MGFC42V5867

5.8~6.75GHz BAND 16W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFC42V5867 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 = 42.5dBm (TYP.) @ f=5.8 ~ 6.75 GHz
- High power gain
  GLP = 9 dB (TYP.) @ f=5.8 ~ 6.75 GHz

APPLICATION

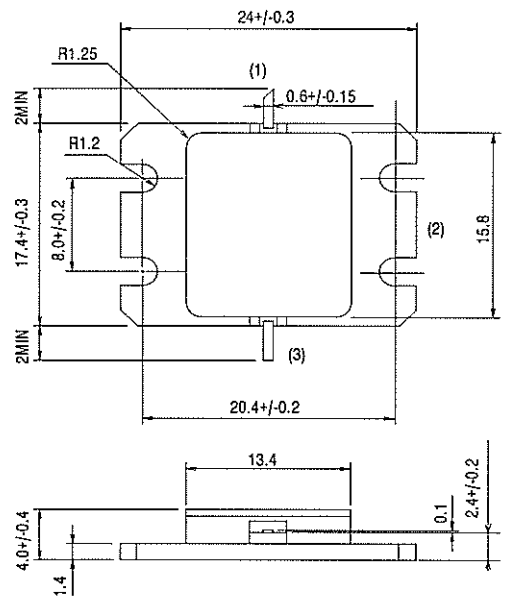
VSAT

RECOMMENDED BIAS CONDITIONS

VDS = 10 (V)
ID=4.5(A)
RG=25 (ohm)

OUTLINE DRAWING

Unit: millimeters (inches)



GF-18

(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	12	A
IGR	Revese gate current	-40	mA
IGF	Forward gate current	84	mA
PT *1	Total power dissipation	78.9	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	-	9	12	
gm	Transconductance	VDS=3V,ID=4.4A	-	4		
VGS(off)	Pinch-off voltage	VDS=3V,ID=80mA	-2	-3	-4	V
P1dB	Output power at 1dB gain	VDS=10V,ID(RF off)=4.5A. f=5.8 ~ 6.75GHz	41.0	42.5	-	dBm
GLP	Linear power gain		7.0	9.0	-	dB
ID	Drain Current		-	4.5	-	A
P.A.E.	Power added efficiency		-	31	-	%
Rth(ch-c)	Thermal resistance *1	delta Vf method	-	-	1.9	deg.C/W

*1 : Channel-case

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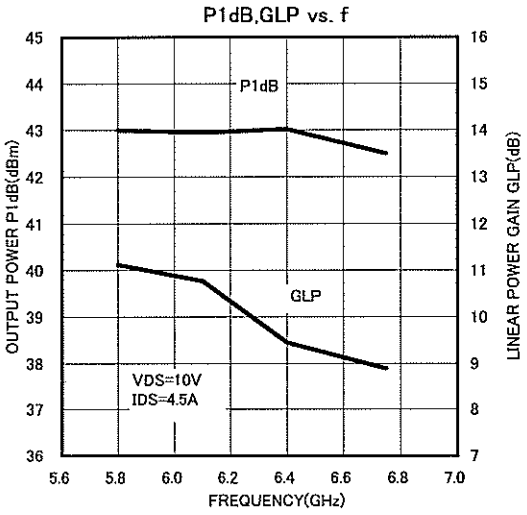
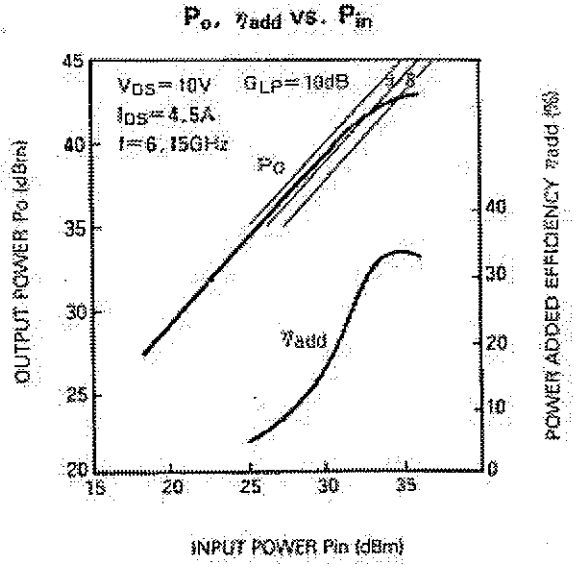
5.8 - 6.75GHz BAND 16W INTERNALLY MATCHED GaAs FET

TYPICAL CHARACTERISTICS (Ta=25deg.C)





S parameters (Ta=25deg.C , VDS=10(V),IDS=4.5(A))

f	S-Parameters (TYP.)							
	S11		S21		S12		S22	
(GHz)	Magn.	Angle(deg)	Magn.	Angle(deg)	Magn.	Angle(deg)	Magn.	Angle(deg)
5.8	0.419	152	3.353	-10	0.058	-62	0.115	-148
5.9	0.401	120	3.304	-30	0.060	-84	0.161	164
6.0	0.414	91	3.177	-49	0.064	-102	0.231	139
6.1	0.438	65	2.981	-69	0.065	-123	0.297	124
6.2	0.460	48	2.819	-85	0.066	-140	0.359	115
6.3	0.479	35	2.686	-99	0.066	-153	0.408	107
6.4	0.492	23	2.571	-112	0.067	-169	0.449	101
6.5	0.494	13	2.473	-125	0.070	-178	0.480	96
6.6	0.488	2	2.400	-138	0.069	168	0.506	91
6.7	0.472	-10	2.351	-153	0.073	157	0.541	84
6.8	0.447	-21	2.333	-166	0.075	142	0.557	79

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