

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

MGF2430A

L to Ku BAND / 1.1W
non - matched

DESCRIPTION

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

FEATURES

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

APPLICATION

- For L to Ku band power amplifiers

QUALITY

- IG

RECOMMENDED BIAS CONDITIONS

- Vds=10V • Ids=300mA • Rg=500Ω

Absolute maximum ratings (Ta=25°C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to Source Voltage	-15	V
VGSO	Gate to source voltage	-15	V
IDSS	Saturated 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	Cannel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

*1:Tc=25°C

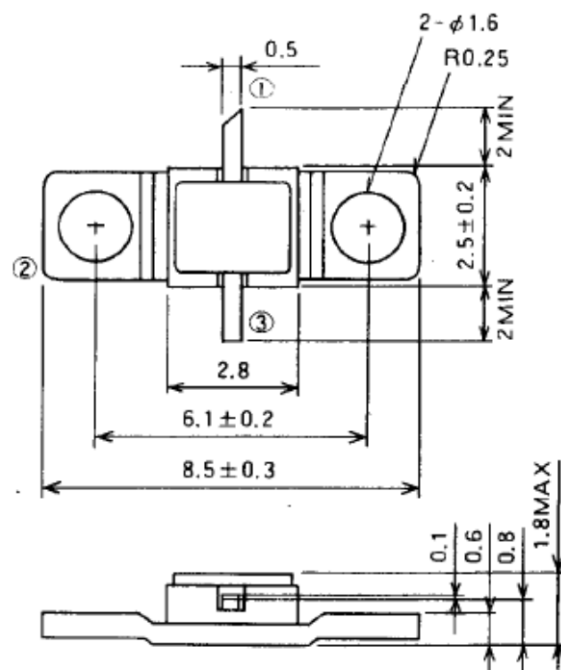
Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V, VGS=0V	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	-4.0	V
P1dB	1dB gain compression power	VDS=10V, ID(RF off)=300mA	29	30.5	-	dBm
GLP *2	Linear power gain	f=14.5GHz	5.5	6.5	-	dB
P.A.E	Power added efficiency	*2 : Pin=15dBm		27	-	%
Rth(ch-c) *3	Thermal resistance	Δ Vf method	-	-	30	°C/W

*3 :Channel-case

OUTLINE DRAWING

Unit : millimeters



GF-17

① GATE
② SOURCE
③ DRAIN

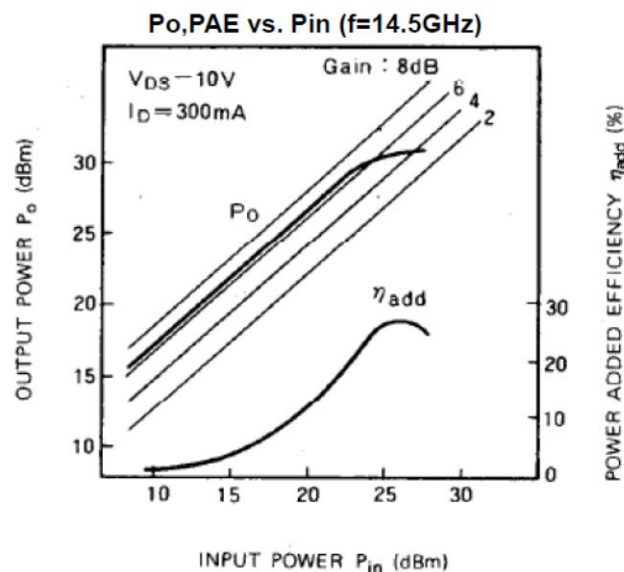
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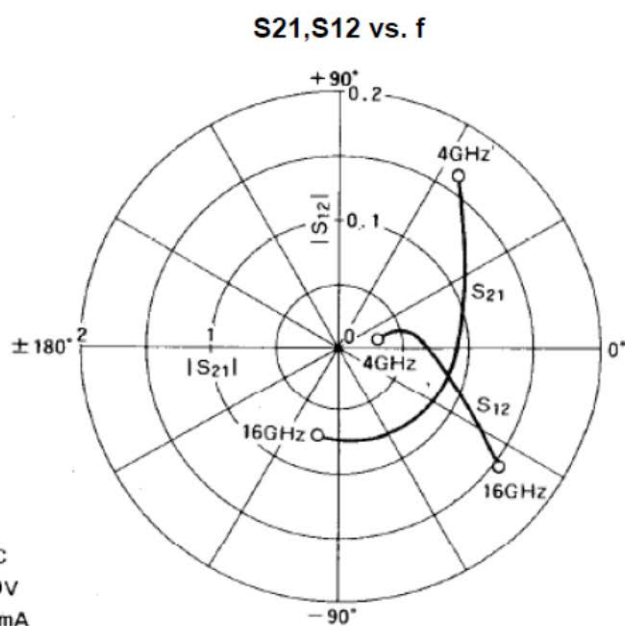
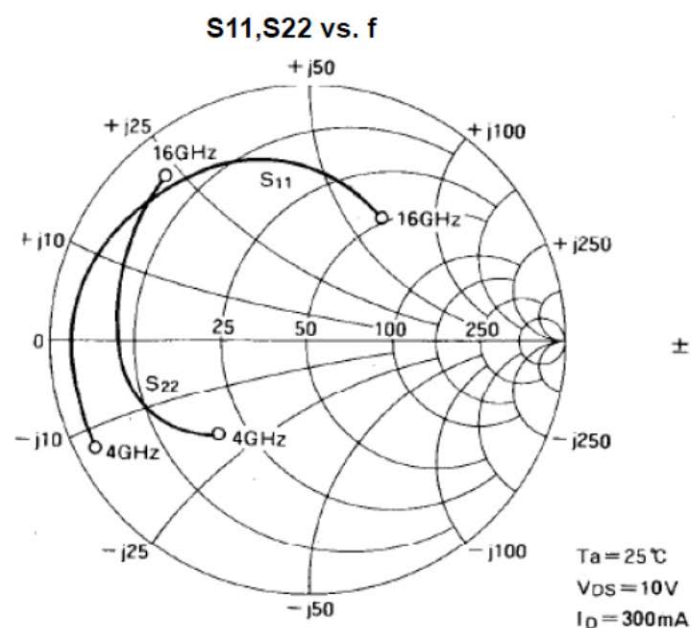
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MGF2430A TYPICAL CHARACTERISTICS(Ta=25deg.C)



MGF2430A S-parameters(Ta=25deg.C , V_{DS}=10(V), I_D=300mA)



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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