PRELIMINARY

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

MITSUBISHI SEMICONDUCTOR <GaAs FET>

MGFS45B2527B

2.5 - 2.7GHz BAND 30W INTERNALLY MATCHED GaAs FET

DESCRIPTION

The MGFS45B2527B is an internally impedance-matched GaAs power FET especially designed for use in 2.5 - 2.7 GHz band amplifiers.The hermetically sealed metal-ceramic package guarantees high reliability.

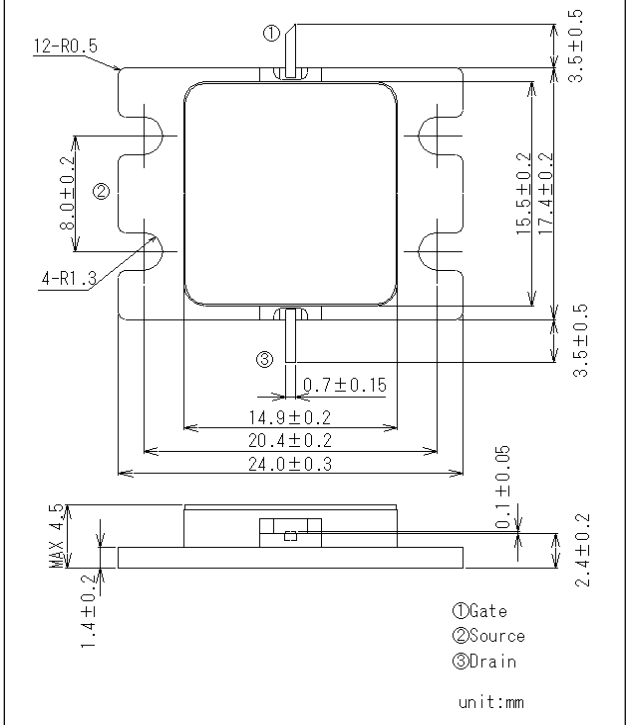
FEATURES

Class AB operation
Internally matched to 50(ohm) system
High output power
Po(SAT) = 30W (TYP.) @ f=2.5 - 2.7 GHz
High power gain
GLP = 12.5 dB (TYP.) @ f=2.5 - 2.7 GHz
Distortion
EVM = 1% (TYP.) @ f=2.5 - 2.7 GHPo=34dBm
EVM = 2% (TYP.) @ f=2.5 - 2.7 GHPo=37dBm

RECOMMENDED BIAS CONDITIONS

VDS = 12 (V)
ID = 0.9 (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	10	A
PT *1	Total power dissipation	78	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)

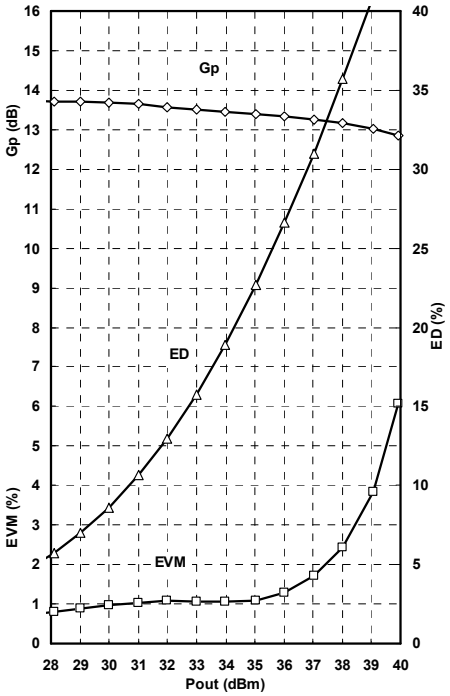
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
VGS(off)	Gate to source cut-off voltage	VDS = 3V , ID = 100mA	-0.5	-	-3.0	V
Po(SAT)	Output power	VDS=12V, ID(RF off)=0.9A, f=2.5-2.7GHz	-	45	-	dBm
GLP	Linear power gain	VDS=12V, ID(RF off)=0.9A, f=2.5-2.7GHz Pout=34dBm	10.0	12.5	-	dB
ID	Drain current		-	1.2	1.5	A
EVM *2	Error Vector Magnitude		-	1.0	2.0	%
Rth(ch-c) *3	Thermal resistance	delta Vf method	-	1.2	1.9	deg.C/W

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

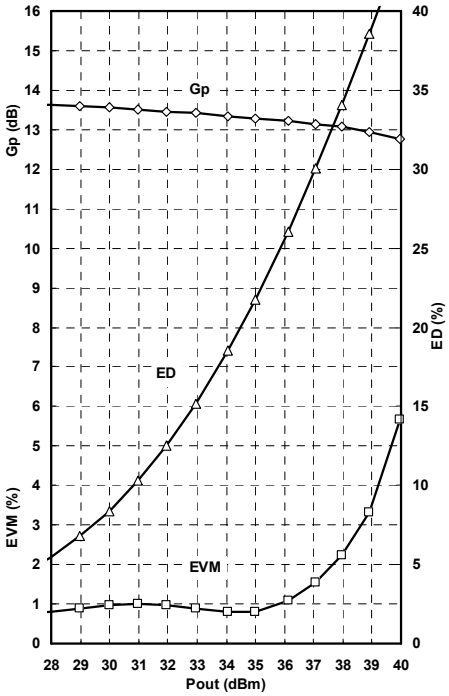
EVM(@WiMAX) vs . Pout characteristics

Test Condition
Vds=12V, Idq=0.9A, Ta=25deg.C
WiMAX : 64QAM-3/4,Bw=6MHz

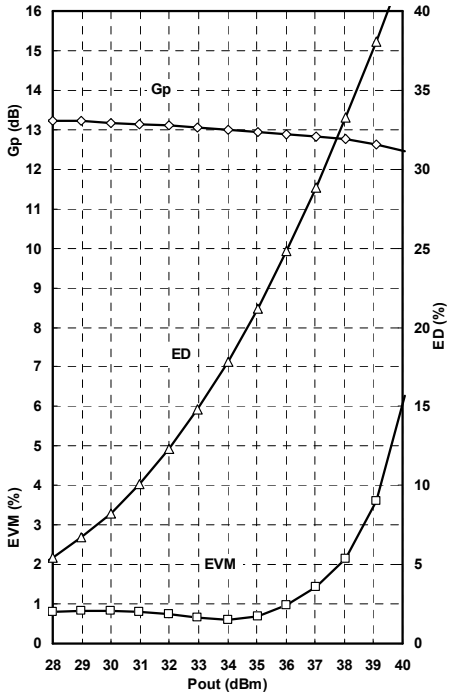
freq. = 2.5GHz



freq. = 2.6GHz

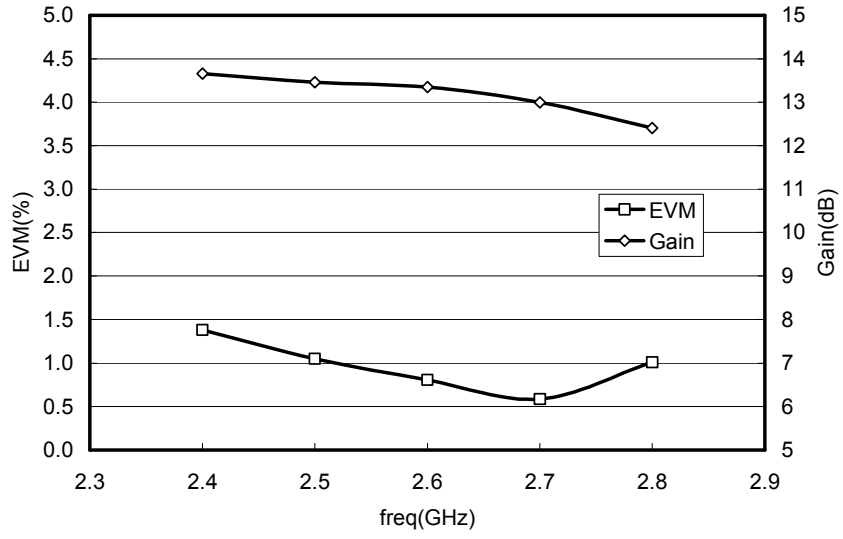


freq. = 2.7GHz

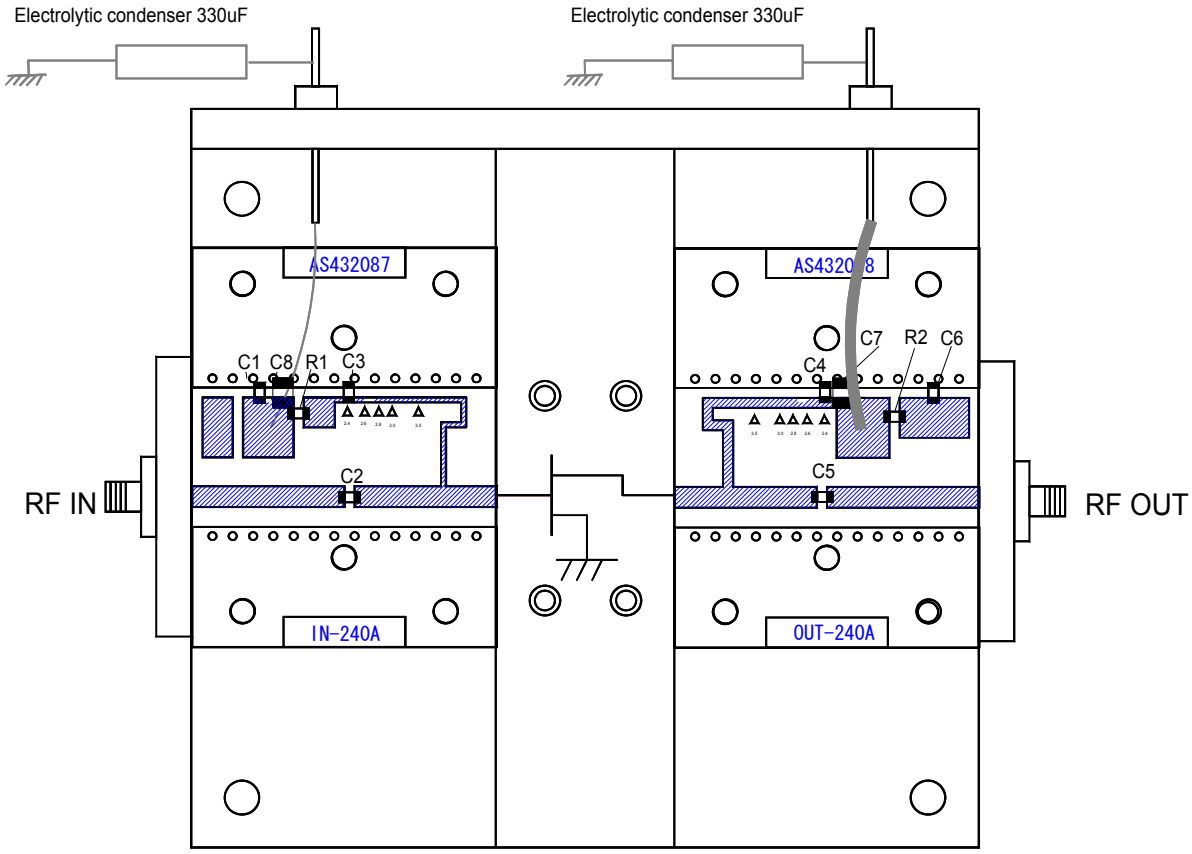


EVM(@WiMAX) vs . Freq. characteristics

Test Condition: Vds=12V, Idq=0.9A, Pout=34dBm, Ta=25deg.C
WiMAX : 64QAM-3/4,Bw=6MHz



RF TEST FIXTURE



C1,C6=1000pF
C3,C4=20pF
C2,C5=20pF
C7=470nF
C8=100nF
R1=CR10 10ohm
R2=CR10 51ohm
Board material :Teflon, t=0.8mm, Specific dielectric constant=2.6
UNIT:(mm)

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