MGFS44V2735

2.7 - 3.5GHz BAND 24W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFS44V2735 is an internally impedance-matched GaAs power FET especially designed for use in 2.7 - 3.5 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 = 24W (TYP.) @ f=2.7 - 3.5 GHz
High power gain
GLP = 12 dB (TYP.) @ f=2.7 - 3.5GHz
High power added efficiency
P.A.E. = 36 % (TYP.) @ f=2.7 - 3.5GHz
Low distortion [item -51]
IM3=-45dBc(TYP.) @Po=33.5dBm S.C.L.

APPLICATION

item 01 : 2.7 - 3.5 GHz band power amplifier
item 51 : 2.7 - 3.5 GHz band digital ratio communication

QUALITY GRADE

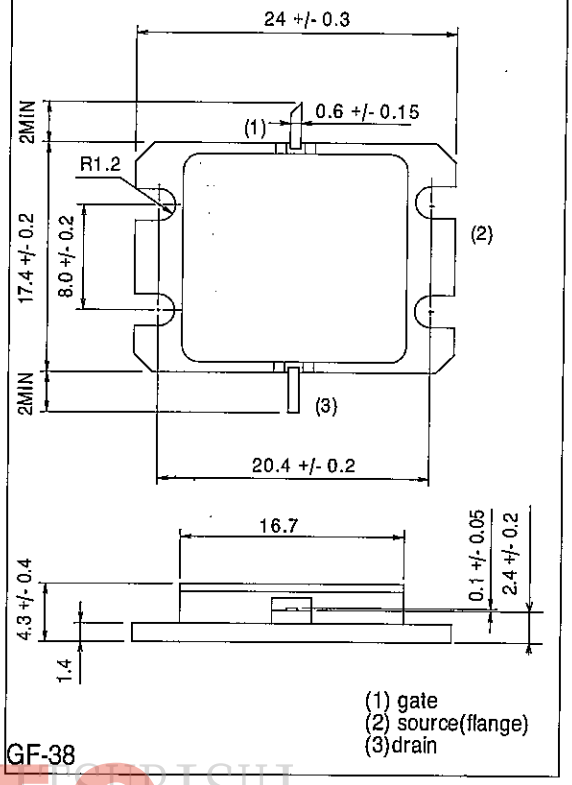
IG

RECOMMENDED BIAS CONDITIONS

VDS = 10 (V)
ID = 6.4 (A)
RG=25 (ohm)

OUTLINE

unit : mm



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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	-60	mA
IGF	Forward gate current	126	mA
PT *1	Total power dissipation	125	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	-	18	-	A
gm	Transconductance	VDS = 3V , ID = 6.4A	-	6.5	-	S
VGS(off)	Gate to source cut-off voltage	VDS = 3V , ID = 120mA	-2	-	-5	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=6.4A, f=2.7 - 3.5GHz	43	44	-	dBm
GLP	Linear power gain		11	12	-	dB
ID	Drain current		-	6.4	-	A
P.A.E.	Power added efficiency		-	36	-	%
IM3 *2	3rd order IM distortion		-42	-45	-	dBc
Rth(ch-c) *3	Thermal resistance	delta Vf method	-	1.0	1.2	deg.C/W

*2 : item -51,2 tone test,Po=33.5dBm Single Carrier Level,f=2.7,3.1,3.5GHz,delta f=10MHz
*3 : Channel-case

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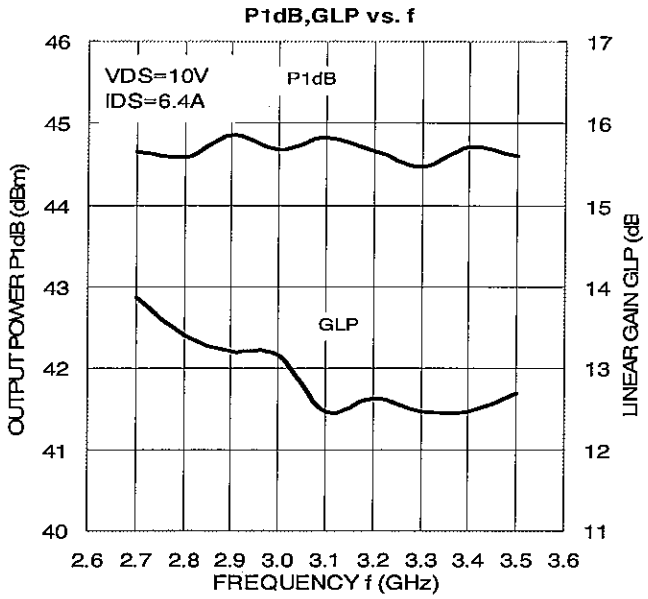
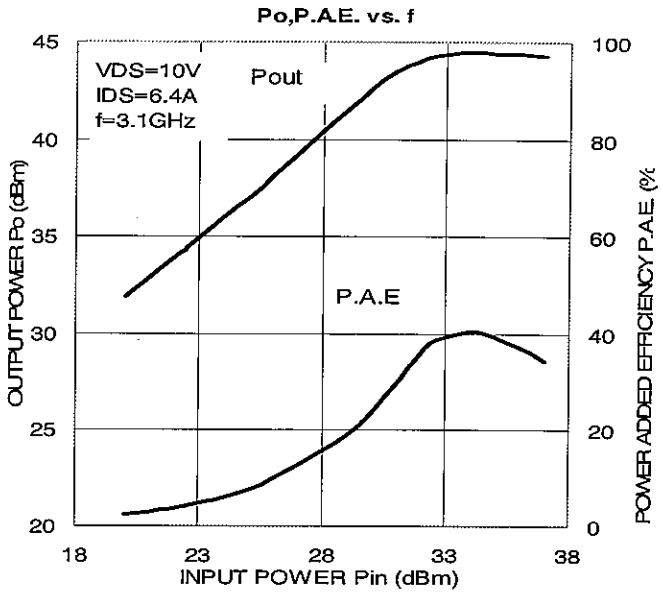
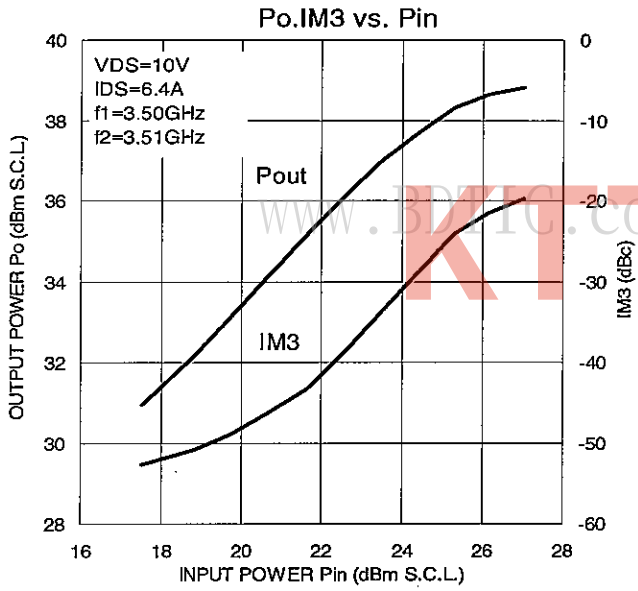
TYPICAL CHARACTERISTICS







S parameters (Ta=25deg.C , VDS=10(V),IDS=6.4(A))

f	S-Parameter (TYP.)							
	S11		S21		S12		S22	
(GHz)	Magn.	Angle(deg)	Magn.	Angle(deg)	Magn.	Angle(deg)	Magn.	Angle(deg)
2.60	0.51	178	4.32	50	0.05	-13	0.38	-62
2.70	0.49	123	4.40	14	0.05	-56	0.34	-96
2.80	0.50	77	4.31	-18	0.05	-85	0.33	-127
2.90	0.52	37	4.14	-48	0.06	-114	0.33	-152
3.00	0.54	2	4.04	-77	0.06	-137	0.33	-174
3.10	0.53	-29	3.96	-105	0.06	-167	0.33	169
3.20	0.51	-62	3.97	-133	0.06	165	0.31	150
3.30	0.47	-95	4.06	-161	0.07	137	0.29	131
3.40	0.40	-134	4.20	168	0.07	105	0.24	103
3.50	0.29	171	4.31	134	0.08	73	0.18	61
3.60	0.27	82	4.13	96	0.07	32	0.17	-24

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