

Coaxial High Power Amplifier

ZHL-25W-63+

50Ω 25W 700 to 6000 MHz

The Big Deal

- Saturated power, 25W
- Wide bandwidth, 700 to 6000 MHz
- High gain, 53 dB
- Self-protected from excessive drive, heat, and reverse polarity
- Withstands short and open circuit at output while delivering up to 20W



ZHL-25W-63+



ZHL-25W-63X+

Product Overview

The ZHL-25W-63+ is a Class AB, high-power amplifier providing 25W saturated power over the 700 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, excessive drive and overheating. It is capable of withstanding short and open circuits at output while continuously delivering 20W of power. Housed in a rugged aluminum alloy case measuring 5.6 x 8.8 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 600 to 6100 MHz	Suitable for a broad range of high-power, wideband applications, including test setups, communications and defense applications.
High gain, 53 dB	Enables signal amplification to 25W output without the need for multiple gain stages.
Built-in self-protection	In instances of potentially-damaging excessive drive current, heat buildup within the housing, unshorting of DC supply, and short or open loads at the output, 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 25W typ.
- Wide bandwidth, 700 to 6000 MHz
- High gain, 53 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 20 watts

Applications

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

Product Description

ZHL-25W-63+ 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.

Electrical Specifications at 25°C

Parameter	ZHL-25W-63+ ZHL-25W-63X+			Units
	Min.	Typ.	Max.	
Frequency Range	700	—	6000	MHz
Gain ¹	44	53	62	dB
Gain Flatness ¹	—	±4.0	±5.0	dB
Output Power at 1dB compression	—	+37	—	dBm
Output Power at Saturation	+43	+44	—	dBm
Noise Figure	—	13	16	dB
Output third order intercept point ²	+39	+45	—	dBm
Input VSWR ¹	—	1.8	2.9	:1
Output VSWR ¹	—	2.0	3.2	:1
DC Supply Voltage	—	24 ⁴	30	V
Supply Current ³	—	7	12	A

1. Small signal input power -50 dBm typ.

2. Two tones, 26 dBm/tone, 1 MHz spacing.

3. Power supply should be capable of delivering 15A at startup

4. Recommended Operating Voltage.

5. 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

Parameter	Ratings
Operating Ambient Temperature (With Mini-Circuits' heatsink and fan)	0°C to 60°C
Base Plate Temperature (When used without heatsink)	+85°C
Storage Temperature	-55°C to 100°C
DC Voltage	30V
Input RF Power (no damage)	+5 dBm

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

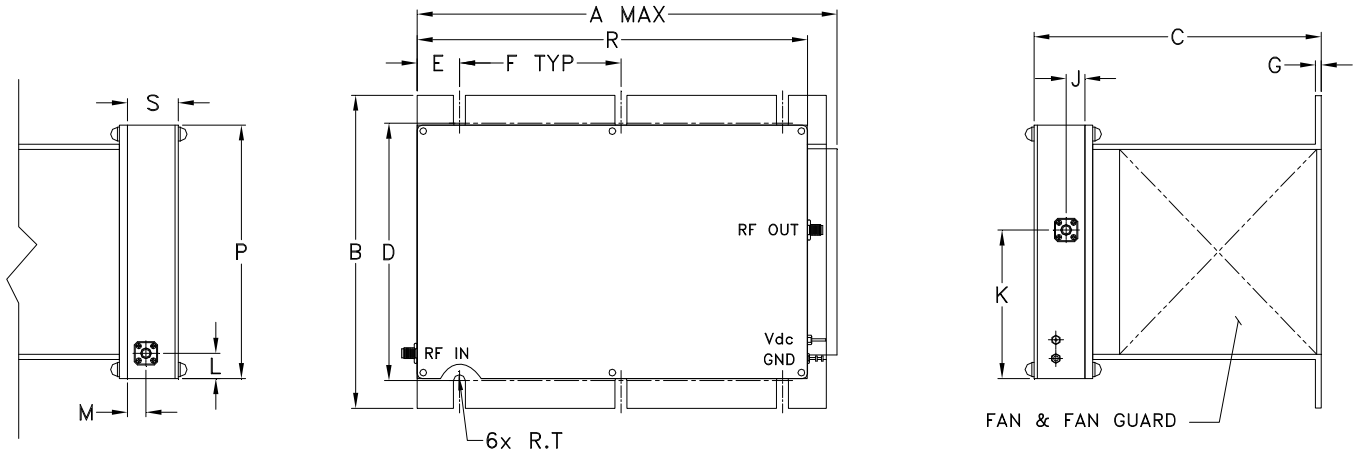


Model No.	ZHL-25W-63+	ZHL-25W-63X+
Case Style	BT1834-2	
Connectors	IN-SMA, OUT-SMA	

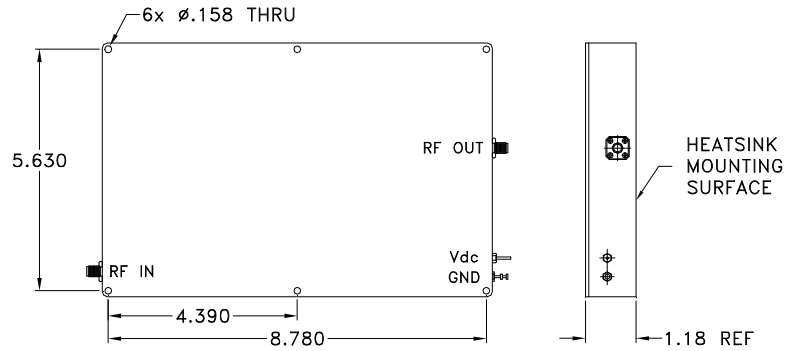
+RoHS Compliant

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

Outline Drawing for models with heatsink



MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK.

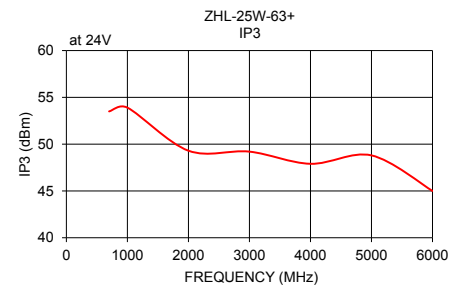
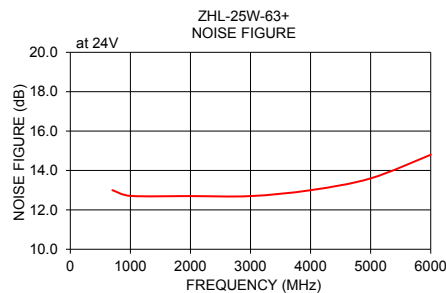
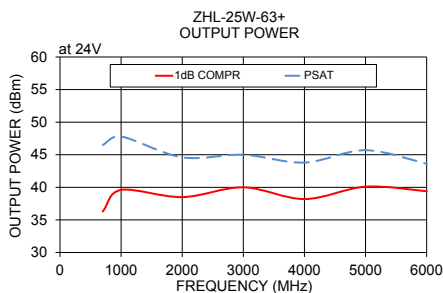
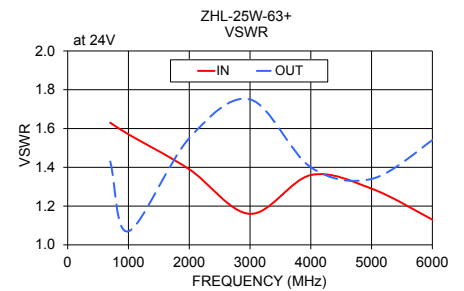
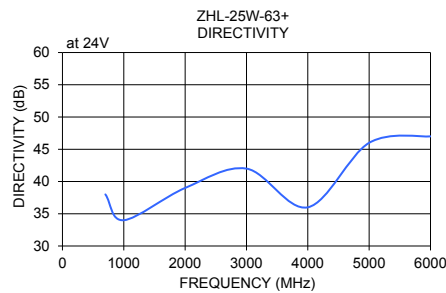
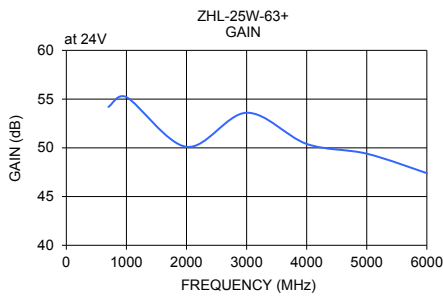


Outline Dimensions (inch/mm)

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	0.43	3.46	0.59	0.43	5.91	9.06	1.18	0.14	grams*
250.19	185.42	167.64	152.4	24.89	95.25	3.30	11.0	87.9	15.0	11.0	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)	IP3 (dBm)
	24V	24V	IN	OUT	24V	24V	24V	24V
700	54.2	38.0	1.6	1.4	36.3	46.5	13.0	53.5
1000	55.2	34.0	1.6	1.1	39.6	47.8	12.7	53.9
2000	50.1	39.0	1.4	1.6	38.5	44.6	12.7	49.3
3000	53.6	42.0	1.2	1.8	40.0	45.0	12.7	49.2
4000	50.4	36.0	1.4	1.4	38.2	43.8	13.0	47.9
5000	46.7	46.0	1.3	1.3	40.1	45.7	13.6	48.8
6000	47.4	47.0	1.1	1.5	39.4	43.6	14.8	45.0



Additional 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.
- 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