

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

MGF2407A

S to Ku BAND / 0.28W

non - matched

DESCRIPTION

The MGF2407A, power GaAs FET with an N-channel schottky gate, is designed for use in S to Ku band amplifiers.

FEATURES

- High output power
Po=24.5dBm(TYP.) @f=14.5GHz
- High linear power gain
GLP=8.0dB(TYP.) @f=14.5GHz
- High power added efficiency
P.A.E.=30%(TYP.) @f=14.5GHz,P1dB

APPLICATION

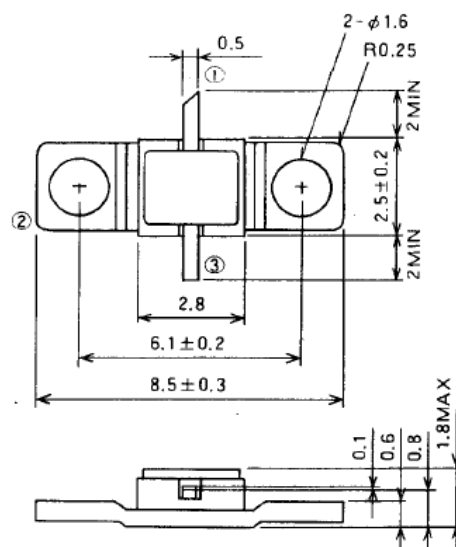
- S to Ku Band power amplifiers

QUALITY

- IG

OUTLINE DRAWING

Unit: millimeters



GF-17

RECOMMENDED BIAS CONDITIONS

- Vds=10V • Ids=75mA Refer to Bias Procedure

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	200	mA
IGR	Reverse gate current	-0.6	mA
IGF	Forward gate current	2.5	mA
PT*1	Total power dissipation	1.5	W
Tch	Cannel 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	100	150	200	mA
gm	Transconductance	VDS=3V,ID=0.5mA	50	65	-	mS
VGS(off)	Gate to source cut-off voltage	VDS=3V,ID=75mA	-1	-2.5	-4	V
P1dB	Output power	VDS=10V,ID(RF off)=75mA	23	24.5	-	dBm
GLP	Linear power gain	f=14.5GHz	7	8	-	dB
P.A.E.	Power added efficiency		-	30	-	%
Rth(ch-c) *2	Thermal resistance	Δ Vf method	-	-	100	°C/W

*2 :Channel-case

Keep Safety first in your circuit designs!

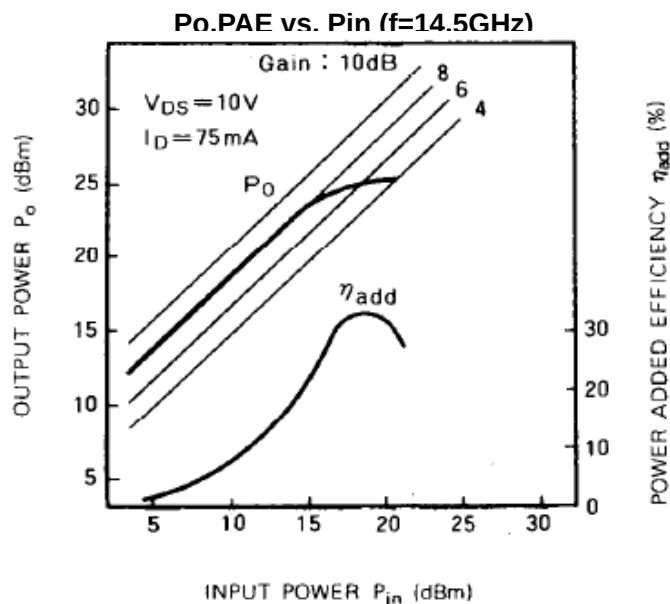
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MGF2407A

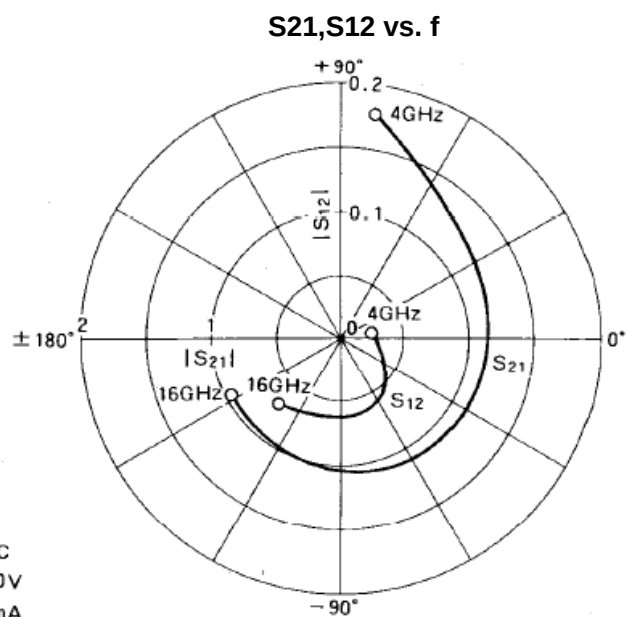
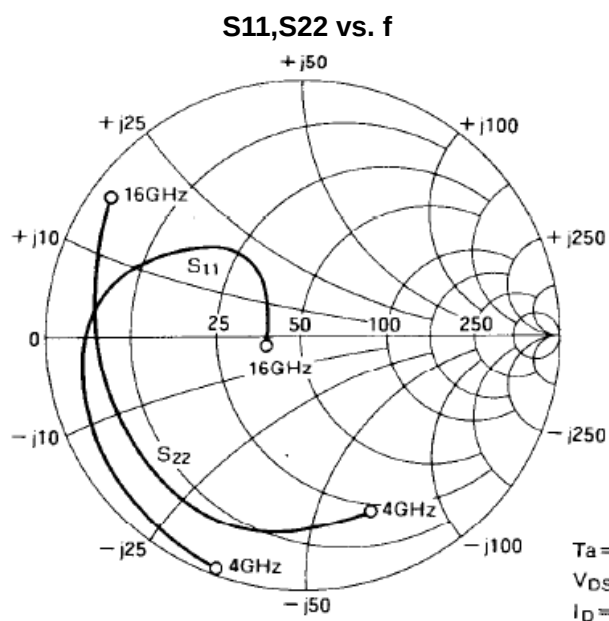
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MGF2407A TYPICAL CHARACTERISTICS(Ta=25deg.C)



MGF2407A S-parameters(Ta=25deg.C , V_{DS}=10(V),I_{DS}=75(mA))



f (GHz)	S Parameters(Typ.)									
	S ₁₁		S ₂₁		S ₁₂		S ₂₂		K	MSG/MAG
	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)	-	dB
4	0.968	-112.5	1.766	81.5	0.024	-6.0	0.713	-70.5	0.380	18.7
6	0.929	-135.5	1.279	48.5	0.028	-6.0	0.758	-93.5	0.813	16.6
8	0.891	-157.5	1.147	26.0	0.033	-17.0	0.777	-116.0	0.948	15.4
10	0.833	-180.0	1.111	-5.0	0.041	-30.5	0.782	-139.0	1.176	11.8
12	0.719	158.0	1.080	-36.0	0.050	-50.0	0.793	-164.5	1.583	8.9
14	0.469	133.5	1.030	-85.0	0.059	-82.0	0.818	168.0	2.276	6.1
16	0.172	-165.5	0.967	-153.0	0.073	-123.0	0.911	144.5	1.245	8.2

Keep safety first in your circuit designs!

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