



Mini-Circuits

MEDIUM POWER, HIGH GAIN

Wideband Amplifier ZVA-443HGX+

50Ω 10 MHz to 43.5 GHz¹

THE BIG DEAL

- High Gain of 33 dB typ.
- Output Power of +11 dBm typ. at saturation
- Operates with a single DC supply of +9 to +15 V
- Over-Voltage and Reverse Voltage protected

APPLICATIONS

- Wideband Test and Instrumentation
- 5G
- SATCOM
- Optical communications



Generic photo used for illustration purposes only

Model No.	ZVA-443HGX+
Case Style	T2704-1
Connectors	2.92mm Female

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

PRODUCT OVERVIEW

Mini-Circuits' ZVA-443HGX+ is a Coaxial, High Gain and General-Purpose Wideband amplifier operating from 10 MHz to 43.5 GHz¹. The model operates over a single positive supply range of +9 to +15 V, allowing users to choose their desired operating voltage. Internal DC-DC conversion circuitry maintains constant efficiency over the full input voltage range. The amplifier incorporates several DC-protection features such as Over-voltage, Reverse voltage and In-rush current that protects the amplifier from damage if mishandled during operation. The Amplifier is capable of delivering over +11 dBm of saturated RF power over the entire band and has a good Noise figure performance of 3.5 dB, typ. up to 26.5 GHz. The Wideband operation combined with a High Gain makes this model an ideal choice for testing and instrumentation applications.

KEY FEATURES

Feature	Advantages
Wide-band amplifier, 10 MHz to 43.5 GHz ¹	A single amplifier covers applications including Test & instrumentation, Fiber Optics, 5G, SATCOM, etc.
<ul style="list-style-type: none">• High Gain• Wideband• Low Noise Figure• Medium RF power	The Amplifier is capable of providing High Gain of about 33 dB typ. combined with low Noise Figure of 3.5 dB typ. The model is capable of delivering Saturated Output Power of over +11 dBm typ. in the entire operating band.
Adjustable DC Supply voltage	The device is capable of operating from +9 to +15 V with constant DC power consumption, with no effect on RF performance.
DC Protection <ul style="list-style-type: none">• Over-voltage• Reverse voltage• In-rush current	The internal DC circuitry allows the amplifier to be protected from any external mishandling that could lead to catastrophic failures in the field.

1. Amplifier is usable down to 100 kHz

REV. B
ECO-008181
ZVA-443HGX+
AD/JM/CP/AM
210610





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ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Condition (MHz)	Min.	Typ.	Max.	Units
Frequency Range ¹		10		43500	MHz
Gain	10 - 18000	30	37		dB
	18000 - 32000	25	33		
	32000 - 40000	24	30		
	40000 - 43500	22	28		
Input VSWR	10 - 18000		1.5		:1
	18000 - 32000		1.3		
	32000 - 40000		1.4		
	40000 - 43500		1.6		
Output VSWR ³	10 - 18000		1.5		:1
	18000 - 32000		1.7		
	32000 - 40000		1.9		
	40000 - 43500		1.7		
Output Power at 1dB compression	10 - 18000		12		dBm
	18000 - 32000		10		
	32000 - 40000		9		
	40000 - 43500		8		
Output IP3	10 - 18000		20		dBm
	18000 - 32000		18		
	32000 - 40000		18		
	40000 - 43500		18		
Noise Figure	1000-26500		3.5		dB
	26500-43500		6.0		
Operating DC Voltage		+9		+15	V
Device Operating Current at +9V ²				350	mA
Device Operating Power at Operating DC Voltage			2.6		W

1. Amplifier is usable down to 100 kHz

2. DC Supply must be able to source at least 400mA DC at startup.

MAXIMUM RATINGS³

Parameter	Ratings
Operating Temperature (Ambient)	-10°C to +85°C
Storage Temperature	-55°C to +100°C
Total Power dissipation	3W
Input Power (CW)	+5 dBm
DC Voltage	+16V

3. Permanent damage may occur if any of these limits are exceeded.



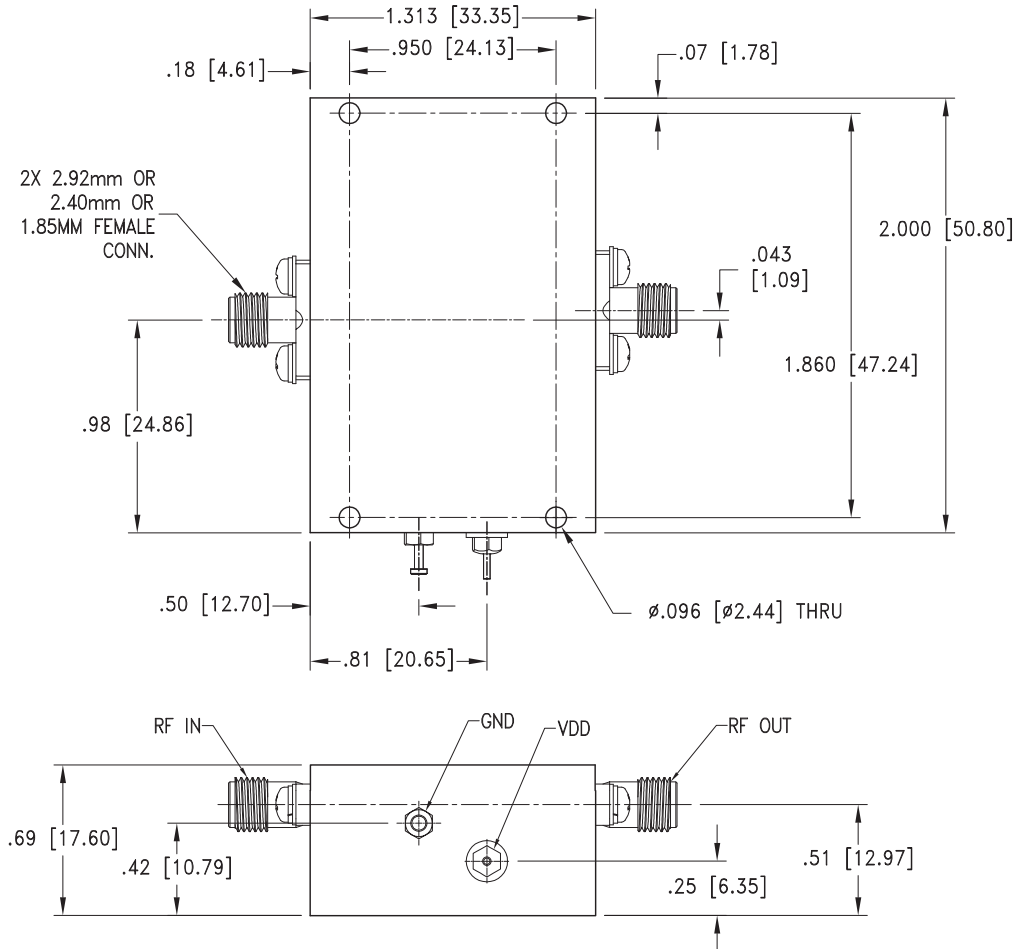


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OUTLINE DRAWING



Weight: 220 grams

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .03$; 3 Pl. $\pm .015$



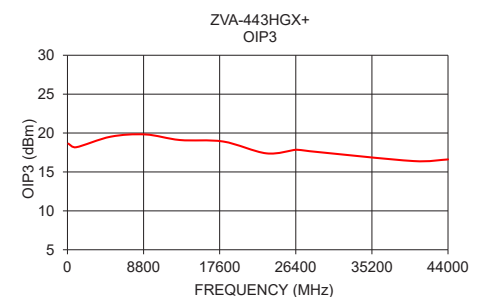
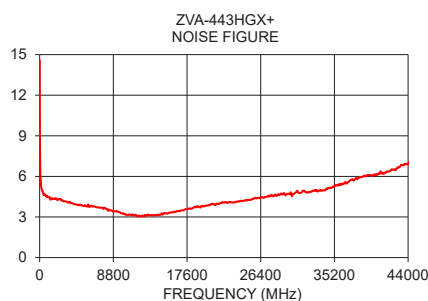
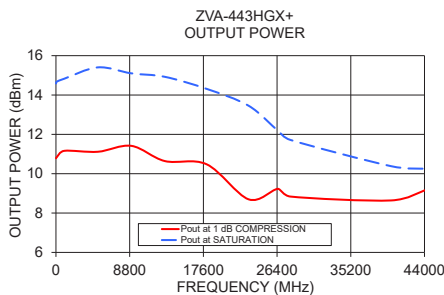
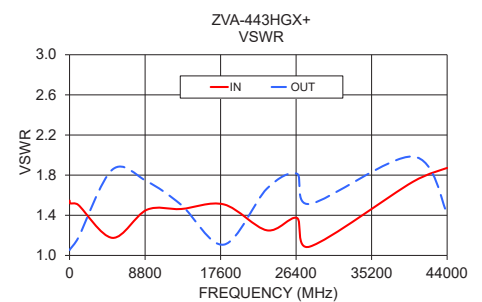
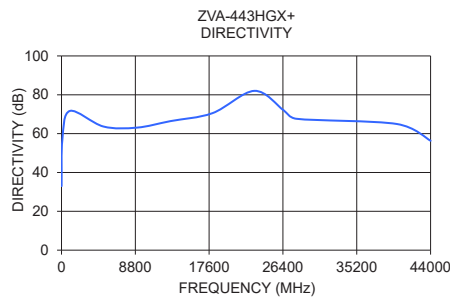
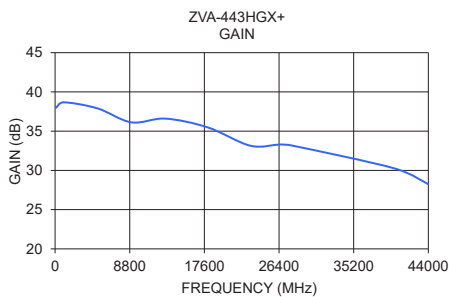


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TYPICAL PERFORMANCE DATA/CURVES

Frequency (MHz)	Gain (dB)	Directivity (dB)	VSWR (:1)		NOISE FIGURE (dB)	P _{OUT} at 1 dB COMPR. (dBm)	P _{OUT} at SATURATION (dBm)	OIP3 (dBm)
			IN	OUT				
10	38.17	32.97	1.55	1.05	14.59	10.79	14.59	--
100	37.96	56.78	1.52	1.07	5.39	10.84	14.68	18.64
1000	38.68	71.68	1.50	1.17	4.48	11.16	14.83	18.18
5000	37.90	63.65	1.17	1.86	3.90	11.12	15.40	19.53
9000	36.12	63.10	1.45	1.74	3.42	11.42	15.10	19.82
13000	36.60	66.44	1.46	1.50	3.18	10.64	14.92	19.10
18000	35.48	70.54	1.51	1.11	3.60	10.48	14.31	18.91
23000	33.15	82.02	1.25	1.67	4.08	8.70	13.46	17.39
26500	33.30	71.95	1.37	1.81	4.49	9.23	12.18	17.86
28000	33.15	67.64	1.09	1.51	4.59	8.84	11.72	17.67
40000	30.26	64.94	1.73	1.99	6.15	8.64	10.38	16.40
44000	28.23	56.33	1.87	1.42	6.90	9.15	10.25	16.61



NOTES

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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