

# Low Noise Amplifier

**ZX60-P162LN+**

50Ω

0.7 to 1.6 GHz

## The Big Deal

- Ultra Low Noise Figure, 0.5 dB typ.
- High Dynamic Range



Case Style: GC957

## Product Overview

The ZX60-P162LN+ (RoHS compliant) uses Mini-Circuits' E-PHEMT technology to offer ultra low noise figure over a broad frequency range and high IP3. Housed in a rugged, cost effective unibody chassis, this amplifier supports a wide variety of applications requiring moderate power output, low distortion and 50 ohm matched input/output ports.

## Key Features

Feature	Advantages
Ultra Low Noise Figure, 0.5 dB at 1GHz	Outstanding world class noise figure performance.
High IP3 vs. DC power consumption 29.9 dBm typical at 1 GHz	Combining Low Noise and High IP3 makes this model ideal for use in Low Noise Receiver Front End (RFE)
Max. Input Power, +25 dBm	Ruggedized design operates to high input powers often seen at receiver inputs.
Very Small Size, 0.75" x 0.75"	The unique unibody size and construction enable the ZX60-P162LN+ to be used in extremely compact connectorized applications.

### Notes

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## ZX60-P162LN+

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### Features

- Low Noise Figure, 0.5 dB at 1 GHz
- High IP3, 29.9 dBm typ. at 1 GHz
- High Pout, P1dB, +19.9 dBm typ. at 1 GHz
- High Gain, 22.5 dB typ. at 1 GHz

### Applications

- Base station infrastructure
- Portable wireless
- GPS
- GSM
- Airborne radar



Case Style: GC957

Connectors	Model
SMA	ZX60-P162LN+

**+RoHS Compliant**

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

### Electrical Specifications at 25°C and 4.0V unless noted

Parameter	Condition (GHz)	Min.	Typ.	Max.	Units
Frequency Range		0.7		1.6	GHz
Noise Figure	0.7	—	0.65	0.95	dB
	0.8		0.47		
	1.0		0.52		
	1.3		0.56		
	1.6		0.74		
Gain	0.7	20.9	24.1	24.5	dB
	0.8		23.8		
	1.0		22.5		
	1.3		20.5		
	1.6		18.5		
Output Power @ 1 dB compression	0.7	17.5	19.2	—	dBm
	0.8		19.9		
	1.0		19.9		
	1.3		19.7		
	1.6		19.5		
Output IP3	0.7	28.0	29.0	—	dBm
	0.8		29.8		
	1.0		29.9		
	1.3		30.2		
	1.6		29.6		
Input VSWR	0.7		2.18		:1
	0.8		1.63		
	1.0		1.19		
	1.3		1.23		
	1.6		1.39		
Output VSWR	0.7		1.57		:1
	0.8		1.42		
	1.0		1.38		
	1.3		1.65		
	1.6		2.11		
Directivity (Isolation-Gain)	0.7 - 1.6		8.0		dB
DC Supply Voltage		3.8	4.0	4.2	V
Supply Current		44	52	60	mA

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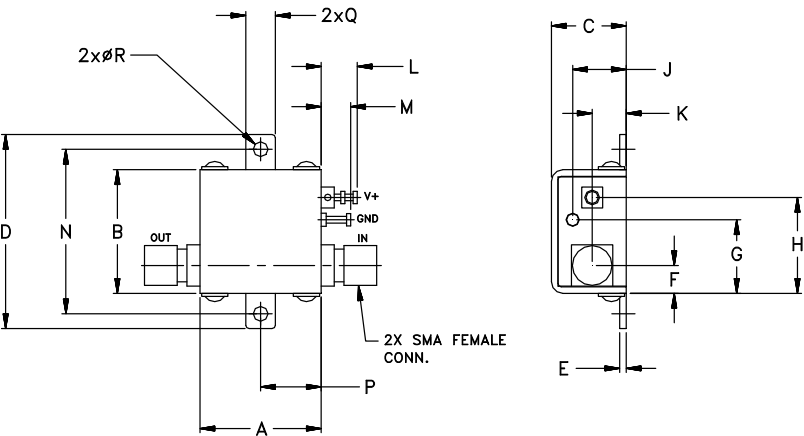


Maximum Ratings

Parameter	Ratings
Operating Temperature	-40°C to 85°C Case
Storage Temperature	-55°C to 100°C
DC Voltage	5.5 V
Input RF Power (no damage) Vd=4V	25 dBm
Power Consumption	0.55 W

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

Outline Drawing



NOTE: When soldering the DC connections, caution must be used to avoid overheating the DC terminal. See Application Note. [AN-40-010](#).

Outline Dimensions (inch)

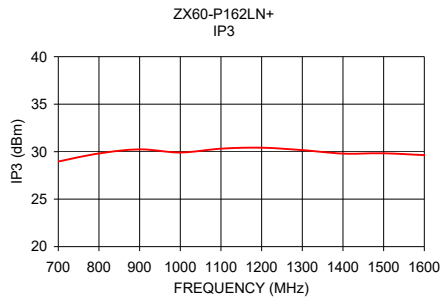
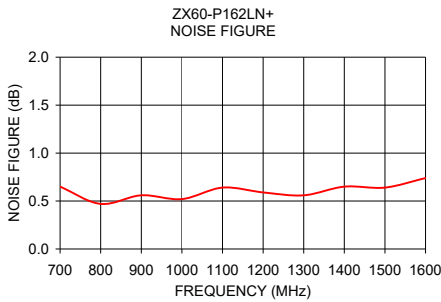
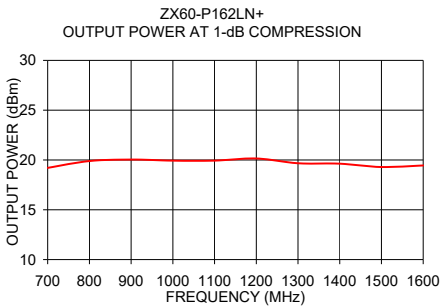
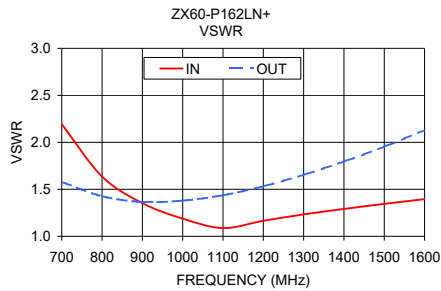
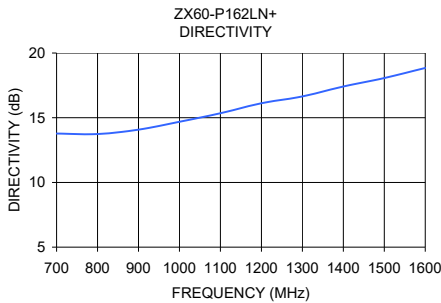
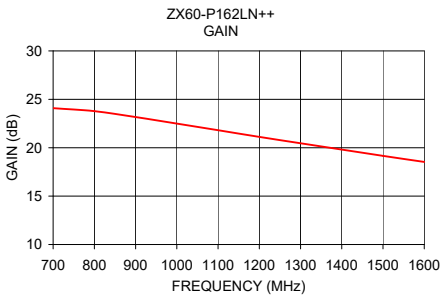
A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	wt
.74	.75	.46	1.18	.04	.17	.45	.59	.33	.21	.22	.14	1.00	.37	.18	.106	grams
18.80	19.1	11.68	30.0	1.02	4.32	11.4	14.99	8.38	5.33	5.59	3.56	25.40	9.40	4.57	2.69	23.0

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FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1)		POUT at 1dB COMPR. (dBm)	NOISE FIGURE (dB)	OUTPUT IP3 (dBm)
			IN	OUT			
700.00	24.09	13.78	2.19	1.58	19.2	0.7	29.0
800.00	23.78	13.74	1.64	1.43	19.9	0.5	29.8
900.00	23.17	14.08	1.35	1.37	20.0	0.6	30.2
1000.00	22.49	14.69	1.19	1.38	19.9	0.5	29.9
1100.00	21.81	15.35	1.09	1.44	19.9	0.6	30.3
1200.00	21.12	16.12	1.16	1.53	20.2	0.6	30.4
1300.00	20.46	16.65	1.23	1.65	19.7	0.6	30.2
1400.00	19.81	17.42	1.29	1.80	19.6	0.7	29.8
1500.00	19.16	18.07	1.34	1.95	19.3	0.6	29.8
1600.00	18.53	18.84	1.40	2.13	19.5	0.7	29.6



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