



### 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).

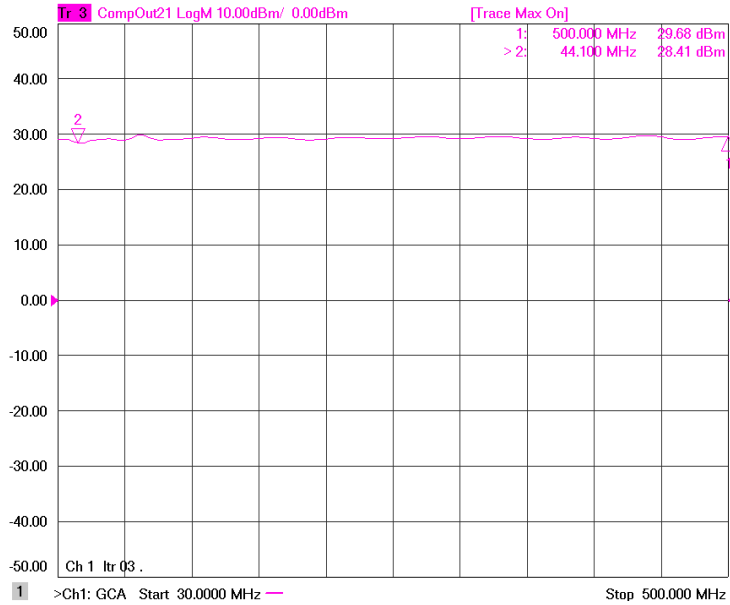


Figure 1: ERZ-HPA-0003-0050-28 P1dB

### Small Signal Gain

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

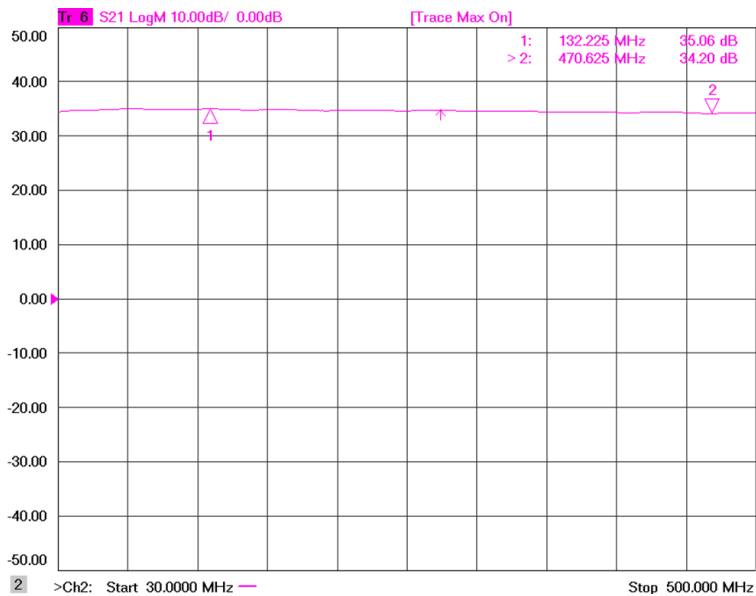


Figure 2: ERZ-HPA-0003-0050-28 Small Signal Gain

### 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.

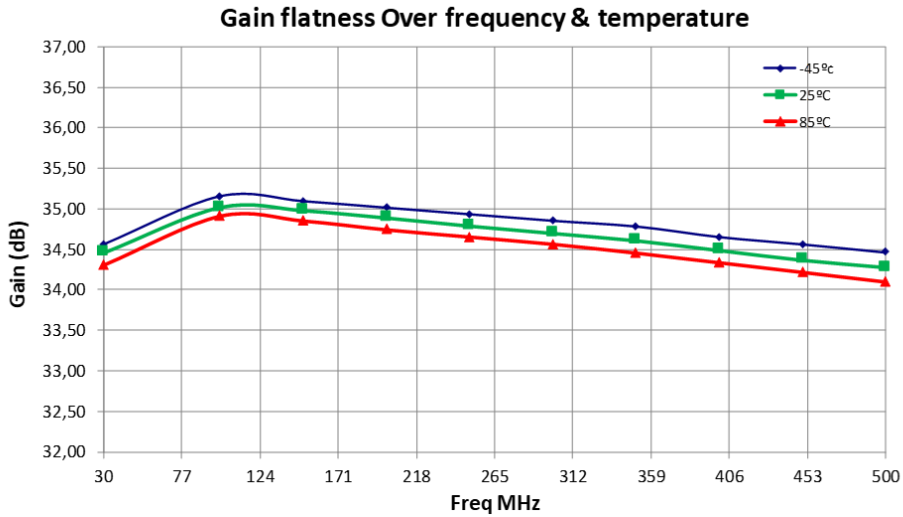


Figure 3: ERZ-HPA-0003-0050-28 Small Signal Gain Vs Temperature

## 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).

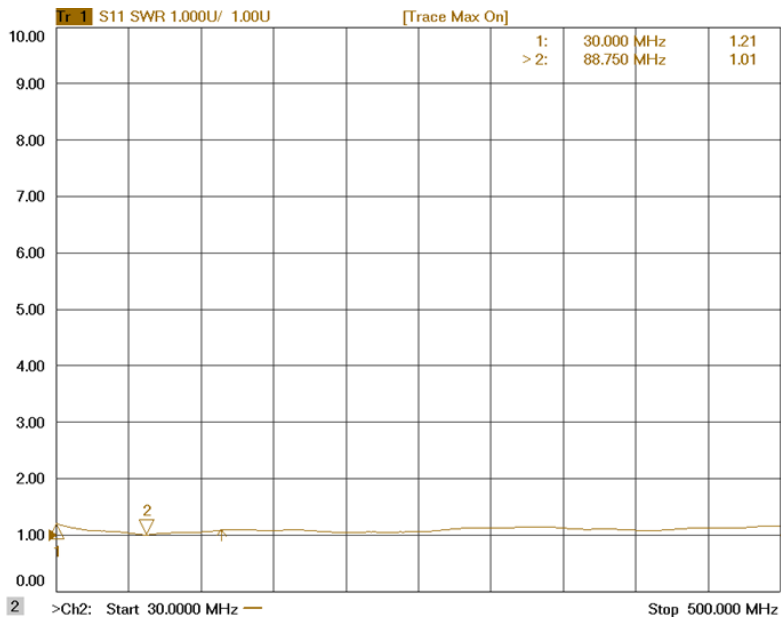


Figure 5: ERZ-HPA-0003-0050-28 Input Matching

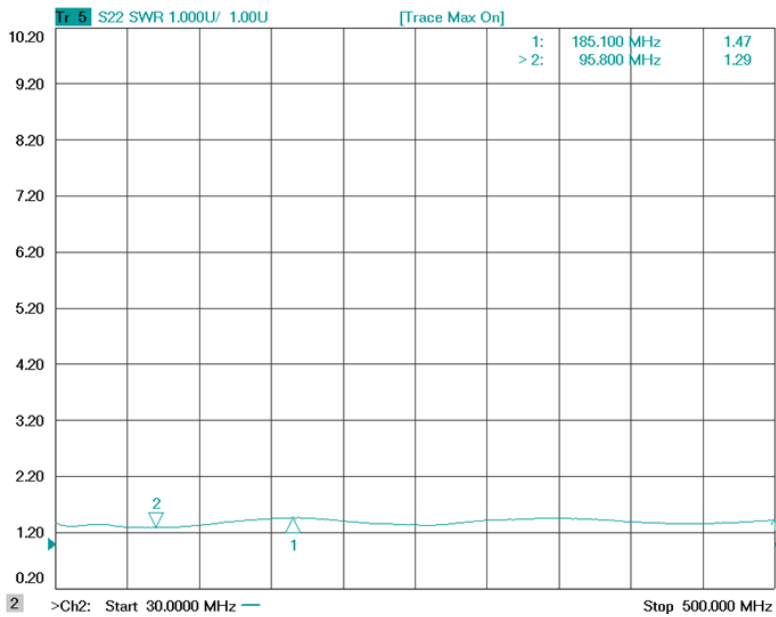


Figure 6: ERZ-HPA-0003-0050-28 Output Matching

### 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	-

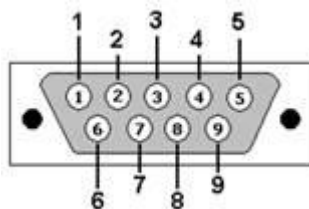
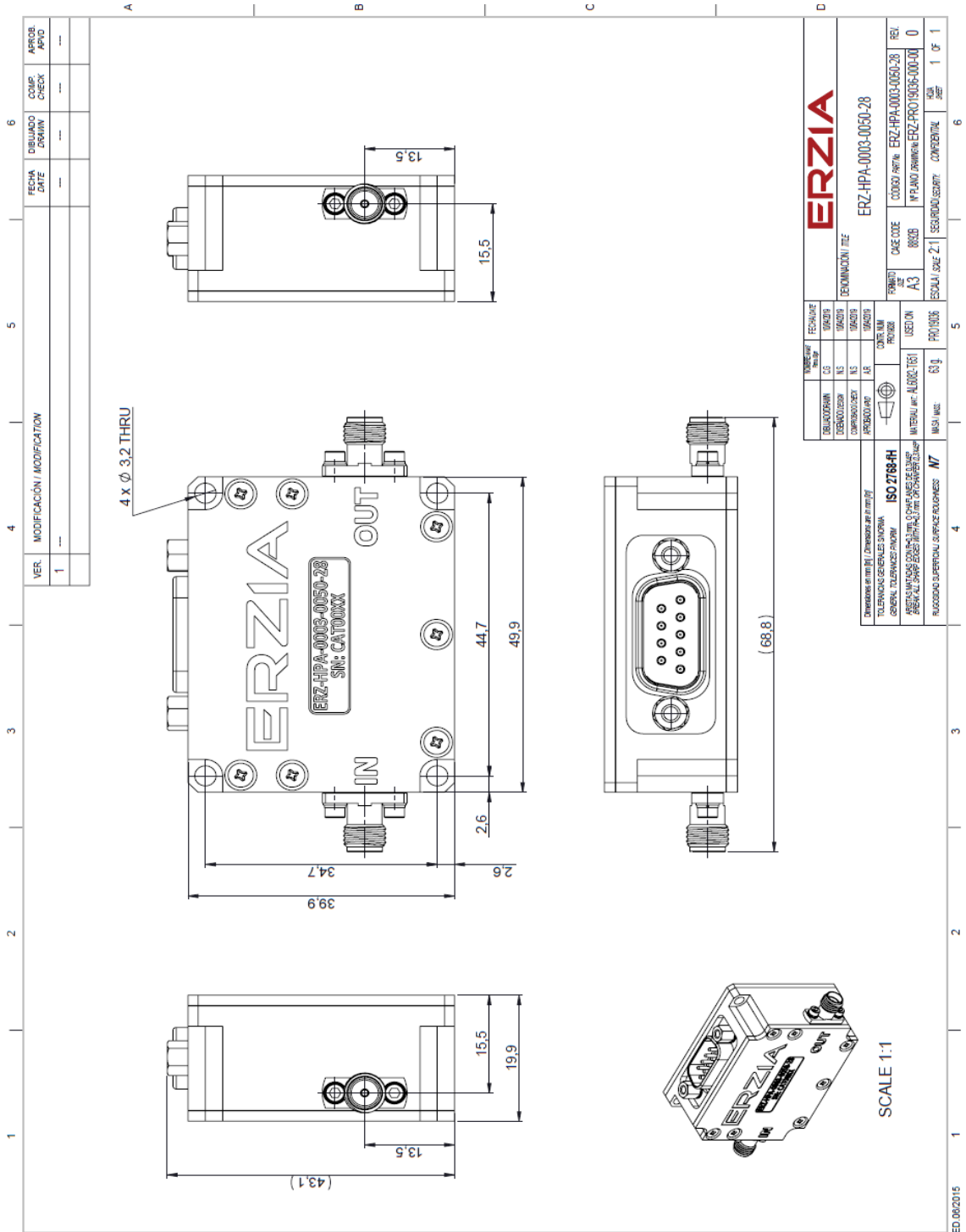


Figure 8: D-sub 9 Connector (Front view)

### 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

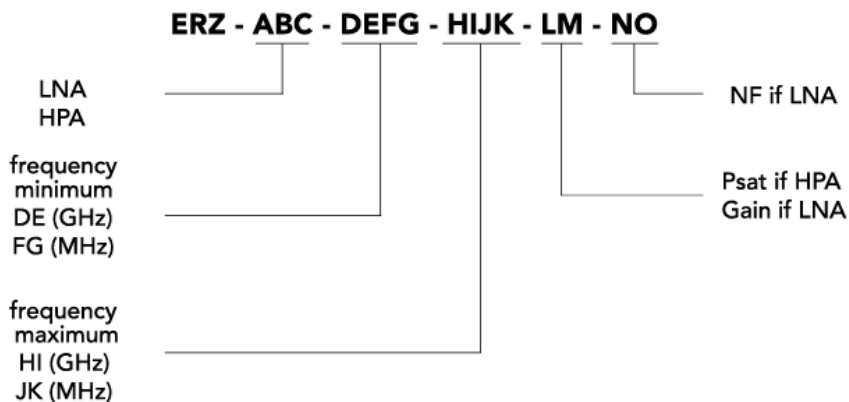
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

### 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

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