

# MMIC Amplifier

# ERA-51SM+

## 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: Icc = 65mA, Vd = 4.44V @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	17.81	20.79	24.67	42.04	1.06	0.71	36.18	18.43	3.06
100	17.77	20.38	24.96	45.28	1.04	0.74	36.05	18.35	3.22
200	17.74	20.43	25.67	41.08	1.05	0.73	36.93	18.40	3.14
300	17.67	20.38	24.73	37.20	1.05	0.73	37.32	18.34	3.17
400	17.63	20.42	25.02	33.55	1.05	0.73	36.84	18.28	3.14
500	17.58	20.43	24.28	31.54	1.05	0.72	36.33	18.24	3.20
600	17.50	20.44	23.62	29.51	1.06	0.71	36.24	18.16	3.18
700	17.43	20.44	23.13	28.23	1.06	0.71	36.35	18.06	3.21
800	17.36	20.44	22.31	27.17	1.06	0.71	36.17	17.89	3.21
900	17.28	20.42	22.03	26.13	1.06	0.70	36.07	17.80	3.15
1000	17.19	20.42	21.79	25.05	1.07	0.69	35.58	17.71	3.14
1100	17.09	20.45	21.32	23.89	1.07	0.68	35.34	17.74	3.13
1200	17.00	20.44	20.99	23.22	1.08	0.68	35.16	17.66	3.16
1300	16.88	20.41	20.99	22.53	1.08	0.67	34.77	17.70	3.19
1400	16.78	20.41	20.81	21.65	1.08	0.67	34.49	17.68	3.07
1500	16.66	20.41	20.47	20.94	1.09	0.66	34.66	17.58	3.15
1600	16.55	20.35	20.34	20.32	1.09	0.65	35.26	17.54	3.16
1700	16.43	20.30	20.35	19.79	1.09	0.65	34.87	17.48	3.14
1800	16.32	20.32	20.24	19.37	1.10	0.64	34.17	17.51	3.12
1900	16.20	20.31	20.35	18.98	1.11	0.63	33.59	17.51	3.18
2000	16.08	20.20	20.53	18.49	1.11	0.63	33.14	17.52	3.15
2100	15.94	20.28	20.57	18.11	1.12	0.62	32.76	17.38	3.14
2200	15.83	20.24	20.83	17.74	1.12	0.61	32.44	17.22	3.15
2300	15.71	20.13	20.82	17.41	1.12	0.61	32.12	16.97	3.16
2400	15.56	20.13	20.93	16.91	1.13	0.60	31.73	16.83	3.19
2500	15.42	20.13	21.02	16.55	1.14	0.59	31.27	16.69	3.26
2600	15.31	20.07	21.47	16.46	1.14	0.59	30.95	16.47	3.21
2700	15.19	19.99	21.70	16.09	1.14	0.59	30.48	16.13	3.18
2800	15.04	20.01	21.98	15.75	1.15	0.57	29.99	16.17	3.24
2900	14.93	19.99	22.69	15.60	1.15	0.57	29.72	15.80	3.20
3000	14.80	19.88	23.17	15.23	1.15	0.56	29.40	15.62	3.17
3100	14.65	19.88	23.39	14.97	1.16	0.56	28.99	15.01	3.24
3200	14.53	19.88	23.83	14.81	1.17	0.55	28.58	15.01	3.23
3300	14.45	19.74	24.66	14.47	1.16	0.55	28.10	14.84	3.29
3400	14.29	19.73	25.38	14.22	1.17	0.54	27.71	14.47	3.31
3500	14.17	19.68	25.74	14.10	1.17	0.54	27.40	14.35	3.33
3600	14.07	19.57	26.98	13.80	1.17	0.54	27.14	14.21	3.32
3700	13.91	19.53	27.70	13.69	1.18	0.53	26.87	14.28	3.38
3800	13.81	19.46	28.41	13.48	1.18	0.52	26.53	13.74	3.37
4000	13.60	19.28	32.63	12.90	1.17	0.52	25.70	13.31	3.24

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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 = 52mA, Vd = 4.36V @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	17.63	20.05	27.25	35.17	1.04	0.76	32.01	16.43	3.01
100	17.59	20.15	28.65	33.84	1.04	0.74	31.77	16.15	3.15
200	17.56	20.27	28.55	34.96	1.05	0.73	32.19	16.34	3.08
300	17.49	20.24	27.06	33.26	1.05	0.73	32.37	16.29	3.12
400	17.45	20.28	27.74	32.05	1.05	0.72	31.99	16.30	3.10
500	17.40	20.36	26.25	30.16	1.06	0.71	31.72	16.30	3.13
600	17.34	20.26	25.24	28.50	1.06	0.72	31.66	16.07	3.15
700	17.26	20.26	24.51	27.81	1.06	0.71	31.90	15.95	3.15
800	17.18	20.25	23.49	26.66	1.06	0.70	31.88	15.62	3.16
900	17.12	20.27	23.19	25.97	1.06	0.70	31.78	15.65	3.09
1000	17.02	20.28	22.73	24.95	1.07	0.69	31.52	15.49	3.11
1100	16.92	20.28	22.21	23.92	1.07	0.68	31.47	15.69	3.06
1200	16.84	20.25	21.80	23.19	1.08	0.68	31.47	15.54	3.11
1300	16.72	20.26	21.78	22.51	1.08	0.67	31.30	15.58	3.13
1400	16.61	20.24	21.54	21.63	1.08	0.67	31.16	15.56	3.00
1500	16.50	20.25	21.20	20.86	1.09	0.66	31.31	15.46	3.08
1600	16.41	20.20	20.99	20.23	1.09	0.65	31.92	15.55	3.10
1700	16.28	20.17	20.95	19.80	1.10	0.65	32.10	15.41	3.09
1800	16.17	20.24	20.88	19.24	1.11	0.63	31.66	15.65	3.06
1900	16.05	20.16	20.89	18.92	1.11	0.63	31.21	15.60	3.12
2000	15.94	20.12	21.08	18.38	1.11	0.63	30.96	15.59	3.09
2100	15.81	20.16	21.11	18.00	1.12	0.62	30.74	15.47	3.11
2200	15.67	20.11	21.35	17.67	1.12	0.61	30.51	15.21	3.12
2300	15.58	20.08	21.35	17.34	1.12	0.61	30.36	15.09	3.12
2400	15.43	19.99	21.44	16.83	1.13	0.60	30.13	15.10	3.11
2500	15.29	20.00	21.51	16.46	1.13	0.59	29.72	15.14	3.17
2600	15.19	19.97	21.95	16.31	1.14	0.58	29.59	15.12	3.10
2700	15.07	19.88	22.24	15.96	1.14	0.58	29.27	14.96	3.14
2800	14.91	19.85	22.50	15.64	1.15	0.57	28.92	15.05	3.18
2900	14.81	19.80	23.13	15.49	1.15	0.57	28.70	14.80	3.14
3000	14.68	19.79	23.63	15.10	1.15	0.56	28.36	14.64	3.09
3100	14.56	19.74	23.94	14.83	1.16	0.56	28.03	14.19	3.17
3200	14.42	19.75	24.24	14.66	1.16	0.55	27.62	14.24	3.16
3300	14.33	19.63	25.00	14.35	1.16	0.55	27.26	14.06	3.20
3400	14.19	19.63	26.13	14.04	1.17	0.54	26.86	13.77	3.26
3500	14.06	19.55	26.17	13.98	1.17	0.54	26.63	13.63	3.25
3600	13.97	19.46	27.57	13.69	1.17	0.53	26.30	13.52	3.27
3700	13.80	19.44	28.32	13.57	1.18	0.52	26.09	13.56	3.30
3800	13.73	19.37	28.74	13.40	1.17	0.52	25.82	13.06	3.30
4000	13.49	19.24	32.78	12.84	1.18	0.52	24.98	12.64	3.17

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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 = 78mA, Vd = 4.52V @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	17.91	20.36	23.54	41.07	1.04	0.75	40.31	19.61	3.14
100	17.86	20.43	23.86	43.21	1.04	0.74	41.21	19.70	3.29
200	17.84	20.51	24.26	36.66	1.05	0.74	44.01	19.61	3.18
300	17.77	20.43	23.55	34.64	1.05	0.74	43.30	19.54	3.25
400	17.74	20.47	23.95	32.47	1.05	0.73	43.40	19.38	3.19
500	17.70	20.56	23.29	30.89	1.05	0.72	40.83	19.31	3.26
600	17.60	20.46	22.60	28.96	1.05	0.72	40.04	19.30	3.26
700	17.53	20.52	22.31	27.81	1.06	0.71	39.11	19.16	3.29
800	17.46	20.50	21.66	26.76	1.06	0.71	38.48	19.03	3.27
900	17.38	20.51	21.35	25.83	1.06	0.70	37.97	18.89	3.21
1000	17.29	20.50	21.21	24.68	1.07	0.70	37.18	18.82	3.20
1100	17.18	20.49	20.70	23.72	1.07	0.69	36.70	18.75	3.19
1200	17.09	20.49	20.51	23.00	1.07	0.68	36.30	18.71	3.24
1300	16.97	20.48	20.56	22.34	1.08	0.67	35.64	18.79	3.25
1400	16.87	20.43	20.44	21.52	1.08	0.67	35.56	18.73	3.13
1500	16.75	20.43	20.06	20.78	1.09	0.66	35.58	18.64	3.20
1600	16.64	20.40	19.95	20.17	1.09	0.66	35.49	18.53	3.24
1700	16.52	20.41	20.02	19.73	1.10	0.65	34.65	18.45	3.19
1800	16.40	20.39	19.91	19.31	1.10	0.64	33.95	18.29	3.19
1900	16.27	20.39	19.99	18.93	1.11	0.63	33.62	18.28	3.25
2000	16.15	20.36	20.18	18.45	1.11	0.63	33.33	18.31	3.24
2100	16.03	20.29	20.20	18.08	1.11	0.62	32.90	18.26	3.22
2200	15.89	20.31	20.56	17.72	1.12	0.61	32.57	18.08	3.28
2300	15.79	20.23	20.58	17.44	1.12	0.61	32.34	17.79	3.24
2400	15.63	20.21	20.60	16.96	1.13	0.60	32.02	17.53	3.26
2500	15.49	20.19	20.71	16.60	1.13	0.59	31.59	17.28	3.32
2600	15.38	20.13	21.13	16.46	1.14	0.59	31.33	17.04	3.30
2700	15.25	20.09	21.32	16.09	1.14	0.58	31.02	16.68	3.26
2800	15.11	20.04	21.62	15.77	1.15	0.58	30.50	16.71	3.35
2900	15.00	20.03	22.30	15.61	1.15	0.57	30.26	16.38	3.29
3000	14.87	19.99	22.77	15.25	1.16	0.56	30.02	16.18	3.24
3100	14.72	19.96	22.87	14.99	1.16	0.56	29.65	15.58	3.32
3200	14.61	19.92	23.36	14.82	1.17	0.55	29.20	15.54	3.31
3300	14.50	19.82	24.22	14.49	1.16	0.55	28.85	15.37	3.37
3400	14.34	19.75	24.64	14.23	1.17	0.54	28.40	15.00	3.39
3500	14.23	19.71	25.24	14.09	1.17	0.54	28.14	14.91	3.43
3600	14.13	19.67	26.33	13.76	1.17	0.53	27.82	14.76	3.43
3700	13.97	19.63	26.92	13.66	1.18	0.53	27.68	14.85	3.47
3800	13.89	19.52	27.76	13.45	1.18	0.53	27.48	14.32	3.44
4000	13.66	19.39	31.22	12.90	1.18	0.52	26.71	13.86	3.33

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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 = 65mA, Vd = 4.67V @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	17.79	20.58	24.58	50.40	1.05	0.72	37.42	18.44	2.65
100	17.74	20.34	25.64	46.27	1.04	0.74	37.63	18.40	2.77
200	17.73	20.31	26.16	39.34	1.04	0.74	39.23	18.47	2.65
300	17.67	20.42	24.62	36.95	1.05	0.73	40.71	18.44	2.67
400	17.63	20.30	25.01	34.19	1.05	0.74	40.72	18.43	2.65
500	17.60	20.38	24.18	31.83	1.05	0.73	41.42	18.38	2.70
600	17.53	20.40	23.35	29.86	1.05	0.72	41.38	18.28	2.69
700	17.46	20.33	22.94	28.62	1.05	0.72	41.42	18.21	2.70
800	17.38	20.40	21.90	27.52	1.06	0.71	41.91	17.98	2.71
900	17.31	20.35	21.73	26.66	1.06	0.71	41.75	17.92	2.64
1000	17.23	20.32	21.48	25.44	1.06	0.71	40.83	17.84	2.64
1100	17.12	20.37	20.99	24.37	1.07	0.69	40.60	17.90	2.62
1200	17.04	20.31	20.60	23.62	1.07	0.69	40.96	17.81	2.65
1300	16.92	20.32	20.41	22.76	1.07	0.68	39.68	17.84	2.66
1400	16.83	20.29	20.14	21.74	1.08	0.68	39.82	17.80	2.53
1500	16.72	20.31	19.82	20.86	1.08	0.67	39.84	17.75	2.61
1600	16.62	20.25	19.66	20.41	1.08	0.67	40.44	17.76	2.65
1700	16.48	20.25	19.60	19.83	1.09	0.66	39.97	17.69	2.61
1800	16.39	20.26	19.30	19.16	1.09	0.65	38.70	17.78	2.59
1900	16.26	20.20	19.40	18.76	1.10	0.65	38.01	17.79	2.65
2000	16.12	20.16	19.46	18.36	1.10	0.64	37.31	17.77	2.63
2100	16.01	20.17	19.48	17.97	1.11	0.63	36.54	17.67	2.62
2200	15.88	20.19	19.66	17.74	1.11	0.62	36.29	17.46	2.61
2300	15.79	20.07	19.89	17.44	1.11	0.62	36.00	17.26	2.63
2400	15.64	20.03	19.89	16.92	1.12	0.61	35.42	17.20	2.64
2500	15.49	20.00	19.86	16.71	1.12	0.61	34.79	17.13	2.69
2600	15.36	20.03	19.93	16.86	1.13	0.59	34.32	17.05	2.64
2700	15.28	19.89	20.30	16.20	1.13	0.60	33.88	16.79	2.63
2800	15.13	19.91	20.39	15.84	1.14	0.59	33.24	16.88	2.70
2900	15.02	19.84	20.81	15.79	1.14	0.59	32.94	16.56	2.65
3000	14.89	19.80	21.41	15.47	1.14	0.58	32.60	16.36	2.63
3100	14.75	19.77	21.45	15.31	1.15	0.57	32.08	15.81	2.67
3200	14.60	19.79	21.40	15.37	1.16	0.56	31.65	15.82	2.67
3300	14.56	19.60	22.41	14.79	1.15	0.57	30.96	15.64	2.75
3400	14.36	19.70	22.22	14.56	1.17	0.55	30.54	15.24	2.76
3500	14.29	19.54	22.98	14.38	1.16	0.55	30.21	15.11	2.76
3600	14.18	19.49	23.66	14.14	1.16	0.55	29.78	14.99	2.77
3700	14.00	19.54	23.37	14.19	1.18	0.54	29.57	15.11	2.83
3800	13.94	19.36	24.55	13.61	1.16	0.54	29.26	14.60	2.79
4000	13.72	19.32	26.26	13.00	1.17	0.53	28.31	14.09	2.68

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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: Icc = 52mA, Vd = 4.59V @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	17.61	20.13	26.45	34.52	1.04	0.75	32.60	16.34	2.59
100	17.59	20.44	28.27	33.82	1.05	0.72	32.37	15.84	2.70
200	17.58	20.09	28.78	34.49	1.04	0.75	33.01	16.01	2.61
300	17.51	20.18	26.70	34.58	1.05	0.74	33.42	16.01	2.61
400	17.48	20.25	27.09	32.66	1.05	0.73	33.26	16.08	2.62
500	17.43	20.24	25.85	30.72	1.05	0.72	33.17	16.08	2.63
600	17.37	20.22	24.82	29.07	1.05	0.72	33.26	15.83	2.65
700	17.30	20.24	24.13	28.24	1.06	0.71	33.70	15.79	2.65
800	17.24	20.23	22.89	27.52	1.06	0.71	33.77	15.37	2.64
900	17.16	20.21	22.70	26.59	1.06	0.71	33.65	15.43	2.58
1000	17.08	20.18	22.41	25.59	1.06	0.70	33.46	15.40	2.59
1100	16.98	20.19	21.83	24.57	1.07	0.70	33.41	15.50	2.56
1200	16.89	20.18	21.37	23.71	1.07	0.69	33.48	15.39	2.58
1300	16.78	20.16	21.06	22.88	1.07	0.68	33.35	15.44	2.61
1400	16.69	20.19	20.74	21.79	1.08	0.68	33.33	15.43	2.47
1500	16.58	20.20	20.48	20.97	1.08	0.67	33.62	15.37	2.55
1600	16.48	20.13	20.24	20.48	1.08	0.67	34.47	15.44	2.59
1700	16.35	20.17	20.23	19.87	1.09	0.65	34.97	15.30	2.54
1800	16.24	20.09	19.85	19.21	1.09	0.65	34.41	15.57	2.53
1900	16.12	20.11	19.85	18.81	1.10	0.64	33.90	15.61	2.61
2000	16.02	20.05	19.97	18.40	1.10	0.64	33.56	15.56	2.56
2100	15.89	20.06	19.98	17.94	1.11	0.63	33.39	15.45	2.57
2200	15.75	20.06	20.14	17.68	1.11	0.62	33.18	15.26	2.55
2300	15.67	19.96	20.34	17.29	1.11	0.62	33.09	15.07	2.58
2400	15.53	19.92	20.41	16.84	1.12	0.61	32.85	15.15	2.58
2500	15.39	19.93	20.29	16.65	1.12	0.60	32.50	15.26	2.65
2600	15.25	19.94	20.29	16.71	1.13	0.59	32.55	15.31	2.59
2700	15.17	19.82	20.73	16.04	1.13	0.60	32.28	15.25	2.57
2800	15.01	19.82	20.88	15.73	1.14	0.59	31.97	15.36	2.65
2900	14.91	19.78	21.29	15.66	1.14	0.58	31.76	15.22	2.57
3000	14.80	19.75	21.81	15.31	1.14	0.57	31.40	15.09	2.57
3100	14.65	19.68	21.89	15.14	1.15	0.57	30.90	14.75	2.60
3200	14.50	19.72	21.79	15.17	1.16	0.56	30.54	14.89	2.63
3300	14.46	19.53	22.91	14.64	1.15	0.57	30.13	14.80	2.67
3400	14.25	19.62	22.87	14.41	1.17	0.55	29.69	14.48	2.70
3500	14.19	19.50	23.53	14.24	1.16	0.55	29.41	14.35	2.70
3600	14.09	19.41	24.24	13.98	1.16	0.55	29.05	14.22	2.70
3700	13.92	19.45	24.06	14.02	1.17	0.54	28.88	14.27	2.76
3800	13.86	19.30	25.28	13.49	1.16	0.54	28.50	13.87	2.70
4000	13.64	19.20	27.46	12.88	1.17	0.53	27.69	13.44	2.62

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# MMIC Amplifier

# ERA-51SM+

## 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 = 4.75V @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	17.89	20.46	23.06	42.48	1.04	0.74	41.33	19.84	2.71
100	17.88	20.54	24.03	41.69	1.05	0.74	42.18	19.84	2.85
200	17.85	20.37	24.82	37.14	1.04	0.75	44.71	19.81	2.69
300	17.78	20.45	23.48	35.34	1.05	0.74	44.77	19.77	2.75
400	17.73	20.44	23.89	32.75	1.05	0.73	44.24	19.65	2.71
500	17.69	20.42	23.24	31.13	1.05	0.73	43.35	19.59	2.76
600	17.64	20.45	22.50	29.31	1.05	0.73	43.20	19.55	2.74
700	17.56	20.44	22.17	28.32	1.05	0.72	42.01	19.43	2.77
800	17.49	20.43	21.24	26.97	1.06	0.72	41.44	19.30	2.76
900	17.41	20.44	21.07	26.07	1.06	0.71	41.60	19.19	2.70
1000	17.33	20.39	20.90	25.08	1.06	0.71	41.66	19.14	2.70
1100	17.22	20.46	20.42	24.04	1.07	0.69	41.57	19.09	2.68
1200	17.12	20.42	20.17	23.28	1.07	0.69	40.83	19.04	2.70
1300	17.01	20.41	19.97	22.46	1.07	0.68	40.41	19.12	2.73
1400	16.92	20.37	19.70	21.55	1.08	0.68	40.48	19.05	2.61
1500	16.80	20.39	19.38	20.74	1.08	0.67	40.27	19.01	2.67
1600	16.70	20.36	19.28	20.27	1.08	0.67	39.08	18.95	2.72
1700	16.56	20.28	19.24	19.65	1.09	0.66	38.09	18.90	2.66
1800	16.45	20.36	18.96	19.06	1.10	0.65	37.85	18.83	2.66
1900	16.34	20.28	19.04	18.70	1.10	0.65	37.81	18.85	2.69
2000	16.22	20.27	19.12	18.29	1.10	0.64	37.38	18.86	2.68
2100	16.10	20.21	19.10	17.98	1.10	0.64	36.76	18.80	2.66
2200	15.96	20.17	19.36	17.79	1.11	0.63	36.53	18.67	2.67
2300	15.87	20.15	19.58	17.41	1.11	0.62	36.31	18.42	2.70
2400	15.72	20.07	19.63	16.93	1.11	0.62	35.80	18.25	2.70
2500	15.59	20.11	19.58	16.78	1.12	0.61	35.38	18.05	2.75
2600	15.44	20.12	19.57	16.81	1.13	0.59	34.75	17.80	2.71
2700	15.36	19.92	19.95	16.24	1.12	0.60	34.42	17.48	2.70
2800	15.20	19.96	20.09	15.85	1.14	0.59	33.83	17.56	2.78
2900	15.08	19.96	20.41	15.77	1.14	0.58	33.60	17.21	2.70
3000	14.96	19.86	21.02	15.51	1.14	0.58	33.10	17.02	2.70
3100	14.83	19.85	21.12	15.31	1.15	0.57	32.59	16.43	2.76
3200	14.67	19.86	21.06	15.33	1.16	0.56	32.25	16.40	2.76
3300	14.63	19.72	22.05	14.81	1.15	0.57	31.63	16.22	2.83
3400	14.42	19.76	21.79	14.59	1.17	0.55	31.13	15.77	2.82
3500	14.35	19.66	22.50	14.34	1.16	0.55	30.87	15.71	2.85
3600	14.26	19.56	23.08	14.17	1.16	0.55	30.50	15.55	2.84
3700	14.07	19.59	22.87	14.20	1.18	0.54	30.22	15.70	2.91
3800	14.01	19.46	23.89	13.63	1.17	0.54	29.91	15.19	2.85
4000	13.79	19.34	25.29	13.04	1.17	0.54	28.93	14.66	2.77

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# MMIC Amplifier

# ERA-51SM+

## 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 = 4.28V @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	17.76	20.28	25.72	36.69	1.04	0.75	35.83	18.27	3.41
100	17.73	20.33	25.67	40.95	1.04	0.74	35.81	18.27	3.59
200	17.70	20.53	25.94	41.68	1.05	0.72	36.53	18.25	3.49
300	17.61	20.43	25.32	36.04	1.05	0.72	36.70	18.19	3.57
400	17.55	20.37	26.13	32.69	1.05	0.72	36.23	18.10	3.53
500	17.51	20.37	25.06	30.38	1.05	0.72	35.55	18.05	3.59
600	17.44	20.36	24.32	28.71	1.06	0.72	35.18	17.98	3.59
700	17.36	20.39	23.75	27.69	1.06	0.71	35.12	17.90	3.62
800	17.27	20.43	22.87	26.70	1.06	0.70	34.95	17.70	3.58
900	17.19	20.38	22.77	25.75	1.07	0.70	34.79	17.60	3.55
1000	17.10	20.44	22.42	24.52	1.07	0.69	34.29	17.52	3.54
1100	17.00	20.43	22.05	23.69	1.08	0.68	33.98	17.53	3.52
1200	16.90	20.44	21.73	23.07	1.08	0.67	33.76	17.44	3.59
1300	16.78	20.40	21.83	22.49	1.08	0.67	33.35	17.51	3.59
1400	16.68	20.43	21.60	21.58	1.09	0.66	33.13	17.42	3.47
1500	16.57	20.42	21.34	20.75	1.10	0.65	33.15	17.35	3.54
1600	16.45	20.37	21.06	20.28	1.10	0.64	33.49	17.28	3.58
1700	16.32	20.36	21.09	19.73	1.10	0.64	33.22	17.21	3.55
1800	16.21	20.38	20.90	19.37	1.11	0.63	32.58	17.18	3.50
1900	16.09	20.36	20.93	18.91	1.11	0.62	32.07	17.16	3.60
2000	15.96	20.31	21.16	18.57	1.12	0.61	31.71	17.16	3.56
2100	15.83	20.23	21.43	18.10	1.12	0.61	31.32	17.05	3.56
2200	15.69	20.22	21.63	17.75	1.13	0.60	30.97	16.87	3.57
2300	15.61	20.19	21.61	17.33	1.13	0.60	30.72	16.58	3.58
2400	15.44	20.09	21.86	16.70	1.13	0.59	30.32	16.35	3.59
2500	15.29	20.16	21.78	16.44	1.14	0.58	29.86	16.14	3.66
2600	15.16	20.10	22.09	16.34	1.15	0.57	29.61	15.89	3.60
2700	15.06	20.04	22.96	15.84	1.15	0.57	29.22	15.53	3.59
2800	14.90	20.01	23.16	15.56	1.16	0.56	28.76	15.54	3.67
2900	14.77	20.01	23.90	15.43	1.16	0.55	28.45	15.18	3.61
3000	14.66	19.90	24.80	14.94	1.16	0.55	28.19	14.99	3.57
3100	14.51	19.91	24.93	14.81	1.17	0.54	27.79	14.38	3.65
3200	14.37	19.88	25.07	14.72	1.18	0.53	27.43	14.42	3.66
3300	14.31	19.75	26.94	14.09	1.17	0.54	27.00	14.19	3.69
3400	14.07	19.84	27.32	14.04	1.19	0.52	26.67	13.83	3.74
3500	14.00	19.67	28.92	13.77	1.18	0.52	26.36	13.73	3.77
3600	13.90	19.62	29.98	13.55	1.18	0.52	26.08	13.62	3.76
3700	13.73	19.56	30.56	13.47	1.19	0.51	25.86	13.60	3.80
3800	13.65	19.51	32.17	13.13	1.19	0.51	25.63	13.04	3.84
4000	13.38	19.33	35.77	12.80	1.19	0.50	24.83	12.65	3.66

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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 = 52mA, Vd = 4.19V @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	17.56	20.10	28.84	29.43	1.04	0.74	31.62	16.49	3.35
100	17.52	20.12	29.08	31.27	1.04	0.74	31.46	16.21	3.50
200	17.48	20.39	28.73	33.05	1.05	0.72	31.81	16.39	3.43
300	17.41	20.24	27.43	31.73	1.05	0.72	31.89	16.34	3.49
400	17.37	20.23	28.24	29.72	1.05	0.72	31.52	16.32	3.46
500	17.33	20.25	26.94	28.20	1.06	0.72	31.19	16.31	3.50
600	17.25	20.32	25.93	27.13	1.06	0.70	31.11	16.13	3.53
700	17.18	20.28	25.17	26.47	1.06	0.70	31.18	16.07	3.52
800	17.09	20.26	24.07	25.86	1.07	0.70	31.11	15.68	3.53
900	17.03	20.27	23.87	25.01	1.07	0.69	31.04	15.73	3.49
1000	16.94	20.26	23.25	24.10	1.07	0.69	30.80	15.53	3.49
1100	16.82	20.29	22.78	23.28	1.08	0.68	30.65	15.75	3.45
1200	16.73	20.25	22.38	22.66	1.08	0.67	30.60	15.66	3.51
1300	16.62	20.28	22.49	22.18	1.09	0.66	30.41	15.60	3.51
1400	16.53	20.24	22.12	21.23	1.09	0.66	30.22	15.63	3.39
1500	16.41	20.22	21.85	20.47	1.09	0.65	30.29	15.50	3.46
1600	16.28	20.23	21.54	20.05	1.10	0.64	30.78	15.55	3.48
1700	16.16	20.19	21.51	19.53	1.10	0.64	30.94	15.38	3.48
1800	16.06	20.24	21.39	19.12	1.11	0.63	30.53	15.62	3.42
1900	15.93	20.23	21.34	18.67	1.12	0.62	30.09	15.58	3.54
2000	15.80	20.17	21.52	18.33	1.12	0.61	29.83	15.54	3.47
2100	15.68	20.19	21.77	17.91	1.13	0.60	29.60	15.44	3.49
2200	15.55	20.12	21.88	17.62	1.13	0.60	29.38	15.16	3.47
2300	15.46	20.05	21.99	17.06	1.13	0.60	29.14	15.00	3.49
2400	15.32	19.98	22.17	16.49	1.13	0.59	28.84	14.97	3.50
2500	15.16	19.94	22.03	16.25	1.14	0.58	28.48	14.99	3.58
2600	15.03	20.01	22.33	16.20	1.15	0.57	28.43	14.85	3.52
2700	14.92	19.93	23.24	15.66	1.15	0.57	28.11	14.63	3.53
2800	14.77	19.91	23.34	15.37	1.16	0.56	27.68	14.65	3.57
2900	14.65	19.91	24.21	15.28	1.16	0.55	27.44	14.37	3.56
3000	14.55	19.77	24.98	14.76	1.16	0.55	27.16	14.19	3.48
3100	14.39	19.76	24.90	14.66	1.17	0.54	26.78	13.63	3.57
3200	14.23	19.78	25.07	14.56	1.18	0.53	26.46	13.73	3.58
3300	14.17	19.64	26.82	13.95	1.17	0.53	26.05	13.52	3.61
3400	13.96	19.76	27.47	13.91	1.19	0.51	25.74	13.20	3.67
3500	13.88	19.57	28.62	13.61	1.18	0.52	25.48	13.06	3.65
3600	13.78	19.56	29.27	13.43	1.18	0.51	25.19	12.94	3.66
3700	13.60	19.52	29.32	13.34	1.19	0.50	25.02	12.92	3.71
3800	13.54	19.37	30.02	13.02	1.18	0.51	24.72	12.40	3.74
4000	13.27	19.31	31.54	12.70	1.19	0.49	23.94	12.02	3.58

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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 = 78mA, Vd = 4.36V @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	17.88	20.43	23.80	52.19	1.04	0.75	39.30	19.46	3.48
100	17.84	20.42	24.28	55.66	1.04	0.74	39.97	19.55	3.68
200	17.82	20.52	24.76	37.79	1.05	0.73	41.33	19.42	3.55
300	17.74	20.49	23.85	35.72	1.05	0.73	40.40	19.32	3.65
400	17.69	20.44	24.62	32.42	1.05	0.73	39.60	19.11	3.60
500	17.63	20.55	23.75	30.66	1.05	0.72	38.28	19.03	3.66
600	17.55	20.48	23.13	28.85	1.06	0.72	37.27	19.05	3.65
700	17.47	20.49	22.92	27.75	1.06	0.71	36.58	18.89	3.67
800	17.38	20.51	22.05	26.62	1.06	0.70	36.12	18.78	3.68
900	17.31	20.55	22.02	25.72	1.07	0.69	35.69	18.62	3.63
1000	17.22	20.51	21.73	24.68	1.07	0.69	34.86	18.53	3.63
1100	17.10	20.51	21.39	23.72	1.08	0.68	34.45	18.42	3.61
1200	17.01	20.51	21.18	23.11	1.08	0.67	34.09	18.39	3.66
1300	16.89	20.52	21.31	22.52	1.09	0.66	33.54	18.49	3.65
1400	16.78	20.48	21.11	21.65	1.09	0.66	33.45	18.40	3.55
1500	16.67	20.52	20.89	20.84	1.09	0.65	33.42	18.28	3.59
1600	16.56	20.45	20.63	20.35	1.10	0.65	33.35	18.12	3.67
1700	16.43	20.42	20.74	19.85	1.10	0.64	32.56	17.99	3.62
1800	16.30	20.40	20.59	19.45	1.11	0.63	32.06	17.78	3.61
1900	16.17	20.38	20.63	19.05	1.11	0.62	31.72	17.75	3.67
2000	16.04	20.40	20.82	18.70	1.12	0.61	31.35	17.78	3.64
2100	15.93	20.41	21.08	18.24	1.13	0.61	31.05	17.72	3.63
2200	15.79	20.29	21.37	17.85	1.13	0.60	30.73	17.50	3.68
2300	15.69	20.25	21.45	17.37	1.13	0.60	30.53	17.18	3.67
2400	15.53	20.19	21.57	16.81	1.13	0.59	30.26	16.93	3.69
2500	15.38	20.24	21.49	16.55	1.14	0.58	29.89	16.65	3.75
2600	15.23	20.25	21.86	16.51	1.15	0.57	29.74	16.38	3.69
2700	15.14	20.08	22.59	15.95	1.15	0.57	29.44	16.03	3.69
2800	14.96	20.13	22.80	15.66	1.16	0.56	28.98	16.02	3.74
2900	14.85	20.06	23.58	15.57	1.16	0.56	28.79	15.70	3.70
3000	14.74	19.96	24.50	15.10	1.16	0.55	28.59	15.50	3.64
3100	14.58	19.93	24.63	14.91	1.17	0.55	28.15	14.90	3.74
3200	14.44	19.93	24.86	14.85	1.18	0.54	27.91	14.90	3.75
3300	14.38	19.82	26.72	14.18	1.17	0.54	27.47	14.70	3.77
3400	14.14	19.87	26.65	14.15	1.19	0.52	27.14	14.34	3.83
3500	14.07	19.74	28.50	13.86	1.18	0.52	26.88	14.21	3.86
3600	13.96	19.70	29.95	13.65	1.19	0.52	26.59	14.08	3.86
3700	13.80	19.68	30.60	13.57	1.20	0.51	26.50	14.08	3.90
3800	13.73	19.52	32.86	13.25	1.18	0.51	26.34	13.59	3.90
4000	13.44	19.46	38.44	12.89	1.20	0.50	25.74	13.18	3.76

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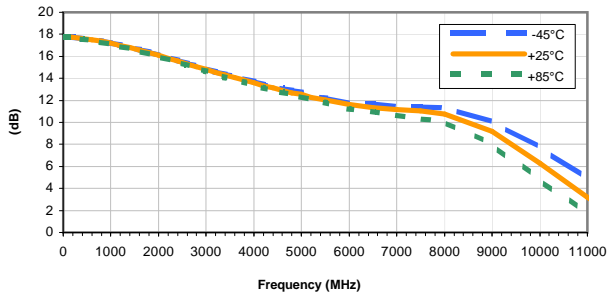
The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see



## Typical Performance Curves

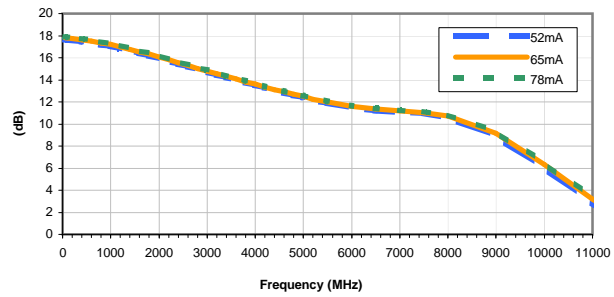
### GAIN vs. TEMPERATURE

INPUT POWER = -20dBm, CURRENT = 65mA



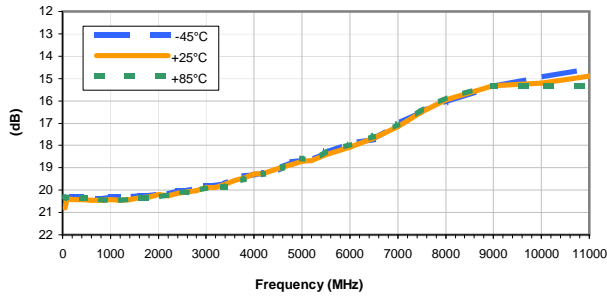
### GAIN vs. CURRENT

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



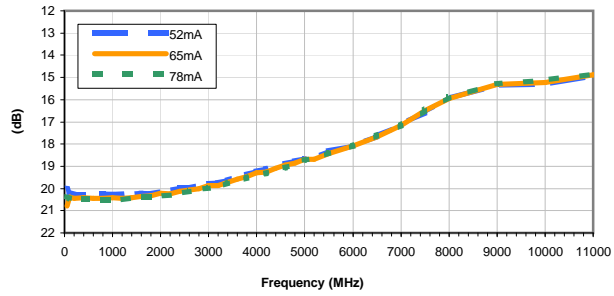
### ISOLATION vs. TEMPERATURE

INPUT POWER = -20dBm, CURRENT = 65mA



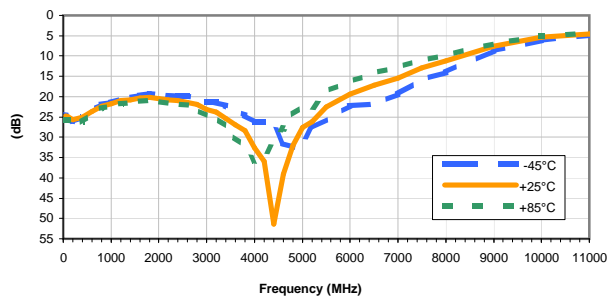
### ISOLATION vs. CURRENT

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



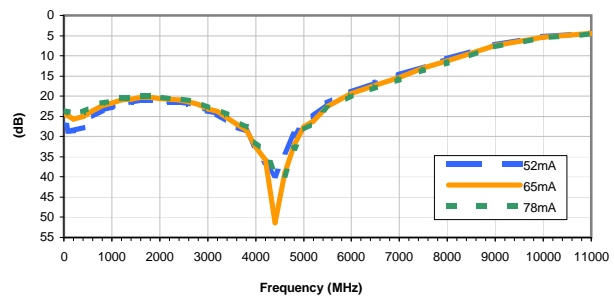
### INPUT RETURN LOSS vs. TEMPERATURE

INPUT POWER = -20dBm, CURRENT = 65mA



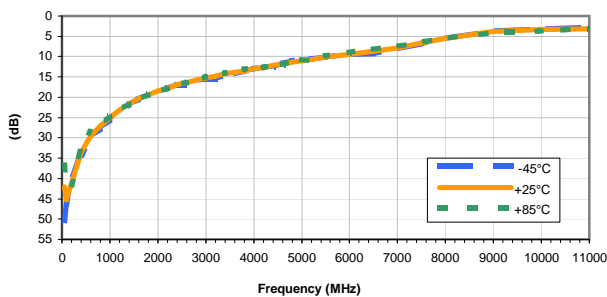
### INPUT RETURN LOSS vs. CURRENT

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



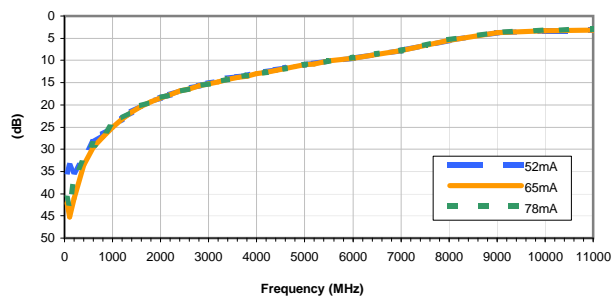
### OUTPUT RETURN LOSS vs. TEMPERATURE

INPUT POWER = -20dBm, CURRENT = 65mA



### OUTPUT RETURN LOSS vs. CURRENT

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



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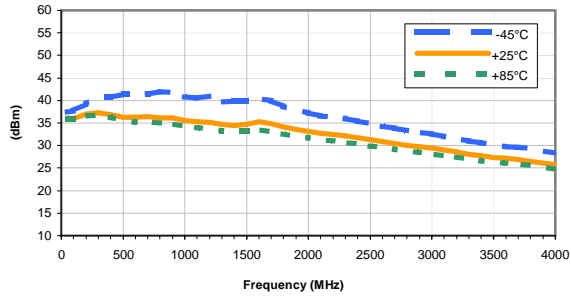
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## Typical Performance Curves

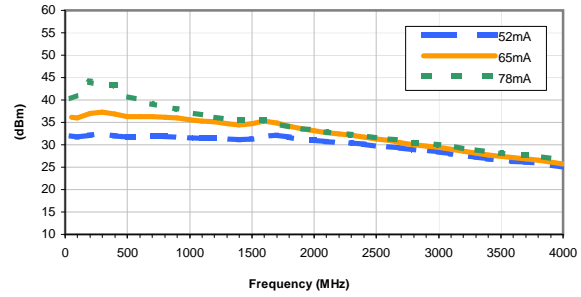
OUTPUT IP3 vs. TEMPERATURE

INPUT POWER = -20dBm, CURRENT = 65mA



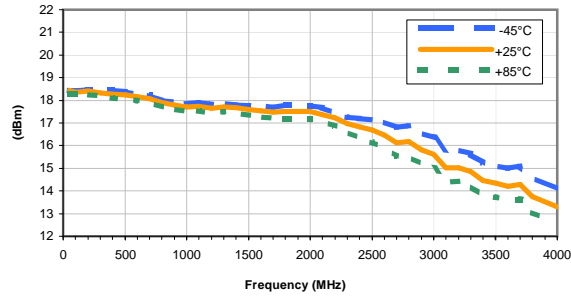
OUTPUT IP3 vs. CURRENT

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



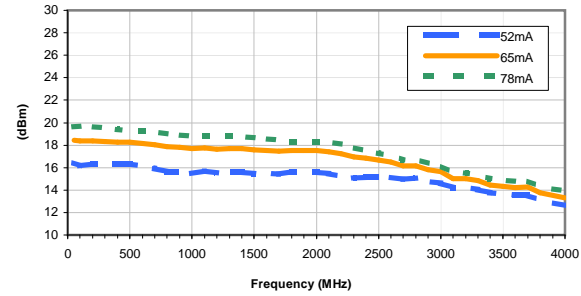
OUTPUT POWER at 1dB Compression vs. TEMPERATURE

CURRENT = 65mA



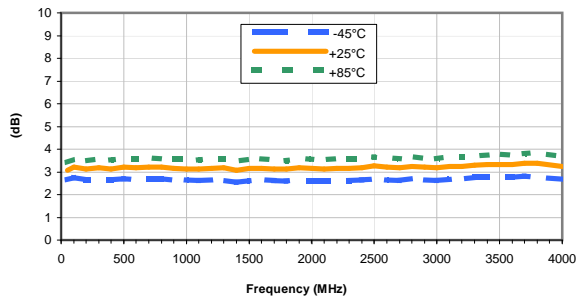
OUTPUT POWER at 1dB Compression vs. CURRENT

Temperature = +25°C



Noise Figure vs. TEMPERATURE

CURRENT = 65mA



Noise Figure vs. CURRENT

Temperature = +25°C

