

RF POWER FIELD-EFFECT TRANSISTOR

DESCRIPTION:

The **ASI MRF137** is a N-Channel Enhancement MOSFET, Designed for Wideband Large Signal Output and Driver Stage Applications up to 400 MHz.

MAXIMUM RATINGS

I_D	5.0 A
V_{DSS}	65 V
P_{DISS}	100 W @ T _C = 25 °C
T_J	-65 °C to +200 °C
T_{STG}	-65 °C to +150 °C
θ_{JC}	1.75 °C/W

PACKAGE STYLE .380 4L FLG

1 = DRAIN 2 = GATE
3 & 4 = SOURCE

	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.220/5,59	.230/5,84
B	.785/19,94	
C	.720/18,29	.730/18,54
D	.970/24,64	.980/24,89
E		.385/9,78
F	.004/0,10	.006/0,15
G	.085/2,16	.105/2,67
H	.160/4,06	.180/4,57
I		.280/7,11
J	.240/6,10	.255/6,48

CHARACTERISTICS T_C = 25 °C

SYMBOL	TEST CONDITIONS		MINIMUM	TYPICAL	MAXIMUM	UNITS
V_{(BR)DSS}	I _D = 10 mA	V _{GS} = 0 V	65			V
I_{DSS}	V _{DS} = 28 V	V _{GS} = 0 V			4.0	mA
I_{GSS}	V _{DS} = 0 V	V _{GS} = 20 V			1.0	μA
V_{GS(th)}	I _D = 25 mA	V _{DS} = 10 V	1.0	3.0	6.0	V
g_{fs}	I _D = 500 mA	V _{DS} = 10 V	500	750		mmhos
C_{iss} C_{oss} C_{rss}	V _{DS} = 28 V	V _{GS} = 0 V		48 11	45	pF
NF	V _{DS} = 28 V	I _D = 1.0 A		1.5		dB
G_{ps} η	V _{DD} = 28 V I _{DQ} = 25 mA	P _{out} = 30 W	12 50	16 60		dB %
ψ	V _{DD} = 28 V I _{DQ} = 25 mA	P _{out} = 30 W VSWR 30:1 @ ALL PHASE ANGLES				NO DEGRADATION IN OUTPUT POWER



f (MHz)	S ₁₁		S ₂₁		S ₁₂		S ₂₂	
	S ₁₁	φ	S ₂₁	φ	S ₁₂	φ	S ₂₂	φ
2	0.977	-32	59.48	163	0.011	67	0.661	-36
5	0.919	-70	48.67	142	0.024	44	0.692	-78
10	0.852	-109	33.50	122	0.032	29	0.747	-117
20	0.817	-140	19.05	106	0.037	16	0.768	-146
30	0.814	-153	13.11	99	0.038	14	0.774	-157
40	0.811	-159	9.88	95	0.038	13	0.782	-162
50	0.812	-164	7.98	92	0.038	12	0.787	-165
60	0.813	-166	6.66	89	0.038	12	0.787	-168
70	0.815	-168	5.708	86	0.038	11	0.787	-169
80	0.816	-170	5.003	84	0.038	11	0.787	-170
90	0.817	-171	4.560	83	0.038	12	0.787	-171
100	0.817	-172	4.170	81	0.039	13	0.787	-172
110	0.818	-173	3.670	80	0.039	13	0.788	-172
120	0.820	-173	3.420	79	0.039	13	0.788	-173
130	0.821	-173	3.170	79	0.039	13	0.788	-173
140	0.822	-174	2.980	78	0.039	13	0.788	-173
150	0.823	-175	2.826	77	0.039	14	0.788	-173
160	0.824	-175	2.650	76	0.039	14	0.790	-174
170	0.825	-176	2.438	75	0.039	14	0.792	-174
180	0.827	-176	2.325	73	0.039	15	0.793	-174
190	0.829	-177	2.175	72	0.039	16	0.796	-174
200	0.831	-177	2.084	71	0.039	16	0.799	-174
225	0.836	-178	1.824	69	0.039	18	0.805	-174
250	0.846	-178	1.621	66	0.039	21	0.816	-174
275	0.853	-179	1.462	64	0.039	23	0.822	-174
300	0.853	-179	1.319	61	0.040	25	0.833	-174
325	0.856	-179	1.194	59	0.040	27	0.828	-174
350	0.857	+ 179	1.089	56	0.040	30	0.842	-174
375	0.861	+ 179	1.014	54	0.042	32	0.849	-174
400	0.865	+ 178	0.927	51	0.043	35	0.856	-174
425	0.875	+ 178	0.876	49	0.045	37	0.866	-174
450	0.881	+ 178	0.810	46	0.046	40	0.870	-174
475	0.886	+ 177	0.755	44	0.046	43	0.875	-174
500	0.887	+ 177	0.694	41	0.051	43	0.888	-174
525	0.888	+ 176	0.677	39	0.052	43	0.890	-174
550	0.896	+ 176	0.625	36	0.055	45	0.898	-174
575	0.907	+ 175	0.603	34	0.058	45	0.913	-174
600	0.910	+ 175	0.585	32	0.061	45	0.918	-174
625	0.910	+ 174	0.563	30	0.065	45	0.945	-174
650	0.920	+ 174	0.543	28	0.069	46	0.952	-174
675	0.938	+ 173	0.533	26	0.074	47	0.974	-174
700	0.943	+ 171	0.515	24	0.078	47	0.958	-176
725	0.934	+ 170	0.491	22	0.079	46	0.953	-177
750	0.940	+ 170	0.475	22	0.084	48	0.943	-177
775	0.953	+ 169	0.477	21	0.090	48	0.957	-177
800	0.959	+ 168	0.467	17	0.093	48	0.957	-179

Common Source Scattering Parameters
50 Ω System
V_{DS} = 28 V, I_D = 0.75 A