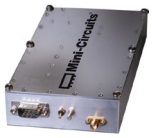
High Power Amplifier ZHL-30W-262+

50Ω 30W 2300 to 2550 MHz

ZHL-30W-262-S+



ZHL-30W-262X-S+

The Big Deal:

- High Power Output:30W
- Capable of operating at rated power into an open or short
- Integrated protection and alarm functions

Product Overview:

ZHL-30W-262+ is a ruggedized High Power Amplifier delivering 30W signals covering the 2400 MHz ISM, WLAN and S-Band radar bands. This amplifier supports a variety of applications from communication, radar to critical test and measurement systems and includes over-temperature self-protect and alarming circuits as well as internal protection circuits to prevent damage due to operation into an open or short under full RF power.

Key Features

Feature	Advantages
Good gain flatness, ±1.5 dB	Predictable performance and signal level strength
Excellent Input and Output VSWR, 1.25:1	Well-matched for full power transmission
Over temperature shut down	The ZHL-30W-262+ includes internal temperature monitoring circuits to automatically shut down the amplifier in the event of over temperature operation. Set for approximately +85°C shutdown (with auto recovery at 70°C), this feature ensures that users whom have difficulty in controlling their thermal environment or need to operate in a remote mode and cannot monitor the amplifier real time, can function with the security that a thermal run-away condition will be avoided through this self management feature. Furthermore, the ZHL-30W-262+ provides a TTL output to indicate thermal shutdown for remote automated systems.
Output load protection	A high root cause for damage to power amplifiers is the operation into highly reflective loads. The ZHL-30W-262+ power amplifier includes circuits to enable the amplifier to operate without damage in the presence of an open or short over all phases.
Excellent Output Power: 30W	Providing 30W of output power at the WiFi bands, this amplifier is an ideal lab test amplifier operating over the entire 2.3 to 2.5 GHz band.

Coaxial

High Power Amplifier

ZHL-30W-262+

50Ω 30W 2300 to 2550 MHz

Description

Mini-Circuits ZHL-30W-262+ is a ruggedized High Power Amplifier delivers 30W signals covering the ISM, WLAN and S-Band radar bands. It supports a variety of applications from communication or radar to critical test and measurement systems and includes over-temperature self-protect and alarming circuits as well as internal protection circuits to prevent damage due to operation into an open or short under full RF power.

Features

- High power, 30Watt
- Low Current consumption, 3.2A typ.
- Usable over 2200 to 2600 MHz
- Good gain flatness, ±1.5 dB typ.
- Excellent VSWR, 1.25:1 typ.
- No damage with an open or short output load under full CW output power
- Shuts off when base plate temperature exceeds +80°C
- Accepts wide range of DC supply voltage +25 to +29V

Applications

- WiFi
- Lab test

Model No.	ZHL-30W-262-S+	ZHL-30W-262X-S+▲
Case Style	BT1344	
Connectors	SMA / D-Sub Male	

+RoHS Compliant

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

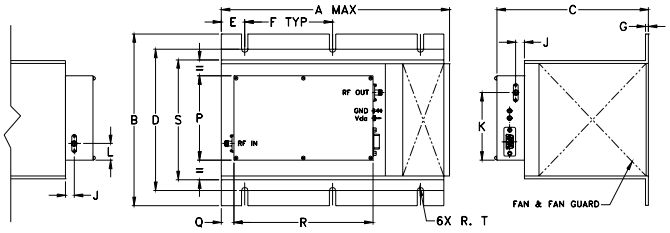
Electrical Specifications

Parameter	Condition (MHz)	ZHL-30W-262-S+			ZHL-30W-262X-S+▲			Units
		Min.	Typ.	Max.	Min	Typ.	Max.	
Frequency Range		2300	—	2550	2300	—	2550	MHz
Gain	2300-2550 2400-2500	42 43	50 50	55 55	42 43	50 50	55 55	dB
Gain Flatness	2300-2550 2400-2500	— —	— —	±3.5 ±1.2	— —	— —	±3.5 ±1.2	dB
Output Power at 1dB compression	2300-2550 2400-2500	+41 +42	+43 +43	— —	+41 +42	+43 +43	— —	dBm
Saturated Output Power at 3dB compression	2300-2550 2400-2500	+43 +44	+45 +45	— —	+43 +44	+45 +45	— —	dBm
Noise Figure	2300-2550	—	7.0	—	—	7.0	—	dB
Output third order intercept point	2300-2550 2400-2500	— —	+50 +51	— —	— —	+50 +51	— —	dBm
Input VSWR	2300-2550 2400-2500	— —	1.3 1.2	— —	— —	1.3 1.2	— —	:1
Output VSWR	2300-2550 2400-2500	— —	1.3 1.2	— —	— —	1.3 1.2	— —	:1
DC Supply Voltage	2300-2550	—	28	29	—	28	29	V
Supply Current[1]	2300-2550	—	3.2	4.3	—	3.2	4.0	A

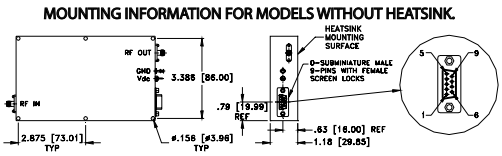
1. Power Supply should be capable of delivering 5.5A at start up.

▲ 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 0.157°C/W max.

Outline Drawing



MOUNTING INFORMATION 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	1.00	3.75	.13	.37	2.87	.71	3.58	.5	5.95	5.1	.135	grams*
250.19	185.42	165.10	152.40	25.40	95.25	3.30	9.40	72.90	18.03	90.93	12.70	151.13	129.54	3.43	4265

*580 grams without heatsink

Maximum Ratings

Parameter	Ratings
Operating Temperature	-20°C to 41°C
Storage Temperature	-55°C to 100°C
Base Plate Temperature	-20°C to 60°C
Input RF Power (no damage)	+9 dBm

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

D-Sub Male Connector Pin Connections**

Pin Function	Label on unit	Pin #	Color	Gauge
None	N/C1, N/C2 N/C4, N/C5	1,2,4,5	None	None
Thermal Shut-Off Indication: Shut-Off: 2 to 5V Not Shut-Off: 0 to 0.8V	TTL Out	3	Orange	26 AWG
DC Input (+)	Vdc	6,7	Red	18 AWG
Ground	GND	8,9	Black	18 AWG

**Each amplifier includes an additional D-Sub connector for mating with the amplifier.

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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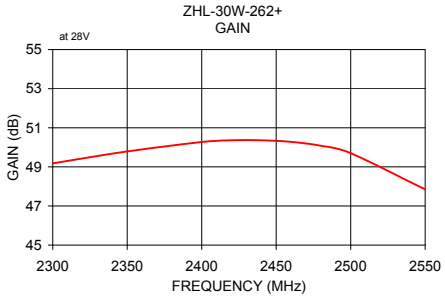
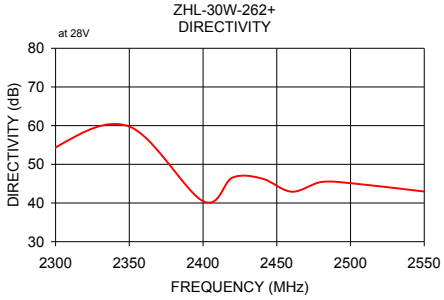
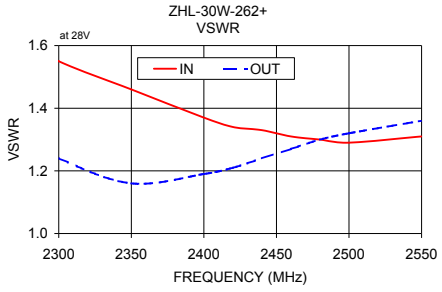
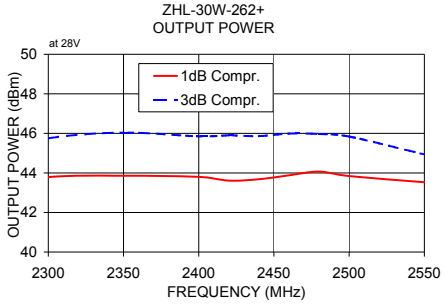
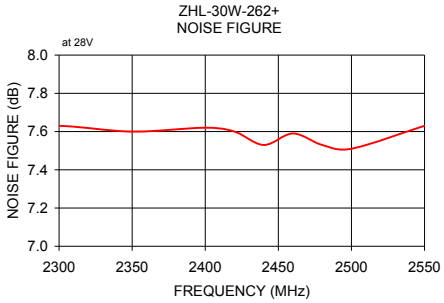
FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1)		NOISE FIGURE (dB)	POUT (dBm) at 28V		OUTPUT IP3 (dBm)
	28V	28V	IN	OUT	28V	1 dB Compr.	3 dB Compr.	28V
2200.00	47.93	46.39	1.78	1.52	7.53	41.85	43.75	50.73
2250.00	48.55	38.56	1.67	1.36	7.62	43.19	44.86	51.03
2300.00	49.18	54.37	1.55	1.24	7.63	43.79	45.75	51.77
2350.00	49.79	59.76	1.46	1.16	7.60	43.86	46.04	51.93
2400.00	50.27	40.46	1.37	1.19	7.62	43.80	45.85	51.65
2420.00	50.36	46.57	1.34	1.21	7.60	43.61	45.90	51.44
2440.00	50.36	46.32	1.33	1.24	7.53	43.68	45.86	51.35
2460.00	50.28	42.92	1.31	1.27	7.59	43.88	45.99	51.40
2480.00	50.08	45.43	1.30	1.30	7.53	44.07	45.97	51.20
2500.00	49.70	45.12	1.29	1.32	7.51	43.84	45.84	51.12
2550.00	47.85	42.96	1.31	1.36	7.63	43.53	44.94	50.55

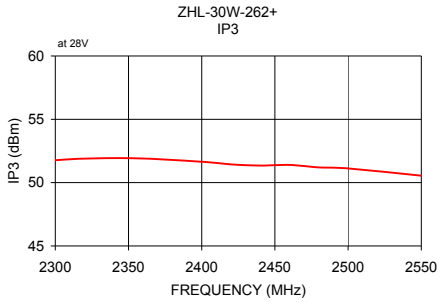












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