

Preliminary

L & S BAND GaAs FET [SMD non – matched]

DESCRIPTION

The MGF0919A GaAs FET with an N-channel schottky Gate, is designed for use UHF band amplifiers.

FEATURES

- High output power
Po=30dBm(TYP.) @f=1.9GHz,Pin=12dBm
- High power gain
Gp=19dB(TYP.) @f=1.9GHz
- High power added efficiency
ηadd=37%(TYP.) @f=1.9GHz,Pin=12dBm
- Hermetic Package

APPLICATION

- For UHF Band power amplifiers

QUALITY

- GG

RECOMMENDED BIAS CONDITIONS

- Vds=10V • Ids=300mA • Rg=500Ω

Delivery Tape & Reel

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	800	mA
IGR	Reverse gate current	-2.4	mA
IGF	Forward gate current	10	mA
PT	Total power dissipation	6	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

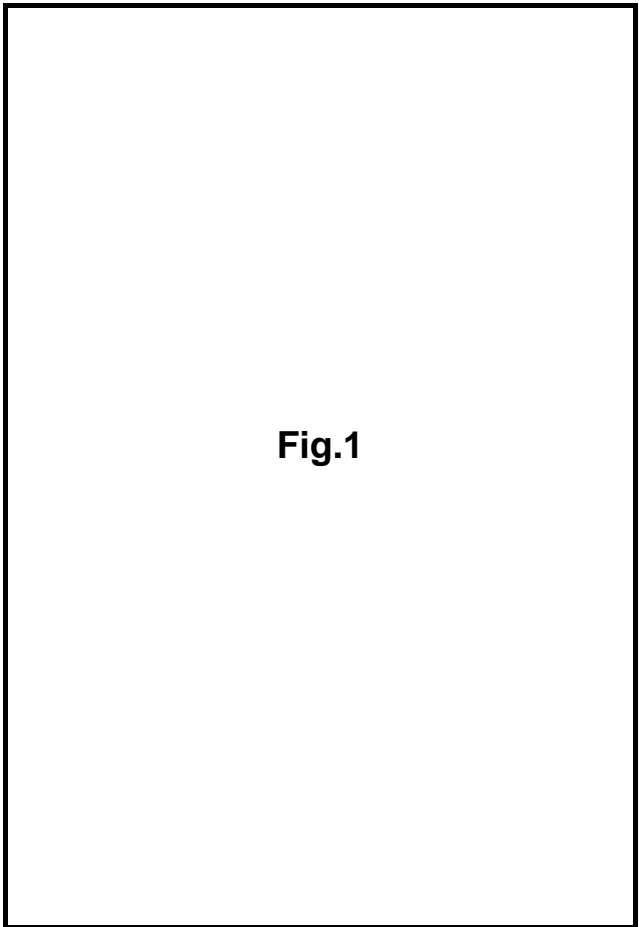


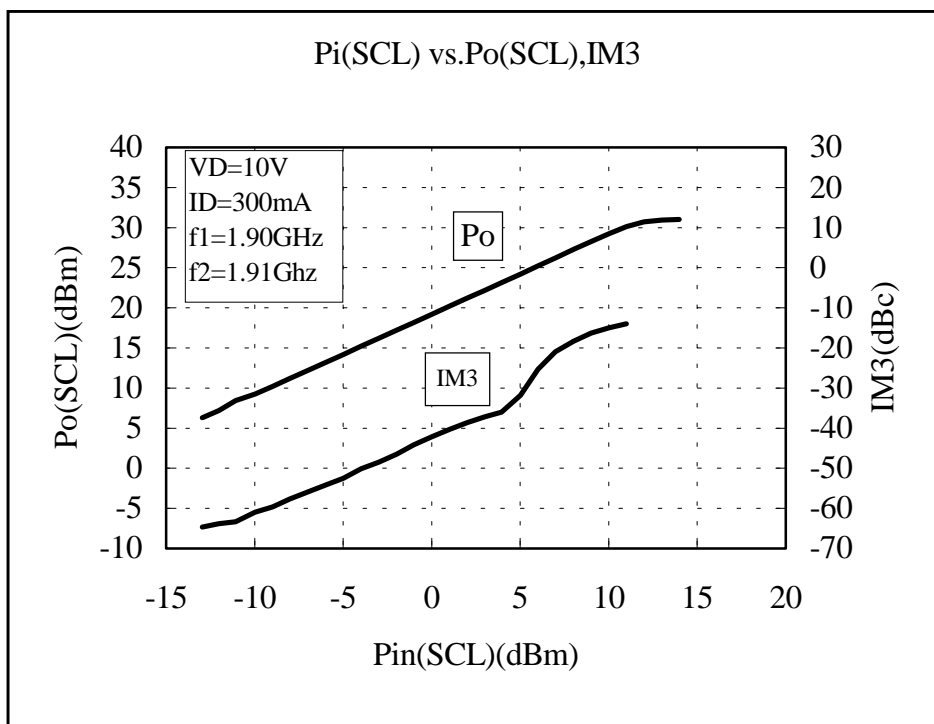
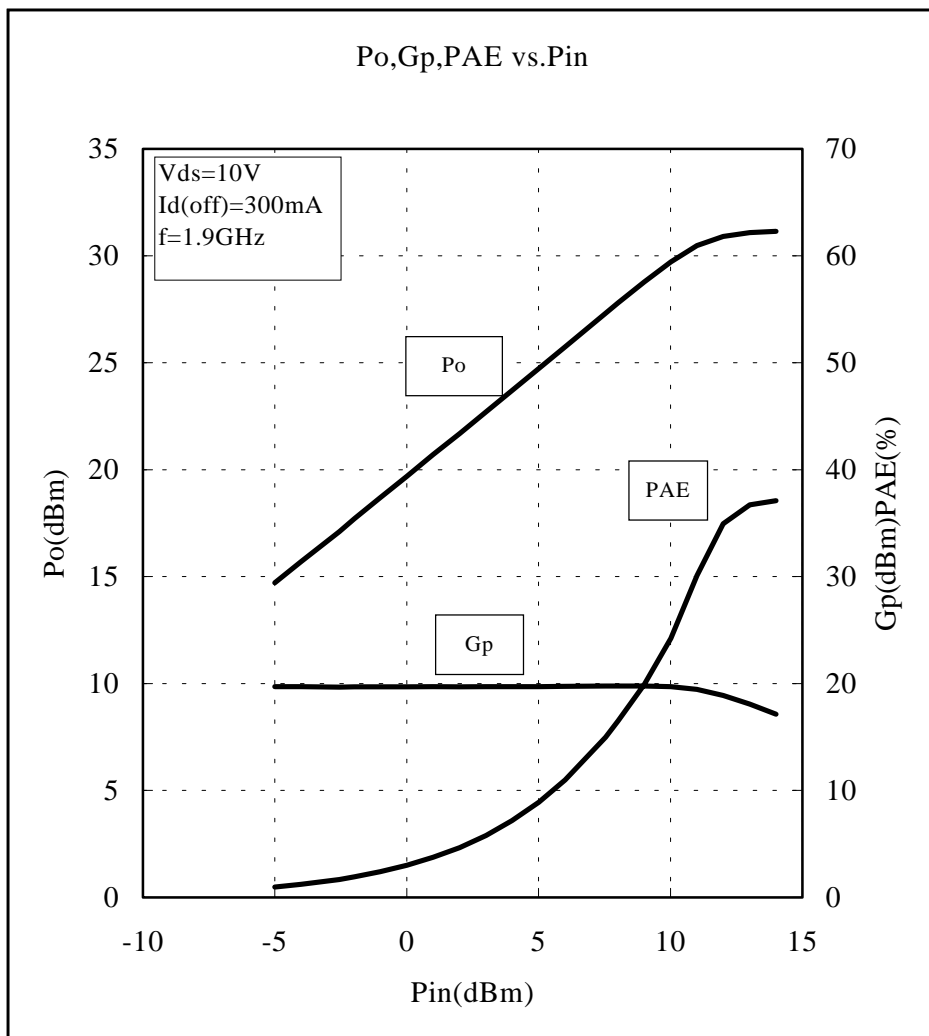
Fig.1

Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V,VGS=0V	-	600	800	mA
VGS(off)	Gate to source cut-off voltage	VDS=3V,ID=2.0mA	-1.0	-	-5.0	V
gm	Transconductance	VDS=3V,ID=300mA	-	260	-	mS
Po	Output power	VDS=10V,ID=300mA,f=1.9GHz	28	30	-	dBm
ηadd	Power added Efficiency	Pin=12dBm	-	37	-	%
GLP	Linear Power Gain	VDS=10V,ID=300mA,f=1.9GHz	17	19	-	dB
NF	Noise figure		-	1.2	-	dB
Rth(ch-c)	Thermal Resistance *1	ΔVf Method	-	17	25	°C/W

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

MGF0919A TYPICAL CHARACTERISTICS



MGF0919A S PARAMETERS (Ta=25°C, VD=10V, ID=300mA, Reference Plane see Fig.1)

freq. (GHz)	S11		S21		S12		S22		K	MSG/MAG (dB)
	Mag	Ang(deg)	Mag	Ang(deg)	Mag	Ang(deg)	Mag	Ang(deg)		
0.4	0.925	-66.77	7.248	147.86	0.030	72.76	0.211	-123.68	0.30	23.87
0.6	0.916	-80.77	6.558	132.14	0.031	63.14	0.269	-126.76	0.29	23.32
0.8	0.908	-94.49	5.876	116.56	0.031	53.66	0.326	-129.77	0.28	22.73
1.0	0.900	-105.20	5.349	104.33	0.032	46.23	0.370	-132.25	0.27	22.21
1.2	0.895	-113.94	4.921	94.25	0.032	39.95	0.406	-134.32	0.27	21.87
1.4	0.889	-121.43	4.562	85.60	0.033	34.60	0.438	-136.20	0.27	21.43
1.6	0.886	-127.89	4.253	78.06	0.033	29.86	0.465	-137.89	0.28	21.14
1.8	0.882	-133.63	3.982	71.35	0.034	25.65	0.489	-139.49	0.27	20.74
2.0	0.878	-138.86	3.743	65.24	0.033	21.74	0.511	-141.00	0.29	20.48
2.2	0.876	-143.59	3.527	59.74	0.033	18.24	0.530	-142.41	0.31	20.23
2.4	0.873	-148.01	3.332	54.55	0.034	14.95	0.549	-143.73	0.31	19.87
2.6	0.870	-152.04	3.155	49.77	0.034	11.87	0.566	-145.06	0.33	19.64
2.8	0.868	-155.78	2.991	45.38	0.034	8.98	0.581	-146.30	0.35	19.41
3.0	0.865	-159.41	2.840	41.10	0.035	6.20	0.595	-147.53	0.35	19.07
3.2	0.863	-162.77	2.700	37.12	0.035	3.62	0.609	-148.68	0.37	18.85
3.4	0.861	-165.95	2.568	33.34	0.035	1.14	0.622	-149.83	0.40	18.63
3.6	0.858	-169.03	2.446	29.76	0.035	-1.24	0.634	-150.98	0.42	18.42
3.8	0.856	-171.93	2.329	26.36	0.035	-3.54	0.645	-152.04	0.46	18.20
4.0	0.854	-174.83	2.220	22.98	0.036	-5.82	0.656	-153.17	0.46	17.87
4.2	0.852	-177.57	2.117	19.89	0.036	-7.91	0.666	-154.23	0.49	17.66
4.4	0.849	179.79	2.019	16.79	0.036	-10.01	0.675	-155.28	0.53	17.45
4.6	0.847	177.22	1.925	13.79	0.036	-12.01	0.685	-156.25	0.56	17.23
4.8	0.844	174.73	1.836	10.89	0.036	-14.01	0.693	-157.30	0.60	17.02
5.0	0.842	172.22	1.751	8.18	0.037	-15.92	0.702	-158.26	0.63	16.80
5.2	0.840	169.90	1.668	5.47	0.037	-17.83	0.710	-159.31	0.67	16.58
5.4	0.837	167.57	1.589	2.74	0.038	-19.66	0.717	-160.25	0.69	16.25
5.6	0.835	165.20	1.514	0.22	0.038	-21.48	0.724	-161.20	0.74	16.02
5.8	0.833	162.91	1.440	-2.31	0.038	-23.31	0.731	-162.15	0.79	15.80
6.0	0.830	159.75	1.372	-4.88	0.038	-25.08	0.737	-163.10	0.84	15.56
6.2	0.827	157.08	1.305	-7.24	0.038	-26.84	0.744	-163.96	0.89	15.33
6.4	0.824	154.49	1.239	-9.61	0.038	-28.51	0.750	-164.90	0.95	15.08
6.6	0.821	151.85	1.172	-11.99	0.039	-30.19	0.756	-165.84	1.02	13.94
6.8	0.817	149.17	1.105	-14.39	0.039	-31.89	0.762	-166.79	1.10	12.63
7.0	0.814	146.45	1.038	-16.80	0.039	-33.60	0.767	-167.73	1.19	11.63

