

MMIC Amplifier

ERA-8SM+

Typical Performance Data

**NOTE: Use PDF Bookmarks to view DATA at required conditions
or to view GRAPHS.**

Definitions:

Input Return Loss = -S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

TEST CONDITIONS: Icc = 36mA, Vd = 3.71V @Temperature = +25degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP3 Output	1dB Comp. Output	Noise Figure
					K	Delta			
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta	(dBm)	(dBm)	(dB)
50	31.54	33.82	16.07	12.12	1.01	0.80	27.74	13.23	2.13
100	31.39	34.53	15.71	12.61	1.04	0.73	27.24	13.02	2.28
150	31.18	34.14	16.25	12.44	1.03	0.74	27.07	12.92	2.29
200	30.87	34.61	15.90	12.55	1.06	0.68	26.27	12.83	2.32
250	30.46	33.82	16.43	12.59	1.04	0.70	25.87	12.89	2.44
300	30.09	33.56	16.96	12.29	1.03	0.68	26.24	12.68	2.52
350	29.68	33.49	16.97	12.47	1.04	0.65	25.96	12.88	2.49
400	29.25	33.03	17.61	12.28	1.04	0.65	25.55	12.60	2.55
450	28.82	33.02	17.53	12.29	1.05	0.61	25.15	12.74	2.58
500	28.38	32.54	17.76	12.13	1.04	0.61	25.14	12.68	2.63
550	27.99	32.19	18.10	12.04	1.04	0.60	24.96	12.78	2.70
600	27.56	32.06	18.05	12.05	1.05	0.58	24.95	12.84	2.71
650	27.16	31.61	18.38	11.84	1.05	0.58	24.92	12.87	2.76
700	26.74	31.25	18.35	11.83	1.05	0.57	25.01	12.88	2.76
750	26.37	30.93	18.52	11.68	1.05	0.57	24.94	12.96	2.86
800	25.97	30.55	18.38	11.55	1.04	0.56	24.94	12.88	2.77
850	25.61	30.13	18.68	11.48	1.04	0.57	24.80	12.98	2.74
900	25.24	29.95	18.54	11.40	1.05	0.55	24.73	12.87	2.79
940	24.95	29.53	18.32	11.31	1.04	0.56	24.58	12.77	2.82
1000	24.53	29.16	18.54	11.20	1.04	0.55	24.38	12.82	2.81
1050	24.19	28.84	18.44	11.08	1.04	0.55	24.14	12.66	2.88
1100	23.88	28.34	18.47	10.97	1.02	0.56	24.04	12.78	2.88
1150	23.57	28.26	18.21	10.92	1.03	0.55	23.85	12.44	2.97
1200	23.22	28.01	18.31	10.82	1.04	0.54	23.76	12.52	2.93
1250	22.93	27.56	18.13	10.69	1.03	0.55	23.68	12.24	2.97
1300	22.64	27.34	18.05	10.63	1.03	0.55	23.38	12.31	3.00
1350	22.34	27.01	17.83	10.52	1.02	0.55	23.01	12.13	3.01
1400	22.07	26.64	17.70	10.46	1.02	0.56	22.80	11.98	3.01
1450	21.79	26.46	17.56	10.32	1.02	0.55	22.85	11.94	2.97
1500	21.54	26.16	17.32	10.26	1.02	0.55	22.71	11.72	3.08
1550	21.21	26.16	17.55	10.27	1.04	0.54	23.00	11.59	3.03
1600	20.98	25.72	17.20	10.13	1.02	0.55	23.14	11.47	3.09
1650	20.73	25.44	16.87	10.00	1.02	0.55	23.53	11.40	2.99
1700	20.48	25.27	16.73	9.97	1.02	0.55	23.30	11.21	2.99
1750	20.24	25.18	16.63	9.93	1.03	0.54	22.56	11.05	2.99
1800	20.00	24.91	16.23	9.76	1.02	0.54	22.49	10.86	3.10
1850	19.75	24.61	16.10	9.71	1.02	0.55	21.68	10.77	2.98
1900	19.53	24.40	15.92	9.66	1.02	0.55	21.86	10.55	2.96
1950	19.30	24.18	15.48	9.55	1.02	0.55	21.30	10.43	2.97
2000	19.09	23.95	15.38	9.49	1.02	0.55	21.62	10.23	2.97

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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: Icc = 29mA, Vd = 3.66V @Temperature = +25degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP3 Output	1dB Comp. Output	Noise Figure
					K	Delta			
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta	(dBm)	(dBm)	(dB)
50	30.57	33.09	12.65	10.00	1.02	0.82	26.33	10.97	2.12
100	30.39	33.85	12.78	10.12	1.04	0.74	25.71	11.28	2.24
150	30.25	33.59	13.17	10.05	1.03	0.74	25.68	11.13	2.27
200	29.93	33.74	13.11	10.17	1.04	0.70	24.52	10.92	2.33
250	29.66	33.26	13.61	10.44	1.02	0.70	24.15	10.95	2.41
300	29.28	33.28	14.12	10.18	1.03	0.66	24.45	10.58	2.51
350	28.91	33.00	14.19	10.43	1.03	0.64	24.13	10.92	2.48
400	28.58	32.72	14.79	10.42	1.03	0.63	23.77	10.61	2.55
450	28.17	32.31	14.82	10.56	1.02	0.62	23.25	10.89	2.53
500	27.83	31.95	15.02	10.53	1.01	0.62	23.38	10.76	2.62
550	27.41	31.55	15.53	10.50	1.01	0.61	23.21	11.00	2.70
600	27.07	31.16	15.53	10.64	1.00	0.61	23.37	10.93	2.67
650	26.70	31.10	15.83	10.57	1.01	0.58	23.28	11.08	2.74
700	26.30	30.53	15.96	10.65	1.00	0.59	23.53	11.23	2.71
750	25.96	30.22	16.08	10.62	1.00	0.58	23.54	11.16	2.84
800	25.62	29.96	16.01	10.62	1.00	0.57	23.74	11.35	2.75
850	25.26	29.68	16.42	10.58	1.01	0.56	23.62	11.22	2.73
900	24.90	29.29	16.31	10.64	1.00	0.56	23.68	11.46	2.78
940	24.66	29.01	16.20	10.59	1.00	0.56	23.61	11.33	2.81
1000	24.26	28.85	16.39	10.53	1.01	0.55	23.40	11.46	2.77
1050	23.95	28.40	16.44	10.48	1.00	0.56	23.32	11.51	2.83
1100	23.62	28.12	16.51	10.40	1.00	0.55	23.22	11.39	2.83
1150	23.33	27.93	16.36	10.41	1.00	0.54	23.17	11.40	2.95
1200	23.02	27.59	16.49	10.37	1.00	0.55	23.11	11.09	2.92
1250	22.73	27.43	16.43	10.27	1.01	0.54	23.09	11.07	2.93
1300	22.43	26.99	16.40	10.20	1.00	0.55	22.82	11.03	2.97
1350	22.16	26.73	16.20	10.16	1.00	0.54	22.46	11.23	2.97
1400	21.90	26.49	16.09	10.16	1.00	0.54	22.29	10.96	3.00
1450	21.63	26.12	16.03	10.02	0.99	0.55	22.41	11.12	2.96
1500	21.38	25.96	15.95	9.98	0.99	0.55	22.29	10.83	3.05
1550	21.06	25.73	16.17	10.02	1.00	0.54	22.59	10.89	3.01
1600	20.82	25.49	15.87	9.85	1.00	0.54	22.79	10.66	3.07
1650	20.59	25.21	15.56	9.80	0.99	0.55	23.14	10.71	2.99
1700	20.34	24.97	15.50	9.79	0.99	0.55	22.73	10.71	2.93
1750	20.11	24.66	15.44	9.75	0.99	0.55	22.02	10.43	2.98
1800	19.87	24.58	15.14	9.57	0.99	0.54	22.06	10.27	3.02
1850	19.62	24.39	15.06	9.58	1.00	0.54	21.21	10.13	2.97
1900	19.40	24.14	14.88	9.50	0.99	0.54	21.51	10.02	2.94
1950	19.19	23.82	14.54	9.41	0.98	0.55	21.04	9.88	2.93
2000	18.98	23.78	14.47	9.35	0.99	0.54	21.42	9.71	2.95

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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: Icc = 43mA, Vd = 3.75V @Temperature = +25degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP3 Output	1dB Comp. Output	Noise Figure
					K	Delta			
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta	(dBm)	(dBm)	(dB)
50	32.21	34.94	18.72	14.76	1.04	0.75	29.19	14.18	2.13
100	32.07	35.20	18.70	15.31	1.05	0.72	28.71	13.86	2.32
150	31.84	34.30	19.43	15.02	1.03	0.77	28.48	13.99	2.31
200	31.45	34.32	18.80	14.54	1.03	0.73	27.78	13.78	2.35
250	31.06	34.74	19.60	14.77	1.07	0.66	27.28	13.77	2.45
300	30.60	34.56	19.94	14.26	1.07	0.64	27.66	13.63	2.55
350	30.18	34.38	19.70	14.09	1.08	0.62	27.50	13.58	2.51
400	29.70	33.72	20.44	13.88	1.07	0.63	26.97	13.61	2.58
450	29.22	33.50	20.29	13.54	1.07	0.61	26.57	13.48	2.59
500	28.80	33.04	20.36	13.34	1.07	0.60	26.41	13.46	2.66
550	28.32	32.64	20.56	13.04	1.07	0.60	26.26	13.47	2.74
600	27.89	32.46	20.56	12.88	1.08	0.58	26.03	13.48	2.72
650	27.44	32.19	20.76	12.63	1.08	0.56	26.01	13.44	2.78
700	27.02	31.49	20.58	12.52	1.06	0.58	25.88	13.42	2.77
750	26.61	31.26	20.59	12.29	1.07	0.57	25.84	13.41	2.85
800	26.22	30.81	20.47	12.14	1.06	0.57	25.65	13.30	2.80
850	25.82	30.43	20.65	11.97	1.06	0.57	25.47	13.47	2.79
900	25.44	30.03	20.38	11.88	1.06	0.57	25.34	13.17	2.80
940	25.15	29.85	20.28	11.70	1.06	0.56	25.22	13.19	2.85
1000	24.71	29.28	20.33	11.50	1.05	0.56	24.88	13.21	2.82
1050	24.37	29.14	20.17	11.40	1.06	0.55	24.63	13.04	2.90
1100	24.03	28.83	20.04	11.27	1.06	0.55	24.50	13.18	2.88
1150	23.72	28.55	19.83	11.15	1.06	0.55	24.33	12.83	3.01
1200	23.37	28.12	19.85	11.03	1.05	0.55	24.16	13.05	2.94
1250	23.07	27.79	19.59	10.90	1.05	0.55	24.04	12.58	2.96
1300	22.75	27.39	19.40	10.79	1.04	0.56	23.69	12.81	3.03
1350	22.46	27.28	19.14	10.68	1.05	0.55	23.41	12.50	3.03
1400	22.19	26.91	19.00	10.60	1.04	0.55	23.24	12.52	3.06
1450	21.91	26.69	18.69	10.45	1.04	0.55	23.39	12.35	3.03
1500	21.64	26.37	18.39	10.36	1.04	0.56	23.18	12.15	3.15
1550	21.32	26.25	18.66	10.40	1.05	0.54	23.26	12.13	3.06
1600	21.07	25.92	18.18	10.24	1.04	0.55	23.28	11.95	3.14
1650	20.82	25.79	17.80	10.09	1.05	0.54	23.72	11.78	3.04
1700	20.57	25.48	17.66	10.05	1.04	0.55	23.55	11.65	3.00
1750	20.33	25.21	17.49	10.03	1.04	0.55	22.82	11.50	3.03
1800	20.09	24.96	17.03	9.84	1.03	0.55	22.71	11.31	3.12
1850	19.84	24.66	16.90	9.79	1.03	0.56	21.92	11.18	3.05
1900	19.62	24.67	16.61	9.71	1.04	0.54	22.19	11.00	3.01
1950	19.39	24.38	16.20	9.62	1.04	0.55	21.64	10.87	3.01
2000	19.17	24.06	16.07	9.54	1.03	0.56	22.24	10.69	3.04

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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: I_{cc} = 36mA, V_d = 3.74V @Temperature = -45degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP3 Output	1dB Comp. Output	Noise Figure
					K	Delta			
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta	(dBm)	(dBm)	(dB)
50	32.13	34.84	17.58	14.44	1.04	0.75	26.36	13.34	1.71
100	31.95	34.59	18.18	14.60	1.03	0.76	26.37	13.05	1.88
150	31.72	33.57	17.90	14.23	1.01	0.83	26.68	13.01	1.86
200	31.41	33.79	17.92	14.07	1.02	0.78	26.17	12.86	1.91
250	31.01	34.21	19.38	14.37	1.04	0.70	26.06	12.84	2.07
300	30.63	34.07	19.73	14.27	1.05	0.68	26.36	12.81	2.19
350	30.22	33.25	20.25	14.14	1.03	0.71	26.17	12.88	2.01
400	29.77	33.23	21.21	14.00	1.04	0.67	25.82	12.91	2.10
450	29.34	32.94	21.11	13.71	1.04	0.65	25.52	12.99	2.09
500	28.91	32.83	21.20	13.48	1.05	0.63	25.58	12.95	2.17
550	28.49	32.56	21.53	13.13	1.05	0.61	25.47	13.18	2.23
600	28.06	32.14	21.82	12.89	1.05	0.61	25.49	13.09	2.21
650	27.65	31.95	21.59	12.72	1.06	0.59	25.47	13.23	2.26
700	27.23	31.43	21.62	12.57	1.05	0.60	25.66	13.17	2.25
750	26.85	31.19	21.56	12.38	1.06	0.59	25.67	13.24	2.31
800	26.46	30.70	21.36	12.19	1.05	0.59	25.66	13.25	2.27
850	26.09	30.36	21.41	12.06	1.05	0.59	25.52	13.26	2.23
900	25.71	29.93	21.42	11.91	1.04	0.59	25.55	13.27	2.26
940	25.43	29.72	21.37	11.74	1.04	0.59	25.41	13.15	2.30
1000	25.02	29.31	21.41	11.58	1.04	0.59	25.17	13.23	2.26
1050	24.68	29.07	21.01	11.52	1.04	0.58	25.08	13.14	2.32
1100	24.37	28.54	20.68	11.40	1.03	0.60	25.03	13.16	2.33
1150	24.06	28.42	20.48	11.25	1.04	0.58	24.92	12.98	2.40
1200	23.71	27.98	20.74	11.11	1.03	0.59	24.71	13.01	2.39
1250	23.42	27.74	20.41	10.94	1.03	0.59	24.74	12.85	2.37
1300	23.12	27.50	20.14	10.81	1.03	0.58	24.41	12.84	2.44
1350	22.84	27.25	19.84	10.67	1.03	0.58	24.22	12.68	2.44
1400	22.56	26.84	19.72	10.62	1.02	0.59	23.97	12.65	2.45
1450	22.29	26.54	19.17	10.47	1.02	0.59	24.19	12.63	2.43
1500	22.04	26.29	18.84	10.36	1.02	0.59	23.82	12.41	2.56
1550	21.70	26.22	19.31	10.36	1.03	0.58	24.31	12.31	2.48
1600	21.48	25.83	18.52	10.23	1.02	0.59	24.30	12.24	2.51
1650	21.23	25.62	18.24	10.11	1.02	0.59	24.37	12.09	2.44
1700	20.98	25.33	18.05	10.10	1.02	0.59	24.19	12.00	2.42
1750	20.75	25.21	17.64	10.06	1.02	0.58	23.59	11.84	2.44
1800	20.52	24.93	17.13	9.91	1.02	0.59	23.42	11.68	2.50
1850	20.27	24.74	17.18	9.83	1.02	0.58	22.75	11.56	2.43
1900	20.05	24.59	16.97	9.72	1.02	0.58	23.06	11.42	2.39
1950	19.83	24.16	16.37	9.59	1.01	0.60	22.38	11.31	2.40
2000	19.61	24.06	16.22	9.47	1.01	0.59	22.87	11.09	2.40

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Gain(Power Gain) = S21 (dB)

Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

TEST CONDITIONS: Icc = 29mA, Vd = 3.69V @Temperature = -45degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP3 Output	1dB Comp. Output	Noise Figure
					K	Delta			
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta	(dBm)	(dBm)	(dB)
50	31.21	32.31	14.71	11.73	1.00	0.93	24.90	11.27	1.70
100	31.10	34.48	14.55	11.81	1.05	0.72	24.67	11.29	1.84
150	30.92	33.78	14.80	11.47	1.02	0.76	24.92	10.86	1.85
200	30.58	34.74	14.70	11.38	1.07	0.65	24.13	10.87	1.88
250	30.30	33.64	15.62	11.89	1.03	0.70	24.11	10.88	2.04
300	29.92	33.59	16.13	11.83	1.04	0.67	24.26	10.68	2.17
350	29.60	33.46	16.66	12.07	1.04	0.65	24.00	10.96	2.02
400	29.19	32.73	17.53	11.95	1.02	0.66	23.72	10.68	2.09
450	28.77	32.66	17.43	11.97	1.03	0.63	23.34	10.85	2.08
500	28.42	32.19	17.60	11.98	1.02	0.64	23.55	10.83	2.13
550	28.00	32.20	18.02	11.74	1.04	0.60	23.45	11.00	2.20
600	27.64	31.54	18.30	11.74	1.02	0.62	23.64	11.15	2.19
650	27.24	31.38	18.28	11.60	1.03	0.60	23.58	11.22	2.22
700	26.87	31.02	18.28	11.62	1.02	0.59	23.90	11.35	2.21
750	26.50	30.57	18.50	11.49	1.02	0.60	23.92	11.42	2.31
800	26.16	30.26	18.37	11.47	1.02	0.59	24.16	11.47	2.23
850	25.79	29.99	18.55	11.35	1.02	0.59	24.08	11.38	2.21
900	25.45	29.46	18.76	11.27	1.01	0.60	24.18	11.55	2.23
940	25.19	29.34	18.65	11.15	1.01	0.59	24.25	11.52	2.27
1000	24.78	29.02	18.69	11.08	1.02	0.58	24.13	11.63	2.24
1050	24.48	28.65	18.60	11.05	1.01	0.59	24.09	11.59	2.29
1100	24.15	28.26	18.48	10.94	1.01	0.59	23.95	11.51	2.30
1150	23.87	28.05	18.33	10.87	1.01	0.58	24.09	11.73	2.38
1200	23.54	27.63	18.55	10.77	1.00	0.59	24.02	11.44	2.37
1250	23.25	27.38	18.40	10.63	1.00	0.59	24.06	11.71	2.40
1300	22.96	27.08	18.25	10.53	1.00	0.59	23.78	11.54	2.43
1350	22.69	26.94	18.01	10.44	1.00	0.58	23.51	11.63	2.41
1400	22.42	26.53	17.97	10.38	1.00	0.59	23.32	11.48	2.40
1450	22.15	26.36	17.69	10.27	1.00	0.58	23.59	11.64	2.42
1500	21.89	25.99	17.34	10.18	0.99	0.59	23.26	11.34	2.51
1550	21.57	25.98	17.78	10.20	1.01	0.58	23.71	11.50	2.46
1600	21.35	25.52	17.21	10.04	0.99	0.59	23.88	11.32	2.50
1650	21.10	25.40	16.86	9.95	1.00	0.58	24.04	11.37	2.41
1700	20.87	25.06	16.84	9.95	0.99	0.59	23.82	11.34	2.40
1750	20.64	24.86	16.61	9.91	1.00	0.59	23.22	11.10	2.40
1800	20.40	24.73	16.13	9.76	1.00	0.58	22.88	11.02	2.50
1850	20.16	24.52	16.11	9.70	1.00	0.58	22.21	10.90	2.39
1900	19.95	24.30	16.01	9.62	1.00	0.58	22.51	10.79	2.36
1950	19.73	24.08	15.56	9.49	0.99	0.59	22.19	10.69	2.39
2000	19.51	23.84	15.41	9.39	0.99	0.59	22.40	10.55	2.39

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MMIC Amplifier

ERA-8SM+

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: Icc = 43mA, Vd = 3.79V @Temperature = -45degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP3 Output	1dB Comp. Output	Noise Figure
					K	Delta			
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta	(dBm)	(dBm)	(dB)
50	32.74	35.26	21.07	18.13	1.04	0.76	27.53	14.48	1.74
100	32.59	35.75	21.98	17.53	1.06	0.70	27.74	14.24	1.91
150	32.26	36.17	22.06	16.60	1.09	0.65	28.05	14.19	1.87
200	31.93	35.73	21.65	16.71	1.08	0.65	27.64	14.10	1.90
250	31.52	34.73	22.89	16.62	1.05	0.69	27.39	14.09	2.08
300	31.10	34.02	23.88	16.16	1.04	0.71	27.71	14.11	2.24
350	30.65	34.20	24.41	15.80	1.06	0.66	27.60	14.23	2.07
400	30.14	33.56	25.42	15.33	1.05	0.67	27.18	14.08	2.10
450	29.70	33.26	25.30	14.86	1.05	0.66	26.89	14.17	2.14
500	29.25	33.27	24.83	14.46	1.07	0.62	26.76	14.16	2.18
550	28.78	32.58	25.50	13.93	1.06	0.64	26.68	14.17	2.22
600	28.33	32.70	25.16	13.64	1.08	0.59	26.57	14.22	2.22
650	27.90	32.08	25.12	13.29	1.07	0.61	26.56	14.21	2.27
700	27.49	31.89	24.67	13.11	1.08	0.59	26.54	14.15	2.26
750	27.07	31.43	24.61	12.89	1.07	0.59	26.50	14.17	2.35
800	26.66	31.07	23.86	12.65	1.07	0.59	26.34	14.09	2.27
850	26.28	30.64	24.17	12.42	1.06	0.59	26.23	14.20	2.26
900	25.89	30.11	23.84	12.20	1.05	0.60	26.13	13.95	2.31
940	25.60	29.93	23.62	12.01	1.06	0.59	26.06	13.95	2.31
1000	25.18	29.46	23.82	11.84	1.05	0.59	25.76	14.02	2.27
1050	24.83	29.18	23.10	11.72	1.05	0.59	25.59	13.83	2.34
1100	24.50	28.90	22.82	11.59	1.05	0.59	25.45	13.92	2.35
1150	24.19	28.52	22.30	11.42	1.05	0.59	25.36	13.55	2.44
1200	23.84	28.16	22.49	11.24	1.04	0.59	25.20	13.77	2.39
1250	23.54	27.84	22.14	11.09	1.04	0.59	25.10	13.31	2.42
1300	23.23	27.71	21.71	10.94	1.05	0.58	24.63	13.53	2.47
1350	22.95	27.38	21.27	10.81	1.04	0.59	24.46	13.27	2.44
1400	22.66	26.98	20.94	10.73	1.04	0.59	24.36	13.19	2.45
1450	22.38	26.82	20.40	10.55	1.04	0.59	24.60	13.05	2.43
1500	22.12	26.44	19.96	10.45	1.03	0.59	24.17	12.90	2.58
1550	21.78	26.35	20.43	10.44	1.05	0.58	24.48	12.86	2.50
1600	21.57	26.06	19.61	10.28	1.04	0.58	24.95	12.70	2.55
1650	21.32	25.72	19.19	10.20	1.03	0.59	24.57	12.54	2.47
1700	21.07	25.35	18.91	10.16	1.02	0.60	24.66	12.38	2.45
1750	20.83	25.34	18.53	10.10	1.03	0.59	24.03	12.28	2.49
1800	20.60	25.01	18.04	9.93	1.03	0.59	23.70	12.07	2.53
1850	20.35	24.77	17.93	9.87	1.03	0.59	23.27	11.97	2.44
1900	20.13	24.63	17.63	9.76	1.03	0.59	23.26	11.75	2.40
1950	19.91	24.31	16.98	9.62	1.02	0.60	22.51	11.66	2.42
2000	19.69	24.31	16.93	9.49	1.03	0.59	23.03	11.48	2.46

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MMIC Amplifier

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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: Icc = 36mA, Vd = 3.68V @Temperature = +85degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP3 Output	1dB Comp. Output	Noise Figure
					K	Delta			
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta	(dBm)	(dBm)	(dB)
50	30.96	39.20	13.60	10.73	1.38	0.45	28.07	12.97	2.53
100	30.92	34.52	14.20	11.29	1.05	0.71	27.52	12.80	2.65
150	30.67	33.80	14.70	11.42	1.03	0.74	27.51	12.67	2.68
200	30.37	33.24	14.65	11.24	1.02	0.76	26.38	12.72	2.72
250	29.98	33.65	15.16	11.44	1.04	0.68	25.90	12.41	2.88
300	29.57	33.50	15.20	11.17	1.04	0.66	26.28	12.26	2.96
350	29.22	33.15	15.31	11.27	1.03	0.65	25.96	12.36	2.90
400	28.74	33.39	15.59	11.23	1.06	0.59	25.43	12.33	2.99
450	28.34	32.60	15.50	11.12	1.03	0.61	24.93	12.24	3.01
500	27.92	32.15	15.70	11.21	1.03	0.61	24.88	12.22	3.07
550	27.51	31.89	16.01	11.13	1.03	0.59	24.71	12.30	3.17
600	27.10	31.94	16.23	11.16	1.06	0.56	24.70	12.40	3.15
650	26.67	31.42	16.26	11.03	1.04	0.56	24.61	12.29	3.20
700	26.29	31.06	16.42	11.08	1.04	0.55	24.63	12.33	3.19
750	25.91	30.83	16.45	10.98	1.05	0.54	24.59	12.30	3.31
800	25.52	30.24	16.43	10.97	1.03	0.55	24.51	12.26	3.23
850	25.15	30.09	16.49	10.97	1.04	0.53	24.35	12.33	3.22
900	24.80	29.61	16.48	10.98	1.03	0.54	24.26	12.15	3.25
940	24.51	29.36	16.48	10.91	1.03	0.53	24.06	12.17	3.33
1000	24.10	28.89	16.47	10.83	1.03	0.54	23.82	12.20	3.29
1050	23.76	28.57	16.56	10.84	1.03	0.53	23.60	12.01	3.34
1100	23.44	28.26	16.53	10.75	1.02	0.53	23.42	12.05	3.37
1150	23.14	28.09	16.45	10.74	1.03	0.52	23.33	11.79	3.44
1200	22.79	27.70	16.59	10.67	1.03	0.53	23.12	11.84	3.42
1250	22.49	27.38	16.47	10.61	1.02	0.53	23.09	11.56	3.42
1300	22.20	27.22	16.47	10.50	1.03	0.52	22.68	11.69	3.47
1350	21.92	26.82	16.39	10.40	1.02	0.52	22.37	11.44	3.47
1400	21.63	26.68	16.40	10.38	1.03	0.52	22.34	11.38	3.50
1450	21.36	26.32	16.19	10.27	1.02	0.52	22.18	11.31	3.48
1500	21.11	26.13	16.09	10.19	1.02	0.52	21.88	11.02	3.56
1550	20.78	25.93	16.29	10.25	1.04	0.51	22.23	10.93	3.52
1600	20.54	25.69	16.04	10.08	1.03	0.51	22.44	10.81	3.59
1650	20.30	25.40	15.87	9.94	1.02	0.51	22.64	10.71	3.52
1700	20.04	25.27	15.83	9.92	1.03	0.51	22.57	10.59	3.46
1750	19.79	24.95	15.65	9.89	1.03	0.51	21.75	10.42	3.52
1800	19.55	24.69	15.31	9.73	1.02	0.52	21.62	10.24	3.55
1850	19.30	24.54	15.28	9.68	1.03	0.51	21.08	10.08	3.51
1900	19.07	24.34	15.12	9.62	1.03	0.51	21.09	9.82	3.49
1950	18.85	24.16	14.76	9.55	1.03	0.51	20.66	9.76	3.46
2000	18.62	23.81	14.62	9.46	1.02	0.52	20.84	9.53	3.48

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MMIC Amplifier

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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: Icc = 29mA, Vd = 3.63V @Temperature = +85degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP3 Output	1dB Comp. Output	Noise Figure
					K	Delta			
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta	(dBm)	(dBm)	(dB)
50	29.97	32.32	11.47	8.92	1.01	0.86	26.92	11.28	2.53
100	29.90	33.23	11.73	9.03	1.03	0.77	26.24	11.23	2.61
150	29.66	33.63	12.05	9.24	1.04	0.71	26.26	10.85	2.64
200	29.43	33.59	12.27	9.24	1.04	0.68	24.67	10.98	2.72
250	29.09	33.07	12.50	9.43	1.02	0.68	24.21	10.92	2.86
300	28.77	33.30	12.81	9.25	1.04	0.64	24.47	10.44	2.94
350	28.39	32.72	12.89	9.35	1.02	0.64	24.15	10.80	2.90
400	27.98	32.48	13.33	9.50	1.02	0.61	23.61	10.32	2.97
450	27.68	32.35	13.38	9.47	1.02	0.59	23.04	10.68	3.02
500	27.28	31.82	13.46	9.60	1.01	0.59	23.08	10.48	3.04
550	26.91	31.67	13.98	9.64	1.02	0.57	22.87	10.74	3.10
600	26.54	31.44	14.08	9.77	1.02	0.55	23.04	10.78	3.10
650	26.19	30.95	14.23	9.78	1.01	0.56	22.88	10.68	3.18
700	25.83	30.47	14.32	9.84	1.00	0.56	23.12	10.96	3.17
750	25.48	30.18	14.57	9.86	1.00	0.55	23.10	10.99	3.27
800	25.11	29.73	14.44	9.93	0.99	0.55	23.21	11.08	3.22
850	24.78	29.59	14.69	9.97	1.00	0.53	23.08	10.96	3.21
900	24.43	29.21	14.66	10.05	1.00	0.53	23.10	11.13	3.21
940	24.17	29.01	14.62	10.06	1.00	0.53	23.07	10.97	3.29
1000	23.80	28.63	14.79	10.06	1.00	0.52	22.83	11.04	3.27
1050	23.48	28.25	14.75	10.09	0.99	0.53	22.62	10.97	3.29
1100	23.17	27.95	14.95	10.08	0.99	0.52	22.58	10.94	3.33
1150	22.88	27.62	14.82	10.09	0.99	0.52	22.54	10.95	3.43
1200	22.56	27.27	14.95	10.10	0.99	0.53	22.37	10.81	3.40
1250	22.28	27.04	14.99	10.07	0.99	0.52	22.29	10.74	3.39
1300	21.99	26.93	15.04	10.03	1.00	0.51	22.08	10.68	3.44
1350	21.72	26.52	14.87	9.97	0.99	0.52	21.76	10.69	3.43
1400	21.44	26.23	14.89	9.99	0.99	0.52	21.59	10.43	3.47
1450	21.17	26.05	14.90	9.91	0.99	0.51	21.54	10.54	3.45
1500	20.93	25.62	14.86	9.87	0.98	0.53	21.50	10.25	3.57
1550	20.61	25.52	14.98	9.92	1.00	0.51	21.63	10.17	3.51
1600	20.39	25.28	14.82	9.79	0.99	0.52	21.85	10.01	3.56
1650	20.14	25.00	14.63	9.65	0.98	0.52	22.46	9.90	3.49
1700	19.89	24.76	14.60	9.71	0.99	0.52	21.91	10.02	3.48
1750	19.64	24.61	14.53	9.67	0.99	0.51	21.24	9.68	3.46
1800	19.42	24.43	14.29	9.53	0.99	0.51	21.21	9.59	3.53
1850	19.17	24.12	14.27	9.52	0.99	0.52	20.47	9.42	3.46
1900	18.94	24.06	14.13	9.43	1.00	0.51	20.59	9.27	3.41
1950	18.72	23.80	13.79	9.39	0.99	0.51	20.20	9.09	3.44
2000	18.51	23.67	13.72	9.30	1.00	0.51	20.20	8.95	3.48

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MMIC Amplifier

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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: Icc = 43mA, Vd = 3.73V @Temperature = +85degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP3 Output	1dB Comp. Output	Noise Figure
					K	Delta			
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta	(dBm)	(dBm)	(dB)
50	31.77	36.84	15.89	13.18	1.14	0.59	29.32	13.48	2.56
100	31.61	34.46	16.57	13.53	1.04	0.75	28.73	13.17	2.66
150	31.38	33.74	17.40	13.31	1.02	0.79	28.56	13.23	2.66
200	31.00	34.61	17.22	13.36	1.06	0.68	27.74	12.99	2.74
250	30.60	33.91	17.66	13.18	1.04	0.70	27.27	13.02	2.89
300	30.19	33.84	17.56	12.90	1.05	0.67	27.58	12.88	3.00
350	29.72	33.86	17.56	12.74	1.06	0.62	27.35	12.83	2.90
400	29.25	33.47	17.92	12.58	1.06	0.62	26.74	12.79	2.99
450	28.78	33.29	17.63	12.52	1.07	0.59	26.29	12.73	3.02
500	28.36	32.93	17.69	12.36	1.07	0.58	26.09	12.73	3.09
550	27.89	32.50	17.91	12.20	1.07	0.58	25.92	12.76	3.16
600	27.44	32.39	18.09	12.10	1.08	0.55	25.71	12.72	3.16
650	27.03	31.89	18.06	11.96	1.07	0.55	25.65	12.73	3.22
700	26.59	31.49	18.13	11.89	1.07	0.55	25.49	12.65	3.19
750	26.18	31.06	18.20	11.75	1.07	0.55	25.45	12.68	3.32
800	25.79	30.62	18.00	11.63	1.06	0.55	25.30	12.53	3.24
850	25.41	30.34	18.00	11.61	1.06	0.54	25.06	12.74	3.26
900	25.01	30.15	18.01	11.50	1.07	0.52	24.91	12.45	3.27
940	24.71	29.67	17.88	11.41	1.06	0.53	24.74	12.51	3.34
1000	24.29	29.38	17.93	11.32	1.06	0.52	24.34	12.50	3.30
1050	23.96	28.98	17.85	11.23	1.06	0.53	24.19	12.29	3.36
1100	23.62	28.66	17.86	11.14	1.06	0.52	23.97	12.42	3.38
1150	23.30	28.27	17.75	11.08	1.05	0.53	23.88	12.08	3.44
1200	22.95	27.80	17.84	10.94	1.04	0.54	23.69	12.24	3.45
1250	22.65	27.79	17.76	10.85	1.06	0.52	23.47	11.77	3.42
1300	22.34	27.53	17.66	10.76	1.06	0.51	23.13	12.03	3.50
1350	22.05	27.18	17.45	10.67	1.05	0.52	22.78	11.74	3.56
1400	21.77	26.76	17.47	10.58	1.04	0.53	22.55	11.71	3.54
1450	21.48	26.36	17.28	10.43	1.03	0.53	22.78	11.59	3.50
1500	21.23	26.36	17.08	10.38	1.05	0.52	22.34	11.45	3.60
1550	20.90	26.17	17.33	10.39	1.06	0.51	22.48	11.30	3.56
1600	20.66	25.89	16.98	10.23	1.05	0.51	22.77	11.17	3.62
1650	20.40	25.59	16.73	10.08	1.04	0.52	23.02	11.11	3.54
1700	20.14	25.33	16.69	10.02	1.04	0.52	22.86	10.99	3.51
1750	19.90	25.08	16.47	9.99	1.04	0.52	22.28	10.80	3.52
1800	19.66	24.85	16.07	9.82	1.04	0.52	22.25	10.61	3.58
1850	19.40	24.66	16.05	9.75	1.04	0.52	21.36	10.51	3.54
1900	19.17	24.46	15.88	9.66	1.04	0.52	21.39	10.30	3.50
1950	18.94	24.13	15.41	9.62	1.03	0.53	21.10	10.13	3.53
2000	18.73	23.90	15.22	9.51	1.03	0.53	21.50	9.93	3.53

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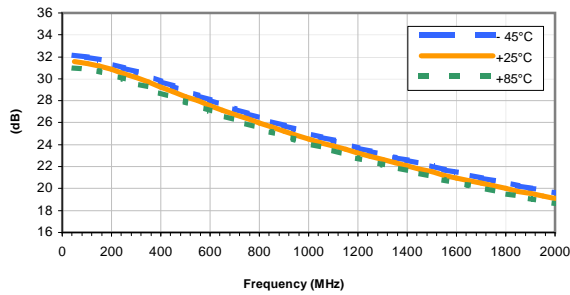
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Typical Performance Curves

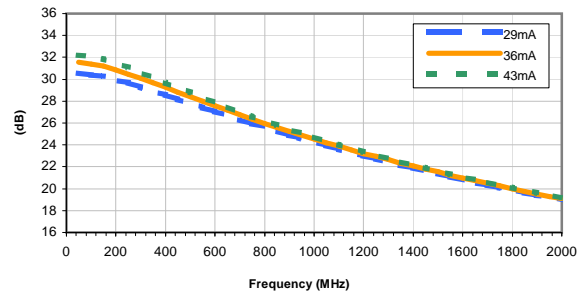
GAIN vs. TEMPERATURE

INPUT POWER = -35dBm, CURRENT = 36mA



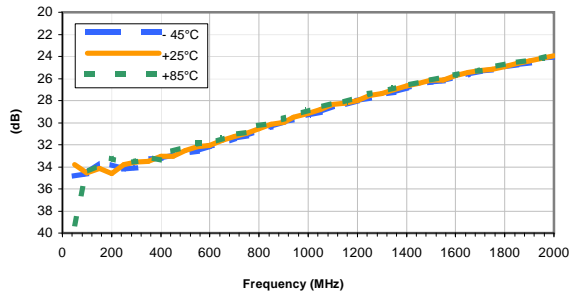
GAIN vs. CURRENT

INPUT POWER = -35dBm, Temperature = +25°C



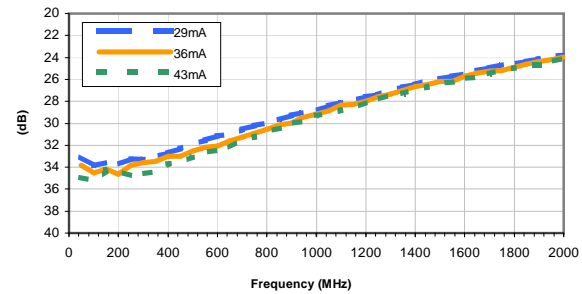
ISOLATION vs. TEMPERATURE

INPUT POWER = -35dBm, CURRENT = 36mA



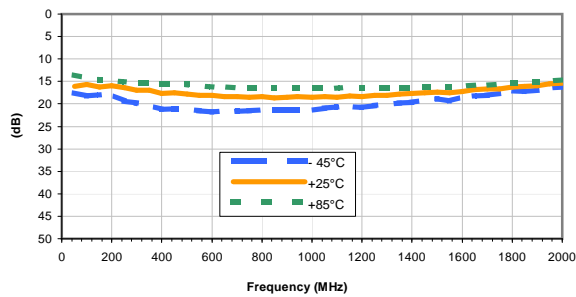
ISOLATION vs. CURRENT

INPUT POWER = -35dBm, Temperature = +25°C



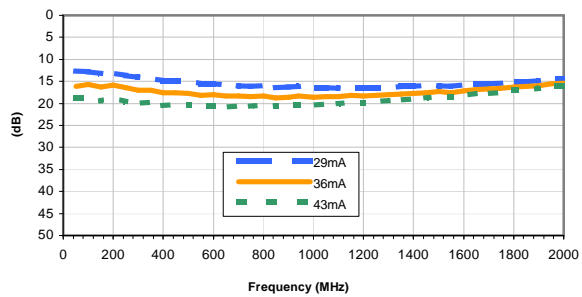
INPUT RETURN LOSS vs. TEMPERATURE

INPUT POWER = -35dBm, CURRENT = 36mA



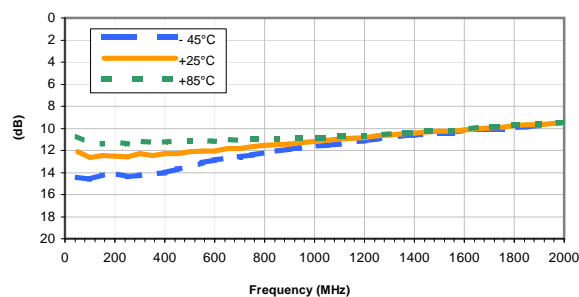
INPUT RETURN LOSS vs. CURRENT

INPUT POWER = -35dBm, Temperature = +25°C



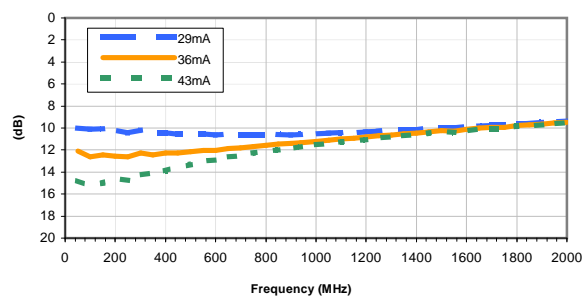
OUTPUT RETURN LOSS vs. TEMPERATURE

INPUT POWER = -35dBm, CURRENT = 36mA



OUTPUT RETURN LOSS vs. CURRENT

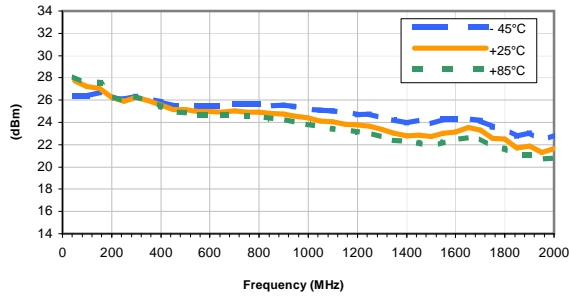
INPUT POWER = -35dBm, Temperature = +25°C



Typical Performance Curves

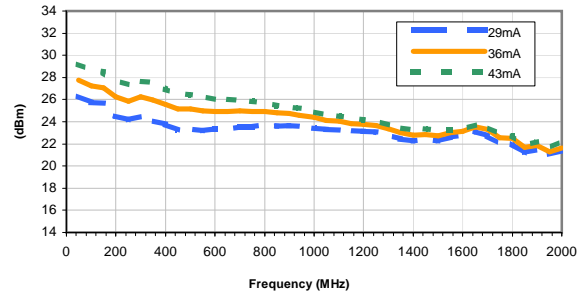
OUTPUT IP3 vs. TEMPERATURE

INPUT POWER = -35dBm, CURRENT = 36mA



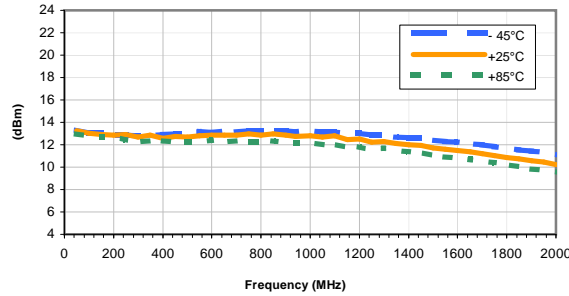
OUTPUT IP3 vs. CURRENT

INPUT POWER = -35dBm, Temperature = +25°C



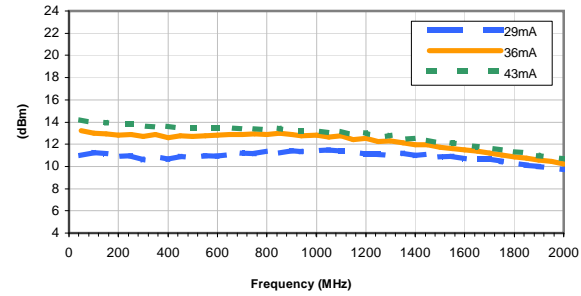
OUTPUT POWER at 1dB Compression vs. TEMPERATURE

CURRENT = 36mA



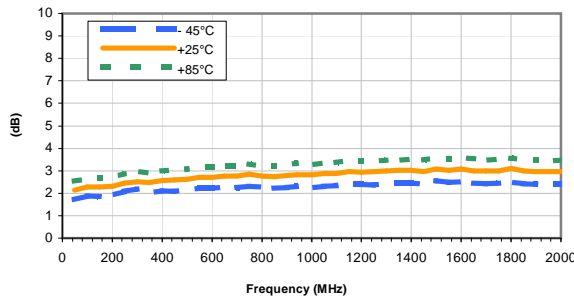
OUTPUT POWER at 1dB Compression vs. CURRENT

Temperature = +25°C



Noise Figure vs. TEMPERATURE

CURRENT = 36mA



Noise Figure vs. CURRENT

Temperature = +25°C

