

# Coaxial High Power Amplifier

50Ω 50W 50 to 500 MHz

## ZHL-50W-52-S+

### 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 power<sup>1</sup>
- 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



Model No.	ZHL-50W-52-S+
Case Style	BT1165
Connectors	IN-SMA, OUT-SMA

### +RoHS Compliant

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

### Applications

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

### Electrical Specifications at 25°C

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

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

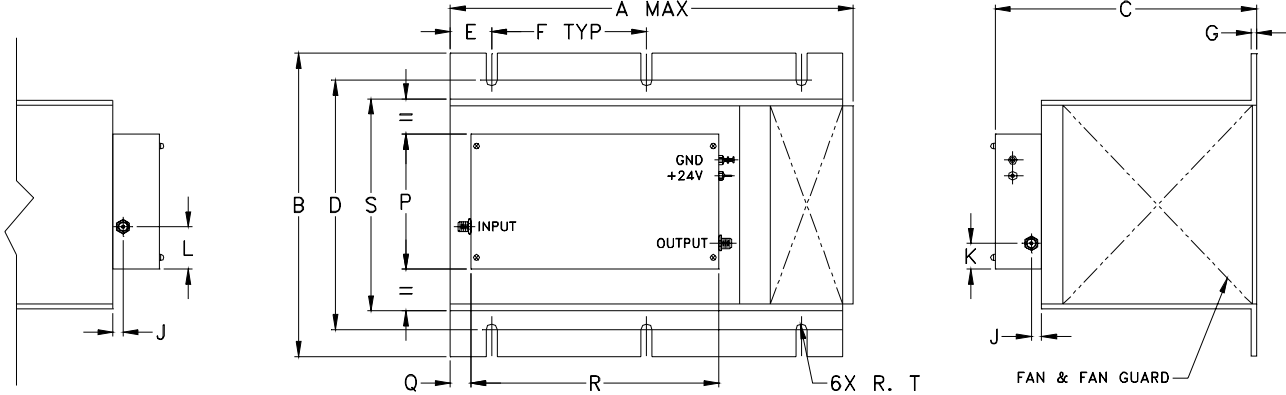
### Maximum Ratings

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

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

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

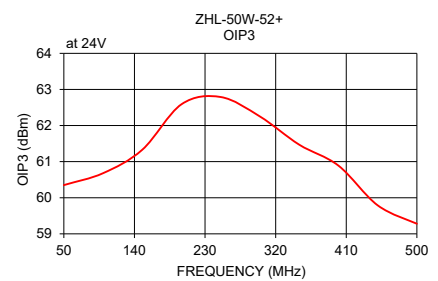
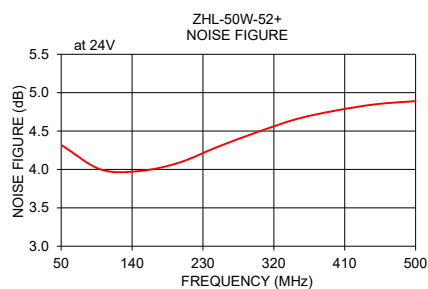
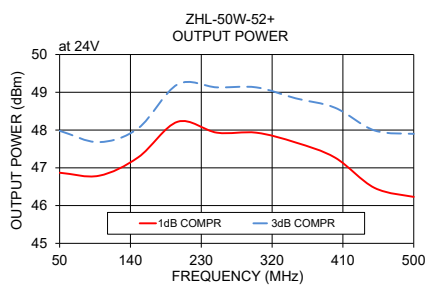
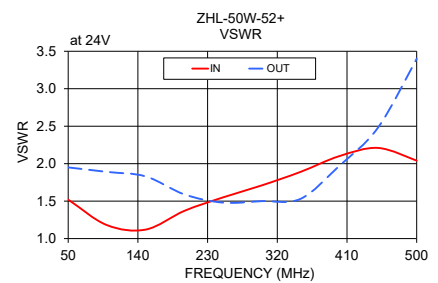
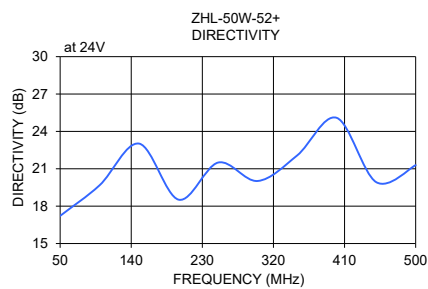
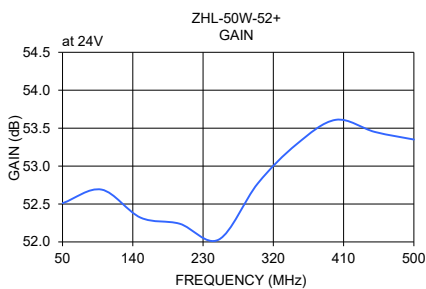
Outline Drawing for models with heatsink



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

FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1)		POUT at 1 dB COMPR. (dBm)	POUT at 3 dB COMPR. (dBm)	NOISE FIGURE (dB)	OIP3 (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



### 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](http://www.minicircuits.com/MCLStore/terms.jsp)