

MMIC Amplifier

ERA-3SM+

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 = 35mA, Vd = 3.25V @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	22.97	25.25	37.00	23.90	1.03	0.77	26.87	12.72	2.51
100	22.93	25.66	37.58	23.73	1.05	0.73	27.44	12.72	2.58
150	22.88	25.57	34.27	23.66	1.04	0.73	27.40	12.80	2.59
200	22.82	25.63	31.98	23.12	1.05	0.72	27.34	12.79	2.53
250	22.73	25.61	30.21	22.90	1.05	0.72	26.64	12.80	2.57
300	22.68	25.49	29.01	22.51	1.05	0.72	27.54	12.75	2.60
350	22.60	25.48	27.80	22.06	1.05	0.72	27.41	12.77	2.55
400	22.51	25.47	26.61	21.82	1.05	0.71	26.97	12.71	2.58
450	22.42	25.41	25.60	21.46	1.05	0.71	26.98	12.69	2.57
500	22.30	25.41	24.83	20.92	1.05	0.69	26.91	12.74	2.59
550	22.21	25.38	24.03	20.53	1.05	0.69	27.11	12.79	2.60
600	22.08	25.31	23.38	20.12	1.05	0.68	26.94	12.84	2.64
650	21.97	25.25	22.88	19.80	1.05	0.68	27.05	12.78	2.62
700	21.86	25.21	22.36	19.42	1.06	0.67	27.21	12.78	2.59
750	21.75	25.17	21.77	19.10	1.06	0.67	27.29	12.66	2.59
800	21.62	25.14	21.31	18.76	1.06	0.66	27.42	12.64	2.59
850	21.50	25.10	20.84	18.52	1.06	0.65	27.28	12.61	2.58
900	21.37	25.02	20.52	18.19	1.06	0.65	27.55	12.56	2.61
940	21.29	24.98	20.23	17.96	1.06	0.64	27.41	12.47	2.55
1000	21.13	24.93	19.84	17.66	1.06	0.63	27.45	12.53	2.55
1100	20.88	24.85	19.35	17.22	1.07	0.62	27.29	12.57	2.68
1200	20.63	24.78	18.91	16.80	1.07	0.60	27.16	12.47	2.60
1300	20.38	24.67	18.67	16.51	1.08	0.59	27.32	12.62	2.71
1400	20.13	24.58	18.35	16.23	1.08	0.58	26.84	12.68	2.67
1500	19.89	24.47	18.19	15.93	1.09	0.57	27.10	12.58	2.70
1600	19.64	24.46	17.93	15.76	1.10	0.56	27.27	12.50	2.70
1700	19.40	24.37	17.86	15.63	1.11	0.55	27.89	12.45	2.71
1800	19.16	24.27	17.81	15.52	1.12	0.54	27.69	12.56	2.72
1900	18.93	24.20	17.70	15.39	1.13	0.53	27.20	12.43	2.64
2000	18.70	24.10	17.70	15.32	1.14	0.52	27.39	12.51	2.63
2100	18.48	24.05	17.70	15.22	1.15	0.51	26.77	12.43	2.67
2200	18.25	24.02	17.70	15.16	1.17	0.50	26.85	12.40	2.61
2300	18.02	23.96	17.65	15.11	1.18	0.49	26.59	12.19	2.63
2400	17.79	23.93	17.65	15.08	1.20	0.48	26.55	12.08	2.54
2500	17.58	23.87	17.53	15.05	1.21	0.47	26.46	11.96	2.69
2600	17.38	23.79	17.50	15.15	1.23	0.47	26.02	11.61	2.58
2700	17.18	23.75	17.54	15.20	1.24	0.46	26.06	11.51	2.72
2800	16.97	23.69	17.51	15.26	1.26	0.46	25.63	11.16	2.61
2900	16.78	23.64	17.46	15.27	1.27	0.45	25.59	11.33	2.66
3000	16.57	23.58	17.43	15.33	1.29	0.44	25.24	10.81	2.74

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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} = 28mA, V_d = 3.22V @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	22.55	25.30	26.96	31.67	1.05	0.73	23.91	11.03	2.48
100	22.52	25.25	27.00	32.07	1.05	0.73	24.46	10.95	2.56
150	22.47	25.24	26.80	31.99	1.05	0.73	24.35	11.16	2.53
200	22.42	25.18	26.62	29.62	1.05	0.73	24.33	11.15	2.52
250	22.33	25.17	26.30	28.96	1.05	0.72	23.71	11.04	2.55
300	22.27	25.15	25.78	28.08	1.05	0.72	24.49	10.98	2.57
350	22.20	25.12	25.26	26.89	1.05	0.71	24.43	11.01	2.54
400	22.11	25.05	24.89	26.20	1.05	0.71	24.00	10.98	2.54
450	22.04	25.02	24.17	25.31	1.05	0.71	24.03	10.83	2.56
500	21.92	25.03	23.86	24.54	1.06	0.70	23.96	11.03	2.53
550	21.83	24.97	23.38	23.71	1.06	0.69	24.15	11.00	2.55
600	21.73	24.97	22.89	22.94	1.06	0.68	24.04	11.14	2.61
650	21.61	24.89	22.61	22.40	1.06	0.68	24.15	10.94	2.60
700	21.50	24.91	22.15	21.84	1.06	0.67	24.30	11.10	2.54
750	21.40	24.84	21.70	21.31	1.06	0.67	24.38	10.95	2.56
800	21.27	24.80	21.31	20.91	1.06	0.66	24.56	10.95	2.57
850	21.18	24.73	20.90	20.38	1.06	0.66	24.41	10.76	2.55
900	21.05	24.76	20.66	19.96	1.07	0.64	24.74	10.94	2.58
940	20.96	24.70	20.42	19.66	1.07	0.64	24.62	10.84	2.54
1000	20.81	24.62	20.02	19.21	1.07	0.63	24.68	10.83	2.54
1100	20.57	24.57	19.59	18.54	1.08	0.62	24.53	10.96	2.66
1200	20.32	24.50	19.19	18.01	1.08	0.61	24.45	10.71	2.58
1300	20.08	24.42	18.93	17.62	1.09	0.59	24.70	11.00	2.70
1400	19.84	24.35	18.61	17.21	1.10	0.58	24.40	11.02	2.67
1500	19.62	24.30	18.45	16.85	1.11	0.57	24.71	10.99	2.66
1600	19.37	24.23	18.18	16.58	1.11	0.56	24.93	10.95	2.66
1700	19.13	24.16	18.10	16.40	1.13	0.55	25.52	10.87	2.67
1800	18.91	24.14	18.00	16.20	1.14	0.54	25.61	10.93	2.65
1900	18.68	24.06	17.88	16.03	1.15	0.53	25.16	10.86	2.59
2000	18.46	23.99	17.85	15.87	1.16	0.52	25.52	10.97	2.62
2100	18.22	23.89	17.81	15.77	1.17	0.51	25.05	10.93	2.63
2200	18.01	23.88	17.79	15.67	1.19	0.50	25.28	10.95	2.58
2300	17.78	23.86	17.69	15.59	1.20	0.49	25.19	10.88	2.60
2400	17.57	23.82	17.65	15.50	1.22	0.48	25.15	10.91	2.51
2500	17.35	23.78	17.48	15.44	1.23	0.47	25.16	10.93	2.62
2600	17.16	23.74	17.42	15.47	1.25	0.47	24.74	10.66	2.51
2700	16.95	23.72	17.40	15.52	1.27	0.46	24.88	10.66	2.69
2800	16.75	23.68	17.35	15.55	1.29	0.45	24.42	10.31	2.59
2900	16.56	23.61	17.27	15.56	1.30	0.45	24.44	10.51	2.59
3000	16.36	23.58	17.20	15.57	1.32	0.44	24.22	10.00	2.67

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Definitions:

Input Return Loss = -S11 (dB)

Gain(Power Gain) = S21 (dB)

Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

TEST CONDITIONS: I_{cc} = 42mA, V_d = 3.27V @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	23.23	25.85	31.94	20.35	1.04	0.74	29.25	13.70	2.56
100	23.19	25.81	31.13	20.70	1.04	0.74	29.84	13.79	2.61
150	23.14	25.91	30.65	20.63	1.05	0.73	29.83	13.80	2.60
200	23.08	25.84	28.99	20.38	1.04	0.73	29.73	13.80	2.59
250	23.00	25.82	27.89	20.30	1.05	0.72	28.93	13.89	2.62
300	22.92	25.83	27.33	19.91	1.05	0.72	29.92	13.87	2.64
350	22.84	25.72	26.15	19.78	1.05	0.72	29.73	13.74	2.57
400	22.75	25.73	25.25	19.52	1.05	0.71	29.26	13.67	2.63
450	22.66	25.68	24.52	19.32	1.05	0.70	29.19	13.82	2.63
500	22.55	25.64	23.74	18.98	1.05	0.70	29.12	13.74	2.62
550	22.43	25.60	23.13	18.67	1.05	0.69	29.28	13.87	2.64
600	22.32	25.57	22.48	18.48	1.05	0.68	29.04	13.84	2.66
650	22.20	25.47	22.04	18.17	1.05	0.68	29.12	13.90	2.67
700	22.09	25.47	21.56	17.96	1.05	0.67	29.23	13.69	2.61
750	21.97	25.41	21.06	17.72	1.05	0.66	29.29	13.68	2.63
800	21.84	25.34	20.65	17.47	1.05	0.66	29.36	13.61	2.63
850	21.72	25.27	20.22	17.30	1.05	0.65	29.19	13.65	2.64
900	21.60	25.22	19.89	17.06	1.05	0.65	29.36	13.49	2.64
940	21.49	25.19	19.63	16.87	1.05	0.64	29.17	13.38	2.61
1000	21.34	25.14	19.27	16.68	1.06	0.63	29.17	13.50	2.61
1100	21.08	25.03	18.83	16.34	1.06	0.62	28.91	13.42	2.72
1200	20.82	24.92	18.46	15.98	1.06	0.61	28.80	13.40	2.63
1300	20.57	24.82	18.26	15.79	1.07	0.59	28.73	13.51	2.76
1400	20.33	24.73	17.94	15.58	1.07	0.58	28.21	13.57	2.71
1500	20.08	24.65	17.80	15.37	1.08	0.57	28.44	13.34	2.77
1600	19.82	24.57	17.58	15.22	1.09	0.56	28.53	13.33	2.72
1700	19.59	24.46	17.52	15.12	1.10	0.55	29.01	13.24	2.76
1800	19.34	24.37	17.51	15.06	1.11	0.54	28.57	13.39	2.76
1900	19.11	24.32	17.42	14.99	1.12	0.53	28.11	13.20	2.68
2000	18.86	24.21	17.46	14.93	1.13	0.52	28.11	13.29	2.71
2100	18.64	24.13	17.50	14.87	1.14	0.51	27.49	13.16	2.69
2200	18.41	24.06	17.50	14.83	1.15	0.50	27.49	13.05	2.65
2300	18.19	24.02	17.49	14.81	1.17	0.49	27.17	12.84	2.67
2400	17.96	23.96	17.53	14.81	1.18	0.49	27.04	12.61	2.57
2500	17.74	23.92	17.45	14.81	1.20	0.48	26.90	12.51	2.71
2600	17.54	23.85	17.47	14.94	1.21	0.47	26.63	12.09	2.64
2700	17.33	23.76	17.52	14.99	1.23	0.47	26.65	11.99	2.77
2800	17.13	23.73	17.53	15.07	1.24	0.46	26.14	11.60	2.66
2900	16.93	23.66	17.50	15.12	1.26	0.45	26.12	11.80	2.76
3000	16.73	23.59	17.47	15.20	1.27	0.45	25.77	11.24	2.88

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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 = 35mA, Vd = 3.42V @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	23.08	25.71	37.23	23.12	1.04	0.74	27.58	13.34	2.16
100	23.05	25.72	37.81	24.02	1.04	0.73	28.14	13.31	2.16
150	23.02	25.63	33.36	24.38	1.04	0.74	28.04	13.42	2.16
200	22.95	25.65	30.59	23.93	1.04	0.73	28.01	13.36	2.16
250	22.88	25.65	29.05	23.43	1.05	0.73	27.37	13.40	2.18
300	22.81	25.62	27.89	22.68	1.05	0.72	28.24	13.35	2.25
350	22.74	25.58	26.86	22.21	1.05	0.72	28.19	13.34	2.12
400	22.65	25.54	25.94	21.72	1.05	0.71	27.78	13.28	2.15
450	22.57	25.50	25.20	21.33	1.05	0.71	27.83	13.24	2.14
500	22.47	25.42	24.51	20.72	1.05	0.71	27.80	13.31	2.12
550	22.36	25.41	23.97	20.30	1.05	0.70	27.99	13.30	2.17
600	22.26	25.35	23.51	19.88	1.05	0.70	27.83	13.39	2.22
650	22.14	25.32	23.19	19.46	1.05	0.69	27.96	13.30	2.18
700	22.03	25.28	22.63	19.20	1.05	0.68	28.11	13.35	2.12
750	21.93	25.19	21.97	18.89	1.05	0.68	28.20	13.23	2.14
800	21.81	25.16	21.39	18.56	1.05	0.67	28.37	13.25	2.12
850	21.69	25.09	20.91	18.31	1.05	0.67	28.19	13.13	2.15
900	21.57	25.08	20.54	17.93	1.05	0.66	28.53	13.16	2.13
940	21.47	25.04	20.32	17.67	1.05	0.65	28.36	13.12	2.08
1000	21.33	24.97	19.93	17.38	1.05	0.64	28.44	13.12	2.12
1100	21.07	24.88	19.30	16.96	1.06	0.63	28.29	13.18	2.20
1200	20.84	24.80	18.79	16.56	1.06	0.62	28.21	13.08	2.13
1300	20.60	24.69	18.54	16.30	1.07	0.61	28.40	13.27	2.22
1400	20.36	24.60	18.27	15.96	1.07	0.59	28.02	13.31	2.20
1500	20.12	24.53	18.09	15.64	1.08	0.58	28.36	13.27	2.23
1600	19.88	24.41	17.87	15.48	1.08	0.57	28.53	13.25	2.23
1700	19.65	24.35	17.72	15.39	1.09	0.56	29.18	13.20	2.24
1800	19.41	24.29	17.52	15.37	1.10	0.55	29.04	13.28	2.22
1900	19.19	24.18	17.37	15.27	1.11	0.54	28.58	13.22	2.17
2000	18.97	24.10	17.58	15.19	1.12	0.53	28.80	13.29	2.17
2100	18.74	24.04	17.79	15.03	1.13	0.53	28.16	13.21	2.15
2200	18.53	24.00	17.74	14.98	1.14	0.52	28.45	13.19	2.11
2300	18.32	23.91	17.51	14.99	1.15	0.51	28.13	13.08	2.10
2400	18.09	23.86	17.31	15.00	1.17	0.50	28.14	13.07	2.05
2500	17.88	23.80	17.28	14.97	1.18	0.49	28.06	12.99	2.16
2600	17.68	23.74	17.37	14.96	1.19	0.49	27.67	12.68	2.11
2700	17.47	23.68	17.52	14.96	1.21	0.48	27.86	12.62	2.19
2800	17.28	23.63	17.42	15.04	1.22	0.47	27.20	12.28	2.10
2900	17.09	23.56	17.32	15.01	1.23	0.47	27.32	12.44	2.14
3000	16.90	23.53	17.26	15.07	1.25	0.46	26.93	11.98	2.22

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Gain(Power Gain) = S21 (dB)

Reverse Isolation = -S12 (dB)

Output Return Loss = -S22 (dB)

TEST CONDITIONS: Icc = 28mA, Vd = 3.39V @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	22.74	25.58	28.13	28.75	1.05	0.72	24.34	11.73	2.07
100	22.70	25.38	27.60	31.21	1.05	0.73	24.88	11.45	2.11
150	22.65	25.37	26.33	31.44	1.05	0.73	24.72	11.67	2.13
200	22.61	25.33	26.06	29.75	1.05	0.73	24.70	11.63	2.13
250	22.53	25.14	25.95	29.06	1.04	0.74	24.18	11.59	2.15
300	22.48	25.27	25.75	27.53	1.05	0.72	24.91	11.49	2.18
350	22.39	25.25	25.52	26.62	1.05	0.72	24.92	11.52	2.07
400	22.33	25.16	25.15	25.54	1.05	0.72	24.53	11.54	2.10
450	22.25	25.14	24.62	24.72	1.05	0.71	24.61	11.38	2.12
500	22.14	25.14	24.25	23.85	1.05	0.70	24.58	11.51	2.10
550	22.05	25.10	23.93	23.01	1.05	0.70	24.78	11.43	2.12
600	21.94	25.07	23.51	22.34	1.05	0.69	24.67	11.58	2.18
650	21.84	24.99	23.19	21.64	1.05	0.69	24.79	11.38	2.13
700	21.73	24.99	22.67	21.18	1.06	0.68	24.96	11.58	2.06
750	21.62	24.92	22.09	20.74	1.06	0.68	25.03	11.38	2.12
800	21.50	24.90	21.56	20.33	1.06	0.67	25.23	11.43	2.10
850	21.40	24.85	21.14	19.88	1.06	0.66	25.07	11.17	2.10
900	21.28	24.83	20.89	19.42	1.06	0.66	25.41	11.36	2.09
940	21.19	24.77	20.65	19.05	1.06	0.65	25.29	11.30	2.06
1000	21.05	24.72	20.25	18.70	1.06	0.64	25.37	11.30	2.09
1100	20.81	24.63	19.63	18.10	1.07	0.63	25.24	11.38	2.16
1200	20.59	24.58	19.13	17.62	1.07	0.62	25.17	11.22	2.10
1300	20.34	24.46	18.92	17.28	1.08	0.61	25.49	11.48	2.18
1400	20.11	24.40	18.63	16.83	1.08	0.60	25.22	11.48	2.18
1500	19.87	24.36	18.48	16.45	1.09	0.58	25.60	11.45	2.15
1600	19.65	24.28	18.26	16.22	1.10	0.57	25.80	11.45	2.18
1700	19.42	24.21	18.07	16.09	1.11	0.56	26.41	11.40	2.18
1800	19.19	24.12	17.82	15.99	1.11	0.55	26.50	11.44	2.17
1900	18.97	24.08	17.69	15.83	1.12	0.54	26.14	11.41	2.13
2000	18.76	23.99	17.91	15.71	1.13	0.53	26.59	11.46	2.13
2100	18.54	23.96	18.06	15.54	1.15	0.52	26.18	11.44	2.10
2200	18.33	23.88	17.96	15.43	1.16	0.52	26.53	11.50	2.08
2300	18.11	23.81	17.67	15.41	1.17	0.51	26.43	11.46	2.05
2400	17.89	23.79	17.48	15.37	1.18	0.50	26.51	11.62	2.01
2500	17.68	23.74	17.43	15.30	1.20	0.49	26.55	11.69	2.11
2600	17.49	23.69	17.44	15.25	1.21	0.48	26.18	11.55	2.05
2700	17.28	23.65	17.56	15.24	1.23	0.48	26.38	11.57	2.15
2800	17.09	23.60	17.42	15.28	1.24	0.47	25.85	11.29	2.05
2900	16.90	23.58	17.31	15.24	1.26	0.46	26.00	11.47	2.07
3000	16.71	23.50	17.21	15.28	1.27	0.46	25.66	11.08	2.15

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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: I_{cc} = 42mA, V_d = 3.45V @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	23.32	25.90	33.29	20.71	1.04	0.74	30.15	14.36	2.19
100	23.28	25.88	34.25	21.28	1.04	0.74	30.69	14.46	2.21
150	23.24	25.89	33.00	21.48	1.04	0.74	30.65	14.49	2.20
200	23.18	25.81	30.02	21.11	1.04	0.74	30.59	14.50	2.19
250	23.10	25.81	28.16	20.90	1.04	0.73	29.83	14.57	2.23
300	23.03	25.81	26.84	20.32	1.04	0.73	30.84	14.60	2.30
350	22.95	25.78	25.69	20.04	1.04	0.72	30.71	14.44	2.13
400	22.87	25.73	24.87	19.71	1.04	0.72	30.30	14.39	2.18
450	22.78	25.70	24.18	19.40	1.04	0.71	30.27	14.50	2.17
500	22.68	25.60	23.47	19.07	1.04	0.71	30.21	14.53	2.18
550	22.57	25.61	23.02	18.70	1.04	0.70	30.40	14.51	2.21
600	22.46	25.54	22.61	18.45	1.04	0.70	30.15	14.57	2.24
650	22.35	25.48	22.34	18.11	1.04	0.69	30.26	14.57	2.21
700	22.23	25.46	21.90	17.91	1.05	0.68	30.38	14.51	2.15
750	22.12	25.39	21.30	17.66	1.05	0.68	30.45	14.39	2.18
800	22.00	25.33	20.82	17.47	1.05	0.67	30.57	14.38	2.16
850	21.88	25.30	20.35	17.22	1.05	0.66	30.38	14.39	2.16
900	21.76	25.23	20.00	16.96	1.05	0.66	30.60	14.30	2.20
940	21.66	25.21	19.75	16.73	1.05	0.65	30.45	14.24	2.13
1000	21.51	25.12	19.42	16.50	1.05	0.65	30.51	14.27	2.17
1100	21.25	25.03	18.83	16.16	1.05	0.63	30.28	14.26	2.22
1200	21.01	24.94	18.31	15.87	1.05	0.62	30.18	14.24	2.20
1300	20.77	24.83	18.12	15.68	1.06	0.61	30.15	14.38	2.28
1400	20.53	24.71	17.87	15.39	1.06	0.60	29.71	14.47	2.24
1500	20.28	24.64	17.68	15.12	1.07	0.58	30.02	14.30	2.26
1600	20.04	24.56	17.50	15.01	1.07	0.57	30.08	14.31	2.25
1700	19.81	24.45	17.39	14.97	1.08	0.56	30.65	14.28	2.26
1800	19.57	24.35	17.19	14.98	1.09	0.55	30.20	14.38	2.26
1900	19.34	24.28	17.05	14.88	1.10	0.54	29.76	14.25	2.18
2000	19.12	24.18	17.26	14.83	1.11	0.54	29.83	14.35	2.18
2100	18.90	24.12	17.47	14.70	1.12	0.53	29.13	14.20	2.19
2200	18.68	24.05	17.49	14.68	1.13	0.52	29.24	14.10	2.15
2300	18.46	23.97	17.29	14.72	1.14	0.51	28.72	13.93	2.15
2400	18.23	23.90	17.15	14.76	1.15	0.50	28.82	13.81	2.10
2500	18.02	23.84	17.11	14.75	1.17	0.49	28.55	13.65	2.20
2600	17.82	23.75	17.21	14.77	1.18	0.49	28.30	13.25	2.17
2700	17.62	23.73	17.38	14.78	1.19	0.48	28.42	13.14	2.25
2800	17.42	23.66	17.33	14.88	1.21	0.48	27.83	12.79	2.14
2900	17.23	23.58	17.25	14.90	1.22	0.47	27.97	12.96	2.17
3000	17.03	23.50	17.22	14.95	1.23	0.47	27.47	12.51	2.27

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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: I_{cc} = 35mA, V_d = 3.12V @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	22.78	25.50	34.44	25.22	1.05	0.73	26.54	12.44	2.91
100	22.72	25.45	35.14	25.21	1.05	0.73	27.14	12.46	2.96
150	22.68	25.45	33.56	24.49	1.05	0.73	27.12	12.50	2.96
200	22.62	25.46	32.03	23.76	1.05	0.72	27.06	12.50	2.95
250	22.53	25.42	31.24	23.33	1.05	0.72	26.28	12.58	2.99
300	22.46	25.45	30.08	23.03	1.05	0.71	27.22	12.44	3.02
350	22.38	25.39	28.58	22.94	1.05	0.70	27.05	12.36	2.94
400	22.30	25.35	27.19	22.61	1.05	0.70	26.57	12.34	2.98
450	22.19	25.32	25.87	22.39	1.06	0.69	26.51	12.37	2.98
500	22.08	25.27	24.95	21.86	1.06	0.69	26.42	12.33	2.96
550	21.98	25.27	24.09	21.40	1.06	0.68	26.56	12.46	3.04
600	21.86	25.19	23.45	20.94	1.06	0.68	26.37	12.42	3.06
650	21.75	25.12	22.92	20.47	1.06	0.67	26.45	12.44	3.05
700	21.62	25.08	22.36	20.16	1.06	0.66	26.57	12.32	2.98
750	21.50	25.07	21.71	19.82	1.06	0.65	26.63	12.30	2.99
800	21.38	25.00	21.14	19.54	1.06	0.65	26.73	12.18	3.01
850	21.27	24.95	20.57	19.37	1.07	0.64	26.57	12.17	3.02
900	21.13	24.91	20.15	19.07	1.07	0.64	26.79	12.12	3.02
940	21.04	24.88	19.81	18.84	1.07	0.63	26.65	12.00	2.98
1000	20.88	24.81	19.36	18.55	1.07	0.62	26.66	12.09	3.01
1100	20.63	24.76	18.87	18.05	1.08	0.61	26.46	12.08	3.09
1200	20.37	24.65	18.42	17.56	1.08	0.60	26.32	11.95	3.03
1300	20.12	24.58	18.10	17.33	1.09	0.58	26.35	12.12	3.15
1400	19.87	24.50	17.81	17.03	1.10	0.57	25.91	12.17	3.13
1500	19.61	24.42	17.76	16.70	1.11	0.56	26.09	11.96	3.15
1600	19.36	24.34	17.62	16.37	1.12	0.55	26.24	11.88	3.15
1700	19.12	24.30	17.64	16.24	1.13	0.53	26.74	11.77	3.13
1800	18.87	24.20	17.65	16.11	1.14	0.53	26.40	11.94	3.17
1900	18.64	24.14	17.60	15.90	1.15	0.52	25.92	11.73	3.06
2000	18.40	24.10	17.70	15.68	1.17	0.51	25.91	11.84	3.12
2100	18.17	24.03	17.76	15.55	1.18	0.50	25.36	11.65	3.12
2200	17.94	23.98	17.70	15.50	1.20	0.49	25.35	11.59	3.04
2300	17.71	23.97	17.58	15.43	1.21	0.48	25.04	11.37	3.11
2400	17.48	23.88	17.53	15.34	1.23	0.47	24.94	11.19	3.01
2500	17.24	23.88	17.32	15.26	1.25	0.46	24.79	11.10	3.17
2600	17.06	23.79	17.22	15.41	1.26	0.46	24.45	10.70	3.07
2700	16.84	23.75	17.12	15.49	1.28	0.45	24.49	10.62	3.21
2800	16.63	23.75	17.01	15.52	1.30	0.44	24.02	10.18	3.11
2900	16.43	23.65	16.92	15.53	1.31	0.44	23.96	10.42	3.10
3000	16.22	23.64	16.85	15.61	1.33	0.43	23.62	9.81	3.26

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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} = 28mA, V_d = 3.09V @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	22.34	24.92	24.66	38.63	1.04	0.74	23.76	11.00	2.85
100	22.28	24.94	25.71	37.49	1.04	0.74	24.33	10.95	2.91
150	22.23	25.01	26.13	33.92	1.05	0.73	24.32	11.14	2.92
200	22.18	24.97	26.18	30.96	1.05	0.72	24.25	11.15	2.94
250	22.10	24.98	26.20	29.95	1.05	0.72	23.55	11.07	2.95
300	22.04	24.98	25.30	28.79	1.05	0.71	24.38	10.97	2.99
350	21.94	24.94	24.85	27.98	1.06	0.71	24.27	10.98	2.91
400	21.87	24.90	24.02	27.01	1.06	0.70	23.80	10.95	2.97
450	21.78	24.88	23.27	26.25	1.06	0.70	23.79	10.84	2.96
500	21.67	24.88	23.00	25.43	1.06	0.69	23.70	10.92	2.94
550	21.57	24.85	22.43	24.51	1.06	0.68	23.86	10.97	2.94
600	21.45	24.81	22.18	23.77	1.06	0.68	23.73	11.08	3.01
650	21.35	24.79	21.80	23.06	1.07	0.67	23.81	10.90	3.01
700	21.24	24.69	21.52	22.57	1.07	0.67	23.94	10.93	2.93
750	21.13	24.66	21.04	22.10	1.07	0.66	24.00	10.82	2.96
800	21.00	24.66	20.56	21.67	1.07	0.65	24.16	10.77	2.94
850	20.90	24.62	20.12	21.26	1.07	0.64	24.02	10.62	2.96
900	20.77	24.57	19.81	20.92	1.08	0.64	24.30	10.75	2.99
940	20.68	24.56	19.53	20.52	1.08	0.63	24.21	10.65	2.95
1000	20.53	24.51	19.15	20.13	1.08	0.62	24.23	10.65	2.96
1100	20.28	24.47	18.72	19.39	1.09	0.61	24.06	10.72	3.05
1200	20.05	24.39	18.35	18.81	1.09	0.60	23.98	10.54	3.01
1300	19.79	24.33	18.09	18.50	1.10	0.58	24.18	10.79	3.10
1400	19.55	24.27	17.85	18.11	1.11	0.57	23.84	10.74	3.04
1500	19.31	24.19	17.81	17.64	1.12	0.56	24.09	10.68	3.12
1600	19.06	24.14	17.68	17.26	1.13	0.55	24.31	10.61	3.10
1700	18.83	24.08	17.67	17.03	1.14	0.54	24.87	10.52	3.10
1800	18.58	24.04	17.65	16.83	1.16	0.52	24.80	10.68	3.13
1900	18.37	23.98	17.58	16.52	1.17	0.52	24.33	10.52	3.01
2000	18.13	23.91	17.62	16.27	1.18	0.51	24.54	10.65	3.08
2100	17.91	23.89	17.58	16.11	1.20	0.50	24.03	10.51	3.04
2200	17.68	23.88	17.50	16.01	1.22	0.49	24.14	10.53	3.02
2300	17.46	23.77	17.32	15.91	1.23	0.48	23.94	10.31	3.05
2400	17.23	23.76	17.25	15.76	1.25	0.47	23.89	10.32	2.95
2500	17.00	23.78	17.01	15.63	1.27	0.46	23.76	10.28	3.05
2600	16.81	23.70	16.86	15.73	1.28	0.46	23.41	9.90	2.98
2700	16.60	23.67	16.72	15.78	1.30	0.45	23.46	9.86	3.16
2800	16.39	23.67	16.59	15.78	1.32	0.44	23.02	9.44	3.08
2900	16.19	23.61	16.50	15.79	1.34	0.43	22.99	9.69	3.05
3000	15.99	23.63	16.44	15.83	1.36	0.42	22.77	9.05	3.23

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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 = 42mA, Vd = 3.14V @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	23.07	28.99	13.28	2.96	1.06	0.71	28.99	13.28	2.96
100	23.01	29.60	13.42	2.99	1.05	0.72	29.60	13.42	2.99
150	22.96	29.67	13.36	3.02	1.05	0.72	29.67	13.36	3.02
200	22.89	29.48	13.33	3.02	1.05	0.73	29.48	13.33	3.02
250	22.81	28.53	13.47	3.04	1.05	0.71	28.53	13.47	3.04
300	22.73	29.54	13.39	3.07	1.05	0.72	29.54	13.39	3.07
350	22.64	29.30	13.28	2.98	1.05	0.70	29.30	13.28	2.98
400	22.56	28.80	13.21	3.02	1.05	0.71	28.80	13.21	3.02
450	22.46	28.62	13.33	3.06	1.05	0.70	28.62	13.33	3.06
500	22.34	28.48	13.22	3.01	1.05	0.69	28.48	13.22	3.01
550	22.23	28.53	13.32	3.05	1.05	0.68	28.53	13.32	3.05
600	22.12	28.22	13.26	3.09	1.06	0.68	28.22	13.26	3.09
650	22.00	28.24	13.37	3.08	1.06	0.67	28.24	13.37	3.08
700	21.87	28.28	13.08	3.02	1.06	0.66	28.28	13.08	3.02
750	21.75	28.26	13.10	3.06	1.06	0.66	28.26	13.10	3.06
800	21.62	28.22	12.91	3.06	1.06	0.65	28.22	12.91	3.06
850	21.50	28.07	13.05	3.07	1.06	0.64	28.07	13.05	3.07
900	21.37	28.09	12.80	3.09	1.06	0.64	28.09	12.80	3.09
940	21.27	27.95	12.72	2.99	1.06	0.63	27.95	12.72	2.99
1000	21.10	27.85	12.79	3.02	1.07	0.62	27.85	12.79	3.02
1100	20.84	27.57	12.70	3.16	1.07	0.61	27.57	12.70	3.16
1200	20.59	27.39	12.65	3.07	1.07	0.60	27.39	12.65	3.07
1300	20.32	27.19	12.71	3.20	1.08	0.58	27.19	12.71	3.20
1400	20.07	26.73	12.86	3.16	1.09	0.57	26.73	12.86	3.16
1500	19.81	26.86	12.48	3.22	1.10	0.56	26.86	12.48	3.22
1600	19.55	26.85	12.43	3.21	1.11	0.55	26.85	12.43	3.21
1700	19.30	27.12	12.35	3.17	1.12	0.54	27.12	12.35	3.17
1800	19.06	26.56	12.50	3.20	1.13	0.53	26.56	12.50	3.20
1900	18.82	26.17	12.26	3.13	1.14	0.52	26.17	12.26	3.13
2000	18.58	26.04	12.39	3.18	1.15	0.51	26.04	12.39	3.18
2100	18.35	25.47	12.20	3.16	1.17	0.50	25.47	12.20	3.16
2200	18.12	25.47	12.12	3.09	1.18	0.49	25.47	12.12	3.09
2300	17.89	25.09	11.78	3.14	1.20	0.48	25.09	11.78	3.14
2400	17.65	24.97	11.65	3.04	1.21	0.48	24.97	11.65	3.04
2500	17.42	24.80	11.54	3.24	1.23	0.46	24.80	11.54	3.24
2600	17.23	24.49	11.03	3.09	1.25	0.46	24.49	11.03	3.09
2700	17.01	24.48	10.96	3.25	1.26	0.45	24.48	10.96	3.25
2800	16.80	24.04	10.49	3.17	1.28	0.44	24.04	10.49	3.17
2900	16.60	23.98	10.83	3.19	1.29	0.44	23.98	10.83	3.19
3000	16.39	23.69	10.18	3.33	1.32	0.43	23.69	10.18	3.33

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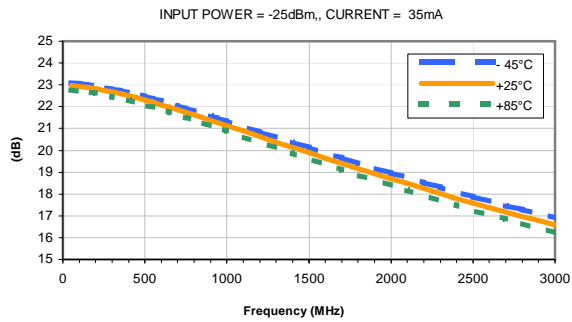


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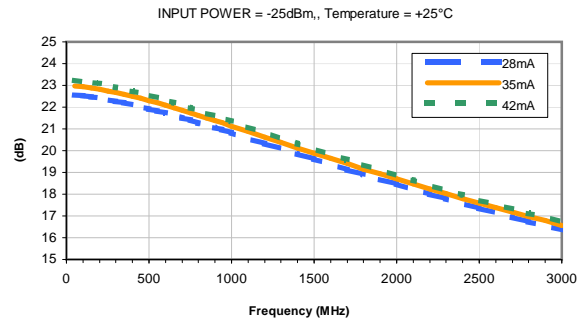


Typical Performance Curves

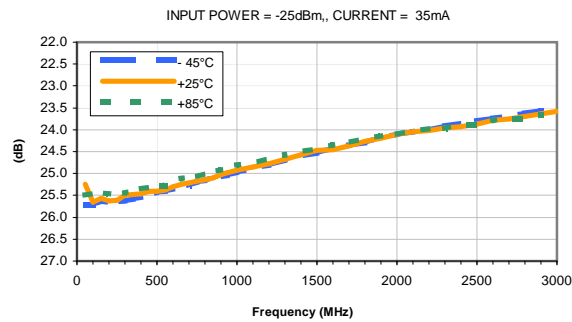
GAIN vs. TEMPERATURE



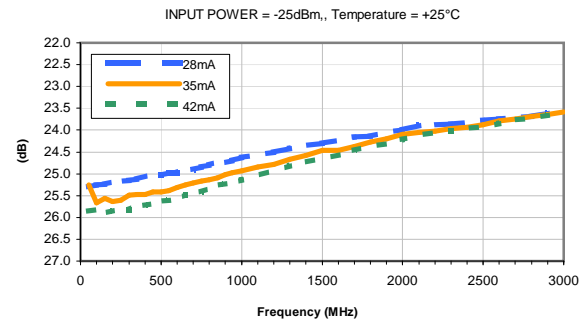
GAIN vs. CURRENT



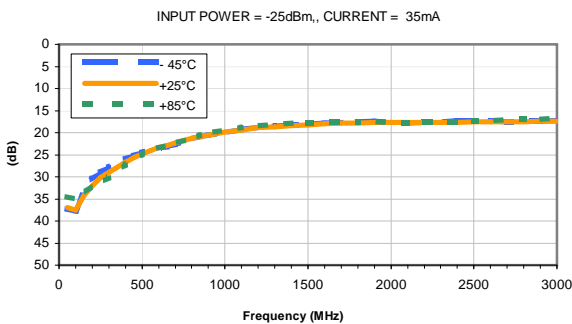
ISOLATION vs. TEMPERATURE



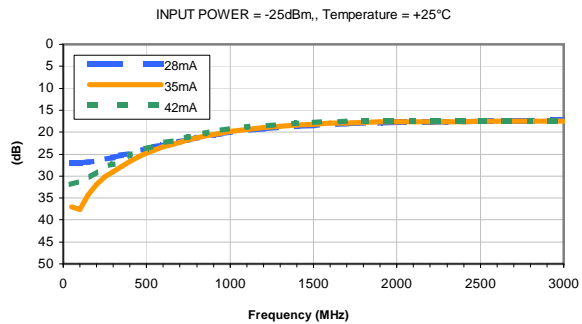
ISOLATION vs. CURRENT



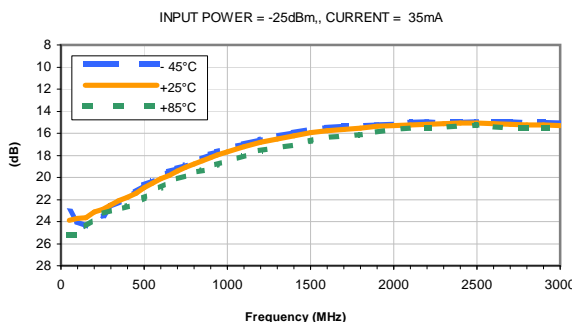
INPUT RETURN LOSS vs. TEMPERATURE



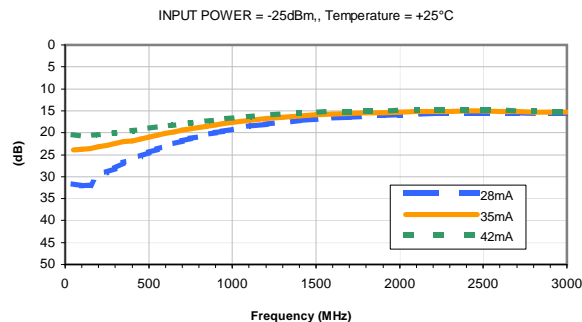
INPUT RETURN LOSS vs. CURRENT



OUTPUT RETURN LOSS vs. TEMPERATURE



OUTPUT RETURN LOSS vs. CURRENT



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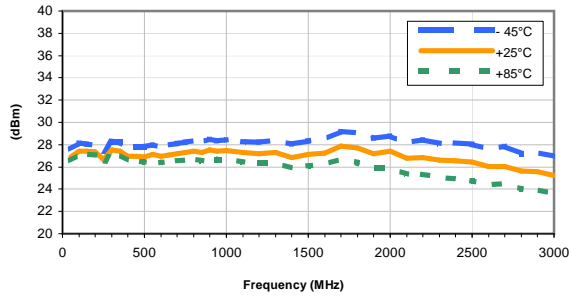
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Typical Performance Curves

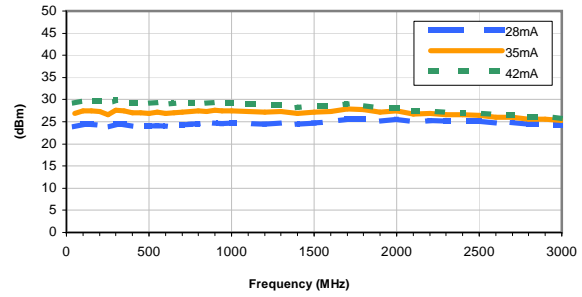
OUTPUT IP3 vs. TEMPERATURE

INPUT POWER = -25dBm, CURRENT = 35mA



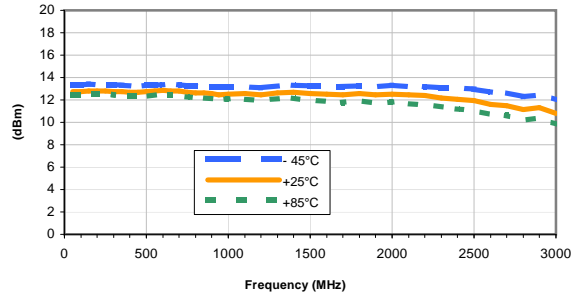
OUTPUT IP3 vs. CURRENT

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



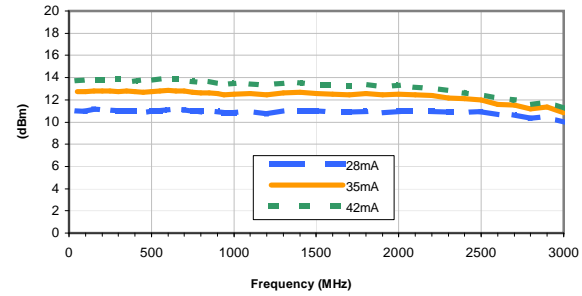
OUTPUT POWER at 1dB Compression vs. TEMPERATURE

CURRENT = 35mA



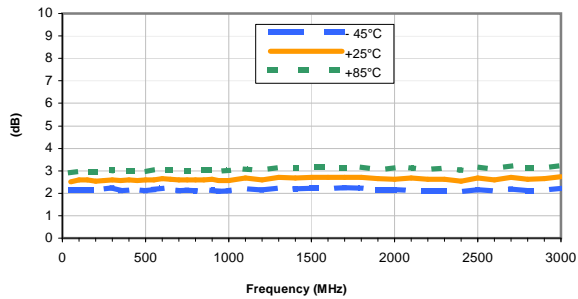
OUTPUT POWER at 1dB Compression vs. CURRENT

Temperature = +25°C



Noise Figure vs. TEMPERATURE

CURRENT = 35mA



Noise Figure vs. CURRENT

Temperature = +25°C

