

# MGFC38V5867

5.8~6.75GHz BAND 6W INTERNALLY MATCHED GaAs FET

## DESCRIPTION

The MGFC38V5867 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

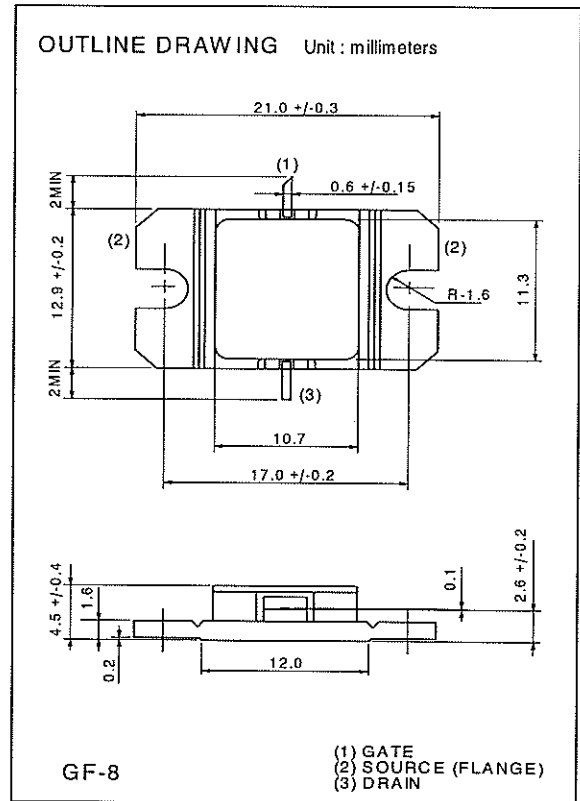
- Class A operation
- Internally matched to 50(ohm) system
- High output power  
P1dB = 38dBm (TYP.) @ f=5.8 ~ 6.75 GHz
- High power gain  
GLP = 10 dB (TYP.) @ f=5.8 ~ 6.75 GHz

## APPLICATION

VSAT

## RECOMMENDED BIAS CONDITIONS

VDS = 10 (V)  
ID=1.8(A)  
RG=100 (ohm)



## 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	5	A
IGR	Reverse gate current	-15	mA
IGF	Forward gate current	31.5	mA
PT *1	Total power dissipation	30	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! >  
Mitsubishi Electric Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage. Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (1) placement of substitutive, auxiliary circuits, (2) use of non-flammable material or (3) prevention against any malfunction or mishap.

## ELECTRICAL CHARACTERISTICS (Ta=25deg.C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V, VGS=0V	-	-	5	
gm	Transconductance	VDS=3V, ID=1.5A	-	2	-	
VGS(off)	Pinch-off voltage	VDS=3V, ID=15mA	-	-	-4.5	V
P1dB	Output power at 1dB gain	VDS=10V, ID(RF off)=1.8A. f=5.8 ~ 6.75GHz	37.0	38.0	-	dBm
GLP	Linear power gain		8.0	10.0	-	dB
ID	Drain Current		-	1.7	-	A
P.A.E.	Power added efficiency		-	32	-	%
Rth(ch-c)	Thermal resistance		*1 delta Vf method	-	-	5

\*1 : Channel-case

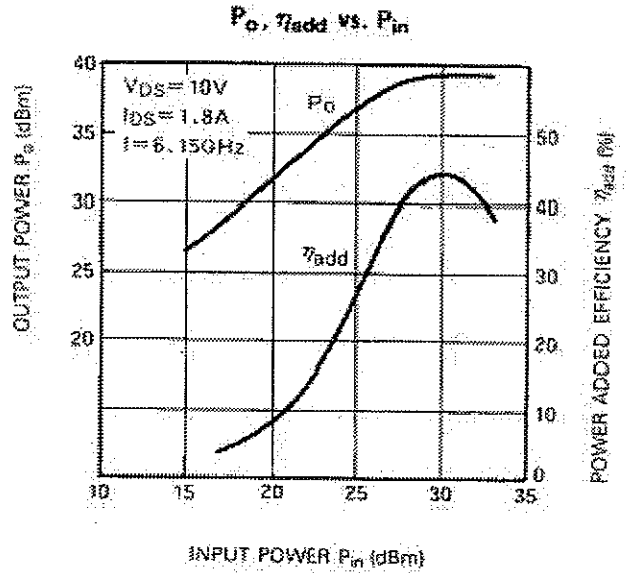
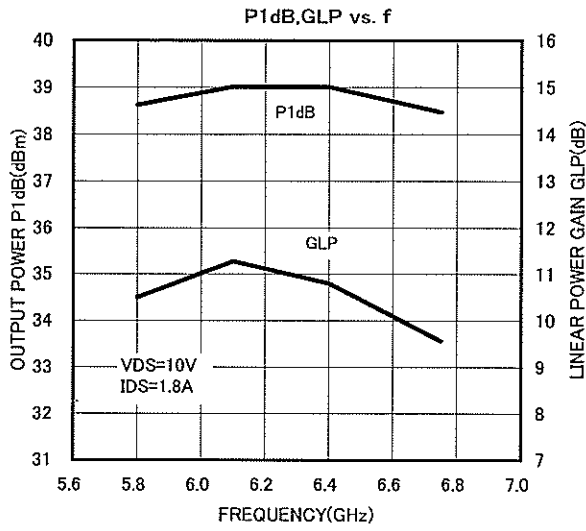


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TYPICAL CHARACTERISTICS (Ta=25deg.C)



### 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	0.053	-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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