



Main Features:

- Frequency Range: 30 to 500 MHz.
- Typical values: Pout 28 dBm, Gain 34 dB
- RF connectors (I/O): SMAFemale
- DSUB type connector for DC & Control
- Several mounting options
- Nickel coating in aluminum housing
- Hi-reliability and dedicated screening/
environmental tests available under request

ERZ-HPA-0003-0050-28

The ERZ-HPA-0003-0050-28 is a High Power Amplifier providing an output power of 28 dBm and again of 34 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	30	-	500	MHz
Output Power (P1dB)	27	28	30	dBm
Small Signal Gain	33	34	36	dB
Gain Flatness	-	±0.5	-	dB
Noise Figure	-	-	-	dB
VSWR input	1.0:1	1.1:1	1.3:1	-
VSWR output	1.0:1	1.3:1	1.7:1	-
DC Voltage	9	12	15	V
Power Consumption	-	5	-	W
RF Connectors	SMA Female IN/OUT			-

Specifications at a case temperature of 25°C at 12 V

Output Power at 1 dB Compression

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

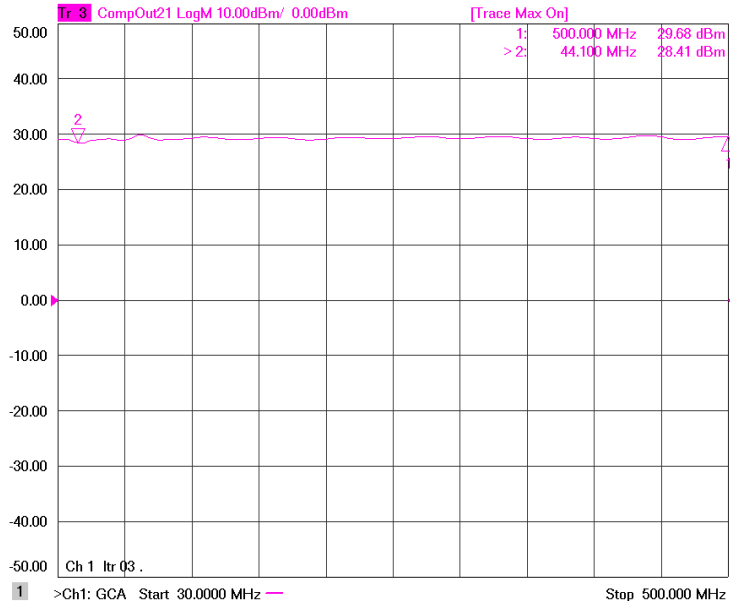


Figure 1: ERZ-HPA-0003-0050-28 P1dB

Small Signal Gain

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

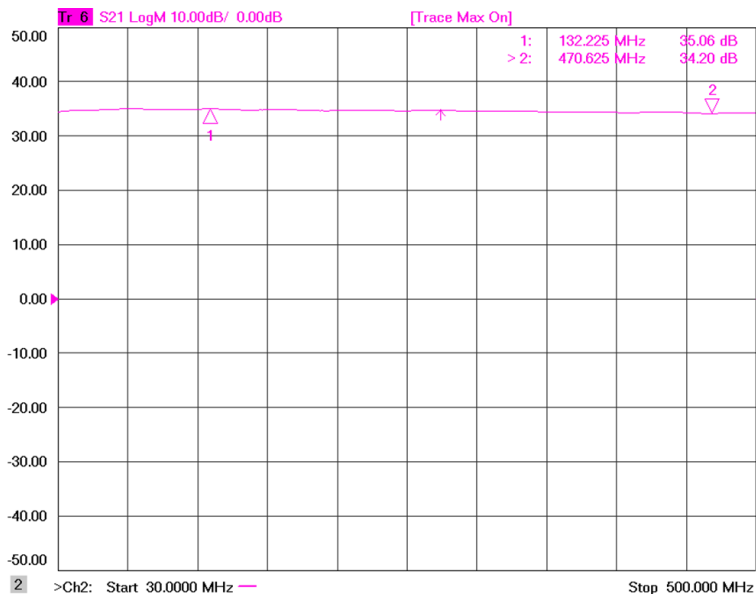


Figure 2: ERZ-HPA-0003-0050-28 Small Signal Gain

Small Signal Gain Vs Temperature

Figure 3 shows small signal gain measurement as a function of frequency at low (-35°C), room (25°C) and high (70°C) temperatures.

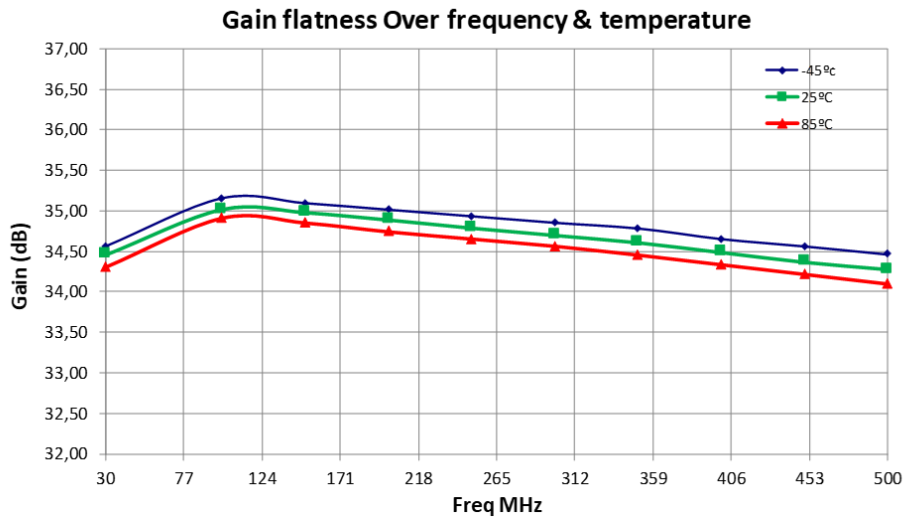


Figure 3: ERZ-HPA-0003-0050-28 Small Signal Gain Vs Temperature

Input and Output Matching

Figure 4 and Figure 4 show input (S11) and output (S22) VSWR as a function of frequency at room temperature (25°C).

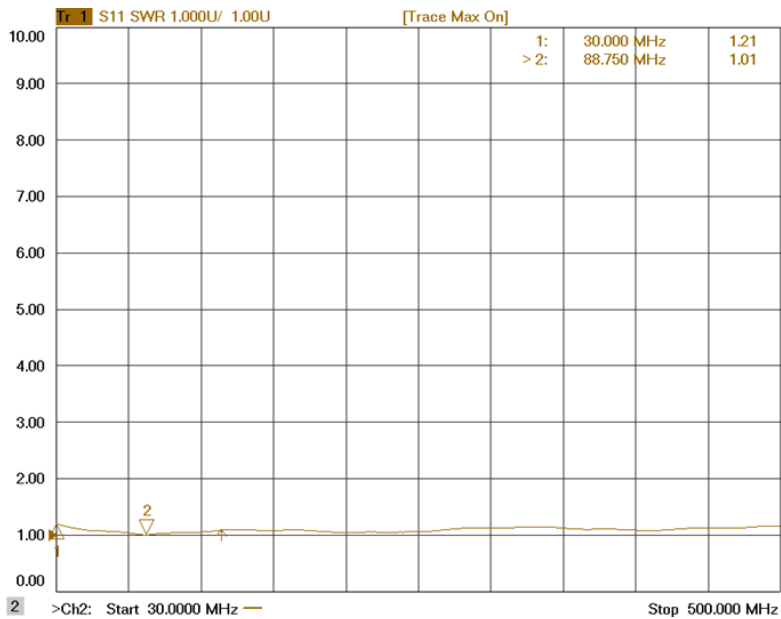


Figure 5: ERZ-HPA-0003-0050-28 Input Matching

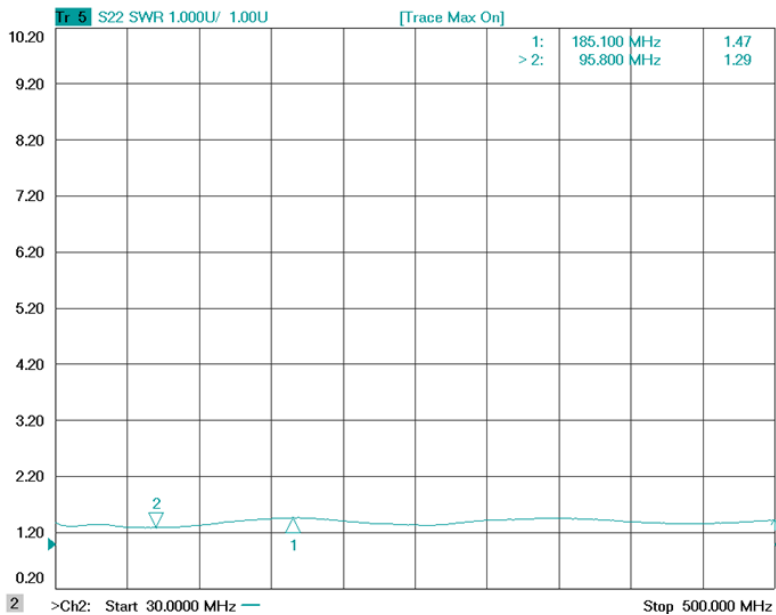


Figure 6: ERZ-HPA-0003-0050-28 Output Matching

Absolute Maximum Ratings

Condition	Value
DC Voltage	+15 VDC
Maximum Input Power (CW)	+10 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.



DC & Control Interface

Power supply characteristics

- Input Voltage: 12 ±3 VDC
- Input Current : 420 mA

Control characteristics

- TTL command (ON/OFF function).
- Temperature & Current monitoring.

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

PIN	LABEL	SIGNAL	DESCRIPTION
1	VCC	+12V Power Source	Power Supply
2	VCC	+12V Power Source	Power Supply
3	GND	Ground	Ground
4	TA_SEN	Temperature sensor	$V_o = -11.69 \text{ mV}/^\circ\text{C} \times T + 1.8663 \text{ V}$
5	I_SEN	Current sense	Analog output. 0.1V/Ampere
6	GND	Ground	Ground
7	GND	Ground	Ground
8	EN	Active High Enable	ON (3.3 to 5V) OFF (GND)
9	NC	Not Connected	-

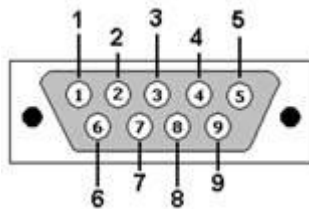
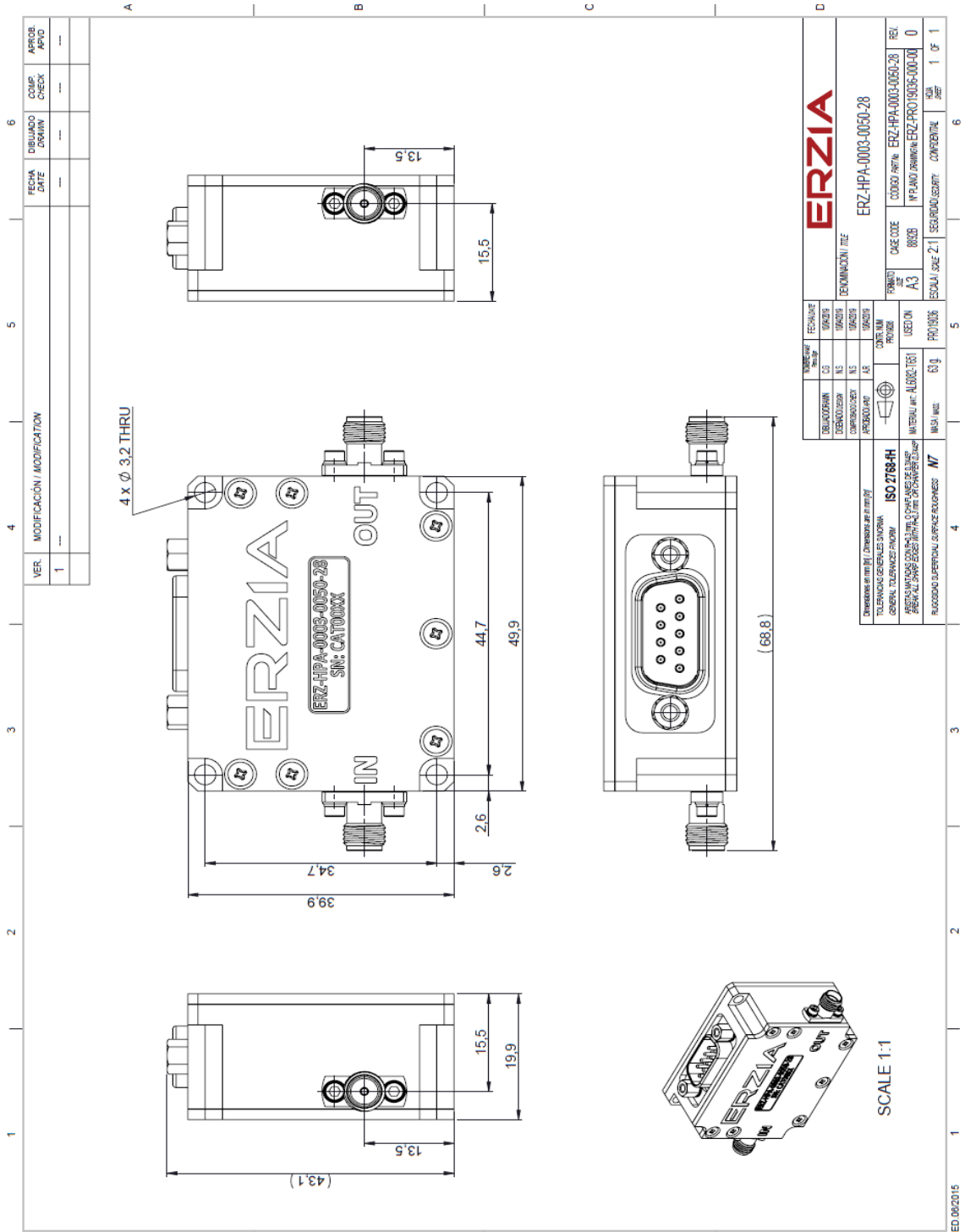


Figure 8: D-sub 9 Connector (Front view)

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

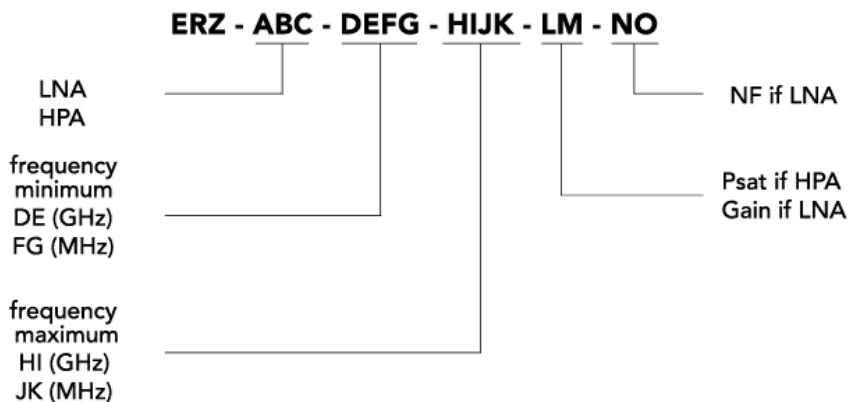
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

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

20191128_rev1.0

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