

MITSUBISHI SEMICONDUCTOR <GaAs FET>

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

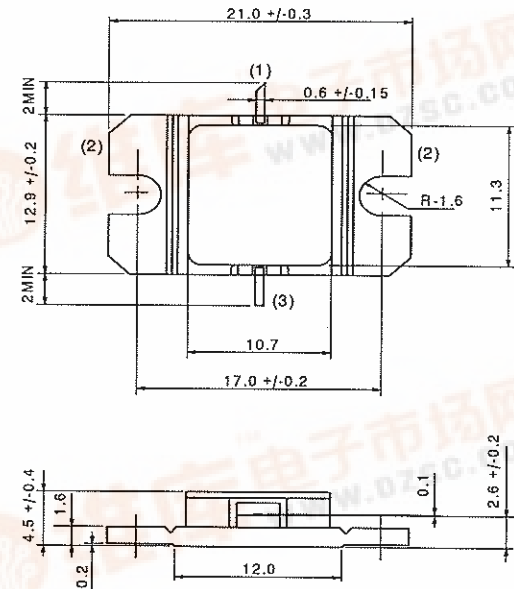
APPLICATION

VSAT

RECOMMENDED BIAS CONDITIONS

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

OUTLINE DRAWING Unit : millimeters



GF-8

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

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

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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	-	-	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	deg.C/W

*1 : Channel-case



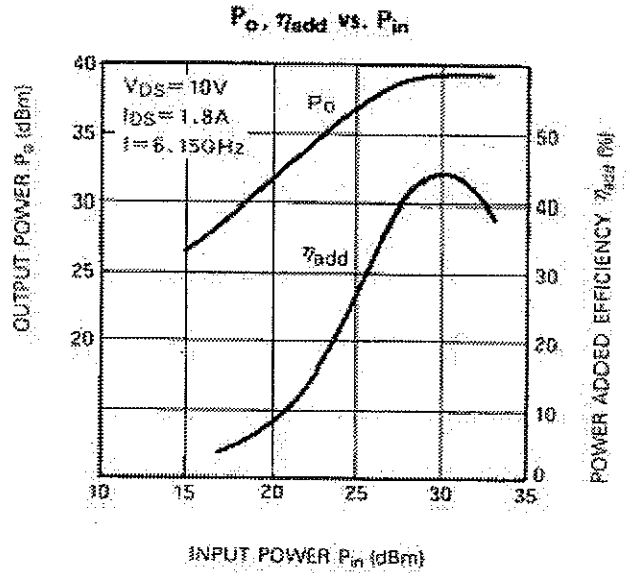
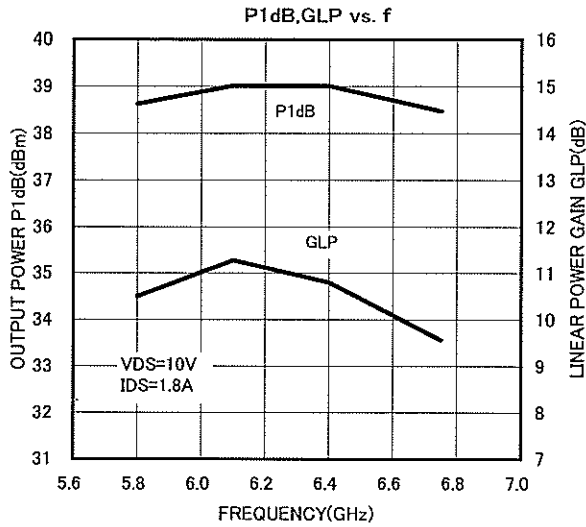
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MGFC38V5867

5.8 - 6.75GHz BAND 6W INTERNALLY MATCHED GaAs FET

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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