Coaxial

High Power Amplifier

ZHL-20W-13+

50Ω 20W 20 to 1000 MHz

Features

- High power, 20 Watt
- Protected against overheat -shuts off automatically
- Excellent gain flatness, ±1.2 dB typ.
- Class A amplifier
- Usable over 15 to 1100 MHz
- Protected by US patent 7,348,854

Applications

- VHF/UHF transmitters
- defense
- Amateur radio, FM, TV

Model No.	ZHL-20W-13+	ZHL-20W-13X+▲
Case Style	CP641	
Connectors	SMA	

+RoHS Compliant

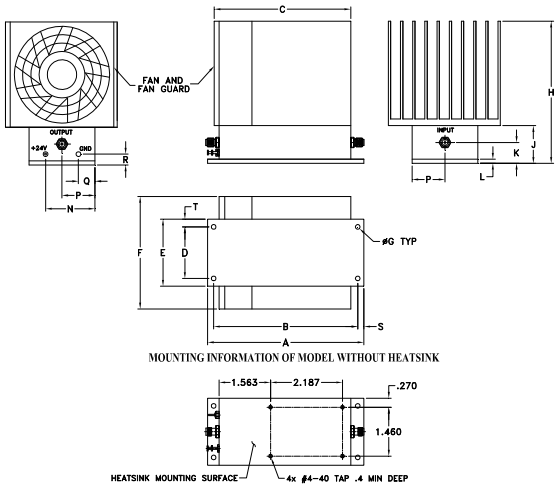
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Electrical Specifications

Parameter	ZHL-20W-13+			ZHL-20W-13X+▲			Units
	Min.	Typ.	Max.	Min	Typ.	Max.	
Frequency Range	20		1000	20		1000	MHz
Gain	46	50	55	46	50	55	dB
Gain Flatness			±1.8			±1.8	dB
Output Power at 1dB compression	+39	+41		+39	+41		dBm
Saturated Output Power at 3dB compression	+40	+43		+40	+43		dBm
Noise Figure		3.5			3.5		dB
Output third order intercept point		+50			+50		dBm
Input VSWR		1.7			1.7		:1
Output VSWR		2.5			2.5		:1
DC Supply Voltage		24			24		V
Supply Current			2.8			2.8	A

▲ 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 0.3°C/W max.

Outline Drawing



Maximum Ratings

Parameter	Ratings
Operating Temperature	-20°C to 65°C
Storage Temperature	-55°C to 100°C
Base Plate Temperature	85°C
DC Voltage	28V
Input RF Power[1] (no damage)	-3dBm

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

1. At nominal 50 Ohms RF load. Amplifier can withstand a full mismatch (short or open) across all phases at RF output, if the input RF power does not exceed -13dBm. Maximum RF input power is defined as a peak envelope power (PEP). See the application note AN-60-037 for PEP calculation.

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	wt
4.75	4.375	4.18	1.540	2.00	3.36	.144	4.24	1.12	.58	.125	--	1.50	1.00	.50	.34	.19	.23	grams*
120.65	111.13	106.17	39.12	50.80	85.34	3.66	107.70	28.45	14.73	3.18	--	38.10	25.40	12.70	8.64	4.83	5.84	750

*290 grams without heatsink

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.
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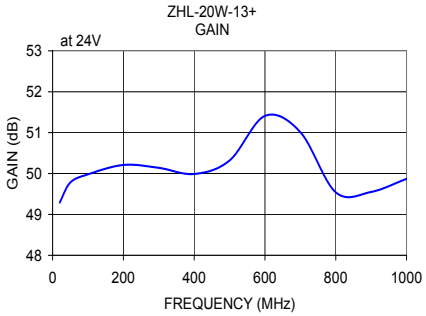
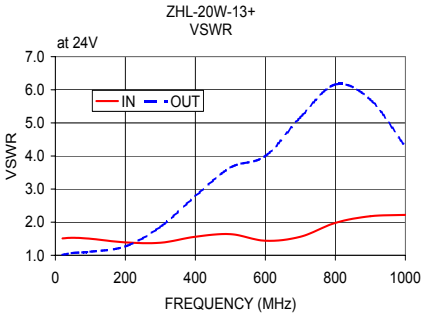
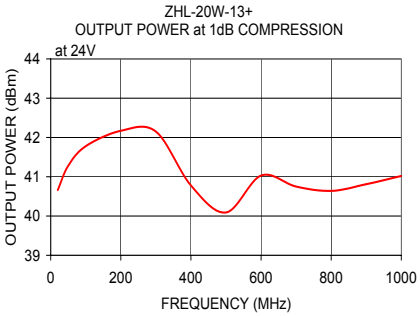
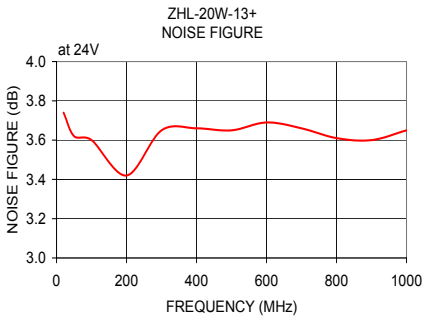
www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

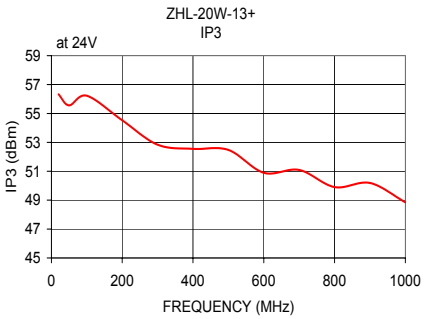
FREQUENCY (MHz)	GAIN (dB)	VSWR (:1)		NOISE FIGURE (dB)	POUT at 1 dB COMPR. (dBm)	IP3 (dBm)
	24V	IN	OUT	24V	24V	24V
20.00	49.29	1.51	1.01	3.74	40.66	56.33
50.00	49.78	1.53	1.07	3.62	41.28	55.56
100.00	49.98	1.50	1.11	3.60	41.78	56.23
200.00	50.21	1.39	1.27	3.42	42.17	54.53
300.00	50.14	1.38	1.86	3.65	42.15	52.84
400.00	49.99	1.56	2.79	3.66	40.78	52.55
500.00	50.32	1.64	3.65	3.65	40.09	52.48
600.00	51.41	1.44	4.00	3.69	41.03	50.89
700.00	51.01	1.56	5.17	3.66	40.75	51.09
800.00	49.54	1.98	6.16	3.61	40.64	49.90
900.00	49.55	2.18	5.70	3.60	40.81	50.19
1000.00	49.87	2.22	4.28	3.65	41.02	48.85











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