ERZIA

DATASHEET

High Power Amplifier

ERZ-HPA-0600-1800-40

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 platted 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 25ºC

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

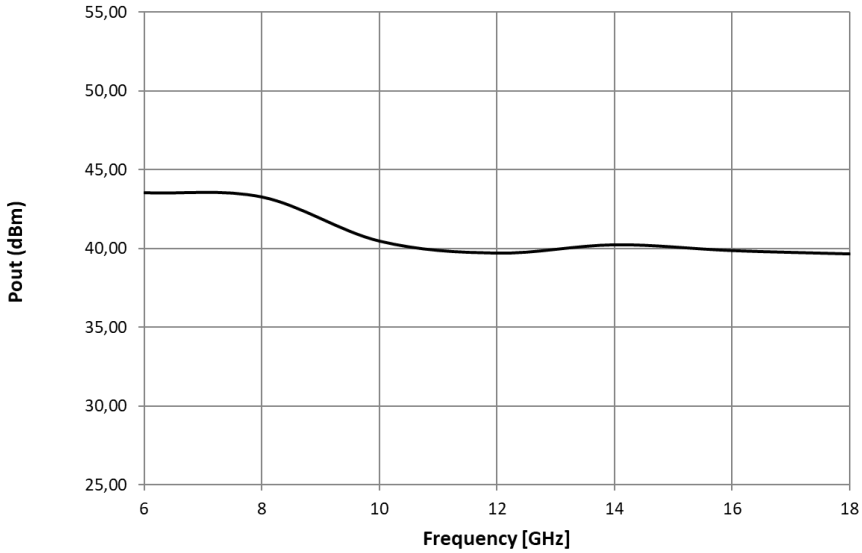


Figure 1: ERZ-HPA-0600-1800-40 Psat over frequency

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

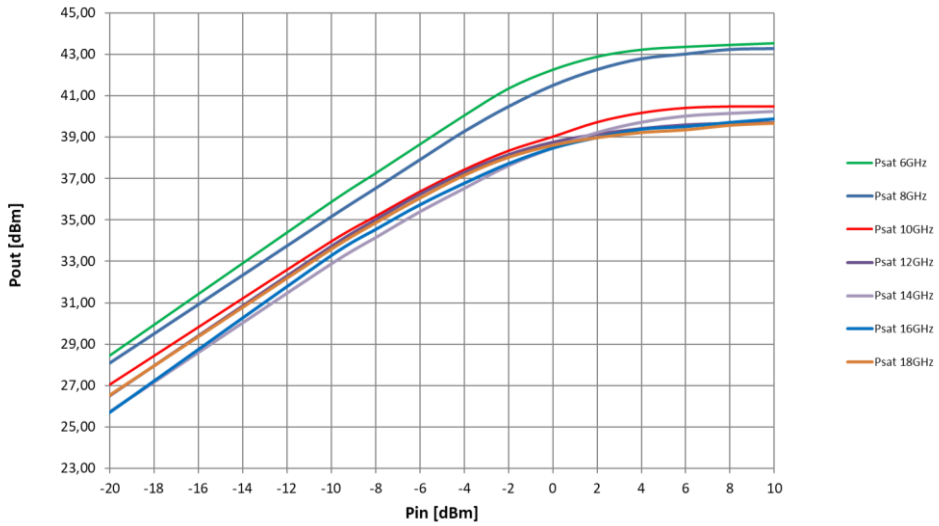


Figure 2: ERZ-HPA-0600-1800-40 Psat Vs Pin

Small Signal Gain

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

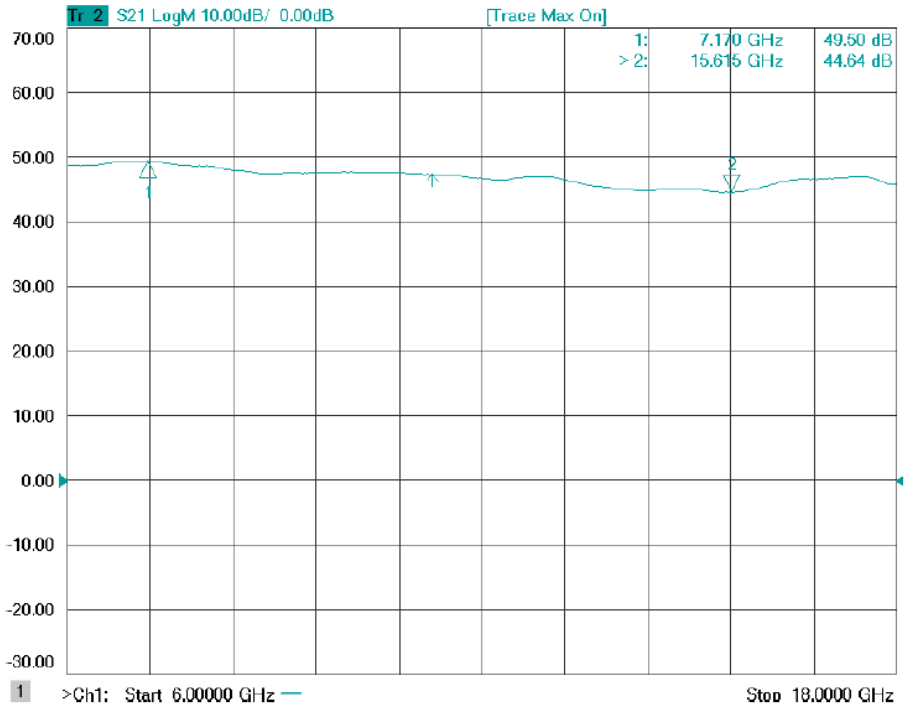


Figure 3: ERZ-HPA-0600-1800-40 Small Signal Gain

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).

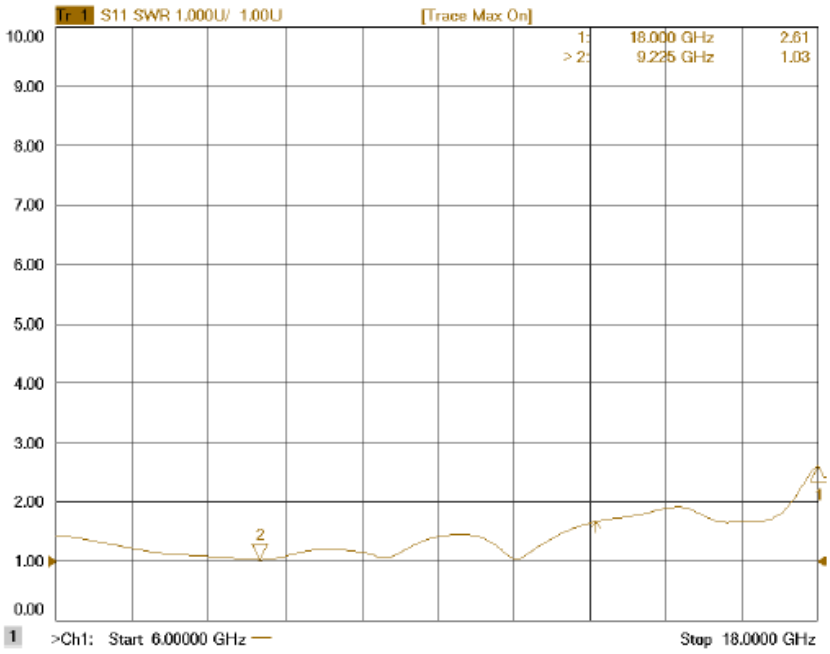


Figure 4: ERZ-HPA-0600-1800-40 Input Matching

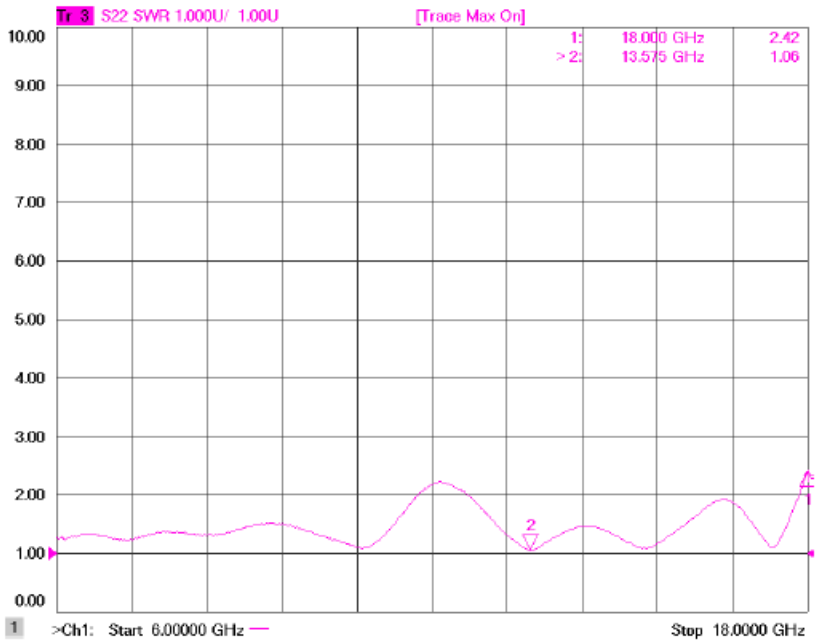


Figure 5: ERZ-HPA-0600-1800-40 Output Matching

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)

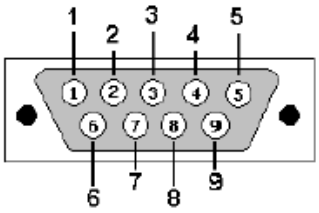
RoHS & REACH Compliance

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 ±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±4 VDC
5	VIN	IN	32±4 VDC
6	GND	GND	Voltage Reference
7	GND	GND	Voltage Reference
8	VIN	IN	32±4 VDC
9	VIN	IN	32±4 VDC

High Power Amplifier

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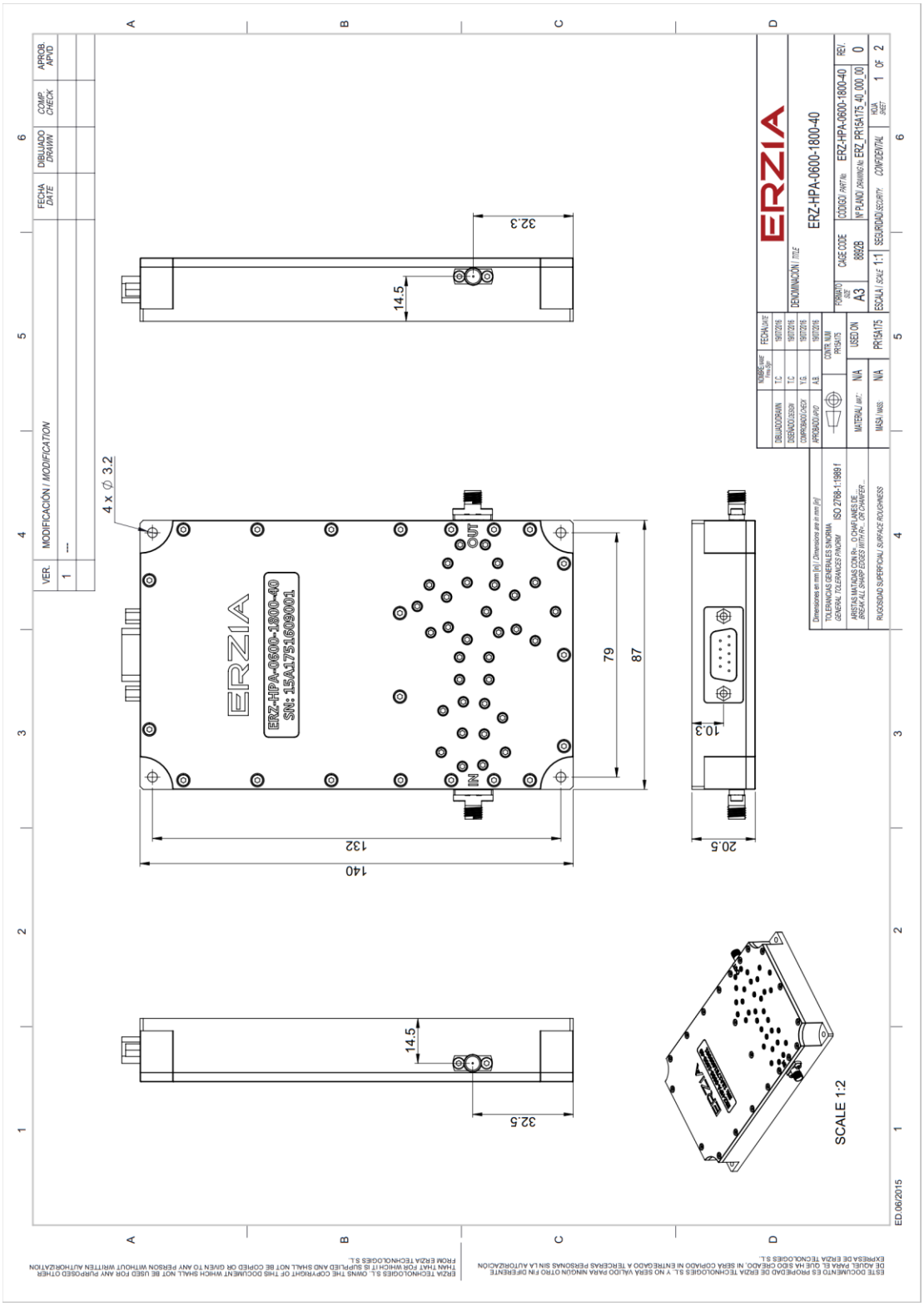
Mechanics and Housing



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

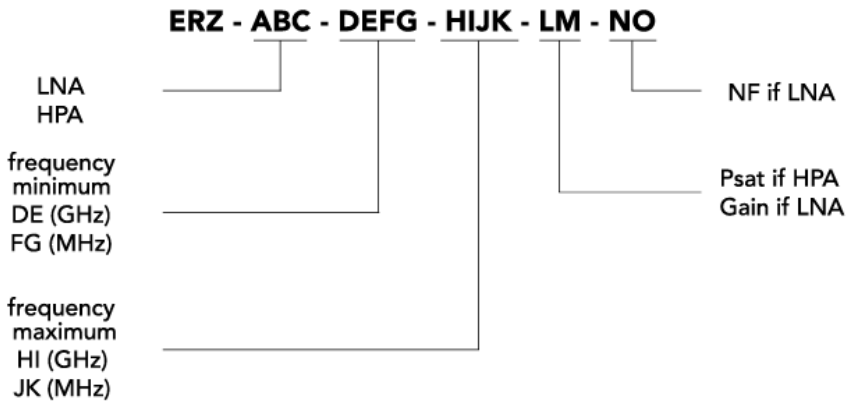
Most of ERZIA´s products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

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



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Tel: +34 942 29 13 42 sales.rf@erzia.com www.erzia.com