

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

MGF0917A

L & S BAND / 0.25W

SMD non - matched

DESCRIPTION

The MGF0917A GaAs FET with an N-channel schottky Gate, is designed for use UHF band amplifiers.

FEATURES

- High output power
Po=24dBm(TYP.) @f=1.9GHz,Pin=4dBm
- High power gain
Gp=21dB(TYP.) @f=1.9GHz
- High power added efficiency
ηadd=38%(TYP.) @f=1.9GHz,Pin=4dBm
- Hermetic Package

APPLICATION

- For UHF Band power amplifiers

QUALITY

- GG

RECOMMENDED BIAS CONDITIONS

- Vds=10V • Ids=75mA • Rg=2kΩ

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	200	mA
IGR	Reverse gate current	-0.6	mA
IGF	Forward gate current	2.5	mA
PT	Total power dissipation	2	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

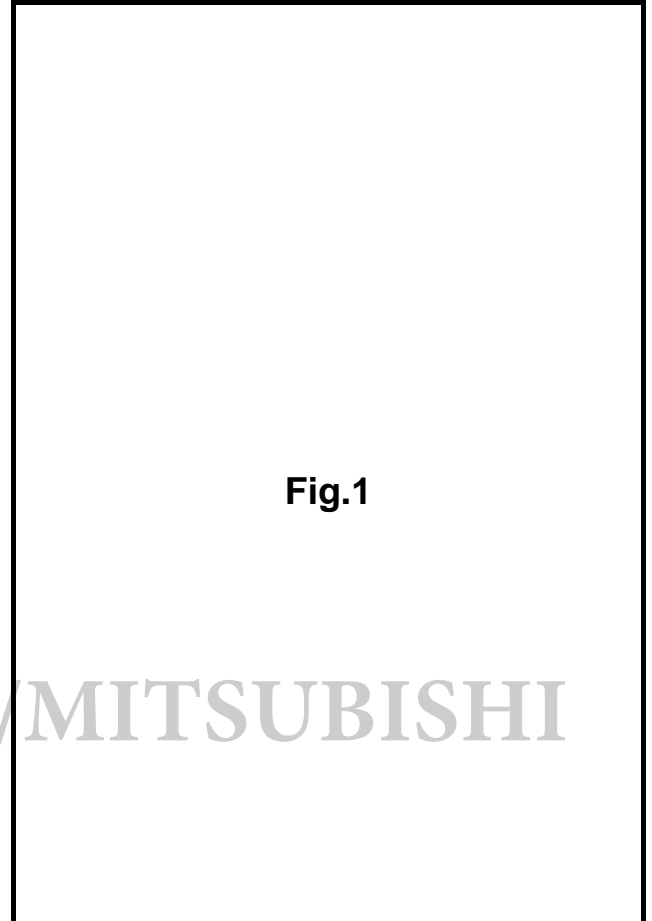


Fig.1

Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V,VGS=0V	-	150	200	mA
VGS(off)	Gate to source cut-off voltage	VDS=3V,ID=0.5mA	-1.0	-	-5.0	V
gm	Transconductance	VDS=3V,ID=75mA	-	70	-	mS
Po	Output power	VDS=10V,ID=75mA,f=1.9GHz	23	24	-	dBm
ηadd	Power added Efficiency	Pin=4dBm	-	38	-	%
GLP	Linear Power Gain	VDS=10V,ID=75mA,f=1.9GHz	-	21	-	dB
NF	Noise figure		-	0.9	-	dB
Rth(ch-c)	Thermal Resistance *1	ΔVf Method	-	55	75	°C/W

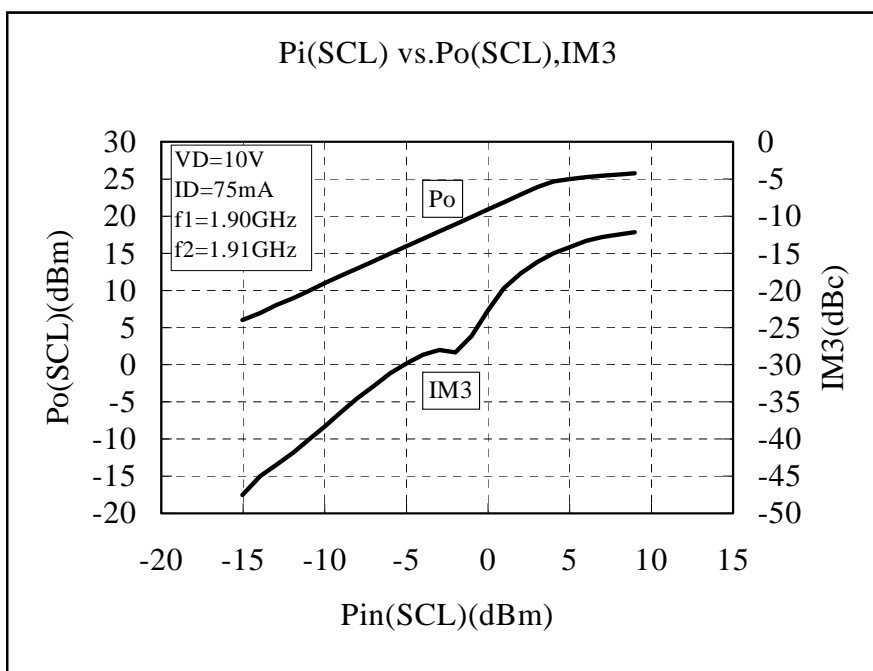
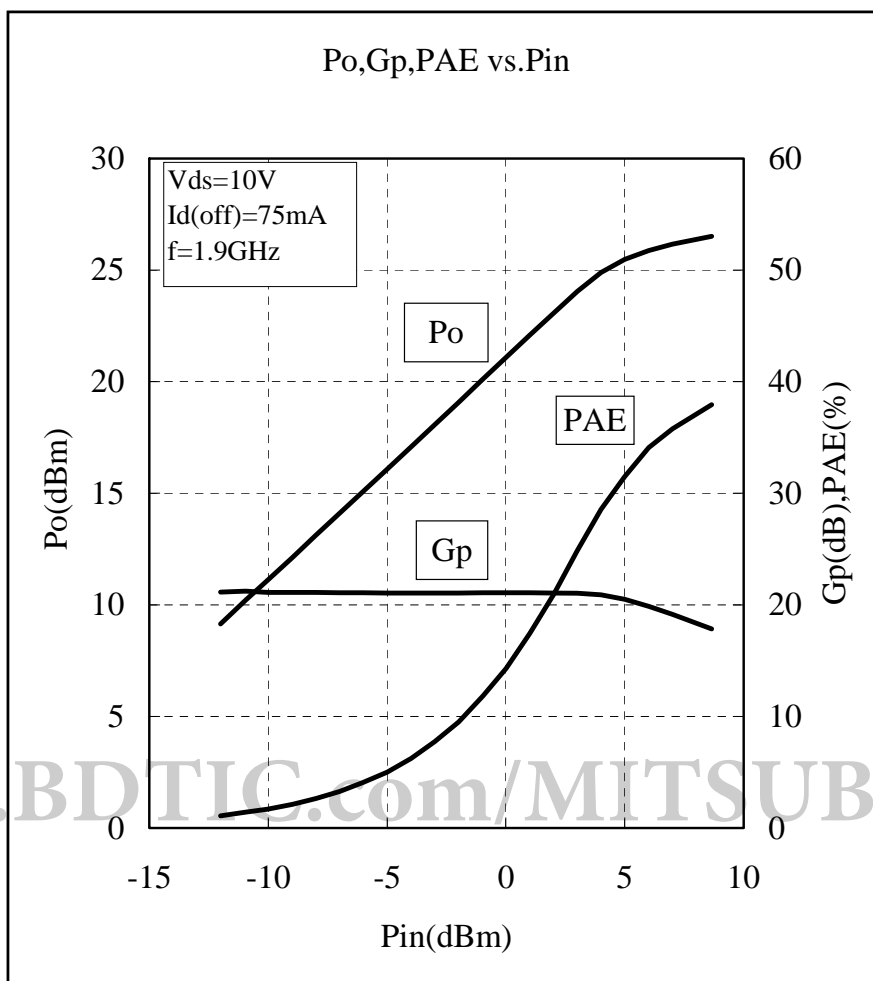
*1:Channel to case / Above parameters, ratings, limits are subject to change.

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MGF0917A TYPICAL CHARACTERISTICS



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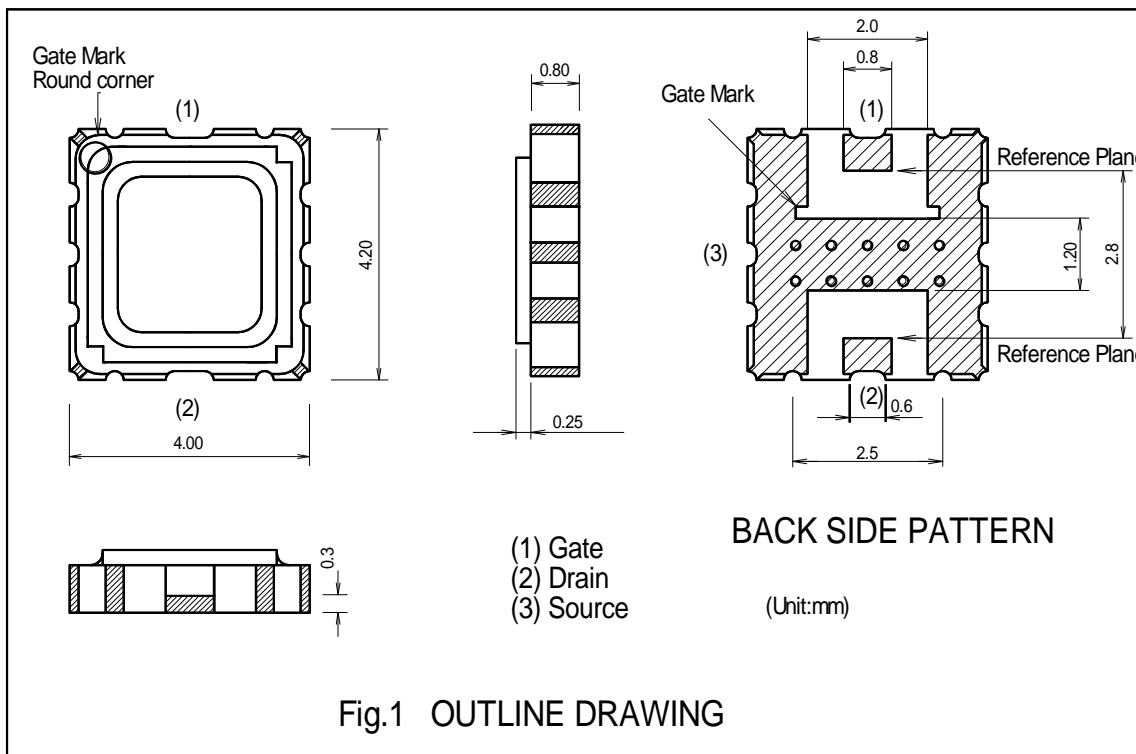
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MGF0917A S PARAMETERS (Ta=25°C,VD=10V,ID=75mA, Reference Plane see Fig.1)

freq. (MHz)	S11		S21		S12		S22		K	MAG/MSG (dB)
	(mag)	(ang)	(mag)	(ang)	(mag)	(ang)	(mag)	(ang)		
600	0.981	-33.12	4.043	146.73	0.013	60.97	0.542	-37.01	0.21	24.93
1000	0.963	-52.23	3.628	130.91	0.017	47.27	0.574	-55.99	0.27	23.29
1400	0.950	-67.81	3.204	115.76	0.020	33.78	0.613	-71.29	0.32	22.05
1800	0.940	-80.66	2.813	101.60	0.023	20.83	0.654	-84.14	0.37	20.87
2200	0.933	-91.42	2.480	88.63	0.025	8.72	0.694	-95.18	0.42	19.97
2600	0.928	-100.60	2.190	76.98	0.026	-2.30	0.732	-104.65	0.48	19.25
3000	0.925	-108.60	1.944	66.64	0.026	-12.04	0.765	-112.60	0.55	18.74
3400	0.922	-115.73	1.755	57.57	0.026	-20.38	0.793	-119.01	0.61	18.29
3800	0.920	-122.21	1.598	49.63	0.025	-27.27	0.816	-123.90	0.68	18.06
4200	0.919	-128.21	1.473	42.64	0.024	-32.78	0.834	-127.39	0.75	17.88
4600	0.917	-133.86	1.381	36.36	0.023	-37.04	0.848	-129.77	0.81	17.78
5000	0.915	-139.27	1.314	30.53	0.023	-40.28	0.859	-131.44	0.84	17.57
5400	0.911	-144.52	1.270	24.85	0.023	-42.81	0.867	-132.90	0.88	17.42
5800	0.905	-149.72	1.251	19.04	0.025	-44.98	0.874	-134.71	0.86	16.99
6200	0.895	-155.02	1.250	12.78	0.028	-47.24	0.880	-137.32	0.82	16.50
6600	0.881	-160.60	1.268	5.79	0.032	-50.03	0.885	-140.94	0.79	15.98
7000	0.860	-166.70	1.310	-2.21	0.037	-53.82	0.891	-145.42	0.76	15.49
7400	0.830	-173.68	1.366	-11.46	0.043	-59.06	0.895	-149.92	0.77	15.02
7800	0.789	179.59	1.451	-22.14	0.049	-66.14	0.897	-152.77	0.85	14.71
8200	0.734	165.49	1.557	-34.40	0.055	-75.38	0.895	-155.52	0.90	14.52
8600	0.662	149.83	1.670	-48.32	0.061	-86.96	0.884	-157.78	1.01	13.81
9000	0.581	121.51	1.779	-63.88	0.066	-100.89	0.863	-158.81	1.08	12.54
9400	0.521	81.43	1.864	-80.99	0.070	-116.97	0.837	-158.40	1.13	12.10
9800	0.525	36.33	1.872	-99.47	0.072	-134.73	0.802	-156.85	1.20	11.48
10200	0.622	-5.95	1.760	-119.01	0.072	-153.36	0.774	-154.83	1.21	11.11
10600	0.734	-39.56	1.553	-139.19	0.070	-171.68	0.759	-153.13	1.22	10.65
11000	0.820	-62.30	1.319	-159.45	0.066	174.68	0.758	-152.41	1.24	10.03
11400	0.876	-75.69	1.104	-179.08	0.060	163.25	0.766	-153.06	1.32	9.25
11800	0.905	-83.49	0.928	170.48	0.054	153.93	0.778	-154.90	1.39	8.64
12200	0.920	-88.74	0.785	158.33	0.047	146.49	0.792	-157.02	1.51	8.01



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