Coaxial

High Power Amplifier

ZHL-100W-63+

50Ω 100W 2500 to 6000 MHz

ZHL-100W-63+

ZHL-100W-63X+

The Big Deal

- Saturated power, 100W typ.
- Wide bandwidth, 2500 to 6000 MHz
- High gain, 58 dB typ.
- Self-protected from overheating and reverse polarity
- Withstands short and open circuit at output while delivering up to 50W

Product Overview

The ZHL-100W-63+ is a Class AB, high-power amplifier providing 100W saturated power over the 2500 to 6000 MHz band, ideal for a variety of high-power test setups as well as applications including communications, radar and more. The ruggedly-designed amplifier provides unconditional stability and built-in self-protection against reverse polarity and overheating. The amplifier's output stage is further protected in the event of a fault condition, allowing high power operation for up to 5 minutes into an OPEN or SHORT load (refer to the maximum input power specifications). Housed in a rugged aluminum alloy case measuring 6.0 x 9.1 x 1.2", the unit features SMA connectors and an optional heat sink and fan attachment for cooling.

Key Features

Feature	Advantages
Wideband, usable from 2300 to 6200 MHz	Suitable for a broad range of high-power, wideband applications, including test setups, communications and defense applications.
High gain, 58 dB typ.	Enables signal amplification to 100W output without the need for multiple gain stages.
Built-in self-protection	In instances of potentially-damaging overheating within the housing an automatic sensing feature signals the unit to power down.
Unconditional stability	Provides reliable performance independent of input and load conditions.

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Features

- Saturated power 100W typ.
- Wide bandwidth, 2500 to 6000 MHz
- High gain, 58 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 50 watts

Applications

- High power test sets
- Burn-in set-ups
- Communications
- Radar

Model No.	ZHL-100W-63+	ZHL-100W-63X+▲
Case Style	BT1834-3	
Connectors	IN-SMA, OUT-N-TYPE	

+RoHS Compliant

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

Electrical Specifications at 25°C

Parameter	ZHL-100W-63+ ZHL-100W-63X+ ▲ Min.	Typ.	Max.	Units
Frequency Range	2500	—	6000	MHz
Gain[1]	52	58	64	dB
Gain Flatness[1]	—	±2.0	±3.5	dB
Output Power at 1dB compression	—	+43[4]	—	dBm
Output Power at Saturation	+47.5	+50[4]	—	dBm
Noise Figure	—	12	19	dB
Output third order intercept point[2]	+44	+54	—	dBm
Input VSWR[1]	—	2.0	—	:1
Output VSWR[1]	—	1.2	—	:1
DC Supply Voltage	—	30[3]	32	V
Supply Current	—	8	22	A

1. Small signal input power -50 dBm typ.
2. Two tones, 26 dBm/tone, 1 MHz spacing.
3. Recommended Operating Voltage.
4. Power measured of fundamental tone only. Does not include power contribution of harmonic signals.

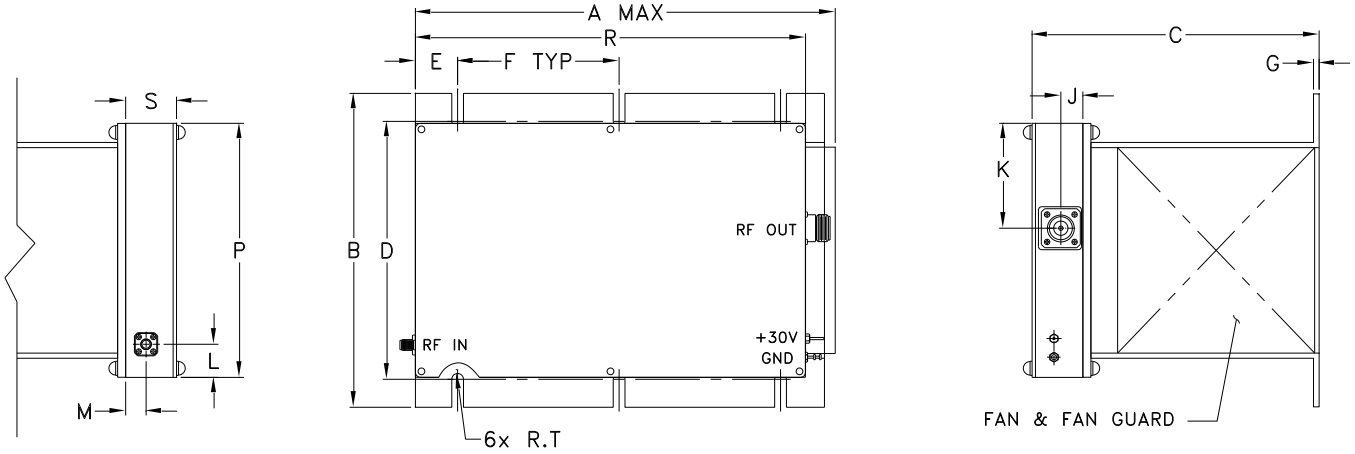
▲Heat sink and fan not included. Alternative heat sinking and heat removal must be provided by the user to limit maximum base-plate temperature to 60°C, in order to ensure proper performance. For reference, this requires thermal resistance of user's external heat sink to be 0.08°C/W max.

Maximum Ratings[5]

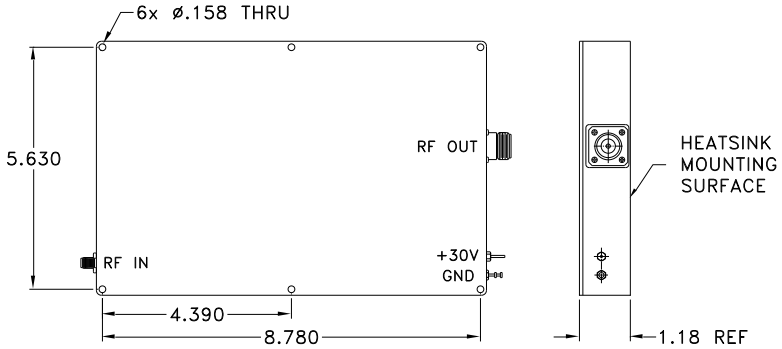
Parameter	Ratings
Operating Ambient Temperature (With Mini-Circuits' heatsink and fan)	0°C to 60°C
Base Plate Temperature (When used without heatsink)	+80°C
Storage Temperature	-55°C to 100°C
DC Voltage	32V
Input RF Power (no damage)	+3 dBm[6] -15 dBm[7]

5. Specifications apply to CW signals only permanent damage may occur if any of these limits are exceeded.
6. Into 50 ohm load
7. Into open or short load, for up to 5 minutes.

Outline Drawing for models with heatsink



MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK.

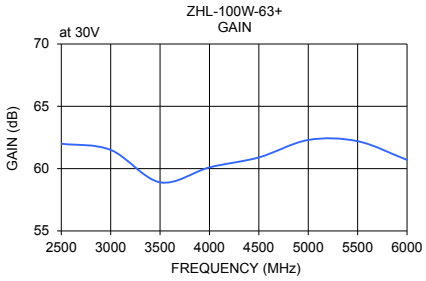


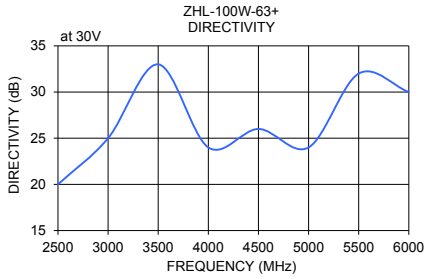
Outline Dimensions (inch / mm)

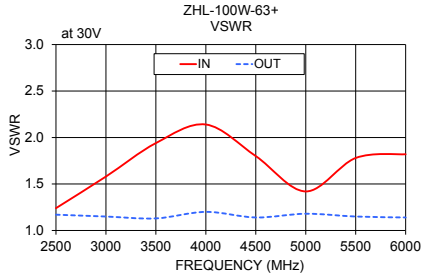
A	B	C	D	E	F	G	J	K	L	M	P	R	S	T	wt
9.85	7.30	6.60	6.00	0.98	3.75	0.13	0.51	2.44	0.59	0.47	5.91	9.06	1.18	0.14	grams*
250.19	185.42	167.64	152.4	24.89	95.25	3.30	13.0	62.1	15.0	12.0	150.0	230.0	30.0	3.43	5350

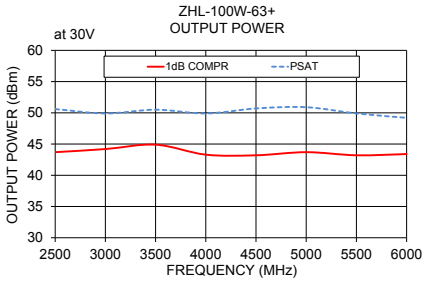
*1670 grams without heatsink

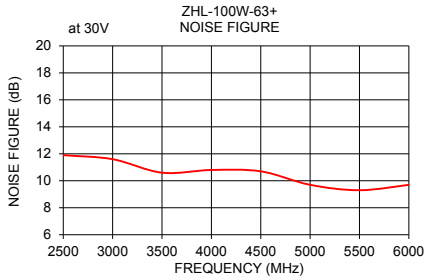
FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1)		POUT at 1 dB COMPR. (dBm)	POUT at Saturation (dBm)	NOISE FIGURE (dB)	OIP3 (dBm)
	30V	30V	IN	OUT	30V	30V	30V	30V
2500	62.0	20	1.24	1.17	43.7	50.6	11.9	56.7
3000	61.5	25	1.58	1.15	44.2	49.9	11.6	53.9
3500	58.9	33	1.94	1.13	44.9	50.5	10.6	54.3
4000	60.1	24	2.14	1.20	43.3	49.9	10.8	54.6
4500	60.9	26	1.80	1.14	43.2	50.7	10.7	56.8
5000	62.3	24	1.42	1.18	43.7	50.9	9.7	55.9
5500	62.2	32	1.78	1.15	43.2	49.9	9.3	54.9
6000	60.7	30	1.82	1.14	43.4	49.2	9.7	53.9

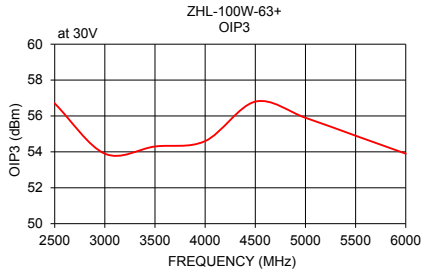












Additional Notes

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