

< C band internally matched power GaAs FET >

MGFC47B3436

3.4 – 3.6 GHz BAND / 50W

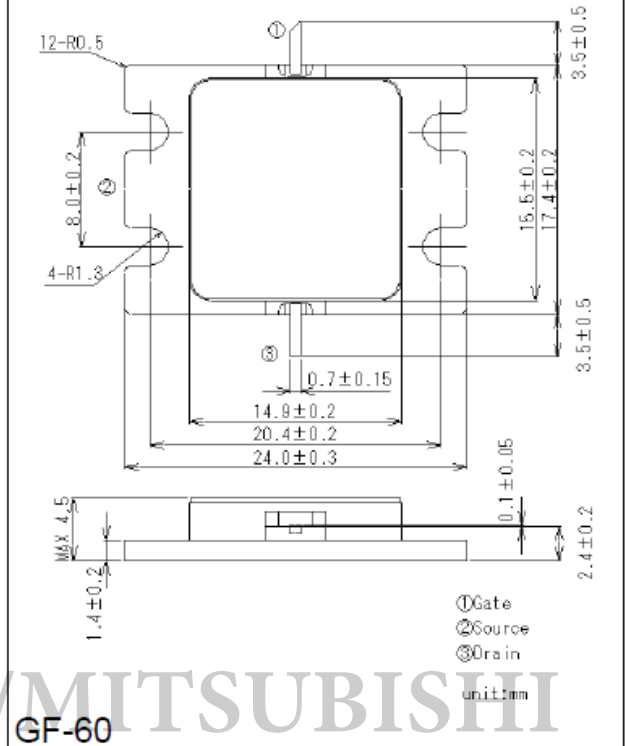
DESCRIPTION

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 – 3.6GHz
- High power gain
GLP=10.0dB (TYP.) @f=3.4 – 3.6GHz
- Distortion
EVM=2.0% (TYP.) @f=3.4 – 3.6GHz, Po=37dBm

OUTLINE DRAWING



RECOMMENDED BIAS CONDITIONS

- VDS=12V
- ID=1.5A
- RG=10ohm

Absolute maximum ratings (Ta=25°C)

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

*1 : Tc=25°C

Electrical characteristics (Ta=25°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	10.5	-	dB
ID	Drain current		-	2.0	3.0	A
EVM *2	Error Vector Magnitude		-	1.5	2.5	%
Rth(ch-c) *3	Thermal resistance	delta Vf method	-	0.65	1.2	°C/W

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

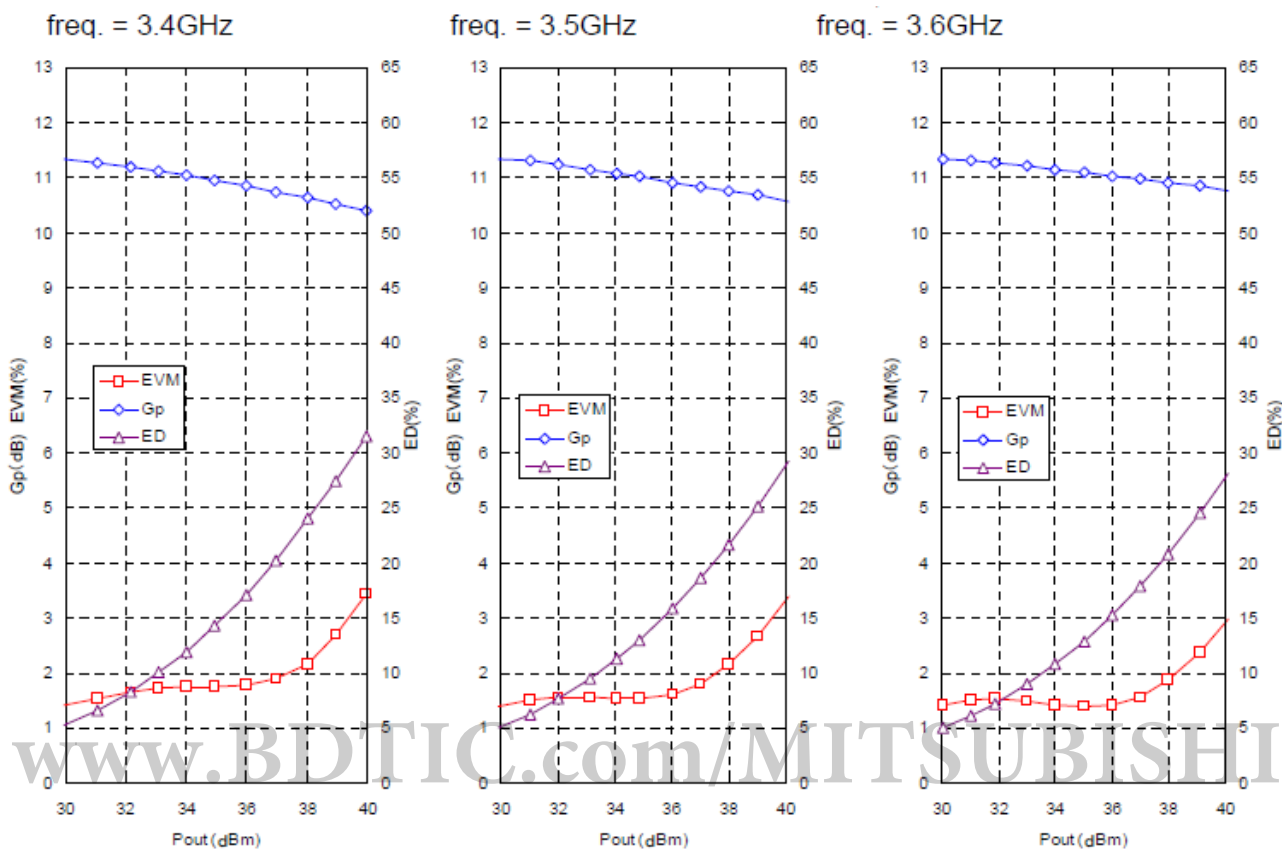
*3 : Channel-case

Keep Safety first in your circuit designs!

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MGFC47B3436B TYPICAL CHARACTERISTICS

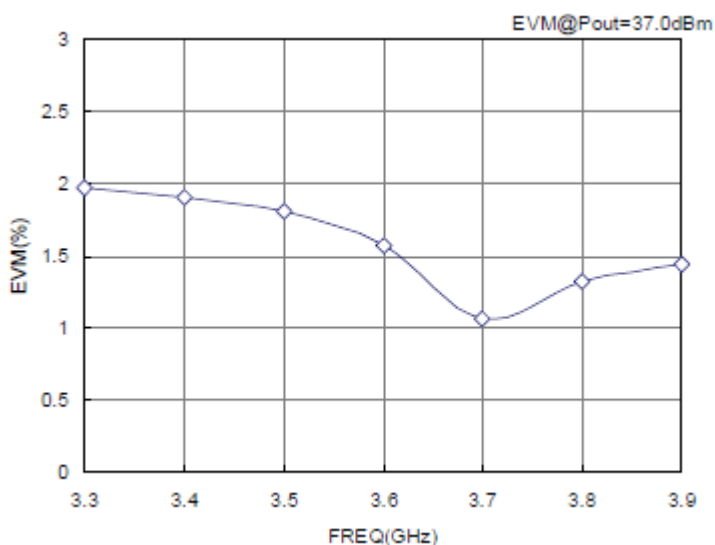
EVM,GP,ED(@WiMAX) vs. Pout



Test Condition

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

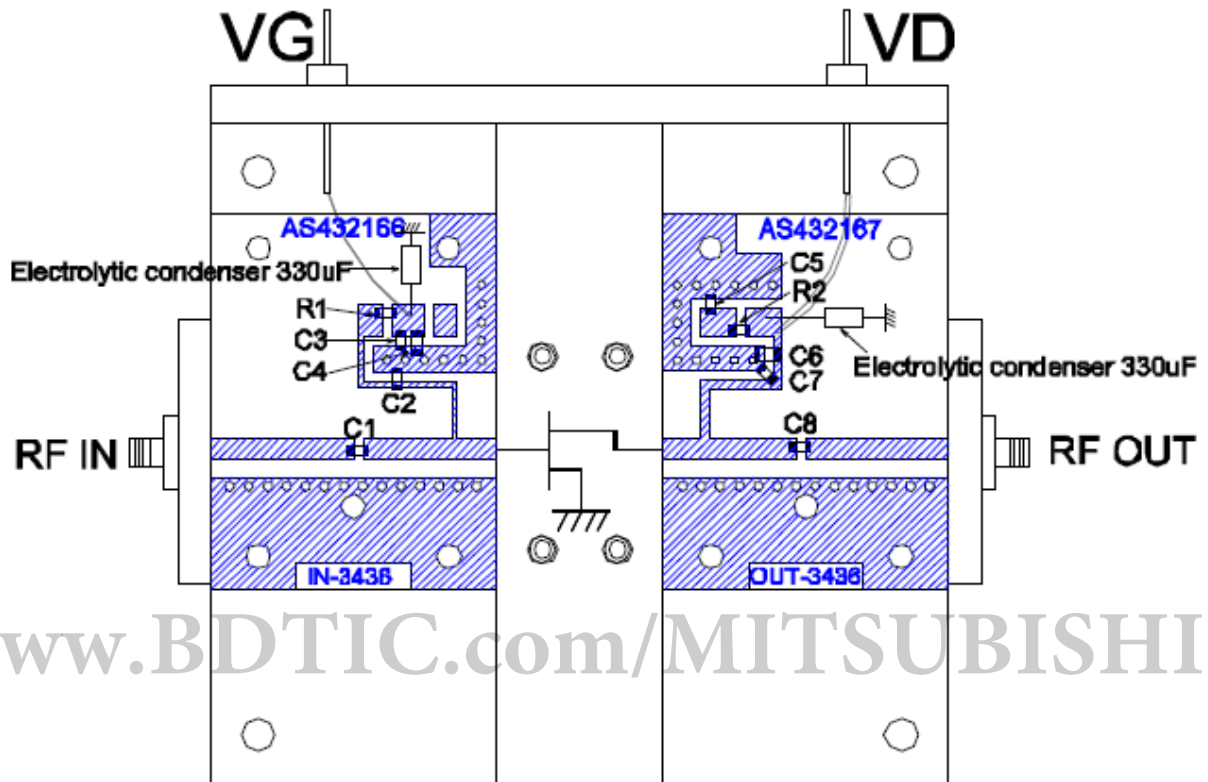
EVM(@WiMAX) vs. f



Test Condition

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

MGFC47B3436B 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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