ULTRA HIGH DYNAMIC RANGE

Monolithic Amplifier

LHA-1H+

50Ω 0.05 to 6 GHz

THE BIG DEAL

- High IP3, +41 dBm typ. at 2 GHz, +5V
- Gain, 13.9 dB typ. at 2 GHz, +5V
- High Pout, P1dB +22.5 dBm typ. at 2 GHz, +5V
- Low noise figure, 2.1 dB @ 2 GHz, +5V
- Usable to +4.0V

Generic photo used for illustration purposes only

CASE STYLE: FG873

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

APPLICATIONS

- Base station infrastructure
- Portable Wireless
- CATV & DBS
- MMDS & Wireless LAN
- LTE

PRODUCT OVERVIEW

LHA-1H+ (RoHS compliant) is an advanced wideband amplifier fabricated using E-PHEMT technology and offers extremely high dynamic range over a broad frequency range and with low noise figure. In addition, the LHA-1H+, unlike competitive models, is well matched (input and output) over a broad frequency range without the need for external matching components. It is enclosed in a 3x3 mm MCLP package for low parasitic interface.

KEY FEATURES

Feature	Advantages
Broad Band: 0.05 to 6.0 GHz	Broadband covering primary wireless communications bands: Cellular, PCS, LTE, WiMAX
Extremely High IP3 versus DC power Consumption +41 dBm typical at 2 GHz	The LHA-1H+ matches industry leading IP3 performance relative to device size and power consumption. The combination of the design and E-PHEMT Structure provides enhanced linearity over a broad frequency range as evidence in the IP3 being typically 17 dB above the P 1dB point. This feature makes this amplifier ideal for use in: • Driver amplifiers for complex waveform up converter paths • Drivers in linearized transmit systems • Secondary amplifiers in ultra High Dynamic range receivers
No External Matching Components Required	LHA-1H+ provides Input and Output Return Loss of 10-22 dB up to 4 GHz without the need for any external matching components
Low Noise Figure: 2.7 dB typ. up to 4 GHz 3.3 dB typ. up to 6 GHz	A unique feature of the LHA-1H+ which separates this design from all competitors is the low noise figure performance in combination with the high dynamic range.
Low Junction Temperature: Tj=115°C at +85°C lead temperature and +135°C at +105°C lead temperature	Results in excellent reliability up to +105°C

REV. A
ECO-011665
LHA-1H+
MCL NY
240725

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ELECTRICAL SPECIFICATIONS[1] AT +25°C, UNLESS NOTED OTHERWISE

Parameter	Condition (GHz)	Vd=+5.0V Min.	Vd=+5.0V Typ.	Vd=+5.0V Max.	Vd=+4.5V Typ.	Vd=+4.0V Typ.	Units
Frequency Range			0.05-6		0.05-6	0.05-6	GHz
Gain	0.05	16.0	17.7	19.6	17.6	17.3	dB
	0.8	14.4	15.9	17.6	15.7	15.5	
	2.0	—	13.9	—	13.8	13.5	
	3.0	—	12.2	—	12.0	11.7	
	4.0	9.8	10.8	12.0	10.5	10.3	
	6.0	—	8.7	—	8.5	8.2	
Input Return Loss	0.05	—	11.5	—	11.2	10.9	dB
	0.8	13.0	16.2	—	16.0	15.4	
	2.0	—	11.4	—	11.2	10.9	
	3.0	—	10.1	—	10.0	9.7	
	4.0	—	9.7	—	9.8	9.6	
	6.0	—	8.7	—	8.8	8.6	
Output Return Loss	0.05	—	14.6	—	14.5	14.3	dB
	0.8	13.0	22.3	—	22.4	22.0	
	2.0	—	20.1	—	19.4	17.8	
	3.0	—	18.1	—	17.6	16.3	
	4.0	—	16.4	—	16.3	15.5	
	6.0	—	15.4	—	15.0	14.2	
Reverse Isolation	2.0	—	19.2	—	19.1	18.9	dB
Output Power @1 dB compression	0.05	+20.0	+22.7	—	+21.4	+19.9	dBm
	0.8	+20.0	+22.6	—	+21.4	+19.9	
	2.0	+20.0	+22.5	—	+21.3	+19.8	
	3.0	—	+22.7	—	+21.5	+19.9	
	4.0	—	+22.9	—	+21.7	+20.0	
	6.0	—	+22.2	—	+21.1	+19.7	
Output IP3	0.05	—	+40.3	—	+38.5	+35.6	dBm
	0.8	+38.0	+41.2	—	+39.6	+35.4	
	2.0	—	+41.4	—	+36.3	+32.9	
	3.0	—	+40.9	—	+35.8	+32.3	
	4.0	—	+41.0	—	+35.8	+32.4	
	6.0	—	+38.6	—	+34.5	+31.4	
Noise Figure	0.05	—	1.6	—	1.5	1.5	dB
	0.8	—	1.9	—	1.8	1.8	
	2.0	—	2.1	—	2.0	2.0	
	3.0	—	2.5	—	2.3	2.2	
	4.0	—	2.7	—	2.4	2.3	
	6.0	—	3.3	—	3.1	2.8	
Device Operating Voltage		+4.8	+5.0	+5.2	+4.5	+4.0	V
Device Operating Current			145	165	116	88	mA
Device Current Variation vs. Temperature[2]			109		141	154	µA/°C
Device Current Variation vs Voltage			0.058		0.057	0.055	mA/mV
Thermal Resistance, junction-to-ground lead			36		36	36	°C/W

1. Measured on Mini-Circuits Characterization test board TB-784+. See Characterization Test Circuit (Fig. 1)
2. (Current at 85°C — Current at -45°C)/130

ABSOLUTE MAXIMUM RATINGS[3]

Parameter	Ratings
Operating Temperature (ground lead)	-40°C to +105°C
Storage Temperature	-65°C to +150°C
Operating Current at 5V	210 mA
Power Dissipation	1 W
Input Power (CW)	+24 dBm
DC Voltage on Pad 3	+6 V

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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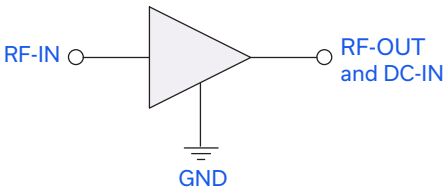
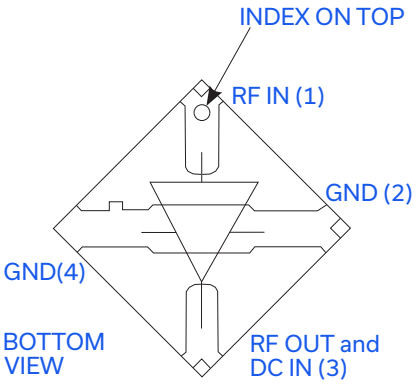
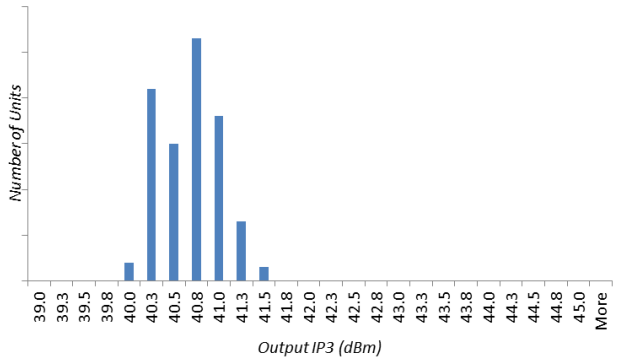
SIMPLIFIED SCHEMATIC AND PAD DESCRIPTION



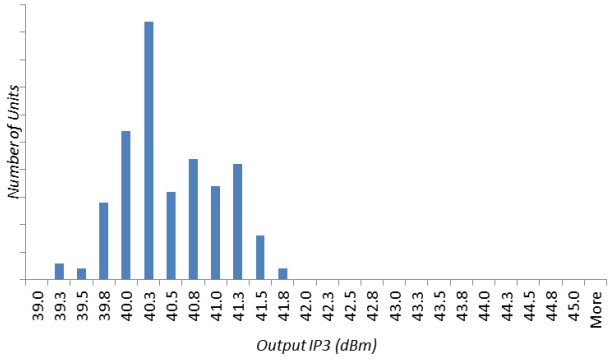


Function	Pad Number	Description
RF-IN	1	RF input pin. This pin requires the use of an external DC blocking capacitor chosen for the frequency of operation.
RF-OUT and DC-IN	3	RF output and bias pin. DC voltage is present on this pin; therefore a DC blocking capacitor is necessary for proper operation. An RF choke is needed to feed DC bias without loss of RF signal due to the bias connection, as shown in "Recommended Application Circuit", Fig. 2
GND	2,4	Connections to ground. Use via holes as shown in "Suggested Layout for PCB Design" to reduce ground path inductance for best performance.

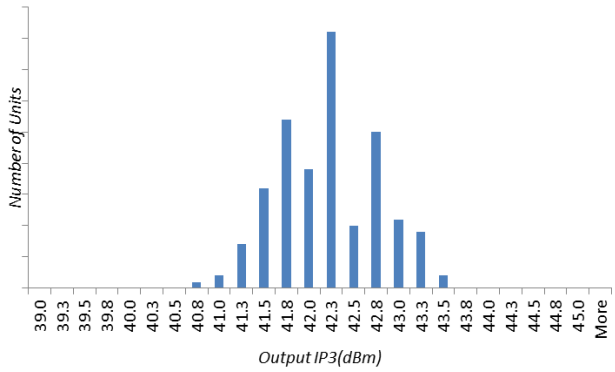
Histogram of OIP3 at 900MHz



Histogram of OIP3 at 2400MHz



Histogram of OIP3 at 3500MHz



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CHARACTERIZATION TEST CIRCUIT

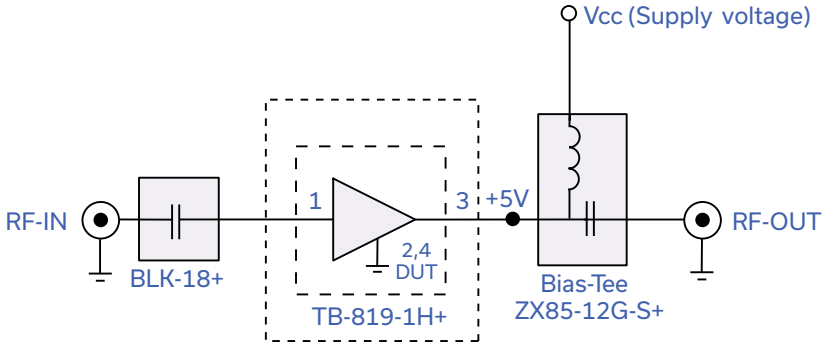


Fig 1. Block Diagram of Test Circuit used for characterization. (DUT soldered on Mini-Circuits Characterization test board TB-819-1H+) Gain, Return loss, Output power at 1dB compression (P1 dB), output IP3 (OIP3) and noise figure measured using Agilent's N5242A PNA-X microwave network analyzer.

Conditions:
1. Gain and Return loss: P_{IN}= -25dBm
2. Output IP3 (OIP3): Two tones, spaced 1 MHz apart, 5 dBm/tone at output.

RECOMMENDED APPLICATION CIRCUIT

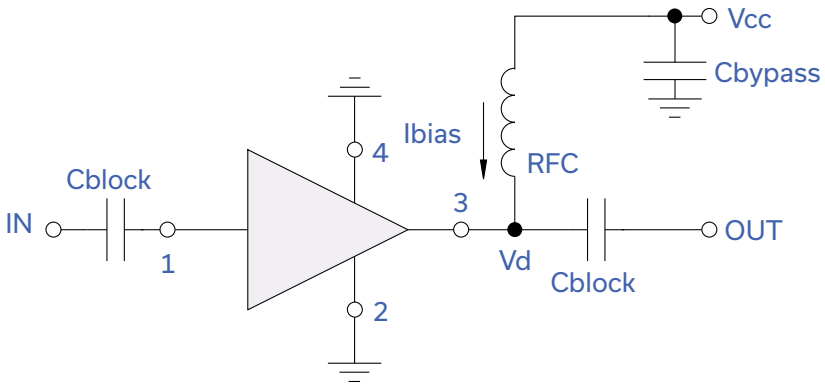
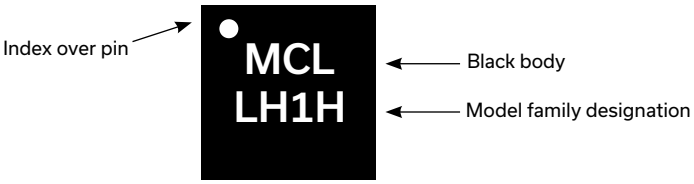


Fig 2. Test Board includes case, connectors, and components soldered to PCB.

PRODUCT MARKING



Marking may contain other features or characters for internal lot control

ADDITIONAL DETAILED TECHNICAL INFORMATION IS AVAILABLE ON OUR DASHBOARD. CLICK HERE

Performance Data	Data Table Swept Graphs S-Parameter (S2P Files) Data Set (.zip file)
Case Style	FG873 (3x3 mm MCLP) Plastic package, exposed paddle lead finish: matte-tin
Tape & Reel **Standard quantities available on reel**	F68 7" reels with 20, 50, 100, 200, 500, 1K, 2K or 3K devices 13" Reels with 2K, 3K, 4K devices
Suggested Layout for PCB Design	PL-443
Evaluation Board	TB-819-1H+
Environmental Ratings	ENV08T1

ESD RATING

Human Body Model (HBM): Class 1B (500 to <1000V) in accordance with ANSI/ESD STM 5.1 - 2001

Machine Model (MM): Class M1 (>25V) in accordance with ANSI/ESD STM5.2-1999

MSL RATING

Moisture Sensitivity: MSL1 in accordance with IPC/JEDEC J-STD-020D

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/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 = 5.00V, Id = 144.67mA @ 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)
20	19.71	23.78	7.20	9.89	0.88	0.69	40.34	21.55	1.62
100	16.98	20.84	16.41	18.41	1.06	0.62	40.67	22.45	1.68
200	16.63	20.67	19.76	21.39	1.09	0.62	41.01	22.54	1.70
300	16.51	20.63	20.34	22.28	1.10	0.62	40.82	22.62	1.73
400	16.42	20.60	19.94	22.61	1.10	0.63	40.03	22.50	1.67
500	16.33	20.57	19.31	22.81	1.10	0.64	41.12	22.71	1.77
600	16.23	20.53	18.54	22.81	1.10	0.65	40.65	22.63	1.77
700	16.12	20.49	17.78	22.95	1.10	0.65	40.50	22.65	1.75
800	16.00	20.44	17.02	22.96	1.11	0.66	40.74	22.72	1.81
900	15.88	20.38	16.34	22.99	1.11	0.67	39.92	22.52	1.81
1000	15.74	20.32	15.69	22.98	1.11	0.68	41.21	22.77	1.86
1200	15.45	20.18	14.60	22.84	1.11	0.71	40.52	22.62	1.89
1400	15.14	20.01	13.69	22.68	1.11	0.73	40.37	22.58	1.95
1600	14.81	19.83	12.94	22.46	1.11	0.75	40.82	22.68	2.06
1800	14.46	19.64	12.35	22.17	1.11	0.77	42.24	22.77	2.03
2000	14.12	19.43	11.86	21.82	1.11	0.79	42.12	22.72	2.06
2200	13.77	19.20	11.48	21.40	1.11	0.80	40.57	22.40	2.06
2400	13.44	18.96	11.15	20.94	1.11	0.82	41.88	22.64	2.12
2600	13.11	18.72	10.87	20.39	1.10	0.83	44.47	23.14	2.16
2800	12.77	18.47	10.66	19.96	1.10	0.84	44.99	23.07	2.29
3000	12.46	18.21	10.48	19.46	1.10	0.85	42.82	23.20	2.17
3200	12.15	17.94	10.37	19.01	1.09	0.85	42.72	22.90	2.24
3400	11.86	17.67	10.28	18.56	1.09	0.85	43.89	23.12	2.23
3600	11.59	17.39	10.23	18.07	1.09	0.86	43.98	23.24	2.25
3800	11.32	17.10	10.26	17.64	1.08	0.85	43.78	23.42	2.40
4000	11.08	16.81	10.31	17.23	1.08	0.85	43.00	23.16	2.32
4200	10.85	16.51	10.38	16.82	1.07	0.84	43.02	23.09	2.42
4400	10.64	16.19	10.50	16.43	1.07	0.83	43.03	23.09	2.43
4600	10.44	15.90	10.66	16.24	1.06	0.82	44.15	23.18	2.51
4800	10.26	15.57	10.80	16.08	1.05	0.81	42.76	22.99	2.53
5000	10.08	15.27	10.98	16.10	1.05	0.80	43.28	23.54	2.57
5200	9.92	14.95	11.07	16.06	1.04	0.79	42.45	22.99	2.54
5400	9.76	14.64	11.09	16.14	1.03	0.78	41.31	22.35	2.73
5600	9.59	14.35	11.00	16.31	1.02	0.77	42.93	22.76	2.76
5800	9.41	14.08	10.85	16.42	1.02	0.77	43.70	23.07	2.78
6000	9.26	13.80	10.49	16.16	1.01	0.76	42.18	22.90	2.83
6200	9.07	13.54	10.05	15.83	0.99	0.76	41.05	22.50	2.90
6400	8.87	13.32	9.54	15.29	0.99	0.76	41.75	22.35	3.03
6600	8.68	13.10	8.97	14.57	0.97	0.76	43.50	22.65	3.16
6800	8.46	12.91	8.30	13.69	0.96	0.76	41.66	22.52	3.22
7000	8.22	12.74	7.64	12.79	0.95	0.77	41.05	22.28	3.43

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 = 4.75V, Id = 130.12mA @ 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)
20	19.65	23.76	7.20	9.87	0.88	0.70	39.34	21.02	1.57
100	16.92	20.81	16.32	18.42	1.05	0.62	41.11	21.86	1.65
200	16.57	20.64	19.58	21.44	1.09	0.62	42.14	21.94	1.69
300	16.45	20.60	20.15	22.34	1.10	0.63	42.01	22.02	1.67
400	16.36	20.57	19.76	22.65	1.10	0.63	40.82	21.91	1.62
500	16.27	20.53	19.15	22.80	1.10	0.64	42.20	22.12	1.73
600	16.17	20.49	18.38	22.75	1.10	0.65	41.51	22.05	1.72
700	16.06	20.44	17.63	22.83	1.10	0.66	41.11	22.07	1.73
800	15.94	20.39	16.88	22.78	1.11	0.67	41.42	22.14	1.76
900	15.81	20.34	16.21	22.74	1.11	0.68	40.19	21.95	1.75
1000	15.68	20.27	15.57	22.66	1.11	0.69	41.00	22.19	1.86
1200	15.38	20.13	14.50	22.40	1.11	0.71	40.07	22.05	1.84
1400	15.07	19.96	13.59	22.15	1.11	0.73	39.92	22.01	1.93
1600	14.73	19.77	12.84	21.85	1.11	0.75	39.99	22.10	1.99
1800	14.39	19.58	12.27	21.53	1.11	0.77	40.60	22.19	1.99
2000	14.04	19.36	11.78	21.17	1.10	0.79	39.93	22.14	2.05
2200	13.70	19.13	11.41	20.77	1.10	0.80	38.65	21.84	2.02
2400	13.36	18.90	11.08	20.36	1.10	0.82	39.77	22.08	2.07
2600	13.02	18.65	10.81	19.86	1.10	0.83	41.13	22.53	2.13
2800	12.69	18.40	10.60	19.50	1.10	0.84	41.25	22.47	2.26
3000	12.38	18.14	10.43	19.07	1.09	0.85	40.03	22.59	2.15
3200	12.07	17.87	10.32	18.68	1.09	0.85	39.87	22.33	2.30
3400	11.78	17.60	10.23	18.30	1.09	0.86	40.43	22.53	2.16
3600	11.51	17.31	10.19	17.87	1.09	0.86	40.54	22.65	2.26
3800	11.24	17.03	10.23	17.50	1.08	0.85	40.51	22.83	2.35
4000	11.00	16.74	10.28	17.14	1.08	0.85	39.78	22.59	2.36
4200	10.77	16.44	10.34	16.77	1.07	0.84	39.70	22.54	2.39
4400	10.56	16.12	10.49	16.42	1.06	0.83	39.50	22.53	2.36
4600	10.36	15.83	10.65	16.25	1.06	0.82	40.30	22.62	2.48
4800	10.18	15.50	10.78	16.10	1.05	0.81	39.53	22.44	2.49
5000	10.00	15.20	10.98	16.12	1.05	0.80	40.42	22.95	2.51
5200	9.84	14.88	11.06	16.08	1.04	0.79	39.22	22.44	2.47
5400	9.68	14.57	11.09	16.13	1.03	0.78	38.21	21.84	2.61
5600	9.51	14.29	11.00	16.27	1.02	0.77	39.58	22.22	2.71
5800	9.33	14.02	10.84	16.32	1.02	0.76	40.19	22.53	2.72
6000	9.18	13.74	10.50	16.03	1.01	0.76	39.19	22.36	2.81
6200	8.99	13.48	10.04	15.63	1.00	0.76	38.23	21.98	2.84
6400	8.79	13.26	9.55	15.04	0.99	0.76	38.44	21.86	2.90
6600	8.59	13.05	8.97	14.29	0.98	0.76	39.69	22.13	3.07
6800	8.37	12.87	8.30	13.41	0.97	0.76	38.74	22.00	3.19
7000	8.12	12.71	7.64	12.52	0.95	0.76	38.08	21.77	3.30

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 = 5.25V, Id = 159.70mA @ 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)
20	19.73	23.79	7.36	9.95	0.89	0.69	40.41	22.06	1.75
100	17.04	20.91	16.55	18.62	1.06	0.62	40.30	22.97	1.74
200	16.70	20.74	19.82	21.72	1.09	0.62	40.28	23.06	1.75
300	16.59	20.70	20.37	22.68	1.10	0.62	40.40	23.14	1.75
400	16.50	20.67	19.97	23.06	1.10	0.63	39.77	23.01	1.71
500	16.40	20.64	19.31	23.27	1.10	0.64	40.76	23.22	1.78
600	16.31	20.60	18.54	23.31	1.10	0.64	40.26	23.13	1.84
700	16.20	20.56	17.76	23.47	1.11	0.65	40.08	23.14	1.83
800	16.08	20.51	17.01	23.51	1.11	0.66	40.55	23.22	1.87
900	15.95	20.45	16.32	23.56	1.11	0.67	39.86	23.01	1.83
1000	15.82	20.39	15.66	23.55	1.11	0.68	40.87	23.28	1.91
1200	15.53	20.25	14.59	23.43	1.11	0.71	40.63	23.11	1.95
1400	15.21	20.09	13.67	23.27	1.11	0.73	40.31	23.07	2.00
1600	14.88	19.92	12.91	23.02	1.11	0.75	41.26	23.18	2.06
1800	14.54	19.72	12.32	22.67	1.11	0.77	43.11	23.28	2.07
2000	14.19	19.51	11.83	22.24	1.11	0.79	43.75	23.24	2.16
2200	13.84	19.29	11.44	21.73	1.11	0.80	41.93	22.90	2.09
2400	13.50	19.05	11.12	21.20	1.11	0.82	42.98	23.15	2.18
2600	13.17	18.80	10.83	20.56	1.10	0.83	46.79	23.68	2.28
2800	12.84	18.56	10.62	20.06	1.10	0.84	47.79	23.61	2.35
3000	12.52	18.30	10.44	19.49	1.10	0.85	47.49	23.74	2.30
3200	12.21	18.03	10.32	18.97	1.10	0.85	46.05	23.41	2.32
3400	11.92	17.76	10.21	18.47	1.09	0.86	50.17	23.65	2.28
3600	11.64	17.47	10.17	17.94	1.09	0.86	54.63	23.76	2.43
3800	11.38	17.19	10.19	17.48	1.08	0.85	49.99	23.96	2.47
4000	11.13	16.90	10.24	17.04	1.08	0.85	49.49	23.67	2.45
4200	10.90	16.59	10.30	16.61	1.07	0.84	50.15	23.59	2.53
4400	10.70	16.27	10.43	16.22	1.06	0.83	50.87	23.58	2.54
4600	10.49	15.98	10.59	16.03	1.06	0.82	50.18	23.67	2.60
4800	10.31	15.64	10.72	15.86	1.05	0.81	48.06	23.47	2.61
5000	10.13	15.34	10.89	15.88	1.05	0.80	45.49	24.04	2.72
5200	9.97	15.02	10.98	15.85	1.04	0.79	46.01	23.48	2.69
5400	9.81	14.70	10.99	15.95	1.03	0.78	45.55	22.82	2.80
5600	9.64	14.41	10.89	16.15	1.02	0.77	46.47	23.24	2.93
5800	9.47	14.14	10.73	16.29	1.01	0.77	46.45	23.56	2.93
6000	9.31	13.85	10.38	16.11	1.00	0.76	44.88	23.38	3.00
6200	9.13	13.59	9.95	15.82	0.99	0.76	43.89	22.97	3.05
6400	8.93	13.36	9.44	15.34	0.98	0.76	44.38	22.82	3.21
6600	8.73	13.14	8.87	14.65	0.97	0.76	45.03	23.13	3.32
6800	8.51	12.94	8.22	13.79	0.96	0.77	43.54	23.00	3.43
7000	8.27	12.77	7.56	12.91	0.95	0.77	43.19	22.76	3.58

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 = 133.10mA @ 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)
20	19.80	23.72	6.80	9.35	0.85	0.69	41.97	21.48	1.60
100	16.62	20.37	15.74	16.61	1.04	0.61	37.46	22.37	1.35
200	16.18	20.15	19.75	19.16	1.08	0.61	36.86	22.46	1.38
300	16.04	20.11	20.73	19.40	1.09	0.61	36.68	22.55	1.44
400	15.95	20.08	20.52	19.38	1.10	0.61	36.12	22.46	1.36
500	15.87	20.05	20.08	19.43	1.10	0.62	36.83	22.66	1.46
600	15.78	20.03	19.36	19.37	1.10	0.62	36.54	22.60	1.43
700	15.69	19.99	18.74	19.62	1.10	0.63	36.40	22.64	1.43
800	15.60	19.95	18.13	19.89	1.11	0.64	36.75	22.71	1.49
900	15.49	19.90	17.42	20.22	1.11	0.65	36.16	22.54	1.45
1000	15.39	19.85	16.87	20.81	1.11	0.66	37.38	22.75	1.55
1200	15.15	19.73	15.82	22.00	1.11	0.68	36.90	22.69	1.52
1400	14.89	19.59	14.93	22.58	1.11	0.69	36.74	22.64	1.56
1600	14.62	19.44	14.08	23.21	1.11	0.71	37.28	22.70	1.61
1800	14.33	19.27	13.43	23.40	1.12	0.73	38.27	22.76	1.64
2000	14.03	19.09	12.97	23.50	1.12	0.74	38.68	22.70	1.64
2200	13.72	18.90	12.61	23.09	1.12	0.76	37.42	22.41	1.60
2400	13.42	18.70	12.26	22.55	1.12	0.77	37.98	22.58	1.66
2600	13.11	18.49	11.92	22.17	1.12	0.79	40.19	23.05	1.74
2800	12.82	18.27	11.62	22.13	1.11	0.80	40.73	22.99	1.75
3000	12.53	18.03	11.43	22.01	1.11	0.81	40.93	23.16	1.67
3200	12.27	17.77	11.40	21.36	1.11	0.81	39.64	22.89	1.85
3400	12.00	17.52	11.25	20.92	1.11	0.81	41.11	23.12	1.72
3600	11.75	17.26	11.17	20.27	1.10	0.81	41.78	23.20	1.84
3800	11.49	17.01	11.02	19.71	1.09	0.82	42.83	23.39	1.95
4000	11.24	16.75	11.03	18.83	1.09	0.82	41.71	23.12	1.89
4200	11.02	16.47	11.11	17.84	1.08	0.81	41.59	23.10	1.92
4400	10.82	16.18	11.22	17.01	1.07	0.80	41.93	23.17	1.88
4600	10.63	15.90	11.40	16.67	1.07	0.79	43.56	23.24	1.95
4800	10.49	15.56	11.70	16.39	1.06	0.77	43.70	23.16	2.00
5000	10.34	15.25	11.69	17.16	1.06	0.76	48.33	23.75	2.02
5200	10.17	14.95	11.37	18.20	1.05	0.76	44.37	23.22	1.99
5400	10.00	14.68	11.34	18.08	1.04	0.76	42.92	22.54	2.19
5600	9.84	14.40	11.61	17.45	1.03	0.74	44.30	22.85	2.21
5800	9.68	14.13	11.27	17.72	1.02	0.74	46.30	23.13	2.25
6000	9.52	13.86	10.88	17.45	1.01	0.74	46.45	23.09	2.29
6200	9.35	13.62	10.40	17.00	1.00	0.73	45.00	22.70	2.30
6400	9.17	13.40	10.18	16.33	0.99	0.73	44.96	22.41	2.39
6600	9.01	13.15	9.66	15.60	0.98	0.72	44.28	22.54	2.50
6800	8.81	12.96	9.08	14.58	0.97	0.72	47.50	22.56	2.59
7000	8.58	12.79	8.38	13.72	0.96	0.73	46.51	22.36	2.70

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 = 4.75V, Id = 118.21mA @ 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)
20	19.72	23.66	6.82	9.26	0.85	0.69	41.14	20.89	1.45
100	16.55	20.31	15.72	16.70	1.04	0.61	37.68	21.71	1.29
200	16.11	20.09	19.73	19.41	1.08	0.61	37.30	21.81	1.35
300	15.97	20.05	20.75	19.72	1.09	0.61	37.15	21.90	1.35
400	15.88	20.02	20.55	19.71	1.10	0.61	36.47	21.82	1.33
500	15.80	19.99	20.11	19.75	1.10	0.62	37.44	22.01	1.42
600	15.71	19.97	19.39	19.69	1.10	0.63	37.00	21.96	1.41
700	15.63	19.93	18.75	19.93	1.10	0.63	36.80	22.00	1.39
800	15.53	19.89	18.15	20.20	1.11	0.64	37.25	22.07	1.45
900	15.43	19.85	17.43	20.52	1.11	0.65	36.48	21.90	1.46
1000	15.32	19.80	16.86	21.10	1.11	0.66	38.10	22.11	1.55
1200	15.09	19.68	15.79	22.28	1.11	0.68	37.17	22.02	1.48
1400	14.83	19.55	14.90	22.81	1.11	0.70	37.06	21.99	1.54
1600	14.56	19.39	14.04	23.38	1.11	0.71	37.58	22.04	1.60
1800	14.27	19.23	13.40	23.50	1.12	0.73	38.55	22.10	1.58
2000	13.97	19.05	12.93	23.49	1.12	0.75	38.63	22.03	1.61
2200	13.67	18.87	12.57	23.00	1.12	0.76	37.44	21.76	1.57
2400	13.37	18.67	12.21	22.39	1.12	0.77	37.94	21.93	1.64
2600	13.06	18.47	11.87	21.93	1.12	0.79	40.25	22.38	1.71
2800	12.76	18.25	11.56	21.82	1.11	0.80	40.46	22.33	1.78
3000	12.48	18.02	11.35	21.65	1.11	0.81	40.27	22.48	1.66
3200	12.22	17.76	11.34	21.02	1.11	0.81	39.32	22.24	1.80
3400	11.95	17.51	11.18	20.59	1.11	0.82	40.52	22.45	1.73
3600	11.70	17.25	11.10	19.97	1.10	0.82	40.93	22.53	1.82
3800	11.44	17.00	10.96	19.45	1.10	0.82	41.53	22.71	1.86
4000	11.20	16.75	10.96	18.59	1.09	0.82	40.16	22.46	1.87
4200	10.98	16.47	11.04	17.63	1.08	0.81	40.12	22.45	1.91
4400	10.77	16.18	11.14	16.85	1.08	0.80	40.52	22.52	1.90
4600	10.59	15.91	11.32	16.53	1.07	0.79	41.48	22.60	1.90
4800	10.45	15.56	11.62	16.27	1.06	0.77	41.25	22.51	1.95
5000	10.29	15.25	11.63	17.04	1.06	0.76	43.04	23.07	2.02
5200	10.14	14.96	11.30	18.05	1.05	0.77	41.16	22.56	2.05
5400	9.96	14.68	11.27	17.93	1.04	0.76	40.18	21.94	2.10
5600	9.81	14.41	11.53	17.31	1.03	0.75	41.29	22.25	2.19
5800	9.64	14.14	11.21	17.57	1.03	0.74	42.26	22.51	2.20
6000	9.49	13.87	10.81	17.30	1.01	0.74	41.66	22.46	2.21
6200	9.31	13.63	10.35	16.85	1.00	0.74	41.02	22.10	2.26
6400	9.13	13.41	10.14	16.21	1.00	0.73	41.31	21.85	2.32
6600	8.97	13.16	9.62	15.48	0.98	0.73	42.11	21.97	2.51
6800	8.77	12.97	9.05	14.49	0.98	0.73	42.76	22.01	2.53
7000	8.55	12.80	8.36	13.63	0.96	0.73	41.76	21.81	2.64

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 = 5.25V, Id = 148.74mA @ 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)
20	19.86	23.76	6.95	9.46	0.85	0.69	43.21	22.05	1.74
100	16.71	20.46	15.89	16.70	1.04	0.61	37.24	22.97	1.39
200	16.28	20.25	19.87	19.18	1.08	0.61	36.70	23.06	1.45
300	16.14	20.20	20.79	19.40	1.09	0.61	36.52	23.14	1.41
400	16.05	20.17	20.57	19.38	1.10	0.61	35.97	23.04	1.39
500	15.97	20.15	20.08	19.42	1.10	0.62	36.64	23.24	1.49
600	15.89	20.12	19.35	19.37	1.10	0.62	36.32	23.17	1.47
700	15.80	20.08	18.72	19.62	1.10	0.63	36.24	23.21	1.47
800	15.70	20.04	18.11	19.90	1.11	0.64	36.54	23.29	1.52
900	15.59	19.99	17.39	20.24	1.11	0.65	36.04	23.11	1.52
1000	15.49	19.94	16.85	20.83	1.11	0.66	37.12	23.35	1.58
1200	15.25	19.81	15.77	22.05	1.11	0.68	36.75	23.27	1.54
1400	14.98	19.67	14.88	22.66	1.11	0.69	36.58	23.22	1.59
1600	14.71	19.51	14.03	23.31	1.11	0.71	37.22	23.28	1.66
1800	14.41	19.34	13.40	23.53	1.11	0.73	38.18	23.35	1.68
2000	14.11	19.15	12.93	23.64	1.12	0.74	38.62	23.29	1.72
2200	13.80	18.96	12.58	23.25	1.12	0.76	37.57	22.98	1.70
2400	13.50	18.75	12.23	22.72	1.12	0.77	37.90	23.17	1.70
2600	13.18	18.54	11.89	22.32	1.11	0.79	40.00	23.65	1.75
2800	12.88	18.32	11.58	22.28	1.11	0.80	40.33	23.59	1.87
3000	12.60	18.07	11.39	22.13	1.11	0.81	41.15	23.77	1.74
3200	12.33	17.81	11.38	21.45	1.11	0.81	39.57	23.46	1.85
3400	12.06	17.55	11.23	20.98	1.10	0.81	40.83	23.70	1.81
3600	11.81	17.29	11.15	20.35	1.10	0.81	41.31	23.79	1.91
3800	11.55	17.03	11.01	19.76	1.09	0.82	42.45	24.00	1.98
4000	11.30	16.78	11.02	18.87	1.09	0.81	42.05	23.69	1.89
4200	11.07	16.49	11.10	17.84	1.08	0.81	41.57	23.68	2.01
4400	10.87	16.20	11.20	17.00	1.07	0.80	41.78	23.74	1.99
4600	10.68	15.92	11.39	16.62	1.07	0.78	42.66	23.81	2.02
4800	10.54	15.56	11.69	16.36	1.06	0.77	42.87	23.72	2.04
5000	10.38	15.26	11.68	17.13	1.05	0.76	44.38	24.35	2.11
5200	10.22	14.96	11.35	18.17	1.04	0.76	43.77	23.78	2.13
5400	10.04	14.68	11.31	18.06	1.04	0.75	42.49	23.06	2.20
5600	9.89	14.40	11.57	17.44	1.03	0.74	43.03	23.39	2.26
5800	9.72	14.14	11.24	17.75	1.02	0.74	43.00	23.67	2.34
6000	9.57	13.86	10.83	17.47	1.01	0.73	44.03	23.65	2.36
6200	9.38	13.64	10.37	17.13	1.00	0.73	43.12	23.23	2.43
6400	9.20	13.38	10.14	16.32	0.99	0.72	42.03	22.92	2.50
6600	9.04	13.15	9.63	15.64	0.98	0.72	41.33	23.04	2.58
6800	8.84	12.96	9.04	14.63	0.97	0.72	41.80	23.07	2.62
7000	8.62	12.78	8.36	13.75	0.96	0.73	41.80	22.86	2.78

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 = 148.60mA @ 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)
20	19.41	23.78	7.85	10.27	0.93	0.69	38.10	21.62	2.18
100	17.11	21.19	16.64	20.24	1.08	0.64	42.69	22.47	2.16
200	16.84	21.05	18.87	24.13	1.10	0.64	48.37	22.55	2.23
300	16.73	21.01	18.87	25.39	1.10	0.64	48.35	22.63	2.28
400	16.63	20.98	18.33	25.56	1.11	0.65	50.56	22.48	2.20
500	16.53	20.94	17.64	25.41	1.11	0.66	45.29	22.71	2.29
600	16.42	20.89	16.96	25.06	1.11	0.67	47.39	22.60	2.32
700	16.30	20.84	16.22	24.84	1.11	0.68	45.93	22.61	2.29
800	16.16	20.78	15.56	24.40	1.11	0.69	45.75	22.70	2.33
900	16.02	20.71	14.96	23.99	1.11	0.70	45.36	22.48	2.37
1000	15.87	20.63	14.38	23.56	1.11	0.71	43.49	22.77	2.39
1200	15.54	20.46	13.43	22.50	1.10	0.74	42.94	22.61	2.39
1400	15.19	20.27	12.65	21.59	1.10	0.76	43.32	22.59	2.50
1600	14.84	20.05	12.00	20.82	1.10	0.78	42.54	22.71	2.56
1800	14.47	19.82	11.48	20.21	1.10	0.80	41.67	22.84	2.56
2000	14.10	19.58	11.06	19.66	1.10	0.82	40.95	22.82	2.66
2200	13.72	19.35	10.69	19.14	1.09	0.83	40.50	22.51	2.61
2400	13.35	19.09	10.38	18.68	1.09	0.85	42.07	22.74	2.67
2600	12.99	18.84	10.13	18.20	1.09	0.86	41.40	23.21	2.81
2800	12.64	18.57	9.93	17.87	1.09	0.87	41.79	23.16	2.92
3000	12.31	18.30	9.77	17.49	1.08	0.88	40.61	23.24	2.85
3200	11.99	18.02	9.69	17.10	1.08	0.88	41.27	22.98	2.97
3400	11.68	17.75	9.63	16.71	1.08	0.89	41.04	23.18	2.93
3600	11.38	17.45	9.64	16.31	1.08	0.89	40.85	23.26	3.05
3800	11.11	17.16	9.64	16.07	1.07	0.88	40.67	23.38	3.13
4000	10.86	16.85	9.70	15.88	1.07	0.88	40.63	23.12	3.12
4200	10.62	16.54	9.79	15.74	1.07	0.87	40.71	23.04	3.24
4400	10.40	16.21	9.92	15.43	1.06	0.86	40.51	23.00	3.18
4600	10.17	15.93	10.10	15.27	1.06	0.85	40.94	23.07	3.29
4800	9.99	15.59	10.21	15.18	1.05	0.84	40.33	22.85	3.34
5000	9.81	15.27	10.36	15.23	1.04	0.83	40.10	23.29	3.39
5200	9.63	14.95	10.55	15.26	1.04	0.82	39.71	22.82	3.40
5400	9.46	14.64	10.64	15.19	1.03	0.81	39.23	22.28	3.51
5600	9.29	14.35	10.57	15.22	1.02	0.80	40.03	22.68	3.65
5800	9.12	14.07	10.41	15.32	1.01	0.80	40.33	22.97	3.68
6000	8.95	13.79	10.12	15.20	1.00	0.79	39.41	22.75	3.76
6200	8.78	13.52	9.66	14.93	0.99	0.79	38.70	22.42	3.82
6400	8.56	13.30	9.09	14.50	0.98	0.79	39.17	22.36	3.93
6600	8.35	13.09	8.40	13.88	0.97	0.80	39.94	22.66	4.08
6800	8.10	12.93	7.80	13.07	0.96	0.81	38.84	22.48	4.19
7000	7.83	12.77	7.11	12.09	0.94	0.81	38.30	22.24	4.37

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 = 4.75V, Id = 135.57mA @ 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)
20	19.40	23.77	7.69	10.22	0.92	0.69	37.46	21.10	2.09
100	17.08	21.14	16.45	20.11	1.07	0.64	42.40	21.94	2.13
200	16.81	21.00	18.73	23.88	1.10	0.64	46.31	22.02	2.17
300	16.69	20.96	18.72	25.07	1.10	0.64	47.84	22.09	2.25
400	16.60	20.93	18.21	25.22	1.11	0.65	46.87	21.96	2.16
500	16.49	20.88	17.54	25.05	1.11	0.66	43.73	22.18	2.30
600	16.38	20.84	16.87	24.70	1.11	0.67	44.03	22.08	2.27
700	16.26	20.78	16.13	24.46	1.11	0.68	43.46	22.10	2.26
800	16.12	20.72	15.48	24.02	1.11	0.69	43.13	22.18	2.31
900	15.98	20.65	14.91	23.60	1.10	0.70	42.45	21.97	2.34
1000	15.83	20.57	14.33	23.19	1.10	0.71	41.66	22.24	2.40
1200	15.50	20.40	13.37	22.16	1.10	0.74	40.82	22.09	2.37
1400	15.15	20.20	12.61	21.28	1.10	0.76	40.90	22.07	2.46
1600	14.79	19.98	11.97	20.54	1.09	0.78	40.46	22.18	2.50
1800	14.42	19.75	11.45	19.96	1.09	0.80	40.31	22.30	2.51
2000	14.05	19.51	11.03	19.43	1.09	0.81	39.43	22.27	2.58
2200	13.67	19.27	10.68	18.94	1.09	0.83	38.63	21.97	2.61
2400	13.31	19.02	10.37	18.51	1.09	0.84	39.94	22.20	2.67
2600	12.94	18.76	10.12	18.06	1.09	0.86	40.08	22.65	2.76
2800	12.60	18.50	9.93	17.77	1.08	0.87	40.17	22.59	2.86
3000	12.26	18.23	9.77	17.41	1.08	0.88	39.15	22.69	2.83
3200	11.94	17.95	9.69	17.06	1.08	0.88	39.36	22.44	2.93
3400	11.63	17.67	9.63	16.71	1.08	0.88	39.51	22.63	2.84
3600	11.34	17.38	9.64	16.33	1.07	0.88	39.46	22.73	2.99
3800	11.07	17.09	9.65	16.11	1.07	0.88	39.42	22.84	3.07
4000	10.82	16.78	9.71	15.93	1.07	0.88	39.06	22.61	3.05
4200	10.58	16.47	9.80	15.82	1.06	0.87	38.97	22.53	3.17
4400	10.36	16.15	9.93	15.52	1.06	0.86	38.85	22.49	3.16
4600	10.13	15.87	10.12	15.36	1.06	0.85	39.39	22.57	3.24
4800	9.95	15.53	10.23	15.27	1.05	0.84	38.69	22.35	3.26
5000	9.77	15.21	10.39	15.31	1.04	0.83	38.99	22.79	3.35
5200	9.60	14.89	10.57	15.33	1.04	0.82	38.37	22.32	3.29
5400	9.42	14.58	10.68	15.24	1.03	0.81	37.65	21.79	3.52
5600	9.25	14.30	10.62	15.23	1.02	0.80	38.59	22.19	3.59
5800	9.08	14.02	10.45	15.32	1.01	0.79	38.99	22.48	3.54
6000	8.92	13.74	10.17	15.15	1.01	0.79	38.13	22.27	3.66
6200	8.74	13.47	9.72	14.86	0.99	0.78	37.31	21.93	3.74
6400	8.53	13.25	9.14	14.39	0.98	0.79	37.66	21.87	3.84
6600	8.31	13.05	8.45	13.74	0.97	0.79	38.46	22.18	3.97
6800	8.05	12.89	7.85	12.92	0.96	0.80	37.51	21.99	4.10
7000	7.79	12.73	7.14	11.93	0.95	0.80	36.99	21.75	4.23

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 = 5.25V, Id = 161.18mA @ 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)
20	19.41	23.77	8.01	10.25	0.93	0.68	37.75	22.05	2.35
100	17.13	21.21	16.84	20.35	1.08	0.64	42.80	22.93	2.29
200	16.87	21.07	19.11	24.46	1.10	0.64	47.52	23.01	2.33
300	16.76	21.04	19.08	25.89	1.11	0.64	46.63	23.10	2.44
400	16.66	21.01	18.52	26.16	1.11	0.65	47.44	22.94	2.28
500	16.56	20.97	17.80	26.07	1.11	0.66	45.61	23.17	2.44
600	16.45	20.93	17.12	25.78	1.11	0.67	49.12	23.05	2.42
700	16.33	20.88	16.36	25.59	1.11	0.68	48.64	23.05	2.43
800	16.20	20.82	15.69	25.15	1.11	0.69	47.79	23.15	2.46
900	16.06	20.76	15.10	24.73	1.11	0.70	50.48	22.92	2.49
1000	15.91	20.69	14.49	24.28	1.11	0.71	44.63	23.22	2.57
1200	15.58	20.53	13.52	23.14	1.11	0.74	46.02	23.04	2.55
1400	15.24	20.34	12.73	22.16	1.11	0.76	46.30	23.02	2.63
1600	14.89	20.13	12.07	21.33	1.10	0.78	44.30	23.15	2.70
1800	14.52	19.91	11.53	20.65	1.10	0.80	42.75	23.29	2.69
2000	14.15	19.69	11.09	20.03	1.10	0.82	42.22	23.27	2.76
2200	13.77	19.45	10.72	19.46	1.10	0.83	42.39	22.94	2.75
2400	13.42	19.21	10.40	18.93	1.10	0.85	44.02	23.18	2.85
2600	13.05	18.96	10.14	18.39	1.09	0.86	42.22	23.67	2.93
2800	12.70	18.70	9.93	17.99	1.09	0.87	42.33	23.62	3.03
3000	12.37	18.43	9.77	17.55	1.09	0.88	41.27	23.70	3.01
3200	12.05	18.16	9.67	17.10	1.09	0.89	42.43	23.43	3.16
3400	11.74	17.88	9.60	16.66	1.08	0.89	41.84	23.62	3.00
3600	11.45	17.59	9.59	16.21	1.08	0.89	41.80	23.70	3.19
3800	11.17	17.30	9.58	15.93	1.08	0.89	41.27	23.81	3.30
4000	10.92	16.99	9.63	15.70	1.07	0.88	41.59	23.54	3.22
4200	10.68	16.68	9.71	15.52	1.07	0.87	41.72	23.45	3.35
4400	10.46	16.35	9.84	15.19	1.06	0.86	41.54	23.40	3.37
4600	10.23	16.07	10.01	15.01	1.06	0.86	41.54	23.48	3.44
4800	10.05	15.72	10.11	14.92	1.05	0.85	41.26	23.25	3.47
5000	9.87	15.40	10.26	14.96	1.04	0.83	40.71	23.70	3.55
5200	9.69	15.08	10.44	14.99	1.04	0.82	40.65	23.21	3.59
5400	9.53	14.76	10.52	14.95	1.03	0.81	40.56	22.67	3.68
5600	9.35	14.47	10.46	15.00	1.02	0.81	40.92	23.09	3.79
5800	9.19	14.18	10.30	15.17	1.01	0.80	40.95	23.38	3.85
6000	9.02	13.88	10.02	15.11	1.00	0.80	40.19	23.15	3.89
6200	8.85	13.61	9.57	14.95	0.99	0.80	39.63	22.80	4.01
6400	8.64	13.38	9.00	14.61	0.98	0.80	40.12	22.76	4.13
6600	8.43	13.16	8.32	14.06	0.96	0.81	40.73	23.09	4.28
6800	8.17	12.99	7.71	13.31	0.95	0.81	39.71	22.88	4.41
7000	7.91	12.82	7.02	12.34	0.94	0.82	39.32	22.64	4.56

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 = 146.66mA @ Temperature = +105°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)
20	19.27	23.75	8.05	10.34	0.94	0.69	36.49	21.53	2.42
100	17.12	21.28	16.66	20.65	1.08	0.64	41.41	22.34	2.36
200	16.88	21.15	18.61	24.82	1.10	0.64	42.84	22.41	2.39
300	16.76	21.11	18.46	25.99	1.11	0.65	42.54	22.48	2.41
400	16.66	21.08	17.79	25.86	1.11	0.66	42.86	22.34	2.37
500	16.56	21.04	17.11	25.42	1.11	0.67	42.05	22.56	2.47
600	16.44	20.99	16.45	24.89	1.11	0.68	42.91	22.45	2.47
700	16.31	20.93	15.71	24.46	1.11	0.69	42.83	22.46	2.46
800	16.17	20.87	15.07	23.84	1.11	0.70	42.33	22.55	2.53
900	16.02	20.80	14.51	23.26	1.11	0.71	42.48	22.34	2.54
1000	15.86	20.72	13.95	22.71	1.11	0.72	41.48	22.62	2.59
1200	15.53	20.54	13.04	21.57	1.10	0.75	41.26	22.46	2.60
1400	15.17	20.34	12.31	20.62	1.10	0.77	41.61	22.46	2.69
1600	14.81	20.11	11.71	19.88	1.10	0.79	40.79	22.58	2.73
1800	14.43	19.87	11.23	19.29	1.09	0.81	40.14	22.72	2.76
2000	14.05	19.63	10.82	18.81	1.09	0.83	39.65	22.68	2.85
2200	13.67	19.38	10.49	18.38	1.09	0.84	39.35	22.37	2.86
2400	13.30	19.12	10.19	17.99	1.09	0.86	40.36	22.62	2.93
2600	12.93	18.86	9.94	17.57	1.09	0.87	40.06	23.05	3.03
2800	12.58	18.59	9.75	17.29	1.08	0.88	40.31	23.01	3.12
3000	12.24	18.32	9.60	16.96	1.08	0.89	39.17	23.06	3.06
3200	11.91	18.04	9.50	16.64	1.08	0.89	39.80	22.82	3.15
3400	11.60	17.76	9.43	16.32	1.08	0.90	39.69	22.98	3.08
3600	11.30	17.47	9.42	15.98	1.07	0.90	39.60	23.05	3.25
3800	11.02	17.18	9.42	15.77	1.07	0.90	39.35	23.12	3.35
4000	10.76	16.88	9.46	15.61	1.07	0.89	39.33	22.90	3.27
4200	10.51	16.57	9.55	15.47	1.06	0.88	39.42	22.81	3.41
4400	10.29	16.25	9.66	15.18	1.06	0.88	39.20	22.75	3.37
4600	10.06	15.96	9.82	15.00	1.06	0.87	39.62	22.85	3.48
4800	9.87	15.63	9.95	14.89	1.05	0.86	38.98	22.62	3.50
5000	9.68	15.31	10.13	14.90	1.04	0.85	38.91	22.97	3.62
5200	9.51	14.98	10.31	14.86	1.04	0.83	38.53	22.54	3.57
5400	9.34	14.67	10.42	14.77	1.03	0.82	38.20	22.09	3.74
5600	9.17	14.38	10.39	14.80	1.02	0.82	39.03	22.50	3.80
5800	9.00	14.09	10.30	14.90	1.01	0.81	39.12	22.76	3.85
6000	8.84	13.79	10.02	14.80	1.00	0.80	38.24	22.49	3.92
6200	8.66	13.52	9.61	14.62	0.99	0.80	37.69	22.19	4.00
6400	8.46	13.29	9.05	14.27	0.98	0.80	38.14	22.21	4.15
6600	8.24	13.08	8.33	13.72	0.96	0.81	38.75	22.53	4.31
6800	7.98	12.92	7.69	12.97	0.96	0.82	37.83	22.27	4.45
7000	7.71	12.76	6.97	12.00	0.94	0.82	37.27	22.04	4.63

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 = 4.75V, Id = 134.58mA @ Temperature = +105°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)
20	19.29	23.76	7.76	10.31	0.94	0.70	36.70	21.01	2.18
100	17.10	21.24	16.36	20.54	1.08	0.64	41.23	21.81	2.21
200	16.85	21.10	18.45	24.51	1.10	0.64	42.61	21.88	2.22
300	16.73	21.07	18.28	25.59	1.11	0.65	42.64	21.95	2.25
400	16.63	21.03	17.61	25.48	1.11	0.66	43.02	21.81	2.22
500	16.53	20.99	16.98	25.03	1.11	0.67	41.32	22.03	2.35
600	16.41	20.94	16.31	24.50	1.11	0.68	41.99	21.93	2.33
700	16.28	20.88	15.59	24.06	1.11	0.69	41.60	21.94	2.30
800	16.14	20.81	14.97	23.45	1.11	0.70	41.23	22.02	2.39
900	15.99	20.74	14.41	22.88	1.10	0.71	41.14	21.82	2.39
1000	15.83	20.66	13.88	22.35	1.10	0.72	40.47	22.09	2.48
1200	15.49	20.47	12.98	21.26	1.10	0.75	39.82	21.95	2.43
1400	15.13	20.26	12.26	20.35	1.10	0.77	40.02	21.94	2.53
1600	14.76	20.03	11.67	19.64	1.09	0.79	39.49	22.05	2.58
1800	14.39	19.79	11.20	19.07	1.09	0.81	39.11	22.18	2.64
2000	14.01	19.54	10.80	18.62	1.09	0.82	38.44	22.14	2.68
2200	13.62	19.29	10.47	18.21	1.08	0.84	38.00	21.85	2.67
2400	13.26	19.02	10.18	17.84	1.08	0.85	38.87	22.09	2.77
2600	12.89	18.76	9.93	17.45	1.08	0.87	39.11	22.50	2.86
2800	12.54	18.49	9.74	17.19	1.08	0.88	39.13	22.47	2.93
3000	12.20	18.22	9.59	16.89	1.07	0.88	38.29	22.52	2.88
3200	11.87	17.94	9.51	16.61	1.07	0.89	38.47	22.29	3.01
3400	11.55	17.66	9.44	16.32	1.07	0.89	38.62	22.46	2.95
3600	11.25	17.37	9.43	16.01	1.07	0.89	38.63	22.53	3.05
3800	10.97	17.08	9.44	15.83	1.07	0.89	38.44	22.61	3.17
4000	10.72	16.77	9.49	15.68	1.06	0.89	38.15	22.40	3.13
4200	10.47	16.47	9.57	15.56	1.06	0.88	38.14	22.32	3.26
4400	10.25	16.14	9.69	15.30	1.05	0.87	37.94	22.27	3.19
4600	10.02	15.86	9.86	15.13	1.05	0.86	38.59	22.37	3.29
4800	9.83	15.53	9.99	15.02	1.04	0.85	37.93	22.15	3.36
5000	9.64	15.21	10.18	15.02	1.04	0.84	38.01	22.49	3.42
5200	9.47	14.89	10.36	14.97	1.03	0.83	37.50	22.07	3.41
5400	9.30	14.57	10.47	14.86	1.03	0.82	36.97	21.62	3.55
5600	9.13	14.29	10.45	14.86	1.02	0.81	37.83	22.03	3.59
5800	8.96	14.00	10.36	14.93	1.01	0.80	38.10	22.29	3.68
6000	8.80	13.71	10.08	14.77	1.00	0.80	37.26	22.03	3.76
6200	8.62	13.44	9.67	14.55	0.99	0.79	36.58	21.73	3.83
6400	8.42	13.22	9.12	14.13	0.98	0.79	37.04	21.75	3.92
6600	8.19	13.01	8.41	13.54	0.97	0.80	37.67	22.06	4.11
6800	7.93	12.86	7.75	12.77	0.96	0.81	36.79	21.81	4.20
7000	7.67	12.70	7.03	11.79	0.94	0.81	36.21	21.57	4.35

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 = 5.25V, Id = 158.65mA @ Temperature = +105°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)
20	19.26	23.75	8.14	10.33	0.95	0.68	36.05	21.96	2.52
100	17.13	21.29	16.85	20.74	1.09	0.64	41.08	22.78	2.44
200	16.88	21.17	18.90	25.10	1.11	0.64	42.23	22.85	2.46
300	16.77	21.13	18.71	26.40	1.11	0.65	41.79	22.93	2.53
400	16.67	21.11	18.01	26.33	1.11	0.66	41.80	22.78	2.44
500	16.57	21.07	17.33	25.90	1.11	0.67	41.52	23.00	2.61
600	16.45	21.02	16.63	25.42	1.11	0.68	42.57	22.87	2.51
700	16.33	20.97	15.88	24.98	1.11	0.69	42.58	22.88	2.53
800	16.19	20.91	15.23	24.35	1.11	0.70	42.17	22.98	2.62
900	16.04	20.84	14.65	23.75	1.11	0.71	42.52	22.75	2.59
1000	15.89	20.77	14.08	23.17	1.11	0.72	42.08	23.04	2.63
1200	15.55	20.60	13.15	21.99	1.11	0.75	41.80	22.88	2.67
1400	15.20	20.41	12.41	21.00	1.11	0.77	42.39	22.87	2.77
1600	14.84	20.19	11.79	20.22	1.10	0.79	41.19	23.00	2.84
1800	14.46	19.96	11.30	19.58	1.10	0.81	40.23	23.14	2.83
2000	14.09	19.73	10.88	19.07	1.10	0.83	39.78	23.11	2.92
2200	13.71	19.49	10.53	18.60	1.10	0.84	40.05	22.79	2.90
2400	13.35	19.23	10.22	18.17	1.09	0.86	40.88	23.04	2.99
2600	12.98	18.97	9.96	17.70	1.09	0.87	40.05	23.48	3.09
2800	12.63	18.71	9.76	17.37	1.09	0.88	40.36	23.44	3.16
3000	12.29	18.44	9.60	17.00	1.09	0.89	39.54	23.48	3.12
3200	11.96	18.16	9.49	16.64	1.08	0.90	40.24	23.24	3.25
3400	11.64	17.89	9.41	16.28	1.08	0.90	40.03	23.40	3.16
3600	11.34	17.60	9.39	15.90	1.08	0.90	39.83	23.45	3.34
3800	11.06	17.31	9.38	15.65	1.07	0.90	39.68	23.51	3.42
4000	10.81	17.00	9.42	15.44	1.07	0.90	39.77	23.28	3.37
4200	10.56	16.70	9.49	15.27	1.07	0.89	39.85	23.18	3.46
4400	10.34	16.37	9.60	14.97	1.06	0.88	39.70	23.13	3.46
4600	10.11	16.09	9.75	14.79	1.06	0.87	39.87	23.22	3.58
4800	9.92	15.74	9.86	14.67	1.05	0.86	39.37	23.00	3.60
5000	9.73	15.43	10.05	14.66	1.04	0.85	39.11	23.34	3.64
5200	9.56	15.10	10.21	14.62	1.03	0.84	38.99	22.92	3.67
5400	9.40	14.77	10.31	14.56	1.02	0.83	38.86	22.46	3.81
5600	9.22	14.48	10.29	14.61	1.02	0.82	39.40	22.88	3.89
5800	9.06	14.18	10.20	14.74	1.01	0.81	39.28	23.14	3.94
6000	8.90	13.88	9.91	14.69	1.00	0.81	38.70	22.85	4.02
6200	8.73	13.59	9.51	14.59	0.98	0.81	38.27	22.55	4.10
6400	8.52	13.36	8.97	14.33	0.97	0.81	38.71	22.59	4.22
6600	8.30	13.14	8.27	13.86	0.96	0.82	39.05	22.91	4.39
6800	8.05	12.97	7.61	13.17	0.95	0.83	38.30	22.63	4.54
7000	7.78	12.80	6.90	12.22	0.93	0.84	37.90	22.40	4.73

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 = 4.00V, Id = 85.81mA @ 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)
20	19.27	23.63	6.80	9.59	0.88	0.72	35.06	18.92	1.45
100	16.55	20.56	15.66	18.38	1.06	0.64	36.11	19.63	1.55
200	16.19	20.38	18.69	21.77	1.09	0.64	37.04	19.72	1.63
300	16.07	20.33	19.22	22.76	1.10	0.64	37.36	19.80	1.59
400	15.97	20.29	18.87	22.93	1.10	0.65	38.02	19.72	1.59
500	15.88	20.25	18.29	22.84	1.10	0.65	36.28	19.89	1.62
600	15.77	20.20	17.59	22.52	1.10	0.66	36.19	19.84	1.69
700	15.66	20.15	16.90	22.29	1.10	0.67	35.79	19.85	1.64
800	15.54	20.09	16.20	21.97	1.10	0.68	35.64	19.90	1.71
900	15.41	20.02	15.56	21.64	1.10	0.69	35.37	19.74	1.72
1000	15.27	19.95	14.96	21.29	1.10	0.70	34.60	19.91	1.78
1200	14.97	19.79	13.93	20.60	1.10	0.72	34.19	19.79	1.78
1400	14.64	19.61	13.08	20.02	1.10	0.74	34.33	19.77	1.82
1600	14.30	19.41	12.38	19.51	1.09	0.76	34.09	19.82	1.92
1800	13.95	19.20	11.81	19.07	1.09	0.78	33.96	19.90	1.92
2000	13.60	18.98	11.36	18.69	1.09	0.80	33.23	19.82	1.96
2200	13.25	18.75	11.02	18.34	1.09	0.81	32.65	19.61	1.96
2400	12.91	18.51	10.71	18.02	1.09	0.83	33.36	19.82	2.00
2600	12.58	18.25	10.46	17.68	1.08	0.84	33.67	20.10	2.08
2800	12.25	18.00	10.28	17.47	1.08	0.85	33.72	20.10	2.12
3000	11.94	17.74	10.13	17.23	1.08	0.86	33.07	20.15	2.03
3200	11.63	17.48	10.04	17.05	1.08	0.86	33.12	20.03	2.11
3400	11.34	17.21	9.96	16.89	1.08	0.87	33.37	20.16	2.03
3600	11.07	16.93	9.95	16.67	1.07	0.87	33.45	20.27	2.17
3800	10.81	16.65	10.01	16.51	1.07	0.86	33.46	20.36	2.26
4000	10.57	16.36	10.07	16.33	1.07	0.86	33.11	20.25	2.18
4200	10.35	16.06	10.16	16.14	1.06	0.85	33.04	20.22	2.29
4400	10.15	15.75	10.30	15.92	1.06	0.84	32.96	20.22	2.25
4600	9.95	15.47	10.49	15.84	1.05	0.83	33.44	20.32	2.31
4800	9.78	15.14	10.64	15.74	1.05	0.82	33.05	20.18	2.29
5000	9.60	14.85	10.85	15.77	1.04	0.81	33.48	20.52	2.35
5200	9.44	14.55	10.93	15.71	1.04	0.79	32.94	20.20	2.30
5400	9.28	14.25	10.95	15.65	1.03	0.78	32.21	19.82	2.43
5600	9.11	13.98	10.86	15.63	1.03	0.78	32.98	20.12	2.51
5800	8.93	13.73	10.72	15.50	1.02	0.77	33.37	20.37	2.49
6000	8.77	13.46	10.37	15.03	1.01	0.76	32.89	20.23	2.56
6200	8.58	13.23	9.93	14.50	1.00	0.76	32.18	19.97	2.58
6400	8.37	13.03	9.43	13.81	0.99	0.75	32.29	19.90	2.67
6600	8.16	12.84	8.88	13.06	0.98	0.75	32.90	20.13	2.80
6800	7.92	12.68	8.23	12.22	0.98	0.75	32.45	20.02	2.91
7000	7.67	12.54	7.59	11.40	0.96	0.75	32.02	19.84	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 = 4.50V, Id = 115.25mA @ 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)
20	19.57	23.74	7.08	9.82	0.88	0.70	37.73	20.41	1.52
100	16.82	20.74	16.15	18.34	1.06	0.63	40.78	21.20	1.60
200	16.47	20.57	19.39	21.37	1.09	0.63	45.05	21.29	1.60
300	16.35	20.52	19.97	22.25	1.10	0.63	48.21	21.37	1.69
400	16.26	20.49	19.59	22.51	1.10	0.64	42.93	21.27	1.60
500	16.16	20.46	19.00	22.61	1.10	0.64	43.86	21.48	1.69
600	16.06	20.41	18.25	22.50	1.10	0.65	42.08	21.42	1.69
700	15.95	20.37	17.49	22.51	1.10	0.66	40.85	21.44	1.71
800	15.83	20.31	16.76	22.40	1.11	0.67	41.11	21.50	1.77
900	15.71	20.25	16.09	22.29	1.11	0.68	39.64	21.32	1.74
1000	15.57	20.18	15.45	22.15	1.11	0.69	39.79	21.54	1.81
1200	15.27	20.04	14.39	21.79	1.10	0.71	38.61	21.41	1.83
1400	14.96	19.86	13.49	21.45	1.10	0.73	38.56	21.38	1.89
1600	14.62	19.68	12.76	21.11	1.10	0.75	38.35	21.46	1.94
1800	14.28	19.47	12.17	20.77	1.10	0.77	38.55	21.54	1.94
2000	13.93	19.26	11.71	20.44	1.10	0.79	37.62	21.48	2.01
2200	13.58	19.03	11.34	20.08	1.10	0.80	36.64	21.22	1.96
2400	13.24	18.79	11.02	19.71	1.10	0.82	37.58	21.44	2.04
2600	12.91	18.54	10.75	19.29	1.10	0.83	38.44	21.85	2.10
2800	12.58	18.29	10.56	19.00	1.10	0.84	38.57	21.80	2.18
3000	12.27	18.02	10.39	18.63	1.09	0.85	37.68	21.91	2.12
3200	11.96	17.76	10.29	18.33	1.09	0.85	37.46	21.68	2.16
3400	11.67	17.49	10.19	18.03	1.09	0.86	37.84	21.88	2.13
3600	11.40	17.20	10.17	17.67	1.08	0.86	37.97	21.99	2.19
3800	11.13	16.92	10.21	17.37	1.08	0.85	38.07	22.15	2.30
4000	10.89	16.63	10.27	17.06	1.08	0.85	37.48	21.94	2.29
4200	10.67	16.32	10.34	16.73	1.07	0.84	37.25	21.90	2.31
4400	10.46	16.01	10.49	16.42	1.06	0.83	37.26	21.90	2.26
4600	10.26	15.72	10.65	16.27	1.06	0.82	37.92	21.98	2.35
4800	10.08	15.39	10.80	16.13	1.05	0.81	37.24	21.81	2.38
5000	9.90	15.10	11.00	16.16	1.05	0.80	37.91	22.27	2.42
5200	9.74	14.78	11.09	16.11	1.04	0.79	37.10	21.82	2.42
5400	9.58	14.47	11.11	16.12	1.03	0.78	35.97	21.27	2.58
5600	9.41	14.20	11.02	16.20	1.03	0.77	37.09	21.63	2.64
5800	9.23	13.93	10.86	16.19	1.02	0.76	37.68	21.92	2.66
6000	9.07	13.66	10.52	15.82	1.01	0.76	37.00	21.76	2.73
6200	8.89	13.41	10.07	15.37	1.00	0.75	36.07	21.42	2.75
6400	8.69	13.19	9.55	14.74	0.99	0.75	36.24	21.29	2.84
6600	8.48	12.99	8.98	13.97	0.98	0.75	37.11	21.55	2.94
6800	8.26	12.81	8.33	13.08	0.97	0.75	36.49	21.44	3.03
7000	8.01	12.65	7.66	12.20	0.96	0.76	35.86	21.23	3.14

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 = 4.00V, Id = 73.78mA @ 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)
20	19.23	23.45	6.50	8.71	0.84	0.69	33.42	18.32	1.17
100	16.12	19.95	15.20	17.02	1.04	0.63	33.43	19.13	1.26
200	15.67	19.72	19.24	20.89	1.09	0.62	34.20	19.26	1.33
300	15.54	19.67	20.47	21.81	1.10	0.62	34.89	19.34	1.34
400	15.45	19.64	20.40	21.92	1.10	0.63	36.78	19.33	1.28
500	15.37	19.62	19.99	21.95	1.10	0.63	34.44	19.43	1.36
600	15.29	19.60	19.27	21.79	1.11	0.64	34.91	19.40	1.41
700	15.20	19.57	18.60	21.94	1.11	0.65	34.87	19.40	1.40
800	15.11	19.53	17.95	22.08	1.11	0.66	34.62	19.44	1.40
900	15.00	19.50	17.20	22.29	1.11	0.66	35.40	19.33	1.39
1000	14.90	19.45	16.58	22.66	1.11	0.67	32.81	19.36	1.47
1200	14.67	19.35	15.45	23.39	1.11	0.69	33.72	19.33	1.41
1400	14.42	19.23	14.54	23.36	1.11	0.71	34.43	19.35	1.51
1600	14.15	19.10	13.69	23.43	1.11	0.73	34.24	19.35	1.59
1800	13.87	18.95	13.06	22.99	1.12	0.75	33.93	19.41	1.53
2000	13.58	18.80	12.58	22.48	1.12	0.76	32.88	19.27	1.59
2200	13.28	18.63	12.23	21.62	1.12	0.78	32.96	19.11	1.55
2400	12.99	18.46	11.86	20.75	1.12	0.80	34.18	19.32	1.61
2600	12.68	18.28	11.50	20.01	1.12	0.81	33.21	19.55	1.67
2800	12.39	18.09	11.16	19.64	1.11	0.82	33.35	19.55	1.69
3000	12.11	17.88	10.94	19.37	1.11	0.83	32.50	19.58	1.59
3200	11.86	17.64	10.90	18.88	1.11	0.84	33.67	19.55	1.76
3400	11.60	17.41	10.74	18.56	1.11	0.84	33.60	19.70	1.65
3600	11.36	17.17	10.66	18.09	1.10	0.84	33.70	19.77	1.72
3800	11.10	16.94	10.52	17.71	1.10	0.85	33.31	19.85	1.81
4000	10.87	16.70	10.50	17.05	1.09	0.85	33.47	19.72	1.81
4200	10.65	16.43	10.56	16.33	1.08	0.84	33.66	19.70	1.84
4400	10.46	16.16	10.64	15.77	1.08	0.83	33.79	19.78	1.82
4600	10.28	15.89	10.80	15.58	1.07	0.82	34.51	19.92	1.87
4800	10.16	15.54	11.09	15.39	1.06	0.80	34.20	19.85	1.85
5000	10.01	15.24	11.12	16.12	1.06	0.79	33.71	20.27	1.89
5200	9.86	14.95	10.84	16.94	1.05	0.80	34.11	19.92	1.88
5400	9.69	14.68	10.83	16.79	1.04	0.79	34.00	19.52	2.02
5600	9.55	14.41	11.10	16.23	1.03	0.78	34.94	19.82	2.04
5800	9.39	14.14	10.82	16.41	1.02	0.77	35.25	20.07	2.00
6000	9.24	13.88	10.43	16.13	1.01	0.77	34.45	20.03	2.08
6200	9.06	13.64	10.03	15.72	1.00	0.77	34.08	19.76	2.14
6400	8.88	13.42	9.84	15.15	0.99	0.76	34.68	19.67	2.19
6600	8.72	13.18	9.35	14.50	0.98	0.76	35.62	19.84	2.28
6800	8.52	12.99	8.81	13.63	0.97	0.75	35.00	19.87	2.35
7000	8.30	12.83	8.16	12.86	0.96	0.76	34.45	19.72	2.49

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 = 4.50V, Id = 102.88mA @ 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)
20	19.61	23.63	6.71	9.12	0.84	0.69	38.81	20.20	1.34
100	16.45	20.21	15.57	16.75	1.03	0.62	37.95	20.98	1.29
200	16.00	19.99	19.66	19.69	1.08	0.61	38.68	21.10	1.36
300	15.86	19.95	20.74	20.09	1.09	0.61	38.40	21.18	1.32
400	15.77	19.92	20.58	20.10	1.10	0.62	37.37	21.12	1.31
500	15.69	19.89	20.12	20.14	1.10	0.62	39.00	21.30	1.43
600	15.61	19.87	19.41	20.07	1.10	0.63	38.34	21.25	1.42
700	15.52	19.83	18.78	20.30	1.11	0.64	38.01	21.28	1.40
800	15.43	19.79	18.14	20.55	1.11	0.64	38.34	21.34	1.44
900	15.32	19.75	17.41	20.86	1.11	0.65	37.38	21.18	1.44
1000	15.22	19.70	16.85	21.42	1.11	0.66	39.56	21.35	1.54
1200	14.98	19.59	15.75	22.55	1.11	0.68	37.91	21.28	1.44
1400	14.73	19.46	14.85	23.00	1.11	0.70	37.89	21.26	1.51
1600	14.46	19.32	14.00	23.50	1.12	0.72	38.36	21.30	1.57
1800	14.17	19.16	13.36	23.50	1.12	0.73	39.18	21.36	1.58
2000	13.88	18.98	12.87	23.39	1.12	0.75	38.74	21.27	1.63
2200	13.57	18.80	12.52	22.80	1.12	0.76	37.40	21.03	1.56
2400	13.28	18.61	12.17	22.11	1.12	0.78	38.21	21.21	1.64
2600	12.97	18.42	11.81	21.57	1.12	0.79	40.18	21.61	1.70
2800	12.68	18.21	11.50	21.39	1.11	0.81	40.38	21.57	1.82
3000	12.40	17.98	11.29	21.19	1.11	0.81	39.13	21.70	1.63
3200	12.14	17.73	11.27	20.60	1.11	0.82	38.98	21.50	1.76
3400	11.87	17.48	11.11	20.20	1.11	0.82	39.81	21.70	1.64
3600	11.62	17.23	11.04	19.61	1.10	0.82	40.04	21.78	1.79
3800	11.36	16.99	10.89	19.12	1.10	0.83	40.08	21.93	1.90
4000	11.12	16.74	10.89	18.30	1.09	0.83	38.96	21.70	1.81
4200	10.90	16.46	10.96	17.40	1.09	0.82	39.03	21.70	1.90
4400	10.70	16.17	11.05	16.66	1.08	0.81	39.38	21.77	1.87
4600	10.52	15.90	11.23	16.37	1.08	0.80	40.28	21.86	1.90
4800	10.38	15.55	11.53	16.13	1.06	0.78	39.67	21.76	1.92
5000	10.23	15.25	11.55	16.89	1.06	0.77	40.55	22.28	1.96
5200	10.07	14.96	11.22	17.87	1.05	0.77	39.50	21.81	1.90
5400	9.90	14.68	11.20	17.74	1.04	0.77	38.57	21.26	2.00
5600	9.75	14.41	11.47	17.13	1.03	0.75	39.66	21.55	2.08
5800	9.59	14.14	11.15	17.38	1.03	0.75	40.64	21.80	2.11
6000	9.44	13.87	10.76	17.10	1.01	0.75	39.73	21.75	2.14
6200	9.26	13.63	10.31	16.66	1.00	0.74	39.04	21.43	2.21
6400	9.08	13.41	10.08	16.04	1.00	0.74	39.50	21.22	2.26
6600	8.92	13.17	9.59	15.32	0.98	0.73	40.58	21.36	2.41
6800	8.72	12.98	9.02	14.35	0.98	0.73	40.26	21.40	2.45
7000	8.50	12.81	8.34	13.51	0.96	0.74	39.62	21.21	2.54

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 = 4.00V, Id = 94.74mA @ 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)
20	19.13	23.72	7.30	10.08	0.92	0.71	35.89	19.20	1.82
100	16.79	20.97	15.67	19.78	1.07	0.65	37.54	19.93	1.94
200	16.51	20.82	17.74	23.36	1.10	0.65	38.11	20.01	2.01
300	16.39	20.77	17.77	24.21	1.10	0.66	38.14	20.08	2.01
400	16.29	20.73	17.29	23.97	1.11	0.66	38.55	20.00	1.95
500	16.18	20.67	16.67	23.46	1.11	0.67	37.14	20.19	2.08
600	16.07	20.61	16.07	22.87	1.10	0.68	37.07	20.12	2.07
700	15.93	20.54	15.39	22.40	1.10	0.69	36.73	20.14	2.07
800	15.80	20.47	14.80	21.82	1.10	0.70	36.56	20.20	2.12
900	15.65	20.38	14.27	21.31	1.10	0.71	36.28	20.03	2.18
1000	15.49	20.29	13.72	20.82	1.09	0.72	35.82	20.25	2.22
1200	15.14	20.08	12.84	19.81	1.09	0.75	35.36	20.13	2.18
1400	14.78	19.86	12.12	18.99	1.08	0.77	35.46	20.11	2.28
1600	14.42	19.61	11.52	18.34	1.08	0.79	35.26	20.21	2.31
1800	14.04	19.35	11.05	17.84	1.07	0.80	35.11	20.31	2.30
2000	13.66	19.10	10.67	17.43	1.07	0.82	34.48	20.27	2.41
2200	13.27	18.84	10.35	17.06	1.07	0.84	33.89	20.05	2.37
2400	12.90	18.58	10.08	16.76	1.07	0.85	34.58	20.24	2.46
2600	12.54	18.31	9.86	16.47	1.06	0.86	34.90	20.57	2.56
2800	12.19	18.05	9.69	16.33	1.06	0.87	34.99	20.55	2.64
3000	11.85	17.77	9.56	16.13	1.06	0.88	34.33	20.63	2.59
3200	11.53	17.49	9.51	15.96	1.06	0.88	34.34	20.46	2.67
3400	11.23	17.21	9.48	15.80	1.06	0.89	34.59	20.61	2.64
3600	10.94	16.92	9.51	15.60	1.06	0.88	34.66	20.71	2.73
3800	10.66	16.63	9.55	15.53	1.06	0.88	34.66	20.79	2.84
4000	10.42	16.32	9.63	15.48	1.05	0.88	34.30	20.64	2.80
4200	10.18	16.01	9.73	15.52	1.05	0.87	34.20	20.60	2.89
4400	9.97	15.70	9.90	15.34	1.05	0.86	34.09	20.57	2.91
4600	9.74	15.42	10.10	15.25	1.05	0.85	34.56	20.65	2.95
4800	9.56	15.09	10.24	15.17	1.04	0.84	34.07	20.48	3.00
5000	9.38	14.79	10.41	15.20	1.04	0.83	34.49	20.82	3.06
5200	9.21	14.48	10.60	15.19	1.03	0.81	33.89	20.47	3.02
5400	9.03	14.19	10.70	14.99	1.03	0.80	33.17	20.05	3.16
5600	8.86	13.92	10.63	14.85	1.02	0.79	34.01	20.38	3.22
5800	8.68	13.66	10.48	14.74	1.02	0.78	34.34	20.64	3.22
6000	8.51	13.40	10.18	14.37	1.01	0.78	33.72	20.46	3.27
6200	8.32	13.15	9.72	13.89	1.00	0.77	33.02	20.19	3.32
6400	8.10	12.96	9.14	13.26	0.99	0.77	33.24	20.13	3.47
6600	7.87	12.78	8.46	12.53	0.98	0.77	33.87	20.38	3.60
6800	7.61	12.65	7.87	11.71	0.98	0.77	33.27	20.22	3.68
7000	7.33	12.53	7.18	10.79	0.96	0.78	32.73	20.01	3.84

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 = 4.50V, Id = 122.32mA @ 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)
20	19.36	23.76	7.54	10.19	0.92	0.70	37.47	20.53	1.99
100	17.01	21.10	16.26	19.97	1.07	0.64	41.46	21.34	2.08
200	16.73	20.95	18.49	23.60	1.10	0.64	43.92	21.43	2.11
300	16.62	20.91	18.53	24.66	1.10	0.65	43.93	21.49	2.15
400	16.52	20.87	18.01	24.72	1.11	0.65	44.14	21.37	2.11
500	16.42	20.83	17.35	24.48	1.11	0.66	41.99	21.59	2.21
600	16.31	20.77	16.70	24.07	1.11	0.67	41.72	21.51	2.21
700	16.18	20.72	15.99	23.78	1.10	0.68	41.09	21.52	2.20
800	16.04	20.65	15.34	23.31	1.10	0.69	40.87	21.59	2.24
900	15.90	20.57	14.77	22.88	1.10	0.70	40.34	21.40	2.27
1000	15.74	20.50	14.20	22.46	1.10	0.71	39.82	21.66	2.32
1200	15.41	20.31	13.27	21.47	1.10	0.74	39.01	21.52	2.29
1400	15.06	20.11	12.51	20.62	1.09	0.76	38.99	21.50	2.41
1600	14.70	19.88	11.88	19.93	1.09	0.78	38.63	21.61	2.44
1800	14.33	19.64	11.37	19.38	1.09	0.80	38.53	21.72	2.42
2000	13.96	19.39	10.97	18.91	1.08	0.81	37.77	21.68	2.51
2200	13.57	19.15	10.61	18.46	1.08	0.83	37.01	21.41	2.50
2400	13.21	18.89	10.32	18.08	1.08	0.85	37.93	21.63	2.61
2600	12.85	18.63	10.08	17.69	1.08	0.86	38.28	22.04	2.68
2800	12.50	18.37	9.89	17.46	1.08	0.87	38.51	22.00	2.80
3000	12.16	18.09	9.75	17.16	1.07	0.88	37.61	22.09	2.77
3200	11.84	17.82	9.67	16.87	1.07	0.88	37.62	21.86	2.83
3400	11.54	17.53	9.62	16.58	1.07	0.88	37.86	22.04	2.76
3600	11.24	17.24	9.64	16.26	1.07	0.88	37.97	22.14	2.93
3800	10.97	16.95	9.66	16.09	1.07	0.88	37.86	22.26	3.02
4000	10.73	16.64	9.72	15.94	1.06	0.87	37.44	22.04	2.99
4200	10.48	16.33	9.82	15.88	1.06	0.87	37.33	21.98	3.07
4400	10.27	16.01	9.97	15.60	1.05	0.86	37.21	21.94	3.04
4600	10.04	15.73	10.15	15.46	1.05	0.85	37.74	22.02	3.18
4800	9.85	15.39	10.28	15.37	1.05	0.84	37.16	21.81	3.16
5000	9.68	15.08	10.44	15.41	1.04	0.83	37.57	22.23	3.26
5200	9.50	14.77	10.63	15.42	1.04	0.81	36.89	21.79	3.21
5400	9.33	14.46	10.73	15.30	1.03	0.80	36.07	21.28	3.39
5600	9.16	14.18	10.67	15.25	1.02	0.79	37.00	21.66	3.46
5800	8.99	13.91	10.51	15.27	1.02	0.79	37.39	21.95	3.48
6000	8.82	13.63	10.22	15.02	1.01	0.78	36.70	21.75	3.55
6200	8.64	13.37	9.76	14.66	1.00	0.78	35.89	21.42	3.62
6400	8.42	13.16	9.18	14.12	0.99	0.78	36.17	21.36	3.67
6600	8.20	12.97	8.50	13.42	0.97	0.78	36.94	21.65	3.87
6800	7.95	12.82	7.89	12.59	0.97	0.79	36.19	21.47	3.99
7000	7.68	12.67	7.19	11.61	0.95	0.79	35.55	21.24	4.07

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 = 4.00V, Id = 95.21mA @ Temperature = +105°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)
20	19.05	23.70	7.33	10.18	0.93	0.72	35.45	19.09	1.87
100	16.84	21.08	15.49	20.14	1.08	0.65	37.03	19.80	2.00
200	16.58	20.93	17.35	23.76	1.10	0.66	37.56	19.88	2.08
300	16.46	20.89	17.20	24.42	1.11	0.66	37.51	19.94	2.12
400	16.35	20.84	16.63	23.92	1.11	0.67	37.68	19.84	2.02
500	16.24	20.78	16.07	23.22	1.11	0.68	36.70	20.05	2.13
600	16.12	20.72	15.48	22.52	1.10	0.69	36.58	19.98	2.12
700	15.98	20.64	14.82	21.95	1.10	0.70	36.31	19.99	2.16
800	15.83	20.56	14.25	21.28	1.10	0.71	36.17	20.05	2.20
900	15.68	20.47	13.74	20.69	1.09	0.72	35.94	19.89	2.21
1000	15.51	20.36	13.25	20.16	1.09	0.73	35.49	20.12	2.28
1200	15.15	20.15	12.42	19.14	1.08	0.76	35.10	20.00	2.28
1400	14.78	19.90	11.75	18.32	1.08	0.78	35.16	19.99	2.35
1600	14.41	19.64	11.22	17.71	1.07	0.80	35.04	20.09	2.37
1800	14.02	19.38	10.78	17.23	1.06	0.81	34.88	20.20	2.40
2000	13.63	19.11	10.43	16.87	1.06	0.83	34.24	20.17	2.47
2200	13.23	18.84	10.14	16.55	1.06	0.84	33.74	19.94	2.46
2400	12.87	18.56	9.88	16.28	1.06	0.86	34.43	20.14	2.53
2600	12.49	18.29	9.67	16.02	1.06	0.87	34.68	20.46	2.66
2800	12.14	18.02	9.51	15.88	1.05	0.88	34.77	20.45	2.73
3000	11.79	17.74	9.39	15.71	1.05	0.89	34.13	20.51	2.63
3200	11.46	17.46	9.33	15.57	1.05	0.89	34.18	20.35	2.76
3400	11.15	17.18	9.29	15.44	1.05	0.89	34.39	20.48	2.65
3600	10.85	16.89	9.31	15.28	1.05	0.89	34.46	20.56	2.82
3800	10.58	16.60	9.34	15.24	1.05	0.89	34.41	20.62	2.94
4000	10.32	16.30	9.41	15.21	1.05	0.89	34.10	20.49	2.90
4200	10.08	16.00	9.52	15.24	1.05	0.88	34.00	20.45	2.95
4400	9.86	15.68	9.66	15.07	1.04	0.87	33.90	20.41	3.00
4600	9.63	15.41	9.85	14.98	1.04	0.86	34.35	20.49	3.04
4800	9.44	15.08	10.00	14.89	1.04	0.85	33.85	20.32	3.08
5000	9.26	14.78	10.20	14.90	1.04	0.84	34.19	20.58	3.14
5200	9.09	14.47	10.40	14.85	1.03	0.82	33.65	20.28	3.11
5400	8.91	14.17	10.52	14.64	1.03	0.81	33.06	19.90	3.25
5600	8.74	13.90	10.49	14.54	1.02	0.80	33.84	20.25	3.23
5800	8.56	13.63	10.40	14.44	1.02	0.79	34.09	20.48	3.34
6000	8.40	13.36	10.12	14.11	1.01	0.78	33.45	20.26	3.38
6200	8.21	13.11	9.71	13.69	1.00	0.78	32.85	20.02	3.42
6400	7.99	12.92	9.14	13.09	0.99	0.78	33.12	20.03	3.56
6600	7.76	12.74	8.43	12.39	0.98	0.78	33.70	20.29	3.66
6800	7.49	12.62	7.79	11.59	0.97	0.78	33.06	20.07	3.80
7000	7.21	12.49	7.08	10.66	0.96	0.78	32.53	19.86	3.95

Typical Performance Data

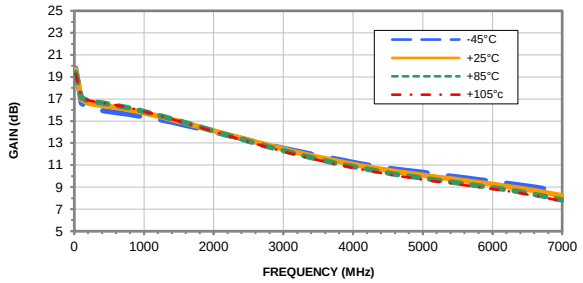
Definitions:
Input Return Loss = -S11 (dB)
Gain(Power Gain) = S21 (dB)
Reverse Isolation = -S12 (dB)
Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 4.50V, Id = 122.20mA @ Temperature = +105°C

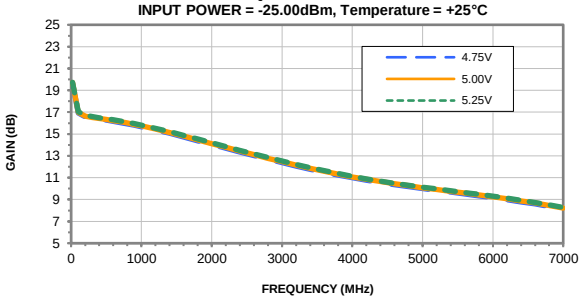
FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
20	19.26	23.76	7.63	10.29	0.93	0.70	36.57	20.45	2.06
100	17.05	21.19	16.16	20.41	1.08	0.64	40.37	21.24	2.13
200	16.79	21.06	18.19	24.19	1.10	0.65	41.63	21.31	2.16
300	16.67	21.02	18.02	25.13	1.11	0.65	41.51	21.37	2.13
400	16.57	20.98	17.40	24.97	1.11	0.66	41.64	21.25	2.14
500	16.46	20.93	16.78	24.48	1.11	0.67	40.21	21.46	2.23
600	16.35	20.88	16.13	23.92	1.11	0.68	40.55	21.37	2.21
700	16.21	20.82	15.43	23.47	1.10	0.69	39.94	21.39	2.25
800	16.07	20.74	14.82	22.85	1.10	0.70	39.82	21.47	2.29
900	15.92	20.66	14.28	22.29	1.10	0.71	39.52	21.27	2.30
1000	15.76	20.58	13.75	21.77	1.10	0.73	38.92	21.53	2.40
1200	15.42	20.38	12.87	20.72	1.09	0.75	38.34	21.40	2.38
1400	15.05	20.17	12.16	19.85	1.09	0.77	38.48	21.39	2.46
1600	14.68	19.93	11.58	19.17	1.08	0.79	38.16	21.50	2.51
1800	14.30	19.68	11.12	18.64	1.08	0.81	37.86	21.61	2.54
2000	13.92	19.42	10.73	18.22	1.08	0.82	37.26	21.58	2.60
2200	13.54	19.17	10.42	17.84	1.08	0.84	36.55	21.30	2.60
2400	13.17	18.90	10.13	17.50	1.07	0.85	37.46	21.53	2.66
2600	12.80	18.63	9.89	17.15	1.07	0.87	37.76	21.93	2.76
2800	12.45	18.36	9.71	16.94	1.07	0.88	37.88	21.88	2.84
3000	12.11	18.08	9.57	16.68	1.07	0.88	37.03	21.96	2.78
3200	11.78	17.80	9.49	16.44	1.07	0.89	37.14	21.74	2.93
3400	11.46	17.52	9.43	16.20	1.07	0.89	37.35	21.90	2.85
3600	11.17	17.23	9.43	15.93	1.06	0.89	37.35	21.98	2.93
3800	10.88	16.94	9.45	15.79	1.06	0.89	37.30	22.06	3.11
4000	10.63	16.63	9.51	15.68	1.06	0.89	36.96	21.87	3.03
4200	10.38	16.33	9.60	15.61	1.06	0.88	36.84	21.80	3.17
4400	10.16	16.01	9.72	15.37	1.05	0.87	36.72	21.75	3.15
4600	9.93	15.73	9.90	15.22	1.05	0.86	37.25	21.85	3.21
4800	9.74	15.39	10.04	15.10	1.04	0.85	36.61	21.64	3.23
5000	9.56	15.08	10.23	15.11	1.04	0.84	36.91	21.97	3.28
5200	9.39	14.76	10.42	15.06	1.03	0.82	36.37	21.57	3.26
5400	9.22	14.45	10.53	14.92	1.03	0.81	35.69	21.12	3.46
5600	9.04	14.17	10.51	14.89	1.02	0.81	36.64	21.52	3.53
5800	8.87	13.89	10.41	14.90	1.02	0.80	36.85	21.78	3.54
6000	8.71	13.60	10.14	14.68	1.00	0.79	36.12	21.53	3.67
6200	8.53	13.34	9.73	14.38	0.99	0.78	35.42	21.24	3.64
6400	8.32	13.13	9.18	13.90	0.99	0.79	35.75	21.25	3.83
6600	8.10	12.93	8.46	13.25	0.97	0.79	36.51	21.56	3.95
6800	7.84	12.78	7.80	12.45	0.97	0.79	35.60	21.31	4.09
7000	7.56	12.63	7.08	11.48	0.95	0.80	35.11	21.09	4.23

Typical Performance Curves

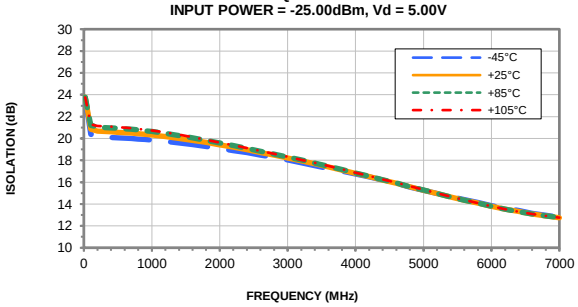
GAIN vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 5.00V



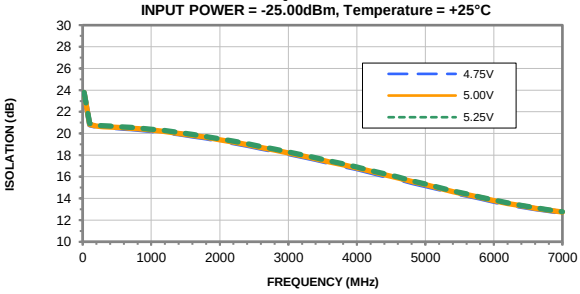
GAIN vs. FREQUENCY & DEVICE VOLTAGE
INPUT POWER = -25.00dBm, Temperature = +25°C



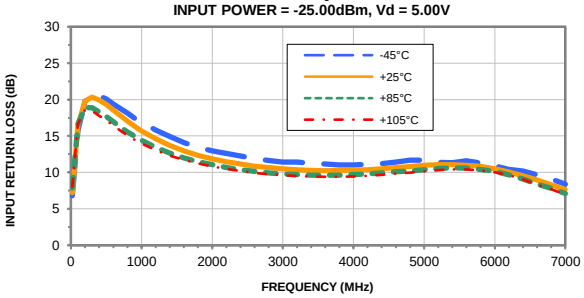
ISOLATION vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 5.00V



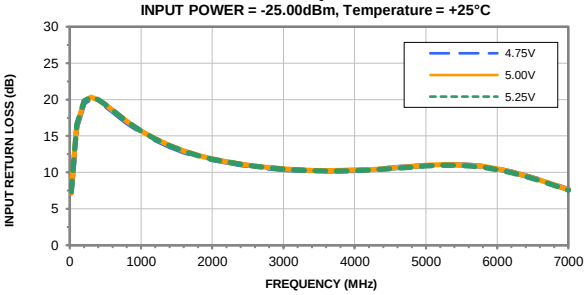
ISOLATION vs. FREQUENCY & DEVICE VOLTAGE
INPUT POWER = -25.00dBm, Temperature = +25°C



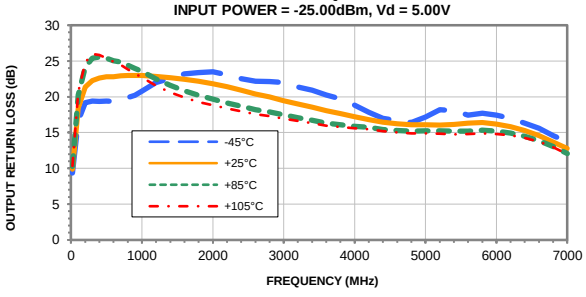
INPUT RETURN LOSS vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 5.00V



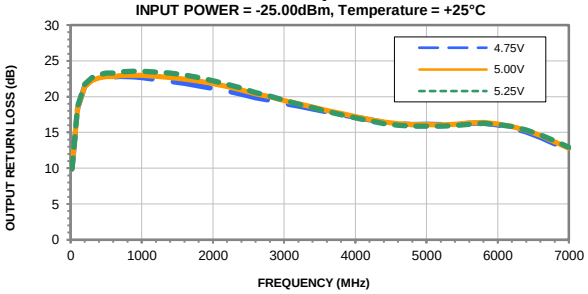
INPUT RETURN LOSS vs. FREQUENCY & DEVICE VOLTAGE
INPUT POWER = -25.00dBm, Temperature = +25°C



OUTPUT RETURN LOSS vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 5.00V

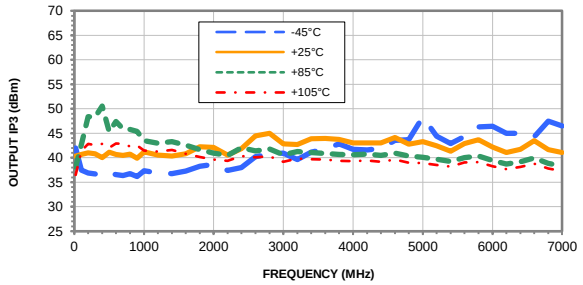


OUTPUT RETURN LOSS vs. FREQUENCY & DEVICE VOLTAGE
INPUT POWER = -25.00dBm, Temperature = +25°C

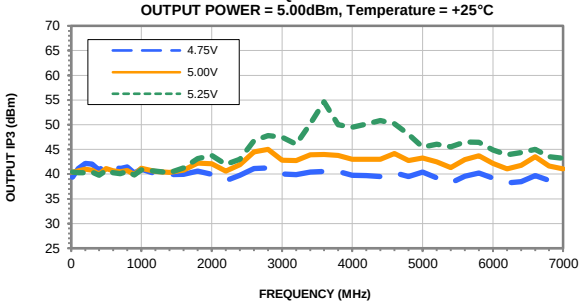


Typical Performance Curves

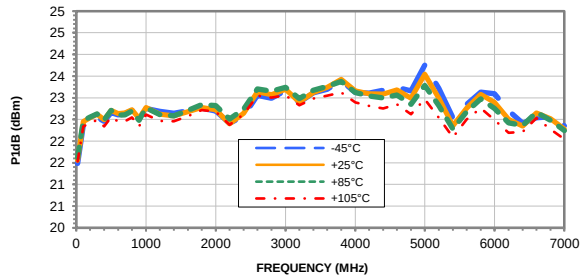
OUTPUT IP3 vs. FREQUENCY & TEMPERATURE
OUTPUT POWER = 5.00dBm, Vd = 5.00V



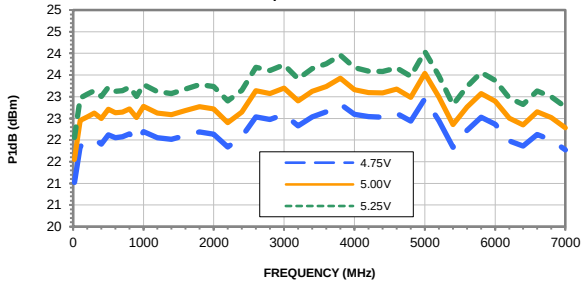
OUTPUT IP3 vs. FREQUENCY & DEVICE VOLTAGE
OUTPUT POWER = 5.00dBm, Temperature = +25°C



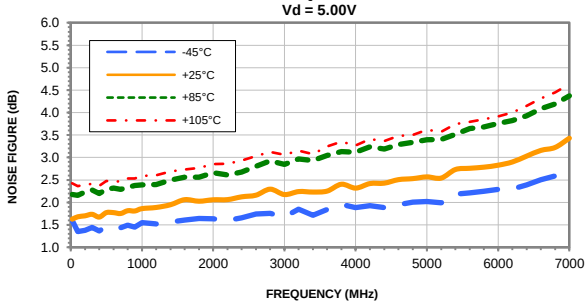
P1dB vs. FREQUENCY & TEMPERATURE
Vd = 5.00V



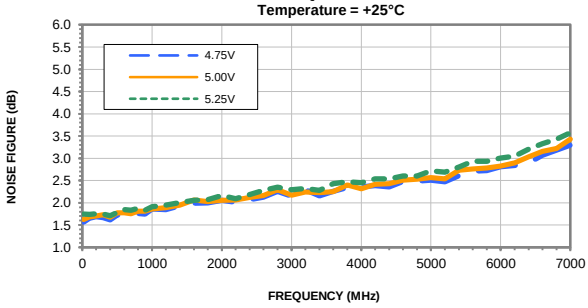
P1dB vs. FREQUENCY & DEVICE VOLTAGE
Temperature = +25°C



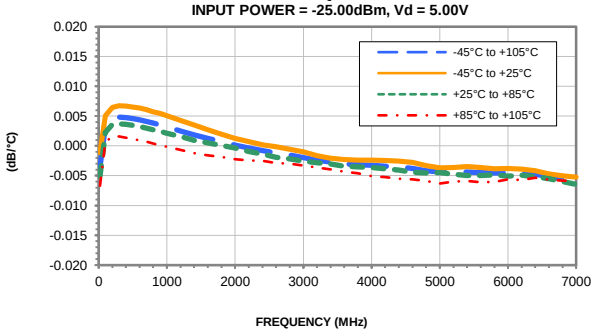
NOISE FIGURE vs. FREQUENCY & TEMPERATURE
Vd = 5.00V



NOISE FIGURE vs. FREQUENCY & DEVICE VOLTAGE
Temperature = +25°C

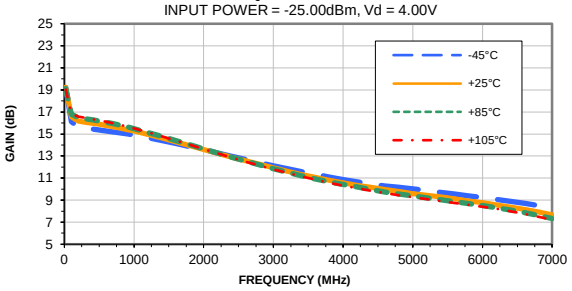


GAIN VARIATION vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 5.00V

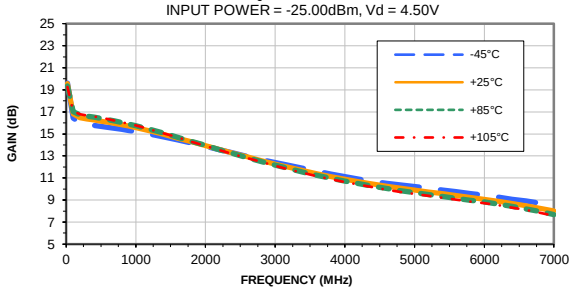


Typical Performance Curves

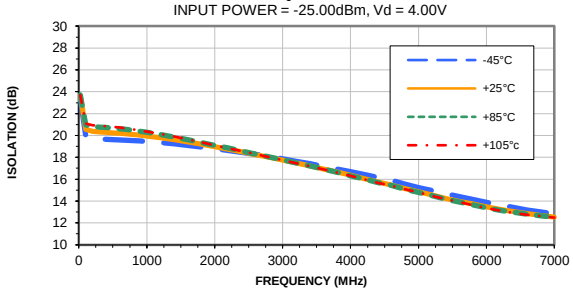
GAIN vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 4.00V



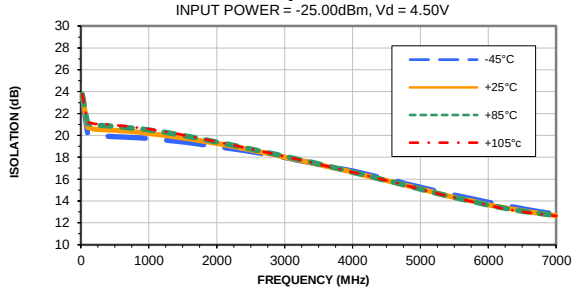
GAIN vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 4.50V



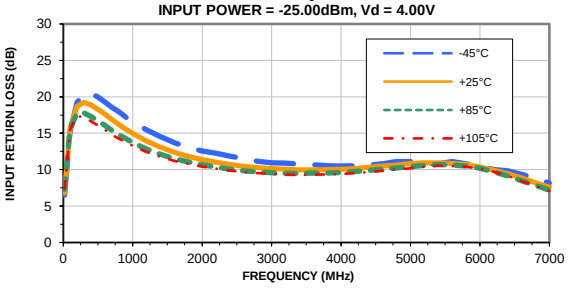
ISOLATION vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 4.00V



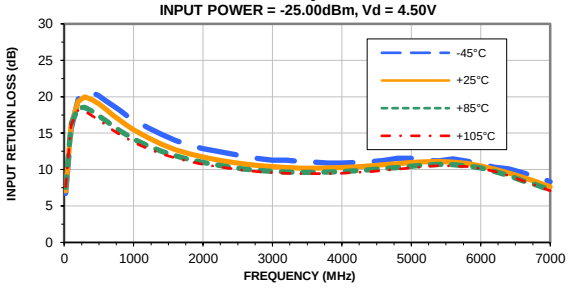
ISOLATION vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 4.50V



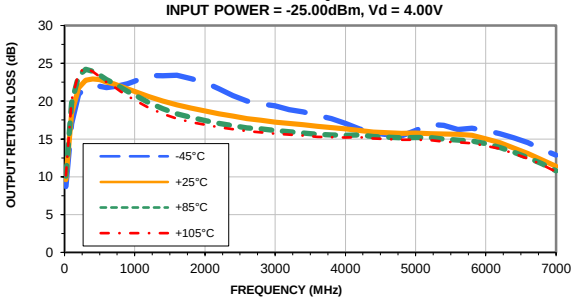
INPUT RETURN LOSS vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 4.00V



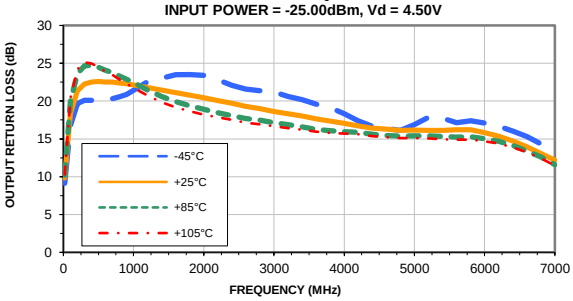
INPUT RETURN LOSS vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 4.50V



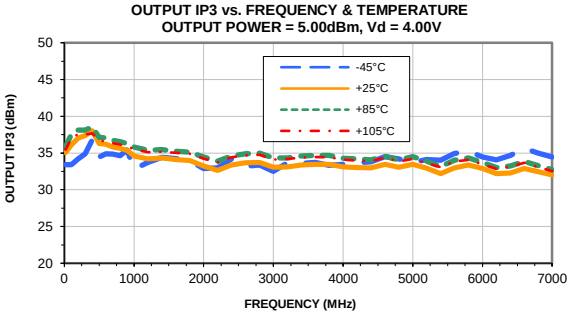
OUTPUT RETURN LOSS vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 4.00V

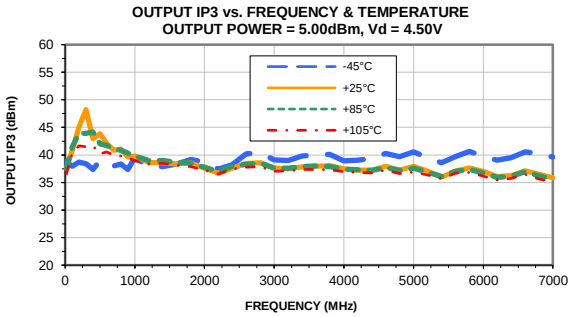


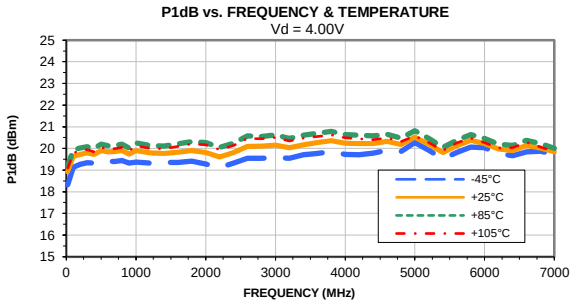
OUTPUT RETURN LOSS vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 4.50V

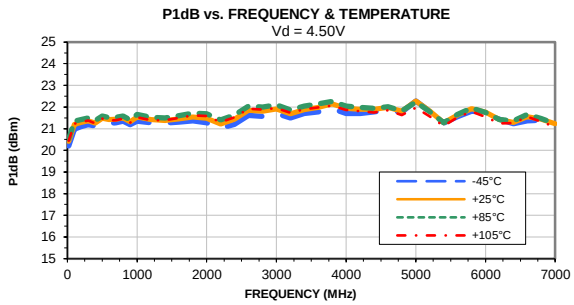


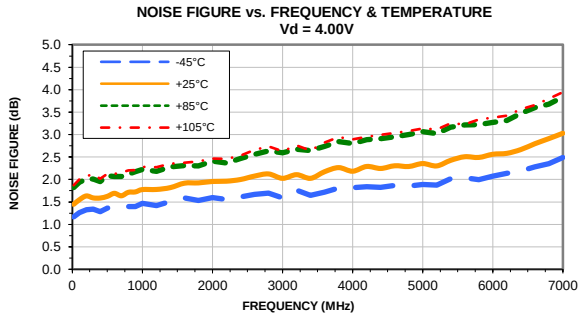
Typical Performance Curves

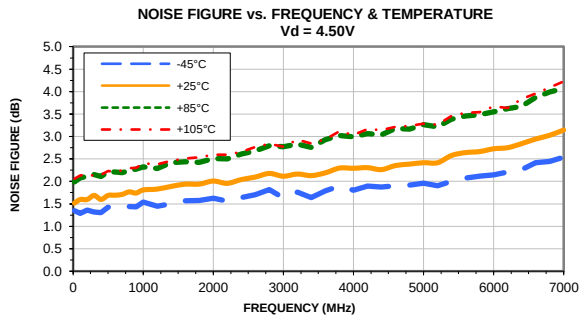




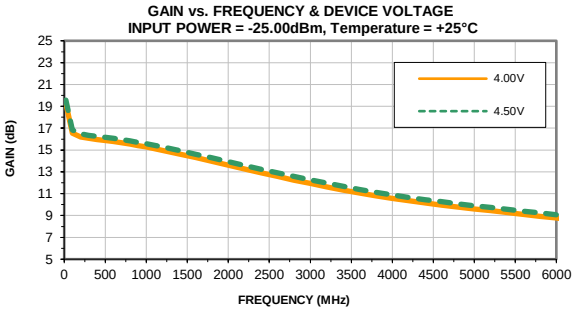


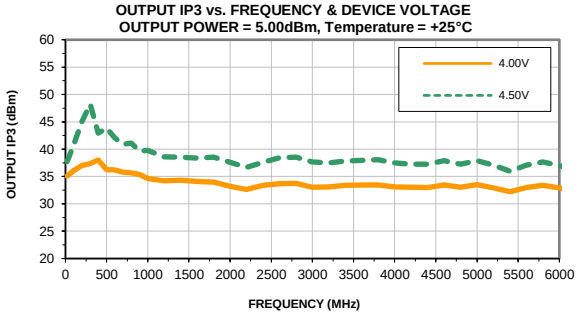


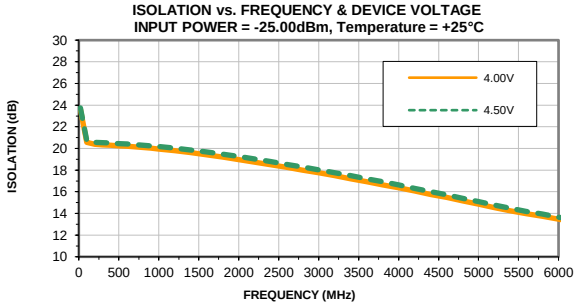


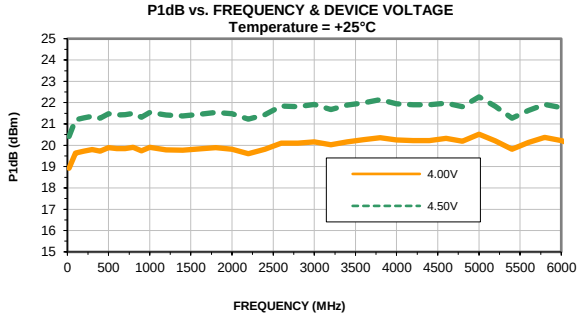


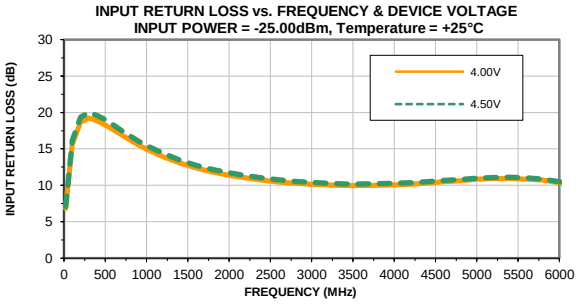
Typical Performance Curves

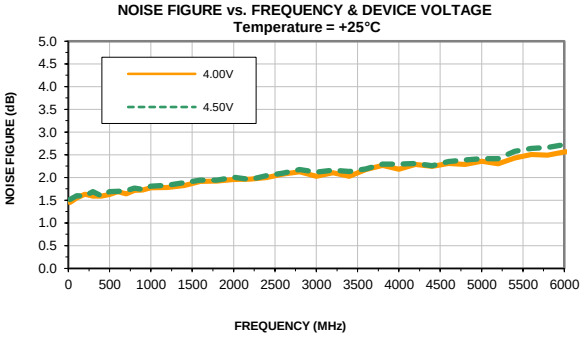


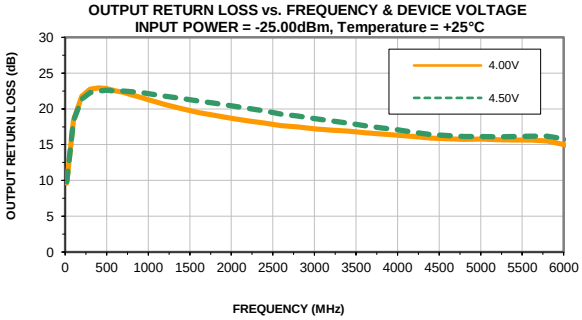








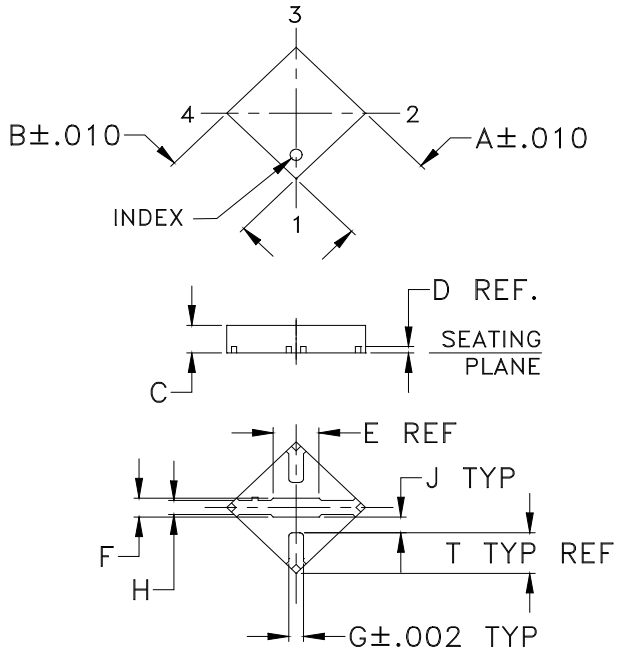




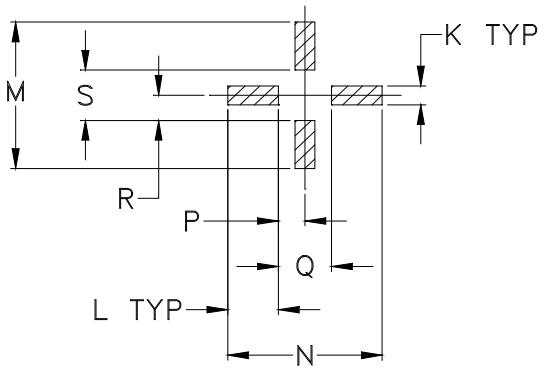
Case Style FG

FG873

Outline Dimensions



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

CASE #	A	B	C	D	E	F	G	H	J	K	L	M	N	P
FG873	.118 (3.00)	.118 (3.00)	.035 (0.89)	.008 (0.20)	.07 (1.78)	.024 (0.60)	.017 (0.43)	.018 (0.46)	.021 (0.52)	.024 (0.61)	.061 (1.55)	.186 (4.72)	.186 (4.72)	.032 (0.81)

CASE #	Q	R	S	T	WT. GRAM
FG873	.064 (1.63)	.032 (0.81)	.064 (1.63)	.050 (1.27)	.02

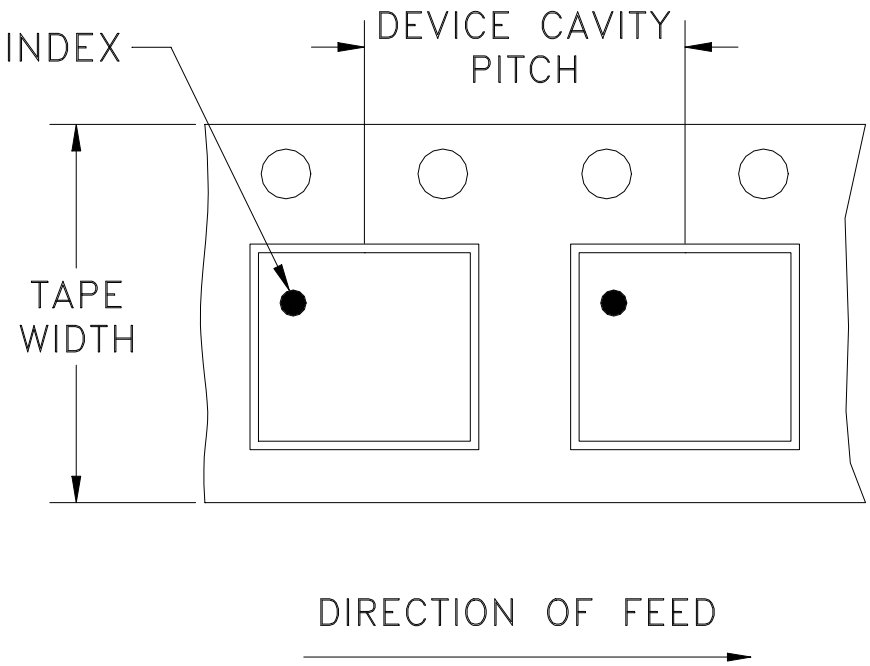
Dimensions are in inches (mm). Tolerances: 2 Pl. ± .01; 3Pl. ± .004

Notes:

1. Case material: Plastic.
2. Termination finish:
   For RoHS Case Styles: Tin-Silver alloy plate over Nickel barrier or Matte-Tin per Data Sheet. All models, (+) suffix.
   For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

Tape & Reel Packaging TR-F68

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel see note	
12	8	7	Small quantity standard	20
				50
				100
				200
				500
		7	Standard	1000
		13	Standard	2000
				3000
				4000

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

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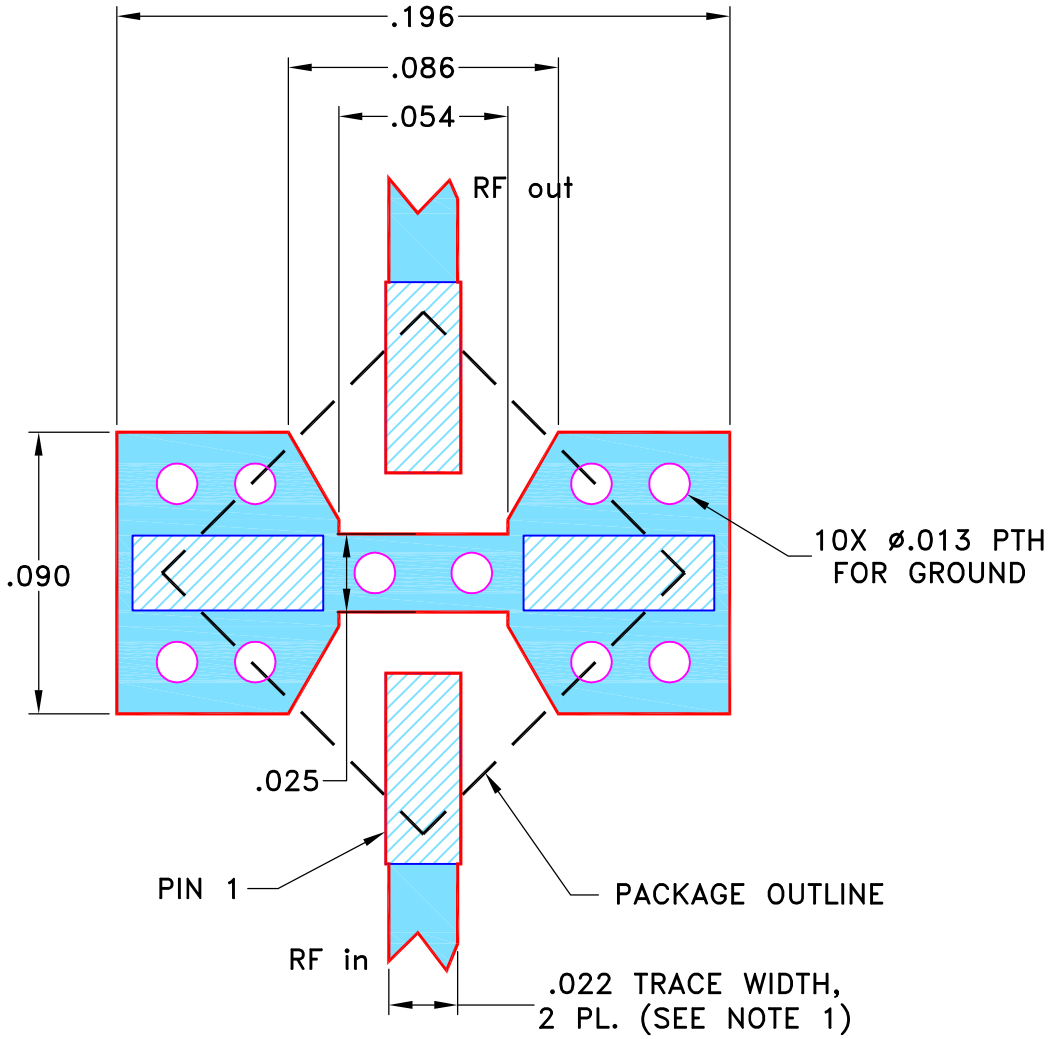
THIRD ANGLE PROJECTION

REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M148938	NEW RELEASE	11/17/14	ITG	MM

SUGGESTED MOUNTING CONFIGURATION
FOR FG873 CASE STYLE, "04AM05" PIN CODE



NOTES:

1. TRACE WIDTH PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010"±.001". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN	ITG	11/07/14
TOLERANCES ON:	CHECKED	GF	11/10/14
2 PL DECIMALS ±	APPROVED	MM	11/17/14
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

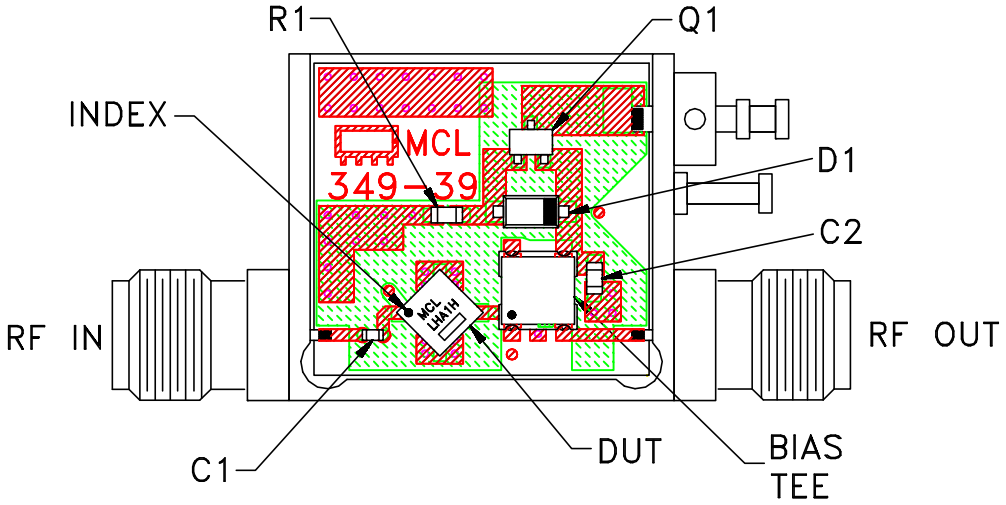
ASHEETA1.DWG REV:A DATE:01/12/95

Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

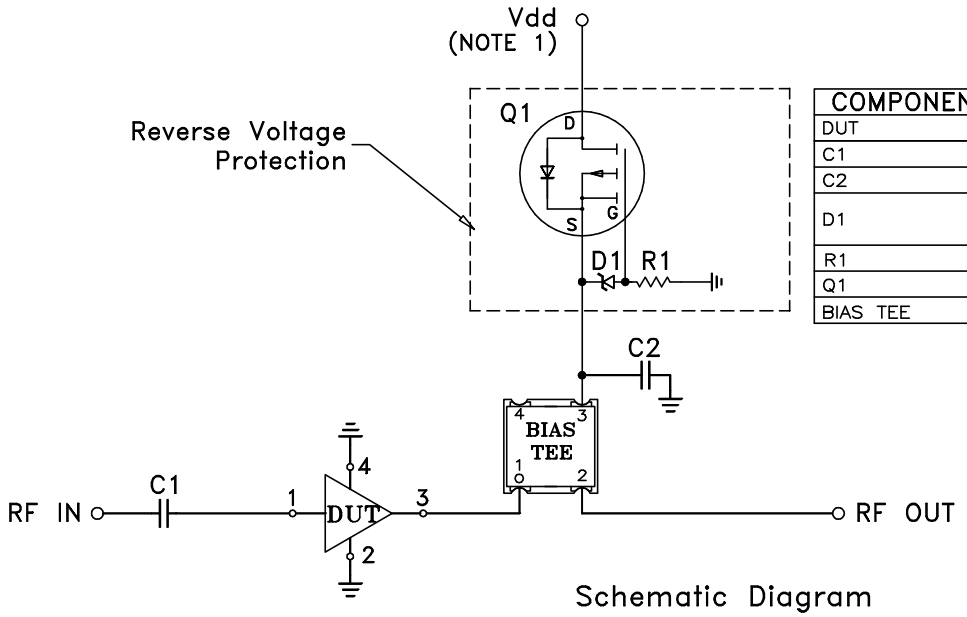
PL, 04AM05, FG873, TB-819+

SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-443	OR
FILE: 98PL443	SCALE: 16:1	SHEET: 1 OF 1	

Evaluation Board and Circuit

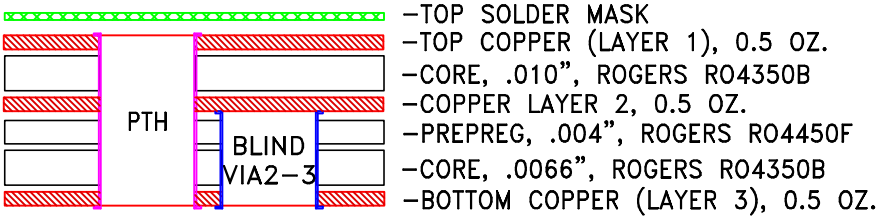


TB-819-1H+



COMPONENT	VALUE	SIZE
DUT	LHA-1H+	3X3 MM
C1	0.001 uF	
C2	1 nF	0805
D1	Zener Diode 5.6V ONSEMI MMSZ4690T1G	SOD123
R1	62 Ohm	0402
Q1	Transistor ONSEMI FET NTS4101P	SOT323
BIAS TEE	Mini-Circuits TCBT-14+	-

Schematic Diagram



Stack-Up Diagram

NOTES:

1. Vs voltage: +5±0.2V.
2. SMA Female connectors.
3. PCB material: Rogers RO4350 or equivalent, dielectric constant=3.5, Total Finished Thickness - .026"±10%.

Mini-Circuits®

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Environmental Specifications **ENV08T1**

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 or -45° to 85° C or -55° to 105° C or -40° to 105° C or -40° to 95° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C or -65° to 150° Ambient Environment	Individual Model Data Sheet
HTOL	1000 hours at 125°C	MIL-STD-883, Method 1005, Condition B
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Mechanical Shock	1.5Kg, 0.5 ms, 5 shock pulses, Y1 direction only	MIL-STD-883, Method 2002, Condition B, except Y1 direction only
Vibration (Variable Frequency)	50g peak	MIL-STD-883, Method 2007, Condition B
Autoclave	15 psig, 100% RH, 121°C, 96 hours	JESD22-A102, Condition C
HAST	130°C, 85% RH, 96 hours	JESD22-A110
Solderability	10X Magnification	J-STD-002, Para 4.2.5, Test S, 95% Coverage
Solder Reflow Heat	Sn-Pb Eutetic Process: 240°C peak Pb-Free Process: 260°C peak	J-STD-020, Table 4-1, 4-2 and 5-2; Figure 5-1
Moisture Sensitivity: Level 1	Bake at 125°C for 24 hours Soak at 85°C/85% RH for 168 hours, Reflow 3 cycles at 260°C peak	J-STD-020

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
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215