

B1	Short RF Bead Fair Rite-274301944	L1	5 Turns, 20 AWG, IDIA 0.126
C1	18 pF Chip Capacitor	R1	10 kΩ, 1/4 W Resistor
C2, C3, C6, C9	43 pF Chip Capacitor	R2	13 kΩ, 1/4 W Resistor
C4	100 pF Chip Capacitor	R3	1.0 kΩ, 1/4 W Chip Resistor
C5, C12	10 μF, 50 Vdc Electrolytic Capacitor	R4	4 x 39 Ω, 1/8 W Chip Resistor
C7, C10	1000 pF Chip Capacitor	TL1-TL4	Microstrip Line See Photomaster
C8, C11	0.1 μF, 50 Vdc Chip Capacitor	Ckt Board	1/32" Glass Teflon, ε _r = 2.55
C13	250 μF, 50 Vdc Electrolytic Capacitor		ARLON-GX-0300-55-22
C14	0.6-4.5 pF Variable Capacitor		

Figure 1. MRF182 Schematic

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TYPICAL CHARACTERISTICS

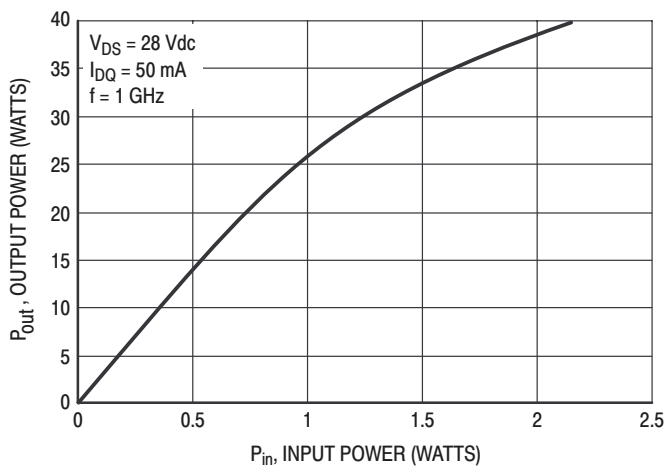


Figure 2. Output Power versus Input Power at 1 GHz

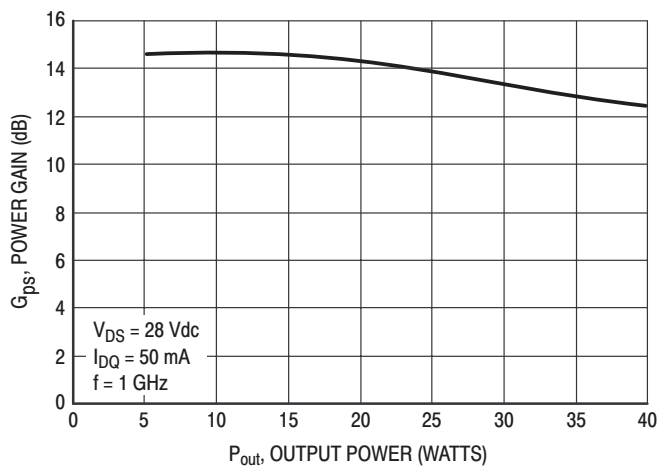


Figure 3. Power Gain versus Output Power at 1 GHz

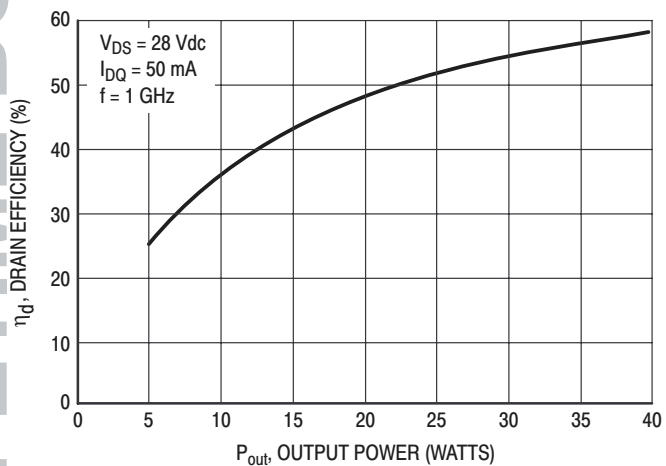


Figure 4. Drain Efficiency versus Output Power at 1 GHz

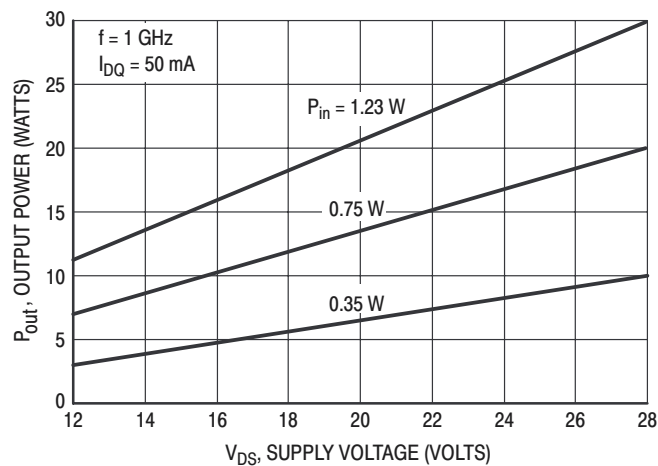


Figure 5. Output Power versus Supply Voltage

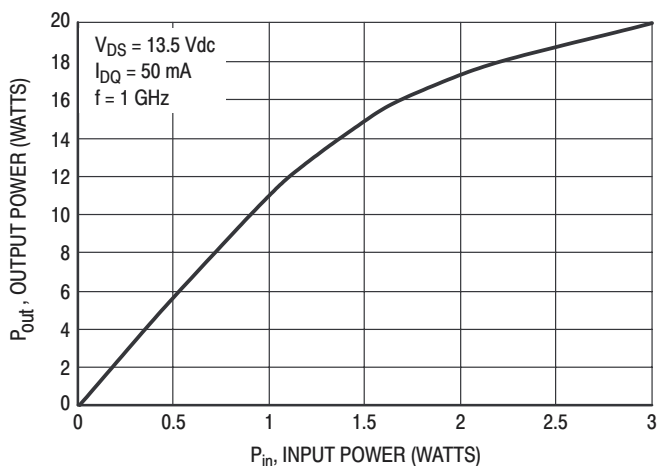


Figure 6. Output Power versus Input Power

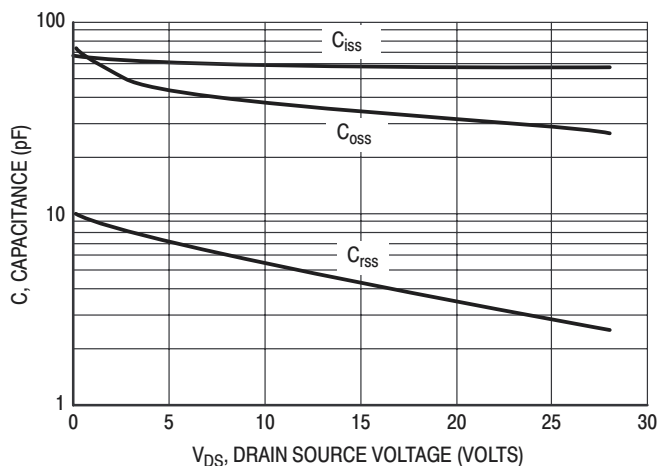


Figure 7. Capacitance versus Drain Source Voltage

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Table 1. Typical Common Source S-Parameters ($V_{DS} = 13.5\text{ V}$)

$I_D = 1.0\text{ A}$

f MHz	S ₁₁		S ₂₁		S ₁₂		S ₂₂	
	S ₁₁	∠φ	S ₂₁	∠φ	S ₁₂	∠φ	S ₂₂	∠φ
20	0.933	-131	40.81	112	0.021	22	0.664	-138
30	0.922	-148	29.31	104	0.022	15	0.700	-151
40	0.892	-156	22.19	99	0.022	10	0.718	-158
50	0.877	-161	17.91	95	0.023	7	0.725	-162
60	0.870	-164	14.67	92	0.023	4	0.732	-164
70	0.863	-166	12.57	90	0.022	2	0.735	-166
80	0.860	-168	11.00	89	0.022	1	0.738	-168
90	0.860	-169	9.79	87	0.022	0	0.740	-169
100	0.859	-170	8.79	86	0.022	-1	0.741	-169
150	0.859	-173	5.78	80	0.022	-7	0.750	-172
200	0.862	-175	4.29	74	0.022	-11	0.759	-172
250	0.868	-176	3.38	69	0.021	-14	0.770	-173
300	0.880	-177	2.77	65	0.020	-17	0.780	-173
350	0.877	-177	2.32	61	0.020	-19	0.793	-173
400	0.882	-178	1.98	56	0.019	-22	0.808	-173
450	0.892	-179	1.72	52	0.018	-24	0.816	-173
500	0.899	-180	1.51	49	0.017	-26	0.828	-174
550	0.898	180	1.33	45	0.017	-27	0.838	-174
600	0.907	179	1.19	42	0.016	-28	0.849	-175
650	0.914	179	1.07	38	0.015	-28	0.859	-175
700	0.916	177	0.95	35	0.014	-25	0.867	-176
750	0.920	177	0.88	34	0.015	-26	0.874	-176
800	0.924	176	0.80	30	0.015	-27	0.884	-177
850	0.929	175	0.74	27	0.015	-33	0.891	-178
900	0.929	174	0.68	25	0.013	-38	0.897	-178
950	0.933	173	0.63	22	0.011	-39	0.905	-179
1000	0.934	173	0.58	20	0.010	-37	0.912	-180
1050	0.930	172	0.54	17	0.009	-33	0.918	180
1100	0.938	171	0.52	15	0.009	-29	0.924	179
1150	0.933	170	0.48	13	0.008	-28	0.929	178
1200	0.930	169	0.45	10	0.008	-25	0.930	177
1250	0.939	168	0.42	8	0.007	-23	0.935	177
1300	0.936	168	0.40	6	0.007	-21	0.934	176
1350	0.933	167	0.38	4	0.006	-19	0.936	175
1400	0.937	166	0.35	2	0.005	-14	0.939	174
1450	0.937	165	0.33	0	0.005	-5	0.934	174
1500	0.927	164	0.32	-2	0.004	0	0.930	173

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Table 2. Typical Common Emitter S-Parameters ($V_{DS} = 28\text{ V}$)

$I_D = 1.0\text{ A}$

f MHz	S ₁₁		S ₂₁		S ₁₂		S ₂₂	
	S ₁₁	∠φ	S ₂₁	∠φ	S ₁₂	∠φ	S ₂₂	∠φ
20	0.964	-99	54.39	129	0.014	39	0.429	-108
30	0.949	-121	43.46	118	0.017	28	0.478	-125
40	0.909	-134	34.35	109	0.018	20	0.520	-137
50	0.884	-142	28.27	103	0.018	15	0.540	-144
60	0.875	-148	23.38	98	0.019	11	0.553	-149
70	0.862	-152	20.10	95	0.019	8	0.562	-152
80	0.861	-156	17.64	92	0.019	5	0.569	-154
90	0.858	-158	15.72	90	0.019	3	0.575	-156
100	0.858	-160	14.11	88	0.019	1	0.580	-157
150	0.856	-166	9.26	79	0.018	-7	0.606	-160
200	0.862	-169	6.80	71	0.018	-12	0.633	-161
250	0.871	-171	5.29	65	0.017	-16	0.661	-161
300	0.882	-173	4.27	59	0.016	-21	0.690	-162
350	0.883	-174	3.52	54	0.015	-23	0.718	-162
400	0.895	-175	2.97	49	0.014	-26	0.747	-163
450	0.904	-176	2.54	45	0.013	-28	0.767	-164
500	0.911	-177	2.20	41	0.012	-30	0.789	-165
550	0.911	-178	1.90	37	0.011	-30	0.807	-166
600	0.923	-179	1.69	33	0.010	-30	0.825	-167
650	0.929	-180	1.50	30	0.009	-29	0.841	-168
700	0.929	179	1.32	26	0.009	-22	0.855	-169
750	0.933	178	1.21	24	0.010	-22	0.865	-170
800	0.938	177	1.09	21	0.009	-20	0.877	-171
850	0.942	176	1.00	18	0.010	-31	0.886	-172
900	0.942	175	0.92	16	0.008	-37	0.894	-173
950	0.947	174	0.84	13	0.006	-38	0.904	-174
1000	0.946	173	0.77	11	0.005	-28	0.912	-175
1050	0.943	172	0.72	8	0.005	-18	0.919	-176
1100	0.948	171	0.67	6	0.004	-9	0.926	-177
1150	0.945	171	0.62	4	0.005	0	0.932	-178
1200	0.939	170	0.59	1	0.004	3	0.934	-179
1250	0.949	169	0.54	0	0.005	12	0.940	-180
1300	0.947	168	0.51	-3	0.005	18	0.939	180
1350	0.944	167	0.48	-4	0.005	22	0.941	179
1400	0.945	166	0.44	-7	0.004	34	0.943	178
1450	0.944	165	0.42	-9	0.005	45	0.940	177
1500	0.933	164	0.40	-10	0.005	55	0.936	176

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LAST ORDER 31JUL04 LAST SHIP 31JAN05

PACKAGE DIMENSIONS

NOTES:

1. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION H IS MEASURED 0.030 (0.762) AWAY FROM PACKAGE BODY.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.795	0.805	20.19	20.45
B	0.225	0.235	5.72	5.97
C	0.125	0.175	3.18	4.45
D	0.210	0.220	5.33	5.59
E	0.055	0.065	1.40	1.65
F	0.004	0.006	0.10	0.15
G	0.562 BSC		14.28 BSC	
H	0.077	0.087	1.96	2.21
K	0.220	0.250	5.59	6.35
M	0.355	0.365	9.02	9.27
N	0.357	0.363	9.07	9.22
Q	0.125	0.135	3.18	3.43
R	0.227	0.233	5.77	5.92
S	0.225	0.235	5.72	5.97
aaa	0.005 REF		0.13 REF	
bbb	0.010 REF		0.25 REF	
ccc	0.015 REF		0.38 REF	

STYLE 1:
 PIN 1. DRAIN
 2. GATE
 3. SOURCE

**CASE 360B-05
 ISSUE F
 NI-360
 MRF182R1**

NOTES:

1. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION H IS MEASURED 0.030 (0.762) AWAY FROM PACKAGE BODY.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.375	0.385	9.53	9.78
B	0.225	0.235	5.72	5.97
C	0.105	0.155	2.67	3.94
D	0.210	0.220	5.33	5.59
E	0.035	0.045	0.89	1.14
F	0.004	0.006	0.10	0.15
H	0.057	0.067	1.45	1.70
K	0.085	0.115	2.16	2.92
M	0.355	0.365	9.02	9.27
N	0.357	0.363	9.07	9.22
R	0.227	0.23	5.77	5.92
S	0.225	0.235	5.72	5.97
aaa	0.005 REF		0.13 REF	
bbb	0.010 REF		0.25 REF	
ccc	0.015 REF		0.38 REF	

STYLE 1:
 PIN 1. DRAIN
 2. GATE
 3. SOURCE

**CASE 360C-05
 ISSUE D
 NI-360S
 MRF182SR1**

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