

Coaxial

# Low Noise Amplifier

## ZFL-500LN+

50Ω

0.1 to 500 MHz

### Features

- very low noise, 2.9 dB typ.
- good VSWR, 1.5 :1 typ.
- protected by US Patent, 6,943,629

### Applications

- VHF/UHF
- small signal amplifier
- communications system



Generic photo used for illustration purposes only

CASE STYLE: Y460

Connectors	Model
SMA	ZFL-500LN+
BNC	ZFL-500LN-BNC+
<b>BRACKET (OPTION "B")</b>	

**+RoHS Compliant**

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

### 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	
	f <sub>L</sub>	f <sub>U</sub>		Typ.	Min.	Total Range	Output (1 dB Compr.)		Input (no damage)	IP3 Typ.	In	Out
ZFL-500LN+	0.1	500	2.9	24	±0.5	+5	+5	+14	1.5*	1.6	15	60

m = mid range [2 f<sub>L</sub> to f<sub>U</sub>/2]

\*VSWR 1.6:1 max. from 0.1 to 0.2 MHz.

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

### Maximum Ratings

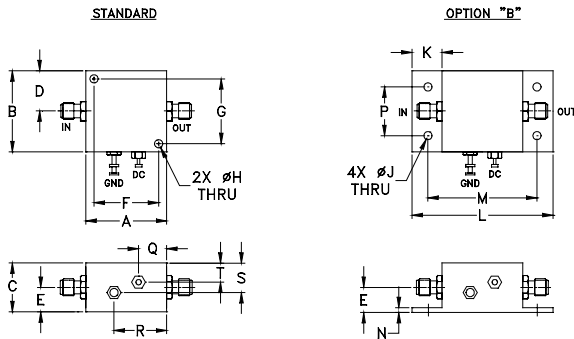
Operating Temperature -20°C to 71°C

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

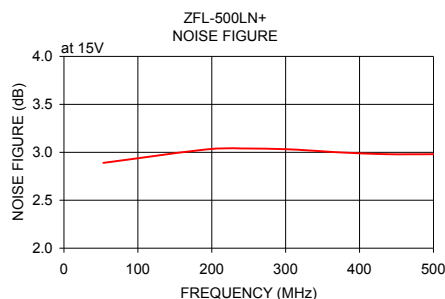
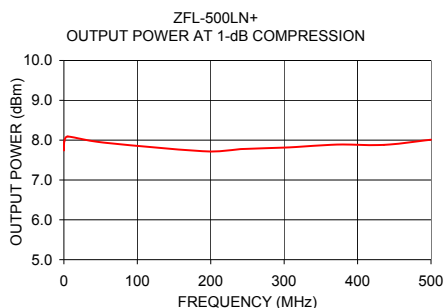
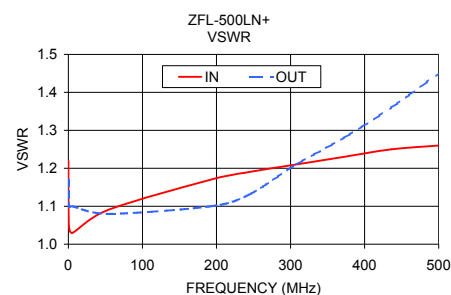
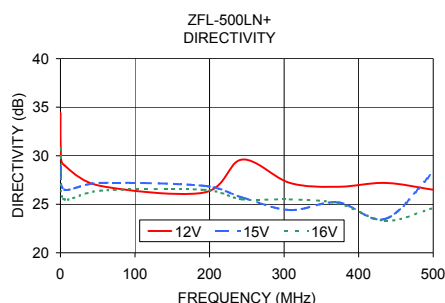
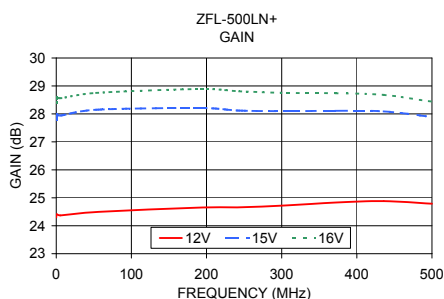
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ZFL-500LN+  
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FREQUENCY (MHz)	GAIN (dB)			DIRECTIVITY (dB)			VSWR (:1)		NOISE FIGURE (dB)	POUT at 1 dB COMPR. (dBm)
	12V	15V	16V	12V	15V	16V	IN	OUT		
0.10	24.30	27.80	28.40	34.40	27.80	30.80	1.22	1.17	—	7.74
0.60	24.41	27.98	28.60	30.00	28.80	28.40	1.05	1.10	—	7.97
5.40	24.37	27.94	28.56	29.00	26.50	25.50	1.03	1.10	—	8.09
53.30	24.49	28.15	28.75	26.90	27.20	26.40	1.09	1.08	2.89	7.94
192.40	24.65	28.21	28.89	26.20	26.90	26.50	1.17	1.10	3.03	7.72
243.60	24.66	28.12	28.81	29.60	25.70	25.50	1.19	1.13	3.04	7.78
307.70	24.73	28.10	28.75	27.20	24.40	25.50	1.21	1.21	3.03	7.82
371.80	24.83	28.11	28.74	26.80	25.20	25.10	1.23	1.28	3.00	7.89
435.90	24.88	28.09	28.68	27.20	23.50	23.30	1.25	1.36	2.98	7.88
500.00	24.79	27.89	28.44	26.50	28.30	24.60	1.26	1.45	2.98	8.01



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# Low Noise Amplifier

# ZFL-500LN+

## 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				
0.1	24.30	27.80	28.40	34.40	27.80	30.80	1.22	1.17		7.74
0.6	24.41	27.98	28.60	30.00	28.80	28.40	1.05	1.10		7.97
5.4	24.37	27.94	28.56	29.00	26.50	25.50	1.03	1.10		8.09
53.3	24.49	28.15	28.75	26.90	27.20	26.40	1.09	1.08	2.89	7.94
192.4	24.65	28.21	28.89	26.20	26.90	26.50	1.17	1.10	3.03	7.72
243.6	24.66	28.12	28.81	29.60	25.70	25.50	1.19	1.13	3.04	7.77
307.7	24.73	28.10	28.75	27.20	24.40	25.00	1.21	1.21	3.03	7.82
371.8	24.83	28.11	28.74	26.80	25.20	25.10	1.23	1.28	3.00	7.89
435.9	24.88	28.09	28.68	27.20	23.50	23.30	1.25	1.36	2.98	7.88
500.0	24.79	27.89	28.44	26.50	28.30	24.60	1.26	1.45	2.98	8.01

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ZFL-500LN+  
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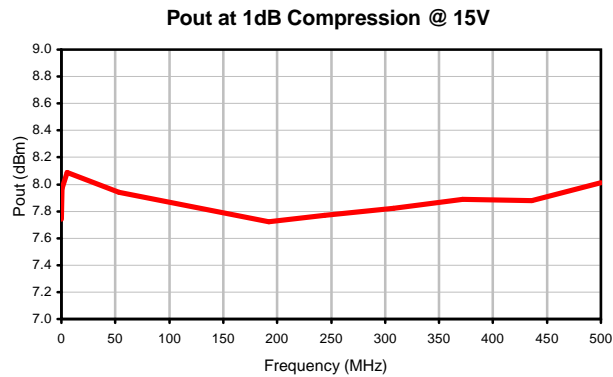
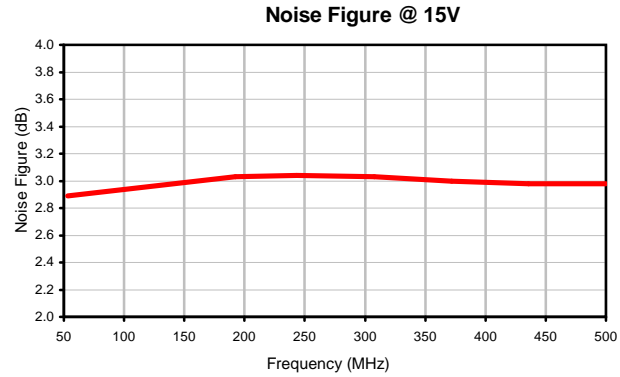
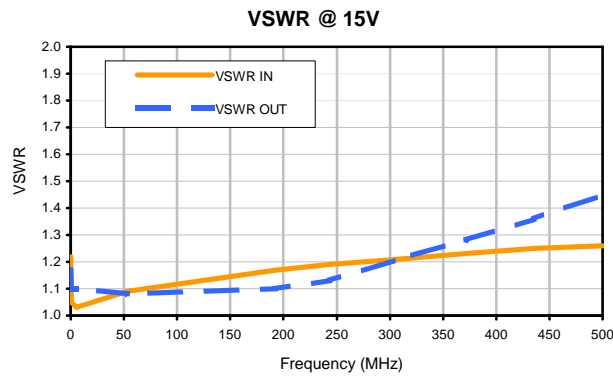
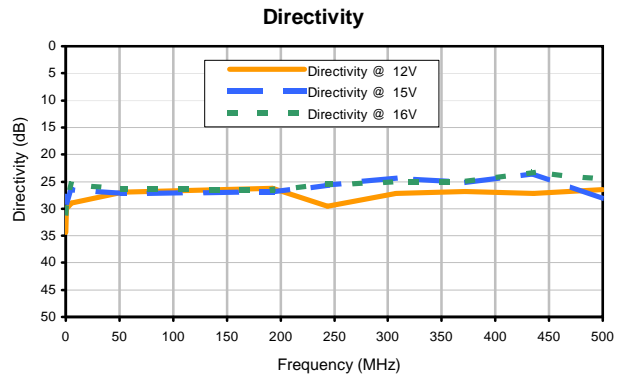
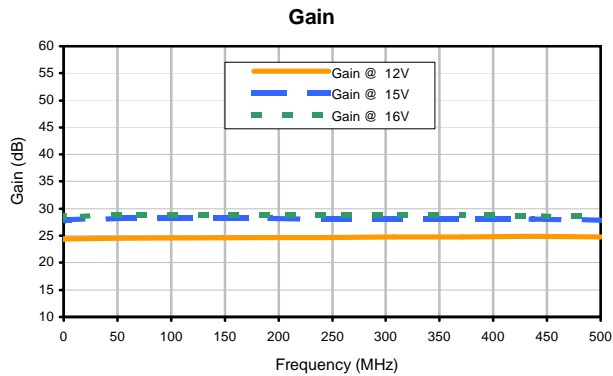
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# Low Noise Amplifier

# ZFL-500LN+

## Typical Performance Curves



### 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.  $\pm .03$ ; 3 Pl.  $\pm .015$

#### 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



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