

# MGFC39V5867

5.8~6.75GHz BAND 8W INTERNALLY MATCHED GaAs FET

## DESCRIPTION

The MGFC39V5867 device is an internally impedance-matched GaAs power FET especially designed for use in 5.8 ~ 6.75GHz 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 = 39dBm (TYP.) @ f=5.8 ~ 6.75 GHz
- High power gain  
GLP = 9 dB (TYP.) @ f=5.8 ~ 6.75 GHz

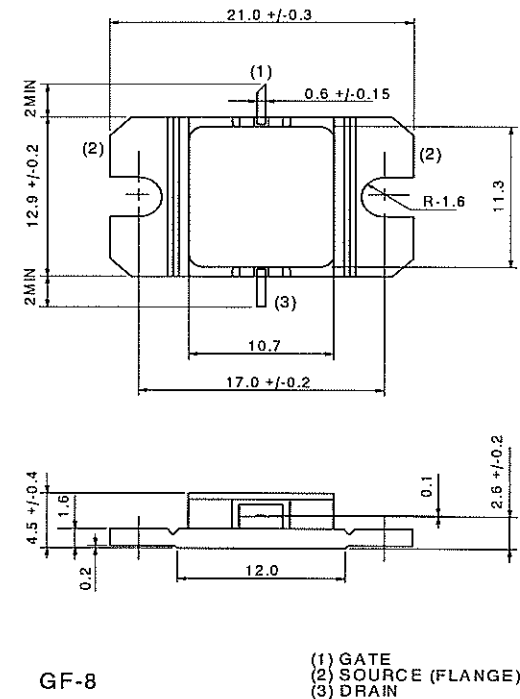
## APPLICATION

VSAT

## RECOMMENDED BIAS CONDITIONS

VDS = 10 (V)  
ID=2.4(A)  
RG=50 (ohm)

OUTLINE DRAWING Unit : millimeters



## ABSOLUTE MAXIMUM RATINGS (Ta=25deg.C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain voltage	-15	V
VGSO	Gate to source voltage	-15	V
ID	Drain current	7.5	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	deg.C
Tstg	Storage temperature	-65 / +175	deg.C

\*1 : Tc=25deg.C

< Keep safety first in your circuit designs! >  
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## ELECTRICAL CHARACTERISTICS (Ta=25deg.C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V, VGS=0V	-	-	7.5	
gm	Transconductance	VDS=3V, ID=2.2A	-	2	-	
VGS(off)	Pinch-off voltage	VDS=3V, ID=20mA	-	-	-4.5	V
P1dB	Output power at 1dB gain	VDS=10V, ID(RF off)=2.4A. f=5.8 ~ 6.75GHz	38.0	39.0	-	dBm
GLP	Linear power gain		8.0	9.0	-	dB
ID	Drain Current		-	-	3	A
P.A.E.	Power added efficiency		-	30	-	%
Rth(ch-c)	Thermal resistance	*1 delta Vf method	-	-	3.5	deg.C/W

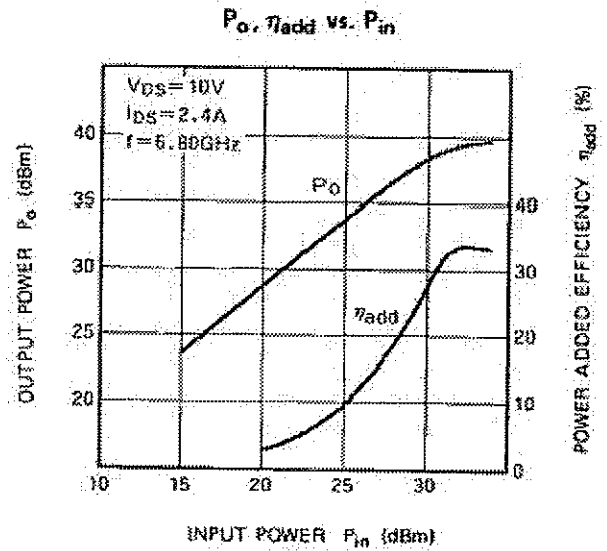
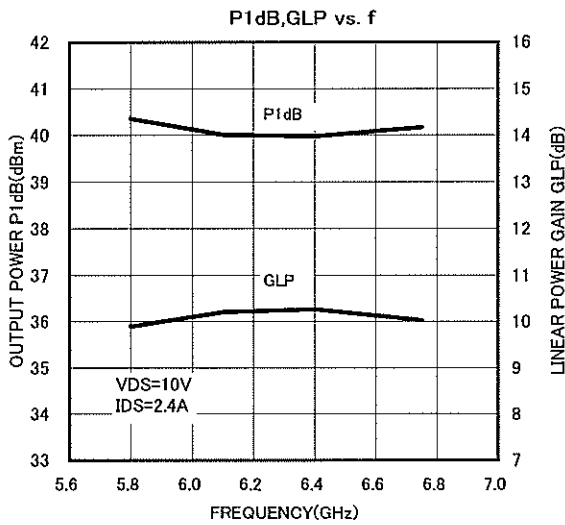
\*1 : Channel-case



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TYPICAL CHARACTERISTICS (Ta=25deg.C)



### 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)
5.8	0.669	-173	2.927	13	0.043	-28	0.188	-100
5.9	0.658	171	2.916	-1	0.050	-46	0.155	-130
6.0	0.645	156	2.937	-14	0.055	-63	0.148	-160
6.1	0.632	143	2.948	-28	0.055	-76	0.166	176
6.2	0.618	130	2.933	-42	0.058	-90	0.201	154
6.3	0.598	119	2.928	-55	0.060	-104	0.241	139
6.4	0.574	108	2.909	-68	0.063	-117	0.282	126
6.5	0.543	98	2.903	-81	0.066	-131	0.320	115
6.6	0.502	87	2.927	-94	0.070	-143	0.353	104
6.7	0.450	76	2.945	-107	0.071	-156	0.380	94
6.8	0.386	65	2.995	-121	0.076	-168	0.398	84



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