

PRELIMINARY

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

mitsubishi semiconductor <GaAs FET>

MGFC47B3436B

3.4 - 3.6GHz BAND 50W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFC47B3436B is an internally impedance-matched GaAs power FET especially designed for use in 3.4 - 3.6 GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

FEATURES

Class AB operation

Internally matched to 50(ohm) system

High output power

Po(SAT) = 50W (TYP.) @ f=3.4 - 3.6 GHz

High power gain

GP = 10 dB (TYP.) @ f=3.4 - 3.6 GHz

Distortion

EVM = 2.0% (TYP.) @ f=3.4 - 3.6GHz, Po=37dBm

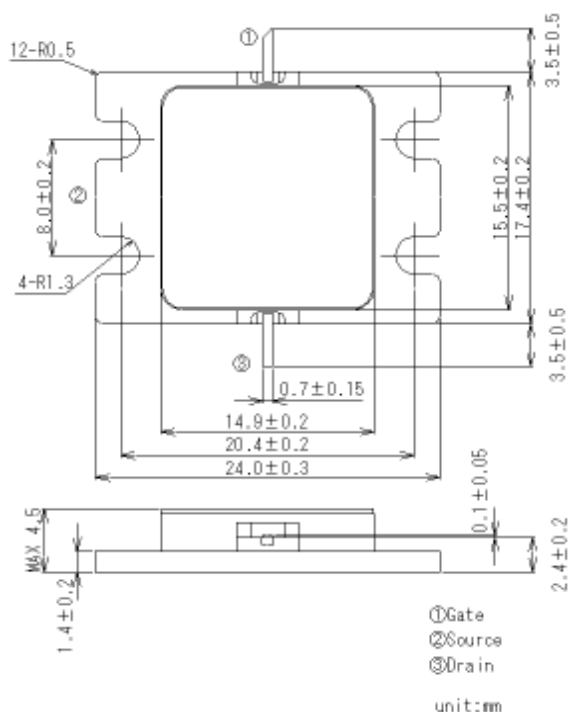
RECOMMENDED BIAS CONDITIONS

VDS = 12 (V)

ID = 1.5 (A)

RG=10(ohm)

OUTLINE DRAWING



GF-60

ABSOLUTE MAXIMUM RATINGS

(Ta=25deg.C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain voltage	-15	V
VGSO	Gate to source voltage	-10	V
MAXID	Maximum drain current	12	A
PT *1	Total power dissipation	115	W
Tch	Channel temperature	175	deg.C
Tstg	Storage temperature	-55 / +150	deg.C

*1 : Tc=25deg.C

< Keep safety first in your circuit designs! >

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

ELECTRICAL CHARACTERISTICS

(Ta=25deg.C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
VGS(off)	Gate to source cut-off voltage	VDS = 3V , ID = 100mA	-0.5	-	-3.0	V
Po(SAT)	Output power	VDS=12V, ID(RF off)=1.5A, f=3.4-3.6GHz	-	47	-	dBm
GP	Power gain	VDS=12V, ID(RF off)=1.5A, f=3.4-3.6GHz Pout=37dBm	9.0	10.5	-	dB
ID	Drain current		-	2.0	3	A
EVM *2	Error Vector Magnitude		-	1.5	2.5	%
Rth(ch-c) *3	Thermal resistance	delta Vf method	-	0.65	1.2	deg.C/W

*2 :WiMAX Downlink, 64QAM-3/4, Channel Bandwidth: 6MHz

*3 : Channel-case



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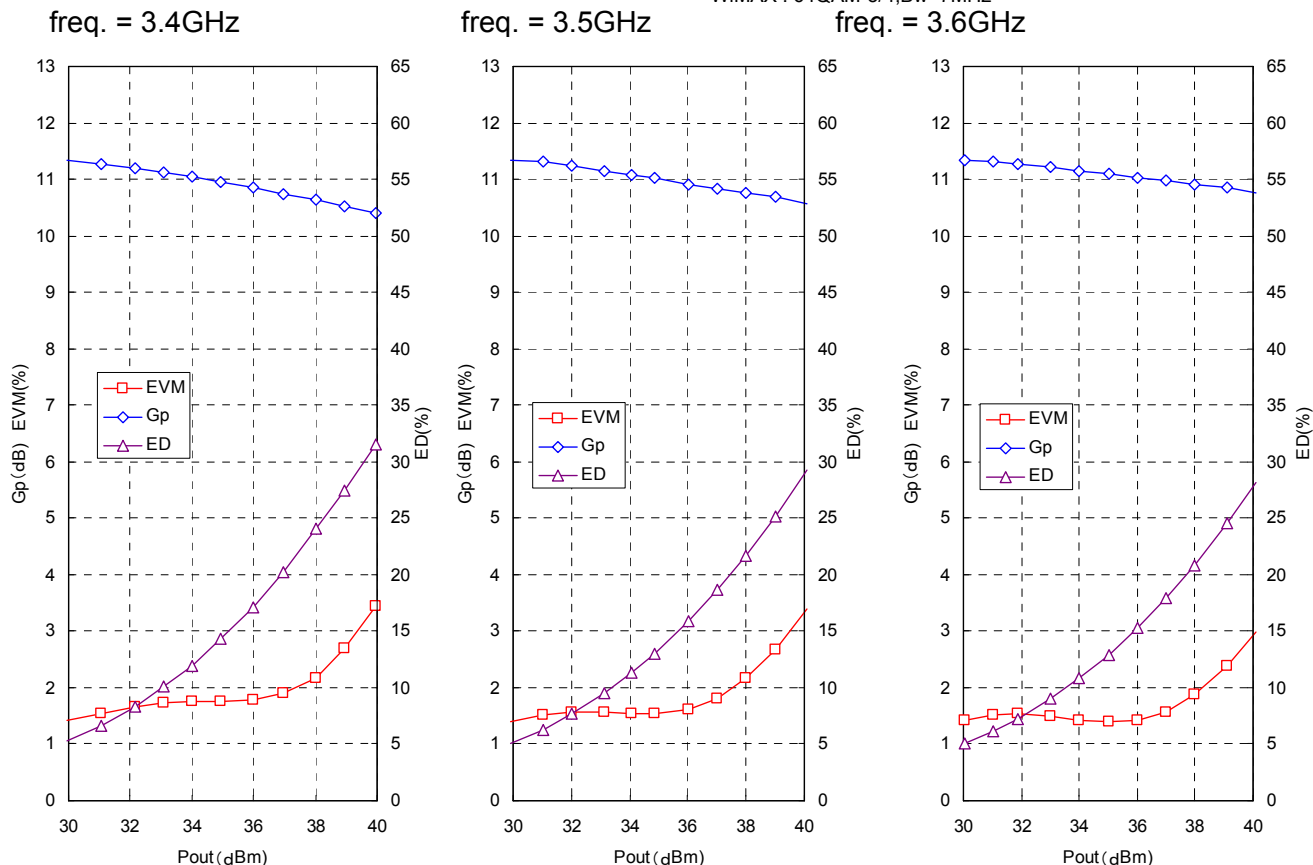
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EVM(@WiMAX) vs . Pout characteristics

Test Condition

Vds=12V, Idq=1.5A, Ta=25deg.C

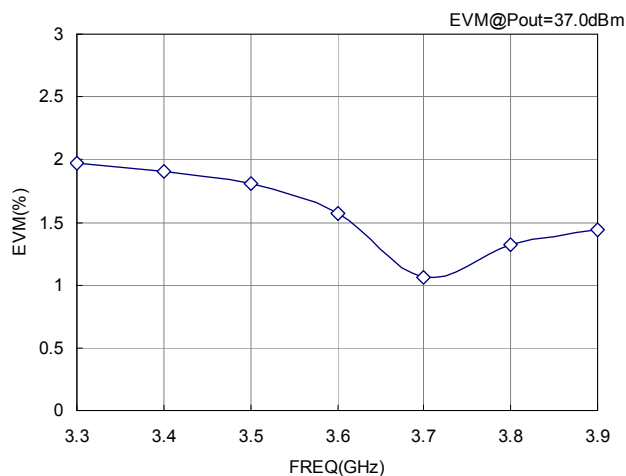
WiMAX : 64QAM-3/4, Bw=7MHz



EVM(@WiMAX) vs . Freq. characteristics

Test Condition: Vds=12V, Idq=1.5A, Pout=37dBm, Ta=25deg.C

WiMAX : 64QAM-3/4, Bw=7MHz



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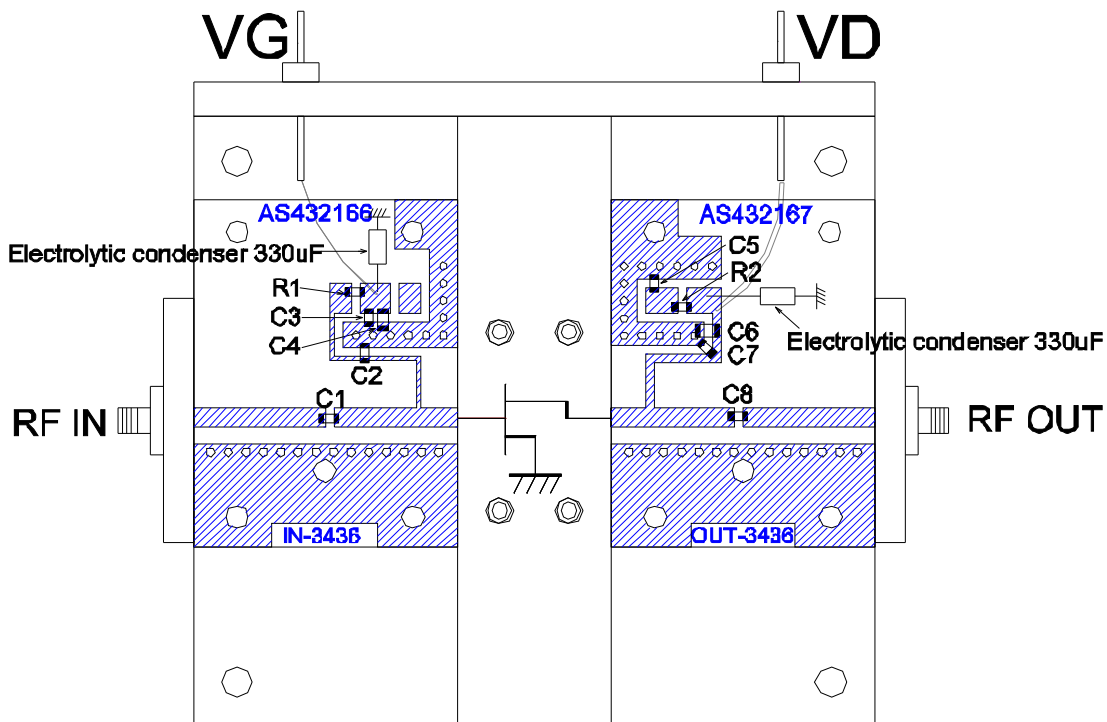
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RF TEST FIXTURE



C1,C2,C7,C8=GR708 8pF

C3,C5=1000pF

C4=100nF

C6=470nF

R1= 10ohm

R2=CR10 51ohm

Board material:Teflon t=0.8mm

Specific dielectric constant=2.6

UNIT:(mm)



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MITSUBISHI SEMICONDUCTOR <GaAs FET>

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3.4 - 3.6GHz BAND 50W INTERNALLY MATCHED GaAs FET

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