



Main Features:

- Frequency Range: 33 to 45 GHz.
- Typical values: Pout 23 dBm, Gain 15 dB
- RF connectors (I/O): 2.4 mm Female
- Solder filtered pins for DC connection
- Several mounting options
- Gold plated compact aluminum housing
- Hi-reliability and dedicated screening/ environmental tests available under request

ERZ-HPA-3300-4500-23

The ERZ-HPA-3300-4500-23 is a High Power Amplifier providing an output power of 23 dBm and a gain of 15 dB. The compact size and modularity makes it ideal for a wide range of applications.

Typical applications:

- Industrial / Laboratory
- Satcom / Telecom
- Space / Aerospace

Performance

Parameter		Value			Units
		Min	Typ	Max	
Frequency		33	-	45	GHz
Output Power (P1dB)		20	23	26	dBm
Small Signal Gain		13	15	19	dB
Gain Flatness		-	±2.5	-	dB
Noise Figure		-	-	-	dB
VSWR input		-	1.5:1	3:1	-
VSWR output		-	1.2:1	2:1	-
DC Voltage		10	12	14	V
Power Consumption	SS	-	3.0	-	W
	PSat	-	4.2	-	W
RF Connectors		2.4 mm Female IN/OUT			-

Specifications at case temperature of 25°C

Saturated Output Power

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

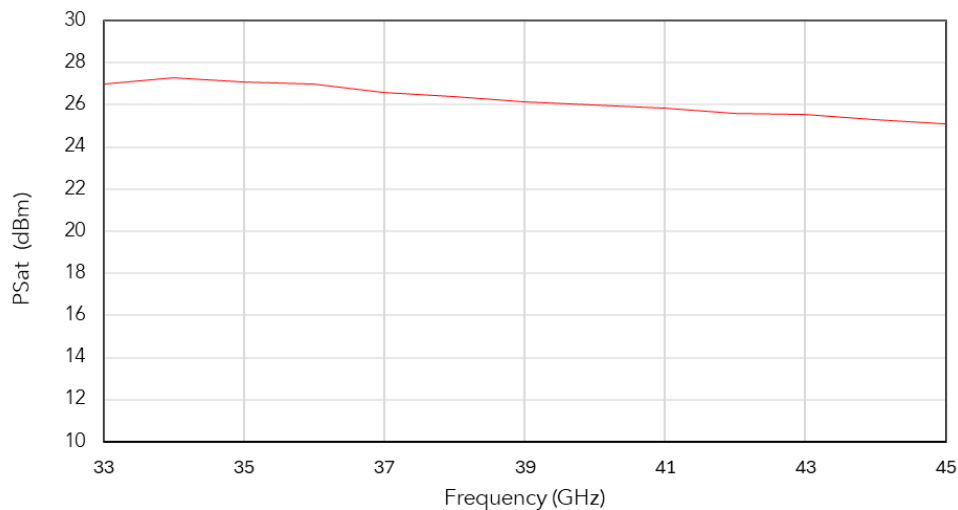


Figure 1: ERZ-HPA-3300-4500-23 PSat

Output Power (P1dB)

Figure 2 shows output power at 1dB compression measurement as a function of frequency at room temperature (25°C).

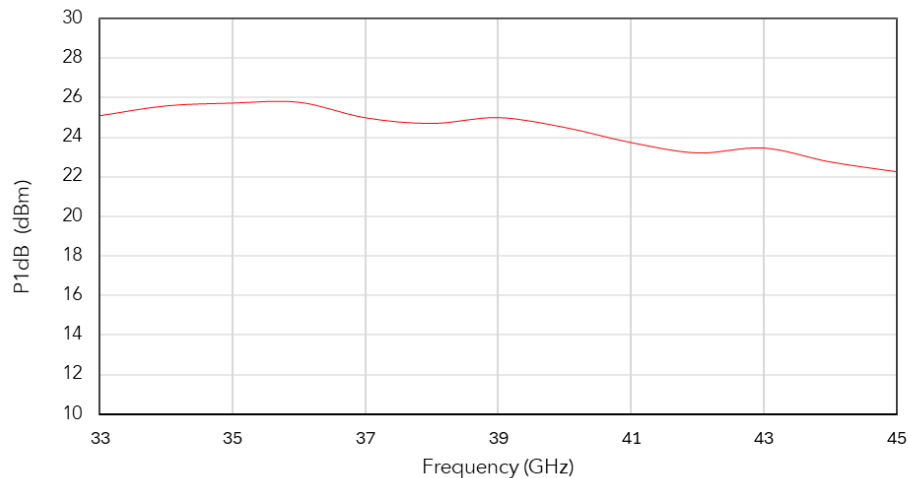


Figure 2: ERZ-HPA-3300-4500-23 P1dB

Small Signal Gain

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

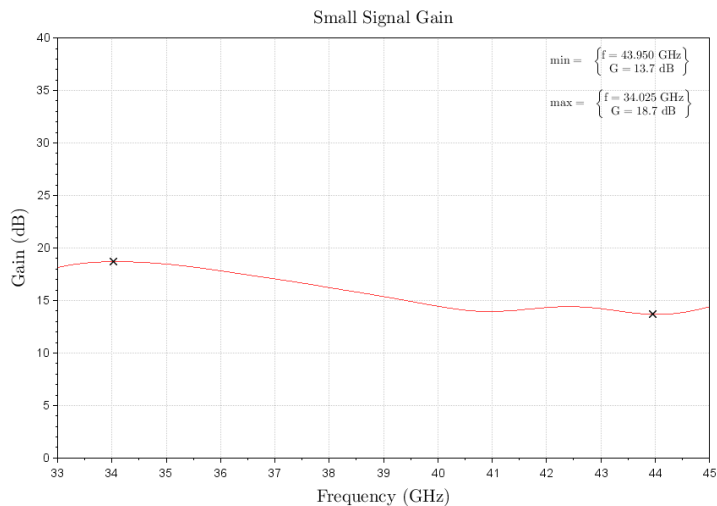


Figure 3: ERZ-HPA-3300-4500-23 Small Signal Gain

Gain Flatness over Frequency & Temperature

Figure 4 shows small signal gain flatness over frequency and temperature at -40°C, 25°C and 85°C.

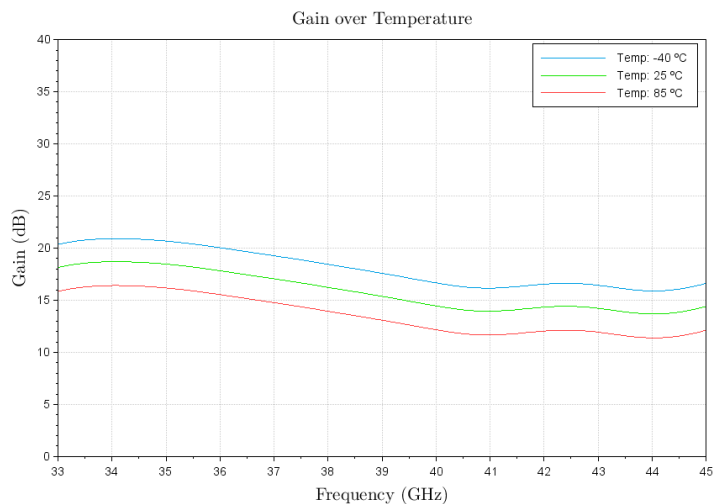


Figure 4: ERZ-HPA-3300-4500-23 Gain Flatness

Input and Output Matching

Figure 5 shows input (S11) and output (S22) VSWR as a function of frequency at room temperature (25°C).

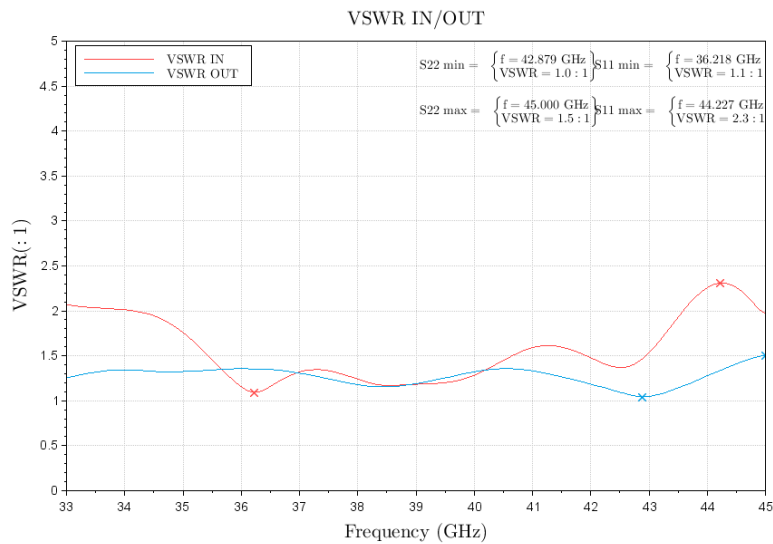


Figure 5: ERZ-HPA-3300-4500-23 Input and Output Matching

Absolute Maximum Ratings

Condition	Value
DC Voltage	+14 VDC
Maximum Input Power (CW)	23 dBm
Operation temperature (at case)	-40 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:	-35 to +75 °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.



Mechanics and Housing

Technical drawing of the ERZ-M1-HPA-2CAJERAS component. The drawing includes three views: a top view, a front view, and a side view. The top view shows a rectangular component with dimensions 34.83 ± 0.7 mm in length and 15 mm in width. It features two circular ports on the left side, each with a diameter of 3.1 mm. The front view shows the component's profile with dimensions 17.5 ± 0.2 mm in height and 12.5 mm in width. The side view shows the component's profile with dimensions 49.03 ± 0.5 mm in height and 1.93 ± 0.02 mm in width. The component is labeled "ERZ-M1-HPA-2CAJERAS" and "SN: 00000". It also features a "VCC" pin and a "GND" pin. The drawing includes a table with dimensions in mm (in) and a table with dimensions in mm (in).

DIMENSIONES EN mm (in)	
34.83 ± 0.7	1.371 ± 0.028
15	0.591
12.5	0.492
17.5 ± 0.2	0.689 ± 0.008

DIMENSIONES EN mm (in)	
49.03 ± 0.5	1.93 ± 0.02
1.93 ± 0.02	0.076 ± 0.008

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 / Hi-Rel Usage

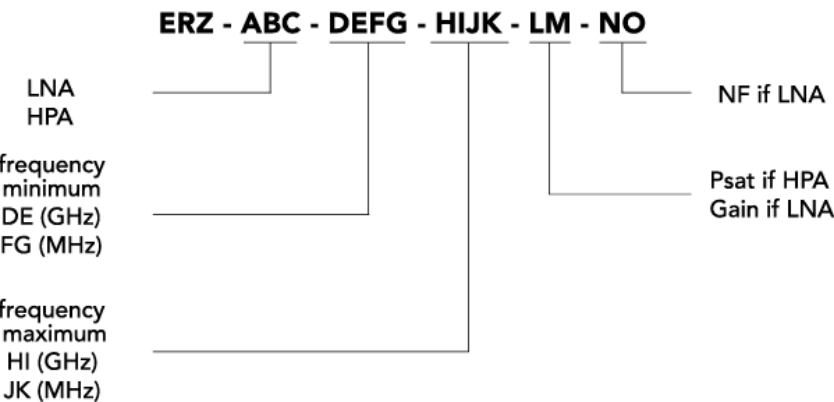
Most of ERZIA’s products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, or specific hi-reliability usage.

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

20260818_rev2.1

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