

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

MGF0905A

L & S BAND / 2.5W

non - matched

DESCRIPTION

The MGF0905A, GaAs FET with an N-channel schottky gate, is designed for use in UHF band amplifiers.

FEATURES

- High output power
Po=34.0dBm(TYP.) @f=1.65GHz,Pin=26dBm
- High power gain
Gp=8.0dB(TYP.) @f=1.65GHz,Pin=26dBm
- High power added efficiency
P.A.E =40%(TYP.) @f=1.65GHz,Pin=26dBm

APPLICATION

- For UHF Band power amplifiers

QUALITY

- GG

RECOMMENDED BIAS CONDITIONS

- Vds=8V • Ids=800mA • Rg=100Ω Refer to Bias Procedure

Absolute maximum ratings (Ta=25°C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain voltage	-17	V
VGSO	Gate to source voltage	-17	V
ID	Drain current	3200	mA
IGR	Reverse gate current	-10	mA
IGF	Forward gate current	21.5	mA
PT*1	Total power dissipation	12	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

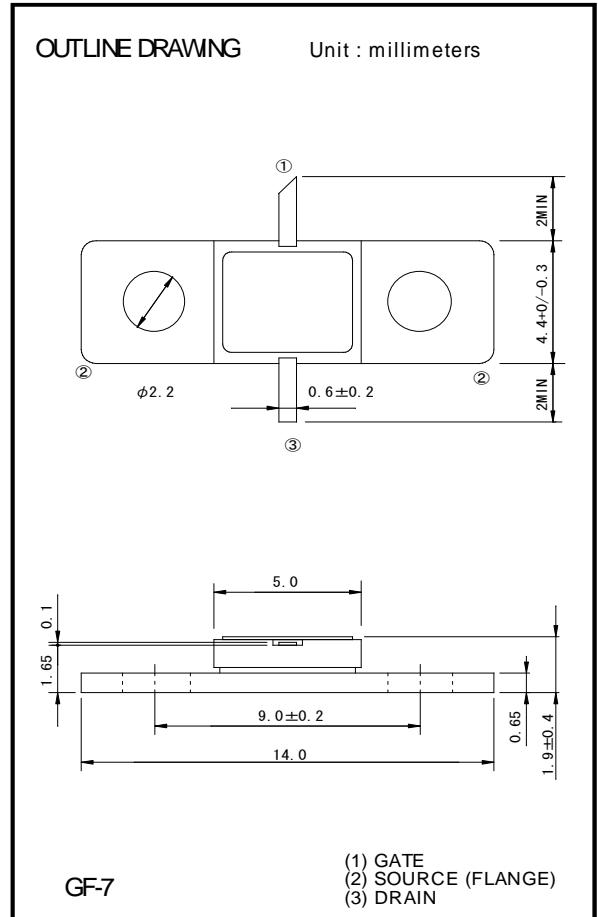
*1:Tc=25°C

Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V,VGS=0V	1600	2400	3200	mA
gm	Transconductance	VDS=3V,ID=800mA	500	800	-	mS
VGS(off)	Gate to source cut-off voltage	VDS=3V,ID=10mA	-1	-3	-5	V
Po	Output power	VDS=8V,ID(RF off)=800mA	33	34	-	dBm
P.A.E.	Power added efficiency	f=1.65GHz,Pin=26dBm	-	40	-	%
Rth(ch-c) *2	Thermal resistance	Δ Vf method	-	-	12.5	°C/W
Rth(ch-a) *3	Thermal resistance	Δ Vf method	-	-	72.5	°C/W

*2 :Channel-case

*3 :Channel-ambient

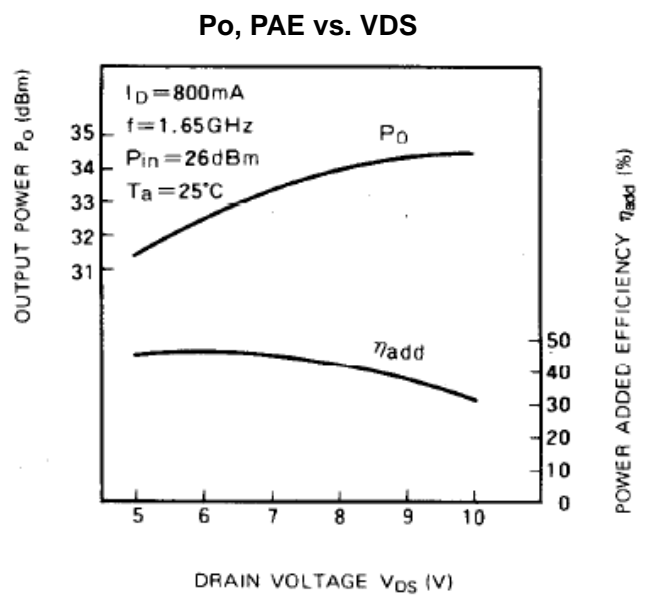
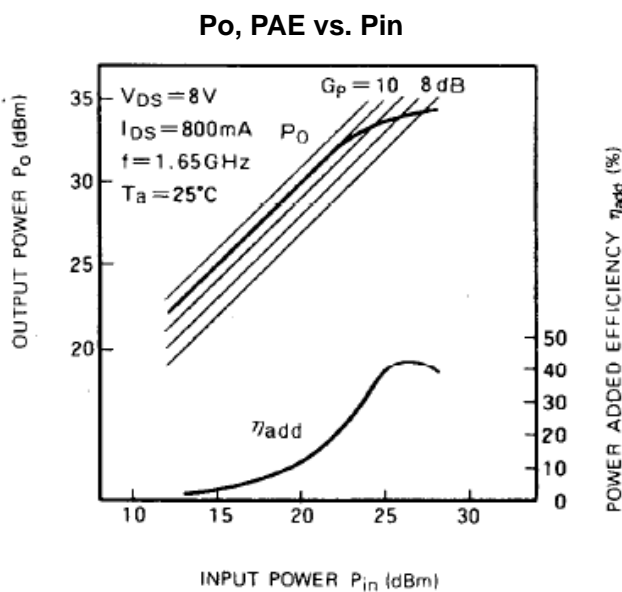
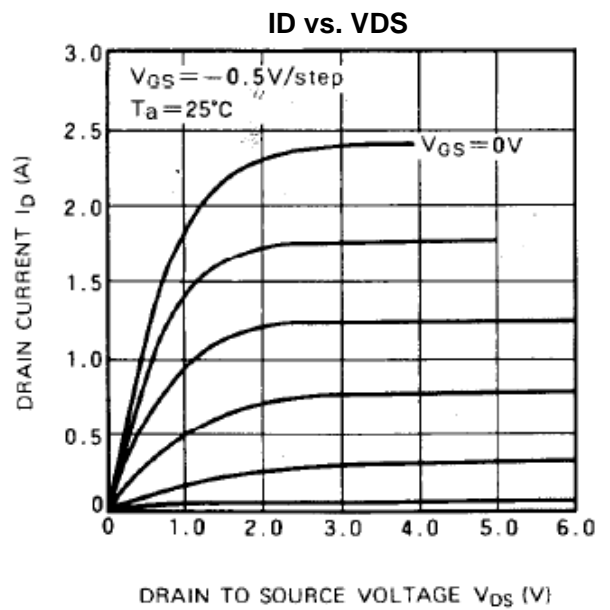
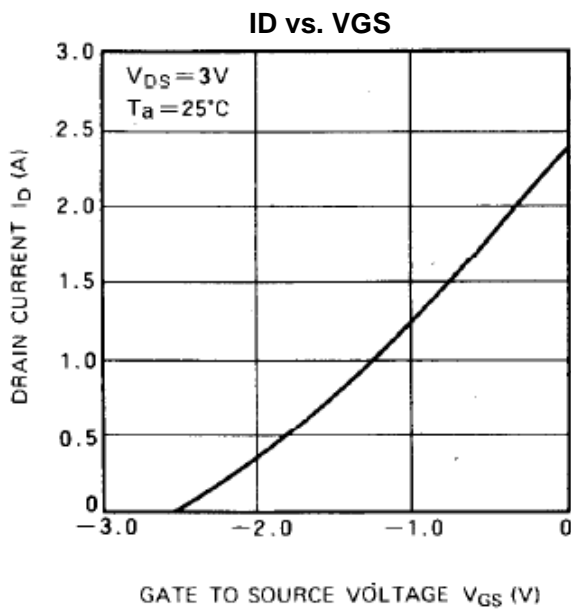


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MGF0905A TYPICAL CHARACTERISTICS (Ta=25deg.C)



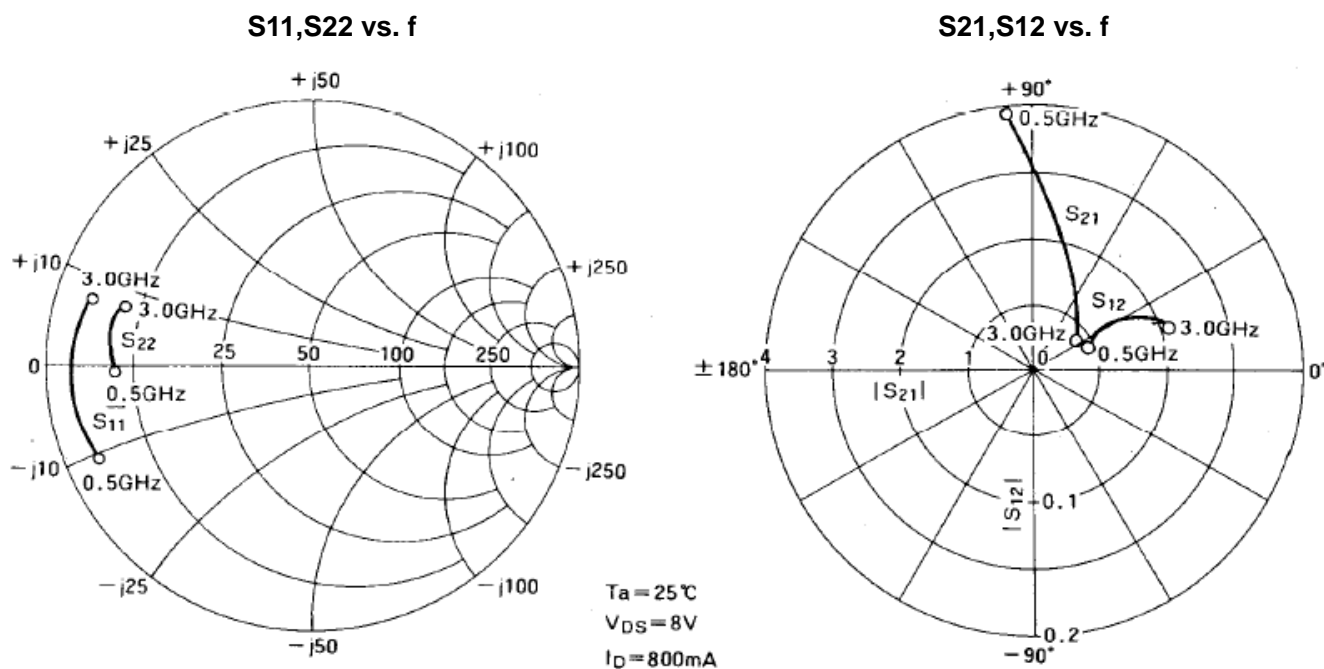
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MGF0905A S-parameters (Ta=25deg.C , VDS=8(V),IDS=800(mA))



f (GHz)	S Parameters(Typ.)									
	S11		S21		S12		S22		K	MSG/MAG
	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)	-	dB
0.5	0.861	-155.5	3.895	96.0	0.022	25.0	0.731	-179.0	0.806	22.5
1.0	0.887	-170.5	1.999	78.0	0.025	33.0	0.753	175.5	1.133	16.8
1.5	0.894	177.0	1.485	68.0	0.033	33.0	0.747	172.5	1.175	14.0
2.0	0.887	173.0	1.205	58.0	0.039	29.0	0.743	169.5	1.205	12.2
2.5	0.877	169.0	1.000	48.5	0.047	24.0	0.738	166.5	1.221	10.4
3.0	0.864	165.0	0.795	35.0	0.054	18.0	0.723	164.0	1.365	8.1

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