

< C band internally matched power GaAs FET >

MGFC45V5867

5.8 – 6.75 GHz BAND / 30W

DESCRIPTION

The MGFC45V5867 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=30W (TYP.) @f=5.8 – 6.75GHz
- High power gain
GLP=9dB (TYP.) @f=5.8 – 6.75GHz

APPLICATION

- VSAT

RECOMMENDED BIAS CONDITIONS

- VDS=10V • ID=8.0A • RG=25ohm

Absolute maximum ratings (Ta=25°C)

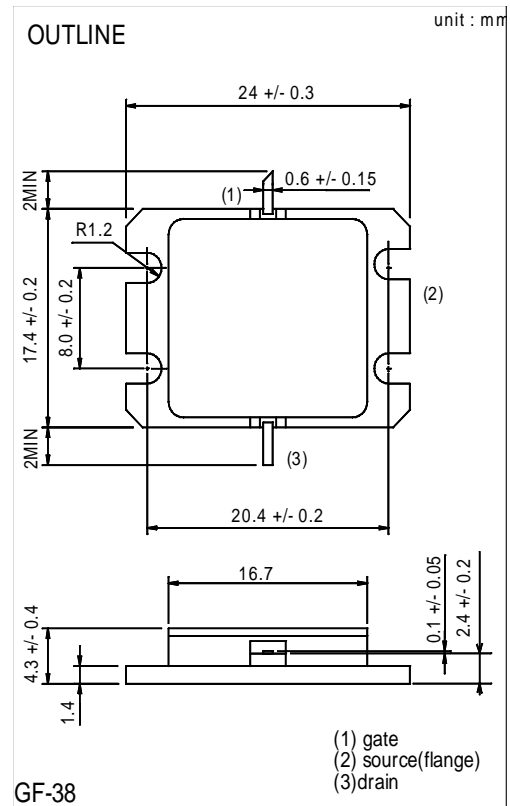
Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain breakdown voltage	-15	V
VGSO	Gate to source breakdown voltage	-15	V
ID	Drain current	20	A
IGR	Reverse gate current	-80	mA
IGF	Forward gate current	168	mA
PT *1	Total power dissipation	150	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

*1 : Tc=25°C

Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS=3V,VGS=0V	-	24	-	A
gm	Transconductance	VDS=3V,ID=8A	-	8	-	S
VGS(off)	Gate to source cut-off voltage	VDS=3V,ID=160mA	-	-	-5	V
P1dB	Output power at 1dB gain compression	VDS=10V,ID(RF off)=8A	43.5	45	-	dBm
GLP	Linear Power Gain	f=5.8 – 6.75GHz	7	9	-	dB
ID	Drain current		-	8	-	A
P.A.E.	Power added efficiency		-	35	-	%
Rth(ch-c) *2	Thermal resistance	delta Vf method	-	-	1	°C/W

*2 :Channel-case



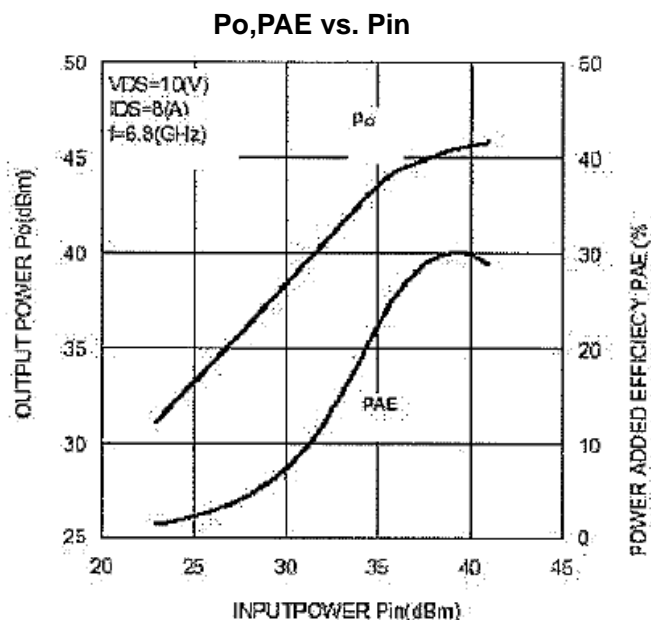
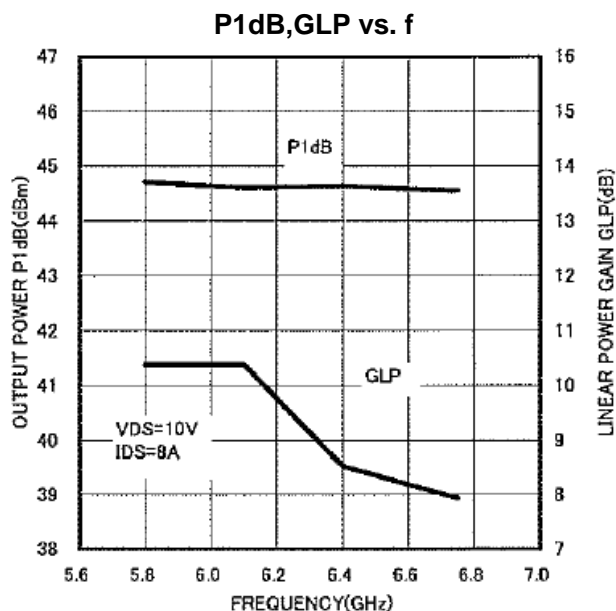
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MGFC45V5867 TYPICAL CHARACTERISTICS(Ta=25deg.C)



MGFC45V5867 S-parameters(Ta=25deg.C , VDS=10(V),IDS=8.0(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

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