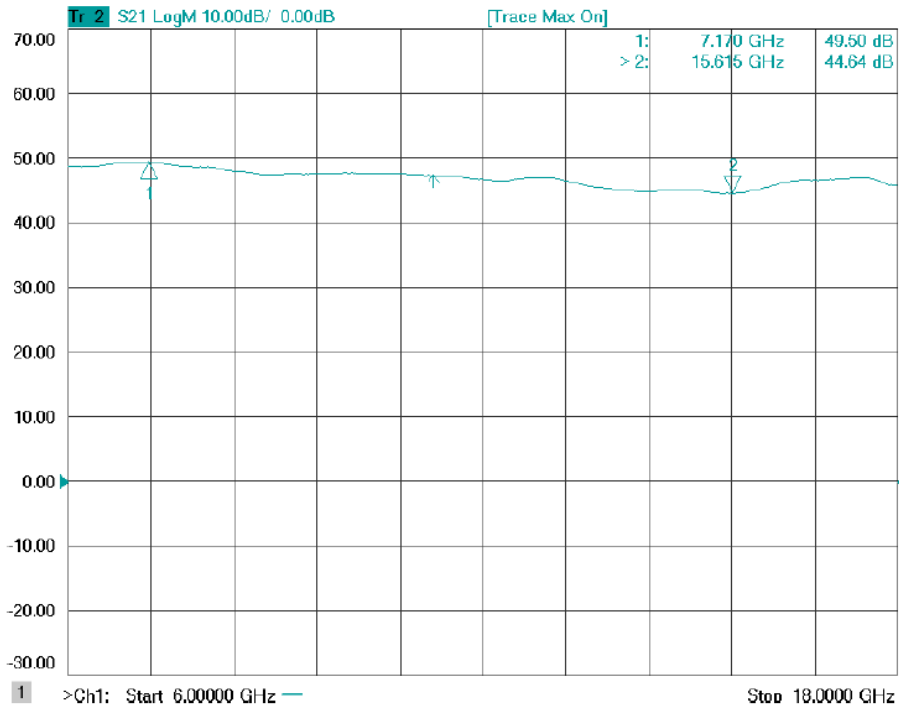


Figure 3: ERZ-HPA-0600-1800-40 Small Signal Gain

### 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).

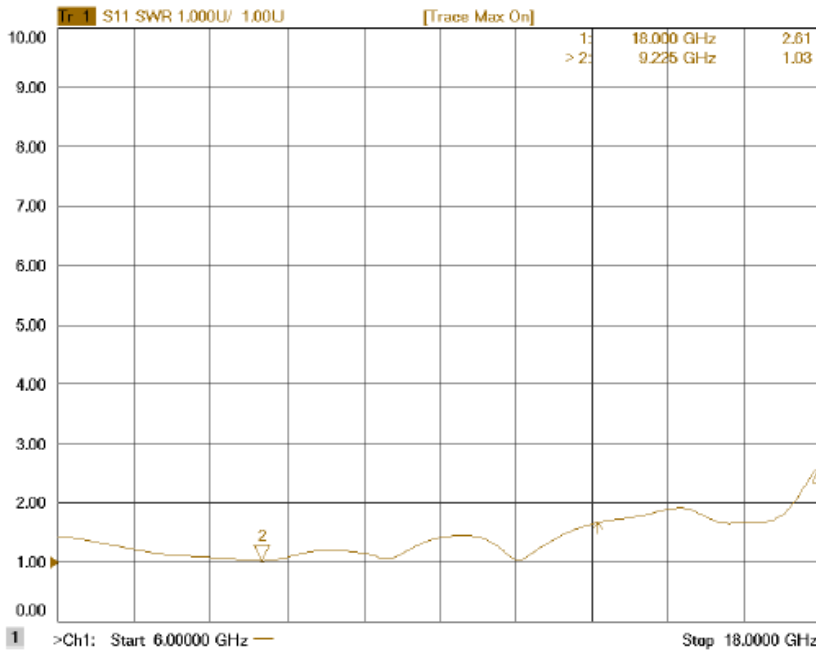


Figure 4: ERZ-HPA-0600-1800-40 Input Matching

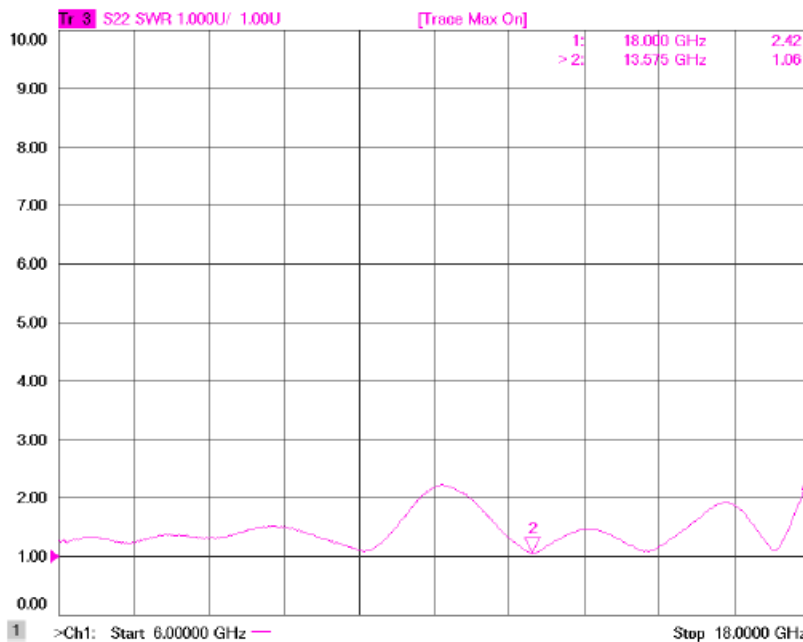


Figure 5: ERZ-HPA-0600-1800-40 Output Matching

## Absolute Maximum Ratings

Condition	Value
DC Voltage	+36 VDC
Maximum Input Power (Pulsed RF signal) RF input characteristics: - Pulse width: 10 us	10 dBm
Operation temperature (at case)	-35 to 70 °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)	-35°C, 25 °C, 70 °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)	-35°C to 70°C

## Environmental Specifications (By Design)

Operating Temperature:	-35 to +70 °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.

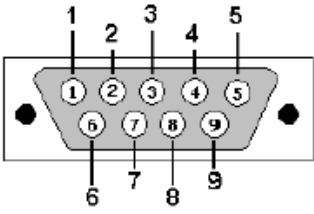


## Electrical Interfaces (Pinout)

Power supply characteristics

- Input Voltage:  $32 \pm 4$  VDC
- Input Current: 6 A (max)

Table below shows db9 connector (Male) pinout:



PIN	FUNCTION	IN/OUT	DESCRIPTION
1	GND	GND	Voltage Reference
2	GND	GND	Voltage Reference
3	NC	-	Not Connected
4	VIN	IN	$32 \pm 4$ VDC
5	VIN	IN	$32 \pm 4$ VDC
6	GND	GND	Voltage Reference
7	GND	GND	Voltage Reference
8	VIN	IN	$32 \pm 4$ VDC
9	VIN	IN	$32 \pm 4$ VDC



## 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

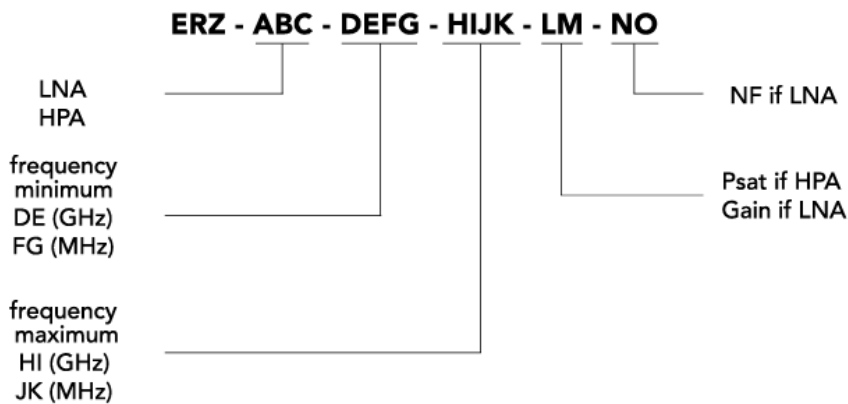
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

## 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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Tel: +34 942 29 13 42

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

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