

Coaxial High Power Amplifier

50Ω 100W 800 to 1000 MHz

ZHL-100W-13+

Features

- saturated power 100W typ.
- wide bandwidth, usable 750 to 1050 MHz
- high gain, 50 dB typ.
- good gain flatness, ± 1 dB typ.
- unconditionally stable
- self protected against excessive drive, high case temp., reverse polarity and shorting/unshorting
- can withstand short and open circuit at output while delivering 100 watts



Model No.	ZHL-100W-13+	▲ZHL-100W-13X+
Case Style	BT1689	
Connectors	IN-SMA, OUT-N-Type	

Applications

- AM/FM
- multi-carrier amplification
- broadband swept signal
- linear pulse
- feed forward

Product Description

ZHL-100W-13+ is a Class-AB, unconditionally stable amplifier. It features a ruggedized case, the ability to withstand accidental open or short at output and reverse bias protection for added reliability under difficult conditions.

+RoHS Compliant

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

Electrical Specifications at 25°C

Parameter	Condition (MHz)	ZHL-100W-13+ ▲ZHL-100W-13X+			Units
		Min.	Typ.	Max.	
Frequency Range		800	—	1000	MHz
Gain ¹	800 - 1000	45	50	57	dB
Gain Flatness	800 - 1000	—	± 1.0	± 1.5	dB
Output Power at 1dB compression	800 - 1000	+47.5	+49	—	dBm
Output Power at 3dB compression	800 - 1000	+48.5	+50	—	dBm
Noise Figure	800 - 1000	—	7	10	dB
Output third order intercept point ²	800 - 1000	+52	+60	—	dBm
Input VSWR	800 - 1000	—	1.3	1.6	:1
Output VSWR	800 - 1000	—	1.4	1.6	:1
DC Supply Voltage		—	28 ⁴	30	V
Supply Current ³		—	10	14.5	A

1. Small signal input power -15 dBm typ.

2. Two tones, 40 dBm/line, 1 MHz spacing.

3. Power supply should be capable of delivering 17A at start up.

4. Recommended Operating Voltage.

▲Heat sink and fan not included. Alternative heat sinking and heat removal must be provided by the user to limit maximum base-plate temperature to 60°C, in order to ensure proper performance. For reference, this requires thermal resistance of user's external heat sink to be 0.035°C/W max.

Maximum Ratings

Parameter	Ratings
Operating Temperature	-20°C to 45°C
Base Plate Temperature	60°C
Storage Temperature	-55°C to 100°C
DC Voltage	30V
Input RF Power (no damage)	+7 dBm

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

Notes

A. 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.

B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.

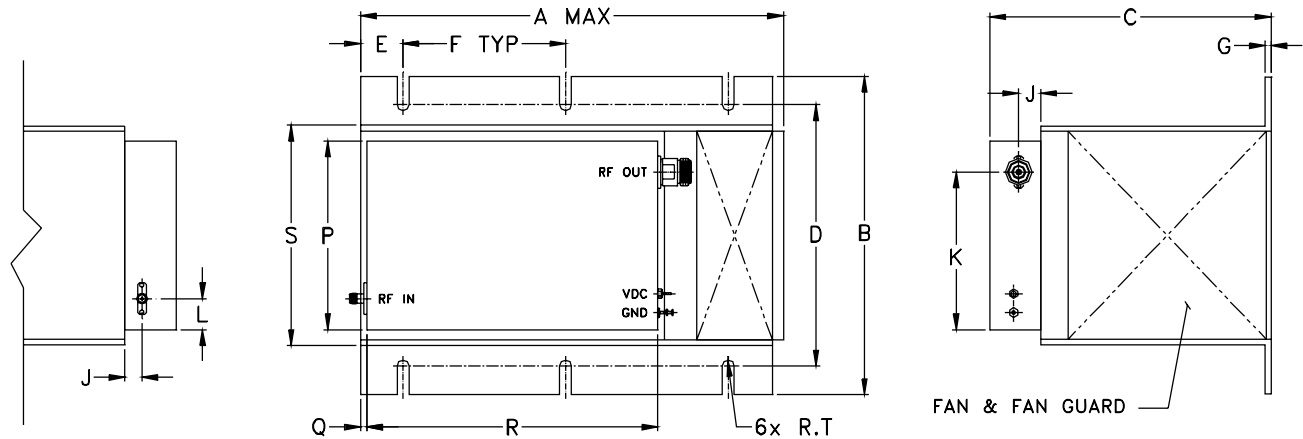
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



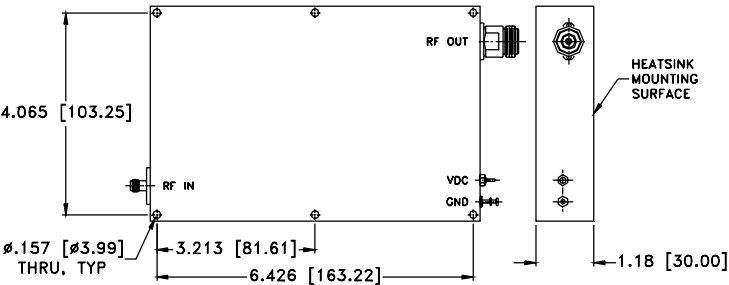
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REV. A
M151107
ZHL-100W-13+
ED-14590/2
WZ/CP/AM
151029
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Outline Drawing for models with heatsink



Outline Drawing for models without heatsink



Outline Dimensions (inch mm)

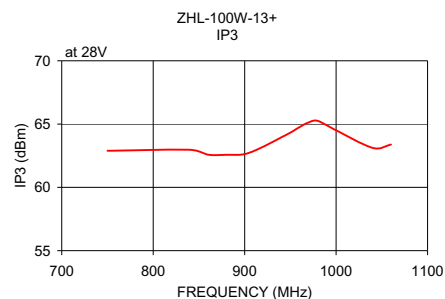
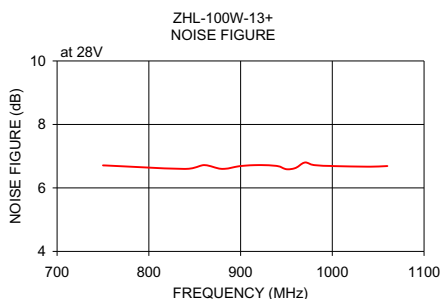
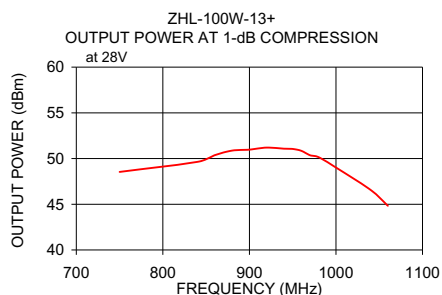
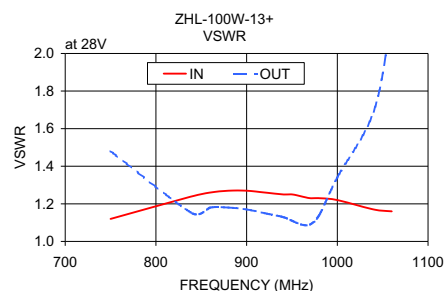
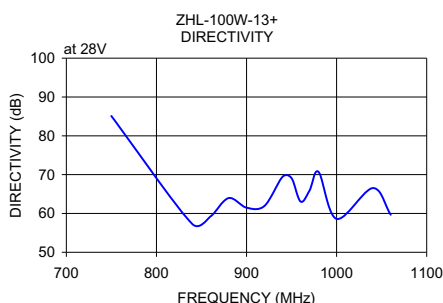
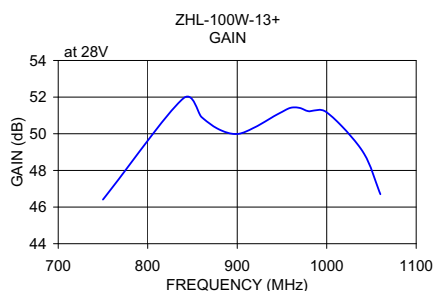
A	B	C	D	E	F	G	J	K	L	P	Q	R	S	T	wt
9.85	7.3	6.5	6.00	.98	3.75	.13	.51	3.62	.72	4.33	.2	6.69	5.1	.136	grams*
250.19	185.42	165.10	152.40	24.89	95.25	3.30	12.95	91.95	18.29	109.98	5.08	169.93	129.54	3.45	5645

*800 grams without heatsink

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FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1)		POUT at 1 dB COMPR. (dBm)	NOISE FIGURE (dB)	IP3 (dBm)
	28V	28V	IN	OUT	28V	28V	28V
750	46.41	85.10	1.12	1.48	48.54	6.71	62.89
840	51.94	57.24	1.24	1.15	49.64	6.60	62.97
860	50.92	59.22	1.26	1.18	50.37	6.72	62.58
880	50.23	63.96	1.27	1.18	50.87	6.60	62.57
900	49.99	61.48	1.27	1.17	50.97	6.69	62.63
920	50.36	61.95	1.26	1.15	51.20	6.72	63.20
940	50.93	69.45	1.25	1.13	51.08	6.69	63.95
950	51.19	69.08	1.25	1.11	51.05	6.59	64.32
960	51.42	63.07	1.24	1.09	50.84	6.63	64.76
970	51.41	65.92	1.23	1.09	50.36	6.80	65.13
980	51.23	70.67	1.23	1.14	50.15	6.72	65.25
1000	51.17	58.60	1.22	1.34	49.02	6.69	64.51
1040	49.05	66.54	1.17	1.69	46.57	6.67	63.12
1060	46.70	59.66	1.16	2.18	44.83	6.69	63.38



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