Coaxial

Low Noise Amplifier

ZFL-500HLN+

50Ω 10 to 500 MHz

Features

- low noise, 3.8 dB typ.
- high IP3, +30 dBm typ.

Generic photo used for illustration purposes only

CASE STYLE: Y460

Connectors	Model
SMA	ZFL-500HLN+
BRACKET (OPTION "B")	

+RoHS Compliant

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

Applications

- VHF/UHF
- small signal amplifier
- communications system

Low Noise Amplifier Electrical Specifications

MODEL NO.	FREQUENCY (MHz)		NOISE FIGURE (dB)	GAIN (dB)		MAXIMUM POWER (dBm)		INTERCEPT POINT (dBm)	VSWR (:1) Typ.		DC POWER	
					Flatness Max.							
	f_L	f_U	Typ.	Min.	Total Range	Output (1 dB Compr.)	Input (no damage)	IP3 Typ.	In	Out	Volt (V) Nom.	Current (mA) Max.
ZFL-500HLN+	10	500	3.8	19	±0.4	+16	+15	+30	2.0	2.0	15	110

m = mid range [2 fL to fU/2]

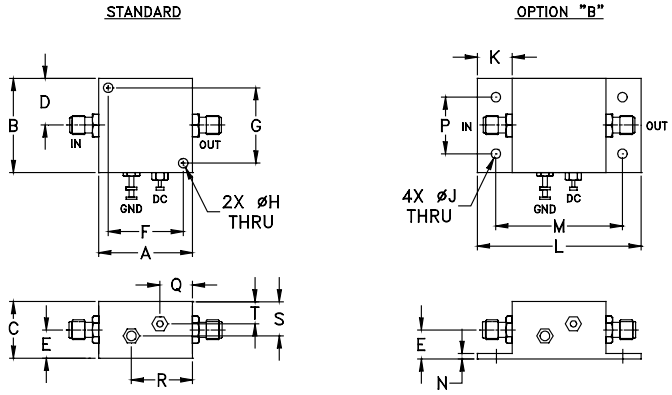
Open load is not recommended, potentially can cause damage.
With no load derate max input power by 20 dB

Maximum Ratings

Operating Temperature	-20°C to 71°C
Storage Temperature	-55°C to 100°C
DC Voltage	+17V Max.

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

Outline Drawing



Outline Dimensions (inch / mm)

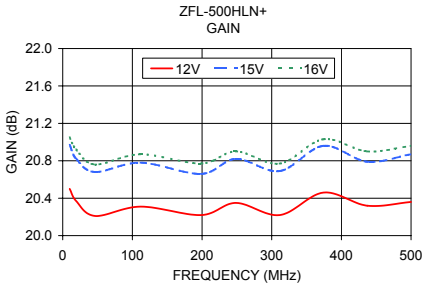
A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	wt.
1.25	1.25	.75	.63	.36	1.000	1.000	.125	.125	.46	2.18	1.688	.06	.750	.50	.80	.45	.29	grams
31.75	31.75	19.05	16.00	9.14	25.40	25.40	3.18	3.18	11.68	55.37	42.88	1.52	19.05	12.70	20.32	11.43	7.37	38

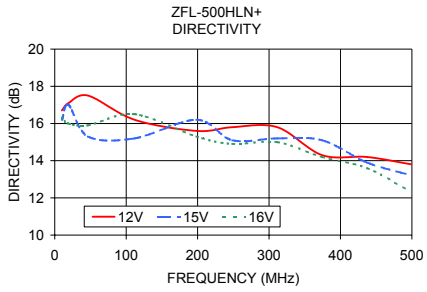
Notes

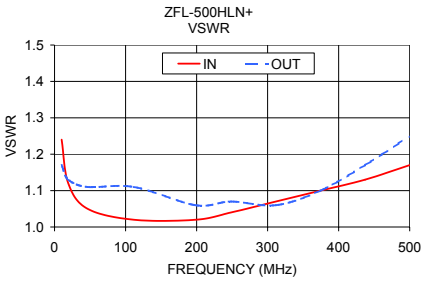
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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

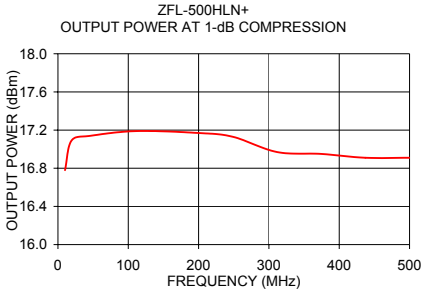
Typical Performance Data/Curves ZFL-500HLN+

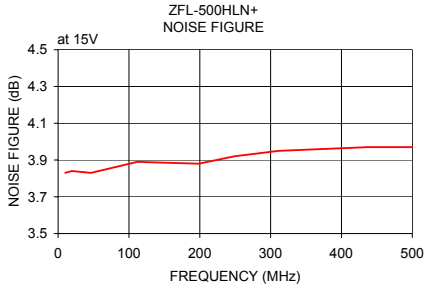
FREQUENCY (MHz)	GAIN (dB)			DIRECTIVITY (dB)			VSWR (:1)		NOISE FIGURE (dB)	POUT at 1 dB COMPR. (dBm)
	12V	15V	16V	12V	15V	16V	IN	OUT	15V	15V
10.00	20.50	20.97	21.05	16.70	16.20	16.30	1.24	1.17	3.83	16.78
19.30	20.37	20.82	20.92	17.10	17.00	16.00	1.12	1.13	3.84	17.09
46.50	20.21	20.68	20.76	17.50	15.30	15.90	1.05	1.11	3.83	17.14
111.80	20.31	20.78	20.87	16.20	15.20	16.50	1.02	1.11	3.89	17.19
198.50	20.22	20.66	20.77	15.60	16.20	15.30	1.02	1.06	3.88	17.17
248.70	20.35	20.82	20.90	15.80	15.10	14.90	1.04	1.07	3.92	17.13
311.50	20.22	20.69	20.77	15.80	15.20	15.00	1.07	1.06	3.95	16.97
374.40	20.46	20.96	21.03	14.30	15.10	14.20	1.10	1.10	3.96	16.95
437.20	20.32	20.79	20.90	14.20	13.90	13.60	1.13	1.17	3.97	16.91
500.00	20.36	20.87	20.96	13.80	13.20	12.30	1.17	1.25	3.97	16.91











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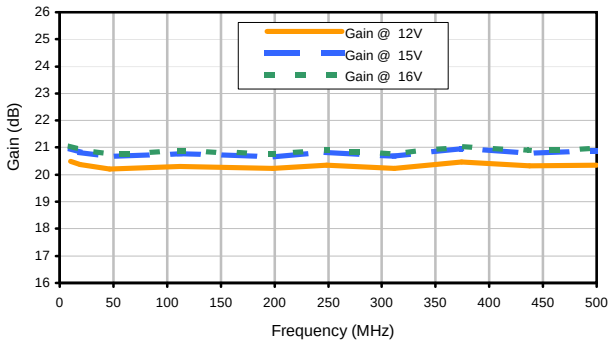
Low Noise Amplifier ZFL-500HLN+

Typical Performance Data

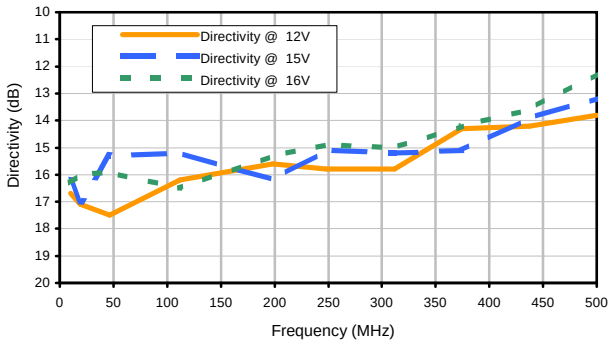
FREQUENCY (MHz)	GAIN (dB)			DIRECTIVITY (dB)			VSWR IN (:1)	VSWR OUT (:1)	NOISE FIGURE (dB)	Pout at 1dB Comp. (dBm)
	12V	15V	16V	12V	15V	16V	15V	15V	15V	15V
10.0	20.50	20.97	21.05	16.70	16.20	16.30	1.24	1.17	3.83	16.78
19.3	20.37	20.82	20.92	17.10	17.00	16.00	1.12	1.13	3.84	17.09
46.5	20.21	20.68	20.76	17.50	15.30	15.90	1.05	1.11	3.83	17.14
111.8	20.31	20.78	20.87	16.20	15.20	16.50	1.02	1.11	3.89	17.19
198.5	20.22	20.66	20.77	15.60	16.20	15.30	1.02	1.06	3.88	17.17
248.7	20.35	20.82	20.90	15.80	15.10	14.90	1.04	1.07	3.92	17.13
311.5	20.22	20.69	20.77	15.80	15.20	15.00	1.07	1.06	3.95	16.97
374.4	20.46	20.96	21.03	14.30	15.10	14.20	1.10	1.10	3.96	16.95
437.2	20.32	20.79	20.90	14.20	13.90	13.60	1.13	1.17	3.97	16.91
500.0	20.36	20.87	20.96	13.80	13.20	12.30	1.17	1.25	3.97	16.91

Typical Performance Curves

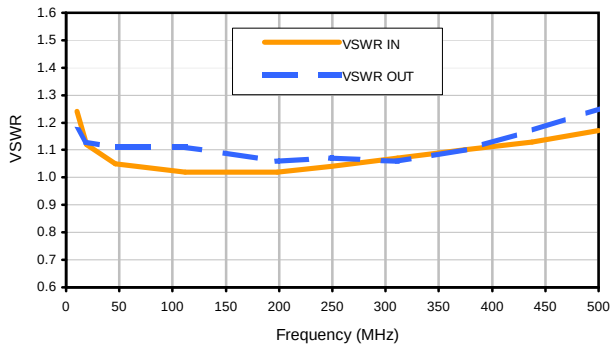
Gain



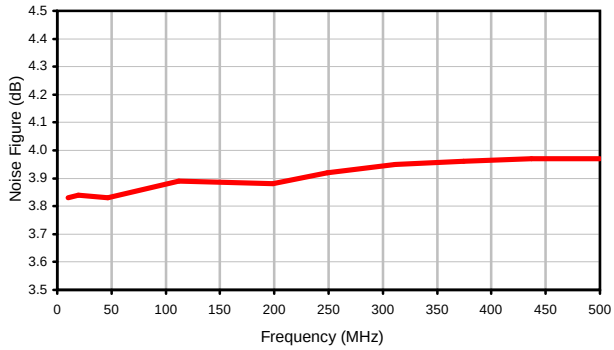
Directivity



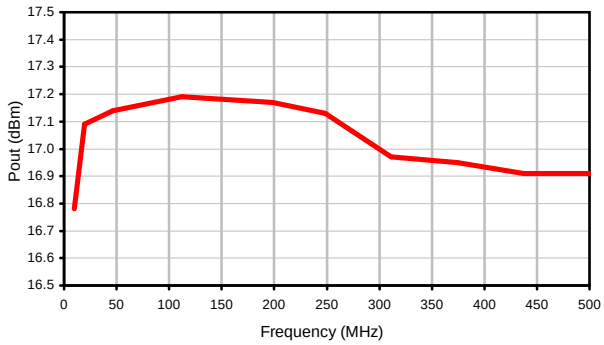
VSWR @ 15V



Noise Figure @ 15V



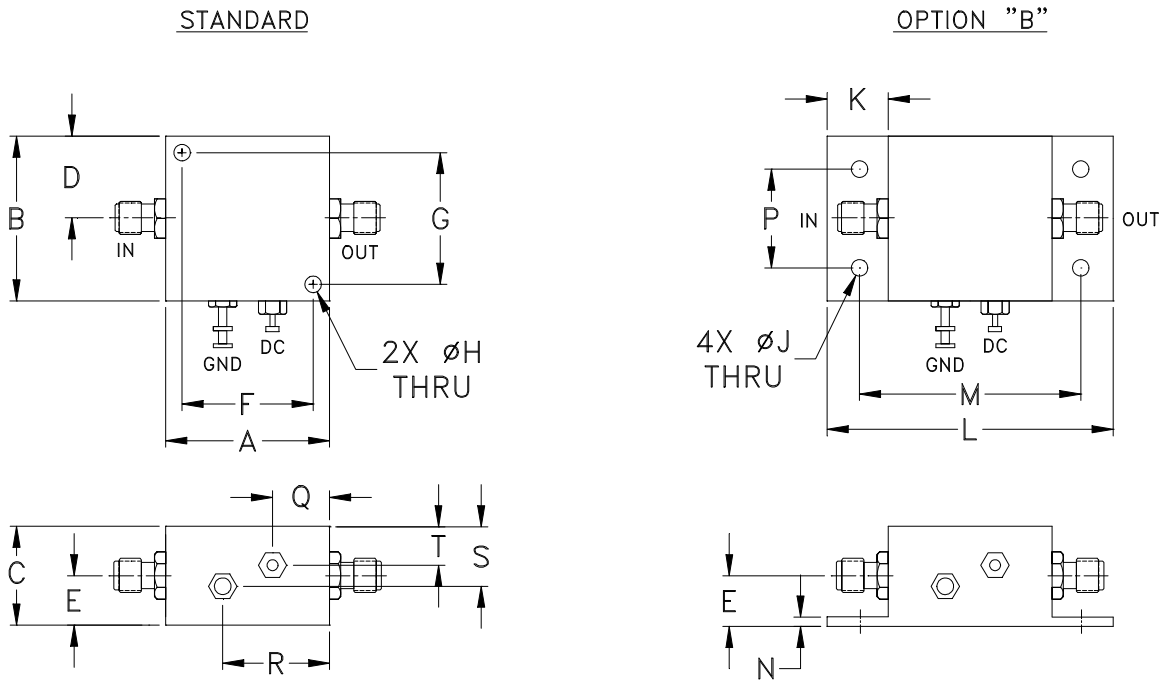
Pout at 1dB Compression @ 15V



Case Style Y

Y460

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
Y460	1.25 (31.75)	1.25 (31.75)	.75 (19.05)	.63 (16.0)	.36 (9.15)	1.000 (25.4)	1.000 (25.4)	.125 (3.2)	.125 (3.2)	.46 (11.7)	2.18 (55.4)	1.688 (42.9)	.06 (1.5)

CASE#	P	Q	R	S	T	WT. GRAMS
Y460	.750 (19.0)	.50 (12.7)	.80 (20.3)	.45 (11.4)	.29 (7.4)	38

Dimensions are in inches (mm). Tolerances: 2 Pl. ± .03; 3 Pl. ± .015

Notes:

1. Case material: Aluminum alloy.
2. Case finish:
   For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
3. Mounting bracket available on request. Add suffix B to part number

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Environmental Specifications ENV23T2

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	-20° to 71° 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