

< High-power GaAs FET (small signal gain stage) >

MGF0918A

L & S BAND / 0.5W
SMD non - matched

DESCRIPTION

The MGF0918A GaAs FET with an N-channel schottky Gate, is designed for use UHF band amplifiers.

FEATURES

- High output power
Po=27dBm(TYP.) @f=1.9GHz,Pin=8dBm
- High power gain
Gp=20dB(TYP.) @f=1.9GHz
- High power added efficiency
ηadd=45%(TYP.) @f=1.9GHz,Pin=8dBm
- Hermetic Package

APPLICATION

- For UHF Band power amplifiers

QUALITY

- GG

RECOMMENDED BIAS CONDITIONS

- Vds=10V • Ids=150mA • Rg=1kΩ

Delivery -01:Tape & Reel(1K), -03:Trai(50pcs)

Absolute maximum ratings (Ta=25°C)

Symbol	Parameter	Ratings	Unit
VGSO	Gate to source breakdown voltage	-15	V
VGDO	Gate to drain breakdown voltage	-15	V
ID	Drain current	400	mA
IGR	Reverse gate current	-1.2	mA
IGF	Forward gate current	5.0	mA
PT	Total power dissipation	3	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

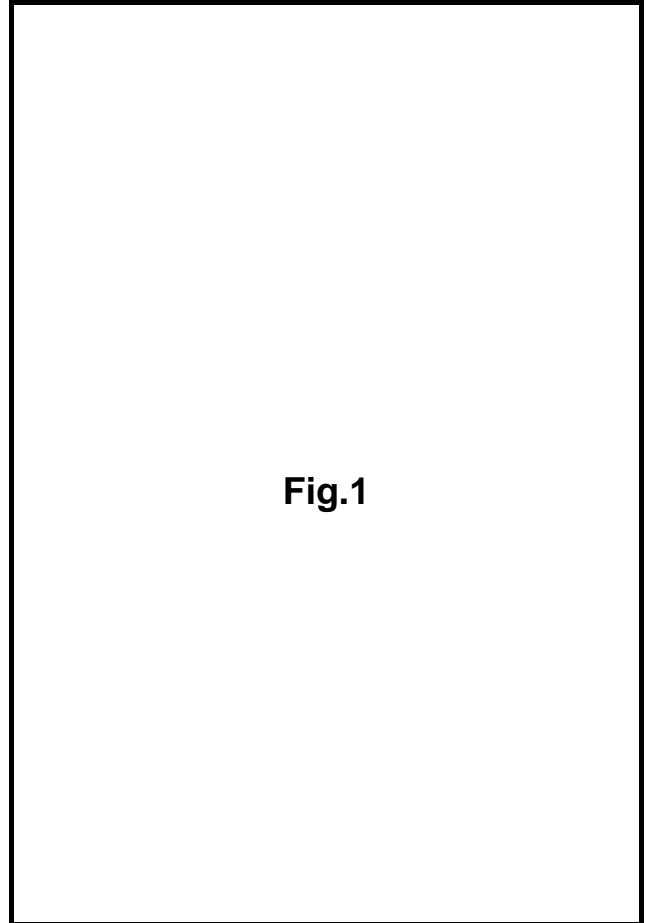


Fig.1

Electrical characteristics (Ta=25°C)

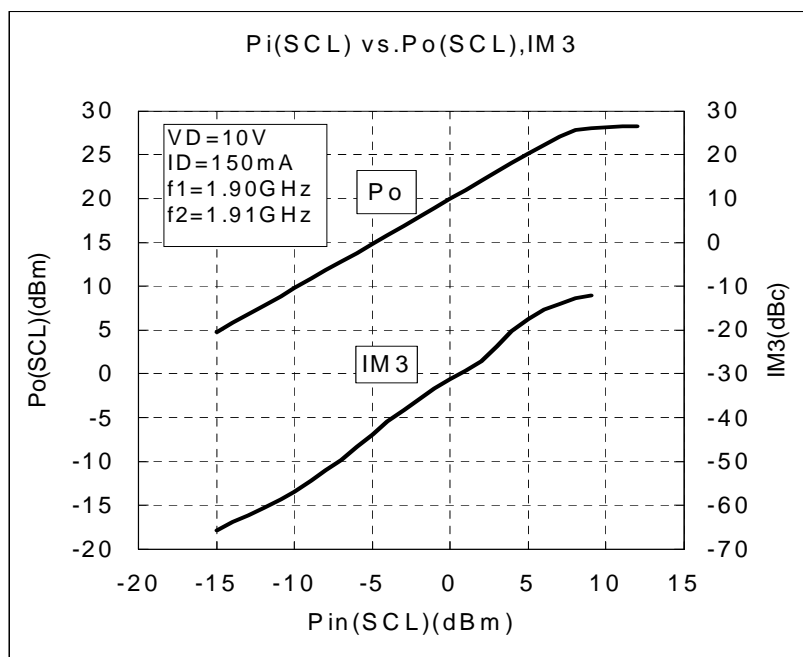
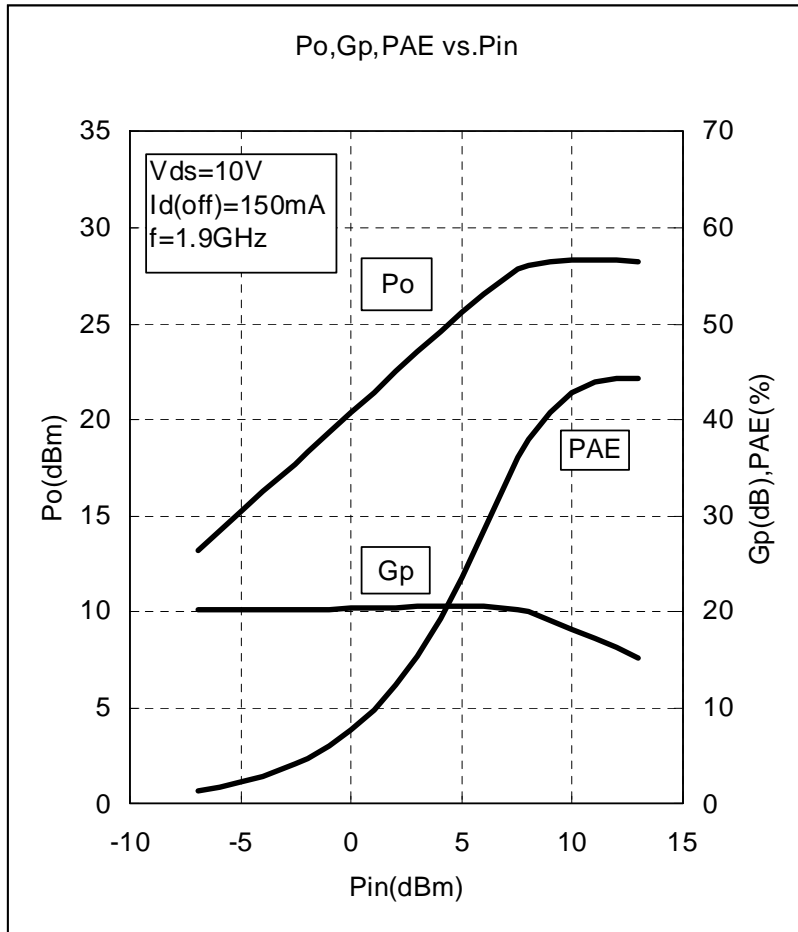
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V,VGS=0V	-	300	400	mA
VGS(off)	Gate to source cut-off voltage	VDS=3V,ID=1.0mA	-1.0	-	-5.0	V
gm	Transconductance	VDS=3V,ID=150mA	-	130	-	mS
Po	Output power	VDS=10V,ID=150mA,f=1.9GHz	25	27	-	dBm
ηadd	Power added Efficiency	Pin=8dBm	-	35	-	%
GLP	Linear Power Gain	VDS=10V,ID=150mA,f=1.9GHz	18	20	-	dB
NF	Noise figure		-	1.0	-	dB
Rth(ch-c)	Thermal Resistance *1	ΔVf Method	-	35	50	°C/W

*1:Channel to case / Above parameters, ratings, limits are subject to change.

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MGF0918A TYPICAL CHARACTERISTICS



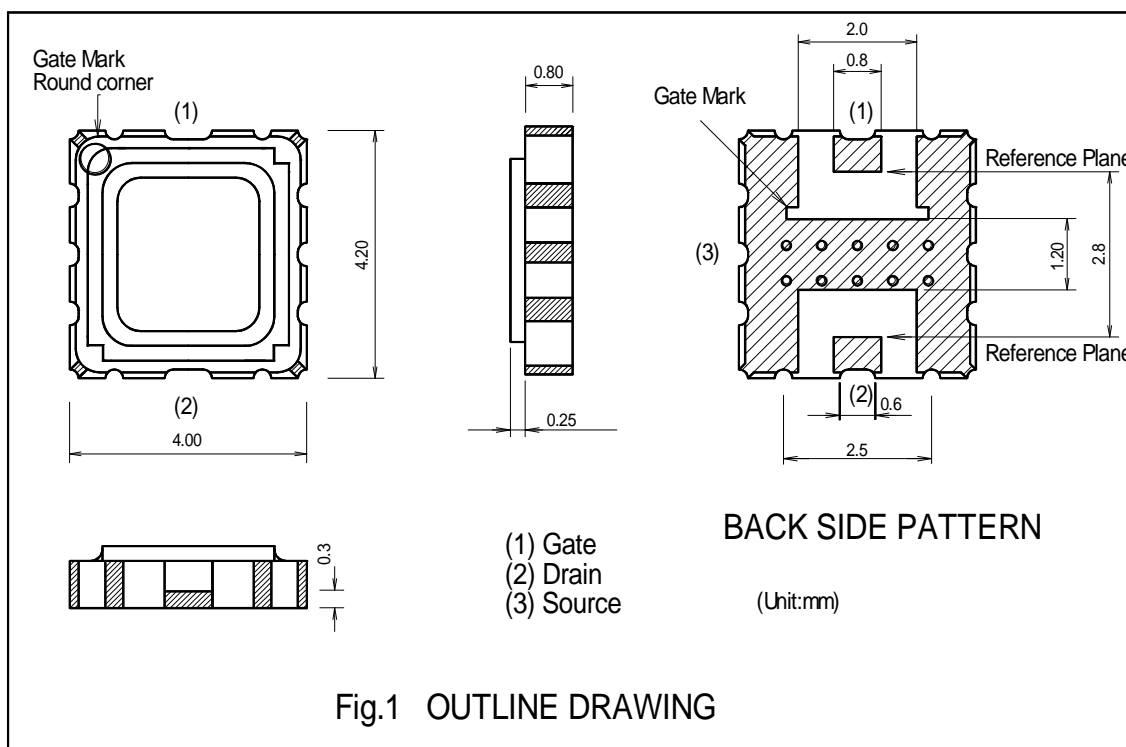
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MGF0918A S PARAMETERS (Ta=25°C,VD=10V,ID=150mA, Reference Plane see Fig.1)

freq. (MHz)	S11		S21		S12		S22		K	MAG/MSG (dB)
	(mag)	(ang)	(mag)	(ang)	(mag)	(ang)	(mag)	(ang)		
600	0.966	-47.70	6.220	142.02	0.015	56.75	0.302	-56.49	0.21	26.18
1000	0.939	-72.11	5.269	120.98	0.021	41.10	0.360	-78.28	0.29	24.00
1400	0.919	-90.91	4.470	103.95	0.024	27.49	0.426	-94.16	0.36	22.70
1800	0.905	-105.49	3.805	89.91	0.026	15.71	0.492	-105.68	0.42	21.65
2200	0.897	-116.96	3.257	78.05	0.026	5.60	0.553	-114.07	0.49	20.98
2600	0.892	-126.16	2.811	67.78	0.025	-3.00	0.606	-120.27	0.60	20.51
3000	0.890	-133.71	2.453	58.64	0.024	-10.20	0.651	-125.02	0.70	20.09
3400	0.889	-140.07	2.168	50.31	0.024	-16.12	0.687	-128.82	0.76	19.56
3800	0.888	-145.57	1.946	42.56	0.023	-20.89	0.716	-132.05	0.86	19.27
4200	0.886	-150.45	1.775	35.21	0.023	-24.64	0.738	-134.94	0.93	18.87
4600	0.883	-154.92	1.647	28.16	0.022	-27.52	0.754	-137.64	1.07	17.15
5000	0.877	-159.19	1.553	21.31	0.023	-29.72	0.768	-140.24	1.10	16.35
5400	0.868	-163.52	1.489	14.56	0.024	-31.42	0.779	-142.75	1.15	15.58
5800	0.856	-168.29	1.448	7.83	0.025	-32.85	0.788	-145.19	1.20	14.90
6200	0.840	-173.99	1.427	1.01	0.027	-34.23	0.797	-147.53	1.20	14.51
6600	0.820	177.60	1.423	-6.02	0.029	-35.84	0.806	-149.77	1.18	14.33
7000	0.797	172.89	1.433	-13.41	0.031	-37.92	0.814	-151.90	1.21	13.88
7400	0.771	162.95	1.457	-21.33	0.035	-40.74	0.820	-153.92	1.12	14.06
7800	0.743	154.14	1.491	-29.97	0.038	-44.55	0.824	-155.84	1.12	13.86
8200	0.713	146.69	1.536	-39.52	0.042	-49.58	0.824	-157.68	1.13	13.40
8600	0.674	137.66	1.587	-50.18	0.047	-56.03	0.818	-159.47	1.19	12.62
9000	0.618	123.53	1.643	-62.15	0.053	-64.03	0.806	-161.21	1.27	11.77
9400	0.545	102.00	1.699	-75.56	0.058	-73.66	0.786	-162.88	1.40	10.90
9800	0.485	73.05	1.748	-90.54	0.064	-84.89	0.759	-164.44	1.47	10.32
10200	0.475	39.23	1.782	-107.10	0.071	-97.58	0.723	-165.75	1.45	10.00
10600	0.535	5.13	1.788	-125.18	0.077	-111.47	0.678	-166.62	1.38	10.00
11000	0.640	-23.88	1.753	-144.56	0.082	-126.11	0.636	-166.73	1.22	10.44
11400	0.730	-43.68	1.656	-164.88	0.086	-140.87	0.609	-165.59	1.15	10.47
11800	0.813	-54.21	1.473	-177.63	0.088	-154.90	0.607	-162.55	1.14	9.96
12200	0.876	-63.08	1.176	-160.67	0.087	-167.09	0.636	-156.74	1.19	8.65



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