

< L/S band internally matched power GaAs FET >

# MGFS44V2735

2.7 – 3.5 GHz BAND / 24W

## 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 - 3.5GHz
- High power gain  
GLP=12.0dB (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

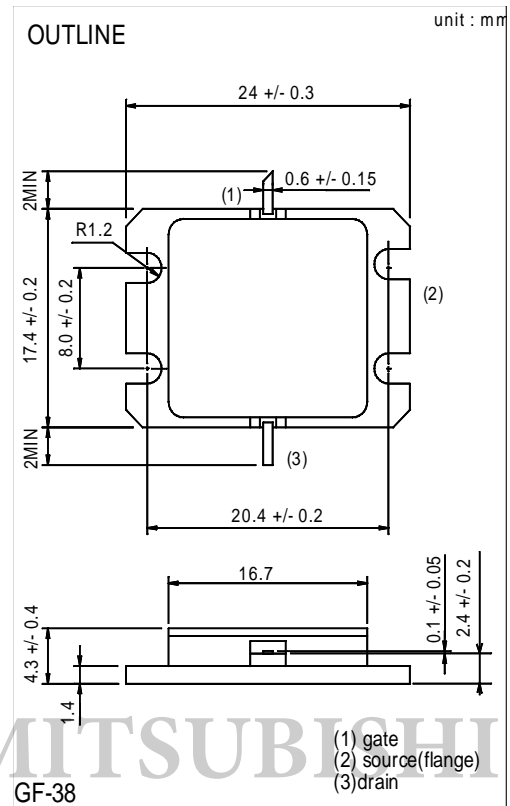
- item 01 : 2.7 - 3.5 GHz band power amplifier
- item 51 : 2.7 - 3.5 GHz band digital radio communication

## QUALITY

- IG

## RECOMMENDED BIAS CONDITIONS

- VDS=10V • ID=6.4A • 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	-60	mA
IGF	Forward gate current	126	mA
PT *1	Total power dissipation	125	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	-	18	-	A	
gm	Transconductance	VDS=3V, ID=6.4A	-	6.5	-	S	
VGS(off)	Gate to source cut-off voltage	VDS=3V, ID=160mA	-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	1.2	°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

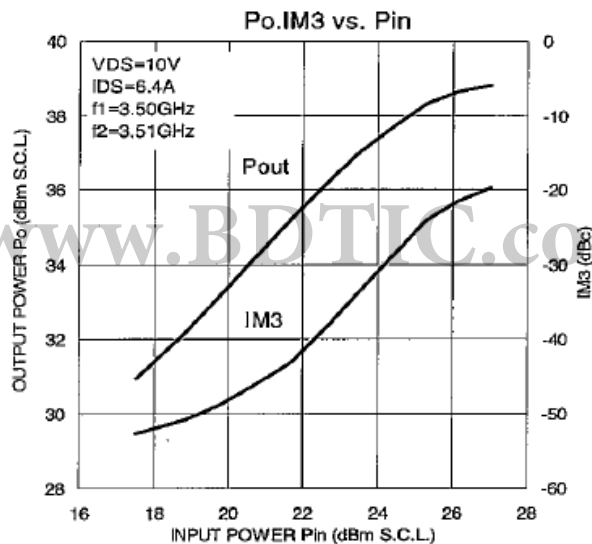
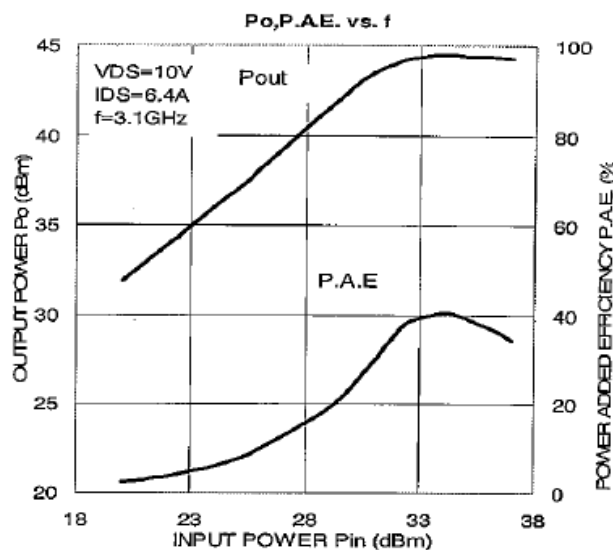
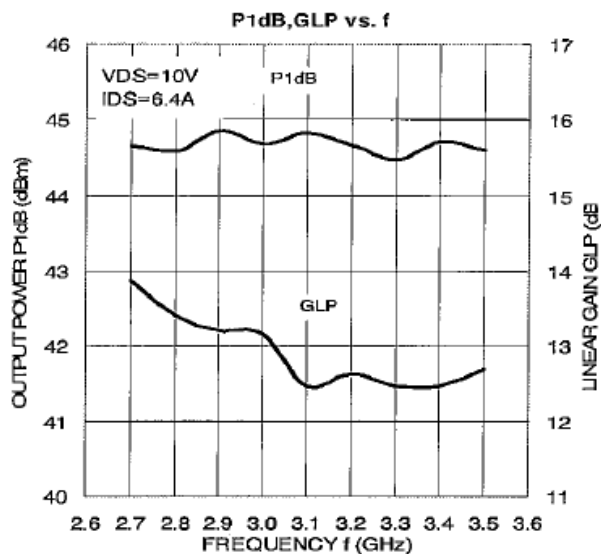
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## MGFS44V2735 TYPICAL CHARACTERISTICS



## MGFS44V2735 S-parameters (Ta=25deg.C , VDS=10(V), IDS=6.4(A) )

f (GHz)	S-Parameter (TYP.)							
	S11		S21		S12		S22	
	Magn.	Angle(deg)	Magn.	Angle(deg)	Magn.	Angle(deg)	Magn.	Angle(deg)
2.60	0.51	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	166	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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