



Mini-Circuits

COAXIAL

Low Noise Amplifier

ZX60-83LN-S+

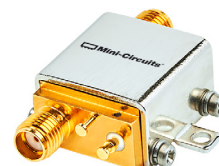
50Ω 0.5 to 8 GHz SMA Female

THE BIG DEAL

- Extremely wideband, 0.5 to 8 GHz
- Low Noise, 1.4 dB @ 2 GHz
- High IP3, +34 dBm
- Excellent gain flatness ± 0.9 dB over 0.5 to 7 GHz @6V
- Reverse voltage protection
- Protected by US patent 6,790,049

APPLICATIONS

- WiFi
- WLAN
- UMTS
- LTE
- WiMAX
- S-band Radar
- C-band Satcom



Generic photo used for illustration purposes only

Model No.	ZX60-83LN-S+
Case Style	GC957
Connectors	SMA Female

+RoHS Compliant

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

PRODUCT OVERVIEW

Mini-Circuits' ZX60-83LN-S+ is a wideband low noise connectorized amplifier providing a unique combination of low noise figure, high IP3 and flat gain over a very wide frequency range, supporting a wide range of sensitive, high-dynamic range receiver applications and many systems where high performance over wideband is needed. This design operates on a single 5 or 6V supply and comes in a rugged, compact unibody case (0.74 x 0.75 x 0.46") with SMA connectors, making it an excellent candidate for tough operating conditions and crowded system layouts.

KEY FEATURES

Feature	Advantages
Ultra-wideband with excellent gain flatness, ± 0.9 dB	Enables a single amplifier to be used in a wide range of applications including WiFi, LTE, S-Band radar, C-band SATCOM, defense, instrumentation and more.
Low noise over the whole band	Enables lower system noise figure performance.
High gain, 21 dB typ.	Reduces the number of gain stages, lowering component count and overall system cost.
High IP3: • +35.2 dBm at 2 GHz • +28.5 dBm at 8 GHz	The combination of low noise and high IP3 makes the ZX60-83LN-S+ ideal for use in low noise receiver front end (RFE) as it gives the user the advantages of sensitivity and two-tone IM performance at both ends of the dynamic range.
Low operating voltage, +5V/+6V	The amplifier achieves high IP3 using low voltage.
Rugged, unibody construction	Mini-Circuits unibody construction integrates the RF connector into the case body, providing high reliability and excellent survivability in critical applications.

REV. C
ECO-015740
ZX60-83LN-S+
ED-15070802
DJ/CP/AM
221108





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50Ω 0.5 to 8 GHz SMA Female

ELECTRICAL SPECIFICATIONS AT 25°C UNLESS NOTED OTHERWISE

Parameter	Condition GHz)	V _{DD} =+6.0			V _{DD} =+5.0 Typ.	Units
		Min.	Typ.	Max.		
Frequency Range		0.5		0.8	0.5-8.0	GHz
Noise Figure	0.5	—	1.6	—	1.6	dB
	2.0	—	1.4	1.7	1.4	
	4.0	—	1.5	—	1.5	
	8.0	—	2.2	—	2.2	
Gain	0.5	—	21.8	—	21.0	dB
	2.0	19.9	22.1	24.3	21.3	
	4.0	—	21.5	—	20.8	
	8.0	—	19.2	—	18.7	
Input Return Loss	0.5	—	14.2	—	13.1	dB
	2.0	—	15.0	—	15.0	
	4.0	—	12.0	—	11.0	
	8.0	—	6.1	—	6.1	
Output Return Loss	0.5	—	12.9	—	13.7	dB
	2.0	—	10.0	—	11.0	
	4.0	—	18.0	—	18.0	
	8.0	—	12.9	—	12.6	
Output Power at 1dB Compression ¹	0.5	—	18.6	—	16.3	dBm
	2.0	—	20.7	—	19.1	
	4.0	—	19.6	—	17.6	
	8.0	—	18.0	—	17.3	
Output IP3	0.5	—	34.2	—	29.7	dBm
	2.0	—	35.2	—	30.0	
	4.0	—	31.0	—	27.0	
	8.0	—	28.5	—	26.2	
Device Operating Voltage (V _{DD})	—	4.9	6.0	—	5.0	V
Device Operating Current (I _{DD})	—	—	77	94	60	mA
Device Current Variation vs. Temperature ²	—	—	-152	—	-109	μA/°C
Device Current Variation vs. Voltage	—	—	0.016	—	0.016	mA/mV
Thermal Resistance, junction-to-ground lead	—	—	47	—	47	°C/W

1. Current increases at P1dB to 109 mA typ. at +6V V_{DD} and 88mA typ. at +5V V_{DD}

2. (Current at 85°C - Current at -45°C)/130

ABSOLUTE MAXIMUM RATINGS³

Parameter	Ratings
Operating Temperature (ground lead)	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Total Power Dissipation	0.95 W
Input Power (CW), V _d =5,6V	+19 dBm (5 minutes max.) +16 dBm (continuous)
DC Voltage	+7V

3. Permanent damage may occur if any of these limits are exceeded. Electrical maximum ratings are not intended for continuous normal operation.





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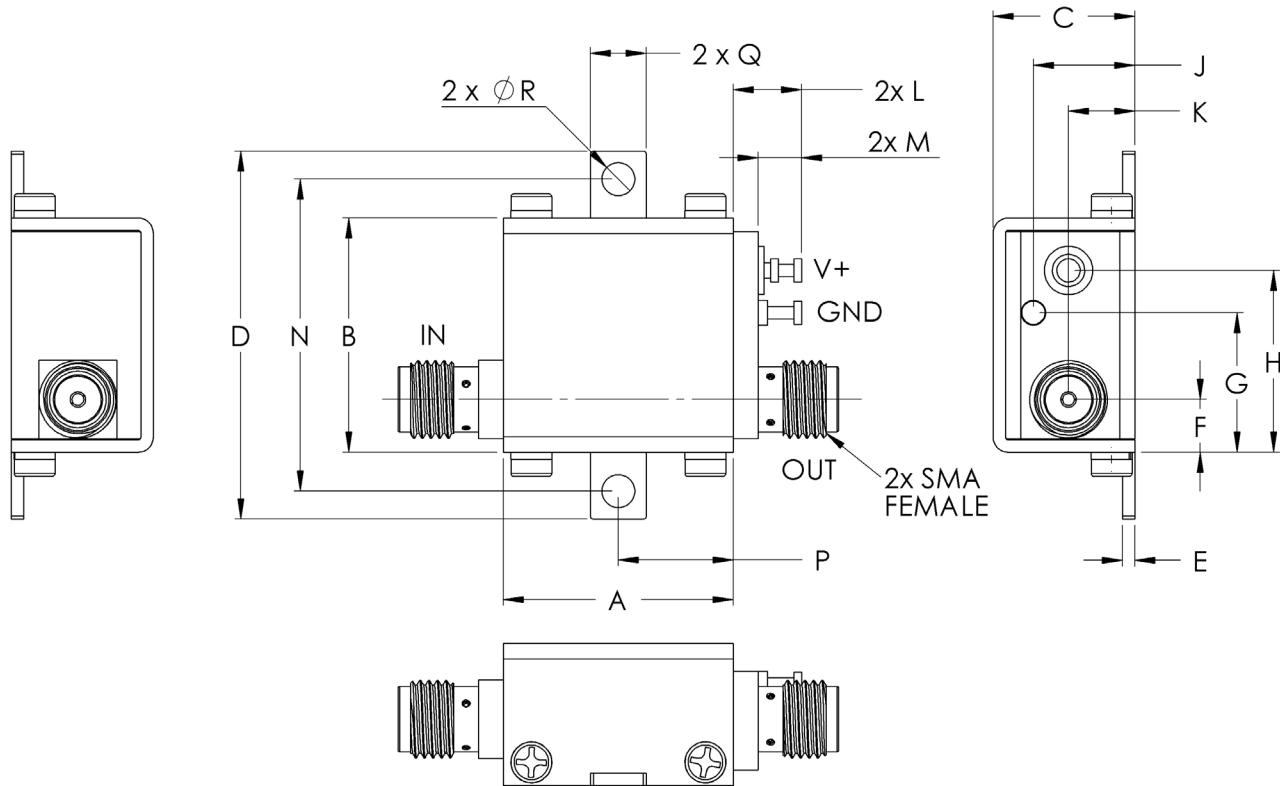
Low Noise Amplifier

ZX60-83LN-S+

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50Ω 0.5 to 8 GHz SMA Female

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 (Inches)
mm

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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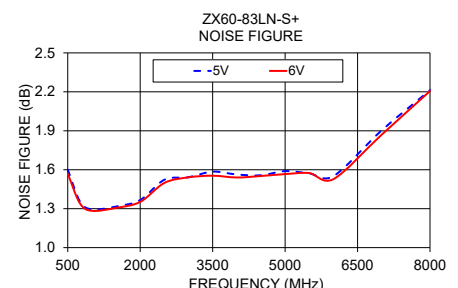
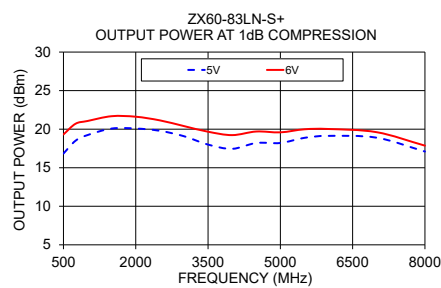
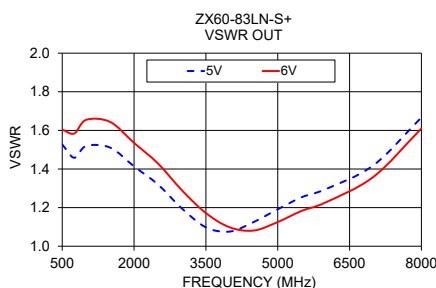
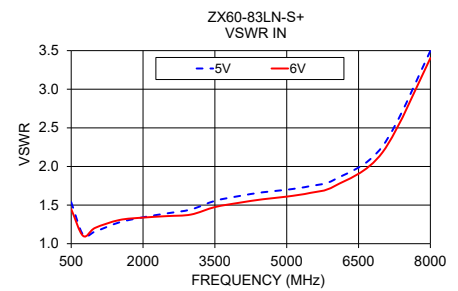
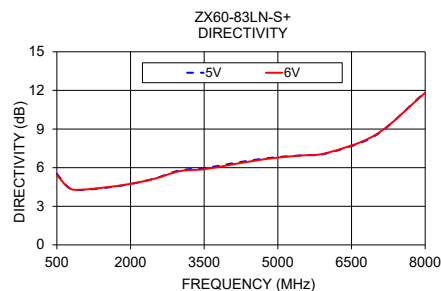
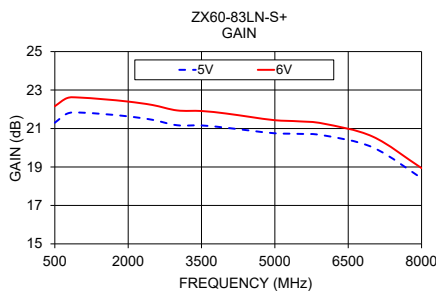
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50Ω 0.5 to 8 GHz SMA Female

TYPICAL PERFORMANCE DATA/CURVES

Frequency (MHz)	Gain (dB)		Directivity (dB)		VSWR (:1)				Power Out @1 dB COMPR. (dBm)		Noise Figure (dB)		IP3 (dBm)	
	5V	6V	5V	6V	5V		6V		5V	6V	5V	6V	5V	6V
					IN	OUT	IN	OUT						
500	21.30	22.16	5.52	5.42	1.54	1.45	1.53	1.60	16.84	19.32	1.60	1.57	31.05	34.61
750	21.77	22.58	4.43	4.41	1.11	1.10	1.46	1.58	18.50	20.70	1.36	1.34	31.75	36.32
1000	21.83	22.61	4.27	4.29	1.16	1.20	1.52	1.65	19.23	21.06	1.29	1.28	31.96	36.52
1500	21.75	22.52	4.44	4.47	1.28	1.31	1.51	1.64	20.08	21.68	1.32	1.31	36.35	38.37
2000	21.63	22.40	4.73	4.74	1.34	1.34	1.41	1.54	20.09	21.61	1.37	1.35	35.25	38.90
2500	21.45	22.22	5.17	5.15	1.39	1.36	1.32	1.43	19.79	21.14	1.52	1.50	33.23	38.19
3000	21.17	21.94	5.79	5.73	1.44	1.38	1.20	1.29	19.09	20.40	1.54	1.54	30.16	35.44
3500	21.16	21.91	5.96	5.88	1.55	1.47	1.10	1.17	18.00	19.67	1.59	1.55	29.93	35.24
4000	21.04	21.78	6.29	6.20	1.62	1.53	1.08	1.10	17.45	19.23	1.56	1.54	28.69	33.05
4500	20.89	21.60	6.59	6.52	1.67	1.58	1.13	1.08	18.21	19.70	1.56	1.55	29.82	35.40
5000	20.75	21.43	6.83	6.78	1.70	1.61	1.19	1.13	18.21	19.59	1.59	1.57	27.84	32.02
5500	20.72	21.37	6.96	6.95	1.75	1.66	1.25	1.18	18.88	19.98	1.57	1.57	29.37	33.90
6000	20.64	21.25	7.12	7.15	1.83	1.75	1.30	1.23	19.13	20.02	1.55	1.53	29.00	33.37
7000	20.02	20.58	8.53	8.58	2.26	2.18	1.42	1.36	18.89	19.61	1.90	1.87	29.40	33.74
8000	18.41	18.94	11.88	11.82	3.50	3.40	1.67	1.61	17.10	17.86	2.21	2.21	26.87	29.89



NOTES

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



Typical Performance Data

NOTE: Use PDF Bookmarks to view DATA at required conditions

Definitions:

Input Return Loss = -S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 6.00V, Id = 82.80mA @ Temperature = +25°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
400	20.99	28.13	9.18	9.45	1.15	0.76	34.82	18.45	1.83
500	21.71	27.30	14.74	12.01	1.12	0.69	34.61	19.32	1.57
600	22.00	26.96	22.32	12.55	1.11	0.64	35.54	20.05	1.44
700	22.11	26.80	32.13	12.10	1.10	0.60	35.16	20.17	1.37
800	22.14	26.74	24.91	11.48	1.10	0.57	36.32	20.70	1.34
900	22.14	26.71	20.86	10.93	1.09	0.55	37.37	21.18	1.34
1000	22.12	26.71	18.63	10.50	1.09	0.53	36.52	21.06	1.28
1100	22.10	26.72	17.17	10.14	1.09	0.52	38.63	21.44	1.29
1200	22.07	26.73	16.15	9.87	1.09	0.52	39.99	21.42	1.31
1300	22.04	26.75	15.45	9.65	1.09	0.51	38.50	21.58	1.35
1400	21.98	26.79	14.86	9.43	1.09	0.51	37.79	21.63	1.34
1500	21.96	26.80	14.41	9.30	1.09	0.51	38.37	21.68	1.31
1600	21.92	26.83	13.97	9.18	1.10	0.51	38.11	21.50	1.40
1800	21.86	26.86	13.45	9.10	1.10	0.52	38.33	21.62	1.39
2000	21.81	26.89	13.12	9.15	1.10	0.53	38.90	21.61	1.35
2200	21.75	26.93	13.07	9.31	1.11	0.54	35.50	21.08	1.37
2400	21.68	26.98	13.13	9.65	1.12	0.57	35.02	21.35	1.37
2600	21.60	27.05	13.51	10.21	1.13	0.60	38.19	21.14	1.50
2800	21.54	27.09	14.08	11.07	1.15	0.63	37.89	20.84	1.55
3000	21.55	27.07	14.41	12.18	1.15	0.66	35.44	20.40	1.54
3200	21.58	27.03	14.32	13.45	1.15	0.69	35.10	20.35	1.51
3400	21.58	27.02	14.06	15.05	1.15	0.71	35.87	20.20	1.51
3600	21.55	27.04	13.62	17.08	1.15	0.74	35.24	19.67	1.55
3800	21.52	27.08	13.08	19.80	1.15	0.77	33.97	19.41	1.49
4000	21.47	27.14	12.47	23.80	1.16	0.79	33.05	19.23	1.54
4200	21.40	27.21	11.86	30.30	1.16	0.81	34.14	19.25	1.57
4400	21.34	27.29	11.30	36.52	1.17	0.82	33.90	19.40	1.59
4600	21.28	27.38	10.88	29.21	1.17	0.83	35.40	19.70	1.55
4800	21.22	27.46	10.55	25.05	1.18	0.84	33.33	19.37	1.53
5000	21.18	27.55	10.39	22.60	1.19	0.85	32.02	19.59	1.57
5200	21.15	27.61	10.28	21.20	1.20	0.85	32.55	20.00	1.58
5400	21.14	27.65	10.32	20.30	1.20	0.85	33.20	19.63	1.57
5600	21.15	27.68	10.47	19.71	1.20	0.84	33.90	19.98	1.57
6000	21.19	27.74	11.12	19.31	1.21	0.84	33.37	20.02	1.53
6500	21.19	27.87	12.12	18.78	1.22	0.84	34.23	19.85	1.62
7000	20.90	28.22	12.84	18.01	1.27	0.87	33.74	19.61	1.87
7500	20.48	28.67	9.35	16.17	1.25	0.98	31.74	18.69	1.96
8000	19.74	29.29	6.79	13.81	1.22	1.11	29.89	17.86	2.21
8500	18.58	30.16	5.02	11.53	1.21	1.22	28.10	17.34	2.48
9000	17.05	30.91	3.91	9.41	1.22	1.27	26.86	16.41	2.83
9500	15.35	31.65	3.17	8.06	1.30	1.29	26.21	15.88	3.31
10000	13.00	32.59	2.81	8.64	1.85	1.34	24.46	14.06	3.88

Typical Performance Data

Definitions:

Input Return Loss = -S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 5.00V, Id = 64.21mA @ Temperature = +25°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
400	20.21	27.46	8.75	9.78	1.16	0.78	30.14	16.07	1.85
500	20.95	26.63	13.75	12.70	1.13	0.71	31.05	16.84	1.60
600	21.26	26.26	20.01	13.53	1.12	0.66	31.43	17.55	1.46
700	21.38	26.09	29.28	13.13	1.11	0.62	30.92	17.77	1.40
800	21.42	26.02	29.40	12.46	1.10	0.59	31.75	18.50	1.36
900	21.43	25.99	23.67	11.84	1.10	0.57	33.21	19.28	1.35
1000	21.43	25.98	20.69	11.37	1.10	0.56	31.96	19.23	1.29
1100	21.41	25.99	18.88	10.96	1.10	0.55	35.28	19.73	1.30
1200	21.38	26.00	17.61	10.67	1.10	0.54	35.15	19.66	1.33
1300	21.35	26.02	16.74	10.41	1.10	0.54	35.44	19.90	1.36
1400	21.29	26.05	16.01	10.17	1.10	0.54	35.74	19.97	1.38
1500	21.28	26.07	15.45	10.01	1.10	0.53	36.35	20.08	1.32
1600	21.24	26.10	14.92	9.88	1.10	0.54	36.14	19.93	1.40
1800	21.19	26.15	14.27	9.79	1.10	0.54	35.35	20.12	1.41
2000	21.14	26.18	13.83	9.84	1.11	0.55	35.25	20.09	1.37
2200	21.07	26.23	13.67	10.01	1.11	0.57	32.37	19.56	1.38
2400	21.00	26.30	13.65	10.38	1.12	0.60	34.16	19.84	1.37
2600	20.92	26.39	13.91	10.98	1.14	0.63	33.23	19.79	1.52
2800	20.84	26.45	14.32	11.93	1.15	0.66	32.14	19.48	1.56
3000	20.85	26.45	14.40	13.14	1.16	0.69	30.16	19.09	1.54
3200	20.87	26.44	14.05	14.54	1.15	0.72	31.15	18.92	1.57
3400	20.86	26.45	13.60	16.30	1.15	0.74	30.55	18.72	1.51
3600	20.84	26.49	13.03	18.52	1.15	0.77	29.93	18.00	1.59
3800	20.80	26.55	12.43	21.50	1.15	0.79	29.03	17.63	1.54
4000	20.75	26.62	11.80	25.49	1.16	0.82	28.69	17.45	1.56
4200	20.69	26.70	11.24	28.95	1.16	0.83	29.60	17.66	1.57
4400	20.63	26.79	10.71	27.26	1.17	0.85	29.24	17.82	1.62
4600	20.58	26.88	10.35	24.20	1.17	0.85	29.82	18.21	1.56
4800	20.53	26.97	10.07	21.92	1.18	0.86	28.84	17.87	1.55
5000	20.50	27.05	9.93	20.33	1.19	0.86	27.84	18.21	1.59
5200	20.49	27.11	9.85	19.35	1.19	0.86	28.32	18.80	1.59
5400	20.49	27.16	9.90	18.62	1.20	0.86	28.54	18.43	1.61
5600	20.52	27.19	10.06	18.15	1.20	0.86	29.37	18.88	1.57
6000	20.58	27.23	10.70	17.76	1.20	0.85	29.00	19.13	1.55
6500	20.61	27.36	11.72	17.26	1.21	0.85	29.47	19.00	1.60
7000	20.35	27.71	12.49	16.63	1.26	0.88	29.40	18.89	1.90
7500	19.94	28.17	9.17	15.20	1.24	0.98	28.43	17.88	1.99
8000	19.21	28.82	6.71	13.20	1.20	1.11	26.87	17.10	2.21
8500	18.06	29.74	4.97	11.18	1.20	1.22	25.50	16.69	2.45
9000	16.56	30.55	3.87	9.21	1.22	1.27	24.34	15.94	2.87
9500	14.88	31.37	3.15	7.93	1.31	1.28	23.87	15.41	3.30
10000	12.55	32.38	2.79	8.57	1.89	1.34	22.38	13.48	3.90

Typical Performance Data

Definitions:

Input Return Loss = -S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 6.25V, Id = 87.68mA @ Temperature = +25°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
400	21.15	28.26	9.22	9.40	1.15	0.76	35.32	19.03	1.85
500	21.87	27.44	14.85	11.94	1.12	0.69	34.80	19.83	1.58
600	22.15	27.10	22.62	12.46	1.11	0.63	36.36	20.45	1.44
700	22.25	26.94	32.11	12.00	1.10	0.59	35.58	20.58	1.41
800	22.28	26.88	24.58	11.38	1.09	0.56	36.08	21.03	1.33
900	22.28	26.85	20.61	10.84	1.09	0.54	37.23	21.51	1.31
1000	22.27	26.85	18.43	10.42	1.09	0.53	36.67	21.43	1.25
1100	22.25	26.86	17.01	10.06	1.09	0.52	37.95	21.79	1.27
1200	22.21	26.87	16.03	9.79	1.09	0.52	37.89	21.76	1.31
1300	22.18	26.89	15.33	9.58	1.09	0.51	37.97	21.95	1.34
1400	22.11	26.93	14.76	9.36	1.09	0.51	37.03	21.98	1.35
1500	22.09	26.94	14.31	9.23	1.09	0.51	38.02	22.06	1.27
1600	22.06	26.97	13.89	9.11	1.09	0.51	37.22	21.83	1.42
1800	22.00	27.00	13.38	9.03	1.10	0.51	37.52	21.99	1.38
2000	21.95	27.02	13.06	9.08	1.10	0.52	37.24	21.96	1.34
2200	21.88	27.05	13.01	9.25	1.11	0.54	35.61	21.47	1.35
2400	21.82	27.10	13.10	9.59	1.12	0.56	34.89	21.73	1.35
2600	21.73	27.17	13.47	10.14	1.13	0.60	38.06	21.49	1.50
2800	21.67	27.21	14.06	11.00	1.15	0.63	39.38	21.21	1.57
3000	21.68	27.18	14.42	12.09	1.15	0.66	37.07	20.73	1.55
3200	21.71	27.14	14.31	13.36	1.15	0.68	36.14	20.74	1.54
3400	21.71	27.14	14.08	14.96	1.15	0.71	37.86	20.60	1.49
3600	21.69	27.15	13.63	16.96	1.15	0.74	37.59	20.06	1.61
3800	21.65	27.19	13.09	19.70	1.15	0.76	35.07	19.86	1.51
4000	21.59	27.25	12.50	23.69	1.16	0.79	34.59	19.67	1.54
4200	21.53	27.32	11.89	30.34	1.16	0.81	35.91	19.69	1.56
4400	21.47	27.40	11.32	38.96	1.17	0.82	35.44	19.81	1.58
4600	21.40	27.49	10.90	29.72	1.17	0.83	36.46	20.07	1.55
4800	21.34	27.57	10.58	25.26	1.18	0.84	34.92	19.76	1.54
5000	21.29	27.65	10.40	22.71	1.19	0.84	33.03	19.99	1.56
5200	21.27	27.72	10.30	21.29	1.20	0.85	33.71	20.32	1.60
5400	21.26	27.76	10.33	20.36	1.20	0.85	34.49	19.95	1.59
5600	21.26	27.79	10.47	19.78	1.20	0.84	35.25	20.25	1.57
6000	21.29	27.84	11.12	19.40	1.21	0.84	34.56	20.25	1.53
6500	21.29	27.98	12.11	18.94	1.22	0.84	35.20	20.09	1.61
7000	20.99	28.32	12.80	18.17	1.27	0.87	35.06	19.76	1.87
7500	20.56	28.76	9.29	16.27	1.25	0.98	32.98	18.87	1.94
8000	19.81	29.38	6.75	13.85	1.22	1.11	30.80	18.01	2.20
8500	18.64	30.24	5.00	11.55	1.21	1.22	28.94	17.48	2.47
9000	17.10	30.96	3.89	9.41	1.22	1.28	27.53	16.63	2.84
9500	15.40	31.69	3.18	8.07	1.30	1.29	26.89	16.11	3.31
10000	13.05	32.60	2.81	8.64	1.84	1.34	25.11	14.28	3.92

Low Noise Amplifier**ZX60-83LN-S+****Typical Performance Data****Definitions:**

Input Return Loss = -S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 6.00V, Id = 89.85mA @ Temperature = -45°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
400	20.42	27.44	11.36	8.01	1.14	0.67	33.86	20.30	1.45
500	21.02	26.74	20.68	9.12	1.11	0.60	31.84	21.13	1.28
600	21.20	26.50	20.79	8.85	1.10	0.55	31.30	21.66	1.17
700	21.22	26.43	16.10	8.35	1.09	0.51	31.83	21.92	1.08
800	21.20	26.41	13.78	7.94	1.09	0.49	31.06	22.18	1.04
900	21.16	26.42	12.49	7.58	1.08	0.47	30.53	22.27	1.06
1000	21.14	26.42	11.66	7.38	1.08	0.46	31.22	22.39	1.03
1100	21.10	26.45	11.09	7.17	1.08	0.45	30.33	22.48	1.04
1200	21.06	26.47	10.59	6.99	1.08	0.44	30.46	22.59	1.06
1300	21.02	26.50	10.21	6.84	1.08	0.44	30.19	22.65	1.08
1400	20.95	26.54	9.91	6.67	1.08	0.43	30.09	22.70	1.10
1500	20.92	26.57	9.64	6.53	1.08	0.43	30.05	22.70	1.04
1600	20.89	26.60	9.41	6.43	1.08	0.43	30.08	22.62	1.12
1800	20.84	26.63	9.07	6.29	1.08	0.42	30.11	22.66	1.15
2000	20.83	26.62	8.98	6.30	1.08	0.42	30.13	22.69	1.08
2200	20.81	26.62	9.02	6.32	1.08	0.43	29.49	22.58	1.09
2400	20.78	26.64	9.03	6.39	1.09	0.44	28.88	22.77	1.06
2600	20.77	26.65	9.39	6.67	1.09	0.46	30.17	22.63	1.20
2800	20.79	26.62	10.14	7.22	1.11	0.49	30.19	22.46	1.23
3000	20.95	26.46	11.09	7.94	1.11	0.51	31.34	22.11	1.22
3200	21.11	26.30	11.70	8.45	1.10	0.51	29.38	22.10	1.18
3400	21.23	26.19	12.51	9.13	1.09	0.52	31.19	22.02	1.13
3600	21.32	26.10	13.45	9.91	1.09	0.54	30.74	21.29	1.22
3800	21.42	26.02	14.95	11.11	1.09	0.56	32.60	21.12	1.11
4000	21.49	25.96	16.56	12.43	1.10	0.58	32.63	20.53	1.18
4200	21.54	25.95	17.76	13.79	1.10	0.59	30.32	20.15	1.14
4400	21.57	25.94	18.35	15.32	1.10	0.61	31.53	20.13	1.19
4600	21.59	25.97	18.52	16.74	1.10	0.62	32.74	20.38	1.12
4800	21.58	26.02	18.51	17.99	1.11	0.64	32.80	19.71	1.09
5000	21.59	26.07	18.72	19.49	1.11	0.65	34.27	20.02	1.15
5200	21.60	26.12	18.70	21.27	1.12	0.66	35.33	20.28	1.14
5400	21.63	26.16	18.23	22.97	1.12	0.66	33.63	19.76	1.15
5600	21.66	26.20	18.27	23.73	1.12	0.66	34.10	20.37	1.13
6000	21.73	26.30	18.74	26.29	1.12	0.67	35.96	20.47	1.12
6500	21.83	26.50	21.46	25.65	1.14	0.67	34.75	20.57	1.15
7000	21.78	26.85	26.09	20.25	1.16	0.68	34.01	20.77	1.35
7500	21.75	27.27	15.79	20.33	1.18	0.73	30.74	19.03	1.48
8000	21.51	27.92	10.49	22.27	1.18	0.86	29.40	17.53	1.71
8500	20.93	28.96	7.25	23.33	1.19	1.05	29.03	16.31	1.96
9000	19.80	30.15	5.26	13.39	1.21	1.18	28.46	14.90	2.22
9500	18.44	31.41	3.98	9.48	1.23	1.22	27.59	13.85	2.57
10000	16.62	32.60	3.08	8.42	1.38	1.27	27.07	13.02	3.02

Typical Performance Data

Definitions:

Input Return Loss = -S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 5.00V, Id = 65.62mA @ Temperature = -45°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
400	19.84	26.86	10.44	8.82	1.15	0.72	33.81	16.13	1.45
500	20.48	26.12	18.46	10.43	1.12	0.65	33.71	17.43	1.27
600	20.70	25.84	27.30	10.31	1.11	0.59	34.48	18.59	1.18
700	20.76	25.74	20.04	9.77	1.10	0.55	34.37	18.94	1.12
800	20.76	25.71	16.64	9.28	1.09	0.53	34.41	19.61	1.08
900	20.74	25.70	14.86	8.85	1.09	0.51	33.55	19.91	1.08
1000	20.73	25.70	13.75	8.61	1.09	0.50	34.77	20.01	1.07
1100	20.70	25.71	13.01	8.35	1.09	0.49	33.07	20.16	1.06
1200	20.67	25.74	12.37	8.14	1.09	0.48	33.28	20.26	1.09
1300	20.64	25.76	11.91	7.95	1.09	0.47	33.23	20.36	1.11
1400	20.57	25.80	11.49	7.75	1.09	0.47	32.63	20.41	1.08
1500	20.55	25.84	11.17	7.57	1.09	0.47	32.23	20.42	1.05
1600	20.52	25.87	10.85	7.47	1.09	0.47	32.36	20.33	1.17
1800	20.47	25.91	10.43	7.31	1.09	0.46	32.38	20.44	1.15
2000	20.46	25.92	10.29	7.33	1.09	0.47	32.00	20.45	1.10
2200	20.43	25.94	10.28	7.36	1.09	0.47	30.38	20.09	1.10
2400	20.38	26.00	10.26	7.46	1.10	0.49	29.72	20.34	1.08
2600	20.35	26.03	10.64	7.80	1.11	0.51	31.44	20.23	1.22
2800	20.34	26.06	11.46	8.47	1.13	0.55	31.31	19.94	1.29
3000	20.47	25.95	12.42	9.36	1.13	0.57	30.67	19.50	1.24
3200	20.60	25.84	12.86	10.03	1.12	0.58	29.44	19.35	1.20
3400	20.69	25.77	13.49	10.88	1.11	0.60	31.17	19.03	1.17
3600	20.75	25.73	14.04	11.87	1.11	0.62	30.25	18.11	1.21
3800	20.82	25.70	14.98	13.40	1.11	0.64	30.18	17.51	1.13
4000	20.87	25.69	15.74	15.09	1.11	0.66	29.58	17.01	1.16
4200	20.90	25.70	15.97	16.91	1.12	0.67	28.98	17.04	1.16
4400	20.92	25.73	15.78	19.11	1.12	0.69	29.28	17.16	1.18
4600	20.93	25.78	15.44	21.41	1.12	0.70	31.20	17.61	1.13
4800	20.92	25.85	15.23	23.41	1.13	0.71	29.70	16.86	1.12
5000	20.92	25.92	15.30	26.04	1.14	0.72	28.99	17.26	1.14
5200	20.94	25.98	15.24	28.88	1.14	0.72	29.51	17.85	1.17
5400	20.97	26.02	14.97	33.64	1.14	0.72	29.11	17.43	1.17
5600	21.02	26.07	15.09	34.71	1.14	0.72	30.36	18.23	1.15
6000	21.10	26.17	15.53	29.42	1.14	0.72	30.53	18.64	1.10
6500	21.23	26.36	17.37	25.75	1.15	0.72	31.48	18.85	1.15
7000	21.19	26.70	20.20	20.46	1.18	0.73	32.25	19.43	1.34
7500	21.10	27.15	13.89	20.14	1.19	0.80	29.44	17.99	1.48
8000	20.78	27.83	9.41	19.56	1.18	0.93	27.78	17.26	1.70
8500	20.10	28.90	6.53	17.98	1.18	1.11	26.79	16.97	1.99
9000	18.91	30.04	4.82	12.26	1.19	1.22	25.99	16.33	2.27
9500	17.57	31.19	3.71	9.19	1.21	1.25	25.14	15.55	2.55
10000	15.79	32.29	2.93	8.52	1.38	1.31	24.63	14.54	3.03

Typical Performance Data

Definitions:

Input Return Loss = -S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 6.25V, Id = 95.20mA @ Temperature = -45°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
400	20.48	27.49	11.58	7.88	1.14	0.66	33.39	21.10	1.45
500	21.07	26.79	20.98	8.92	1.11	0.59	31.63	21.76	1.25
600	21.23	26.57	19.77	8.63	1.10	0.54	30.90	22.17	1.19
700	21.24	26.50	15.44	8.13	1.09	0.50	31.38	22.42	1.11
800	21.22	26.49	13.29	7.74	1.09	0.48	30.74	22.70	1.05
900	21.18	26.50	12.06	7.38	1.08	0.46	30.25	22.82	1.06
1000	21.15	26.51	11.28	7.18	1.08	0.45	30.80	22.92	1.03
1100	21.11	26.53	10.73	6.98	1.08	0.44	30.11	23.01	1.03
1200	21.07	26.56	10.26	6.81	1.08	0.44	30.16	23.13	1.05
1300	21.03	26.58	9.91	6.66	1.08	0.43	30.04	23.19	1.10
1400	20.96	26.63	9.62	6.50	1.08	0.43	29.86	23.23	1.06
1500	20.93	26.65	9.37	6.36	1.08	0.42	29.93	23.22	1.03
1600	20.90	26.68	9.14	6.27	1.08	0.42	29.87	23.16	1.14
1800	20.85	26.71	8.84	6.13	1.08	0.42	29.88	23.19	1.12
2000	20.84	26.69	8.73	6.14	1.08	0.41	29.98	23.22	1.11
2200	20.82	26.69	8.78	6.15	1.08	0.42	29.44	23.17	1.08
2400	20.80	26.71	8.79	6.22	1.08	0.43	28.87	23.33	1.08
2600	20.79	26.71	9.15	6.48	1.09	0.45	30.05	23.17	1.21
2800	20.81	26.68	9.89	7.01	1.10	0.48	30.06	23.03	1.26
3000	20.98	26.50	10.83	7.70	1.10	0.49	31.24	22.73	1.25
3200	21.15	26.33	11.44	8.19	1.09	0.49	29.41	22.76	1.17
3400	21.28	26.21	12.29	8.83	1.09	0.50	31.21	22.71	1.15
3600	21.37	26.12	13.27	9.58	1.09	0.52	30.90	22.04	1.19
3800	21.48	26.02	14.82	10.73	1.09	0.54	32.64	21.84	1.12
4000	21.56	25.96	16.58	11.99	1.09	0.56	32.38	21.27	1.14
4200	21.62	25.93	17.98	13.28	1.09	0.58	30.37	20.88	1.14
4400	21.65	25.92	18.93	14.71	1.10	0.59	31.53	20.84	1.15
4600	21.67	25.95	19.30	16.02	1.10	0.61	32.81	21.04	1.12
4800	21.67	25.99	19.47	17.18	1.10	0.62	33.22	20.35	1.10
5000	21.68	26.04	19.76	18.55	1.11	0.63	35.24	20.64	1.15
5200	21.69	26.09	19.70	20.14	1.11	0.64	36.69	20.85	1.16
5400	21.72	26.13	19.12	21.60	1.11	0.65	34.29	20.28	1.13
5600	21.75	26.16	19.14	22.26	1.11	0.65	34.44	20.85	1.14
6000	21.82	26.27	19.58	24.59	1.12	0.65	36.70	20.91	1.12
6500	21.92	26.46	22.62	24.46	1.13	0.65	35.17	20.97	1.15
7000	21.87	26.82	28.17	19.85	1.16	0.67	33.92	21.04	1.34
7500	21.86	27.24	16.37	20.01	1.17	0.72	31.27	19.18	1.47
8000	21.65	27.88	10.80	22.62	1.18	0.84	29.83	17.16	1.69
8500	21.11	28.91	7.45	25.37	1.19	1.03	29.81	15.40	1.97
9000	19.98	30.12	5.38	13.57	1.21	1.16	29.17	13.83	2.27
9500	18.62	31.44	4.03	9.46	1.23	1.21	28.41	12.97	2.55
10000	16.79	32.69	3.10	8.32	1.38	1.26	27.79	12.77	3.02

Low Noise Amplifier**ZX60-83LN-S+****Typical Performance Data****Definitions:**

Input Return Loss = -S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 6.00V, Id = 71.02mA @ Temperature = +85°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
400	21.10	28.64	7.32	10.04	1.17	0.82	30.75	18.25	2.27
500	21.91	27.74	10.62	14.05	1.13	0.76	31.32	18.94	1.94
600	22.30	27.31	13.98	17.00	1.12	0.71	31.58	19.43	1.78
700	22.48	27.09	17.22	17.92	1.11	0.67	31.36	19.65	1.67
800	22.56	26.97	20.54	17.48	1.10	0.64	31.98	20.11	1.62
900	22.60	26.90	23.58	16.70	1.10	0.62	33.03	20.72	1.60
1000	22.62	26.87	25.86	16.04	1.10	0.61	31.82	20.69	1.56
1100	22.61	26.86	26.04	15.41	1.10	0.60	33.62	21.06	1.55
1200	22.59	26.86	25.11	14.97	1.10	0.59	33.93	21.01	1.58
1300	22.56	26.87	23.65	14.57	1.10	0.59	34.07	21.23	1.59
1400	22.52	26.89	22.11	14.26	1.10	0.59	34.12	21.33	1.62
1500	22.47	26.92	20.86	13.96	1.10	0.60	34.15	21.40	1.54
1600	22.45	26.93	19.71	13.81	1.10	0.60	34.59	21.25	1.63
1800	22.36	26.98	18.12	13.67	1.11	0.61	34.61	21.44	1.65
2000	22.26	27.03	16.82	13.76	1.11	0.63	34.03	21.48	1.63
2200	22.14	27.11	15.85	14.04	1.12	0.66	34.15	20.95	1.67
2400	22.00	27.22	15.02	14.69	1.13	0.69	35.39	21.21	1.65
2600	21.84	27.35	14.34	15.80	1.15	0.73	33.79	21.15	1.83
2800	21.69	27.46	13.55	17.51	1.16	0.76	33.11	20.85	1.88
3000	21.58	27.53	12.59	19.84	1.17	0.80	31.74	20.49	1.88
3200	21.47	27.60	11.53	22.73	1.17	0.83	33.23	20.35	1.87
3400	21.35	27.70	10.60	25.57	1.17	0.87	31.86	20.30	1.85
3600	21.21	27.81	9.78	25.15	1.17	0.90	31.43	19.78	1.94
3800	21.06	27.92	9.08	22.25	1.18	0.92	30.41	19.57	1.89
4000	20.91	28.05	8.49	19.55	1.18	0.94	30.11	19.44	1.95
4200	20.76	28.17	8.02	17.54	1.19	0.95	31.27	19.53	1.98
4400	20.62	28.29	7.60	15.98	1.19	0.96	30.77	19.64	1.99
4600	20.49	28.40	7.32	14.84	1.20	0.97	30.88	19.77	1.98
4800	20.39	28.48	7.13	14.02	1.21	0.97	29.88	19.46	1.98
5000	20.32	28.52	7.07	13.49	1.21	0.97	29.09	19.51	2.01
5200	20.27	28.54	7.07	13.15	1.21	0.97	29.19	19.63	2.02
5400	20.24	28.53	7.12	12.89	1.21	0.96	29.57	19.31	2.00
5600	20.25	28.49	7.29	12.75	1.21	0.96	29.99	19.38	2.00
6000	20.27	28.36	7.83	12.88	1.20	0.95	29.13	19.05	1.94
6500	20.16	28.27	8.44	12.87	1.19	0.96	29.22	18.55	2.05
7000	19.54	28.54	8.94	12.53	1.27	0.99	28.34	17.93	2.38
7500	18.79	28.80	6.57	11.18	1.18	1.10	27.82	17.42	2.43
8000	17.68	29.22	5.09	9.88	1.14	1.19	26.43	16.85	2.74
8500	16.24	29.80	4.07	8.76	1.15	1.25	25.08	16.26	3.04
9000	14.54	30.28	3.40	7.79	1.22	1.27	23.77	15.47	3.48
9500	12.63	30.93	2.93	7.25	1.43	1.28	23.26	14.93	4.09
10000	10.03	31.97	2.72	7.99	2.27	1.32	21.26	12.54	4.78

Low Noise Amplifier

ZX60-83LN-S+

Typical Performance Data

Definitions:

Input Return Loss = -S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 5.00V, Id = 53.86mA @ Temperature = +85°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
400	20.16	27.97	6.85	10.03	1.18	0.84	27.76	16.35	2.31
500	21.01	27.04	9.77	14.13	1.14	0.78	28.37	16.98	1.99
600	21.42	26.59	12.61	17.88	1.13	0.73	28.31	17.42	1.82
700	21.62	26.35	15.24	20.09	1.11	0.69	28.11	17.77	1.72
800	21.72	26.22	17.73	20.30	1.11	0.66	28.49	18.31	1.64
900	21.78	26.14	19.89	19.52	1.10	0.64	29.42	19.06	1.64
1000	21.80	26.10	21.71	18.70	1.10	0.63	28.68	19.08	1.59
1100	21.80	26.08	22.65	17.86	1.10	0.62	30.08	19.46	1.59
1200	21.79	26.08	23.05	17.27	1.10	0.62	30.09	19.45	1.60
1300	21.76	26.09	22.45	16.75	1.10	0.62	29.96	19.69	1.64
1400	21.73	26.11	21.62	16.33	1.10	0.62	30.32	19.78	1.64
1500	21.68	26.14	20.50	15.92	1.11	0.62	30.22	19.88	1.61
1600	21.66	26.16	19.60	15.74	1.11	0.63	30.42	19.77	1.67
1800	21.58	26.21	18.00	15.53	1.11	0.64	30.65	20.01	1.70
2000	21.48	26.28	16.64	15.60	1.12	0.66	30.59	20.02	1.65
2200	21.36	26.37	15.51	15.91	1.12	0.69	30.09	19.49	1.68
2400	21.21	26.50	14.58	16.65	1.14	0.72	31.54	19.70	1.67
2600	21.05	26.64	13.74	17.96	1.15	0.76	29.99	19.84	1.86
2800	20.89	26.78	12.87	19.98	1.17	0.79	29.50	19.58	1.89
3000	20.76	26.87	11.85	22.40	1.17	0.83	28.15	19.31	1.91
3200	20.65	26.97	10.81	24.18	1.17	0.86	29.18	18.92	1.92
3400	20.51	27.08	9.90	23.55	1.17	0.89	28.28	18.92	1.89
3600	20.37	27.21	9.13	21.17	1.17	0.92	27.93	18.31	1.99
3800	20.22	27.35	8.47	18.80	1.17	0.94	27.03	18.06	1.94
4000	20.07	27.48	7.94	16.89	1.18	0.96	26.92	17.90	2.00
4200	19.92	27.61	7.49	15.42	1.18	0.97	27.92	18.03	2.01
4400	19.78	27.73	7.13	14.26	1.18	0.98	27.43	18.23	2.04
4600	19.67	27.84	6.88	13.38	1.19	0.98	27.60	18.45	2.03
4800	19.58	27.92	6.71	12.75	1.19	0.98	26.81	18.25	2.00
5000	19.52	27.96	6.66	12.34	1.20	0.98	26.10	18.45	2.04
5200	19.49	27.97	6.68	12.08	1.20	0.97	26.34	18.69	2.05
5400	19.48	27.95	6.73	11.88	1.19	0.97	26.61	18.38	2.06
5600	19.50	27.90	6.91	11.77	1.19	0.96	27.10	18.41	2.04
6000	19.56	27.75	7.43	11.90	1.18	0.95	26.55	18.25	1.99
6500	19.48	27.65	8.05	11.90	1.16	0.96	26.66	17.69	2.08
7000	18.87	27.91	8.62	11.67	1.24	0.99	26.08	17.13	2.44
7500	18.12	28.20	6.37	10.52	1.15	1.10	25.56	16.55	2.48
8000	17.02	28.65	4.98	9.40	1.11	1.19	24.28	16.01	2.77
8500	15.58	29.30	4.00	8.40	1.14	1.24	23.08	15.67	3.09
9000	13.89	29.85	3.35	7.52	1.22	1.26	21.80	15.08	3.54
9500	11.99	30.56	2.89	7.03	1.44	1.26	21.29	14.73	4.16
10000	9.39	31.68	2.70	7.84	2.35	1.31	19.51	12.15	4.89

Low Noise Amplifier**ZX60-83LN-S+****Typical Performance Data****Definitions:**

Input Return Loss = -S11 (dB)

Gain(Power Gain) = S21 (dB)

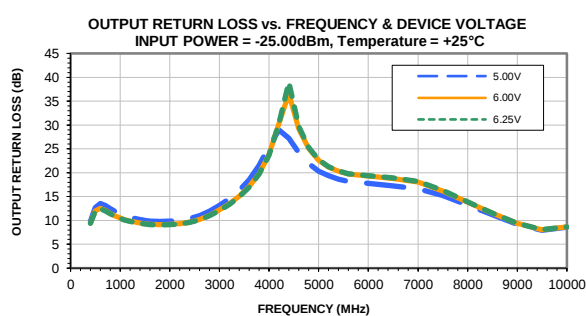
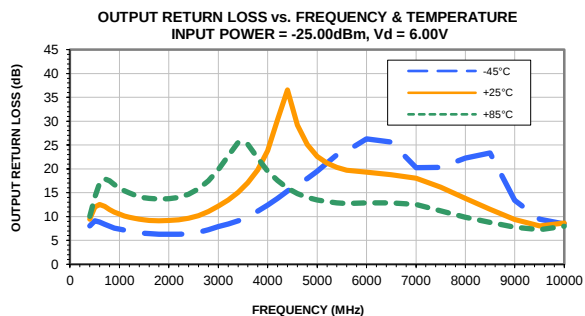
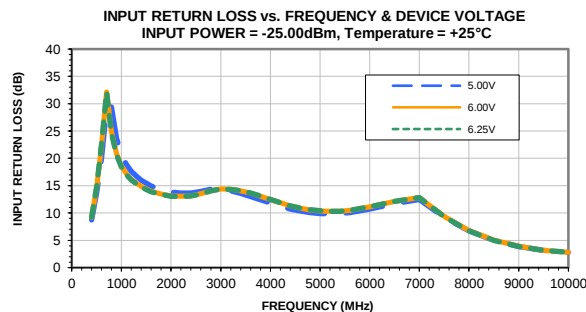
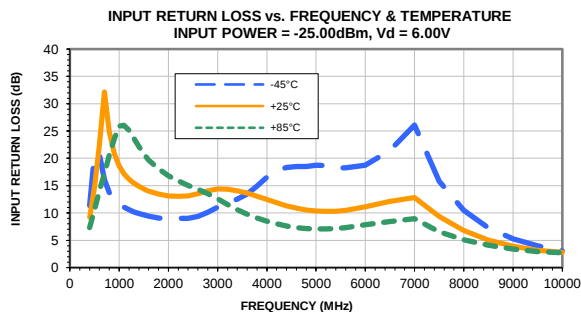
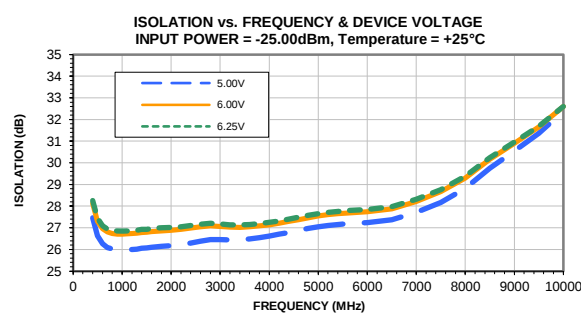
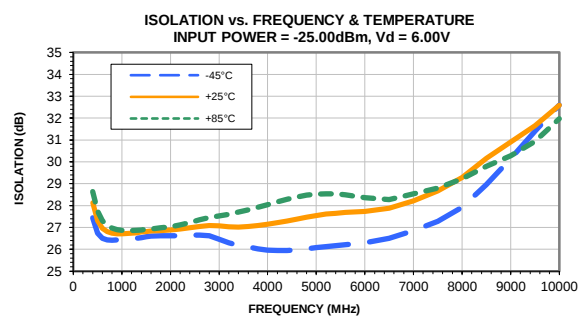
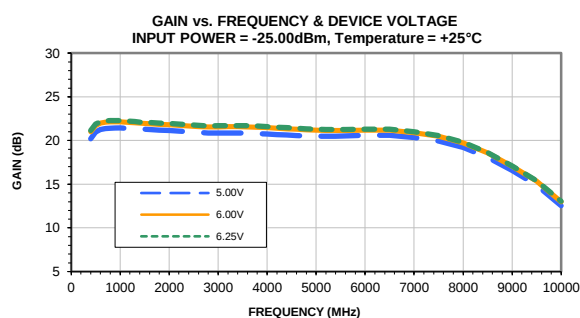
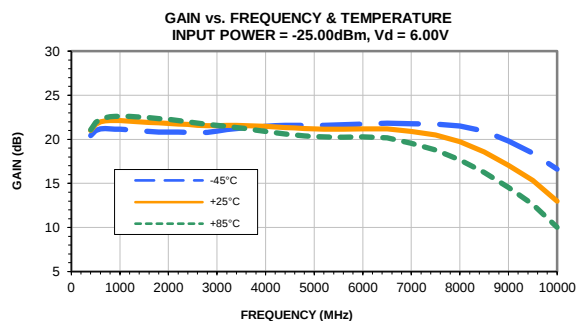
Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

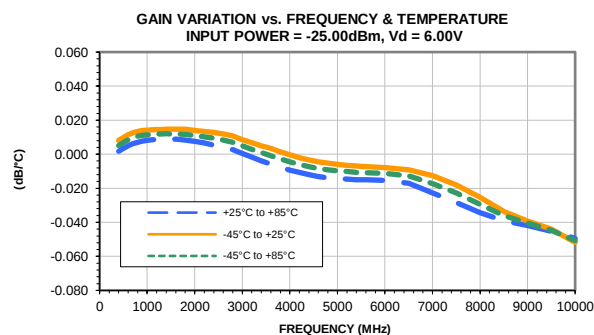
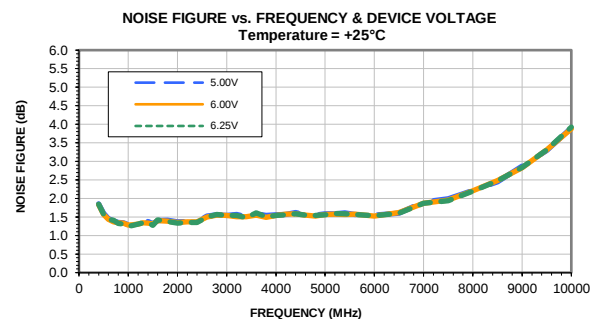
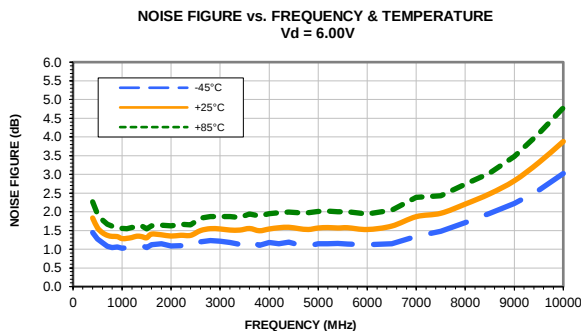
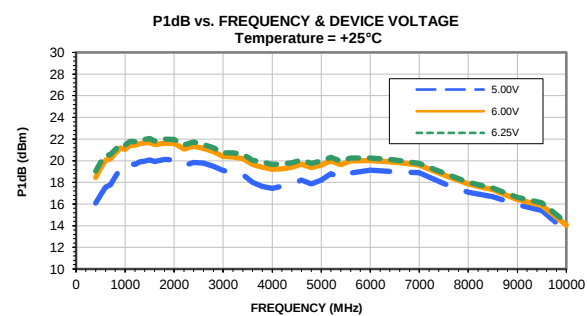
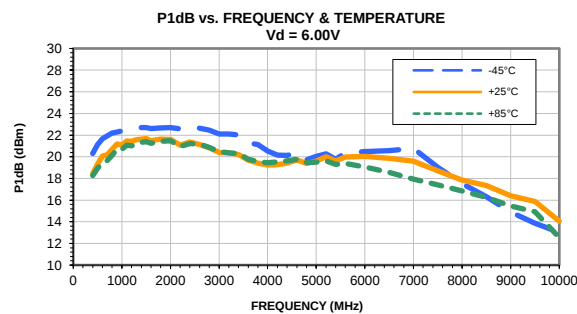
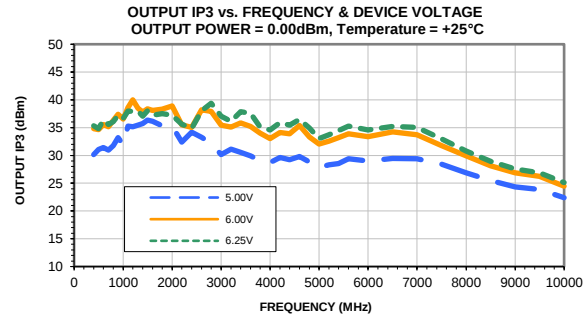
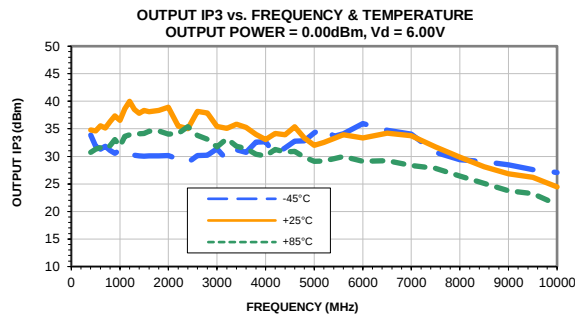
TEST CONDITIONS: Vd = 6.25V, Id = 75.58mA @ Temperature = +85°C

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
400	21.27	28.77	7.39	10.03	1.16	0.82	31.48	18.84	2.27
500	22.08	27.88	10.78	14.01	1.13	0.76	31.95	19.48	1.95
600	22.46	27.45	14.20	16.81	1.12	0.70	32.08	19.95	1.77
700	22.63	27.23	17.60	17.59	1.11	0.66	32.02	20.17	1.65
800	22.72	27.11	21.07	17.12	1.10	0.63	32.61	20.59	1.61
900	22.76	27.05	24.31	16.34	1.10	0.61	33.50	21.12	1.59
1000	22.77	27.02	26.61	15.70	1.10	0.60	32.45	21.15	1.54
1100	22.77	27.00	26.37	15.10	1.10	0.59	34.33	21.48	1.55
1200	22.74	27.01	25.24	14.67	1.10	0.59	35.04	21.44	1.57
1300	22.71	27.02	23.54	14.29	1.10	0.59	34.68	21.61	1.58
1400	22.67	27.03	22.05	13.99	1.10	0.59	34.85	21.70	1.59
1500	22.61	27.07	20.78	13.70	1.10	0.60	34.99	21.77	1.55
1600	22.59	27.08	19.66	13.56	1.10	0.60	35.12	21.62	1.62
1800	22.50	27.13	18.09	13.43	1.11	0.61	35.73	21.82	1.65
2000	22.41	27.17	16.81	13.52	1.11	0.63	35.42	21.84	1.62
2200	22.28	27.26	15.84	13.80	1.12	0.65	34.98	21.33	1.64
2400	22.14	27.36	15.06	14.44	1.13	0.68	36.72	21.58	1.66
2600	21.99	27.48	14.41	15.52	1.15	0.72	34.37	21.45	1.80
2800	21.84	27.59	13.65	17.19	1.16	0.76	33.83	21.19	1.83
3000	21.72	27.66	12.70	19.46	1.17	0.80	32.29	20.80	1.87
3200	21.62	27.73	11.64	22.39	1.17	0.83	34.05	20.70	1.87
3400	21.50	27.82	10.70	25.64	1.17	0.86	32.59	20.63	1.86
3600	21.36	27.92	9.86	25.93	1.17	0.89	32.10	20.16	1.94
3800	21.21	28.04	9.16	22.96	1.18	0.92	31.12	19.95	1.90
4000	21.05	28.16	8.58	20.06	1.18	0.94	30.78	19.85	1.95
4200	20.91	28.28	8.08	17.91	1.19	0.95	31.88	19.87	1.96
4400	20.76	28.40	7.67	16.27	1.20	0.96	31.37	19.94	2.03
4600	20.64	28.50	7.39	15.07	1.20	0.97	31.64	20.08	1.97
4800	20.53	28.59	7.19	14.21	1.21	0.97	30.69	19.74	1.96
5000	20.45	28.63	7.12	13.66	1.21	0.97	29.80	19.71	2.01
5200	20.41	28.65	7.12	13.31	1.22	0.96	29.82	19.82	2.00
5400	20.37	28.64	7.17	13.05	1.22	0.96	30.18	19.50	2.02
5600	20.38	28.60	7.35	12.89	1.21	0.95	30.51	19.54	2.01
6000	20.39	28.47	7.89	13.04	1.21	0.95	29.86	19.22	1.96
6500	20.28	28.38	8.51	13.04	1.20	0.96	29.67	18.72	2.03
7000	19.65	28.65	8.98	12.69	1.28	0.99	28.89	18.10	2.39
7500	18.89	28.90	6.57	11.29	1.19	1.10	28.33	17.56	2.45
8000	17.78	29.31	5.11	9.96	1.14	1.19	26.94	16.98	2.71
8500	16.33	29.89	4.08	8.81	1.16	1.25	25.57	16.32	3.02
9000	14.64	30.35	3.41	7.83	1.22	1.27	24.17	15.54	3.48
9500	12.73	31.00	2.93	7.28	1.43	1.28	23.63	14.95	4.08
10000	10.13	32.01	2.73	8.00	2.26	1.32	21.70	12.57	4.82

Typical Performance Curves



Typical Performance Curves

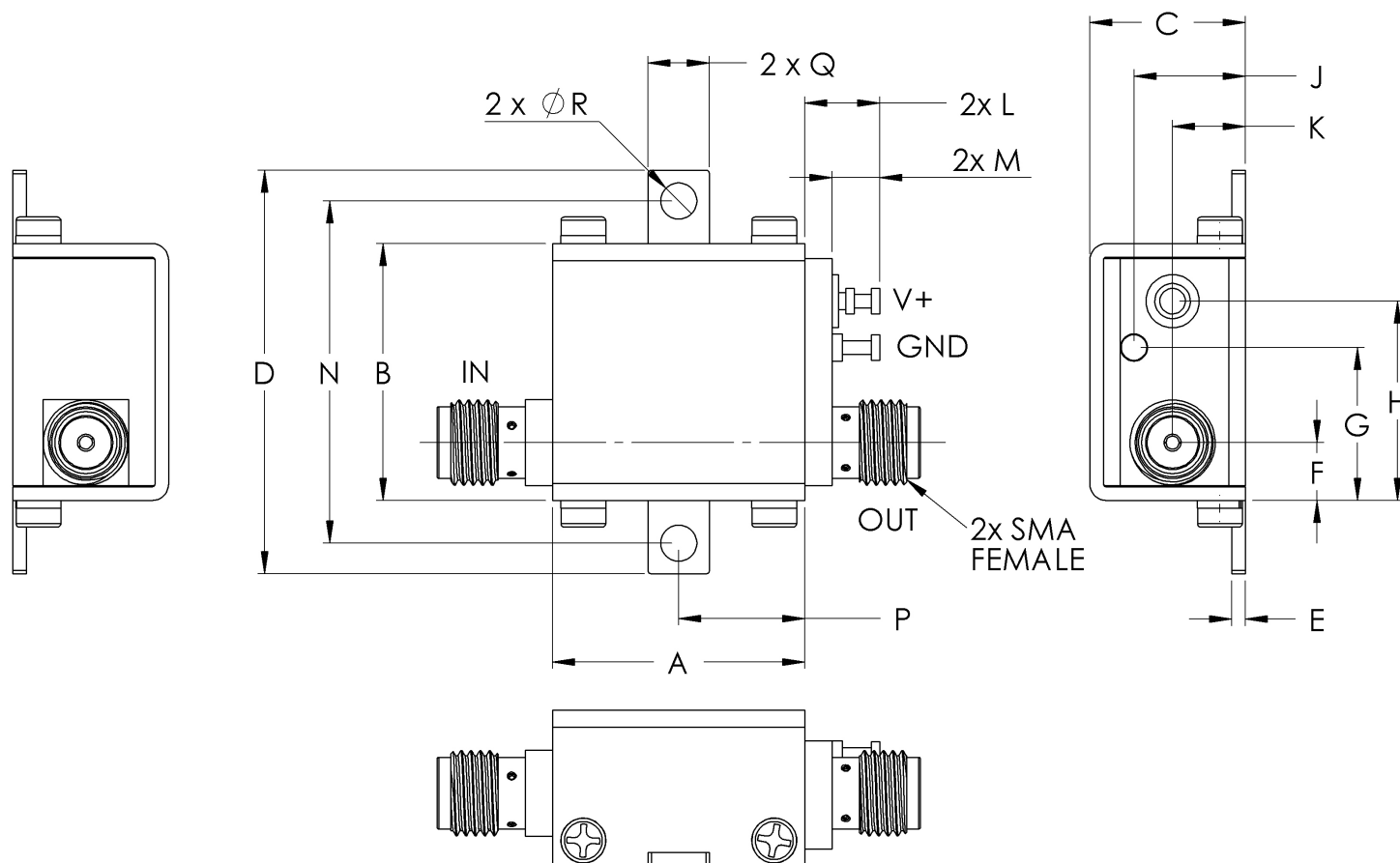


Case Style

Outline Dimensions

GC

GC957



CASE #.	A	B	C	D	E	F	G	H	J	K	L	M	N
GC957	.74 (18.80)	.75 (19.15)	.46 (11.61)	1.18 (30.07)	.04 (1.02)	.17 (4.32)	.45 (11.40)	.59 (14.86)	.33 (8.31)	.21 (5.44)	.22 (5.59)	.14 (3.56)	1.00 (25.4)

CASE #.	P	Q	R	WT GRAMS
GC957	.37 (9.40)	.18 (4.57)	.106 (2.69)	23.0

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

Note:

1. Case material: Brass
2. 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