

< X/Ku band internally matched power GaAs FET >

# MGFX39V0717

10.7 – 11.7 GHz BAND / 8W

## DESCRIPTION

The MGFX39V0717 is an internally impedance-matched GaAs power FET especially designed for use in 10.7 – 11.7 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

## FEATURES

Internally impedance matched

- High output power  
P1dB=8.0W (TYP.) @f=10.7 – 11.7GHz
- High linear power gain  
GLP=7.0dB (TYP.) @f=10.7 – 11.7GHz
- High power added efficiency  
P.A.E.=26% (TYP.) @f=10.7 – 11.7GHz

## APPLICATION

- For use in 10.7 – 11.7 GHz band power amplifiers

## QUALITY

- IG

## RECOMMENDED BIAS CONDITIONS

- VDS=10V • ID=2.4A Refer to Bias Procedure

## Absolute maximum ratings (Ta=25°C)

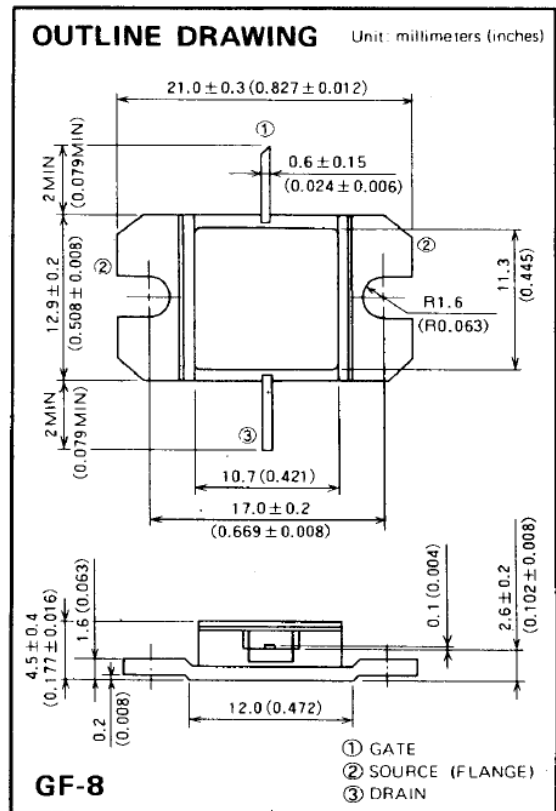
Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain breakdown voltage	-15	V
VGSO	Gate to source breakdown voltage	-15	V
ID	Drain current	5.6	A
IGR	Reverse gate current	-18	mA
IGF	Forward gate current	36	mA
PT *1	Total power dissipation	42.8	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	-65 to +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	-	4	5.6	A
gm	Transconductance	VDS=3V, ID=2.2A	-	2	-	S
VGS(off)	Gate to source cut-off voltage	VDS=3V, ID=20mA	-2	-3	-4	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=2.4A	37.5	39	-	dBm
GLP	Linear Power Gain	f=10.7 – 11.7GHz	6	7	-	dB
P.A.E.	Power added efficiency		-	26	-	%
Rth(ch-c) *2	Thermal resistance		-	-	3.5	°C/W

\*2 : Channel-case

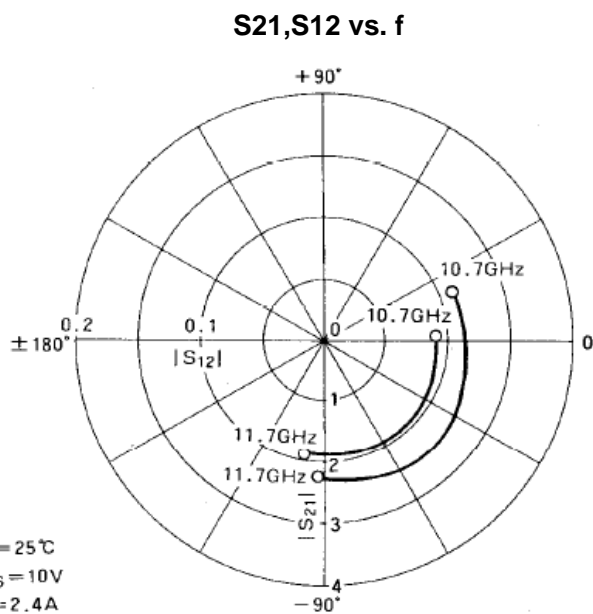
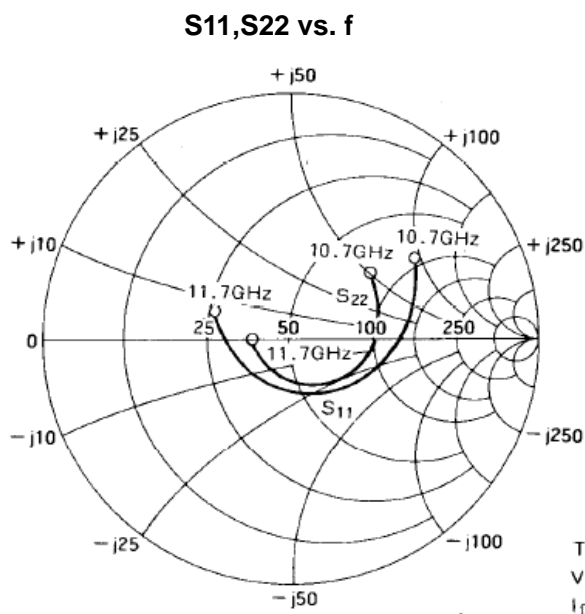
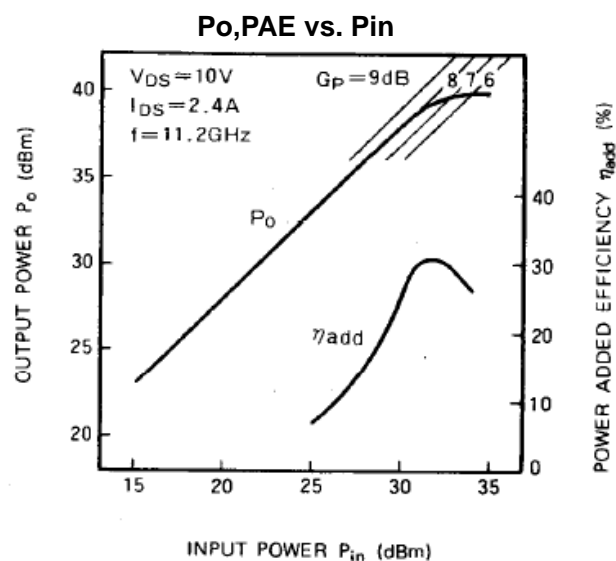
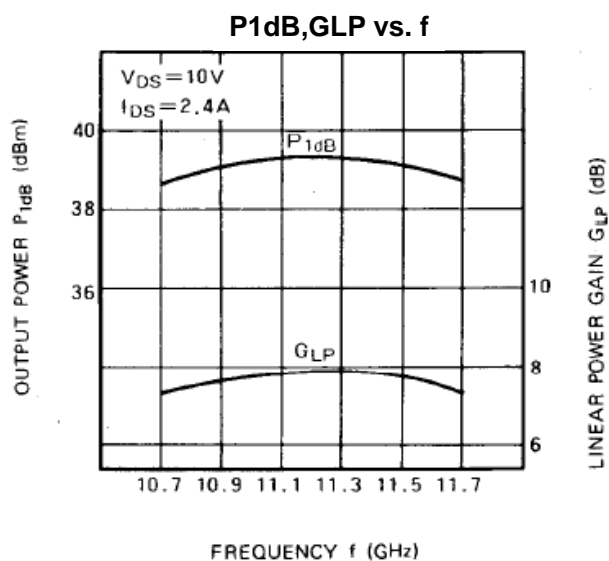


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## MGFX39V0717 TYPICAL CHARACTERISTICS( Ta=25deg.C )



## MGFX39V0717 S-parameters( Ta=25deg.C , VDS=10(V),IDS=2.4(A) )

f (GHz)	S Parameters(Typ.)							
	S11		S21		S12		S22	
	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)
10.7	0.64	40	2.15	23	0.082	2	0.44	41
10.9	0.50	15	2.28	-4	0.085	-14	0.34	14
11.1	0.34	-15	2.38	-25	0.087	-34	0.24	-17
11.3	0.16	-71	2.45	-52	0.093	-57	0.14	-73
11.5	0.20	-168	2.30	-73	0.092	-79	0.16	-136
11.7	0.32	151	2.15	-93	0.087	-98	0.18	176

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