

< C band internally matched power GaAs FET >

# MGFC38V5867

5.8 – 6.75 GHz BAND / 6W

## DESCRIPTION

The MGFC38V5867 is an internally impedance-matched GaAs power FET especially designed for use in 5.8 – 6.75 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

## FEATURES

Class A operation

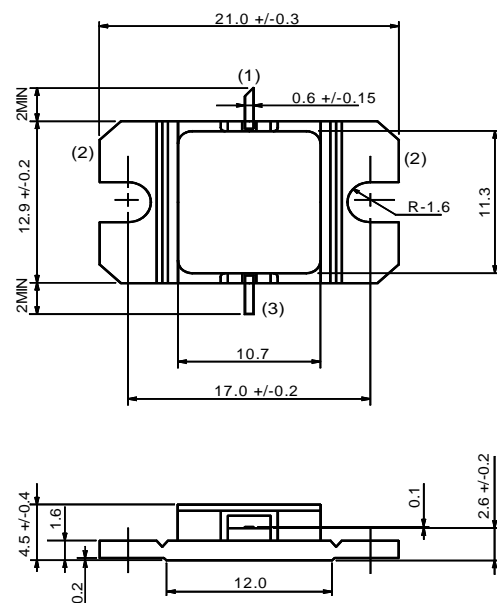
Internally matched to 50(ohm) system

- High output power  
P1dB=6W (TYP.) @f=5.8 – 6.75GHz
- High power gain  
GLP=10dB (TYP.) @f=5.8 – 6.75GHz

## APPLICATION

- VSAT

OUTLINE DRAWING Unit : millimeters



GF-8

- (1) GATE  
(2) SOURCE (FLANGE)  
(3) DRAIN

## RECOMMENDED BIAS CONDITIONS

- VDS=10V • ID=1.8A • RG=100ohm

## 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	A
IGR	Reverse gate current	-15	mA
IGF	Forward gate current	21.5	mA
PT *1	Total power dissipation	30	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

\*1 : Tc=25°C

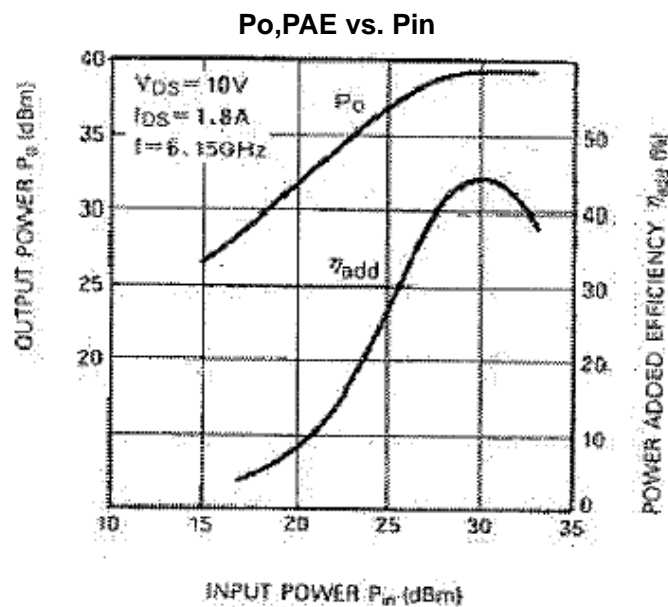
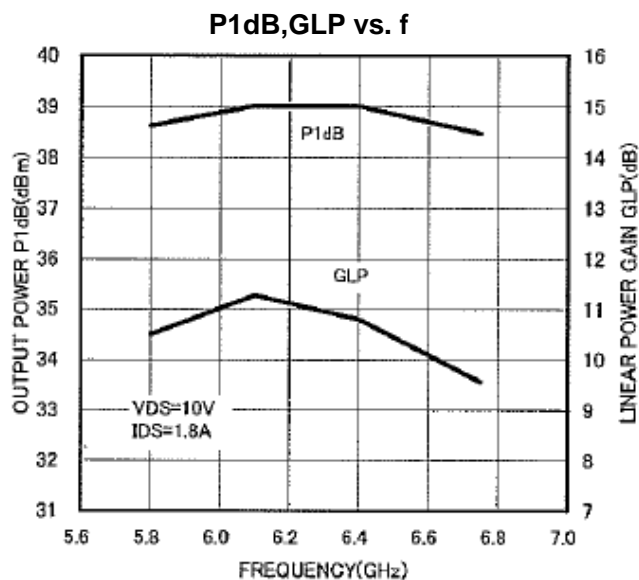
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## Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V, VGS=0V	-	-	5	A
gm	Transconductance	VDS=3V, ID=1.5A	-	2	-	S
VGS(off)	Gate to source cut-off voltage	VDS=3V, ID=15mA	-	-	-4.5	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=1.8A f=5.8 – 6.75GHz	37	38	-	dBm
GLP	Linear Power Gain		8.0	10	-	dB
ID	Drain current		-	1.7	-	A
P.A.E.	Power added efficiency		-	32	-	%
Rth(ch-c) *2	Thermal resistance	delta Vf method	-	-	5	°C/W

\*2 : Channel-case

**MGFC38V5867 TYPICAL CHARACTERISTICS**( Ta=25deg.C )**MGFC38V5867 S-parameters**( Ta=25deg.C , VDS=10(V),IDS=1.8(A) )

f (GHz)	S Parameters(Typ.)							
	S11		S21		S12		S22	
	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)	Magn.	Angle(deg.)
5.8	0.433	-139	3.314	37	0.036	14	0.449	-68
5.9	0.387	-168	3.402	21	0.041	-13	0.369	-83
6.0	0.354	163	3.493	4	0.047	-36	0.305	-98
6.1	0.339	135	3.549	-14	0.052	-58	0.262	-117
6.2	0.329	109	3.541	-31	0.056	-78	0.224	-139
6.3	0.315	84	3.498	-48	0.062	-96	0.210	-166
6.4	0.297	59	3.416	-65	0.064	-112	0.213	169
6.5	0.276	33	3.328	-82	0.068	-130	0.228	146
6.6	0.259	4	3.243	-99	0.070	-147	0.244	126
6.7	0.262	-30	3.133	-117	0.071	-164	0.261	111
6.8	0.287	-64	3.008	-135	0.071	-179	0.266	97

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