MMIC Amplifier ERA-5XSM+

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 = 65mA, Vd = 4.77V @Temperature = +25degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability	
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta
50	20.59	24.12	23.53	35.10	1.08	0.67
100	20.57	24.01	23.48	36.05	1.08	0.67
200	20.50	23.96	23.10	35.85	1.08	0.67
300	20.40	23.95	23.00	36.69	1.08	0.67
400	20.29	23.89	22.82	38.38	1.08	0.66
500	20.16	23.85	22.60	39.85	1.09	0.66
600	20.02	23.80	22.44	41.51	1.09	0.65
700	19.86	23.69	22.24	45.59	1.09	0.64
800	19.69	23.64	22.15	58.65	1.10	0.63
900	19.50	23.53	21.93	66.50	1.10	0.63
1000	19.31	23.43	21.76	51.14	1.11	0.62
1100	19.11	23.33	21.70	43.98	1.11	0.62
1200	18.90	23.21	21.54	41.24	1.12	0.61
1300	18.69	23.08	21.56	38.94	1.12	0.60
1400	18.48	22.96	21.55	36.76	1.13	0.60
1500	18.27	22.85	21.73	34.28	1.14	0.59
1600	18.05	22.69	21.61	33.61	1.14	0.58
1700	17.83	22.57	21.71	32.62	1.15	0.58
1800	17.62	22.42	21.87	31.37	1.15	0.57
2000	17.19	22.11	21.98	29.59	1.16	0.57
2100	16.96	21.98	22.05	28.85	1.16	0.56
2200	16.75	21.83	21.91	28.36	1.17	0.55
2400	16.31	21.52	21.87	27.41	1.17	0.55
2600	15.92	21.17	21.39	26.29	1.18	0.54
2800	15.47	20.90	21.01	26.05	1.19	0.53
3000	15.10	20.55	20.51	24.92	1.19	0.53
3200	14.72	20.23	20.13	24.19	1.19	0.52
3400	14.37	19.87	19.81	23.26	1.19	0.52
3600	13.96	19.65	19.98	23.34	1.20	0.51
4000	13.39	18.85	19.23	21.31	1.18	0.52
4500	12.57	18.20	20.40	19.59	1.19	0.51
5000	11.85	17.44	20.37	16.61	1.18	0.52
6000	10.55	16.18	14.66	12.10	1.14	0.54
7000	9.38	15.22	10.98	9.62	1.10	0.56
8000	8.29	14.35	8.32	7.76	1.04	0.59
9000	6.61	13.88	6.09	6.15	1.00	0.60
10000	4.03	13.64	5.00	5.17	1.03	0.55
11000	1.69	13.47	4.49	4.62	1.07	0.50
12000	-0.30	13.18	4.39	4.41	1.12	0.45
13000	-1.90	13.10	4.24	4.34	1.14	0.39

FREQ	IP3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dBm)	(dBm)	(dB)
50	34.78	18.40	2.99
100	35.17	18.36	3.02
200	35.24	18.33	2.97
300	35.12	18.34	3.14
400	34.59	18.25	3.11
500	34.28	18.21	3.13
600	34.13	18.18	3.13
700	34.23	18.15	3.06
800	34.21	18.12	3.03
900	34.10	17.90	3.03
1000	33.81	17.85	3.09
1100	33.62	17.91	3.05
1200	33.38	17.83	3.10
1300	33.01	17.82	3.10
1400	32.69	17.77	3.07
1500	32.56	17.66	3.05
1600	32.72	17.55	3.02
1700	32.81	17.48	3.00
1800	32.25	17.32	3.03
1900	31.79	17.13	3.05
2000	31.50	16.96	3.15
2100	31.10	16.84	3.07
2200	30.67	16.76	2.98
2300	30.39	16.66	3.05
2400	30.08	16.43	3.12
2500	29.85	16.11	3.16
2600	29.65	15.83	3.10
2700	29.66	15.77	3.16
2800	29.50	15.50	3.16
2900	29.27	15.33	3.11
3000	28.98	15.20	3.13
3100	28.56	14.91	3.18
3200	28.24	14.73	3.20
3300	27.95	14.57	3.17
3400	27.64	14.34	3.24
3500	27.56	14.00	3.19
3600	27.36	13.90	3.24
3700	27.11	13.65	3.27
3800	26.90	13.45	3.35
4000	26.20	13.08	3.22

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 = 52mA, Vd = 4.69V @Temperature = +25degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability	
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta
50	20.40	23.82	21.72	29.33	1.08	0.68
100	20.39	23.89	21.60	29.44	1.08	0.67
200	20.31	23.84	21.40	29.40	1.08	0.67
300	20.22	23.77	21.42	29.94	1.08	0.67
400	20.12	23.75	21.37	30.67	1.09	0.66
500	19.99	23.70	21.27	31.25	1.09	0.65
600	19.86	23.63	21.20	31.99	1.09	0.65
700	19.70	23.55	21.10	33.30	1.10	0.64
800	19.53	23.49	21.11	34.88	1.10	0.64
900	19.35	23.39	20.99	35.82	1.11	0.63
1000	19.16	23.29	20.89	37.44	1.11	0.62
1100	18.97	23.19	20.92	39.13	1.11	0.62
1200	18.76	23.10	20.82	39.85	1.12	0.61
1300	18.56	22.97	20.87	39.87	1.13	0.60
1400	18.36	22.84	20.87	38.77	1.13	0.60
1500	18.16	22.76	21.10	36.69	1.14	0.59
1600	17.93	22.60	20.97	35.68	1.14	0.58
1700	17.71	22.46	21.06	34.39	1.15	0.58
1800	17.50	22.33	21.23	32.91	1.15	0.57
2000	17.08	22.03	21.28	30.58	1.16	0.56
2100	16.86	21.89	21.39	29.63	1.16	0.56
2200	16.64	21.75	21.20	29.32	1.17	0.55
2400	16.22	21.46	21.24	27.79	1.18	0.54
2600	15.82	21.12	20.63	26.72	1.18	0.54
2800	15.38	20.86	20.33	26.32	1.19	0.53
3000	15.02	20.51	19.81	25.05	1.19	0.53
3200	14.63	20.21	19.46	24.52	1.19	0.52
3400	14.27	19.86	19.15	23.55	1.19	0.52
3600	13.90	19.61	19.18	23.30	1.20	0.51
4000	13.30	18.87	18.59	21.67	1.18	0.52
4500	12.40	18.30	20.44	19.99	1.21	0.50
5000	11.76	17.47	19.49	16.78	1.19	0.51
6000	10.49	16.27	14.43	12.48	1.15	0.53
7000	9.29	15.36	10.83	9.96	1.12	0.54
8000	8.09	14.41	8.03	7.90	1.05	0.58
9000	6.41	14.01	5.97	6.32	1.02	0.58
10000	3.88	13.73	4.95	5.35	1.05	0.53
11000	1.49	13.50	4.53	4.83	1.10	0.49
12000	-0.49	13.02	4.43	4.55	1.14	0.44
13000	-2.04	12.90	4.20	4.47	1.14	0.38

FREQ	IP3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dBm)	(dBm)	(dB)
50	31.38	16.70	2.89
100	31.75	16.69	2.93
200	31.82	16.60	2.86
300	31.73	16.67	3.05
400	31.31	16.62	3.04
500	31.25	16.59	3.00
600	31.25	16.54	3.05
700	31.59	16.46	2.98
800	31.80	16.50	2.90
900	31.87	16.35	2.94
1000	31.80	16.35	2.99
1100	31.68	16.39	2.94
1200	31.57	16.38	2.97
1300	31.40	16.32	3.01
1400	31.19	16.29	2.96
1500	31.16	16.26	2.95
1600	31.41	16.22	2.89
1700	31.76	16.30	2.91
1800	31.29	16.25	2.94
1900	30.82	16.21	2.94
2000	30.64	16.14	3.05
2100	30.32	16.10	2.96
2200	30.01	15.96	2.90
2300	29.81	15.84	2.94
2400	29.59	15.66	3.01
2500	29.44	15.43	3.12
2600	29.18	15.22	2.98
2700	29.22	15.15	3.02
2800	29.07	14.92	3.03
2900	28.79	14.79	2.98
3000	28.52	14.59	3.06
3100	28.10	14.31	3.04
3200	27.83	14.16	3.06
3300	27.49	13.99	3.03
3400	27.31	13.84	3.12
3500	27.16	13.48	3.08
3600	26.93	13.36	3.11
3700	26.73	13.07	3.15
3800	26.46	12.93	3.22
4000	25.77	12.48	3.07

Typical Performance Data

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

TEST CONDITIONS: Icc = 78mA, Vd = 4.84V @Temperature = +25degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability	
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta
50	20.72	24.09	25.12	44.79	1.07	0.68
100	20.70	24.19	24.95	47.10	1.08	0.67
200	20.62	24.09	24.50	47.52	1.08	0.67
300	20.53	24.07	24.29	48.87	1.08	0.67
400	20.42	24.02	24.03	50.48	1.08	0.66
500	20.28	23.95	23.66	48.50	1.09	0.66
600	20.13	23.88	23.39	46.37	1.09	0.65
700	19.97	23.79	23.05	43.10	1.09	0.64
800	19.80	23.73	22.91	39.49	1.10	0.64
900	19.61	23.63	22.59	39.17	1.10	0.63
1000	19.41	23.52	22.32	37.65	1.11	0.62
1100	19.21	23.40	22.23	36.01	1.11	0.62
1200	19.00	23.28	22.00	35.13	1.12	0.61
1300	18.79	23.17	22.03	34.17	1.12	0.60
1400	18.57	23.03	21.97	33.10	1.13	0.60
1500	18.36	22.93	22.15	31.50	1.13	0.59
1600	18.14	22.76	22.04	31.31	1.14	0.59
1700	17.91	22.62	22.13	30.61	1.14	0.58
1800	17.69	22.48	22.34	29.77	1.15	0.57
2000	17.26	22.17	22.48	28.52	1.15	0.57
2100	17.03	22.03	22.55	27.91	1.16	0.56
2200	16.82	21.86	22.42	27.62	1.16	0.56
2400	16.39	21.57	22.43	26.79	1.17	0.55
2600	15.99	21.21	22.04	25.85	1.17	0.54
2800	15.54	20.92	21.61	25.65	1.18	0.53
3000	15.17	20.57	21.11	24.61	1.18	0.53
3200	14.79	20.26	20.73	23.94	1.19	0.53
3400	14.44	19.87	20.42	22.98	1.18	0.53
3600	14.02	19.65	20.59	23.00	1.20	0.52
4000	13.45	18.87	19.81	21.17	1.18	0.53
4500	12.63	18.18	21.08	19.28	1.18	0.52
5000	11.89	17.50	21.54	16.55	1.18	0.52
6000	10.66	16.16	15.07	12.00	1.14	0.55
7000	9.51	15.16	11.14	9.44	1.09	0.57
8000	8.41	14.29	8.48	7.54	1.03	0.61
9000	6.71	13.85	6.08	5.85	0.99	0.62
10000	4.20	13.66	4.99	4.97	1.02	0.57
11000	1.79	13.41	4.56	4.56	1.07	0.51
12000	-0.21	12.95	4.49	4.45	1.11	0.45
13000	-1.79	12.93	4.34	4.37	1.13	0.39

FREQ	IP3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dBm)	(dBm)	(dB)
50	37.51	19.34	3.07
100	37.90	19.36	3.09
200	37.88	19.32	3.05
300	37.52	19.36	3.23
400	36.86	19.15	3.20
500	36.05	19.11	3.18
600	35.60	19.09	3.21
700	35.32	19.10	3.16
800	34.99	18.97	3.12
900	34.66	18.58	3.12
1000	34.30	18.51	3.17
1100	34.06	18.55	3.12
1200	33.73	18.50	3.18
1300	33.29	18.44	3.20
1400	32.97	18.33	3.16
1500	32.76	18.15	3.14
1600	32.83	18.02	3.12
1700	32.74	17.91	3.10
1800	32.22	17.69	3.11
1900	31.80	17.46	3.12
2000	31.55	17.28	3.20
2100	31.19	17.17	3.18
2200	30.72	17.11	3.09
2300	30.38	17.03	3.19
2400	30.13	16.82	3.25
2500	29.81	16.46	3.27
2600	29.67	16.19	3.17
2700	29.63	16.15	3.23
2800	29.47	15.87	3.26
2900	29.28	15.73	3.20
3000	29.03	15.63	3.24
3100	28.59	15.36	3.27
3200	28.34	15.13	3.29
3300	28.00	14.98	3.27
3400	27.76	14.78	3.33
3500	27.60	14.41	3.31
3600	27.44	14.28	3.35
3700	27.22	14.06	3.39
3800	26.94	13.85	3.45
4000	26.27	13.49	3.37

Typical Performance Data

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

TEST CONDITIONS: Icc = 65mA, Vd = 5.01V @Temperature = -45degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability	
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta
50	20.77	24.17	24.15	41.36	1.07	0.68
100	20.76	24.13	24.00	42.05	1.07	0.68
200	20.68	24.09	23.32	40.19	1.07	0.68
300	20.59	24.04	23.62	43.61	1.08	0.67
400	20.49	24.04	23.70	46.55	1.08	0.66
500	20.36	23.95	23.31	46.69	1.08	0.66
600	20.22	23.87	23.07	44.89	1.09	0.66
700	20.06	23.78	22.88	42.27	1.09	0.65
800	19.90	23.71	22.63	41.35	1.09	0.64
900	19.71	23.61	22.34	40.11	1.10	0.64
1000	19.52	23.50	22.25	38.14	1.10	0.63
1100	19.33	23.40	22.18	36.64	1.11	0.62
1200	19.12	23.28	21.85	36.32	1.11	0.62
1300	18.92	23.15	21.88	35.50	1.11	0.61
1400	18.71	23.02	21.94	34.25	1.12	0.61
1500	18.51	22.89	22.12	33.06	1.12	0.60
1600	18.29	22.74	21.96	32.65	1.13	0.60
1700	18.07	22.60	22.20	31.67	1.13	0.59
1800	17.86	22.45	22.45	30.74	1.14	0.59
2000	17.44	22.15	22.41	30.21	1.14	0.58
2100	17.22	22.02	22.57	29.45	1.15	0.57
2200	17.02	21.86	22.85	28.63	1.15	0.57
2400	16.61	21.53	23.24	27.34	1.16	0.56
2600	16.20	21.19	22.61	26.99	1.16	0.56
2800	15.76	20.91	22.45	26.72	1.17	0.55
3000	15.40	20.56	22.08	25.67	1.17	0.55
3200	15.02	20.25	21.43	25.29	1.17	0.54
3400	14.69	19.86	21.29	23.83	1.17	0.55
3600	14.32	19.58	21.49	23.18	1.17	0.54
4000	13.71	18.90	20.76	21.92	1.16	0.54
4500	12.87	18.13	22.29	18.48	1.17	0.54
5000	12.23	17.49	21.62	17.32	1.16	0.54
6000	11.02	16.26	16.65	13.16	1.14	0.56
7000	9.93	15.19	11.83	9.91	1.09	0.60
8000	8.77	14.30	8.13	7.33	1.02	0.64
9000	7.36	13.76	6.29	6.15	0.96	0.63
10000	5.10	13.22	5.29	5.28	0.97	0.59
11000	2.49	13.28	4.44	4.36	1.00	0.55
12000	0.25	12.95	4.21	4.22	1.04	0.49
13000	-1.10	12.47	4.18	4.35	0.99	0.40

FREQ	IP3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dBm)	(dBm)	(dB)
50	35.57	18.65	2.50
100	35.98	18.62	2.53
200	36.04	18.57	2.46
300	36.05	18.61	2.63
400	35.74	18.53	2.59
500	35.56	18.53	2.60
600	35.53	18.45	2.62
700	35.75	18.44	2.55
800	35.81	18.41	2.51
900	35.70	18.26	2.52
1000	35.50	18.23	2.55
1100	35.26	18.27	2.53
1200	35.10	18.23	2.59
1300	34.68	18.18	2.57
1400	34.31	18.17	2.56
1500	34.16	18.12	2.53
1600	34.35	18.06	2.46
1700	34.49	18.08	2.44
1800	33.94	17.95	2.49
1900	33.44	17.83	2.49
2000	33.10	17.69	2.57
2100	32.69	17.58	2.51
2200	32.22	17.50	2.43
2300	31.81	17.42	2.49
2400	31.55	17.20	2.55
2500	31.27	16.90	2.60
2600	31.13	16.66	2.56
2700	31.08	16.58	2.57
2800	30.99	16.31	2.61
2900	30.75	16.16	2.53
3000	30.46	16.01	2.57
3100	30.06	15.70	2.55
3200	29.63	15.55	2.63
3300	29.36	15.36	2.59
3400	29.07	15.19	2.66
3500	28.94	14.80	2.63
3600	28.74	14.67	2.72
3700	28.48	14.44	2.65
3800	28.28	14.27	2.72
4000	27.58	13.94	2.63

Typical Performance Data

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

TEST CONDITIONS: Icc = 52mA, Vd = 4.93V @Temperature = -45degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability	
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta
50	20.62	23.98	22.54	32.90	1.07	0.68
100	20.60	23.95	22.36	33.02	1.07	0.68
200	20.53	24.00	21.88	32.04	1.08	0.67
300	20.44	23.94	22.20	33.86	1.08	0.67
400	20.34	23.90	22.33	36.24	1.08	0.66
500	20.22	23.83	22.11	36.71	1.08	0.66
600	20.08	23.75	22.01	37.47	1.09	0.66
700	19.93	23.68	21.92	39.64	1.09	0.65
800	19.77	23.60	21.76	42.52	1.09	0.64
900	19.59	23.50	21.59	43.67	1.10	0.64
1000	19.39	23.40	21.58	47.60	1.10	0.63
1100	19.21	23.28	21.56	52.10	1.11	0.63
1200	19.01	23.16	21.31	50.85	1.11	0.62
1300	18.81	23.04	21.38	46.06	1.11	0.61
1400	18.61	22.92	21.46	41.56	1.12	0.61
1500	18.41	22.79	21.64	38.11	1.12	0.60
1600	18.19	22.66	21.55	37.18	1.13	0.60
1700	17.97	22.53	21.76	35.22	1.13	0.59
1800	17.77	22.38	22.00	33.50	1.14	0.59
2000	17.35	22.08	21.96	32.11	1.14	0.58
2100	17.13	21.95	22.12	31.21	1.15	0.57
2200	16.93	21.80	22.34	30.04	1.15	0.57
2400	16.52	21.48	22.62	28.33	1.16	0.56
2600	16.12	21.15	21.97	27.71	1.16	0.56
2800	15.69	20.89	21.81	27.36	1.17	0.55
3000	15.33	20.54	21.38	26.12	1.17	0.54
3200	14.95	20.21	20.80	25.69	1.17	0.54
3400	14.62	19.83	20.62	24.09	1.17	0.54
3600	14.25	19.55	20.83	23.47	1.17	0.54
4000	13.63	18.89	20.10	22.19	1.17	0.54
4500	12.79	18.14	21.39	18.74	1.17	0.53
5000	12.15	17.52	20.71	17.56	1.17	0.53
6000	10.93	16.31	16.13	13.38	1.14	0.55
7000	9.83	15.25	11.53	10.11	1.10	0.58
8000	8.65	14.37	7.96	7.54	1.02	0.63
9000	7.22	13.84	6.18	6.34	0.97	0.62
10000	4.96	13.29	5.22	5.45	0.98	0.58
11000	2.35	13.34	4.39	4.49	1.02	0.54
12000	0.11	13.01	4.17	4.32	1.05	0.48
13000	-1.26	12.52	4.13	4.40	0.99	0.40

FREQ	IP3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dBm)	(dBm)	(dB)
50	31.99	16.82	2.38
100	32.30	16.67	2.45
200	32.30	16.62	2.40
300	32.36	16.69	2.55
400	32.09	16.71	2.56
500	32.13	16.68	2.53
600	32.18	16.58	2.57
700	32.61	16.53	2.51
800	32.89	16.57	2.42
900	32.98	16.42	2.42
1000	32.94	16.48	2.49
1100	32.82	16.53	2.43
1200	32.82	16.47	2.50
1300	32.67	16.41	2.52
1400	32.52	16.34	2.47
1500	32.47	16.36	2.45
1600	32.75	16.33	2.41
1700	33.11	16.50	2.39
1800	32.69	16.48	2.40
1900	32.28	16.48	2.46
2000	32.06	16.51	2.49
2100	31.75	16.55	2.45
2200	31.40	16.40	2.37
2300	31.22	16.26	2.41
2400	30.96	16.14	2.49
2500	30.72	16.05	2.54
2600	30.53	15.89	2.49
2700	30.57	15.87	2.49
2800	30.38	15.63	2.52
2900	30.19	15.47	2.48
3000	29.95	15.35	2.51
3100	29.53	15.08	2.49
3200	29.16	14.95	2.53
3300	28.89	14.78	2.52
3400	28.54	14.59	2.56
3500	28.42	14.22	2.55
3600	28.22	14.09	2.62
3700	28.03	13.88	2.57
3800	27.79	13.69	2.62
4000	27.09	13.33	2.56

Typical Performance Data

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

TEST CONDITIONS: Icc = 78mA, Vd = 5.08V @Temperature = -45degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		FREQ	IP3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta	(MHz)	(dBm)	(dBm)	(dB)
50	20.88	24.22	25.68	45.24	1.07	0.68	50	38.35	19.76	2.54
100	20.86	24.27	25.39	47.02	1.08	0.68	100	38.92	19.77	2.59
200	20.79	24.20	24.53	48.64	1.08	0.68	200	38.87	19.72	2.54
300	20.70	24.15	24.83	41.77	1.08	0.67	300	38.78	19.77	2.68
400	20.59	24.11	24.79	38.41	1.08	0.67	400	38.34	19.60	2.69
500	20.46	24.06	24.25	38.38	1.08	0.66	500	37.74	19.56	2.65
600	20.32	23.97	23.87	37.56	1.09	0.66	600	37.37	19.56	2.67
700	20.16	23.88	23.58	35.72	1.09	0.65	700	37.18	19.55	2.63
800	19.99	23.80	23.22	35.00	1.09	0.64	800	36.84	19.49	2.55
900	19.80	23.69	22.84	34.55	1.10	0.64	900	36.55	19.21	2.57
1000	19.61	23.59	22.67	33.36	1.10	0.63	1000	36.15	19.15	2.63
1100	19.41	23.46	22.57	32.53	1.10	0.63	1100	35.89	19.19	2.57
1200	19.20	23.35	22.20	32.38	1.11	0.62	1200	35.54	19.14	2.65
1300	19.00	23.22	22.18	32.01	1.11	0.61	1300	35.10	19.14	2.64
1400	18.79	23.09	22.22	31.24	1.12	0.61	1400	34.73	19.04	2.60
1500	18.59	22.94	22.38	30.47	1.12	0.60	1500	34.51	18.88	2.60
1600	18.37	22.80	22.21	30.34	1.13	0.60	1600	34.63	18.78	2.56
1700	18.14	22.67	22.42	29.63	1.13	0.59	1700	34.52	18.67	2.54
1800	17.93	22.49	22.72	29.04	1.13	0.59	1800	34.06	18.46	2.57
2000	17.51	22.18	22.71	28.83	1.14	0.58	1900	33.60	18.27	2.60
2100	17.28	22.05	22.85	28.24	1.15	0.57	2000	33.29	18.06	2.65
2200	17.08	21.90	23.19	27.58	1.15	0.57	2100	32.86	17.98	2.61
2400	16.67	21.56	23.67	26.55	1.15	0.57	2200	32.39	17.92	2.53
2600	16.26	21.21	23.10	26.38	1.16	0.56	2300	31.94	17.86	2.59
2800	15.83	20.94	22.94	26.18	1.17	0.55	2400	31.63	17.64	2.64
3000	15.47	20.58	22.59	25.23	1.17	0.55	2500	31.35	17.32	2.70
3200	15.09	20.27	21.97	24.96	1.17	0.55	2600	31.18	17.06	2.61
3400	14.76	19.87	21.84	23.54	1.16	0.55	2700	31.20	17.00	2.65
3600	14.39	19.58	22.09	22.90	1.17	0.54	2800	31.05	16.73	2.68
4000	13.78	18.89	21.30	21.71	1.16	0.55	2900	30.90	16.60	2.64
4500	12.93	18.11	23.17	18.27	1.16	0.55	3000	30.63	16.47	2.66
5000	12.29	17.47	22.58	17.13	1.16	0.55	3100	30.24	16.22	2.63
6000	11.09	16.24	17.18	13.00	1.13	0.56	3200	29.83	16.05	2.70
7000	10.02	15.14	12.14	9.75	1.08	0.60	3300	29.54	15.83	2.67
8000	8.88	14.23	8.31	7.16	1.01	0.66	3400	29.22	15.64	2.74
9000	7.51	13.70	6.42	5.96	0.96	0.65	3500	29.19	15.30	2.69
10000	5.26	13.16	5.37	5.12	0.96	0.61	3600	28.97	15.21	2.83
11000	2.64	13.23	4.50	4.25	0.99	0.56	3700	28.79	14.89	2.76
12000	0.40	12.92	4.26	4.15	1.03	0.50	3800	28.59	14.74	2.80
13000	-0.94	12.42	4.23	4.30	0.97	0.41	4000	27.88	14.43	2.75

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 = 65mA, Vd = 4.61V @Temperature = +85degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		FREQ	IP3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta	(MHz)	(dBm)	(dBm)	(dB)
50	20.47	24.00	22.77	32.26	1.08	0.67	50	34.16	18.14	3.37
100	20.45	23.93	22.96	33.23	1.08	0.67	100	34.62	18.12	3.43
200	20.37	23.92	22.83	33.46	1.08	0.67	200	34.69	18.09	3.33
300	20.28	23.87	22.63	33.94	1.08	0.66	300	34.49	18.11	3.54
400	20.17	23.86	22.31	34.48	1.09	0.66	400	33.87	17.95	3.50
500	20.03	23.74	22.10	35.14	1.09	0.65	500	33.49	17.91	3.51
600	19.89	23.72	21.95	36.13	1.10	0.64	600	33.28	17.90	3.54
700	19.72	23.64	21.76	37.89	1.10	0.64	700	33.28	17.86	3.49
800	19.55	23.58	21.61	39.67	1.10	0.63	800	33.20	17.78	3.45
900	19.36	23.47	21.39	40.64	1.11	0.62	900	33.05	17.52	3.41
1000	19.16	23.39	21.23	41.76	1.12	0.62	1000	32.76	17.44	3.52
1100	18.96	23.27	21.17	41.31	1.12	0.61	1100	32.55	17.50	3.46
1200	18.74	23.16	20.99	39.98	1.13	0.60	1200	32.31	17.44	3.48
1300	18.53	23.05	20.98	38.27	1.13	0.59	1300	31.94	17.38	3.52
1400	18.32	22.92	20.95	36.54	1.14	0.59	1400	31.64	17.31	3.49
1500	18.11	22.82	21.14	34.55	1.14	0.58	1500	31.49	17.12	3.45
1600	17.88	22.66	20.99	33.43	1.15	0.58	1600	31.64	17.02	3.43
1700	17.65	22.52	21.09	32.30	1.15	0.57	1700	31.64	16.94	3.44
1800	17.43	22.40	21.23	31.11	1.16	0.56	1800	31.06	16.71	3.45
2000	17.00	22.08	21.33	29.01	1.17	0.56	1900	30.59	16.52	3.47
2100	16.77	21.97	21.40	28.32	1.17	0.55	2000	30.28	16.30	3.53
2200	16.55	21.80	21.22	27.87	1.18	0.54	2100	29.88	16.18	3.50
2400	16.11	21.50	21.18	26.68	1.19	0.53	2200	29.48	16.07	3.43
2600	15.71	21.16	20.77	25.43	1.19	0.53	2300	29.16	15.99	3.49
2800	15.26	20.89	20.43	24.99	1.20	0.52	2400	28.90	15.73	3.55
3000	14.88	20.53	19.89	23.89	1.20	0.52	2500	28.63	15.38	3.59
3200	14.49	20.23	19.56	23.28	1.20	0.51	2600	28.46	15.12	3.52
3400	14.13	19.87	19.28	22.30	1.20	0.51	2700	28.40	15.04	3.58
3600	13.74	19.59	19.29	22.05	1.21	0.50	2800	28.19	14.78	3.58
4000	13.11	18.89	18.68	20.75	1.20	0.50	2900	27.99	14.61	3.53
4500	12.24	18.21	19.90	19.00	1.21	0.49	3000	27.70	14.45	3.59
5000	11.54	17.43	19.19	16.24	1.20	0.50	3100	27.27	14.17	3.58
6000	10.20	16.23	14.17	11.99	1.17	0.52	3200	26.99	14.01	3.64
7000	8.95	15.30	10.42	9.47	1.12	0.53	3300	26.66	13.84	3.59
8000	7.69	14.43	7.88	7.69	1.06	0.56	3400	26.40	13.62	3.69
9000	5.91	14.04	6.01	6.31	1.05	0.55	3500	26.27	13.22	3.64
10000	3.33	13.78	5.00	5.29	1.10	0.52	3600	26.12	13.13	3.70
11000	0.88	13.61	4.58	4.70	1.16	0.47	3700	25.84	12.88	3.72
12000	-1.09	13.05	4.53	4.63	1.22	0.42	3800	25.56	12.69	3.79
13000	-2.40	12.69	4.41	4.62	1.21	0.36	4000	24.87	12.36	3.70

Typical Performance Data

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

TEST CONDITIONS: Icc = 52mA, Vd = 4.54V @Temperature = +85degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability	
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta
50	20.27	23.73	21.10	27.11	1.08	0.67
100	20.25	23.75	21.17	27.62	1.08	0.67
200	20.18	23.73	21.05	27.89	1.08	0.67
300	20.09	23.71	21.02	28.19	1.08	0.66
400	19.98	23.69	20.85	28.53	1.09	0.66
500	19.85	23.63	20.75	28.90	1.09	0.65
600	19.71	23.57	20.68	29.40	1.10	0.64
700	19.55	23.49	20.57	30.38	1.10	0.64
800	19.38	23.42	20.55	31.27	1.10	0.63
900	19.19	23.33	20.41	31.81	1.11	0.62
1000	19.00	23.24	20.31	32.60	1.12	0.62
1100	18.81	23.13	20.31	33.55	1.12	0.61
1200	18.60	23.02	20.20	34.01	1.13	0.60
1300	18.39	22.93	20.23	34.07	1.13	0.59
1400	18.18	22.81	20.22	33.92	1.14	0.59
1500	17.97	22.70	20.40	33.74	1.14	0.58
1600	17.76	22.56	20.29	32.78	1.15	0.58
1700	17.53	22.41	20.38	32.08	1.15	0.57
1800	17.32	22.29	20.49	31.19	1.16	0.56
2000	16.89	22.00	20.57	29.22	1.17	0.55
2100	16.66	21.87	20.64	28.66	1.17	0.55
2200	16.44	21.73	20.46	28.16	1.18	0.54
2400	16.01	21.42	20.38	26.95	1.19	0.53
2600	15.61	21.11	19.98	25.59	1.19	0.53
2800	15.17	20.83	19.69	25.16	1.20	0.52
3000	14.79	20.49	19.17	24.02	1.20	0.51
3200	14.40	20.20	18.88	23.44	1.21	0.51
3400	14.03	19.84	18.61	22.45	1.20	0.50
3600	13.65	19.58	18.60	22.26	1.21	0.50
4000	13.03	18.88	18.07	20.98	1.20	0.50
4500	12.15	18.21	19.18	19.30	1.22	0.49
5000	11.46	17.45	18.55	16.52	1.20	0.50
6000	10.11	16.29	13.87	12.25	1.18	0.51
7000	8.84	15.38	10.24	9.72	1.14	0.52
8000	7.57	14.53	7.77	7.93	1.08	0.54
9000	5.79	14.12	5.95	6.53	1.06	0.54
10000	3.21	13.86	4.96	5.45	1.11	0.51
11000	0.75	13.69	4.54	4.80	1.18	0.46
12000	-1.22	13.13	4.48	4.69	1.23	0.41
13000	-2.56	12.75	4.37	4.65	1.22	0.36

FREQ	IP3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dBm)	(dBm)	(dB)
50	30.98	16.58	3.32
100	31.35	16.54	3.37
200	31.51	16.50	3.28
300	31.35	16.53	3.45
400	30.84	16.45	3.46
500	30.72	16.46	3.44
600	30.71	16.38	3.47
700	30.97	16.35	3.41
800	31.10	16.35	3.37
900	31.15	16.19	3.39
1000	31.01	16.17	3.44
1100	30.90	16.20	3.39
1200	30.77	16.19	3.42
1300	30.60	16.14	3.45
1400	30.36	16.12	3.42
1500	30.34	16.04	3.39
1600	30.56	15.95	3.33
1700	30.87	16.02	3.34
1800	30.35	15.90	3.36
1900	29.87	15.80	3.39
2000	29.63	15.68	3.48
2100	29.30	15.61	3.42
2200	28.97	15.45	3.35
2300	28.76	15.34	3.39
2400	28.53	15.10	3.46
2500	28.28	14.80	3.49
2600	28.17	14.59	3.45
2700	28.05	14.49	3.49
2800	27.89	14.23	3.53
2900	27.59	14.07	3.46
3000	27.36	13.90	3.51
3100	26.94	13.64	3.50
3200	26.63	13.43	3.51
3300	26.42	13.31	3.52
3400	26.14	13.10	3.62
3500	26.01	12.74	3.52
3600	25.85	12.67	3.58
3700	25.57	12.35	3.64
3800	25.26	12.18	3.65
4000	24.59	11.86	3.56

Typical Performance Data

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

TEST CONDITIONS: Icc = 78mA, Vd = 4.68V @Temperature = +85degC

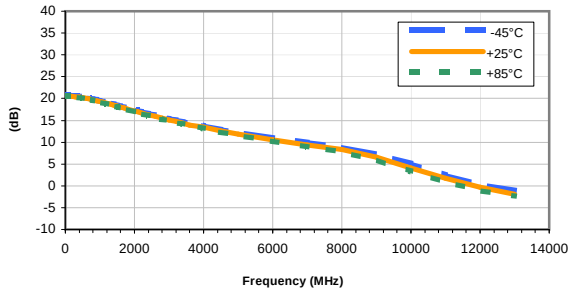
FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability	
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Delta
50	20.61	24.13	24.52	38.71	1.08	0.67
100	20.58	24.09	24.52	40.99	1.08	0.67
200	20.51	24.02	24.22	42.28	1.08	0.67
300	20.41	24.01	23.98	43.42	1.08	0.66
400	20.29	23.95	23.56	45.69	1.09	0.66
500	20.16	23.89	23.18	47.24	1.09	0.65
600	20.01	23.82	22.93	51.38	1.09	0.65
700	19.84	23.74	22.60	63.49	1.10	0.64
800	19.67	23.67	22.39	48.67	1.10	0.63
900	19.47	23.57	22.10	46.82	1.11	0.62
1000	19.27	23.47	21.85	43.28	1.11	0.62
1100	19.06	23.35	21.77	39.58	1.12	0.61
1200	18.84	23.26	21.52	38.01	1.13	0.60
1300	18.63	23.13	21.50	36.37	1.13	0.60
1400	18.41	23.00	21.47	34.85	1.14	0.59
1500	18.19	22.91	21.62	32.88	1.14	0.58
1600	17.97	22.73	21.49	32.25	1.15	0.58
1700	17.73	22.60	21.57	31.25	1.15	0.57
1800	17.51	22.46	21.74	30.23	1.16	0.56
2000	17.07	22.14	21.89	28.49	1.17	0.56
2100	16.84	22.01	21.95	27.84	1.17	0.55
2200	16.62	21.87	21.79	27.47	1.18	0.54
2400	16.18	21.54	21.77	26.38	1.18	0.54
2600	15.77	21.20	21.38	25.24	1.19	0.53
2800	15.32	20.91	21.01	24.84	1.20	0.52
3000	14.94	20.56	20.43	23.78	1.20	0.52
3200	14.54	20.25	20.09	23.20	1.20	0.51
3400	14.18	19.87	19.79	22.20	1.20	0.51
3600	13.79	19.60	19.76	21.95	1.21	0.50
4000	13.17	18.89	19.13	20.64	1.19	0.51
4500	12.30	18.21	20.44	18.82	1.21	0.50
5000	11.60	17.40	19.68	16.07	1.19	0.51
6000	10.26	16.20	14.35	11.84	1.16	0.52
7000	9.01	15.24	10.53	9.33	1.11	0.54
8000	7.76	14.37	7.95	7.55	1.06	0.57
9000	5.99	13.97	6.05	6.17	1.04	0.56
10000	3.40	13.73	5.03	5.18	1.09	0.53
11000	0.95	13.58	4.60	4.61	1.15	0.48
12000	-1.00	13.03	4.56	4.57	1.21	0.42
13000	-2.32	12.67	4.44	4.60	1.20	0.37

FREQ	IP3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dBm)	(dBm)	(dB)
50	36.92	18.94	3.46
100	37.47	18.98	3.48
200	37.31	18.95	3.42
300	36.72	19.00	3.61
400	36.02	18.76	3.59
500	35.19	18.67	3.59
600	34.66	18.65	3.60
700	34.31	18.66	3.58
800	33.90	18.51	3.51
900	33.60	18.08	3.55
1000	33.17	17.96	3.57
1100	32.94	17.99	3.53
1200	32.62	17.93	3.57
1300	32.17	17.87	3.62
1400	31.88	17.72	3.55
1500	31.68	17.53	3.54
1600	31.78	17.39	3.52
1700	31.51	17.28	3.52
1800	30.96	17.04	3.51
1900	30.57	16.83	3.54
2000	30.24	16.62	3.64
2100	29.87	16.48	3.62
2200	29.42	16.41	3.52
2300	29.11	16.33	3.57
2400	28.82	16.10	3.67
2500	28.55	15.74	3.68
2600	28.34	15.46	3.58
2700	28.35	15.39	3.69
2800	28.16	15.10	3.71
2900	27.92	14.95	3.66
3000	27.66	14.82	3.69
3100	27.23	14.54	3.72
3200	26.95	14.36	3.75
3300	26.62	14.20	3.71
3400	26.35	13.99	3.82
3500	26.21	13.63	3.79
3600	26.02	13.45	3.81
3700	25.76	13.30	3.85
3800	25.45	13.05	3.89
4000	24.80	12.68	3.83

Typical Performance Curves

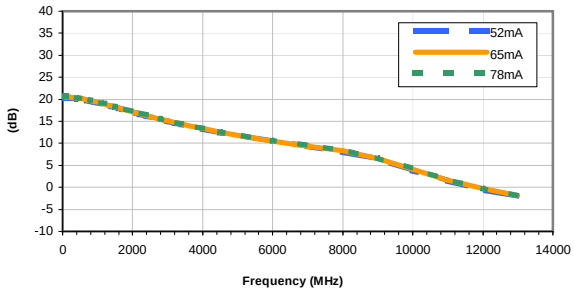
GAIN vs. TEMPERATURE

INPUT POWER = -20dBm, CURRENT = 65mA



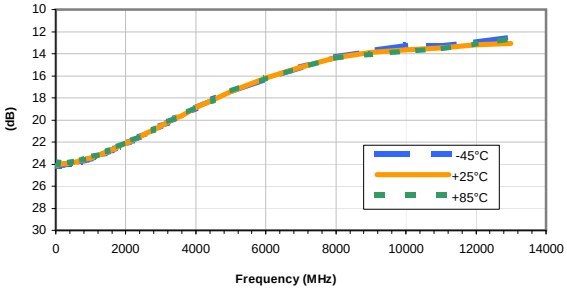
GAIN vs. CURRENT

INPUT POWER = -20dBm, Temperature = +25°C



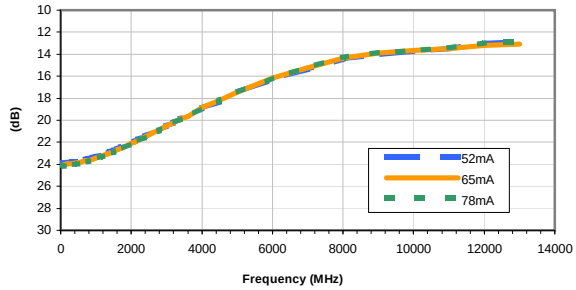
ISOLATION vs. TEMPERATURE

INPUT POWER = -20dBm, CURRENT = 65mA



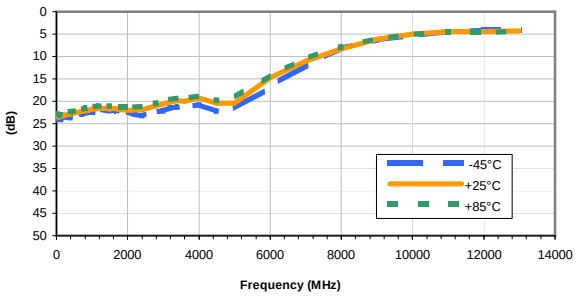
ISOLATION vs. CURRENT

INPUT POWER = -20dBm, Temperature = +25°C



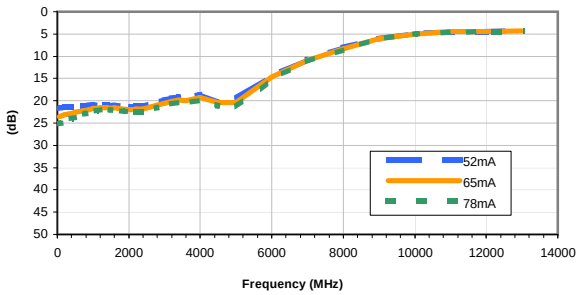
INPUT RETURN LOSS vs. TEMPERATURE

INPUT POWER = -20dBm, CURRENT = 65mA



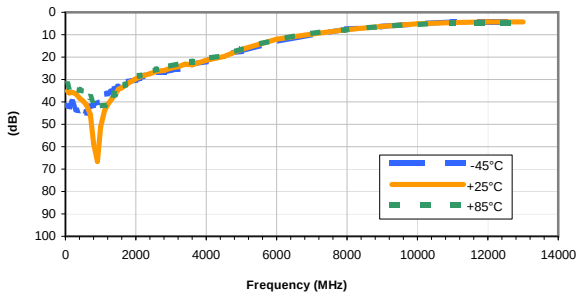
INPUT RETURN LOSS vs. CURRENT

INPUT POWER = -20dBm, Temperature = +25°C



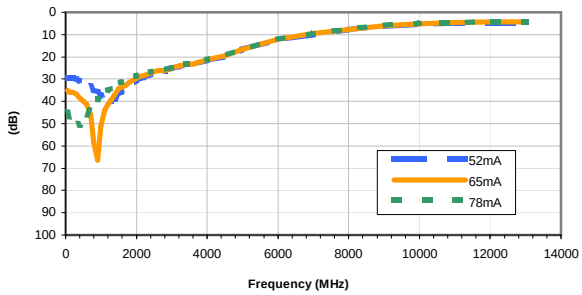
OUTPUT RETURN LOSS vs. TEMPERATURE

INPUT POWER = -20dBm, CURRENT = 65mA



OUTPUT RETURN LOSS vs. CURRENT

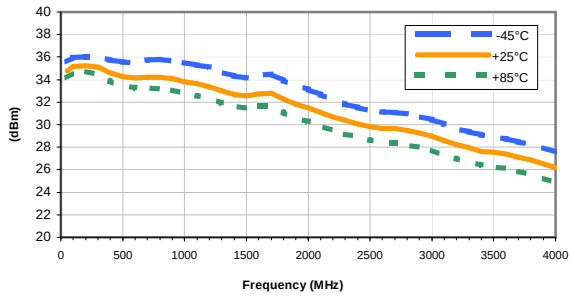
INPUT POWER = -20dBm, Temperature = +25°C



Typical Performance Curves

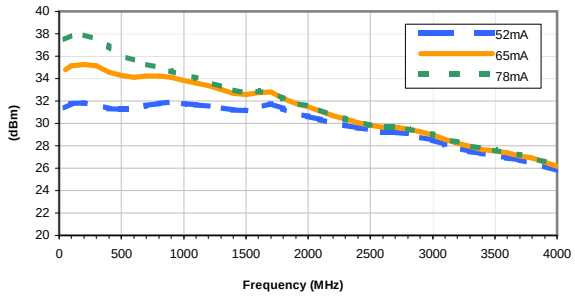
OUTPUT IP3 vs. TEMPERATURE

INPUT POWER = -20dBm, CURRENT = 65mA



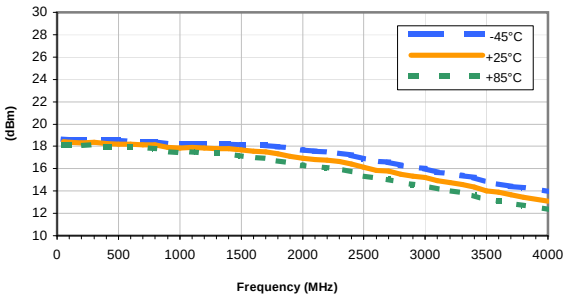
OUTPUT IP3 vs. CURRENT

INPUT POWER = -20dBm, Temperature = +25°C



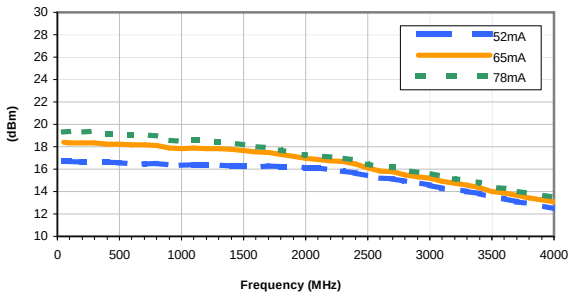
OUTPUT POWER at 1dB Compression vs. TEMPERATURE

CURRENT = 65mA



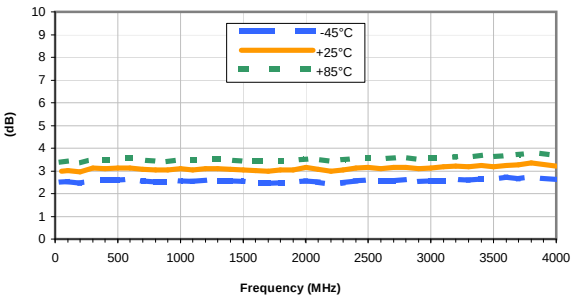
OUTPUT POWER at 1dB Compression vs. CURRENT

Temperature = +25°C



Noise Figure vs. TEMPERATURE

CURRENT = 65mA



Noise Figure vs. CURRENT

Temperature = +25°C