ULTRA HIGH DYNAMIC RANGE

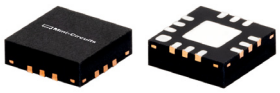
Monolithic Amplifier

LHA-83W+

50Ω 50 MHz to 8 GHz

THE BIG DEAL

- Ultra Wideband, 0.05-8 GHz
- Excellent Gain Flatness, 16.8±2.4 dB Typ.
- High Linearity, +23.3 dBm P1dB & +35.1 dBm OIP3
- Robust ESD Performance (Class 1B)



Generic photo used for illustration purposes only

CASE STYLE: DQ1225

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

APPLICATIONS

- WiFi
- WLAN
- LTE
- WiMAX
- S-Band Radar
- C-Band Satcom

PRODUCT OVERVIEW

The LHA-83W+ (RoHS compliant) is an advanced wideband amplifier fabricated using pHEMT technology and offers extremely high dynamic range over a broad frequency range, along with excellent gain flatness. In addition, the LHA-83W+ has good input and output return loss over a broad frequency range. LHA-83W+ is enclosed in a 3x3 mm 12-lead QFN-style package and has very good thermal performance.

KEY FEATURES

Feature	Advantages
Ultra Wideband: 50 MHz to 8 GHz	Broadband covering primary wireless communications bands.
Extremely High IP3 +35.4 dBm Typ. at 50 MHz +36.3 dBm Typ. at 6 GHz	The LHA-83W+ matches industry leading IP3 performance relative to device size and power consumption. The combination of the design and pHEMT structure provides enhanced linearity over a broad frequency range as evidence in the IP3 being approximately 12 dB above the P1dB point. This feature makes this amplifier ideal for use in: • Driver amplifiers for complex waveform upconverter paths • Drivers in linearized transmit systems • Secondary amplifiers in ultra-high dynamic range receivers
Excellent Gain Flatness	Typical ±2.4 dB gain flatness across the entire frequency range minimizes the need for external equalizer networks, making it a great fit for instrumentation and EW applications.

REV. B
ECO-026525
LHA-83W+
MCL NY
250812

Monolithic Amplifier LHA-83W+

50Ω 50 MHz to 8 GHz

ELECTRICAL SPECIFICATIONS[1] AT +25°C, 50Ω, UNLESS NOTED OTHERWISE

Parameter	Condition (MHz)	V_{DD} = +9 V[1] Min.	V_{DD} = +9 V[1] Typ.	V_{DD} = +9 V[1] Max.	V_{DD} = +5 V[1] Typ.	V_S = +9 V[2] Typ.	V_S = +5 V[2] Typ.	Units
Frequency Range		50		8000	50-8000	50-8000	50-8000	MHz
Gain	50	15	16.7	18.4	15.2	16.4	14.8	dB
	2000	14.9	16.7	18.3	14.8	16.4	14.3	
	4000	14.9	16.8	18.3	14.2	16.4	14	
	6000	15	16.7	18.4	12.7	16.3	12.7	
	8000		11.8		8.2	12.5	8.5	
Gain Flatness	50-8000		2.4		3.5	1.95	3.1	dB
Input Return Loss	50		23.8		19.3	15.9	15.1	dB
	2000		25.7		16.4	17.1	12.3	
	4000		23.5		18.5	20.1	15.3	
	6000		13.9		12.2	22.3	15.7	
	8000		2.2		3.4	2.8	4.2	
Output Return Loss	50		17.8		28.8	13.4	18.1	dB
	2000		28.1		19.8	24.8	15.1	
	4000		20.4		15.6	22.4	19.7	
	6000		33.8		10.6	20.4	13.4	
	8000		3.9		4.5	5.7	5.8	
Output Power @ 1 dB Compression	50		+23.6		+15.9	+23.2	+15.5	dBm
	2000		+23.8		+16.3	+22.8	+15.2	
	4000		+23.3		+16.1	+23	+15.5	
	6000		+22.2		+15.8	+22.1	+16	
	8000		+17.5		+12.2	+17	+11.6	
Output IP3 (P_{OUT} = 0dBm/Tone)	50		+35.4		+23	+35	+22.9	dBm
	2000		+35.7		+23.5	+34.7	+22.4	
	4000		+35.1		+22.9	+34.4	+22.8	
	6000		+36.3		+22.7	+35	+24.3	
	8000		+30.6		+19.5	+30.6	+19.7	
Noise Figure	50		3.2		2.8	3.3	2.8	dB
	2000		2.7		2.5	2.8	2.6	
	4000		3.1		2.9	3.1	2.9	
	6000		3.8		3.5	3.8	3.5	
	8000		4.9		4.6	4.9	4.6	
Device Operating Voltage (V_{DD} or V_S)		+8.5	+9	+9.5	+5	+9	+5	V
Device Operating Current			105	127	39.6	104	39	mA
Device Current Variation vs. Temperature[3]			38.5		38.5	38.5	38.5	µA/°C
Device Current Variation vs. Voltage[4]			0.017		0.016	0.017	0.016	mA/mV
Thermal Resistance Junction-to-Ground Lead at +85°C Stage Temperature			41		41	41	41	°C/W

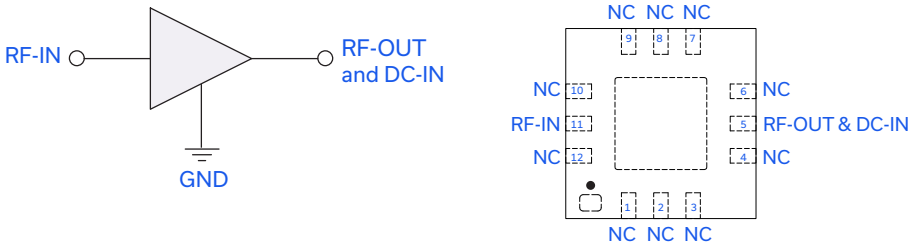
1. Measured on Mini-Circuits Characterization Test Board TB-LHA-83W+. See Characterization Test Circuit (Figure 1).
2. Measured on Mini-Circuits Application Evaluation Board TB-LHA-83WE+. See Application Test Circuit (Figure 2).
3. Device Current Variation vs. Temperature = (Current at +85°C - Current at -45°C)/130
4. Device Current Variation vs. Voltage = (Current at +9.5 V - Current at +8.5 V) / ((+9.5 V - +8.5 V) * 1000 mV/V)

ABSOLUTE MAXIMUM RATINGS[5]

Parameter	Ratings
Operating Temperature (Ground Lead)	-45°C to +85°C
Storage Temperature	-65°C to +150°C
Power Dissipation	1.58 W
Input Power (CW)	+18 dBm (continuous) +24 dBm (5 minutes max.)
DC Voltage on Pin 5	+10.5 V

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

SIMPLIFIED SCHEMATIC AND PAD DESCRIPTION



Function	Pad Number	Description
RF-IN	11	RF input pin.
RF-OUT and DC-IN	5	RF Output and DC Bias
GND	Paddle	Connections to ground
NC	1-4, 6-10 & 12	No connection, connected to ground externally on test board

CHARACTERIZATION TEST CIRCUIT

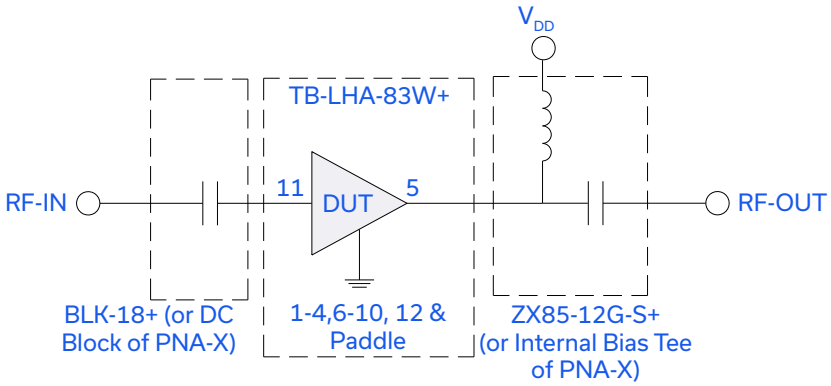
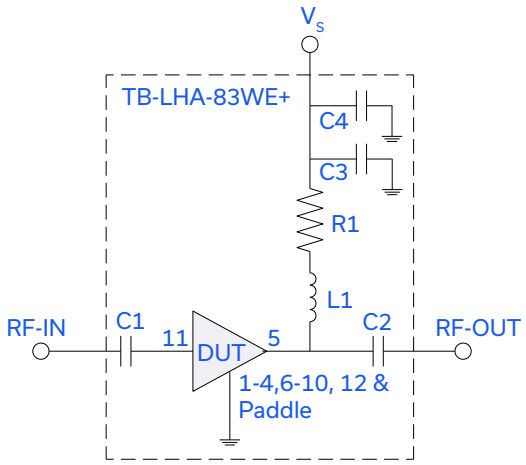


Fig 1. Block Diagram of Test Circuit used for characterization. (DUT soldered on Mini-Circuits Characterization test board TB-LHA-83W+) Gain, Return Loss, Output Power at 1 dB Compression (P1dB), Output IP3 (OIP3) and Noise Figure measured using Agilent's N5242A PNA-X microwave network analyzer.

Conditions:
1. Gain and Return Loss: P_{IN} = -25 dBm
2. Output IP3 (OIP3): Two tones, spaced 1 MHz apart, 0 dBm/tone at output.

APPLICATION TEST CIRCUIT

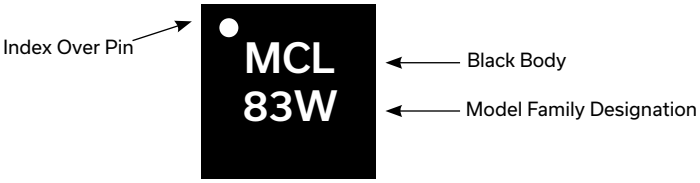


Component	Size	Value	Part Number	Manufacturer
C1	0402	1000pF	GRM1555C1H102JA01D	Murata
C2	0402	180pF	GRM1555C1H181JA01D	Murata
C3	0402	10000pF	GRM155R71E103KA01D	Murata
C4	0402	0.1uF	GRM155R71C104KA88D	Murata
L1	0603	330nH	LQW18CNR33J00D	Murata
R1	0402	20hm	RK73H1ETTP2R00F	Koa

Fig 2. Block Diagram of Test Circuit used for characterization. (DUT soldered on Mini-Circuits Application test board TB-LHA-83WE+) Gain, Return Loss, Output Power at 1 dB Compression (P1dB), Output IP3 (OIP3) and Noise Figure measured using Agilent's N5242A PNA-X microwave network analyzer.

Conditions:
1. Gain and Return Loss: P_{IN} = -25 dBm
2. Output IP3 (OIP3): Two Tones spaced 1 MHz apart, 0 dBm/tone at output.

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
Case Style	DQ1225 Plastic package, exposed paddle Lead Finish: Matte-Tin
Tape & Reel **Standard Quantities Available on Reel**	F66 7" Reels with 20, 50, 100, 200, 500, 1000, 2000, or 3000 devices
Suggested Layout for PCB Design	PL-660
Evaluation Board	TB-LHA-83WE+
Environmental Ratings	ENV08T1

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

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

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

TEST CONDITIONS: Vd = 9.00V, Id = 106mA @ 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)
50	16.34	20.87	15.78	13.17	1.10	0.60	32.33	23.30	3.26
100	16.50	20.59	21.57	15.95	1.10	0.58	36.08	23.68	3.14
200	16.58	20.41	26.30	17.55	1.09	0.56	36.45	24.42	3.08
400	16.62	20.40	32.19	19.05	1.09	0.57	36.80	24.37	2.85
600	16.59	20.44	38.28	20.26	1.09	0.58	36.89	24.37	2.78
800	16.54	20.50	42.11	21.40	1.10	0.59	36.58	24.14	2.75
1000	16.55	20.50	34.60	23.58	1.10	0.59	36.59	24.28	2.69
1200	16.52	20.53	28.48	26.14	1.10	0.60	35.96	24.14	2.65
1400	16.48	20.58	24.81	31.09	1.11	0.62	36.15	24.03	2.76
1600	16.47	20.58	22.30	36.46	1.11	0.62	34.72	23.30	2.67
1800	16.42	20.64	20.57	37.37	1.11	0.63	36.56	23.95	2.73
2000	16.37	20.70	18.87	30.06	1.12	0.64	35.47	23.14	2.74
2200	16.36	20.71	17.74	26.18	1.12	0.64	35.66	23.17	2.86
2400	16.37	20.72	16.97	24.50	1.12	0.64	35.03	23.16	2.78
2600	16.36	20.72	16.66	23.82	1.12	0.64	33.98	22.19	2.84
2800	16.35	20.74	16.44	23.52	1.12	0.64	32.31	22.87	2.93
3000	16.34	20.75	16.59	23.63	1.12	0.65	35.68	22.62	2.97
3200	16.34	20.75	16.82	24.35	1.12	0.65	34.02	22.32	2.96
3400	16.33	20.76	17.46	25.12	1.12	0.65	33.80	22.86	3.00
3600	16.33	20.75	18.23	26.03	1.12	0.65	35.07	22.69	2.96
3800	16.33	20.73	19.51	26.03	1.12	0.65	34.79	23.38	3.10
4000	16.34	20.73	21.01	25.04	1.12	0.64	33.84	22.97	3.12
4200	16.34	20.70	23.00	23.42	1.12	0.64	34.13	23.61	3.09
4400	16.35	20.69	25.82	21.77	1.12	0.63	34.53	23.48	3.14
4600	16.34	20.67	29.47	20.21	1.11	0.63	35.60	23.51	3.29
4800	16.33	20.68	34.71	19.15	1.12	0.62	34.79	23.65	3.22
5000	16.32	20.65	42.32	18.18	1.11	0.62	34.77	23.36	3.23
5200	16.30	20.64	42.38	17.82	1.11	0.61	35.41	23.35	3.34
5400	16.30	20.63	34.22	17.71	1.11	0.61	35.85	22.62	3.34
5600	16.29	20.60	31.19	18.25	1.11	0.62	36.37	22.76	3.53
5800	16.28	20.58	25.88	19.37	1.11	0.62	36.14	22.06	3.60
6000	16.26	20.53	22.34	21.48	1.11	0.63	35.77	22.16	3.74
6200	16.24	20.51	18.42	26.06	1.11	0.64	37.60	21.74	3.72
6400	16.21	20.51	15.35	36.13	1.10	0.66	38.03	21.15	3.79
6600	16.12	20.53	12.46	27.40	1.09	0.68	34.74	20.87	4.01
6800	15.96	20.63	10.31	19.84	1.09	0.71	34.89	20.48	4.08
7000	15.68	20.85	8.41	15.52	1.09	0.74	34.28	20.51	4.16
7200	15.28	21.19	6.88	12.28	1.10	0.77	32.91	19.38	4.19
7400	14.79	21.58	5.57	10.00	1.10	0.79	33.89	19.53	4.53
7600	14.17	22.14	4.55	8.22	1.11	0.81	32.04	18.19	4.63
7800	13.48	22.71	3.69	6.86	1.12	0.81	31.27	17.81	4.81
8000	12.70	23.41	3.09	5.85	1.14	0.81	29.93	17.05	4.86
8200	11.89	24.11	2.59	5.05	1.16	0.81	29.80	16.77	5.06
8400	11.04	24.87	2.28	4.47	1.20	0.80	28.82	16.20	5.05
8600	10.19	25.58	1.97	3.98	1.23	0.78	28.21	15.65	5.25
8800	9.33	26.31	1.82	3.66	1.29	0.78	28.23	15.38	5.40
9000	8.52	27.00	1.64	3.34	1.33	0.76	27.04	14.82	5.48
10000	4.72	30.10	1.46	2.85	1.91	0.76	25.28	13.12	6.21

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 = 8.50V, Id = 97mA @ 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)
50	16.30	20.81	15.82	13.18	1.10	0.60	33.77	22.69	3.15
100	16.46	20.56	21.71	16.07	1.10	0.58	36.42	23.19	3.09
200	16.54	20.38	26.76	17.74	1.09	0.57	35.54	23.80	2.99
400	16.58	20.37	33.36	19.27	1.09	0.57	35.22	23.73	2.81
600	16.55	20.41	41.18	20.50	1.09	0.58	35.95	23.72	2.75
800	16.50	20.47	38.90	21.62	1.10	0.59	35.82	23.49	2.68
1000	16.52	20.47	33.00	23.86	1.10	0.60	35.92	23.48	2.59
1200	16.49	20.51	27.77	26.33	1.10	0.61	36.09	23.33	2.58
1400	16.44	20.56	24.33	30.97	1.11	0.62	34.64	23.37	2.64
1600	16.44	20.57	21.98	34.33	1.11	0.62	34.94	22.48	2.77
1800	16.39	20.62	20.30	34.52	1.12	0.63	35.26	23.14	2.68
2000	16.33	20.71	18.68	29.30	1.12	0.64	34.84	22.47	2.67
2200	16.32	20.70	17.57	25.88	1.12	0.64	33.41	22.50	2.75
2400	16.33	20.70	16.84	24.22	1.12	0.64	34.28	22.48	2.65
2600	16.31	20.72	16.53	23.74	1.12	0.64	33.88	21.51	2.72
2800	16.30	20.73	16.36	23.52	1.12	0.65	32.67	22.21	2.81
3000	16.29	20.73	16.49	23.92	1.12	0.65	34.32	21.95	2.92
3200	16.29	20.74	16.78	24.86	1.12	0.65	33.80	21.66	2.89
3400	16.28	20.75	17.40	26.29	1.12	0.65	34.38	22.35	2.93
3600	16.28	20.74	18.26	27.84	1.12	0.65	33.53	22.18	2.88
3800	16.28	20.73	19.49	28.46	1.12	0.65	34.51	22.89	3.03
4000	16.29	20.71	21.10	27.23	1.12	0.65	34.01	22.46	3.02
4200	16.29	20.70	23.10	24.92	1.12	0.64	34.58	23.11	3.03
4400	16.28	20.67	26.13	22.85	1.12	0.64	35.10	22.99	3.07
4600	16.28	20.67	30.01	20.88	1.12	0.63	35.27	23.01	3.19
4800	16.26	20.66	35.75	19.68	1.12	0.63	35.06	23.15	3.16
5000	16.24	20.64	45.80	18.57	1.12	0.62	35.18	22.86	3.13
5200	16.21	20.64	39.39	18.13	1.12	0.62	35.47	22.86	3.30
5400	16.20	20.63	33.60	17.94	1.12	0.62	36.12	22.13	3.28
5600	16.17	20.62	30.51	18.44	1.12	0.63	36.04	22.26	3.49
5800	16.15	20.59	26.27	19.51	1.12	0.63	35.88	21.67	3.51
6000	16.12	20.59	22.54	21.52	1.12	0.65	35.88	21.65	3.64
6200	16.08	20.57	18.93	25.65	1.12	0.66	35.60	21.20	3.66
6400	16.04	20.57	15.69	34.22	1.11	0.68	34.77	20.74	3.71
6600	15.96	20.59	12.91	28.23	1.10	0.70	33.79	20.32	3.95
6800	15.80	20.68	10.67	20.65	1.10	0.73	33.67	19.92	3.97
7000	15.53	20.88	8.78	16.19	1.10	0.76	34.56	19.96	4.03
7200	15.16	21.18	7.18	12.83	1.11	0.79	31.43	18.68	4.08
7400	14.69	21.58	5.86	10.45	1.11	0.81	32.16	18.84	4.38
7600	14.10	22.05	4.78	8.61	1.12	0.83	30.07	17.52	4.51
7800	13.44	22.64	3.90	7.19	1.13	0.83	29.60	17.15	4.65
8000	12.69	23.28	3.24	6.11	1.15	0.83	28.62	16.41	4.72
8200	11.90	23.94	2.72	5.27	1.17	0.82	28.39	16.01	4.86
8400	11.09	24.64	2.34	4.65	1.19	0.81	27.43	15.45	4.96
8600	10.24	25.36	2.04	4.13	1.22	0.80	26.73	14.91	5.10
8800	9.42	26.07	1.84	3.77	1.27	0.79	27.07	14.51	5.25
9000	8.61	26.77	1.66	3.43	1.31	0.77	25.81	14.11	5.34
10000	4.87	29.74	1.41	2.86	1.80	0.76	24.16	12.44	6.01

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 = 9.50, Id = 114mA @ 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)
50	16.38	20.87	15.73	13.13	1.10	0.59	38.15	23.86	3.27
100	16.53	20.60	21.44	15.86	1.09	0.58	37.30	24.23	3.19
200	16.61	20.43	25.95	17.43	1.09	0.56	35.72	24.86	3.05
400	16.66	20.41	31.20	18.89	1.09	0.56	36.51	24.96	2.88
600	16.63	20.45	36.74	20.07	1.09	0.57	37.40	24.81	2.81
800	16.58	20.52	46.37	21.19	1.10	0.59	37.37	24.59	2.74
1000	16.60	20.51	35.85	23.37	1.10	0.59	36.94	24.73	2.66
1200	16.58	20.54	29.10	25.95	1.10	0.60	36.77	24.60	2.69
1400	16.54	20.59	25.12	31.01	1.11	0.61	36.56	24.64	2.70
1600	16.53	20.60	22.53	38.10	1.11	0.61	36.22	23.77	2.66
1800	16.49	20.65	20.71	39.65	1.11	0.62	37.05	24.41	2.73
2000	16.44	20.71	18.97	30.34	1.12	0.63	35.77	23.76	2.72
2200	16.43	20.69	17.78	26.32	1.11	0.63	35.45	23.64	2.82
2400	16.44	20.71	17.01	24.51	1.11	0.63	34.87	23.78	2.84
2600	16.43	20.71	16.65	23.80	1.11	0.63	33.96	22.82	2.82
2800	16.43	20.74	16.43	23.31	1.11	0.64	32.87	23.34	2.89
3000	16.42	20.73	16.54	23.32	1.11	0.64	35.44	23.24	3.01
3200	16.42	20.72	16.80	23.76	1.11	0.64	35.26	22.78	2.95
3400	16.42	20.74	17.37	24.26	1.11	0.64	35.02	23.32	3.02
3600	16.42	20.72	18.18	24.69	1.11	0.64	34.89	23.14	2.93
3800	16.43	20.71	19.35	24.44	1.11	0.64	34.94	23.82	3.12
4000	16.44	20.69	20.88	23.59	1.11	0.63	35.79	23.43	3.12
4200	16.45	20.66	22.72	22.27	1.11	0.63	35.01	24.07	3.09
4400	16.46	20.64	25.47	20.93	1.11	0.62	35.49	23.95	3.13
4600	16.46	20.63	28.76	19.51	1.10	0.61	35.41	23.99	3.30
4800	16.46	20.61	33.24	18.62	1.10	0.61	35.39	24.13	3.25
5000	16.46	20.60	39.69	17.77	1.10	0.60	35.15	23.83	3.21
5200	16.45	20.56	40.78	17.44	1.10	0.59	35.18	23.83	3.37
5400	16.46	20.53	34.38	17.38	1.10	0.59	35.65	23.10	3.39
5600	16.45	20.51	30.32	17.89	1.10	0.59	35.74	23.13	3.57
5800	16.45	20.46	25.42	19.01	1.09	0.60	35.51	22.55	3.61
6000	16.45	20.43	21.53	20.89	1.09	0.60	35.38	22.54	3.75
6200	16.43	20.40	17.87	24.79	1.09	0.62	36.19	22.12	3.74
6400	16.41	20.39	14.71	28.59	1.08	0.63	36.31	21.66	3.85
6600	16.33	20.41	12.00	24.36	1.07	0.65	37.12	21.40	4.04
6800	16.16	20.54	9.82	18.63	1.07	0.68	37.42	21.02	4.12
7000	15.87	20.76	8.01	14.73	1.07	0.71	38.03	21.05	4.19
7200	15.46	21.11	6.47	11.67	1.08	0.74	36.22	19.92	4.25
7400	14.94	21.55	5.23	9.50	1.08	0.77	35.56	20.06	4.48
7600	14.30	22.10	4.23	7.79	1.09	0.78	33.97	18.88	4.69
7800	13.57	22.75	3.43	6.50	1.10	0.79	33.15	18.49	4.84
8000	12.77	23.47	2.84	5.53	1.12	0.79	31.44	17.72	4.92
8200	11.93	24.19	2.39	4.77	1.14	0.78	31.56	17.42	5.04
8400	11.07	24.95	2.07	4.23	1.17	0.77	30.15	16.82	5.14
8600	10.19	25.72	1.81	3.76	1.20	0.76	29.30	16.27	5.29
8800	9.33	26.45	1.66	3.46	1.25	0.75	29.57	15.98	5.45
9000	8.50	27.16	1.52	3.16	1.29	0.73	28.10	15.42	5.53
10000	4.68	30.33	1.36	2.72	1.85	0.74	26.37	13.53	6.26

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 = 9.00V, Id = 105mA @ 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)
50	16.50	20.89	15.73	13.10	1.09	0.58	36.27	23.39	2.67
100	16.65	20.61	21.46	15.97	1.09	0.57	38.30	23.76	2.57
200	16.73	20.44	25.99	17.64	1.08	0.55	39.38	24.52	2.44
400	16.78	20.41	30.61	19.13	1.08	0.55	37.23	24.45	2.37
600	16.77	20.46	36.21	20.11	1.08	0.56	36.32	24.26	2.25
800	16.72	20.53	44.74	20.97	1.08	0.58	36.95	24.05	2.19
1000	16.75	20.49	37.28	22.85	1.08	0.57	37.73	24.21	2.10
1200	16.74	20.52	30.97	25.03	1.08	0.58	37.24	24.03	2.13
1400	16.70	20.56	26.08	28.52	1.08	0.59	35.04	23.96	2.16
1600	16.71	20.58	23.83	31.83	1.08	0.59	36.80	23.23	2.15
1800	16.68	20.62	21.90	35.56	1.08	0.60	37.02	23.78	2.17
2000	16.61	20.70	20.22	35.38	1.08	0.62	35.64	23.07	2.23
2200	16.61	20.72	18.68	28.95	1.08	0.62	34.78	23.02	2.12
2400	16.64	20.68	17.91	26.88	1.08	0.61	36.15	23.25	2.17
2600	16.65	20.69	17.43	25.91	1.08	0.61	35.01	22.15	2.26
2800	16.65	20.71	17.24	25.49	1.08	0.61	37.47	22.75	2.24
3000	16.66	20.72	17.10	25.50	1.08	0.62	35.79	22.64	2.35
3200	16.66	20.72	17.36	26.14	1.08	0.62	35.55	21.95	2.35
3400	16.67	20.72	17.83	27.57	1.07	0.62	35.65	22.82	2.37
3600	16.68	20.74	18.56	28.62	1.07	0.62	34.98	22.72	2.40
3800	16.71	20.74	19.57	28.51	1.07	0.62	35.05	23.14	2.39
4000	16.77	20.76	21.36	26.36	1.06	0.61	35.58	23.22	2.38
4200	16.87	20.81	23.18	24.37	1.06	0.60	34.89	23.71	2.39
4400	16.80	20.71	25.98	22.12	1.06	0.59	34.51	23.91	2.54
4600	16.57	20.45	30.30	20.08	1.05	0.59	34.85	24.03	2.51
4800	16.63	20.50	36.72	18.52	1.05	0.58	34.34	24.18	2.50
5000	16.69	20.54	53.94	17.37	1.04	0.57	34.69	24.02	2.67
5200	16.71	20.56	38.20	16.44	1.04	0.56	34.86	23.97	2.68
5400	16.72	20.55	34.29	16.12	1.04	0.56	34.75	23.41	2.67
5600	16.72	20.55	33.17	16.13	1.03	0.56	34.94	23.52	2.83
5800	16.73	20.53	30.75	16.62	1.03	0.56	35.45	23.05	2.77
6000	16.72	20.52	27.39	17.79	1.03	0.57	36.12	23.08	2.95
6200	16.69	20.50	23.15	20.19	1.02	0.59	35.71	22.83	3.00
6400	16.74	20.42	18.68	23.62	1.02	0.59	37.02	22.45	3.12
6600	16.80	20.34	15.13	29.58	1.02	0.59	37.23	22.35	3.18
6800	16.73	20.36	12.60	32.53	1.02	0.62	37.38	22.09	3.24
7000	16.62	20.41	10.33	22.11	1.01	0.64	37.44	22.45	3.35
7200	16.42	20.55	8.46	17.01	1.01	0.67	34.32	21.45	3.42
7400	16.11	20.82	6.88	13.45	1.01	0.70	35.52	21.94	3.53
7600	15.68	21.16	5.54	10.83	1.01	0.73	33.09	20.76	3.68
7800	15.15	21.63	4.46	8.94	1.01	0.76	32.27	20.57	3.75
8000	14.52	22.18	3.58	7.41	1.01	0.78	31.24	19.81	3.86
8200	13.81	22.82	2.90	6.26	1.01	0.79	30.53	19.86	3.99
8400	13.03	23.48	2.36	5.35	1.02	0.78	29.80	19.03	4.09
8600	12.22	24.22	1.98	4.67	1.02	0.78	29.46	18.61	4.12
8800	11.37	24.95	1.67	4.13	1.03	0.77	29.25	18.39	4.33
9000	10.48	25.72	1.44	3.67	1.03	0.76	28.00	17.49	4.49
10000	6.50	29.15	1.03	2.52	1.10	0.69	27.18	15.60	5.02

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 = 8.50V, Id = 97mA @ 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)
50	16.44	20.81	15.81	13.19	1.09	0.58	34.45	22.70	2.57
100	16.60	20.57	21.66	16.24	1.09	0.57	37.12	23.07	2.51
200	16.68	20.39	26.62	18.02	1.08	0.56	37.70	23.66	2.43
400	16.73	20.36	32.27	19.52	1.08	0.55	34.75	23.59	2.31
600	16.72	20.41	39.82	20.52	1.08	0.56	36.92	23.40	2.23
800	16.67	20.47	42.64	21.44	1.08	0.58	37.17	23.18	2.13
1000	16.70	20.45	35.03	23.32	1.08	0.57	36.45	23.35	2.07
1200	16.69	20.48	29.79	25.57	1.08	0.58	35.53	23.17	2.12
1400	16.65	20.51	25.34	29.17	1.09	0.59	37.87	23.09	2.13
1600	16.66	20.53	23.26	32.00	1.09	0.59	35.06	22.36	2.20
1800	16.63	20.56	21.46	34.20	1.09	0.60	35.26	22.91	2.16
2000	16.56	20.64	19.87	33.11	1.09	0.62	34.57	22.19	2.17
2200	16.56	20.65	18.36	27.66	1.09	0.62	33.90	21.97	2.09
2400	16.59	20.64	17.66	26.01	1.09	0.61	35.97	22.36	2.11
2600	16.60	20.65	17.19	25.11	1.08	0.61	34.40	21.26	2.25
2800	16.60	20.65	16.99	24.80	1.08	0.61	34.18	21.71	2.23
3000	16.60	20.66	16.83	24.89	1.08	0.62	34.98	21.77	2.31
3200	16.61	20.68	17.07	25.56	1.08	0.62	34.30	21.23	2.29
3400	16.61	20.68	17.54	27.21	1.08	0.62	35.06	22.11	2.34
3600	16.63	20.69	18.26	29.19	1.07	0.62	34.30	21.86	2.40
3800	16.66	20.69	19.22	29.84	1.07	0.62	35.12	22.44	2.36
4000	16.72	20.71	21.00	27.72	1.07	0.61	34.94	22.53	2.34
4200	16.81	20.76	22.74	25.61	1.06	0.60	35.41	23.03	2.32
4400	16.75	20.67	25.47	22.92	1.06	0.60	34.21	23.23	2.54
4600	16.51	20.39	29.72	20.64	1.05	0.59	34.39	23.36	2.41
4800	16.57	20.45	35.76	18.93	1.05	0.58	34.02	23.63	2.42
5000	16.63	20.50	51.45	17.67	1.05	0.57	35.18	23.48	2.62
5200	16.65	20.51	38.14	16.70	1.04	0.57	34.47	23.32	2.64
5400	16.66	20.51	34.06	16.35	1.04	0.56	34.55	22.77	2.63
5600	16.65	20.52	32.75	16.33	1.04	0.56	35.53	22.98	2.76
5800	16.65	20.50	30.11	16.84	1.03	0.57	35.82	22.41	2.69
6000	16.63	20.48	26.99	18.01	1.03	0.58	35.25	22.54	2.90
6200	16.60	20.46	22.90	20.47	1.03	0.59	43.14	22.28	2.95
6400	16.64	20.40	18.56	23.64	1.02	0.60	43.74	21.91	3.08
6600	16.69	20.34	15.08	27.91	1.02	0.61	38.29	21.79	3.11
6800	16.61	20.35	12.60	28.81	1.02	0.63	35.96	21.53	3.19
7000	16.50	20.42	10.35	21.44	1.02	0.65	35.23	21.88	3.33
7200	16.31	20.54	8.50	16.81	1.02	0.68	32.89	20.88	3.38
7400	16.00	20.81	6.94	13.42	1.02	0.71	32.97	21.24	3.48
7600	15.58	21.16	5.61	10.87	1.02	0.74	31.69	20.04	3.60
7800	15.06	21.60	4.53	9.01	1.02	0.77	30.83	19.84	3.68
8000	14.44	22.13	3.65	7.48	1.02	0.78	29.70	19.07	3.80
8200	13.75	22.73	2.95	6.33	1.02	0.79	29.65	18.98	3.86
8400	12.97	23.41	2.40	5.39	1.02	0.79	28.26	17.94	4.00
8600	12.18	24.09	2.01	4.71	1.03	0.78	28.22	17.36	4.00
8800	11.35	24.84	1.68	4.16	1.03	0.78	28.02	16.96	4.23
9000	10.47	25.57	1.45	3.68	1.04	0.76	27.13	16.06	4.34
10000	6.52	28.98	0.99	2.49	1.11	0.68	26.20	14.38	4.90

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 = 9.50V, Id = 114mA @ 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)
50	16.55	20.95	15.68	13.03	1.09	0.58	34.85	24.04	2.76
100	16.70	20.65	21.27	15.76	1.08	0.57	39.58	24.41	2.63
200	16.78	20.47	25.46	17.40	1.08	0.55	37.56	25.16	2.52
400	16.83	20.44	29.53	18.81	1.08	0.55	39.07	25.10	2.40
600	16.82	20.49	34.09	19.75	1.08	0.56	37.99	25.08	2.28
800	16.77	20.55	41.99	20.59	1.08	0.57	41.58	24.87	2.20
1000	16.81	20.52	39.58	22.38	1.08	0.57	37.96	24.87	2.15
1200	16.80	20.54	32.28	24.46	1.08	0.58	38.22	24.69	2.18
1400	16.76	20.59	26.75	27.95	1.08	0.59	37.90	24.78	2.17
1600	16.77	20.58	24.36	31.33	1.08	0.59	35.97	24.06	2.18
1800	16.75	20.62	22.32	36.74	1.08	0.60	37.21	24.59	2.21
2000	16.68	20.69	20.55	38.65	1.08	0.61	36.91	23.90	2.26
2200	16.68	20.71	18.91	30.02	1.08	0.61	36.06	23.71	2.17
2400	16.72	20.67	18.13	27.77	1.08	0.60	35.13	24.08	2.20
2600	16.73	20.69	17.61	26.55	1.08	0.61	35.51	23.00	2.33
2800	16.73	20.70	17.40	26.02	1.08	0.61	33.73	23.43	2.26
3000	16.73	20.71	17.23	25.84	1.08	0.61	35.19	23.48	2.40
3200	16.74	20.73	17.47	26.21	1.08	0.61	36.29	22.79	2.39
3400	16.75	20.72	17.94	27.20	1.07	0.61	35.75	23.65	2.42
3600	16.76	20.74	18.69	27.72	1.07	0.61	36.89	23.38	2.46
3800	16.79	20.75	19.67	27.11	1.07	0.61	35.30	23.79	2.45
4000	16.85	20.76	21.50	25.03	1.06	0.60	36.31	23.87	2.41
4200	16.95	20.81	23.34	23.39	1.06	0.59	34.55	24.35	2.45
4400	16.89	20.69	26.21	21.32	1.05	0.58	35.24	24.42	2.61
4600	16.66	20.43	30.77	19.50	1.05	0.57	34.93	24.53	2.56
4800	16.72	20.49	37.56	18.03	1.05	0.57	35.02	24.80	2.56
5000	16.78	20.52	50.75	16.96	1.04	0.56	34.54	24.51	2.71
5200	16.81	20.53	37.74	16.12	1.04	0.55	34.12	24.47	2.67
5400	16.83	20.52	34.19	15.82	1.03	0.54	34.42	23.91	2.73
5600	16.84	20.52	33.44	15.87	1.03	0.54	34.88	24.01	2.87
5800	16.85	20.49	30.94	16.40	1.03	0.55	33.66	23.54	2.82
6000	16.84	20.46	27.30	17.58	1.02	0.55	35.43	23.57	3.02
6200	16.83	20.43	22.91	20.03	1.02	0.57	35.08	23.32	3.07
6400	16.88	20.36	18.40	23.76	1.02	0.57	35.90	22.84	3.19
6600	16.94	20.28	14.87	31.48	1.01	0.58	35.79	22.74	3.24
6800	16.87	20.30	12.35	33.87	1.01	0.60	36.28	22.58	3.34
7000	16.77	20.37	10.09	21.76	1.01	0.62	37.71	22.95	3.46
7200	16.56	20.50	8.23	16.67	1.01	0.65	34.58	21.95	3.50
7400	16.25	20.77	6.67	13.14	1.01	0.68	36.70	22.43	3.63
7600	15.80	21.14	5.35	10.56	1.01	0.71	33.26	21.27	3.72
7800	15.26	21.61	4.30	8.70	1.01	0.74	33.75	21.18	3.84
8000	14.62	22.18	3.44	7.21	1.01	0.76	33.15	20.44	3.98
8200	13.89	22.84	2.77	6.08	1.01	0.77	31.80	20.33	4.07
8400	13.09	23.54	2.25	5.18	1.02	0.77	31.33	19.81	4.20
8600	12.26	24.25	1.89	4.52	1.02	0.76	30.45	19.23	4.21
8800	11.41	25.02	1.59	3.99	1.02	0.76	30.15	19.02	4.43
9000	10.51	25.81	1.37	3.55	1.03	0.74	28.89	18.49	4.56
10000	6.49	29.25	0.98	2.43	1.10	0.67	28.26	16.55	5.12

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 = 9.00V, Id = 109mA @ 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)
50	16.13	20.67	16.23	13.81	1.10	0.61	31.73	21.67	3.66
100	16.27	20.42	22.14	16.69	1.10	0.59	37.36	22.27	3.62
200	16.35	20.29	27.67	18.19	1.09	0.58	35.78	23.10	3.37
400	16.39	20.28	35.20	19.99	1.09	0.58	35.10	23.63	3.18
600	16.37	20.33	44.44	21.25	1.10	0.59	36.45	23.64	3.07
800	16.33	20.39	33.86	23.07	1.11	0.61	36.66	23.57	2.94
1000	16.33	20.39	28.75	25.90	1.11	0.61	36.52	23.55	2.97
1200	16.29	20.43	25.05	30.69	1.11	0.62	35.78	23.36	3.04
1400	16.25	20.48	22.02	38.54	1.12	0.63	35.29	23.27	3.09
1600	16.23	20.50	20.22	34.93	1.12	0.63	35.88	22.51	3.06
1800	16.18	20.55	18.67	29.13	1.12	0.64	34.31	23.01	3.10
2000	16.12	20.62	17.37	25.27	1.13	0.65	34.71	22.31	3.18
2200	16.11	20.64	16.42	22.98	1.13	0.65	34.42	22.27	3.13
2400	16.10	20.64	15.79	21.73	1.12	0.65	33.99	22.42	3.15
2600	16.08	20.68	15.40	20.95	1.13	0.66	33.37	21.51	3.26
2800	16.07	20.68	15.33	20.57	1.13	0.66	32.26	21.91	3.25
3000	16.06	20.69	15.39	20.51	1.13	0.66	33.51	21.98	3.34
3200	16.05	20.70	15.78	20.81	1.13	0.66	33.90	21.44	3.35
3400	16.05	20.69	16.36	21.37	1.13	0.66	34.36	22.12	3.44
3600	16.05	20.69	17.19	21.85	1.13	0.66	34.38	21.87	3.50
3800	16.07	20.70	18.37	22.30	1.13	0.66	34.45	22.38	3.51
4000	16.12	20.71	20.07	22.26	1.13	0.66	34.67	22.14	3.48
4200	16.20	20.77	21.94	21.85	1.13	0.65	34.13	22.57	3.47
4400	16.12	20.67	24.66	20.79	1.13	0.65	33.80	22.54	3.64
4600	15.87	20.40	28.75	19.61	1.13	0.64	33.41	22.66	3.67
4800	15.93	20.43	33.09	18.65	1.12	0.63	33.84	22.91	3.64
5000	15.98	20.46	34.87	18.05	1.12	0.63	34.38	22.50	3.84
5200	16.00	20.48	31.24	17.61	1.12	0.63	34.15	22.38	3.86
5400	16.01	20.45	27.70	17.87	1.12	0.62	34.15	21.48	3.97
5600	16.02	20.42	24.58	18.75	1.12	0.63	34.11	21.55	4.07
5800	16.01	20.40	20.88	20.80	1.12	0.64	33.28	20.86	4.09
6000	15.97	20.37	17.63	24.79	1.11	0.65	33.97	20.90	4.34
6200	15.90	20.40	14.64	30.29	1.11	0.67	32.30	20.32	4.42
6400	15.78	20.46	11.99	24.02	1.11	0.70	32.21	19.81	4.59
6600	15.56	20.63	9.77	17.86	1.11	0.73	31.19	19.21	4.71
6800	15.21	20.90	7.96	14.05	1.11	0.76	30.77	18.79	4.81
7000	14.77	21.27	6.44	11.26	1.12	0.79	31.00	18.72	4.97
7200	14.19	21.78	5.19	9.24	1.13	0.82	30.00	17.66	5.08
7400	13.49	22.40	4.20	7.71	1.15	0.84	30.18	17.56	5.21
7600	12.71	23.05	3.42	6.51	1.16	0.85	29.27	16.51	5.40
7800	12.01	23.67	2.88	5.37	1.17	0.81	29.01	16.28	5.50
8000	11.33	24.24	2.49	4.39	1.17	0.74	28.69	15.90	5.60
8200	10.57	24.87	2.20	3.85	1.20	0.71	28.33	15.67	5.76
8400	9.77	25.56	1.97	3.47	1.23	0.70	27.50	15.25	5.88
8600	8.98	26.20	1.83	3.21	1.27	0.69	27.31	14.73	5.93
8800	8.18	26.89	1.69	3.07	1.34	0.70	27.13	14.36	6.11
9000	7.32	27.61	1.61	3.04	1.43	0.73	26.21	14.02	6.29
10000	4.03	30.22	1.57	2.43	1.98	0.66	25.37	12.39	6.93

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 = 8.50V, Id = 100mA @ 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)
50	16.10	20.65	16.26	13.70	1.10	0.61	34.54	21.35	3.58
100	16.24	20.42	22.24	16.71	1.10	0.60	34.90	21.86	3.56
200	16.32	20.27	28.02	18.28	1.09	0.58	34.93	22.68	3.34
400	16.37	20.26	35.91	20.10	1.10	0.58	36.64	23.19	3.13
600	16.34	20.32	41.96	21.34	1.10	0.59	35.80	23.19	3.03
800	16.30	20.38	32.68	23.15	1.11	0.61	35.23	22.98	3.01
1000	16.29	20.39	28.16	25.82	1.11	0.61	35.00	23.10	2.98
1200	16.26	20.42	24.71	30.19	1.11	0.62	34.41	22.90	3.03
1400	16.21	20.47	21.78	35.19	1.12	0.63	34.21	22.81	3.03
1600	16.19	20.50	20.07	33.20	1.12	0.64	33.13	22.04	3.12
1800	16.13	20.56	18.60	28.87	1.12	0.65	33.93	22.55	3.10
2000	16.07	20.63	17.33	25.29	1.13	0.66	33.88	21.84	3.16
2200	16.05	20.63	16.42	23.08	1.13	0.66	34.58	21.80	3.08
2400	16.04	20.65	15.79	21.90	1.13	0.66	34.06	21.95	3.14
2600	16.03	20.66	15.43	21.20	1.13	0.66	33.34	21.03	3.26
2800	16.01	20.69	15.37	20.91	1.13	0.66	33.30	21.44	3.22
3000	16.00	20.70	15.44	21.01	1.13	0.67	33.91	21.51	3.36
3200	15.99	20.71	15.84	21.52	1.13	0.67	33.05	20.97	3.37
3400	15.98	20.71	16.45	22.41	1.14	0.67	33.64	21.65	3.37
3600	15.99	20.72	17.31	23.28	1.14	0.67	33.02	21.42	3.44
3800	16.00	20.73	18.52	24.18	1.14	0.67	34.56	21.93	3.42
4000	16.04	20.74	20.29	24.39	1.14	0.67	34.02	21.82	3.44
4200	16.11	20.81	22.28	23.87	1.14	0.67	33.90	22.24	3.41
4400	16.03	20.70	25.11	22.41	1.14	0.66	34.03	22.08	3.60
4600	15.77	20.43	29.43	20.87	1.14	0.65	33.05	22.20	3.59
4800	15.81	20.49	34.19	19.63	1.14	0.65	34.00	22.45	3.58
5000	15.85	20.53	34.50	18.85	1.14	0.65	33.61	22.15	3.80
5200	15.86	20.53	30.56	18.29	1.14	0.64	34.39	22.03	3.78
5400	15.86	20.53	27.34	18.46	1.14	0.65	33.70	21.14	3.91
5600	15.85	20.51	24.62	19.26	1.13	0.65	33.46	21.19	4.04
5800	15.82	20.50	21.18	21.35	1.13	0.66	32.74	20.50	4.02
6000	15.77	20.50	18.08	25.64	1.13	0.68	33.16	20.52	4.24
6200	15.69	20.52	15.15	41.87	1.13	0.70	31.95	19.94	4.37
6400	15.57	20.59	12.52	26.61	1.13	0.73	31.26	19.43	4.49
6600	15.36	20.74	10.27	19.18	1.13	0.76	30.12	18.82	4.63
6800	15.03	21.00	8.44	15.00	1.13	0.80	29.99	18.41	4.72
7000	14.61	21.34	6.88	12.02	1.14	0.82	29.95	18.36	4.90
7200	14.06	21.79	5.58	9.89	1.15	0.85	28.66	17.17	4.95
7400	13.40	22.36	4.54	8.26	1.17	0.87	29.50	17.10	5.10
7600	12.67	22.99	3.72	6.98	1.19	0.88	28.14	16.06	5.29
7800	12.01	23.55	3.12	5.74	1.19	0.84	27.79	15.84	5.38
8000	11.36	24.06	2.70	4.71	1.19	0.77	27.44	15.34	5.52
8200	10.62	24.70	2.37	4.13	1.21	0.75	27.03	15.12	5.67
8400	9.84	25.36	2.11	3.72	1.24	0.73	26.23	14.57	5.76
8600	9.07	25.98	1.94	3.43	1.29	0.72	26.15	14.06	5.81
8800	8.28	26.60	1.79	3.25	1.34	0.73	26.25	13.85	5.99
9000	7.44	27.31	1.68	3.21	1.44	0.75	25.19	13.37	6.13
10000	4.18	29.89	1.59	2.51	1.94	0.68	23.45	11.75	6.73

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 = 9.50V, Id = 117mA @ 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)
50	16.13	20.66	16.19	13.80	1.10	0.61	33.47	22.06	3.76
100	16.27	20.42	22.05	16.73	1.10	0.59	35.76	22.56	3.68
200	16.35	20.28	27.41	18.20	1.09	0.58	34.86	23.39	3.47
400	16.40	20.29	34.61	19.96	1.10	0.58	37.59	24.04	3.23
600	16.38	20.34	45.39	21.21	1.10	0.59	35.47	24.05	3.11
800	16.34	20.39	34.68	23.07	1.11	0.60	36.09	23.98	3.12
1000	16.34	20.39	29.19	25.93	1.11	0.61	35.48	23.96	3.03
1200	16.31	20.43	25.28	30.97	1.11	0.62	35.77	23.77	3.02
1400	16.27	20.47	22.14	41.55	1.11	0.63	34.98	23.69	3.12
1600	16.25	20.50	20.31	35.72	1.12	0.63	35.22	22.94	3.09
1800	16.20	20.55	18.74	29.17	1.12	0.64	36.28	23.43	3.19
2000	16.15	20.60	17.40	25.15	1.12	0.65	34.64	22.88	3.20
2200	16.13	20.62	16.44	22.83	1.12	0.65	34.80	22.70	3.19
2400	16.13	20.64	15.78	21.54	1.12	0.65	34.59	22.85	3.24
2600	16.11	20.65	15.38	20.74	1.12	0.65	34.24	22.10	3.37
2800	16.10	20.67	15.28	20.28	1.12	0.65	34.38	22.35	3.34
3000	16.09	20.67	15.32	20.11	1.12	0.66	34.38	22.41	3.41
3200	16.09	20.68	15.68	20.27	1.12	0.66	34.12	21.87	3.41
3400	16.09	20.68	16.25	20.67	1.12	0.66	34.25	22.54	3.46
3600	16.10	20.68	17.04	20.93	1.12	0.66	33.83	22.28	3.54
3800	16.12	20.67	18.16	21.19	1.12	0.66	34.36	22.78	3.54
4000	16.17	20.68	19.77	21.10	1.12	0.65	33.90	22.55	3.53
4200	16.25	20.73	21.56	20.75	1.12	0.65	34.26	22.97	3.55
4400	16.18	20.63	24.03	19.86	1.12	0.64	33.74	22.83	3.76
4600	15.94	20.36	27.59	18.87	1.12	0.63	33.60	22.95	3.70
4800	16.00	20.39	31.17	18.07	1.12	0.62	34.58	23.22	3.74
5000	16.06	20.42	33.21	17.56	1.11	0.62	33.92	22.91	3.94
5200	16.09	20.40	30.56	17.19	1.11	0.61	34.36	22.80	3.96
5400	16.11	20.38	27.10	17.48	1.11	0.61	34.00	21.78	3.97
5600	16.13	20.35	23.82	18.36	1.11	0.61	33.82	21.85	4.12
5800	16.13	20.30	20.13	20.21	1.10	0.62	33.31	21.16	4.17
6000	16.10	20.30	16.93	23.32	1.10	0.64	33.82	21.21	4.46
6200	16.03	20.31	14.01	25.15	1.10	0.65	33.23	20.63	4.49
6400	15.91	20.39	11.44	21.29	1.09	0.68	32.27	20.12	4.67
6600	15.67	20.57	9.28	16.52	1.09	0.71	32.24	19.51	4.77
6800	15.30	20.87	7.53	13.16	1.10	0.75	31.64	19.09	4.90
7000	14.83	21.28	6.07	10.60	1.11	0.77	31.61	19.13	5.08
7200	14.22	21.79	4.87	8.72	1.11	0.80	30.85	17.94	5.21
7400	13.49	22.44	3.93	7.29	1.13	0.82	30.90	17.94	5.31
7600	12.68	23.16	3.20	6.17	1.15	0.83	30.37	17.02	5.52
7800	11.97	23.77	2.70	5.07	1.16	0.78	29.68	16.78	5.67
8000	11.27	24.36	2.34	4.15	1.16	0.72	29.85	16.25	5.77
8200	10.48	25.04	2.08	3.65	1.19	0.69	29.18	16.01	5.89
8400	9.67	25.77	1.86	3.31	1.22	0.68	28.12	15.59	6.02
8600	8.87	26.42	1.74	3.07	1.27	0.68	28.64	15.19	6.08
8800	8.05	27.13	1.62	2.94	1.33	0.69	27.76	14.82	6.29
9000	7.18	27.84	1.54	2.94	1.43	0.72	27.24	14.34	6.47
10000	3.86	30.57	1.54	2.36	2.01	0.65	26.28	12.83	7.08

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 = 40mA @ 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)
50	14.82	19.72	15.15	17.32	1.13	0.68	23.04	15.20	2.83
100	14.96	19.50	18.54	24.07	1.12	0.66	24.55	16.08	2.79
200	15.03	19.35	19.99	31.26	1.12	0.64	24.44	16.86	2.68
400	15.05	19.40	19.71	38.90	1.12	0.64	24.48	16.72	2.63
600	14.99	19.46	18.97	30.02	1.12	0.65	24.60	16.72	2.65
800	14.91	19.56	17.86	25.94	1.13	0.67	24.16	16.62	2.54
1000	14.88	19.57	17.19	23.05	1.13	0.67	24.18	16.78	2.48
1200	14.80	19.64	16.24	20.98	1.14	0.68	24.16	16.42	2.43
1400	14.70	19.73	15.38	19.38	1.15	0.69	24.08	16.40	2.54
1600	14.64	19.77	14.58	18.05	1.15	0.69	23.19	15.59	2.51
1800	14.54	19.86	14.01	17.25	1.16	0.70	23.56	16.03	2.54
2000	14.42	19.97	13.39	16.46	1.17	0.72	22.89	15.29	2.56
2200	14.36	19.98	12.91	15.63	1.17	0.71	22.59	14.87	2.65
2400	14.33	20.00	12.62	15.11	1.18	0.71	22.83	14.80	2.58
2600	14.28	20.03	12.57	15.03	1.18	0.72	21.98	13.37	2.61
2800	14.24	20.03	12.60	15.05	1.18	0.72	22.78	14.49	2.71
3000	14.20	20.04	12.82	15.37	1.19	0.73	22.57	14.14	2.82
3200	14.16	20.04	13.16	15.79	1.19	0.73	22.07	13.87	2.76
3400	14.13	20.03	13.69	16.48	1.20	0.74	22.87	14.65	2.81
3600	14.10	20.02	14.38	17.21	1.21	0.74	22.56	14.62	2.77
3800	14.06	20.00	15.26	18.04	1.21	0.75	23.48	15.65	2.88
4000	14.02	19.98	16.31	18.56	1.21	0.75	23.01	15.21	2.87
4200	13.97	19.97	17.49	18.73	1.22	0.75	23.92	16.32	2.90
4400	13.90	19.96	18.87	18.42	1.22	0.75	23.91	16.25	2.92
4600	13.81	19.99	20.12	17.78	1.23	0.76	24.47	16.57	3.01
4800	13.70	20.01	20.98	16.94	1.24	0.76	25.08	16.90	2.97
5000	13.56	20.07	21.38	15.99	1.25	0.77	25.19	16.82	2.95
5200	13.41	20.12	20.97	15.27	1.26	0.78	25.07	16.82	3.01
5400	13.24	20.17	19.92	14.49	1.27	0.79	24.18	16.34	3.06
5600	13.05	20.27	18.85	13.95	1.28	0.80	24.48	16.20	3.27
5800	12.84	20.37	17.33	13.38	1.30	0.82	23.78	15.93	3.31
6000	12.61	20.48	15.95	12.90	1.31	0.84	24.32	15.80	3.41
6200	12.37	20.58	14.45	12.17	1.32	0.85	23.28	15.44	3.41
6400	12.13	20.69	12.93	11.49	1.33	0.87	23.03	15.21	3.46
6600	11.88	20.84	11.46	10.70	1.32	0.89	22.46	14.73	3.70
6800	11.59	20.97	10.11	9.97	1.32	0.90	22.33	14.50	3.77
7000	11.23	21.18	8.92	9.33	1.33	0.92	22.84	14.35	3.81
7200	10.80	21.45	7.82	8.62	1.35	0.93	21.36	13.60	3.89
7400	10.35	21.73	6.86	7.89	1.37	0.94	22.01	13.39	4.16
7600	9.84	22.05	5.98	7.23	1.39	0.94	20.55	12.57	4.25
7800	9.30	22.43	5.22	6.57	1.41	0.94	20.35	12.08	4.43
8000	8.72	22.82	4.58	6.02	1.44	0.93	19.85	11.60	4.51
8200	8.11	23.24	4.02	5.49	1.46	0.92	19.84	11.14	4.63
8400	7.49	23.68	3.58	5.08	1.50	0.91	19.24	10.62	4.73
8600	6.84	24.14	3.19	4.65	1.54	0.89	18.87	10.10	4.87
8800	6.20	24.57	2.90	4.36	1.60	0.88	18.92	9.86	5.01
9000	5.57	25.02	2.62	4.05	1.64	0.86	18.35	9.50	5.07
10000	2.53	27.03	1.98	3.33	2.09	0.82	17.33	7.96	5.79

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 = 38mA @ 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)
50	14.46	19.49	14.53	18.60	1.14	0.70	21.91	14.80	2.81
100	14.60	19.24	17.15	26.69	1.13	0.67	23.30	15.72	2.77
200	14.66	19.11	18.06	34.83	1.12	0.65	23.22	16.48	2.66
400	14.67	19.16	17.75	31.14	1.12	0.66	23.28	16.71	2.64
600	14.61	19.23	17.16	26.11	1.13	0.67	23.26	16.72	2.62
800	14.52	19.32	16.27	23.28	1.14	0.68	22.99	16.63	2.56
1000	14.48	19.36	15.71	20.86	1.14	0.68	22.99	16.77	2.47
1200	14.40	19.42	14.93	19.13	1.15	0.69	22.92	16.60	2.51
1400	14.29	19.52	14.20	17.73	1.16	0.70	22.83	16.56	2.52
1600	14.22	19.56	13.53	16.58	1.16	0.70	22.06	15.96	2.54
1800	14.12	19.66	13.02	15.88	1.17	0.71	22.30	16.19	2.54
2000	13.99	19.76	12.50	15.19	1.18	0.72	21.62	15.64	2.55
2200	13.93	19.79	12.08	14.47	1.18	0.72	21.47	15.20	2.67
2400	13.89	19.79	11.83	14.00	1.18	0.72	21.55	15.13	2.59
2600	13.84	19.82	11.80	13.94	1.19	0.73	20.74	13.50	2.67
2800	13.79	19.83	11.85	13.94	1.19	0.73	21.38	14.80	2.70
3000	13.75	19.83	12.05	14.24	1.20	0.74	21.25	14.26	2.82
3200	13.71	19.82	12.37	14.60	1.20	0.74	20.80	13.99	2.76
3400	13.68	19.80	12.85	15.22	1.21	0.75	21.50	14.58	2.81
3600	13.65	19.78	13.49	15.85	1.21	0.75	21.22	14.74	2.77
3800	13.61	19.75	14.27	16.61	1.22	0.75	22.09	15.39	2.89
4000	13.57	19.73	15.20	17.14	1.22	0.76	21.67	15.13	2.86
4200	13.52	19.70	16.23	17.44	1.23	0.76	22.64	16.03	2.86
4400	13.45	19.70	17.42	17.36	1.23	0.76	22.50	15.79	2.91
4600	13.36	19.70	18.47	16.99	1.24	0.77	23.11	16.08	3.04
4800	13.24	19.74	19.21	16.33	1.25	0.77	23.83	16.23	2.97
5000	13.10	19.78	19.62	15.54	1.26	0.78	23.71	16.15	2.97
5200	12.94	19.82	19.38	14.88	1.27	0.79	23.83	16.14	3.14
5400	12.76	19.91	18.59	14.11	1.28	0.80	22.94	15.66	3.10
5600	12.56	20.00	17.65	13.55	1.29	0.81	23.29	15.66	3.29
5800	12.33	20.11	16.32	12.93	1.31	0.83	22.74	15.38	3.36
6000	12.09	20.22	15.01	12.40	1.33	0.85	23.19	15.24	3.46
6200	11.82	20.34	13.63	11.64	1.34	0.86	22.31	14.87	3.39
6400	11.57	20.47	12.22	10.93	1.34	0.88	22.07	14.62	3.51
6600	11.30	20.59	10.86	10.13	1.34	0.89	21.64	14.31	3.71
6800	10.98	20.76	9.59	9.40	1.33	0.91	21.62	14.06	3.77
7000	10.60	20.98	8.49	8.78	1.35	0.92	22.17	13.90	3.82
7200	10.16	21.24	7.47	8.10	1.36	0.93	20.96	13.32	3.89
7400	9.68	21.56	6.57	7.42	1.38	0.93	21.66	13.27	4.17
7600	9.16	21.87	5.74	6.82	1.40	0.93	20.44	12.47	4.29
7800	8.61	22.26	5.03	6.21	1.43	0.93	20.46	12.15	4.42
8000	8.02	22.67	4.42	5.71	1.46	0.92	20.02	11.68	4.50
8200	7.41	23.08	3.90	5.23	1.49	0.91	20.17	11.39	4.67
8400	6.79	23.50	3.49	4.85	1.53	0.90	19.72	11.07	4.72
8600	6.14	23.96	3.11	4.47	1.57	0.88	19.49	10.56	4.88
8800	5.50	24.37	2.83	4.19	1.62	0.87	19.59	10.52	5.02
9000	4.88	24.81	2.57	3.91	1.66	0.85	19.17	10.17	5.16
10000	1.87	26.78	1.95	3.26	2.12	0.81	18.05	10.27	5.85

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 = 44mA @ 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)
50	15.09	19.96	15.55	16.42	1.12	0.67	24.30	15.88	2.85
100	15.25	19.70	19.70	21.99	1.12	0.65	26.03	16.40	2.82
200	15.32	19.55	21.81	26.74	1.11	0.63	25.90	17.18	2.71
400	15.34	19.58	21.66	32.01	1.11	0.63	26.04	17.22	2.63
600	15.29	19.65	20.74	30.74	1.12	0.64	25.97	17.03	2.64
800	15.21	19.74	19.38	27.44	1.13	0.66	25.64	16.76	2.60
1000	15.18	19.75	18.58	24.83	1.13	0.66	25.54	16.92	2.50
1200	15.11	19.82	17.46	22.61	1.14	0.67	25.52	16.56	2.46
1400	15.02	19.90	16.46	20.90	1.14	0.68	25.37	16.74	2.55
1600	14.96	19.94	15.55	19.39	1.15	0.68	24.58	15.75	2.63
1800	14.87	20.04	14.88	18.52	1.16	0.70	24.93	16.22	2.53
2000	14.76	20.13	14.18	17.62	1.17	0.71	24.22	15.47	2.53
2200	14.71	20.16	13.65	16.70	1.17	0.71	24.12	15.25	2.65
2400	14.68	20.17	13.30	16.12	1.17	0.71	24.32	15.20	2.56
2600	14.63	20.18	13.23	16.03	1.17	0.71	23.38	13.97	2.63
2800	14.59	20.20	13.26	16.05	1.18	0.72	24.03	14.90	2.71
3000	14.56	20.20	13.48	16.42	1.18	0.72	24.03	14.74	2.79
3200	14.52	20.20	13.83	16.90	1.19	0.73	23.61	14.47	2.74
3400	14.49	20.21	14.40	17.69	1.19	0.73	24.27	15.07	2.78
3600	14.46	20.18	15.14	18.50	1.20	0.73	23.96	15.04	2.77
3800	14.42	20.19	16.12	19.43	1.20	0.74	24.85	16.06	2.90
4000	14.39	20.16	17.25	19.92	1.21	0.74	24.42	15.62	2.86
4200	14.33	20.17	18.59	19.92	1.21	0.74	25.32	16.74	2.87
4400	14.27	20.17	20.23	19.36	1.22	0.74	25.24	16.51	2.92
4600	14.18	20.20	21.68	18.45	1.22	0.75	25.92	17.18	3.04
4800	14.07	20.23	22.68	17.44	1.23	0.75	26.51	17.53	2.99
5000	13.95	20.28	23.05	16.38	1.24	0.76	26.35	17.45	2.93
5200	13.80	20.32	22.45	15.64	1.25	0.77	26.40	17.46	3.09
5400	13.65	20.39	21.12	14.85	1.26	0.78	25.40	16.83	3.05
5600	13.47	20.48	19.93	14.35	1.27	0.79	25.71	16.86	3.29
5800	13.28	20.57	18.25	13.81	1.28	0.81	24.87	16.45	3.33
6000	13.07	20.65	16.79	13.38	1.30	0.82	25.43	16.49	3.45
6200	12.84	20.78	15.18	12.71	1.31	0.84	24.39	15.98	3.42
6400	12.63	20.86	13.57	12.06	1.31	0.86	23.86	15.60	3.49
6600	12.40	20.97	11.98	11.29	1.31	0.88	23.13	15.28	3.72
6800	12.13	21.11	10.53	10.55	1.30	0.90	23.07	14.90	3.75
7000	11.78	21.32	9.26	9.89	1.32	0.92	23.64	14.76	3.78
7200	11.37	21.57	8.09	9.12	1.33	0.93	21.96	13.83	3.85
7400	10.93	21.85	7.07	8.33	1.35	0.94	22.65	13.64	4.16
7600	10.43	22.17	6.14	7.62	1.37	0.95	21.01	12.65	4.25
7800	9.89	22.55	5.33	6.89	1.38	0.95	20.71	12.32	4.41
8000	9.32	22.95	4.66	6.28	1.42	0.94	20.08	11.66	4.48
8200	8.71	23.38	4.08	5.71	1.44	0.93	19.98	11.20	4.62
8400	8.09	23.81	3.62	5.26	1.48	0.92	19.29	10.66	4.67
8600	7.44	24.28	3.21	4.80	1.51	0.90	18.77	10.13	4.84
8800	6.79	24.73	2.91	4.48	1.57	0.89	18.76	9.72	4.97
9000	6.16	25.17	2.63	4.14	1.60	0.87	17.97	9.17	5.09
10000	3.06	27.30	1.97	3.39	2.06	0.83	16.94	7.57	5.77

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 = 38mA @ 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)
50	14.78	19.58	14.90	18.25	1.12	0.68	21.44	15.17	2.22
100	14.92	19.34	17.83	26.38	1.12	0.65	22.39	15.45	2.19
200	14.99	19.20	18.92	33.75	1.11	0.63	22.41	16.38	2.08
400	15.02	19.23	18.86	32.93	1.11	0.63	22.42	16.66	2.13
600	14.98	19.30	18.12	27.79	1.12	0.64	22.44	16.61	2.06
800	14.92	19.38	17.28	24.80	1.12	0.65	22.20	16.37	2.06
1000	14.91	19.38	16.61	22.11	1.12	0.65	22.28	16.54	1.89
1200	14.86	19.44	15.86	20.42	1.13	0.65	22.14	16.36	1.96
1400	14.78	19.53	14.90	18.81	1.13	0.66	22.03	16.33	2.00
1600	14.75	19.56	14.28	17.72	1.13	0.66	21.18	15.34	2.01
1800	14.68	19.64	13.71	16.90	1.14	0.67	21.70	15.51	1.98
2000	14.56	19.75	13.18	16.32	1.15	0.69	20.73	15.01	1.99
2200	14.51	19.79	12.55	15.25	1.15	0.69	20.78	14.20	2.00
2400	14.51	19.79	12.27	14.75	1.15	0.68	20.75	14.51	1.99
2600	14.49	19.80	12.10	14.49	1.15	0.68	19.70	12.92	2.12
2800	14.47	19.84	12.06	14.46	1.15	0.69	20.36	13.60	2.03
3000	14.45	19.84	12.05	14.58	1.15	0.69	20.29	14.03	2.16
3200	14.44	19.85	12.23	14.91	1.16	0.69	19.88	13.28	2.14
3400	14.44	19.85	12.57	15.53	1.16	0.70	20.59	14.63	2.19
3600	14.44	19.84	13.02	16.40	1.16	0.71	20.43	14.87	2.23
3800	14.45	19.84	13.58	17.29	1.17	0.71	21.28	15.43	2.24
4000	14.51	19.84	14.47	18.49	1.17	0.71	20.86	15.87	2.24
4200	14.59	19.88	15.25	19.16	1.17	0.71	21.91	16.57	2.22
4400	14.50	19.77	16.27	19.92	1.17	0.71	21.84	16.84	2.32
4600	14.23	19.50	17.45	20.03	1.17	0.71	22.44	17.22	2.31
4800	14.25	19.56	18.41	19.59	1.17	0.71	23.20	17.37	2.29
5000	14.24	19.63	19.33	18.60	1.17	0.71	23.00	17.36	2.38
5200	14.19	19.69	19.65	17.63	1.17	0.72	23.05	17.31	2.44
5400	14.10	19.76	19.36	16.66	1.18	0.73	22.21	16.96	2.45
5600	13.98	19.82	18.68	15.81	1.18	0.74	22.68	17.00	2.59
5800	13.84	19.90	17.44	15.06	1.19	0.76	22.01	16.77	2.48
6000	13.66	19.98	16.14	14.49	1.20	0.77	22.49	16.70	2.71
6200	13.44	20.11	14.72	13.86	1.21	0.79	21.61	16.41	2.73
6400	13.28	20.19	13.05	12.73	1.21	0.80	21.32	16.21	2.79
6600	13.15	20.23	11.42	11.68	1.19	0.81	20.78	16.01	2.88
6800	12.90	20.38	10.07	10.98	1.19	0.84	20.71	15.88	2.96
7000	12.63	20.52	8.76	10.04	1.18	0.85	21.10	15.92	3.06
7200	12.31	20.70	7.61	9.16	1.17	0.87	19.96	15.41	3.11
7400	11.91	20.99	6.59	8.36	1.18	0.88	20.67	15.39	3.18
7600	11.43	21.31	5.66	7.55	1.18	0.89	19.59	14.82	3.30
7800	10.92	21.68	4.87	6.87	1.20	0.90	19.42	14.53	3.44
8000	10.35	22.11	4.18	6.16	1.21	0.89	18.98	14.08	3.47
8200	9.74	22.55	3.60	5.56	1.22	0.89	19.04	13.90	3.62
8400	9.09	23.03	3.09	5.03	1.23	0.88	18.64	13.38	3.74
8600	8.44	23.54	2.71	4.59	1.26	0.86	18.51	13.02	3.69
8800	7.75	24.04	2.35	4.20	1.27	0.85	18.67	12.98	3.89
9000	7.02	24.56	2.07	3.83	1.29	0.83	18.48	12.56	4.08
10000	3.70	27.03	1.34	2.75	1.48	0.74	18.73	12.54	4.69

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 = 4.75, Id = 34mA @ 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)
50	14.32	19.26	14.07	19.55	1.13	0.70	19.98	14.88	2.17
100	14.44	19.03	16.16	27.20	1.13	0.67	21.14	15.70	2.18
200	14.51	18.91	16.78	27.43	1.12	0.65	21.02	16.43	2.10
400	14.54	18.95	16.66	25.10	1.12	0.65	21.20	16.89	2.14
600	14.50	19.02	16.09	22.95	1.12	0.65	21.14	16.85	2.07
800	14.42	19.10	15.44	21.22	1.13	0.67	20.93	16.79	2.01
1000	14.41	19.12	14.91	19.33	1.13	0.66	21.05	16.94	1.90
1200	14.35	19.18	14.30	18.02	1.13	0.67	20.91	16.77	1.96
1400	14.26	19.27	13.52	16.75	1.14	0.68	20.76	16.71	1.97
1600	14.22	19.31	13.00	15.86	1.14	0.68	20.11	16.30	1.99
1800	14.14	19.37	12.53	15.18	1.15	0.68	20.44	16.09	1.98
2000	14.01	19.50	12.09	14.72	1.16	0.70	19.63	15.95	2.00
2200	13.96	19.54	11.54	13.83	1.16	0.70	19.59	15.16	1.97
2400	13.95	19.56	11.32	13.39	1.16	0.69	19.49	15.42	2.02
2600	13.92	19.57	11.18	13.16	1.16	0.69	18.64	13.64	2.12
2800	13.90	19.58	11.16	13.12	1.16	0.70	19.19	14.31	2.04
3000	13.88	19.60	11.16	13.22	1.16	0.70	18.96	14.91	2.19
3200	13.86	19.59	11.33	13.50	1.17	0.70	18.66	13.99	2.17
3400	13.86	19.59	11.64	14.02	1.17	0.71	19.20	15.33	2.16
3600	13.86	19.57	12.05	14.74	1.17	0.72	19.10	15.57	2.22
3800	13.88	19.54	12.54	15.44	1.18	0.72	19.74	15.55	2.20
4000	13.93	19.54	13.32	16.41	1.18	0.72	19.41	16.14	2.24
4200	14.01	19.58	14.01	16.96	1.18	0.72	20.42	16.46	2.21
4400	13.92	19.46	14.87	17.62	1.18	0.72	20.22	16.66	2.37
4600	13.65	19.19	15.84	17.91	1.18	0.72	20.83	16.85	2.26
4800	13.67	19.24	16.63	17.84	1.18	0.73	21.59	16.94	2.25
5000	13.66	19.31	17.35	17.24	1.18	0.73	21.41	16.92	2.40
5200	13.59	19.36	17.61	16.55	1.18	0.74	21.47	16.84	2.45
5400	13.49	19.42	17.40	15.69	1.19	0.75	20.72	16.62	2.45
5600	13.35	19.49	16.85	14.88	1.19	0.76	21.17	16.50	2.58
5800	13.19	19.56	15.83	14.09	1.20	0.77	20.54	16.26	2.49
6000	12.98	19.68	14.70	13.47	1.21	0.79	21.02	16.15	2.68
6200	12.74	19.81	13.48	12.76	1.23	0.81	20.27	15.97	2.71
6400	12.54	19.93	12.01	11.66	1.22	0.82	20.01	15.76	2.80
6600	12.39	19.97	10.59	10.65	1.20	0.83	19.63	15.66	2.90
6800	12.11	20.12	9.39	10.00	1.20	0.85	19.52	15.53	2.95
7000	11.81	20.29	8.22	9.14	1.19	0.86	20.02	15.53	3.04
7200	11.46	20.49	7.17	8.34	1.18	0.87	19.06	15.06	3.12
7400	11.04	20.78	6.24	7.64	1.19	0.88	19.76	15.01	3.18
7600	10.55	21.13	5.40	6.94	1.20	0.88	18.87	14.72	3.29
7800	10.03	21.49	4.67	6.35	1.21	0.89	18.73	14.47	3.41
8000	9.44	21.92	4.03	5.73	1.23	0.88	18.56	14.19	3.56
8200	8.83	22.35	3.50	5.21	1.24	0.87	18.66	14.15	3.58
8400	8.18	22.84	3.02	4.74	1.25	0.86	18.42	13.86	3.74
8600	7.54	23.31	2.66	4.36	1.28	0.85	18.48	13.70	3.74
8800	6.86	23.81	2.32	4.00	1.29	0.84	18.68	13.54	3.94
9000	6.14	24.33	2.06	3.67	1.32	0.82	18.60	13.38	4.06
10000	2.87	26.69	1.34	2.68	1.50	0.73	19.54	13.03	4.66

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 = 42mA @ 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)
50	15.12	19.80	15.44	17.20	1.12	0.66	23.24	15.10	2.22
100	15.26	19.56	19.19	24.11	1.11	0.64	24.18	15.19	2.22
200	15.33	19.41	20.88	30.84	1.10	0.62	24.19	15.93	2.13
400	15.36	19.43	20.79	42.94	1.10	0.62	24.23	16.20	2.15
600	15.33	19.50	19.78	31.93	1.11	0.63	24.20	15.98	2.05
800	15.27	19.58	18.66	27.50	1.12	0.64	23.87	15.74	1.99
1000	15.27	19.58	17.68	23.85	1.11	0.64	24.01	15.92	1.91
1200	15.22	19.64	16.66	21.66	1.12	0.64	23.98	15.56	1.96
1400	15.14	19.72	15.53	19.86	1.12	0.65	23.78	15.74	1.96
1600	15.11	19.75	14.73	18.49	1.12	0.65	22.99	14.76	1.98
1800	15.04	19.83	14.01	17.57	1.13	0.66	23.42	15.13	1.98
2000	14.93	19.94	13.38	16.85	1.14	0.68	22.55	14.46	2.01
2200	14.89	19.99	12.71	15.75	1.14	0.68	22.62	13.85	1.94
2400	14.90	20.01	12.38	15.21	1.14	0.67	22.68	14.18	2.00
2600	14.88	20.00	12.22	15.02	1.14	0.67	21.66	12.80	2.08
2800	14.87	20.02	12.23	15.10	1.14	0.68	22.42	13.65	2.04
3000	14.86	20.03	12.28	15.38	1.14	0.68	22.22	13.73	2.15
3200	14.86	20.04	12.62	16.04	1.15	0.69	21.87	13.16	2.14
3400	14.87	20.02	13.12	16.96	1.15	0.69	22.49	14.32	2.13
3600	14.88	20.03	13.81	18.48	1.15	0.70	22.37	14.38	2.18
3800	14.91	20.00	14.62	19.99	1.15	0.70	23.16	15.10	2.18
4000	14.97	20.01	15.94	22.02	1.16	0.70	22.75	15.37	2.20
4200	15.05	20.07	17.33	23.02	1.16	0.69	23.82	16.46	2.18
4400	14.96	19.96	19.14	22.97	1.16	0.69	23.62	16.59	2.32
4600	14.70	19.69	21.31	21.55	1.16	0.69	24.19	17.35	2.26
4800	14.71	19.77	23.70	19.54	1.16	0.69	24.86	17.71	2.27
5000	14.71	19.84	25.94	17.94	1.16	0.69	24.66	17.72	2.41
5200	14.65	19.91	26.63	16.59	1.16	0.69	24.72	17.70	2.53
5400	14.56	19.97	25.22	15.69	1.16	0.70	23.91	17.34	2.43
5600	14.45	20.05	23.46	14.97	1.17	0.71	24.25	17.41	2.54
5800	14.33	20.11	20.87	14.61	1.17	0.73	23.60	17.06	2.45
6000	14.16	20.21	18.65	14.36	1.18	0.75	23.89	17.04	2.63
6200	13.97	20.32	16.44	14.08	1.20	0.77	23.15	16.75	2.73
6400	13.81	20.41	14.07	13.13	1.19	0.79	22.76	16.57	2.80
6600	13.68	20.44	11.92	12.18	1.17	0.81	22.21	16.24	2.84
6800	13.43	20.59	10.18	11.37	1.17	0.83	22.01	16.11	2.94
7000	13.15	20.76	8.61	10.33	1.16	0.85	22.42	16.19	3.03
7200	12.80	20.99	7.28	9.32	1.15	0.87	21.10	15.51	3.09
7400	12.36	21.33	6.15	8.38	1.16	0.89	21.87	15.51	3.15
7600	11.85	21.70	5.15	7.46	1.16	0.89	20.43	14.60	3.27
7800	11.31	22.11	4.35	6.69	1.17	0.90	20.23	14.12	3.40
8000	10.69	22.58	3.68	5.95	1.18	0.89	19.46	13.62	3.47
8200	10.06	23.07	3.13	5.35	1.19	0.88	19.46	13.08	3.59
8400	9.41	23.56	2.67	4.85	1.20	0.87	18.80	12.31	3.72
8600	8.75	24.05	2.34	4.43	1.22	0.86	18.47	11.72	3.70
8800	8.10	24.57	2.03	4.10	1.23	0.85	18.54	11.30	3.89
9000	7.40	25.08	1.80	3.77	1.26	0.83	18.11	10.46	4.06
10000	4.42	27.22	1.25	2.91	1.43	0.77	17.91	8.35	4.57

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 = 42mA @ 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)
50	14.80	19.80	15.48	17.45	1.13	0.69	25.20	15.71	3.28
100	14.92	19.52	18.69	23.57	1.13	0.66	26.06	16.21	3.25
200	14.99	19.38	20.03	29.27	1.12	0.65	26.01	16.95	3.06
400	15.00	19.42	19.69	36.26	1.12	0.65	26.22	17.01	3.01
600	14.94	19.50	18.93	29.97	1.13	0.66	26.06	16.98	2.96
800	14.86	19.59	17.83	26.17	1.14	0.68	25.70	16.90	2.88
1000	14.81	19.62	16.89	22.98	1.14	0.68	25.79	16.85	2.86
1200	14.72	19.68	15.95	20.95	1.15	0.69	25.73	16.81	2.91
1400	14.62	19.77	14.95	19.19	1.16	0.70	25.55	16.64	2.92
1600	14.54	19.84	14.29	18.01	1.16	0.71	24.75	15.98	2.96
1800	14.43	19.92	13.66	17.12	1.17	0.72	25.19	16.12	2.97
2000	14.32	20.00	13.13	16.34	1.18	0.72	24.36	15.65	3.02
2200	14.25	20.06	12.71	15.61	1.19	0.73	24.44	15.21	2.98
2400	14.20	20.05	12.46	15.16	1.19	0.73	24.36	15.33	3.04
2600	14.14	20.10	12.38	14.97	1.19	0.73	23.47	14.32	3.17
2800	14.09	20.12	12.47	15.07	1.20	0.74	24.00	14.77	3.14
3000	14.05	20.12	12.68	15.38	1.21	0.74	24.07	15.17	3.22
3200	14.01	20.12	13.09	15.98	1.21	0.75	23.80	14.59	3.20
3400	13.97	20.11	13.67	16.71	1.22	0.75	24.38	15.56	3.23
3600	13.93	20.11	14.41	17.71	1.23	0.76	24.38	15.38	3.31
3800	13.90	20.13	15.37	18.75	1.24	0.77	25.23	15.88	3.34
4000	13.89	20.14	16.63	19.63	1.24	0.77	24.90	15.90	3.32
4200	13.89	20.22	17.90	19.98	1.25	0.77	25.78	16.33	3.29
4400	13.73	20.14	19.30	19.96	1.26	0.78	25.59	16.37	3.45
4600	13.38	19.91	20.62	19.25	1.27	0.78	26.04	16.64	3.46
4800	13.32	20.02	21.24	18.11	1.28	0.79	26.73	16.79	3.43
5000	13.23	20.13	20.97	16.97	1.29	0.80	26.37	16.58	3.66
5200	13.08	20.22	19.93	15.86	1.30	0.80	26.30	16.48	3.61
5400	12.91	20.33	18.56	14.87	1.31	0.82	25.35	15.98	3.73
5600	12.71	20.44	17.21	13.94	1.32	0.83	25.67	15.88	3.90
5800	12.48	20.54	15.64	13.22	1.33	0.85	24.80	15.41	3.79
6000	12.22	20.66	14.25	12.48	1.35	0.87	25.06	15.34	4.06
6200	11.95	20.79	12.80	11.77	1.36	0.89	24.20	14.79	4.19
6400	11.67	20.94	11.38	10.93	1.36	0.90	23.64	14.51	4.26
6600	11.34	21.13	10.05	10.25	1.37	0.92	22.94	13.97	4.36
6800	10.93	21.37	8.87	9.54	1.39	0.94	22.65	13.56	4.47
7000	10.50	21.63	7.78	8.80	1.41	0.95	22.92	13.35	4.62
7200	10.00	21.95	6.78	8.12	1.44	0.97	21.45	12.52	4.75
7400	9.46	22.33	5.93	7.53	1.48	0.97	22.01	12.24	4.88
7600	8.89	22.73	5.16	6.92	1.52	0.98	20.62	11.48	5.04
7800	8.42	22.99	4.54	6.09	1.49	0.95	20.53	11.09	5.19
8000	7.96	23.25	4.06	5.23	1.46	0.90	19.95	10.65	5.30
8200	7.40	23.61	3.66	4.75	1.48	0.87	20.01	10.55	5.34
8400	6.81	24.00	3.31	4.41	1.51	0.86	19.30	10.00	5.55
8600	6.21	24.40	3.06	4.15	1.57	0.84	18.84	9.65	5.56
8800	5.59	24.83	2.81	3.97	1.64	0.84	18.85	9.26	5.74
9000	4.89	25.26	2.62	3.90	1.75	0.85	18.04	8.78	5.90
10000	2.26	26.92	2.15	3.09	2.15	0.77	17.10	7.33	6.46

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 = 38mA @ 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)
50	14.50	19.56	14.97	18.28	1.14	0.70	23.74	15.21	3.24
100	14.62	19.31	17.50	26.03	1.13	0.68	24.81	15.72	3.22
200	14.68	19.19	18.38	35.00	1.12	0.66	24.77	16.45	3.04
400	14.69	19.23	18.06	34.41	1.13	0.66	24.82	16.67	3.01
600	14.63	19.31	17.42	27.48	1.13	0.67	24.88	16.65	2.97
800	14.54	19.39	16.51	24.03	1.14	0.68	24.59	16.58	2.91
1000	14.48	19.44	15.72	21.23	1.15	0.69	24.57	16.69	2.86
1200	14.39	19.52	14.91	19.41	1.15	0.70	24.49	16.48	2.95
1400	14.28	19.61	14.04	17.86	1.16	0.71	24.31	16.31	2.96
1600	14.20	19.66	13.47	16.81	1.17	0.71	23.53	15.83	2.98
1800	14.08	19.75	12.92	16.03	1.18	0.72	23.87	15.95	3.01
2000	13.96	19.85	12.44	15.33	1.19	0.73	23.15	15.48	3.04
2200	13.89	19.89	12.07	14.66	1.19	0.74	23.26	15.04	2.94
2400	13.83	19.92	11.85	14.26	1.20	0.74	23.06	15.14	3.06
2600	13.77	19.93	11.79	14.08	1.20	0.74	22.27	14.13	3.18
2800	13.72	19.95	11.88	14.16	1.21	0.74	22.93	14.57	3.12
3000	13.67	19.96	12.07	14.43	1.21	0.75	22.80	14.79	3.24
3200	13.62	19.96	12.45	14.94	1.22	0.76	22.52	14.22	3.23
3400	13.58	19.93	13.00	15.58	1.23	0.76	23.19	15.17	3.24
3600	13.55	19.93	13.68	16.45	1.24	0.77	23.05	15.17	3.32
3800	13.52	19.93	14.54	17.32	1.25	0.77	23.96	15.49	3.35
4000	13.50	19.95	15.67	18.12	1.25	0.78	23.57	15.51	3.36
4200	13.50	20.02	16.76	18.50	1.26	0.78	24.50	15.92	3.32
4400	13.34	19.94	17.96	18.65	1.27	0.78	24.50	15.95	3.47
4600	12.99	19.68	19.11	18.26	1.28	0.79	24.95	16.05	3.48
4800	12.91	19.80	19.71	17.40	1.29	0.80	25.65	16.18	3.48
5000	12.82	19.91	19.62	16.41	1.30	0.81	25.33	15.97	3.64
5200	12.66	20.01	18.82	15.41	1.31	0.82	25.23	15.85	3.74
5400	12.48	20.11	17.62	14.43	1.32	0.83	24.36	15.36	3.69
5600	12.26	20.21	16.39	13.47	1.34	0.84	24.69	15.40	3.91
5800	12.01	20.33	14.92	12.71	1.35	0.86	23.92	14.93	3.86
6000	11.74	20.46	13.59	11.94	1.36	0.88	24.15	14.83	4.09
6200	11.45	20.60	12.22	11.20	1.37	0.89	23.31	14.28	4.14
6400	11.14	20.77	10.89	10.36	1.37	0.91	22.84	13.99	4.35
6600	10.79	20.96	9.65	9.69	1.39	0.93	22.33	13.60	4.39
6800	10.37	21.21	8.54	9.02	1.41	0.94	22.05	13.19	4.51
7000	9.92	21.49	7.52	8.33	1.43	0.95	22.32	12.96	4.64
7200	9.41	21.82	6.58	7.71	1.46	0.96	21.04	12.31	4.78
7400	8.85	22.19	5.78	7.19	1.51	0.97	21.58	12.03	4.91
7600	8.28	22.56	5.05	6.63	1.54	0.97	20.37	11.27	5.04
7800	7.83	22.81	4.46	5.80	1.51	0.94	20.29	11.06	5.17
8000	7.36	23.10	4.00	5.00	1.47	0.89	19.76	10.79	5.31
8200	6.81	23.42	3.62	4.57	1.49	0.86	19.88	10.53	5.40
8400	6.21	23.81	3.29	4.26	1.53	0.85	19.27	10.16	5.55
8600	5.62	24.21	3.04	4.02	1.59	0.83	18.89	9.66	5.58
8800	4.99	24.62	2.80	3.86	1.66	0.83	18.89	9.45	5.75
9000	4.30	25.07	2.61	3.81	1.78	0.84	18.22	9.15	5.91
10000	1.69	26.66	2.14	3.03	2.17	0.76	17.35	8.11	6.55

Typical Performance Data

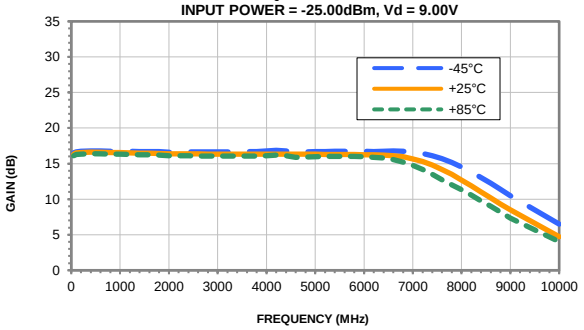
Definitions:
Input Return Loss = -S11 (dB)
Gain(Power Gain) = S21 (dB)
Reverse Isolation = -S12 (dB)
Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 5.25V, Id = 46mA @ Temperature = +85°C

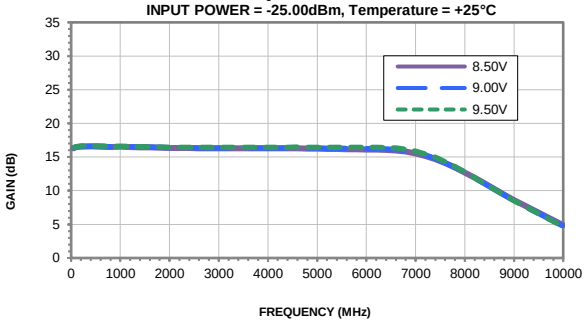
FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
50	15.04	19.92	15.85	16.56	1.13	0.67	26.11	16.18	3.29
100	15.17	19.69	19.71	21.79	1.12	0.65	27.15	16.83	3.27
200	15.23	19.55	21.60	25.88	1.12	0.64	27.46	17.41	3.06
400	15.25	19.59	21.32	30.94	1.12	0.64	27.27	17.46	3.04
600	15.20	19.64	20.42	29.86	1.12	0.65	27.35	17.44	2.93
800	15.12	19.72	19.11	27.57	1.13	0.66	26.93	17.36	2.93
1000	15.07	19.76	18.02	24.47	1.13	0.67	26.99	17.31	2.84
1200	14.99	19.83	16.93	22.36	1.14	0.68	26.84	17.09	2.85
1400	14.90	19.92	15.80	20.44	1.15	0.69	26.66	17.11	2.94
1600	14.83	19.97	15.05	19.16	1.16	0.70	25.90	16.28	2.99
1800	14.72	20.05	14.35	18.18	1.17	0.71	26.31	16.60	3.01
2000	14.61	20.14	13.75	17.31	1.18	0.72	25.42	15.96	3.01
2200	14.55	20.18	13.29	16.49	1.18	0.72	25.66	15.71	3.00
2400	14.51	20.20	13.00	16.01	1.18	0.72	25.52	15.84	3.00
2600	14.45	20.23	12.90	15.81	1.19	0.73	24.70	14.84	3.15
2800	14.41	20.25	13.00	15.90	1.19	0.73	25.41	15.29	3.12
3000	14.37	20.27	13.20	16.26	1.20	0.74	25.25	15.52	3.23
3200	14.33	20.26	13.64	16.93	1.21	0.74	25.02	15.11	3.17
3400	14.29	20.27	14.25	17.79	1.21	0.75	25.54	15.91	3.25
3600	14.25	20.27	15.06	18.96	1.22	0.75	25.47	15.90	3.31
3800	14.23	20.27	16.09	20.18	1.23	0.76	26.27	16.40	3.33
4000	14.22	20.31	17.48	21.19	1.24	0.76	26.02	16.43	3.28
4200	14.22	20.38	18.91	21.46	1.24	0.76	26.75	16.86	3.27
4400	14.07	20.30	20.54	21.20	1.25	0.77	26.77	16.91	3.48
4600	13.72	20.08	22.05	20.13	1.26	0.77	27.21	17.19	3.44
4800	13.66	20.18	22.71	18.72	1.27	0.78	27.59	17.36	3.46
5000	13.58	20.30	22.20	17.44	1.28	0.78	27.45	17.15	3.58
5200	13.45	20.40	20.91	16.27	1.29	0.79	27.25	17.06	3.66
5400	13.29	20.48	19.36	15.29	1.30	0.81	26.43	16.41	3.70
5600	13.10	20.59	17.94	14.39	1.31	0.82	26.63	16.47	3.86
5800	12.89	20.67	16.30	13.71	1.32	0.84	25.63	15.86	3.85
6000	12.66	20.78	14.85	13.03	1.33	0.86	25.87	15.81	4.00
6200	12.40	20.93	13.32	12.36	1.34	0.88	24.91	15.26	4.11
6400	12.14	21.06	11.82	11.51	1.34	0.90	24.35	15.00	4.27
6600	11.83	21.24	10.41	10.82	1.35	0.92	23.65	14.30	4.37
6800	11.44	21.47	9.14	10.07	1.37	0.94	23.28	13.89	4.46
7000	11.02	21.73	7.99	9.27	1.39	0.95	23.59	13.70	4.68
7200	10.53	22.05	6.94	8.52	1.41	0.97	22.02	12.86	4.74
7400	9.99	22.43	6.04	7.86	1.46	0.98	22.57	12.59	4.85
7600	9.43	22.82	5.24	7.19	1.49	0.98	21.09	11.82	5.02
7800	8.95	23.09	4.59	6.31	1.47	0.95	20.96	11.43	5.12
8000	8.49	23.39	4.09	5.40	1.44	0.91	20.32	10.97	5.22
8200	7.93	23.74	3.67	4.89	1.45	0.88	20.39	10.70	5.40
8400	7.34	24.13	3.31	4.52	1.49	0.86	19.58	10.14	5.52
8600	6.73	24.56	3.05	4.24	1.55	0.85	19.06	9.62	5.50
8800	6.10	24.98	2.80	4.04	1.61	0.84	19.08	9.39	5.71
9000	5.40	25.43	2.60	3.96	1.72	0.85	18.19	8.89	5.92
10000	2.73	27.14	2.13	3.12	2.11	0.77	17.12	7.39	6.39

Typical Performance Curves

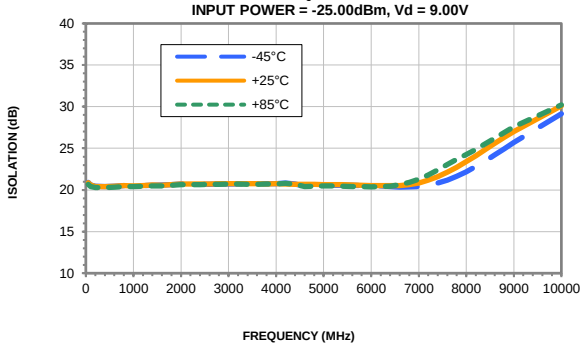
GAIN vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 9.00V



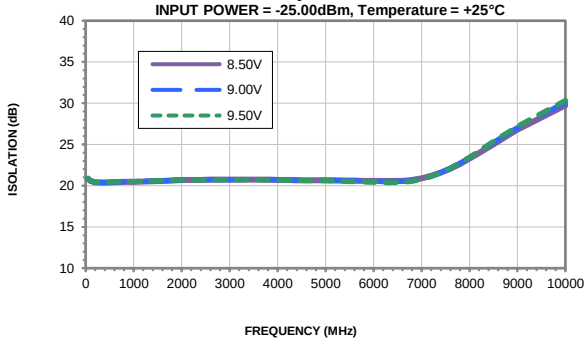
GAIN vs. FREQUENCY & DEVICE VOLTAGE
INPUT POWER = -25.00dBm, Temperature = +25°C



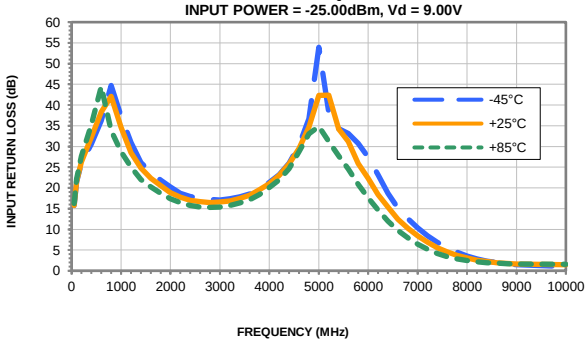
ISOLATION vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 9.00V



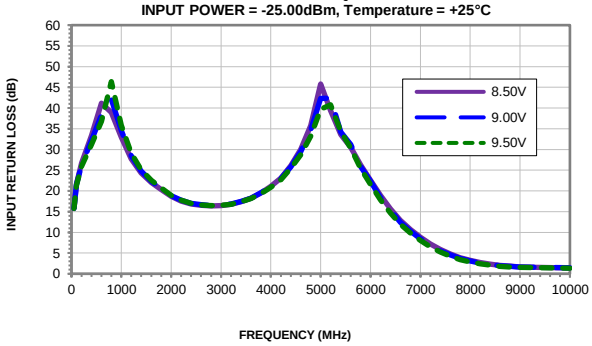
ISOLATION vs. FREQUENCY & DEVICE VOLTAGE
INPUT POWER = -25.00dBm, Temperature = +25°C



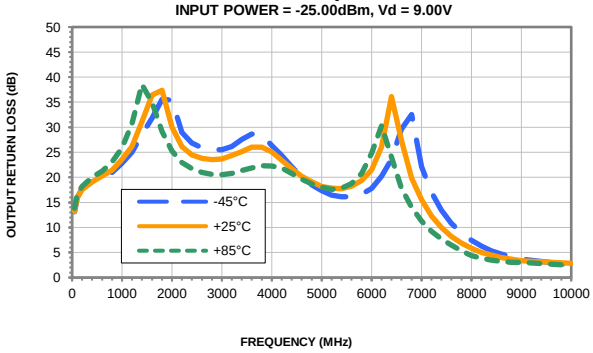
INPUT RETURN LOSS vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 9.00V



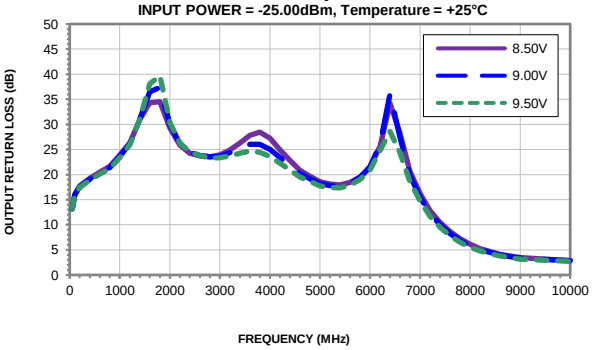
INPUT RETURN LOSS vs. FREQ. & DEVICE VOLTAGE
INPUT POWER = -25.00dBm, Temperature = +25°C



OUTPUT RETURN LOSS vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 9.00V

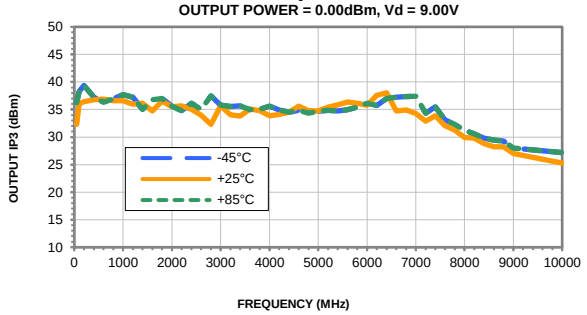


OUTPUT RETURN LOSS vs. FREQUENCY & DEVICE VOLTAGE
INPUT POWER = -25.00dBm, Temperature = +25°C

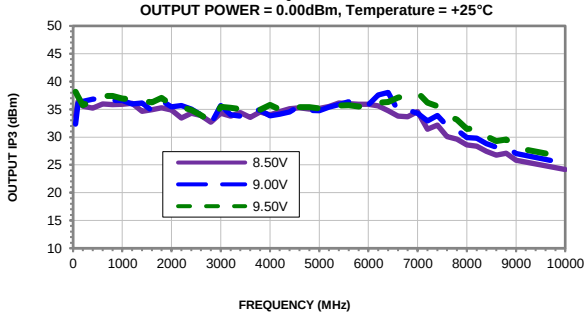


Typical Performance Curves

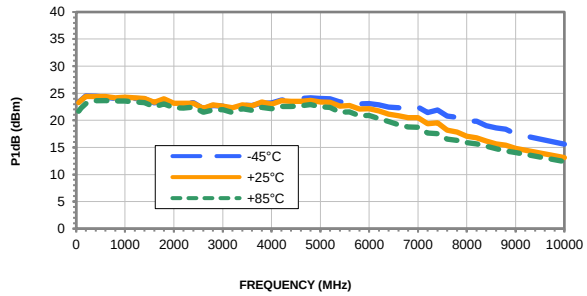
OUTPUT IP3 vs. FREQUENCY & TEMPERATURE
OUTPUT POWER = 0.00dBm, Vd = 9.00V



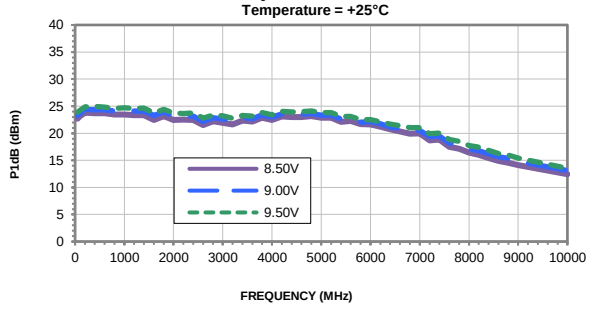
OUTPUT IP3 vs. FREQUENCY & DEVICE VOLTAGE
OUTPUT POWER = 0.00dBm, Temperature = +25°C



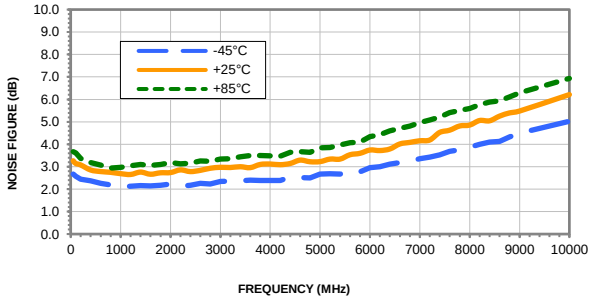
P1dB vs. FREQUENCY & TEMPERATURE
Vd = 9.00V



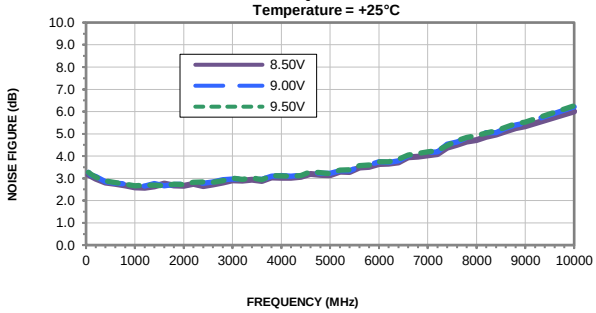
P1dB vs. FREQUENCY & DEVICE VOLTAGE
Temperature = +25°C



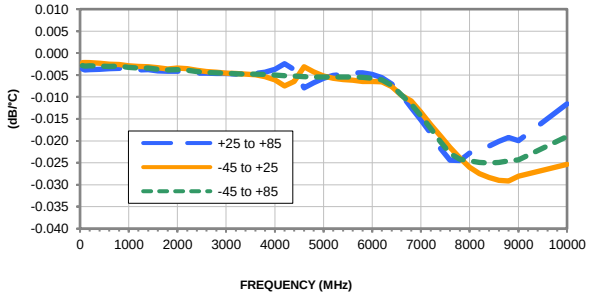
NOISE FIGURE vs. FREQUENCY & TEMPERATURE
Vd = 9.00V



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

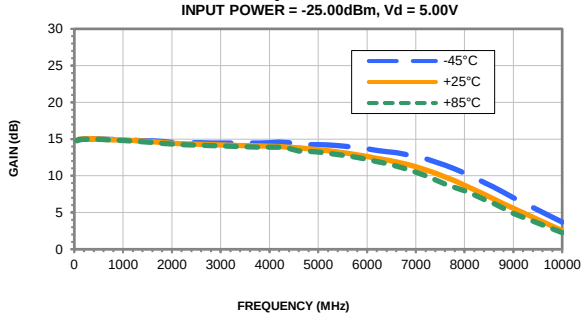


GAIN VARIANTS VS FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 9.00V

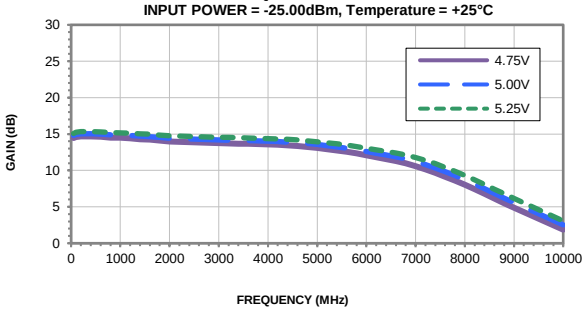


Typical Performance Curves

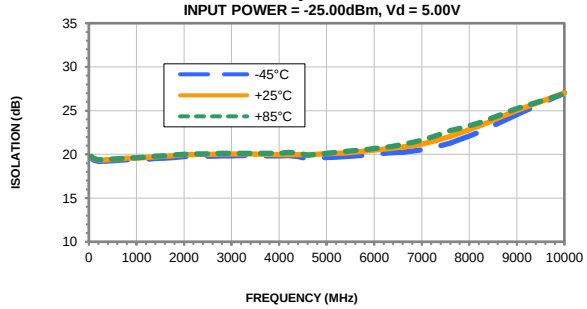
GAIN vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 5.00V



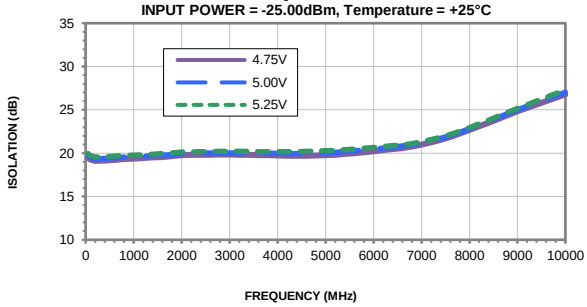
GAIN vs. FREQUENCY & DEVICE VOLTAGE
INPUT POWER = -25.00dBm, Temperature = +25°C



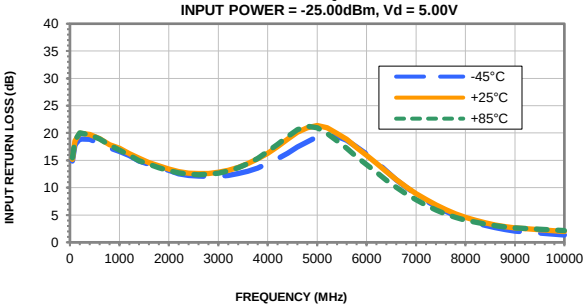
ISOLATION vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 5.00V



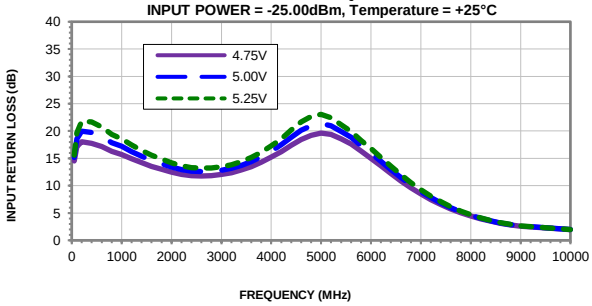
ISOLATION vs. FREQUENCY & DEVICE VOLTAGE
INPUT POWER = -25.00dBm, Temperature = +25°C



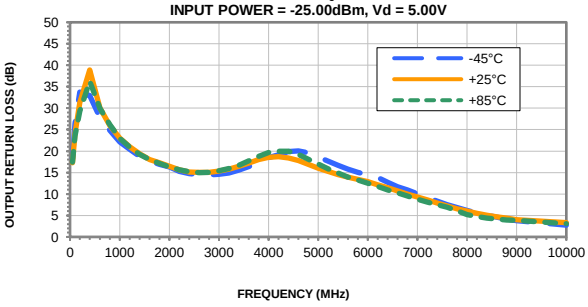
INPUT RETURN LOSS vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 5.00V



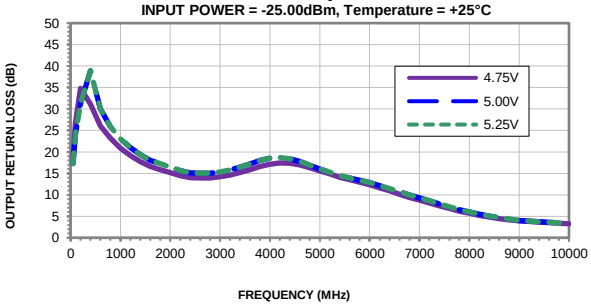
INPUT RETURN LOSS vs. FREQ. & DEVICE VOLTAGE
INPUT POWER = -25.00dBm, Temperature = +25°C



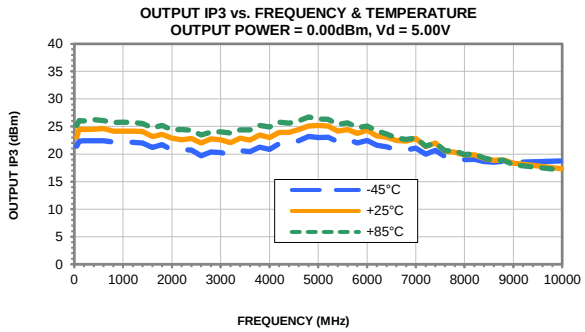
OUTPUT RETURN LOSS vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25.00dBm, Vd = 5.00V

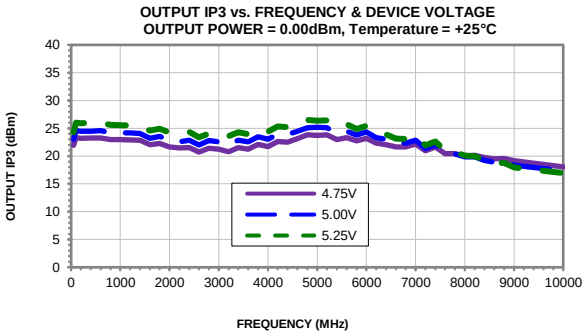


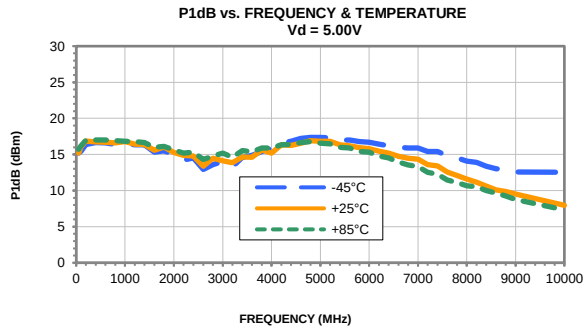
OUTPUT RETURN LOSS vs. FREQUENCY & DEVICE VOLTAGE
INPUT POWER = -25.00dBm, Temperature = +25°C

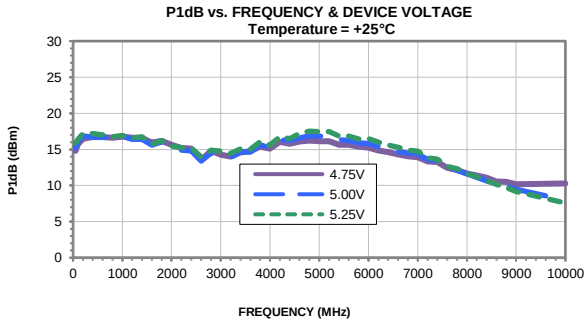


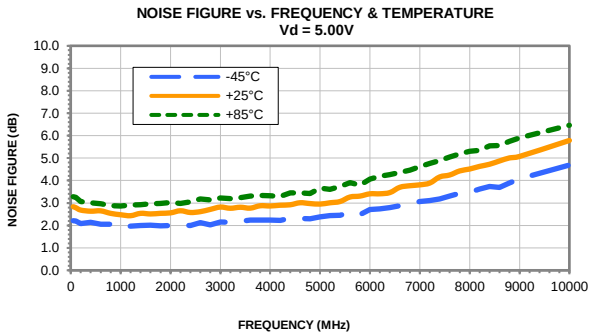
Typical Performance Curves

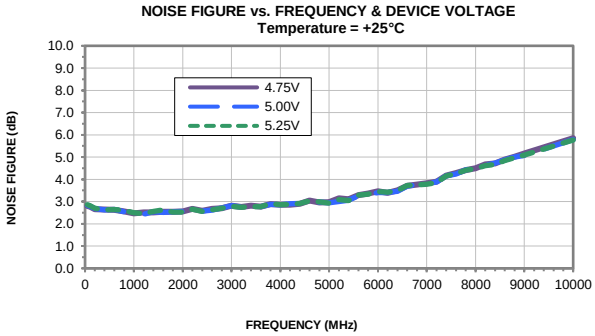


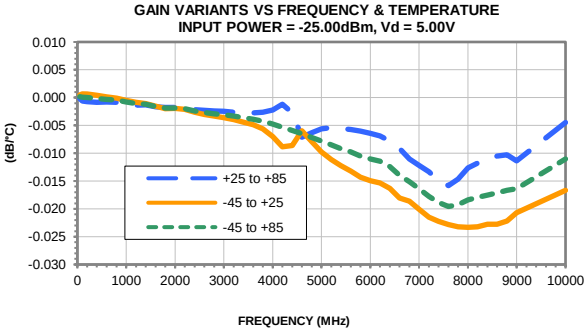








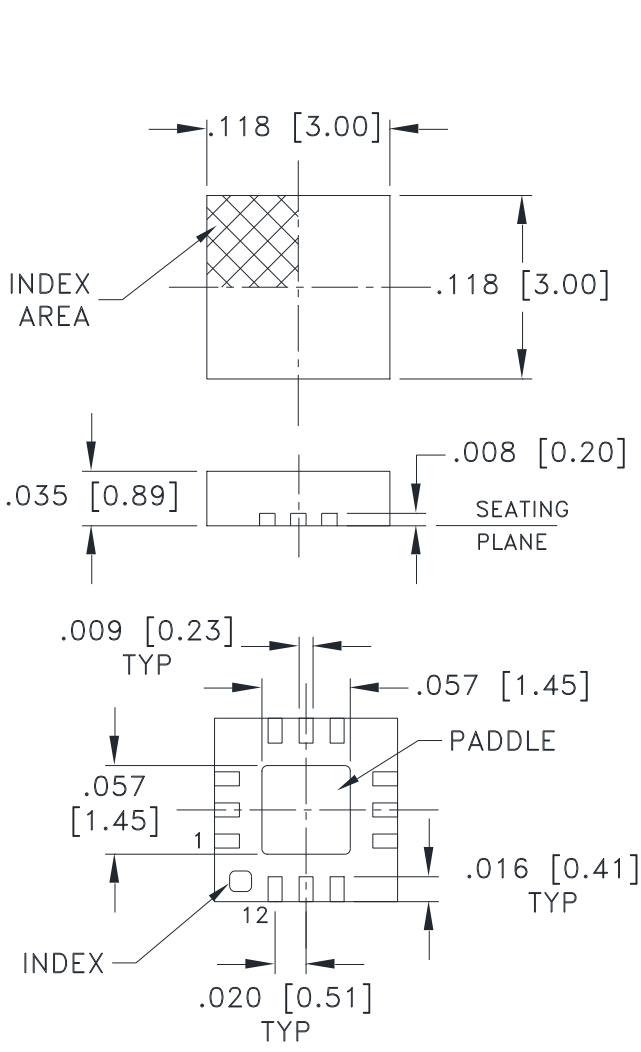




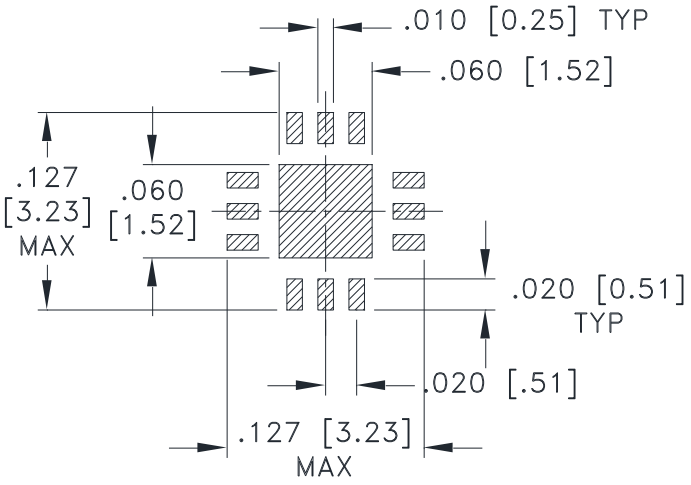
Case Style DQ

DQ1225

Outline Dimensions



PCB Land Pattern



SUGGESTED LAYOUT,
TOLERANCE TO BE WITHIN ±.002

Weight: .02 Grams

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

Notes:

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

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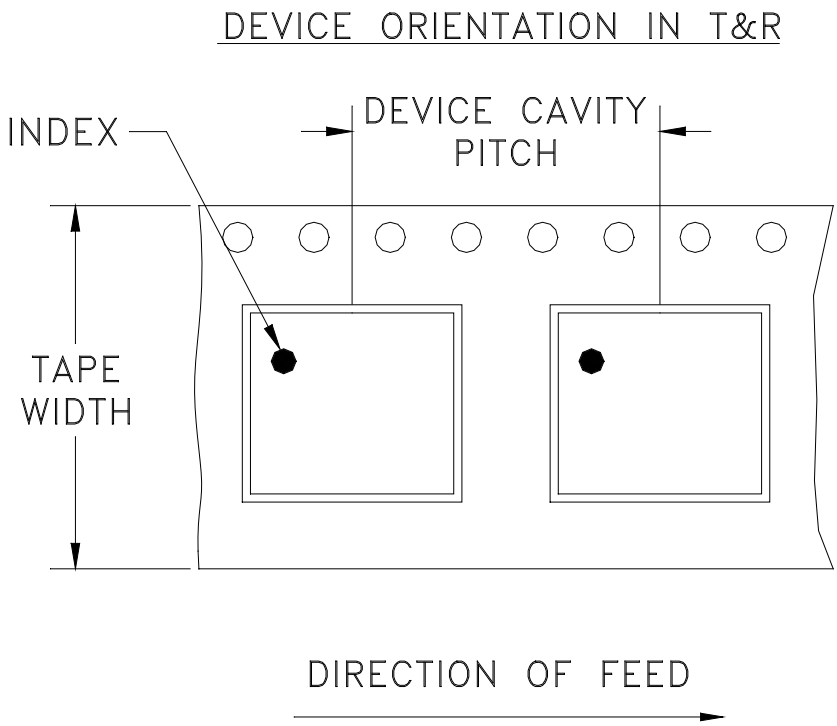
Tape & Reel Packaging TR-F66



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel see note	
8	4	7	Small quantity standard	20
				50
				100
				200
				500
		7	Standard	1000, 2000, 3000

Note: Please consult individual model data sheet to determine device per reel availability.

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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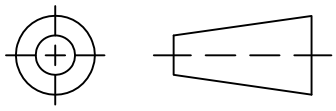
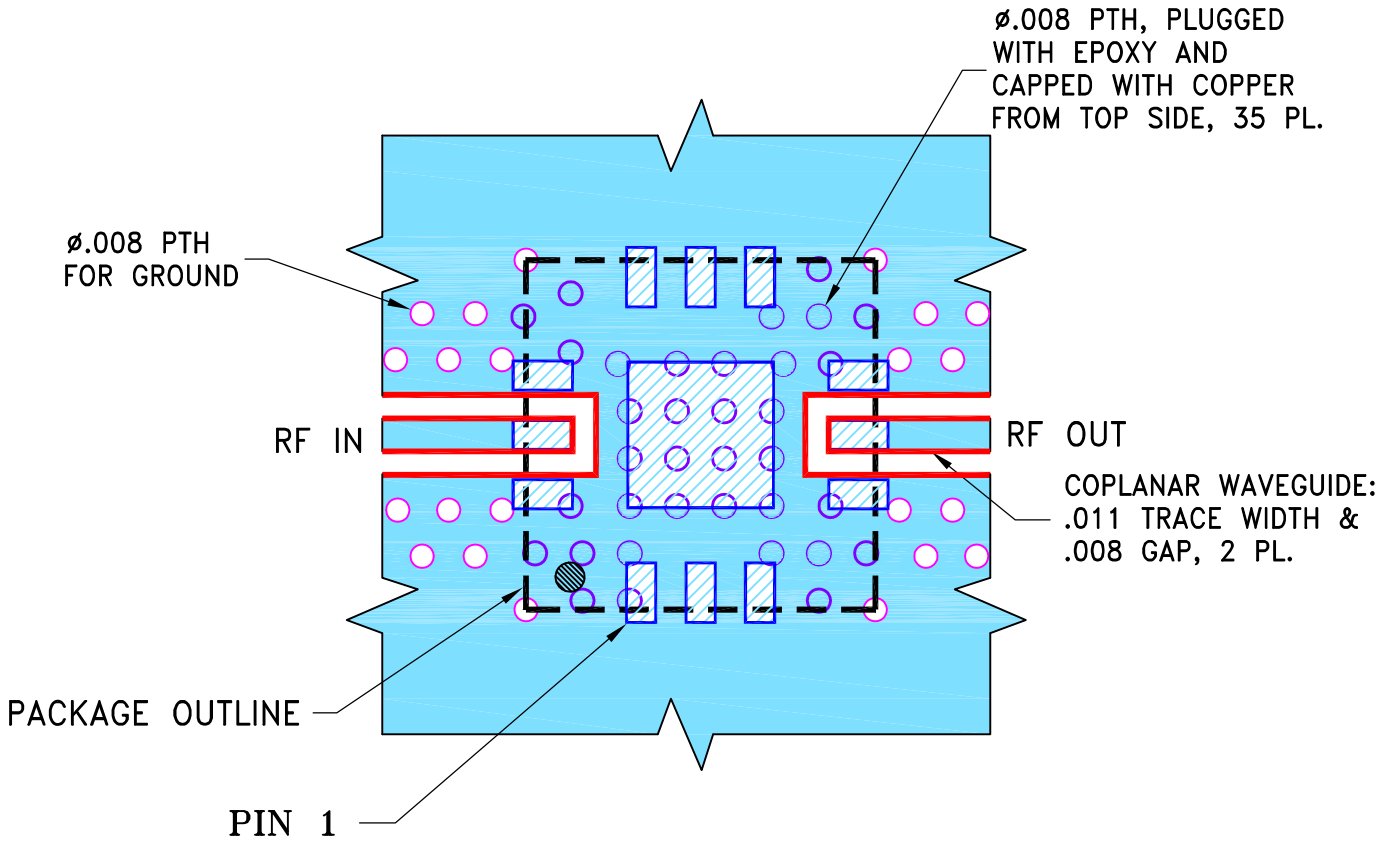
THIRD ANGLE PROJECTION



REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
0R	ECO-001447	NEW RELEASE	01/17/20	GF	IL
A	ECO-001800	RELOCATED UNIT LOCATION DOT	02/21/20	CA	IL

SUGGESTED MOUNTING CONFIGURATION FOR DQ1225 CASE STYLE,



NOTES:

1. TRACE WIDTH & GAP PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .0066±.0007. COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP 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	GF	01/16/20
TOLERANCES ON:	CHECKED	IL	01/17/20
2 PL DECIMALS ±	APPROVED	IL	01/17/20
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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

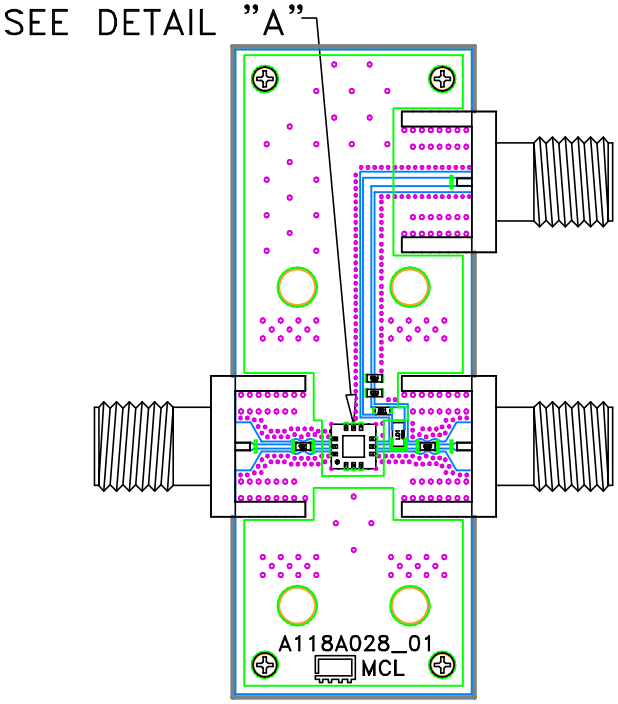
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

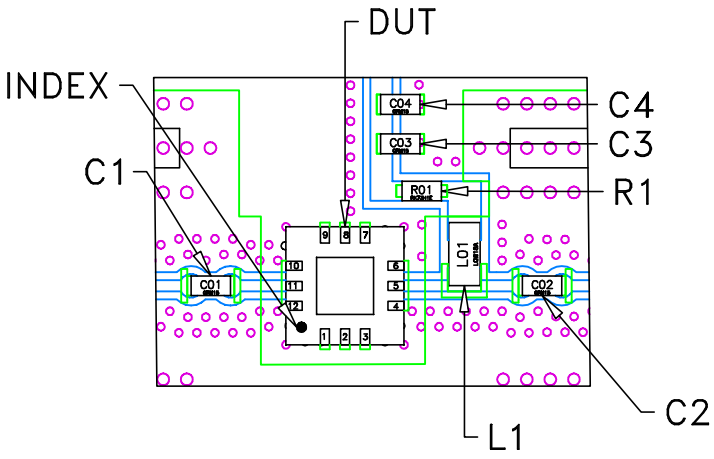
PL, DQ1225, TB-LHA-83WE+

SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-660	A

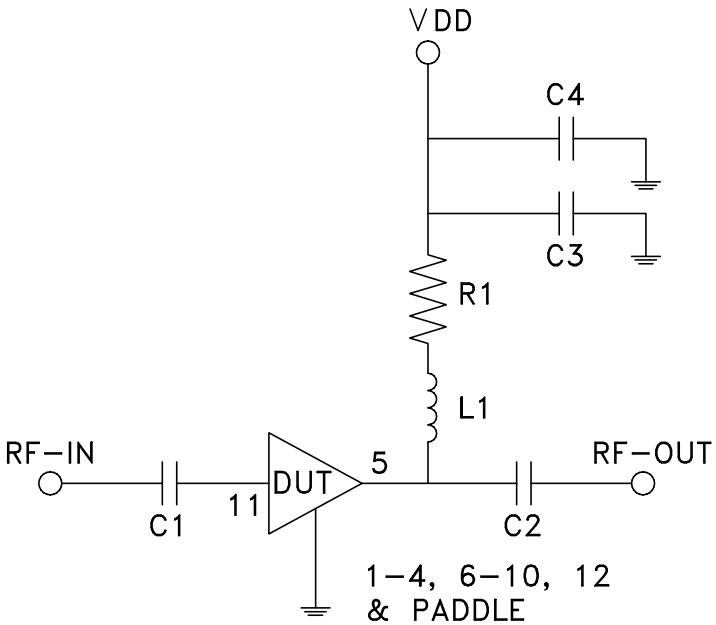
FILE:	SCALE:	SHEET:
98PL660	15:1	1 OF 1

Evaluation Board and Circuit





DETAIL "A"
LOCATION OF COMPONENTS
ON THE PCB
(SCALE 3:1)



SCHEMATIC DIAGRAM

Component	Size	Value	Part Number	Manufacturer
C1	0402	1000pF	GRM1555C1H102JA01D	Murata
C2	0402	180pF	GRM1555C1H181JA01D	Murata
C3	0402	10000pF	GRM155R71E103KA01D	Murata
C4	0402	0.1uF	GRM155R71C104KA88D	Murata
L1	0603	330nH	LQW18CNR33J00D	Murata
R1	0402	20hm	RK73H1ETTP2R00F	Koa

Notes:

1. 50 Ohm SMA Female Connectors.
2. PCB Material: Roger RO4350B or equivalent,
   Dielectric constant=3.5, Thickness=0.0066 inch

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Mini-Circuits

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

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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
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

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