

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

# MGF2430A

S to Ku BAND / 1.1W

non - matched

## DESCRIPTION

The MGF2430A, power GaAs FET with an N-channel schottky gate, is designed for use in S to Ku band amplifiers.

## FEATURES

- High output power  
Po=30.5dBm(TYP.) @f=14.5GHz
- High linear power gain  
GLP=6.5dB(TYP.) @f=14.5GHz
- High power added efficiency  
P.A.E.=27%(TYP.) @f=14.5GHz,P1dB

## APPLICATION

- S to Ku Band power amplifiers

## QUALITY

- IG

## RECOMMENDED BIAS CONDITIONS

- Vds=10V • Ids=300mA Refer to Bias Procedure

## Absolute maximum ratings (Ta=25°C)

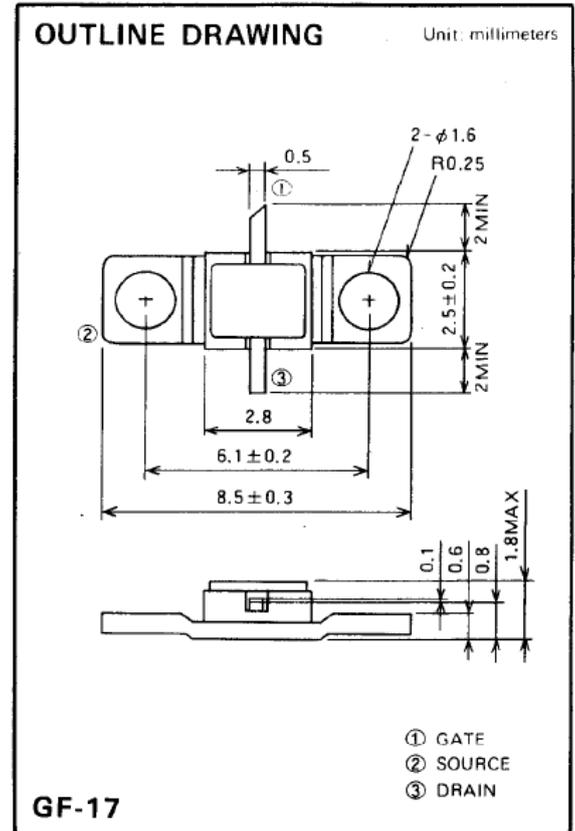
Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain voltage	-15	V
VGSO	Gate to source voltage	-15	V
ID	Drain current	800	mA
IGR	Reverse gate current	-2.4	mA
IGF	Forward gate current	10	mA
PT*1	Total power dissipation	5	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

\*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	400	600	800	mA
gm	Transconductance	VDS=3V,ID=300mA	200	260	-	mS
VGS(off)	Gate to source cut-off voltage	VDS=3V,ID=2mA	-1	-2.5	-4	V
P1dB	Output power	VDS=10V,ID(RF off)=300mA	29	30.5	-	dBm
GLP	Linear power gain	f=14.5GHz	5.5	6.5	-	dB
P.A.E.	Power added efficiency		-	27	-	%
Rth(ch-c) *2	Thermal resistance	Δ Vf method	-	-	30	°C/W

\*2 :Channel-case



## Keep Safety first in your circuit designs!

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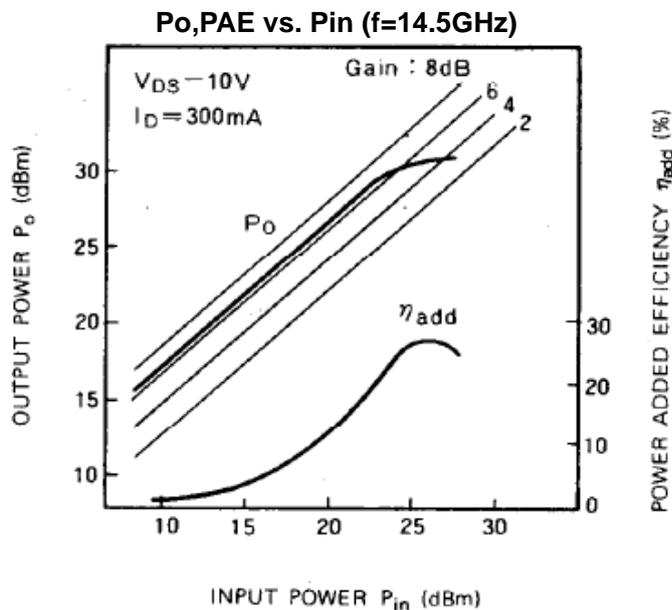
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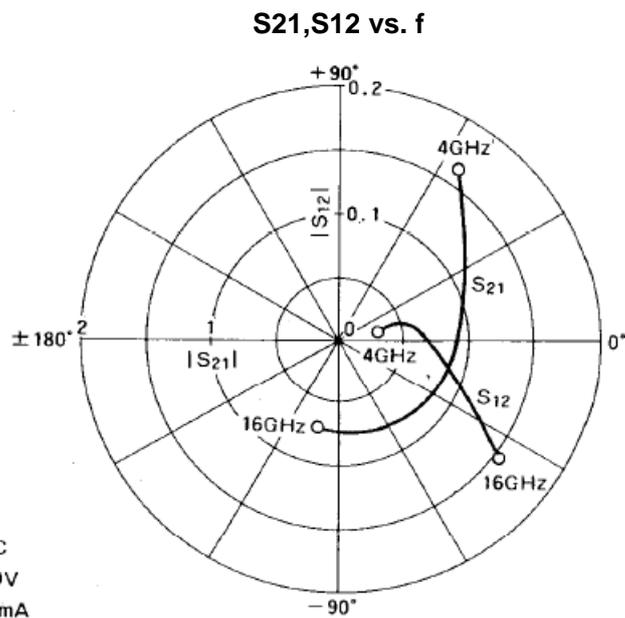
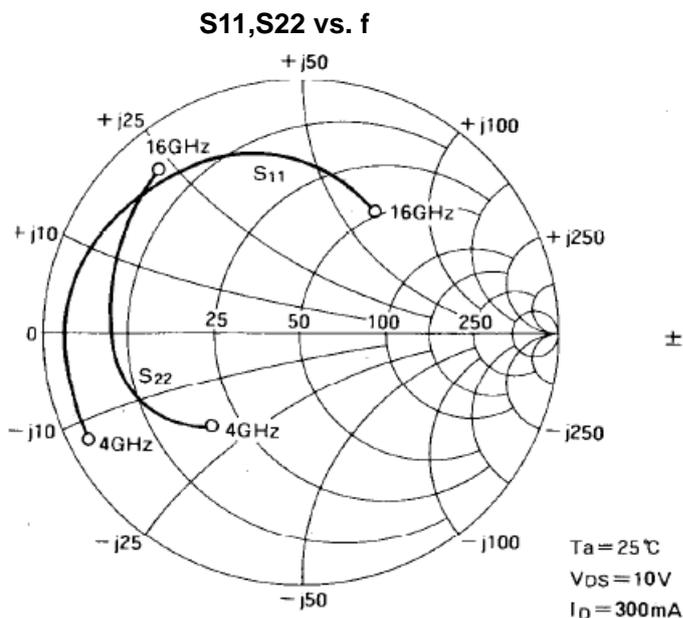
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## MGF2430A TYPICAL CHARACTERISTICS( Ta=25deg.C )



## MGF2430A S-parameters( Ta=25deg.C , V<sub>DS</sub>=10(V), I<sub>DS</sub>=300(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
4	0.934	-153.0	1.641	57.0	0.030	18.0	0.513	-132.0	0.501	17.4
6	0.900	-168.0	1.109	34.0	0.035	19.0	0.620	-142.0	0.969	15.0
8	0.853	173.0	0.927	13.0	0.043	20.0	0.699	-161.5	0.811	13.3
10	0.813	153.0	0.830	-13.0	0.052	18.5	0.723	180.0	1.008	11.5
12	0.750	131.5	0.788	-41.0	0.058	13.0	0.754	162.0	1.331	7.9
14	0.790	105.0	0.730	-69.0	0.083	-7.5	0.783	146.0	1.108	7.4
16	0.530	61.0	0.689	-104.0	0.153	-37.0	0.836	132.0	0.681	6.5

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