

< C band internally matched power GaAs FET >

# MGFC39V5258

5.2 – 5.8 GHz BAND / 8W

## DESCRIPTION

The MGFC39V5258 is an internally impedance-matched GaAs power FET especially designed for use in 5.2 – 5.8 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

## FEATURES

Class A operation

Internally matched to 50(ohm) system

- High output power  
P1dB=8W (TYP.) @f=5.2 – 5.8GHz
- High power gain  
GLP=9.0dB (TYP.) @f=5.2 – 5.8GHz
- High power added efficiency  
P.A.E.=30% (TYP.) @f=5.2 – 5.8GHz

## APPLICATION

- 5.2 – 5.8 GHz band power amplifier

## QUALITY

- IG

## RECOMMENDED BIAS CONDITIONS

- VDS=10V • ID=2.4A Refer to Bias Procedure • RG=50ohm

## Absolute maximum ratings (Ta=25°C)

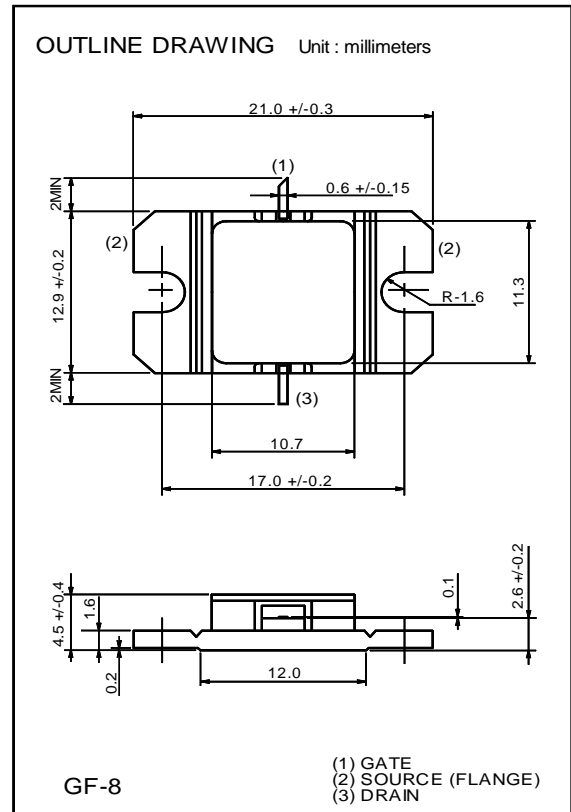
Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain breakdown voltage	-15	V
VGSO	Gate to source breakdown voltage	-15	V
ID	Drain current	5.6	A
IGR	Reverse gate current	-20	mA
IGF	Forward gate current	42	mA
PT *1	Total power dissipation	42.8	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	-65 to +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	38	39	-	dBm
GLP	Linear Power Gain	f=5.2 – 5.8GHz	8	9	-	dB
ID	Drain current		-	2.2	2.4	A
P.A.E.	Power added efficiency		-	30	-	%
Rth(ch-c) *2	Thermal resistance		-	-	3.5	°C/W

\*2 : Channel-case



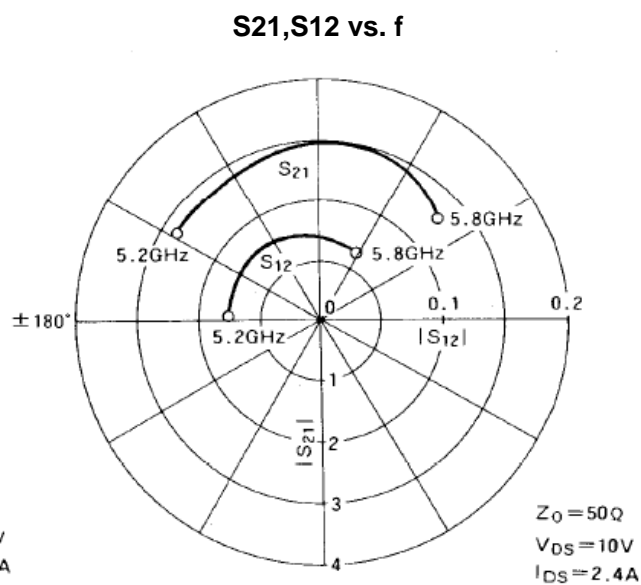
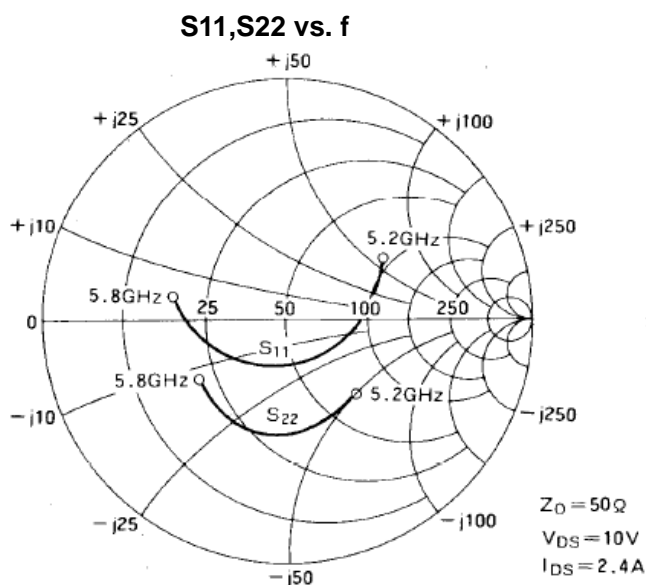
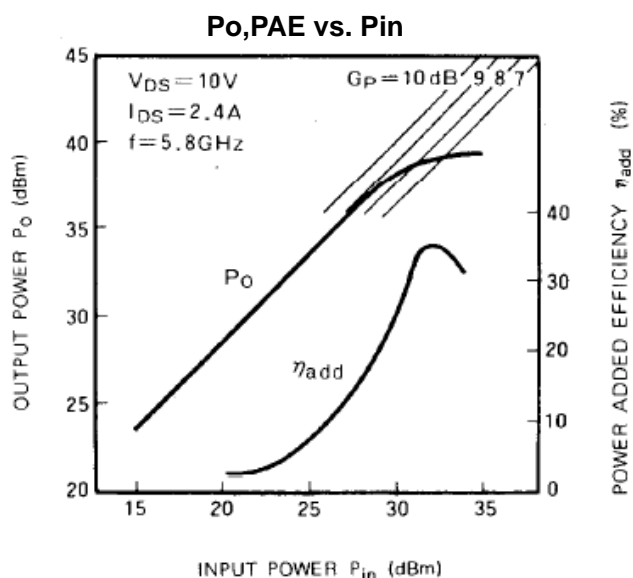
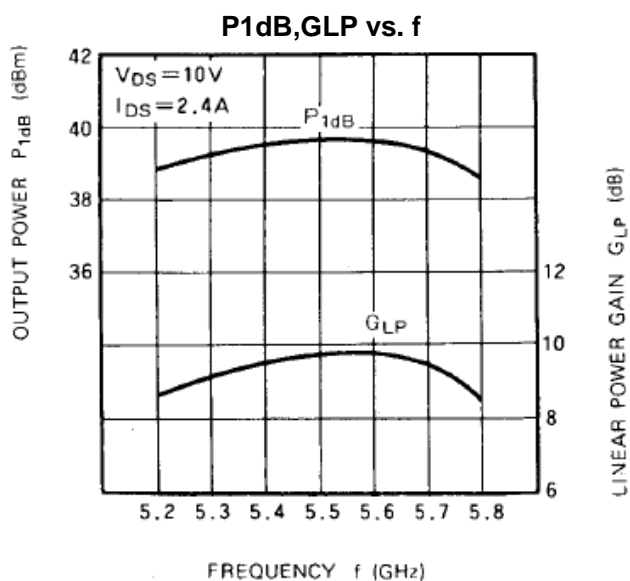
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## MGFC39V5258 TYPICAL CHARACTERISTICS( Ta=25deg.C )



## MGFC39V5258 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.)
5.2	0.48	32	2.69	148	0.076	178	0.42	-47
5.3	0.36	11	2.80	133	0.077	164	0.43	-61
5.4	0.26	-19	2.79	114	0.077	146	0.45	-77
5.5	0.19	-71	2.99	99	0.076	127	0.47	-95
5.6	0.26	-139	2.98	81	0.070	105	0.48	-113
5.7	0.38	-170	2.95	62	0.068	84	0.46	-130
5.8	0.49	169	2.70	41	0.065	61	0.45	-146

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