

Low Noise Amplifier

ZHL-1217HLN

50Ω

1200 to 1700 MHz

Features

- very low noise figure, 1.5 dB max.
- wideband, 1200 to 1700 MHz
- high dynamic range

Applications

- GPS
- mar sat
- communication systems

Not Recommended for New Designs

Recommended Replacement Part:

[ZHL-1217HLN+](#)
[ZHL-1217HLNX+](#)



Model No.	ZHL-1217HLN	ZHL-1217HLNX [▲]
Case Style	NN92	
Connectors	SMA	

Electrical Specifications

Parameter	Frequency (MHz)	ZHL-1217HLN			ZHL-1217HLNX [▲]			Units
		Min.	Typ.	Max.	Min	Typ.	Max.	
Frequency Range		1200		1700	1200		1700	MHz
Noise Figure	1200-1700	—	—	1.5	—	—	1.5	dB
Gain	1200-1700	30	—	—	30	—	—	dB
Gain Flatness	1200-1700	—	—	±1.0	—	—	±1.0	dB
Output Power at 1dB compression	1200-1700	—	+26	—	—	+26	—	dBm
Output third order intercept point	1200-1700	—	+36	—	—	+36	—	dBm
Input VSWR	1200-1700	—	2.4	—	—	2.4	—	:1
Output VSWR	1200-1700	—	2.4	—	—	2.4	—	:1
DC Supply Voltage		—	15	—	—	15	—	V
Supply Current [†]		—	—	725	—	—	725	mA

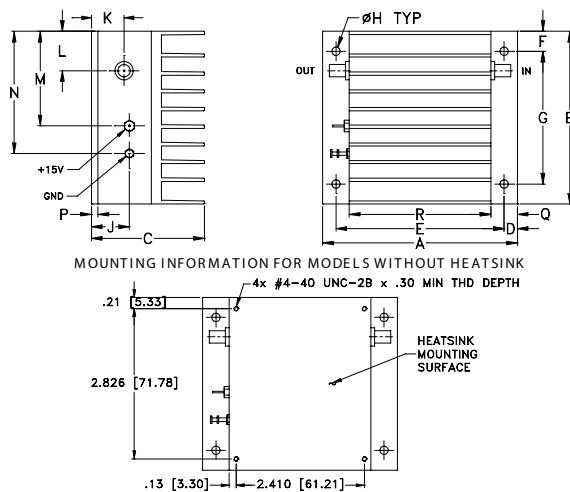
Noise Figure specified at room temperature, increases to 2.3 dB max. at +65°C

Open load is not recommended, potentially can cause damage.

With no load derate max input power by 20 dB

[▲] Heat sink not included. Alternative heat sinking and heat removal must be provided by the user to limit maximum base-plate temperature to 65°C, in order to ensure proper performance. For reference, this requires thermal resistance of user's external heat sink to be 1.8°C/W max.

Outline Drawing



Maximum Ratings

Parameter	Ratings
Operating Temperature	-20°C to 65°C
Storage Temperature	-55°C to 100°C
DC Voltage	17V
Input RF Power (no damage)	+10 dBm

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

Outline Dimensions (inch mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	wt
3.66	3.25	2.13	.25	3.16	.38	2.50	.156	.72	.64	.74	1.78	2.30	.125	.50	2.66	grams*
92.96	82.55	54.10	6.35	80.26	9.65	63.50	3.96	18.29	16.26	18.80	45.21	58.42	3.18	12.70	67.56	500.0

*362 grams without heatsink

Notes

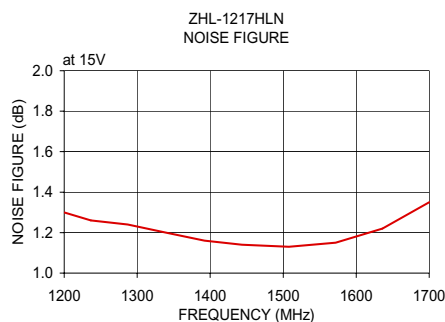
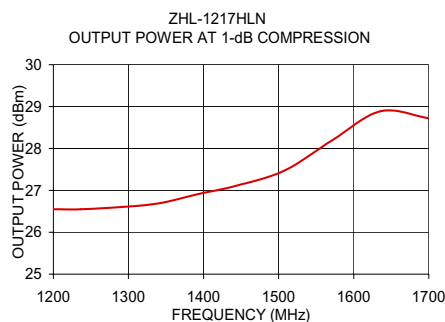
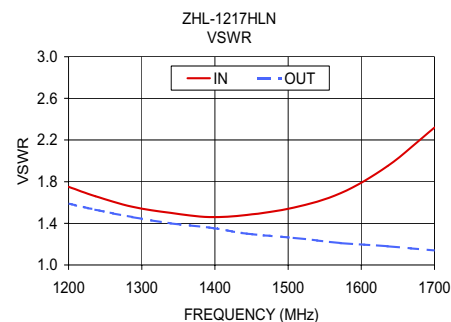
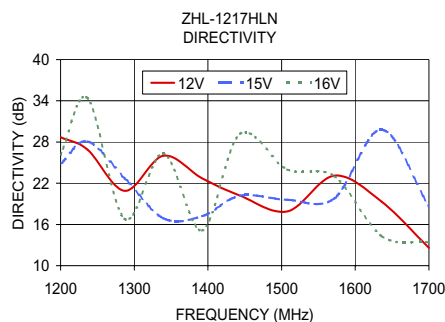
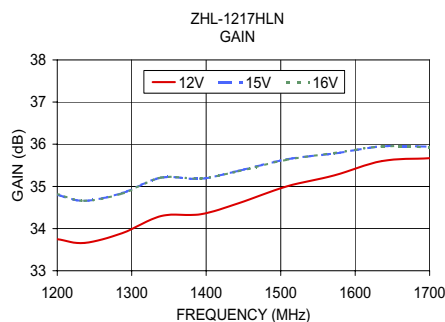
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B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.

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



FREQUENCY (MHz)	GAIN (dB)			DIRECTIVITY (dB)			VSWR (:1)		NOISE FIGURE (dB)	POUT at 1 dB COMPR. (dBm)
	12V	15V	16V	12V	15V	16V	IN	OUT		
1200.00	33.75	34.80	34.82	28.70	24.80	26.10	1.75	1.59	1.30	26.55
1236.60	33.66	34.66	34.66	26.90	28.10	34.40	1.66	1.53	1.26	26.55
1287.00	33.89	34.84	34.83	20.90	22.70	16.80	1.56	1.46	1.24	26.60
1339.60	34.30	35.21	35.21	26.00	16.90	26.30	1.50	1.40	1.20	26.69
1392.30	34.34	35.18	35.19	22.70	17.20	15.10	1.46	1.36	1.16	26.91
1443.60	34.60	35.37	35.36	20.20	20.20	29.20	1.48	1.30	1.14	27.11
1507.70	35.00	35.64	35.63	17.90	19.60	24.00	1.55	1.26	1.13	27.47
1571.80	35.26	35.78	35.79	23.10	19.80	23.00	1.69	1.21	1.15	28.20
1635.90	35.60	35.95	35.95	19.30	29.80	14.30	1.95	1.18	1.22	28.89
1700.00	35.67	35.94	35.93	12.60	18.60	13.40	2.32	1.14	1.35	28.72



Notes

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Typical Performance Data

FREQUENCY (MHz)	GAIN (dB)			DIRECTIVITY (dB)			VSWR IN (:1) 15V	VSWR OUT (:1) 15V	NOISE FIGURE (dB) 15V	Pout at 1dB Comp. (dBm) 15V
	12V	15V	16V	12V	15V	16V				
1200.0	33.75	34.80	34.82	28.70	24.80	26.10	1.75	1.59	1.30	26.55
1236.6	33.66	34.66	34.66	26.90	28.10	34.40	1.66	1.53	1.26	26.55
1287.0	33.89	34.84	34.83	20.90	22.70	16.80	1.56	1.46	1.24	26.60
1339.6	34.30	35.21	35.21	26.00	16.90	26.30	1.50	1.40	1.20	26.69
1392.3	34.34	35.18	35.19	22.70	17.20	15.10	1.46	1.36	1.16	26.91
1443.6	34.60	35.37	35.36	20.20	20.20	29.20	1.48	1.30	1.14	27.11
1507.7	35.00	35.64	35.63	17.90	19.60	24.00	1.55	1.26	1.13	27.47
1571.8	35.26	35.78	35.79	23.10	19.80	23.00	1.69	1.21	1.15	28.20
1635.9	35.60	35.95	35.95	19.30	29.80	14.30	1.95	1.18	1.22	28.89
1700.0	35.67	35.94	35.93	12.60	18.60	13.40	2.32	1.14	1.35	28.72

REV. X1

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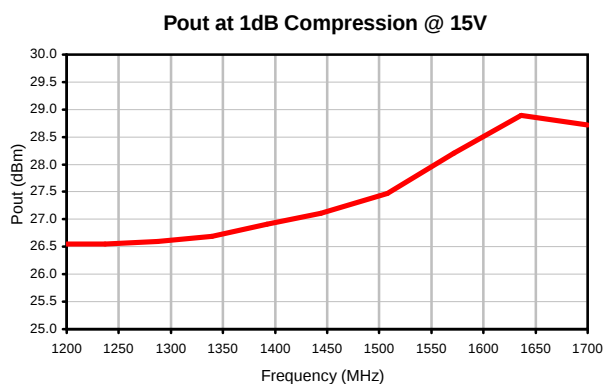
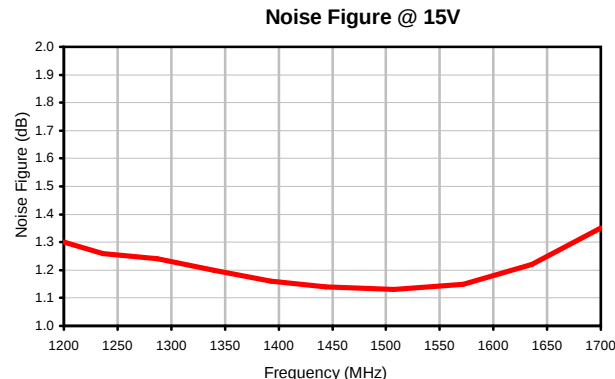
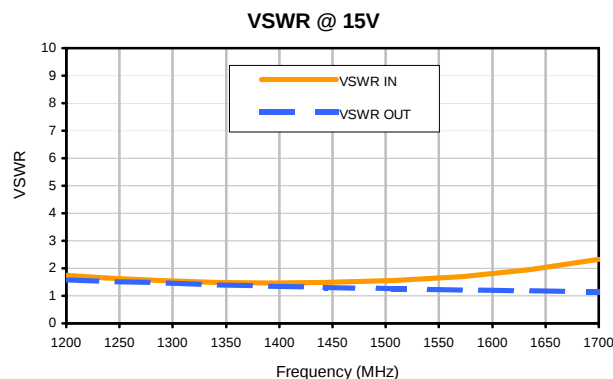
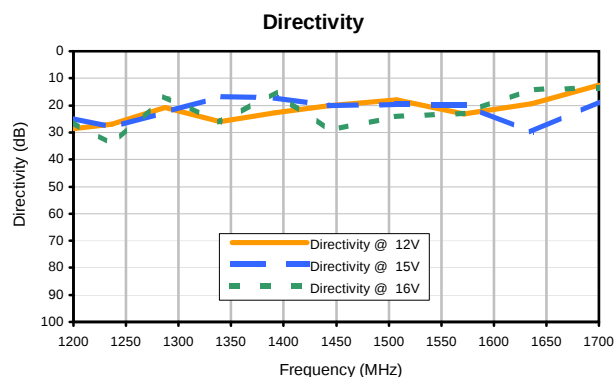
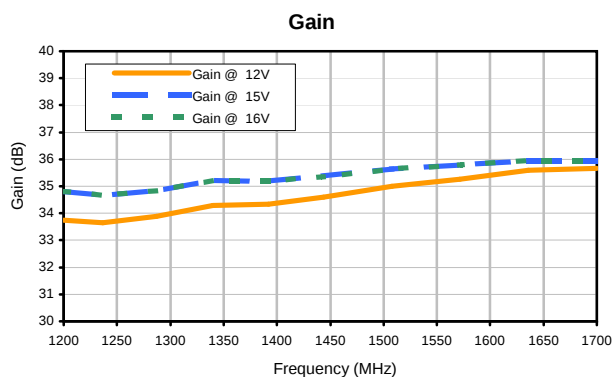
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Typical Performance Curves



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All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-54° to 65°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Stabilization Bake	(non-operating) 125°C, 24 hours	- - -
Burn-in at Elevated Temp.	(DC on) 160 hours at 85° C	MIL-STD-202, Method 108
Thermal Shock	-55° to 100°C, 5 cycles	MIL-STD-202, Method 107, Condition A, except 100°C