ERZIA

DATASHEET

High Power Amplifier

ERZ-HPA-2000-4000-39

Main Features:

- Frequency Range: 20 to 40 GHz.
- Typical values: Psat 39 dBm, Gain 52 dB
- RF connectors (I/O): 2.92mm Female
- DB9 connector for DC & Control
- Several mounting options
- Compact aluminum housing
- Hi-reliability and dedicated screening/ environmental tests available under request

ERZ-HPA-2000-4000-39

The ERZ-HPA-2000-4000-39 is a Ka Band High Power Amplifier providing an output power of 39 dBm and a gain of 52 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	20	-	40	GHz
Output Power (Psat)	37.5	39	41	dBm
Small Signal Gain	47	52	57	dB
Gain Flatness	-	± 2.5	-	dB
Noise Figure	-	-	-	dB
VSWR input	-	2.0:1	2.5:1	-
VSWR output	-	2.0:1	3.0:1	-
DC Voltage	20	24	28	V
Power Consumption	-	95	-	W
RF Connectors	2.92mm Female IN/OUT			-

Specifications at a case temperature of 25°C

Saturated output power

Figure 1 shows output power (Psat) measurement as a function of frequency at different temperatures.

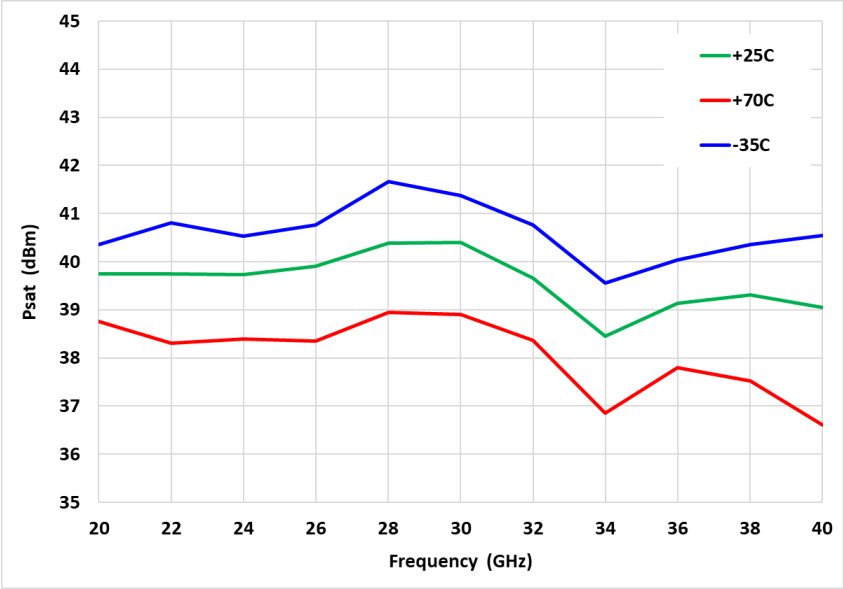

Figure 1: ERZ-HPA-2000-4000-39 Psat

Small Signal Gain

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

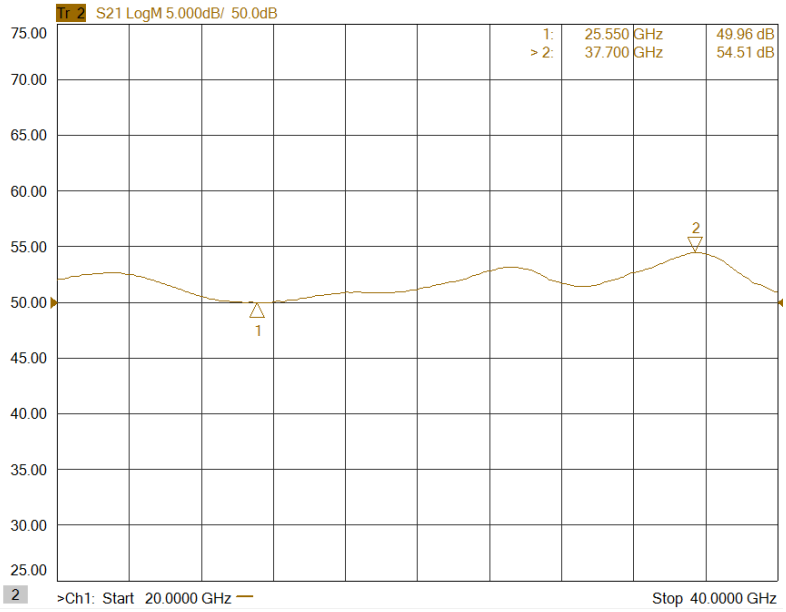

Figure 2: ERZ-HPA-2000-4000-39 Small Signal Gain

Input & Output Matching

Figure 3 and 4 show input (VSWR IN) and output (VSWR OUT) matching measurements as a function of frequency at room temperature (25°C).

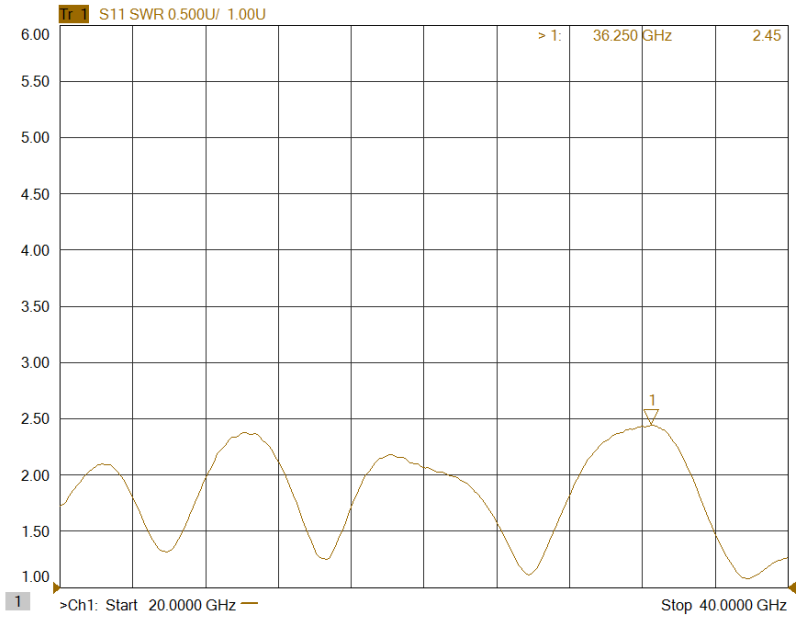

Figure : ERZ-HPA-2000-4000-39 VSWR IN

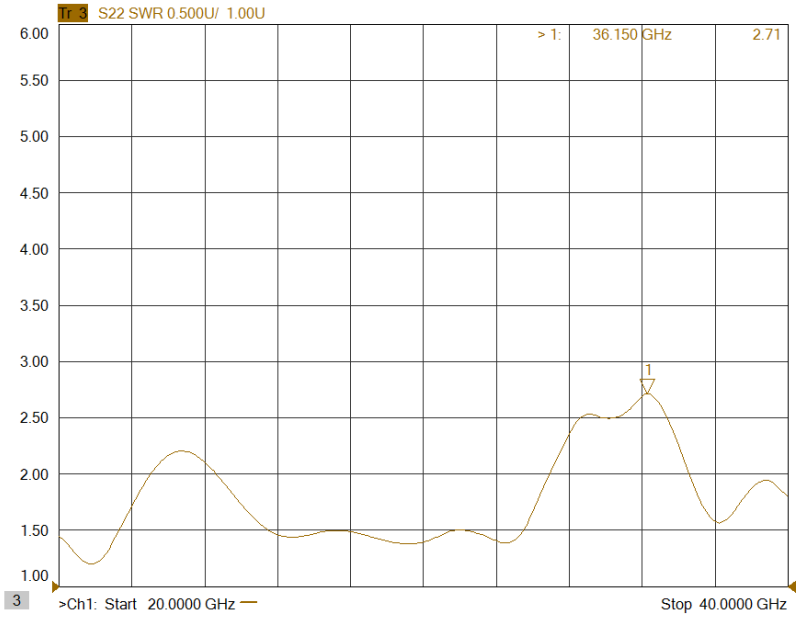

Figure 4: ERZ-HPA-2000-4000-39 VSWR OUT

DC & Control Interface

Power supply characteristics

- Input Voltage: 24 ±4 VDC

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	+24V Power Source	Power Supply
2	VCC	+24V Power Source	Power Supply
3	GND	Ground	Ground
4	EN	TTL Enable	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	MUTE	TTL Mute	OFF (0V to 0.8V); ON (2V to 5.5V)
9	I_SEN	Current Sense	Vo= 0.1V/A

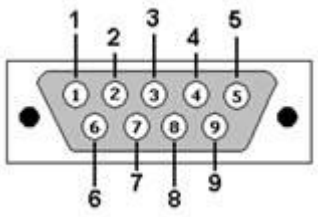

Figure 5: D-sub 9 Connector (Front view)

High Power Amplifier

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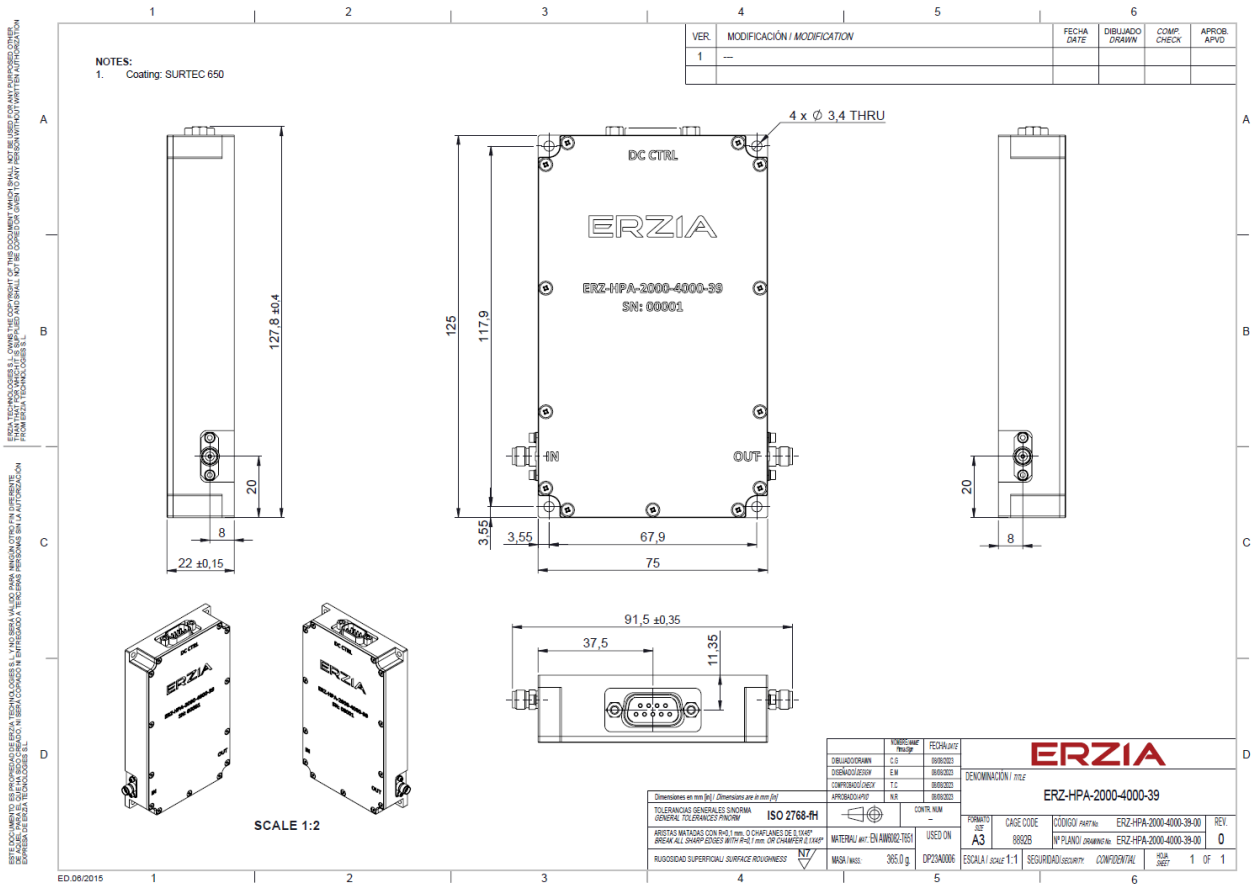
Mechanics and Housing



Parameter	Value
Size	75x125x22 mm
Weight	330 grams ±10%
RF Input Connector	2.92 mm Female
RF Output Connector	2.92 mm Female
DC&CTRL Connector	D-sub9

Absolute Maximum Ratings

Condition	Value
DC Voltage	28 VDC
Maximum Input Power (CW)	+15 dBm
Operation temperature (at case)	-35 to 70°C
Storage temperature	-45 to 85°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)	-35ºC, 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:	-45 to 85 °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

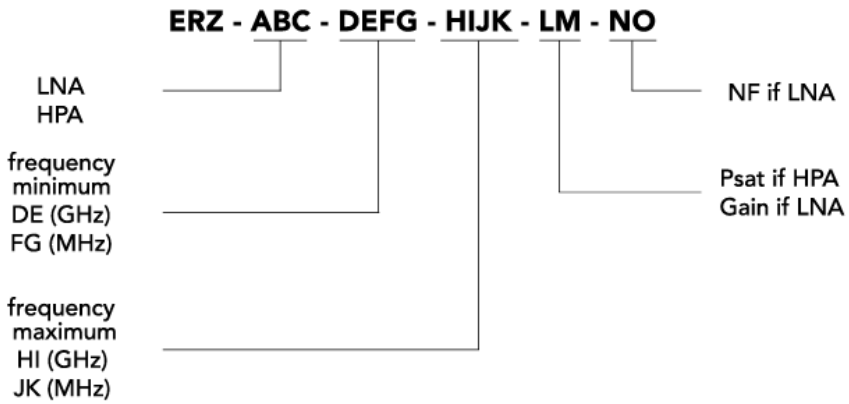
Most of ERZIA´s products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

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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