

Coaxial High Power Amplifier

ZHL-50W-52+

50Ω 50W 50 to 500 MHz

Features

- High power, 50 Watt
- Excellent IP3, +59 dBm typ.
- Class A amplifier, usable up to 75W.
- No damage with an open or short output load under full CW output power¹
- Shuts off when base plate temperature exceeds +100°C
- Internal power regulator (current remains constant over 22 to 28V)
- Over voltage protection, shut off above 29V
- Protected by US Patent 7,348,854

Applications

- VHF/UHF transmitters
- Defense
- Amateur radio, FM, TV
- Laboratory use



Model No.	ZHL-50W-52-S+	ZHL-50W-52X-S+ [▲]
Case Style	BT1165	
Connectors	SMA	

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

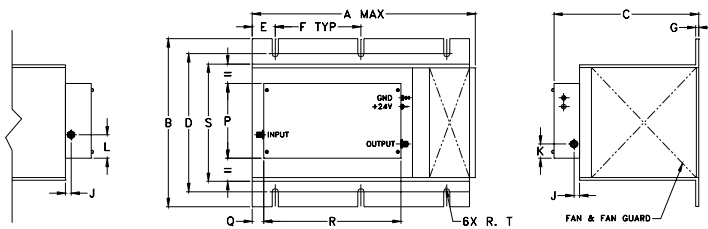
Electrical Specifications at 25°C

Parameter	Condition (MHz)	ZHL-50W-52+			ZHL-50W-52X+ [▲]			Units
		Min.	Typ.	Max.	Min.	Typ.	Max.	
Frequency Range		50		500	50		500	MHz
Gain		47	52	—	47	52	—	dB
Gain Flatness		—	±1.2	±1.8	—	±1.2	±1.8	dB
Output Power at 1dB compression	200 - 300 50 - 500	+46.0 +44.0	+47.5 +46.5	—	+46.0 +44.0	+47.5 +46.5	—	dBm
Saturated Output Power at 3dB compression	200 - 300 50 - 500	+47.0 +45.5	+49.0 +48.0	—	+47.0 +45.5	+49.0 +48.0	—	dBm
Noise Figure		—	4.5	7.0	—	4.5	7.0	dB
Output third order intercept point		—	+59	—	—	+59	—	dBm
Input VSWR		—	1.75	—	—	1.75	—	:1
Output VSWR		—	2.5	—	—	2.5	—	:1
DC Supply Voltage		—	24	25	—	24	25	V
Supply Current		—	—	9.3	—	—	9.0	A

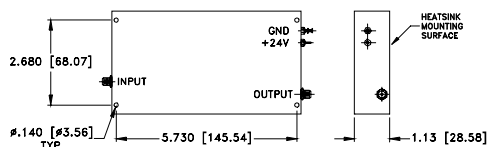
1. At constant open or short load 24V nominal supply voltage

[▲] 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 85°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.

Outline Drawing



MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	wt
9.85	7.3	6.3	6.00	1.00	3.75	.13	—	.25	.63	1.03	—	—	3.25	.5	6.00	5.1	.135	grams*
250.19	185.42	160.02	152.40	25.40	95.25	3.30	—	6.35	16.00	26.16	—	—	82.55	12.70	152.40	129.54	3.43	4185

*500 grams without heatsink

Maximum Ratings

Parameter	Ratings
Operating Temperature	-20°C to 85°C
Storage Temperature	-55°C to 100°C
Base Plate Temperature	85°C
Input RF Power ² (no damage)	+3dBm

2. At nominal output load, 24V nominal supply voltage.

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

Notes

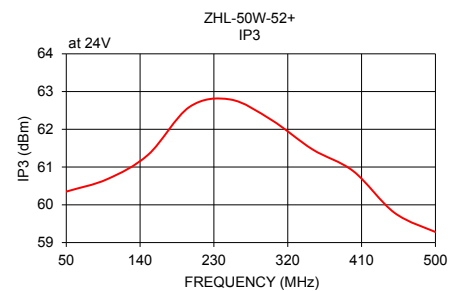
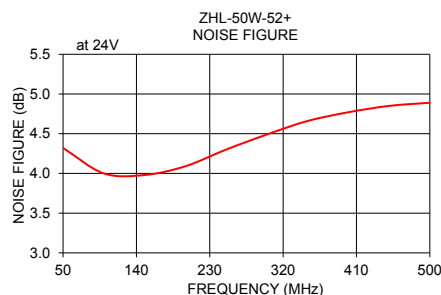
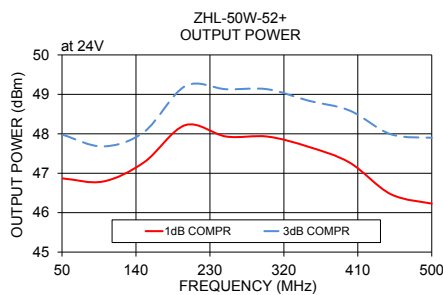
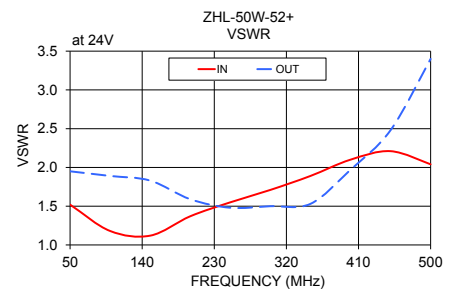
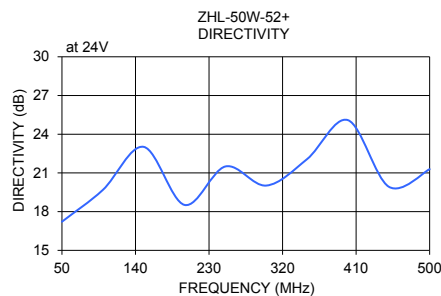
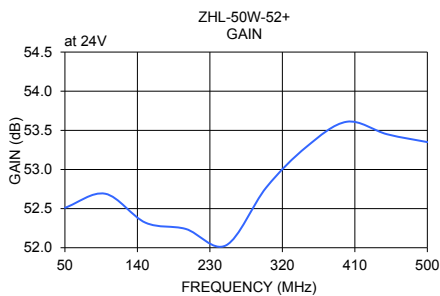
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FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1)		POUT at 1 dB COMPR. (dBm)	POUT at 3 dB COMPR. (dBm)	NOISE FIGURE (dB)	IP3 (dBm)
	24V	24V	IN	OUT	24V	24V	24V	24V
50	52.51	17.22	1.52	1.95	46.87	47.98	4.32	60.35
100	52.69	19.68	1.18	1.89	46.79	47.68	4.00	60.68
150	52.32	23.02	1.12	1.83	47.28	48.05	3.98	61.33
200	52.24	18.52	1.37	1.59	48.22	49.21	4.09	62.59
250	52.03	21.50	1.55	1.48	47.93	49.13	4.30	62.79
300	52.77	20.02	1.71	1.50	47.93	49.13	4.49	62.25
350	53.29	22.07	1.89	1.53	47.67	48.84	4.66	61.47
400	53.61	25.09	2.10	1.97	47.27	48.59	4.77	60.89
450	53.45	19.93	2.21	2.48	46.47	47.99	4.85	59.79
500	53.35	21.29	2.04	3.40	46.23	47.90	4.89	59.28



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