

MITSUBISHI SEMICONDUCTOR <GaAs FET>

MGFC45V5867

5.8~6.75GHz BAND 32W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFC45V5867 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 = 45.0dBm (TYP.) @ f=5.8 ~ 6.75 GHz
- High power gain
GLP = 9 dB (TYP.) @ f=5.8 ~ 6.75 GHz

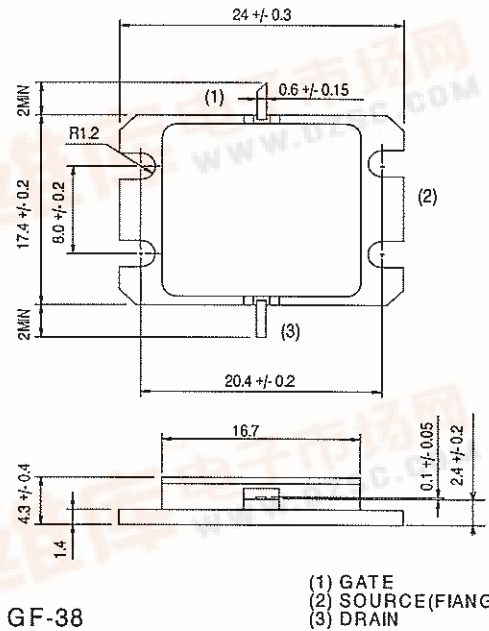
APPLICATION

VSAT

RECOMMENDED BIAS CONDITIONS

VDS = 10 (V)
ID=8(A)
RG=25 (ohm)

OUTLINE DRAWING Unit:millimeters (inches)



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	20	A
IGR	Reverse gate current	-80	mA
IGF	Forward gate current	168	mA
PT *1	Total power dissipation	150	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	-	24	-	
gm	Transconductance	VDS=3V,ID=8A	-	8	-	
VGS(off)	Pinch-off voltage	VDS=3V,ID=160mA	-	-	-5	V
P1dB	Output power at 1dB gain	VDS=10V,ID(RF off)=8A. f=5.8 ~ 6.75GHz	43.5	45.0	-	dBm
GLP	Linear power gain		7.0	9.0	-	dB
ID	Drain Current		-	8.0	-	A
P.A.E.	Power added efficiency		-	35	-	%
Rθ(ch-c)	Thermal resistance	*1: delta Vf method	-	-	1	deg.C/W

*1: Channel-case



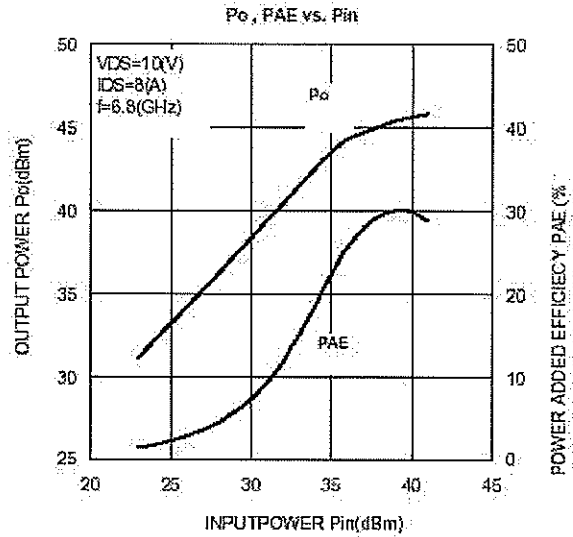
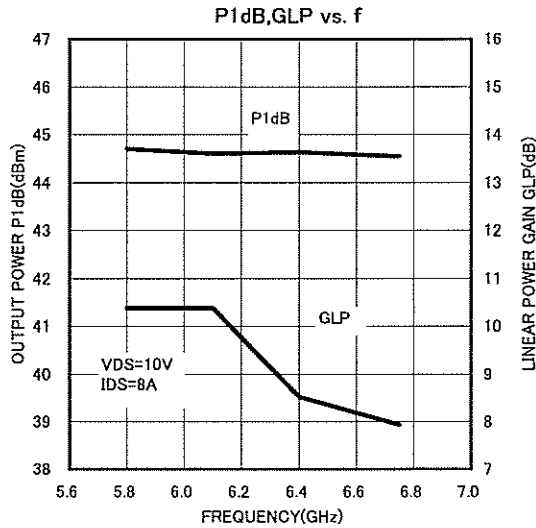
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MGFC45V5867

5.8 - 6.75GHz BAND 32W INTERNALLY MATCHED GaAs FET

TYPICAL CHARACTERISTICS (Ta=25deg.C)



S parameters (Ta=25deg.C , VDS=10(V),IDS=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	0.579	-151	3.261	-18	0.023	-119	0.088	-9
5.9	0.489	177	3.394	-41	0.037	-129	0.118	27
6.0	0.423	142	3.387	-63	0.048	-147	0.173	31
6.1	0.399	108	3.280	-83	0.057	-164	0.217	25
6.2	0.404	79	3.129	-102	0.065	-176	0.241	19
6.3	0.417	56	3.002	-120	0.071	169	0.252	12
6.4	0.428	38	2.866	-136	0.077	155	0.253	5
6.5	0.431	22	2.774	-152	0.081	143	0.250	-2
6.6	0.422	8	2.715	-168	0.084	131	0.239	-9
6.7	0.403	-7	2.685	177	0.090	117	0.220	-21
6.8	0.361	-23	2.679	161	0.095	105	0.201	-36



MGFC45V5867**5.8 ~ 6.75GHz BAND 32W INTERNALLY MATCHED GaAs FET****Requests Regarding Safety Designs**

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