

**PRELIMINARY**

Notice: This is not a final specification.  
Some parametric limits are subject to change.

MITSUBISHI SEMICONDUCTOR &lt;GaAs FET&gt;

**MGFS44V2735****2.7 - 3.5GHz BAND 25W 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 = 25W (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. = 45 % (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)

**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
I <sub>GR</sub>	Reverse gate current	-60	mA
I <sub>GF</sub>	Forward gate current	126	mA
PT *1	Total power dissipation	125	W
T <sub>ch</sub>	Channel temperature	175	deg.C
T <sub>stg</sub>	Storage temperature	-65 / +175	deg.C

\*1 : Tc=25deg.C

**ELECTRICAL CHARACTERISTICS**

(Ta=25deg.C)

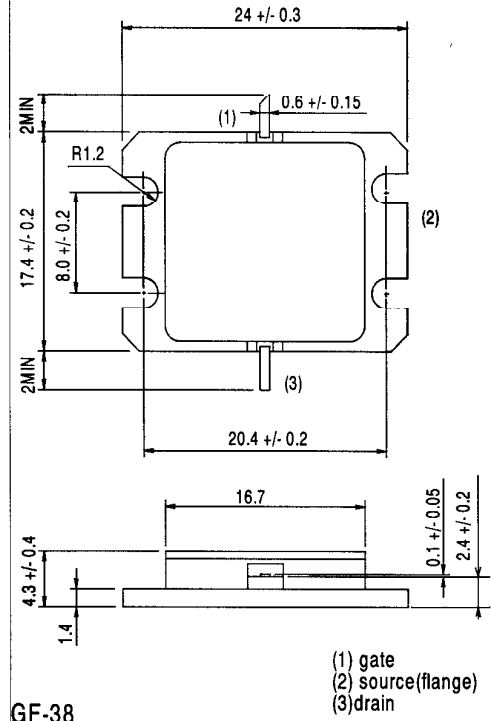
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IDSS	Saturated drain current	VDS = 3V, VGS = 0V	-	18	-	A
gm	Transconductance	VDS = 3V, ID = 6.4A	-	6.5	-	S
VGS(off)	Saturated drain current	VDS = 3V, ID = 120mA	-2	-	-5	V
P1dB	Output power at 1dB gain compression	VDS=10V, ID(RF off)=6.4A, 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
R <sub>th(ch-c)</sub> *3	Thermal resistance		delta Vf method	-	-	1.2

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

\*3 : Channel-case

**OUTLINE**

unit : mm



GF-38

(1) gate  
(2) source(flange)  
(3) drain

&lt; Keep safety first in your circuit designs! &gt;

Mitsubishi Electric Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage. Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (1) placement of substitutive, auxiliary circuits, (2) use of non-flammable material or (3) prevention against any malfunction or mishap.



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20th/Jan.'98

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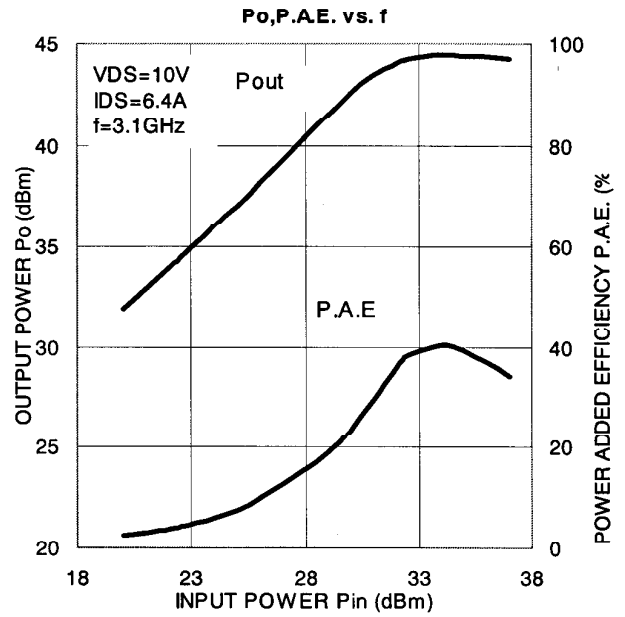
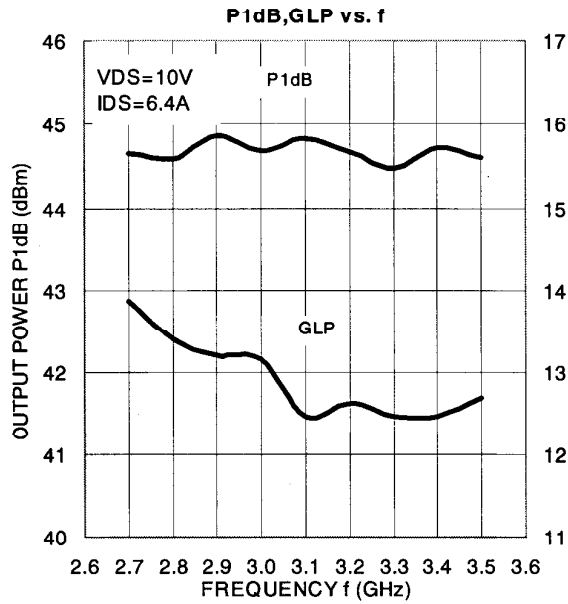
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MITSUBISHI SEMICONDUCTOR <GaAs FET>

**MGFS44V2735**

**2.7 - 3.5GHz BAND 28W INTERNALLY MATCHED GaAs FET**

TYPICAL CHARACTERISTICS



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