

# < 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)

Gate to drain breakdown voltage	-15	V		
Gate to source breakdown voltage	ce breakdown voltage -15			
Drain current	20	Α		
Reverse gate current	-60	mA		
Forward gate current	126	mA		
Total power dissipation	125	W		
Cannel temperature	175	°C		
Storage temperature	-65 to +175	°C		
F	Gate to source breakdown voltage  Drain current  Reverse gate current  Forward gate current  Total power dissipation  Cannel temperature	Gate to source breakdown voltage         -15           Orain current         20           Reverse gate current         -60           Forward gate current         126           Total power dissipation         125           Cannel temperature         175           Storage temperature         -65 to +175		

\*1 : Tc=25°C

# OUTLINE 24 +/- 0.3 (1) gate (2) source(flange) (3) drain

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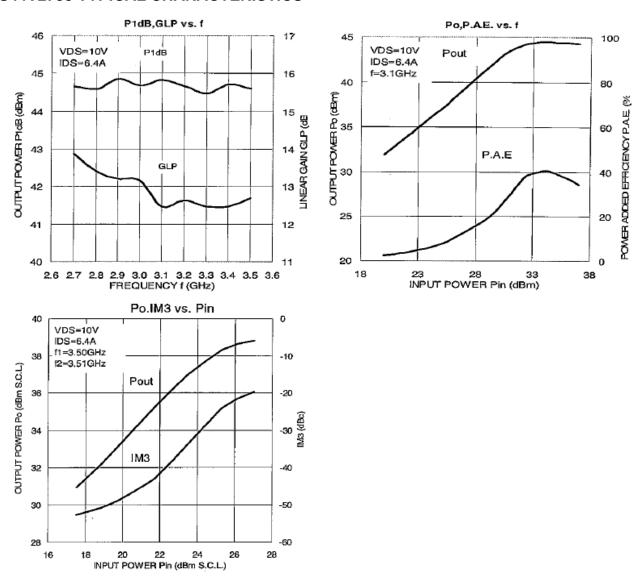
### **Electrical characteristics** (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Тур.	Max.	
IDSS	Saturated drain current	VDS=3V,VGS=0V	-	18	-	Α
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	43	44	-	dBm
GLP	Linear Power Gain	f=2.7 – 3.5GHz	11	12	-	dB
ID	Drain current		-	6.4	-	Α
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

<sup>\*2 :</sup>item -51 ,2 tone test,Po=33.5dBm Single Carrier Level ,f=2.7,3.1,3.5GHz,delta f=10MHz

<sup>\*3:</sup> Channel-case

### MGFS44V2735 TYPICAL CHARACTERISTICS



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

	S-Parameter (TYP.)							
f	· \$11		\$21		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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