

Typical Performance Data

V _{DS} (V)	I _{DS} (mA)					
	@ V _{GS} =					
	0.20V	0.30V	0.40V	0.50V	0.60V	0.70V
0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.1	0.1	1.8	10.5	19.2	24.3	26.5
0.2	0.1	2.1	14.1	32.0	46.9	52.8
0.3	0.1	2.2	14.9	37.6	63.0	77.0
0.4	0.0	2.6	15.4	43.3	72.3	97.7
0.5	0.0	2.6	15.5	44.4	77.3	113.1
0.6	0.0	2.7	16.0	45.1	83.8	119.8
0.7	0.1	2.5	16.5	45.6	85.0	
0.8	0.1	2.5	16.5	46.1	85.7	
0.9	0.1	2.6	16.8	46.0	86.3	
1.0	0.1	2.6	17.0	46.9	86.8	
1.1	0.1	2.7	17.2	47.3	86.3	
1.2	0.1	3.2	17.4	47.7	87.3	
1.3	0.1	3.2	17.9	48.1	87.9	
1.4	0.1	3.2	18.2	48.6	88.5	
1.5	0.1	2.9	18.3	48.7	88.8	
1.6	0.2	2.9	18.1	49.1	89.1	
1.7	0.2	3.0	18.2	49.2	89.5	
1.8	0.2	3.0	18.5	49.6	89.8	
1.9	0.1	3.1	18.6	49.9	89.7	
2.0	0.1	3.6	18.8	50.1	90.2	
2.1	0.1	3.6	19.4	50.4	90.6	
2.2	0.1	3.6	19.4	50.7	90.8	
2.3	0.2	3.3	19.5	50.9	91.1	
2.4	0.3	3.3	19.4	51.2	91.5	
2.5	0.2	3.3	19.5	51.7	91.8	
2.6	0.2	3.4	19.6	52.0	92.2	
2.7	0.2	3.4	19.8	52.3	92.9	
2.8	0.2	4.0	20.1	52.4	93.2	
2.9	0.2	4.0	20.8	52.7	93.7	
3.0	0.2	4.0	20.9	53.0	94.0	
3.1	0.3	3.7	21.1	53.4	94.3	
3.2	0.3	3.7	20.9	53.8	94.9	
3.3	0.3	3.8	21.2	55.0	95.5	
3.4	0.3	3.9	21.5	55.3	96.2	
3.5	0.3	4.0	21.8	55.7	97.1	
3.6	0.3	4.5	22.0	55.7	97.7	
3.7	0.2	4.5	23.1	56.2	97.6	
3.8	0.2	4.3	23.2	56.7	98.2	
3.9	0.4	4.3	23.5	57.2	98.7	
4.0	0.4	4.4	23.4	57.7	99.2	
4.1	0.3	4.5	23.8	59.1	99.1	
4.2	0.3	4.7	24.2	59.4	100.7	
4.3	0.3	5.3	24.6	59.9	101.4	
4.4	0.3	5.4	25.0	59.8	102.0	
4.5	0.3	5.5	26.2	60.4	102.1	
4.6	0.3	5.3	26.4	60.9	102.7	
4.7	0.4	5.4	26.8	61.5	103.3	
4.8	0.4	5.6	26.7	62.0	103.8	
4.9	0.4	5.7	27.1	63.0	104.4	
5.0	0.3	5.9	27.5	63.5	104.9	



Typical Performance Data

I _{DS} (mA)	GAIN (dB)				OIP3 (dBm)			
	V _{DS} =+3V		V _{DS} =+4V		V _{DS} =+3V		V _{DS} =+4V	
	0.9 GHz	2 GHz	0.9 GHz	2 GHz	0.9 GHz	2 GHz	0.9 GHz	2 GHz
10.00	20.73	16.27	20.81	16.31	21.42	20.44	21.60	20.70
15.00	22.10	17.21	22.17	17.31	22.86	21.90	22.62	23.13
30.00	23.69	18.34	23.71	18.39	27.97	27.74	27.59	28.78
60.00	24.74	19.13	24.81	19.20	32.65	33.39	32.78	33.76

I _{DS} (mA)	Pout @ 1dB Compression (dBm)				NOISE FIGURE (dB)			
	V _{DS} =+3V		V _{DS} =+4V		V _{DS} =+3V		V _{DS} =+4V	
	0.9 GHz	2 GHz	0.9 GHz	2 GHz	0.9 GHz	2 GHz	0.9 GHz	2 GHz
10.00	17.72	19.21	20.61	22.11	0.39	0.52	0.41	0.52
15.00	16.63	17.96	19.03	20.52	0.33	0.43	0.31	0.43
30.00	17.19	17.93	18.10	19.94	0.25	0.31	0.24	0.33
60.00	18.58	19.00	20.56	20.95	0.24	0.33	0.23	0.38

NOISE FIGURE (dB)						
FREQ	@ V _{DS} =3V, I _{DS} =15mA	@ V _{DS} =4V, I _{DS} =15mA	@ V _{DS} =3V, I _{DS} =30mA	@ V _{DS} =4V, I _{DS} =30mA	@ V _{DS} =3V, I _{DS} =60mA	@ V _{DS} =4V, I _{DS} =60mA
(GHz)	@ +25°C	@ +25°C	@ +25°C	@ +25°C	@ +25°C	@ +25°C
0.25	0.46	0.45	0.38	0.38	0.34	0.38
0.30	0.48	0.49	0.43	0.41	0.39	0.39
0.40	0.51	0.54	0.43	0.46	0.41	0.43
0.50	0.51	0.49	0.44	0.43	0.39	0.41
0.60	0.57	0.56	0.50	0.47	0.45	0.48
0.70	0.45	0.44	0.37	0.36	0.33	0.34
0.80	0.37	0.39	0.30	0.30	0.29	0.28
0.90	0.33	0.31	0.25	0.24	0.24	0.23
1.00	0.36	0.38	0.31	0.29	0.24	0.28
1.25	0.32	0.30	0.25	0.24	0.20	0.22
1.50	0.29	0.28	0.22	0.31	0.20	0.21
1.75	0.43	0.43	0.35	0.36	0.34	0.35
2.00	0.43	0.43	0.31	0.33	0.33	0.38
2.25	0.41	0.41	0.33	0.33	0.31	0.32
2.50	0.51	0.50	0.39	0.38	0.35	0.37
2.75	0.50	0.50	0.40	0.40	0.36	0.37
3.00	0.44	0.43	0.33	0.33	0.31	0.34
3.25	0.57	0.56	0.46	0.44	0.45	0.43
3.50	0.48	0.46	0.36	0.38	0.42	0.38
3.75	0.48	0.52	0.40	0.41	0.36	0.38
4.00	0.57	0.56	0.40	0.42	0.42	0.42
4.25	0.73	0.78	0.62	0.63	0.62	0.63
4.50	0.90	0.87	0.78	0.76	0.77	0.79
4.75	0.98	0.96	0.89	0.85	0.87	0.90
5.00	1.04	1.01	0.85	0.84	0.87	0.87
5.25	1.25	1.22	1.08	1.06	1.11	1.09
5.50	1.08	1.05	0.91	0.92	0.95	0.94
5.75	1.27	1.23	1.07	1.07	1.09	1.06
6.00	1.36	1.34	1.17	1.16	1.19	1.27




Typical Performance Data

V _{DS} = 3V, I _{DS} = 15 mA @ 25°C			
FREQ (GHz)	GAIN (dB)	OIP3 (dBm)	P1dB (dBm)
0.40	24.53	22.64	16.36
0.50	24.08	22.28	16.36
0.60	23.60	22.56	16.63
0.70	23.10	22.67	16.72
0.80	22.60	22.73	16.84
0.90	22.10	22.86	17.02
1.00	21.59	23.44	17.00
1.10	21.10	23.22	17.40
1.20	20.61	23.01	17.58
1.30	20.15	23.36	17.32
1.40	19.69	23.27	17.60
1.50	19.24	23.14	17.61
1.60	18.80	22.85	18.10
1.70	18.38	23.32	17.96
1.80	17.99	23.00	18.09
1.90	17.60	22.35	18.38
2.00	17.21	21.90	18.54
2.10	16.85	22.42	18.18
2.20	16.48	21.86	18.76
2.30	16.14	21.60	18.69
2.40	15.83	22.12	18.73
2.50	15.50	22.28	18.44
2.60	15.20	22.55	18.69
2.70	14.91	22.55	18.73
2.80	14.62	22.91	18.78
2.90	14.32	23.24	18.26
3.00	14.04	23.49	18.47
3.10	13.77	23.10	18.61
3.20	13.51	23.46	18.31
3.30	13.27	23.88	18.22
3.40	13.03	22.96	18.63
3.50	12.78	23.44	18.31
3.60	12.54	23.77	18.08
3.70	12.28	23.14	18.45
3.80	12.05	24.30	17.86
3.90	11.84	24.15	17.82
4.00	11.64	23.98	17.76
4.10	11.46	24.55	17.73
4.20	11.26	24.45	17.59
4.30	11.06	24.34	17.98
4.40	10.89	24.24	17.89
4.50	10.71	24.38	18.11
4.60	10.51	23.45	18.41
4.70	10.31	23.67	18.17
4.80	10.13	23.69	18.24
4.90	9.93	23.89	18.05
5.00	9.74	23.93	18.15
5.10	9.59	22.83	18.53
5.20	9.43	22.81	18.26
5.30	9.25	23.85	18.01
5.40	9.07	22.45	18.65
5.50	8.92	22.59	18.52
5.60	8.76	21.88	19.03
5.70	8.61	22.26	18.74
5.80	8.46	22.19	19.07
5.90	8.31	22.58	18.83
6.00	8.14	21.08	19.66



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IF/RF MICROWAVE COMPONENTS

Typical Performance Data

V _{DS} = 4V, I _{DS} = 15 mA @ 25°C			
FREQ (GHz)	GAIN (dB)	OIP3 (dBm)	P1dB (dBm)
0.40	24.55	22.66	18.53
0.50	24.12	22.24	18.52
0.60	23.69	22.51	19.03
0.70	23.18	22.62	18.94
0.80	22.67	22.72	19.30
0.90	22.17	22.99	19.49
1.00	21.67	23.45	19.46
1.10	21.18	23.36	19.74
1.20	20.68	23.04	20.11
1.30	20.21	23.57	19.84
1.40	19.75	23.45	20.13
1.50	19.31	23.21	20.35
1.60	18.89	22.90	20.66
1.70	18.46	23.38	20.52
1.80	18.06	23.13	20.87
1.90	17.67	22.41	20.98
2.00	17.31	22.08	21.27
2.10	16.96	22.55	20.74
2.20	16.59	22.06	21.54
2.30	16.25	21.77	21.59
2.40	15.93	22.34	21.48
2.50	15.60	22.47	21.18
2.60	15.31	22.75	21.31
2.70	15.02	22.78	21.44
2.80	14.71	23.15	21.38
2.90	14.40	23.38	20.95
3.00	14.12	23.66	21.07
3.10	13.85	23.23	21.19
3.20	13.61	23.60	21.05
3.30	13.36	24.11	20.79
3.40	13.10	23.14	21.38
3.50	12.86	23.67	21.06
3.60	12.63	23.94	20.83
3.70	12.38	23.38	21.21
3.80	12.16	24.59	20.44
3.90	11.95	24.43	20.57
4.00	11.74	24.26	20.46
4.10	11.55	24.70	20.31
4.20	11.36	24.71	20.31
4.30	11.17	24.61	20.58
4.40	10.99	24.51	20.46
4.50	10.80	24.65	20.68
4.60	10.59	23.69	21.17
4.70	10.40	23.96	20.88
4.80	10.23	23.95	20.82
4.90	10.05	24.22	20.61
5.00	9.87	24.24	20.72
5.10	9.68	23.12	21.11
5.20	9.52	23.10	20.82
5.30	9.34	24.13	20.55
5.40	9.18	22.77	21.25
5.50	9.03	22.86	21.10
5.60	8.87	22.13	21.65
5.70	8.71	22.56	21.34
5.80	8.55	22.48	21.72
5.90	8.41	22.87	21.45
6.00	8.25	21.33	22.24

Typical Performance Data

V_{DS} = 3V, I_{DS} = 30 mA @ 25°C			
FREQ (GHz)	GAIN (dB)	OIP3 (dBm)	P1dB (dBm)
0.40	26.64	27.07	16.89
0.50	26.09	26.95	17.00
0.60	25.50	27.26	17.19
0.70	24.89	27.62	17.24
0.80	24.28	27.74	17.26
0.90	23.69	27.97	17.32
1.00	23.12	28.55	17.36
1.10	22.55	28.38	17.65
1.20	22.00	28.17	17.79
1.30	21.48	28.88	17.68
1.40	20.98	28.72	17.90
1.50	20.49	28.84	17.85
1.60	20.03	28.39	18.08
1.70	19.57	28.69	17.93
1.80	19.14	28.75	17.97
1.90	18.74	28.13	18.01
2.00	18.34	27.74	18.16
2.10	17.97	28.26	17.94
2.20	17.60	27.79	18.28
2.30	17.24	27.56	18.27
2.40	16.91	28.35	18.24
2.50	16.59	28.42	18.19
2.60	16.28	28.61	18.21
2.70	15.98	28.43	18.26
2.80	15.66	28.76	18.20
2.90	15.35	29.01	17.99
3.00	15.06	29.37	18.12
3.10	14.78	28.89	18.11
3.20	14.53	29.39	17.92
3.30	14.28	29.73	17.93
3.40	14.02	28.78	18.23
3.50	13.77	29.45	17.96
3.60	13.53	29.88	17.81
3.70	13.27	29.34	18.06
3.80	13.04	30.22	17.65
3.90	12.83	30.22	17.71
4.00	12.63	30.02	17.71
4.10	12.44	30.49	17.68
4.20	12.25	30.58	17.68
4.30	12.05	30.37	17.74
4.40	11.87	30.39	17.81
4.50	11.68	30.47	17.90
4.60	11.48	29.40	18.06
4.70	11.29	29.63	17.94
4.80	11.10	29.80	17.94
4.90	10.93	30.17	17.97
5.00	10.74	30.22	17.90
5.10	10.55	29.01	18.09
5.20	10.38	28.97	17.94
5.30	10.20	30.48	17.79
5.40	10.03	28.76	18.25
5.50	9.88	28.90	18.05
5.60	9.72	28.12	18.44
5.70	9.56	28.43	18.21
5.80	9.41	28.31	18.42
5.90	9.27	28.80	18.27
6.00	9.12	26.90	18.76



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IF/RF MICROWAVE COMPONENTS

Typical Performance Data

V _{DS} = 4V, I _{DS} = 30 mA @ 25°C			
FREQ (GHz)	GAIN (dB)	OIP3 (dBm)	P1dB (dBm)
0.40	26.64	26.98	17.51
0.50	26.09	26.89	17.44
0.60	25.50	27.30	18.10
0.70	24.91	27.59	18.42
0.80	24.30	27.79	18.38
0.90	23.71	28.08	18.70
1.00	23.14	28.53	19.24
1.10	22.58	28.40	19.34
1.20	22.04	28.33	19.49
1.30	21.53	28.84	19.41
1.40	21.02	28.85	19.66
1.50	20.53	28.78	19.80
1.60	20.07	28.57	20.05
1.70	19.62	29.09	19.94
1.80	19.20	28.78	20.15
1.90	18.80	28.18	20.21
2.00	18.39	27.98	20.35
2.10	18.03	28.43	20.12
2.20	17.66	27.87	20.56
2.30	17.30	27.80	20.50
2.40	16.98	28.49	20.68
2.50	16.64	28.47	20.46
2.60	16.34	28.68	20.49
2.70	16.04	28.61	20.69
2.80	15.72	28.94	20.68
2.90	15.42	29.41	20.43
3.00	15.13	29.49	20.46
3.10	14.85	29.04	20.58
3.20	14.59	29.58	20.41
3.30	14.35	30.10	20.23
3.40	14.09	29.02	20.56
3.50	13.84	29.44	20.45
3.60	13.60	29.97	20.27
3.70	13.33	29.51	20.39
3.80	13.10	30.75	20.08
3.90	12.90	30.26	20.17
4.00	12.70	30.34	20.13
4.10	12.51	30.85	19.97
4.20	12.31	30.62	19.99
4.30	12.11	30.54	20.21
4.40	11.93	30.70	20.11
4.50	11.75	30.68	20.34
4.60	11.55	29.73	20.54
4.70	11.35	29.85	20.37
4.80	11.17	29.90	20.23
4.90	10.99	30.21	20.24
5.00	10.80	30.08	20.33
5.10	10.62	29.01	20.37
5.20	10.45	29.07	20.20
5.30	10.27	30.28	20.05
5.40	10.10	28.82	20.58
5.50	9.95	29.03	20.50
5.60	9.80	28.18	20.77
5.70	9.64	28.51	20.51
5.80	9.49	28.55	20.94
5.90	9.34	28.79	20.76
6.00	9.18	26.96	21.29

Typical Performance Data

V_{DS} = 3V, I_{DS} = 60 mA @ 25°C			
FREQ (GHz)	GAIN (dB)	OIP3 (dBm)	P1dB (dBm)
0.40	28.08	32.40	18.29
0.50	27.43	32.00	18.37
0.60	26.75	32.69	18.48
0.70	26.07	32.68	18.32
0.80	25.39	32.84	18.62
0.90	24.74	32.65	18.58
1.00	24.11	32.84	18.40
1.10	23.50	33.30	18.63
1.20	22.91	33.22	18.79
1.30	22.37	32.98	18.61
1.40	21.84	33.01	18.65
1.50	21.33	32.98	18.74
1.60	20.85	33.07	18.82
1.70	20.38	33.21	18.60
1.80	19.95	33.36	18.80
1.90	19.53	34.04	18.97
2.00	19.13	33.39	19.00
2.10	18.75	33.18	18.65
2.20	18.37	33.34	18.90
2.30	18.00	33.64	18.91
2.40	17.67	33.30	18.80
2.50	17.33	33.67	18.80
2.60	17.02	33.55	18.73
2.70	16.71	33.43	18.77
2.80	16.39	33.09	18.60
2.90	16.07	32.93	18.32
3.00	15.78	33.69	18.37
3.10	15.50	33.02	18.54
3.20	15.24	33.55	18.43
3.30	14.99	33.60	18.21
3.40	14.73	33.39	18.49
3.50	14.48	33.71	18.36
3.60	14.25	33.13	18.25
3.70	13.98	34.12	18.43
3.80	13.74	32.92	18.07
3.90	13.53	32.79	18.12
4.00	13.33	32.45	18.16
4.10	13.14	32.76	18.09
4.20	12.95	32.67	18.08
4.30	12.75	32.52	18.14
4.40	12.56	32.59	18.22
4.50	12.38	33.03	18.33
4.60	12.17	33.07	18.44
4.70	11.98	33.74	18.25
4.80	11.79	32.63	18.33
4.90	11.61	33.35	18.27
5.00	11.42	33.21	18.33
5.10	11.24	33.79	18.43
5.20	11.07	33.15	18.37
5.30	10.89	32.70	18.22
5.40	10.72	34.01	18.63
5.50	10.57	33.20	18.48
5.60	10.41	34.36	18.64
5.70	10.25	33.82	18.47
5.80	10.10	33.84	18.71
5.90	9.96	33.35	18.47
6.00	9.80	34.97	18.86



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 • Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site
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IF/RF MICROWAVE COMPONENTS

Typical Performance Data

V _{DS} = 4V, I _{DS} = 60 mA @ 25°C			
FREQ (GHz)	GAIN (dB)	OIP3 (dBm)	P1dB (dBm)
0.40	28.16	31.39	20.21
0.50	27.51	31.36	20.10
0.60	26.82	31.63	20.42
0.70	26.14	32.42	20.41
0.80	25.46	32.38	20.57
0.90	24.81	32.78	20.56
1.00	24.18	33.40	20.57
1.10	23.57	33.15	20.80
1.20	22.99	33.51	20.79
1.30	22.45	33.70	20.78
1.40	21.92	33.32	20.82
1.50	21.40	33.91	20.92
1.60	20.93	33.32	20.97
1.70	20.46	33.78	20.77
1.80	20.02	33.92	20.95
1.90	19.60	33.58	20.97
2.00	19.20	33.76	20.95
2.10	18.82	33.80	20.77
2.20	18.44	33.81	20.88
2.30	18.08	34.07	21.03
2.40	17.74	34.31	20.95
2.50	17.40	34.63	20.80
2.60	17.10	34.49	20.91
2.70	16.79	35.05	20.94
2.80	16.47	34.90	20.81
2.90	16.15	34.64	20.67
3.00	15.86	34.95	20.61
3.10	15.58	34.23	20.74
3.20	15.32	35.24	20.52
3.30	15.07	35.50	20.43
3.40	14.81	34.32	20.68
3.50	14.56	35.72	20.58
3.60	14.32	35.38	20.47
3.70	14.05	36.26	20.66
3.80	13.81	36.43	20.32
3.90	13.61	36.05	20.36
4.00	13.41	36.33	20.38
4.10	13.21	36.30	20.35
4.20	13.02	36.50	20.34
4.30	12.82	36.20	20.38
4.40	12.64	36.59	20.46
4.50	12.46	36.36	20.55
4.60	12.25	36.05	20.65
4.70	12.06	36.11	20.59
4.80	11.86	37.23	20.55
4.90	11.69	38.68	20.48
5.00	11.50	36.83	20.54
5.10	11.32	35.68	20.58
5.20	11.15	36.63	20.55
5.30	10.97	37.06	20.43
5.40	10.80	35.48	20.68
5.50	10.64	36.16	20.51
5.60	10.49	34.98	20.83
5.70	10.33	35.82	20.63
5.80	10.18	36.52	20.77
5.90	10.03	35.47	20.67
6.00	9.87	34.15	21.07