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.

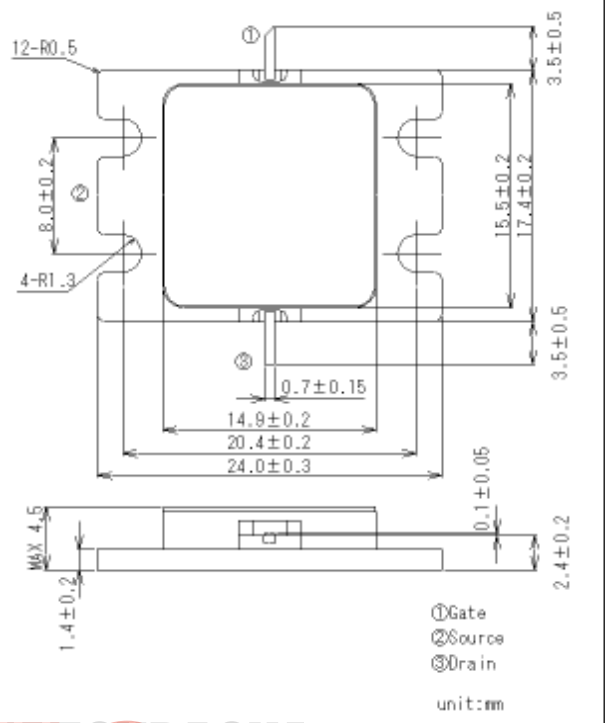
FEATURES

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 CARACTERISTICS (Ta=25deg.C)

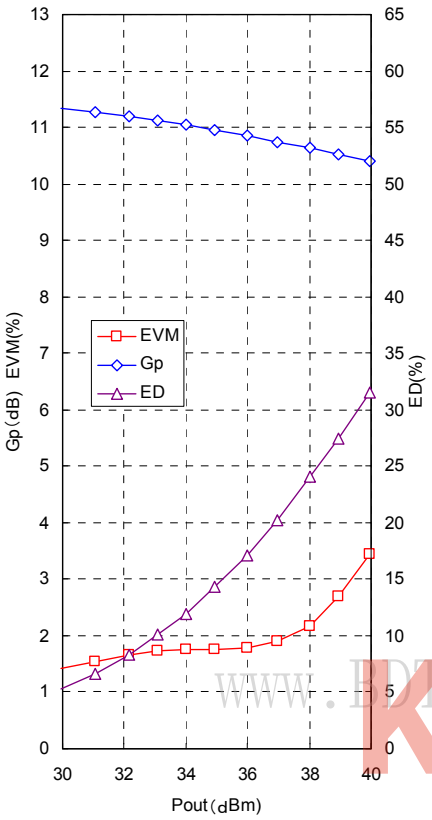
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
VGS(off)	Gate to source cut-off voltage	VDS = 3V , ID = 100mA	-0.5	-	-3.0	V
Po(SAT)	Output power	VDS=12V, ID(RF off)=1.5A, f=3.4-3.6GHz	-	47	-	dBm
GP	Power gain	VDS=12V, ID(RF off)=1.5A, f=3.4-3.6GHz Pout=37dBm	9.0	10.5	-	dB
ID	Drain current		-	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

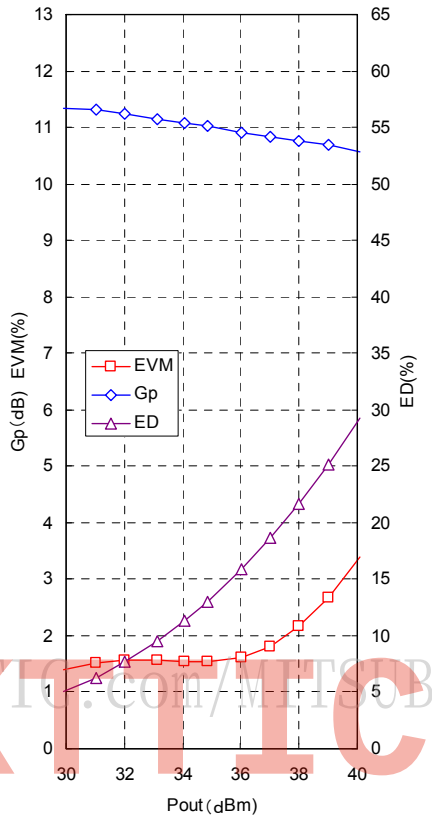
EVM(@WiMAX) vs . Pout characteristics

Test Condition
Vds=12V, Idq=1.5A, Ta=25deg.C
WiMAX : 64QAM-3/4,Bw=7MHz

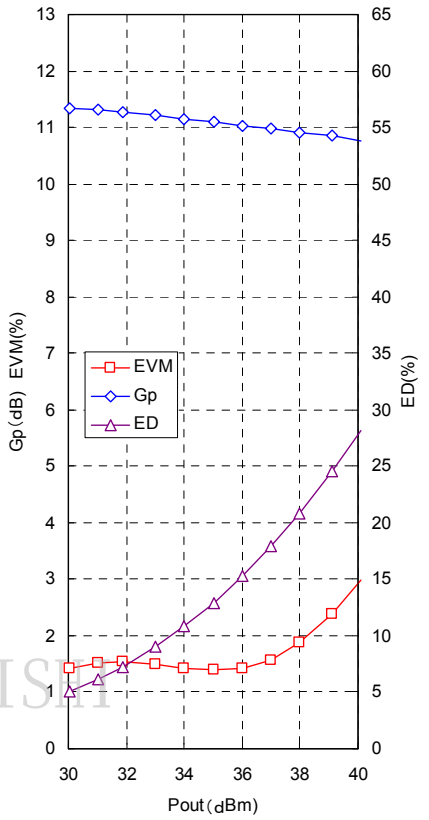
freq. = 3.4GHz



freq. = 3.5GHz

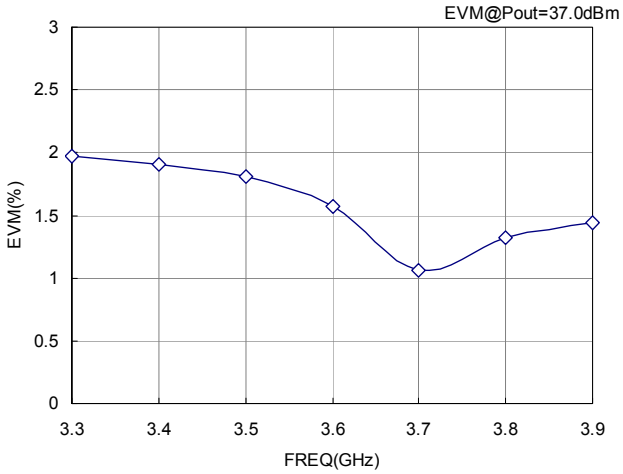


freq. = 3.6GHz

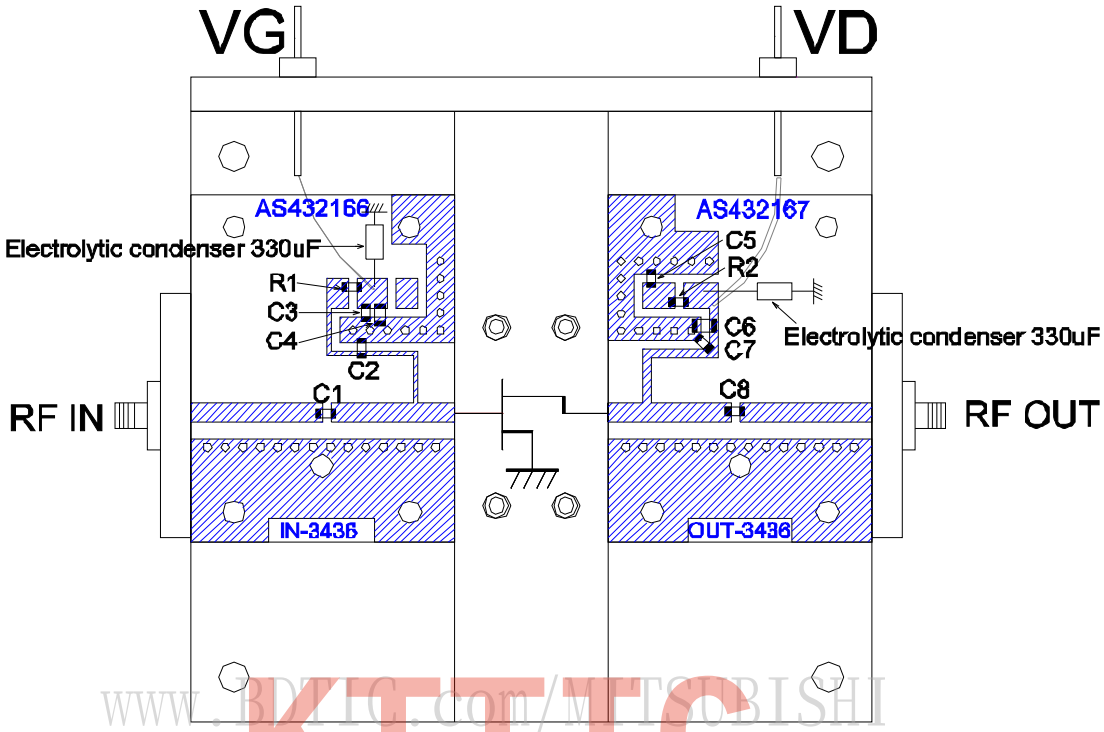


EVM(@WiMAX) vs . Freq. characteristics

Test Condition: Vds=12V, Idq=1.5A, Pout=37dBm, Ta=25deg.C
WiMAX : 64QAM-3/4,Bw=7MHz



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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