

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

MGF0912A

L & S BAND / 14W

non - matched

DESCRIPTION

The MGF0912A, GaAs FET with an N-channel schottky gate, is designed for use in L/S band amplifiers.

FEATURES

- High output power
Po=41.5dBm(TYP.) @f=1.9GHz,Pin=33dBm
- High power gain
Gp=10.5dB(TYP.) @f=1.9GHz
- High power added efficiency
P.A.E =38%(TYP.) @f=1.9GHz,Pin=33dBm
- Hermetic Package

APPLICATION

- For L/S Band power amplifiers

QUALITY

- GG

Delivery

- Tray

RECOMMENDED BIAS CONDITIONS

- Vds=10V
- Ids=2.6A
- Rg=50Ω

Absolute maximum ratings (Ta=25°C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain voltage	-15	V
VGSO	Gate to source voltage	-15	V
ID	Drain current	10	A
IGR	Reverse gate current	-30	mA
IGF	Forward gate current	63	mA
PT*1	Total power dissipation	53.6	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

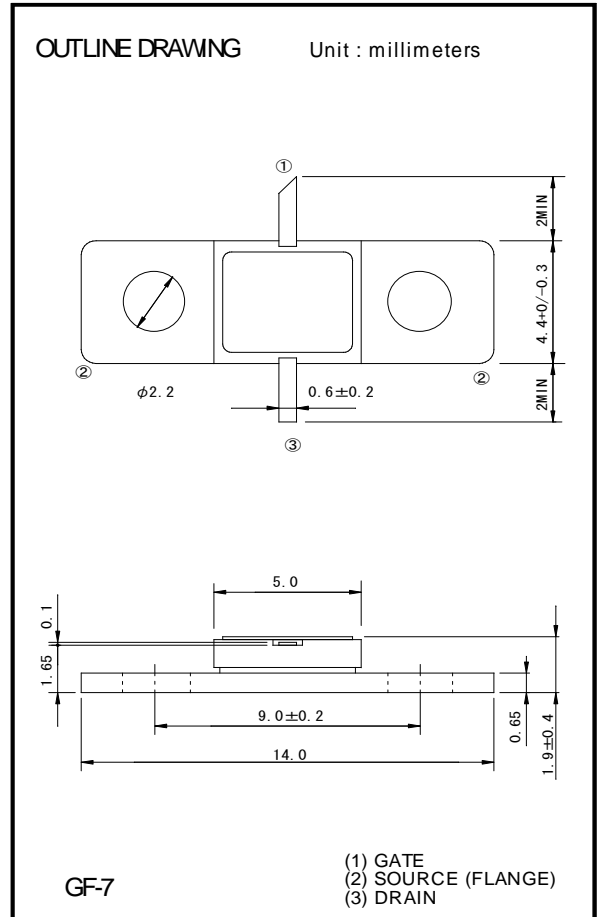
*1:Tc=25°C

Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V,VGS=0V	-	-	10	A
gm	Transconductance	VDS=3V,ID=2.6A	-	3	-	S
VGS(off)	Gate to source cut-off voltage	VDS=3V,ID=20mA	-2	-	-5	V
Po	Output power	VDS=10V,ID(RF off)=2.6A	40.5	41.5	-	dBm
P.A.E.	Power added efficiency	f=1.9GHz,Pin=33dBm	-	38	-	%
GLP	Linear Power Gain	VDS=10V,ID(RF off)=2.6A,f=1.9GHz	9.5	10.5	-	dB
Rth(ch-c) *3	Thermal resistance	Δ Vf method	-	-	100	°C/W

*2 :Channel-case

*3 :Channel-ambient



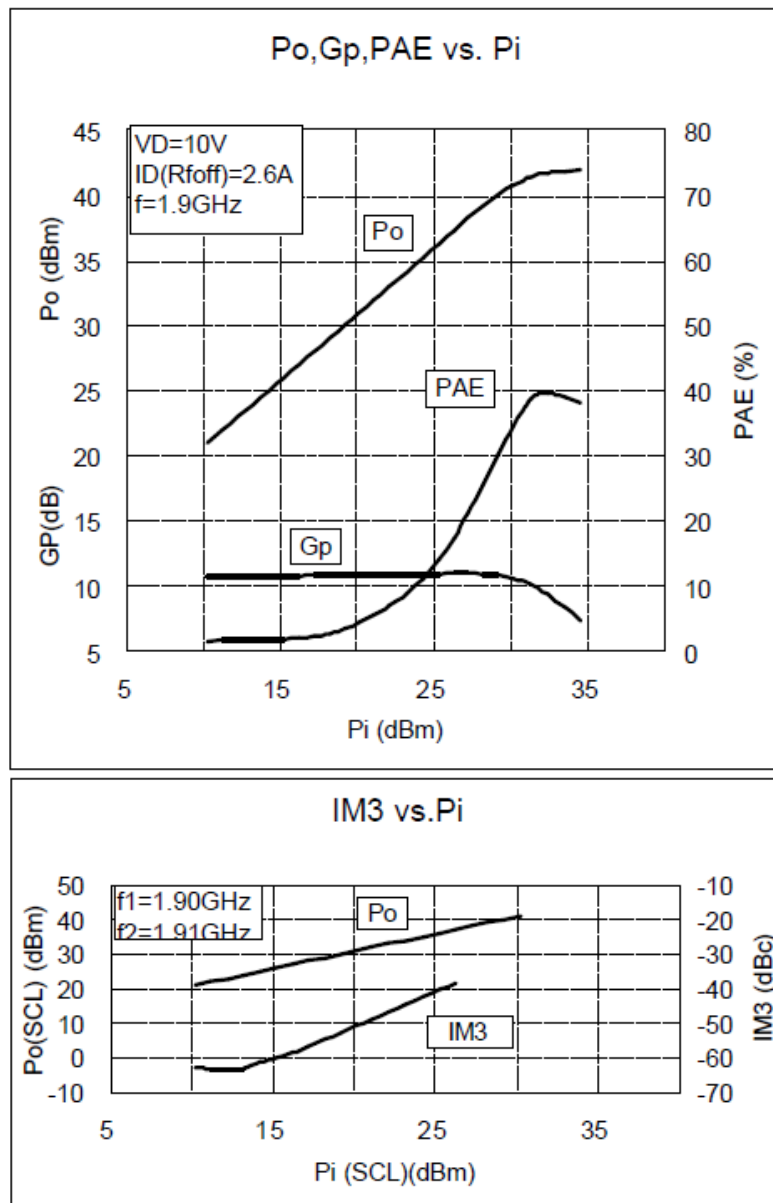
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MGF0912 TYPICAL CHARACTERISTICS (Ta=25deg.C)



MGF0912A S-parameters (Ta=25deg.C, VDS=10(V), IDS=2.6(A))

freq (MHz)	S11		S21		S12		S22		K	MAG/MSG (dB)
	MAG	Ang(deg)	MAG	Ang(deg)	MAG	Ang(deg)	MAG	Ang(deg)		
600	0.973	-169.11	1.885	88.28	0.008	56.40	0.889	177.56	0.99	23.59
800	0.973	-173.29	1.481	83.73	0.009	56.96	0.889	176.12	1.05	20.56
1000	0.972	-176.33	1.183	79.70	0.010	57.05	0.888	174.92	1.13	18.47
1200	0.972	-178.59	0.968	76.03	0.011	56.95	0.887	173.85	1.22	16.75
1400	0.971	179.63	0.818	72.61	0.011	56.87	0.885	172.81	1.31	15.30
1600	0.970	178.09	0.717	69.30	0.012	56.93	0.884	171.72	1.39	14.12
1800	0.969	176.58	0.650	66.02	0.013	57.20	0.882	170.52	1.45	13.16
2000	0.968	174.95	0.606	62.68	0.014	57.66	0.881	169.15	1.47	12.38
2200	0.967	173.08	0.574	59.21	0.015	58.24	0.880	167.56	1.46	11.70
2400	0.966	170.91	0.548	55.57	0.017	58.78	0.878	165.75	1.45	11.05
2600	0.965	168.42	0.521	51.73	0.020	59.06	0.877	163.68	1.42	10.39
2800	0.964	165.64	0.493	47.66	0.022	58.77	0.876	161.38	1.40	9.68
3000	0.963	162.65	0.461	43.37	0.025	57.56	0.875	158.86	1.38	8.94

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