

Low Noise Amplifier

ZX60-0916LN-S+

50Ω

824 to 960 MHz

Features

- Ultra low noise figure, 0.55 dB typ.
- High gain, 18 dB typ.
- Output power, up to +16.5 dBm typ.
- Low current consumption
- Good return loss
- Unconditionally stable
- Protected by US patent 6,790,049

Applications

- Base transceiver station, tower mounted amplifier, repeater
- CDMA: 824 to 894 MHz
- GSM Rx: 880 to 915 MHz
- GSM Tx: 925 to 960 MHz
- General purpose low noise amplifier
- Lab
- Instrumentation
- Test equipment



CASE STYLE: GA955

Connectors	Model
SMA	ZX60-0916LN-S+

+RoHS Compliant

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

Electrical Specifications at 25°C

Parameter	Condition (MHz)	Min.	Typ.	Max.	Units
Frequency Range		824		960	MHz
Noise Figure	824 - 960		0.55	0.80	dB
	824 - 894		0.60	0.80	
	880 - 915		0.55	0.70	
	925 - 960		0.55	0.70	
Gain	824 - 960	16.5	18.0		dB
	824 - 894	16.5	18.0		
	880 - 915	16.5	18.0		
	925 - 960	16.5	17.5		
Gain Flatness	824 - 960		± 0.6	± 1.2	dB
	824 - 894		± 0.4	± 0.8	
	880 - 915		± 0.2	± 0.4	
	925 - 960		± 0.2	± 0.4	
Output Power at 1dB compression	824 - 960	15.5	16.5		dBm
	824 - 894	15.5	16.5		
	880 - 915	15.5	16.5		
	925 - 960	15.5	16.5		
Output third order intercept point	824 - 960		30		dBm
	824 - 894		30		
	880 - 915		30		
	925 - 960		30		
Input VSWR	824 - 960		1.2		:1
	824 - 894		1.2		
	880 - 915		1.2		
	925 - 960		1.1		
Output VSWR	824 - 960		1.4		:1
	824 - 894		1.3		
	880 - 915		1.4		
	925 - 960		1.5		
Active Directivity	824 - 960		6.7		dB
DC Supply Voltage			5		V
Supply Current			40	45	mA

Notes

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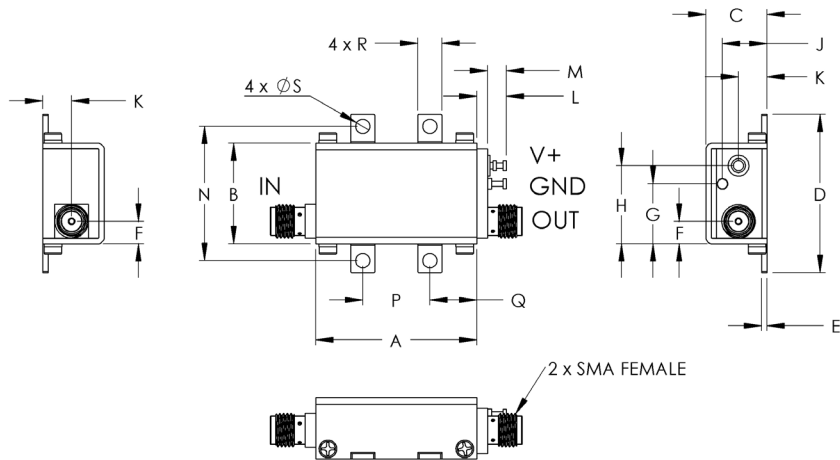


Maximum Ratings

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)	+10 dBm
Power Consumption	250 mW

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

Outline Drawing



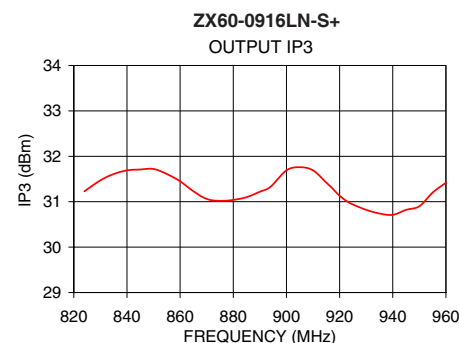
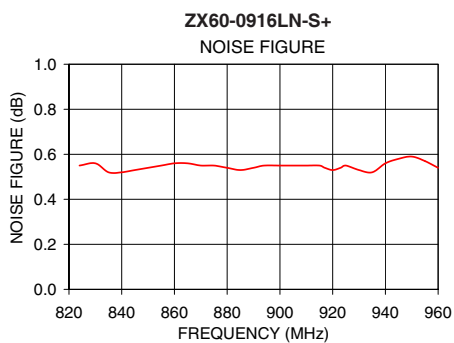
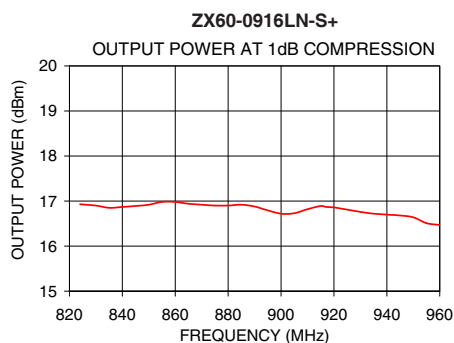
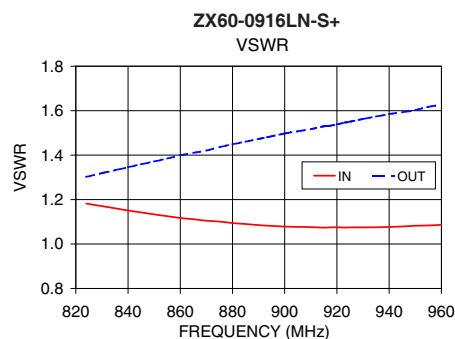
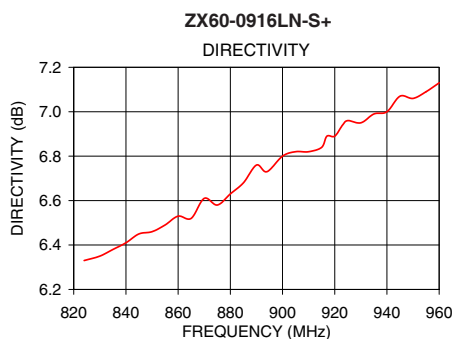
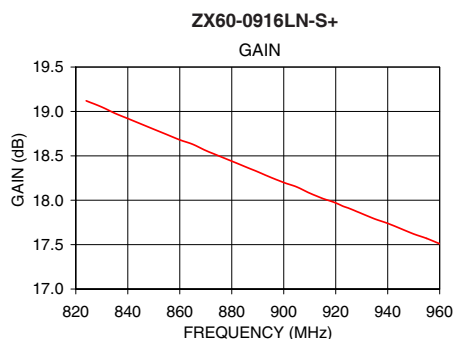
NOTE: When soldering the DC connections, caution must be used to avoid overheating the DC terminals. See Application Note [AN-40-10](#).

Outline Dimensions (inch mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	wt.
1.20	.75	.46	1.18	.04	.17	.45	.59	.33	.21	.22	.14	1.00	.50	.35	.18	.106	grams
30.48	19.05	11.68	29.97	1.02	4.32	11.43	14.99	8.38	5.33	5.59	3.56	25.40	12.70	8.89	4.57	2.69	35.0

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FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR IN (:1)	VSWR OUT (:1)	POWER OUT @ 1dB COMPRESSION (dBm)	OUTPUT IP3 (dBm)	NF (dB)
824.00	19.12	6.33	1.18	1.30	16.93	31.23	0.55
830.00	19.05	6.35	1.17	1.32	16.90	31.47	0.56
835.00	18.98	6.38	1.16	1.33	16.85	31.61	0.52
845.00	18.86	6.45	1.14	1.36	16.89	31.71	0.53
850.00	18.80	6.46	1.13	1.37	16.92	31.72	0.54
855.00	18.74	6.49	1.13	1.38	16.98	31.61	0.55
860.00	18.68	6.53	1.12	1.40	16.98	31.45	0.56
870.00	18.56	6.61	1.10	1.42	16.92	31.06	0.55
875.00	18.50	6.58	1.10	1.44	16.90	31.02	0.55
880.00	18.44	6.63	1.09	1.45	16.90	31.04	0.54
885.00	18.38	6.68	1.09	1.46	16.92	31.10	0.53
894.00	18.27	6.73	1.08	1.48	16.81	31.33	0.55
900.00	18.20	6.80	1.08	1.50	16.72	31.69	0.55
905.00	18.15	6.82	1.08	1.51	16.73	31.76	0.55
915.00	18.02	6.84	1.07	1.53	16.89	31.42	0.55
925.00	17.91	6.96	1.07	1.55	16.81	30.94	0.55
930.00	17.85	6.95	1.07	1.56	16.76	30.82	0.53
935.00	17.79	6.99	1.08	1.57	16.72	30.74	0.52
945.00	17.68	7.07	1.08	1.59	16.68	30.82	0.58
960.00	17.51	7.13	1.09	1.63	16.47	31.42	0.54



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Amplifier

ZX60-0916LN-S+

Typical Performance Data

FREQUENCY (MHz)	GAIN (dB) 5V	DIRECTIVITY (dB) 5V	VSWR IN (:1) 5V	VSWR OUT (:1) 5V	Output IP3 (dBm) 5V	NOISE FIGURE (dB) 5V	Pout at 1dB Comp. (dBm) 5V
824.0	19.12	6.33	1.18	1.30	31.23	0.55	16.93
830.0	19.05	6.35	1.17	1.32	31.47	0.56	16.90
835.0	18.98	6.38	1.16	1.33	31.61	0.52	16.85
845.0	18.86	6.45	1.14	1.36	31.71	0.53	16.89
850.0	18.80	6.46	1.13	1.37	31.72	0.54	16.92
855.0	18.74	6.49	1.13	1.38	31.61	0.55	16.98
860.0	18.68	6.53	1.12	1.40	31.45	0.56	16.98
870.0	18.56	6.61	1.10	1.42	31.06	0.55	16.92
875.0	18.50	6.58	1.10	1.44	31.02	0.55	16.90
880.0	18.44	6.63	1.09	1.45	31.04	0.54	16.90
885.0	18.38	6.68	1.09	1.46	31.10	0.53	16.92
894.0	18.27	6.73	1.08	1.48	31.33	0.55	16.81
900.0	18.20	6.80	1.08	1.50	31.69	0.55	16.72
905.0	18.15	6.82	1.08	1.51	31.76	0.55	16.73
915.0	18.02	6.84	1.07	1.53	31.42	0.55	16.89
925.0	17.91	6.96	1.07	1.55	30.94	0.55	16.81
930.0	17.85	6.95	1.07	1.56	30.82	0.53	16.76
935.0	17.79	6.99	1.08	1.57	30.74	0.52	16.72
945.0	17.68	7.07	1.08	1.59	30.82	0.58	16.68
960.0	17.51	7.13	1.09	1.63	31.42	0.54	16.47



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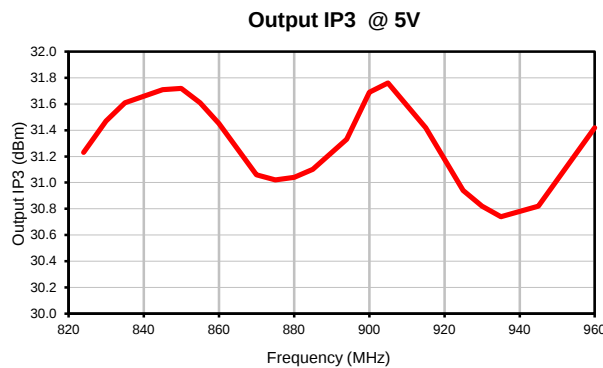
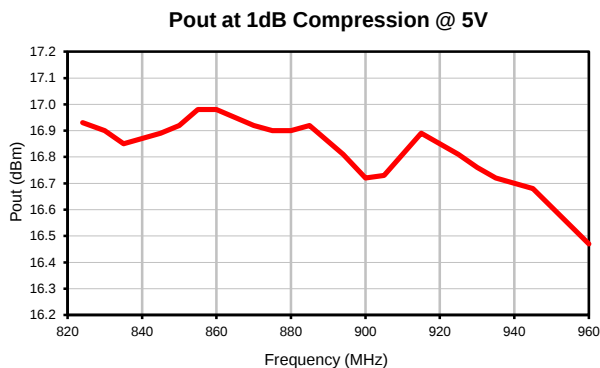
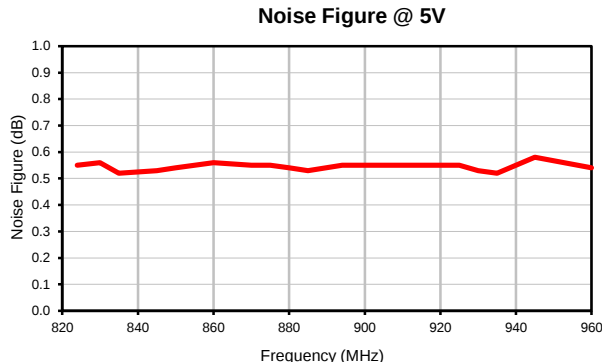
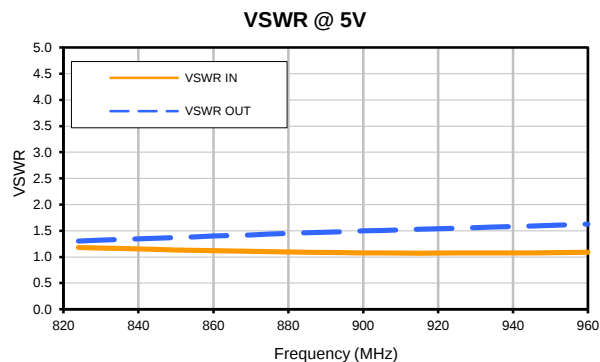
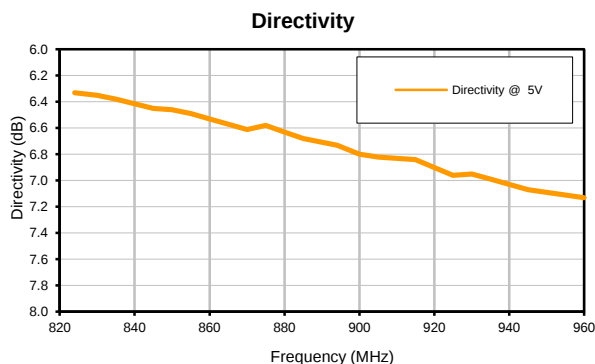
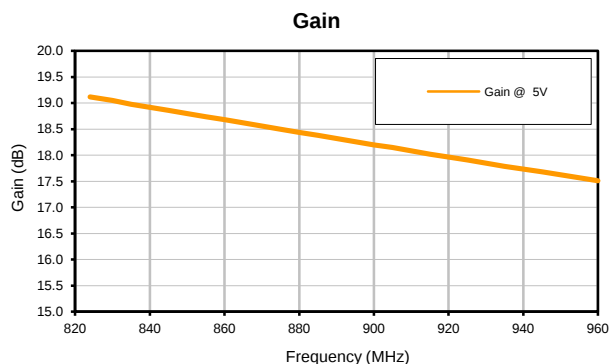
IF/RF MICROWAVE COMPONENTS

For detailed performance specs
& shopping online see web site

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Typical Performance Curves



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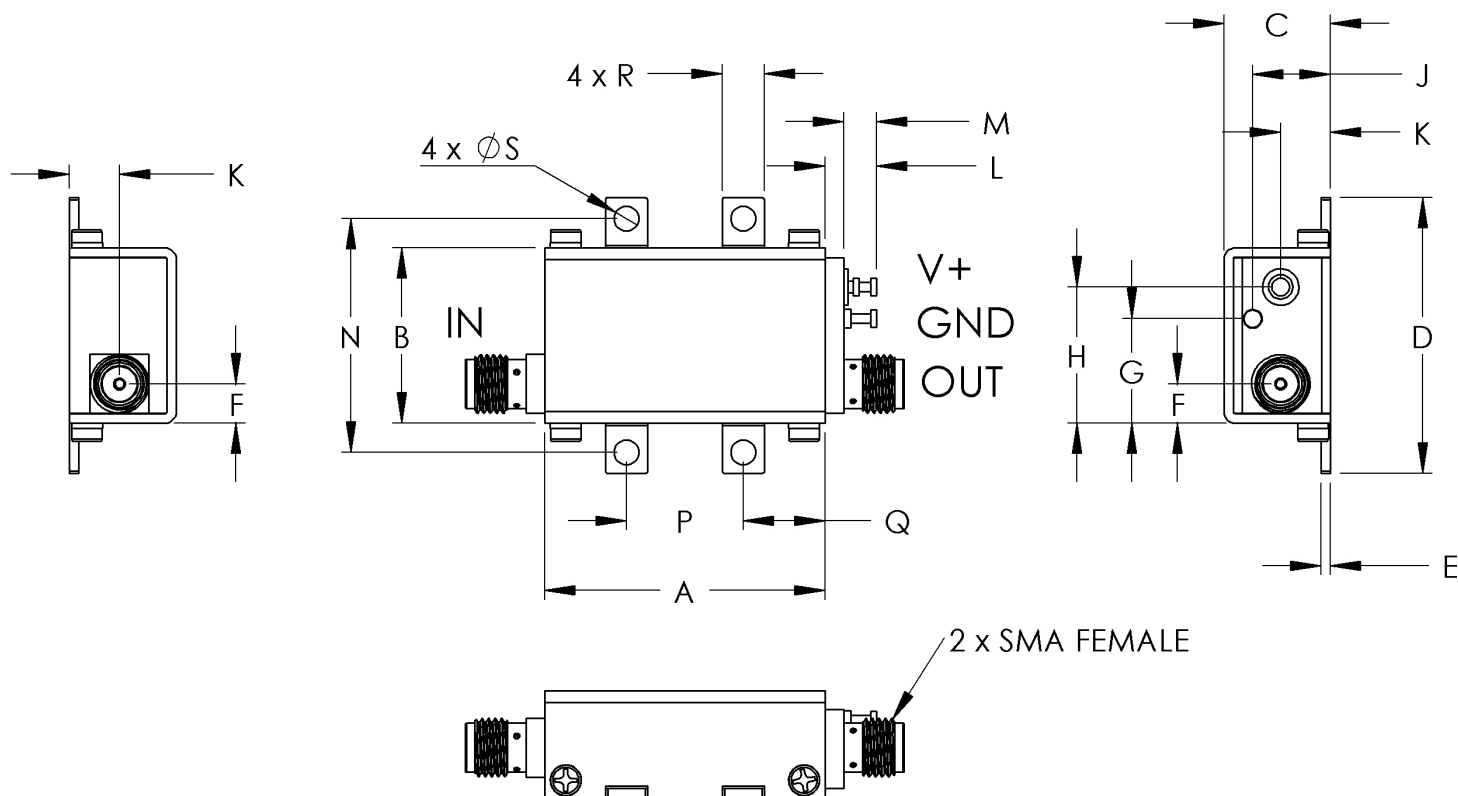
For detailed performance specs
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Case Style

GA

Outline Dimensions

GA955



CASE #.	A	B	C	D	E	F	G	H	J	K	L	M	N
GA955	1.20 (30.48)	.75 (19.05)	.46 (11.61)	1.18 (29.97)	.04 (1.02)	.17 (4.27)	.45 (11.35)	.58 (14.81)	.33 (8.46)	.21 (5.44)	.22 (5.59)	.14 (3.56)	1.000 (25.4)

CASE #.	P	Q	R	S	WT GRAMS
GA955	.500 (12.70)	.35 (8.89)	.18 (4.57)	.106 (2.69)	35.0

Dimensions are in inches (mm). Tolerances: 2Pl. $\pm .03$; 3Pl. $\pm .015$
Tolerance on hole size and interaxes dimensions to be $\pm .005$.

Note:

- Case material: Brass
- Case finish: Nickel plate



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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	-40° to 85° C Case Temperature	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