

MGFS45V2735

2.7 - 3.5GHz BAND 30W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFS45V2735 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 = 30W (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=34.5dBm S.C.L.

APPLICATION

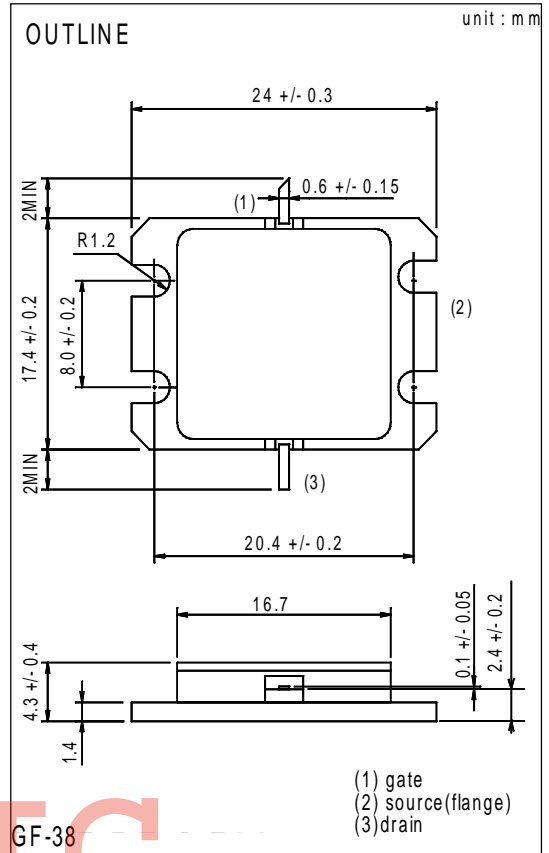
- item 01 : 2.7 - 3.5 GHz band power amplifier
- item 51 : 2.7 - 3.5 GHz band digital radio communication

QUALITY GRADE

IG

RECOMMENDED BIAS CONDITIONS

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



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	-	A
gm	Transconductance	VDS = 3V , ID = 8A	-	8	-	S
VGS(off)	Saturated drain current	VDS = 3V , ID = 160mA	-2	-	-5	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=8A, f=2.7 - 3.5GHz	44	45	-	dBm
GLP	Linear power gain		11	12	-	dB
ID	Drain current		-	8	-	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	-	0.8	1	deg.C/W

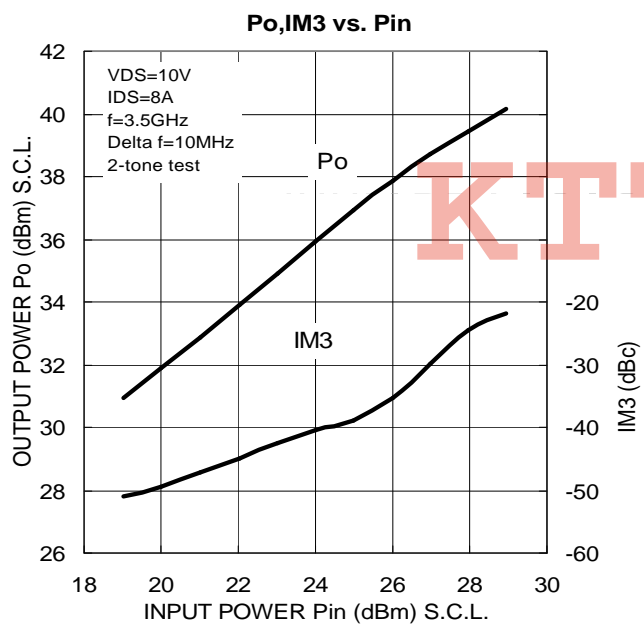
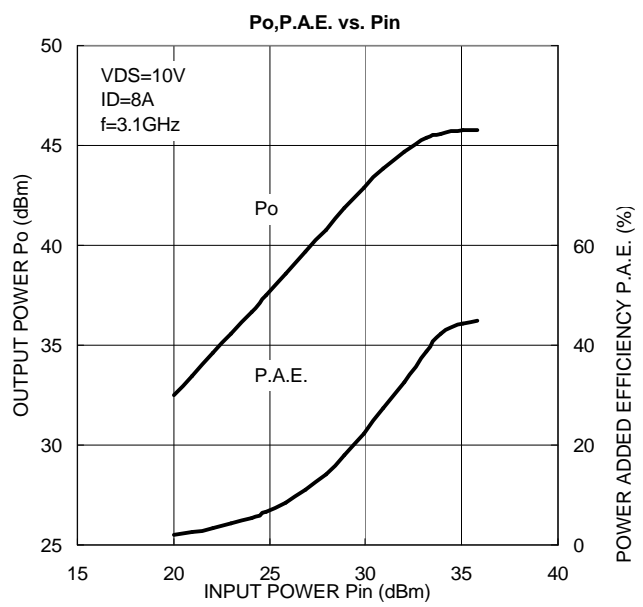
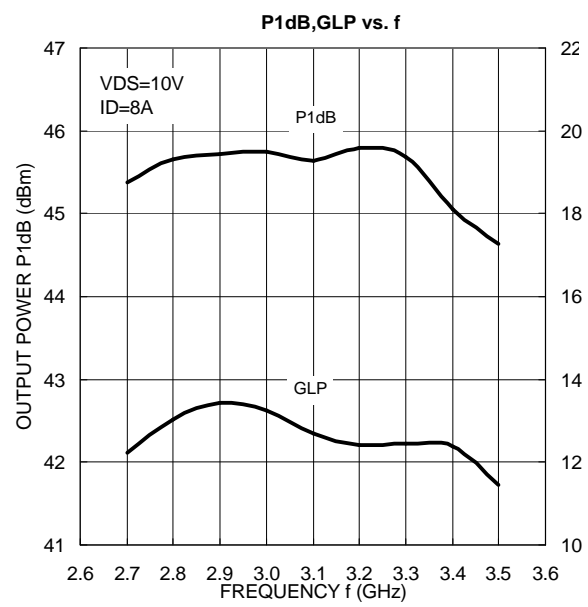
*2 : item -51,2 tone test,Po=34.5dBm Single Carrier Level,f=2.7,3.1,3.5GHz,delta f=10MHz

*3 : Channel-case

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TYPICAL CHARACTERISTICS



S parameters (Ta=25deg.C , VDS=10(V),IDS=8(A))

f (GHz)	S-Parameter (TYP.)							
	S11		S21		S12		S22	
	Magn.	Angle(deg)	Magn.	Angle(deg)	Magn.	Angle(deg)	Magn.	Angle(deg)
2.60	0.63	88	3.39	38	0.03	-17	0.59	26
2.70	0.58	47	3.90	3	0.04	-52	0.49	-1
2.80	0.51	1	4.30	-31	0.05	-86	0.41	-30
2.90	0.47	-51	4.52	-66	0.06	-122	0.32	-67
3.00	0.47	-105	4.51	-101	0.06	-157	0.27	-106
3.10	0.50	-152	4.33	-135	0.06	166	0.24	-137
3.20	0.51	166	4.15	-168	0.05	134	0.23	-165
3.30	0.49	123	4.04	159	0.06	100	0.21	174
3.40	0.45	61	3.92	117	0.06	49	0.15	149
3.50	0.48	-11	3.60	76	0.06	8	0.05	165
3.60	0.64	-75	2.86	33	0.05	-40	0.16	-115

MGFS45V2735**2.7 - 3.5GHz BAND 30W INTERNALLY MATCHED GaAs FET****Requests Regarding Safety Designs**

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