

Coaxial High Power Amplifier

50Ω 50W 50 to 500 MHz

ZHL-50W-52+
ZHL-50W-52

Features

- High power, 50 Watt
- Excellent IP3, +55 dBm typ.
- Class A amplifier, usable up to 75W
- Shuts off when base plate temperature exceeds +100°C
- Good gain flatness, ±1.0 dB typ.
- 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	
Price (Qty.)	\$1395.00 ea. (1-9)	\$1320.00 ea. (1-9)

Electrical Specifications¹ at 25°C

Parameter	Frequency (MHz)	ZHL-50W-52(+)			ZHL-30W-50W-52X(+) [▲]			Units
		Min.	Typ.	Max.	Min.	Typ.	Max.	
Frequency Range		50		500	50		500	MHz
Gain	100 500	47 46	50 50		47 46	50 50		dB
Gain Flatness			±2.0	±2.8		±2.0	±2.8	dB
Output Power at 1dB compression	120-260 50-500	+45.5 +43	+48 +45		+45.5 +43	+48 +45		dBm
Saturated Output Power at 3dB compression	120-260 50-500	+47 +45	+48 +48		+47 +45	+48 +48		dBm
Noise Figure			6.0	8.0		6.0	8.0	dB
Output third order intercept point			+55			+55		dBm
Input VSWR			1.6			1.6		:1
Output VSWR			2.0			2.0		:1
DC Supply Voltage			24	25		24	25	V
Supply Current				9.3			9.0	A

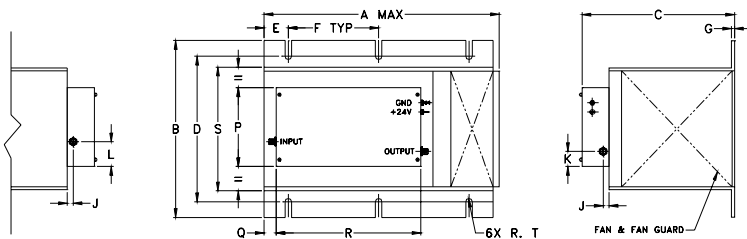
1. All specifications are for a single input CW signal.

At nominal output load, 24V nominal supply voltage.

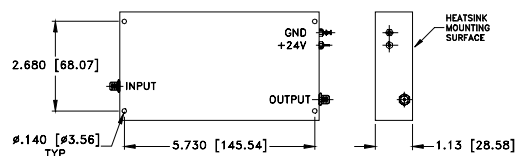
An open or a short load is not recommended potentially can cause damage.

[▲] 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



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at minicircuits.com

IF/RF MICROWAVE COMPONENTS

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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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Typical Performance Data/Curves

FREQUENCY (MHz)	GAIN (dB)			DIRECTIVITY (dB)	VSWR (:1)		NOISE FIGURE (dB)	POUT at 1 dB COMPR. (dBm)		IP3 (dBm)
	22V	24V	27V		IN	OUT		24V	24V	
50.00	51.23	50.95	50.53	19.96	1.70	1.29	6.43	47.75		56.86
70.00	51.53	51.29	50.90	20.24	1.66	1.43	5.92	47.79		57.47
90.00	51.53	51.31	50.97	21.16	1.63	1.35	5.60	47.64		57.96
100.00	51.69	51.49	51.14	20.95	1.61	1.35	5.46	48.16		58.09
120.00	51.71	51.48	51.09	18.47	1.59	1.44	5.28	48.30		58.55
140.00	51.60	51.35	50.98	20.47	1.58	1.54	5.15	48.01		58.98
180.00	51.13	50.91	50.58	17.81	1.53	1.48	4.94	48.01		57.84
200.00	50.72	50.50	50.17	21.37	1.47	1.47	4.95	48.40		56.76
220.00	50.38	50.16	49.82	21.89	1.43	1.55	4.93	48.33		55.23
260.00	49.76	49.52	49.14	21.96	1.40	1.47	4.98	47.98		54.98
280.00	49.65	49.41	49.01	26.60	1.30	1.31	4.98	47.50		54.77
300.00	49.54	49.30	48.89	27.07	1.22	1.38	4.98	47.00		54.59
320.00	49.42	49.17	48.76	27.29	1.19	1.69	4.97	46.64		54.59
360.00	49.56	49.33	48.93	29.37	1.13	2.03	5.07	46.97		54.58
380.00	50.02	49.81	49.42	30.28	1.14	2.55	5.07	46.86		54.44
400.00	50.27	50.09	49.74	25.88	1.22	2.85	5.14	46.50		54.39
420.00	50.68	50.54	50.24	31.38	1.26	3.06	5.19	46.11		54.28
460.00	50.79	50.79	50.66	27.85	1.38	3.25	5.26	45.79		54.10
480.00	50.47	50.55	50.54	32.67	1.48	3.35	5.35	45.91		54.15
500.00	49.62	49.77	49.84	27.81	1.52	3.41	5.47	45.95		54.19

