

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.

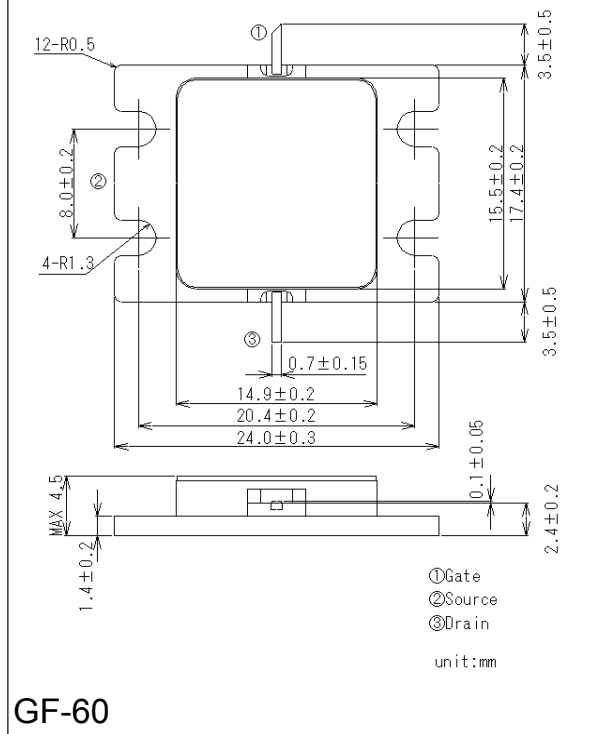
FEATURES

- 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 GHz Po=34dBm
EVM = 2% (TYP.) @ f=2.5 - 2.7 GHz Po=37dBm

RECOMMENDED BIAS CONDITIONS

- VDS = 12 (V)
- ID = 0.9 (A)
- RG=10 (ohm)

OUTLINE DRAWING



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 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)=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



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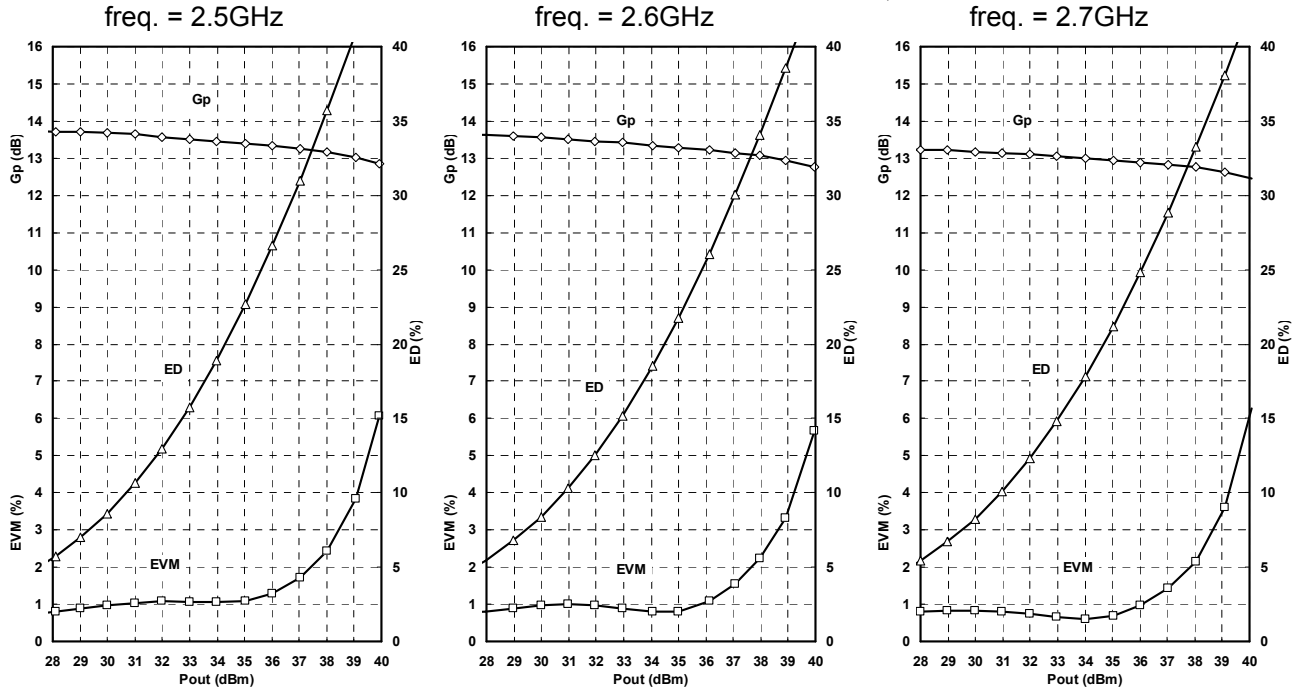
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EVM(@WiMAX) vs . Pout characteristics

Test Condition

Vds=12V, Idq=0.9A, Ta=25deg.C

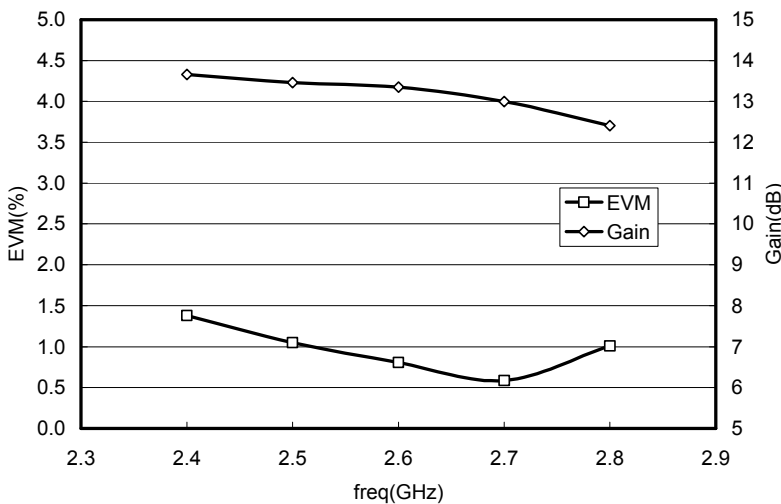
WiMAX : 64QAM-3/4, Bw=6MHz



EVM(@WiMAX) vs . Freq. characteristics

Test Condition: Vds=12V, Idq=0.9A, Pout=34dBm, Ta=25deg.C

WiMAX : 64QAM-3/4, Bw=6MHz



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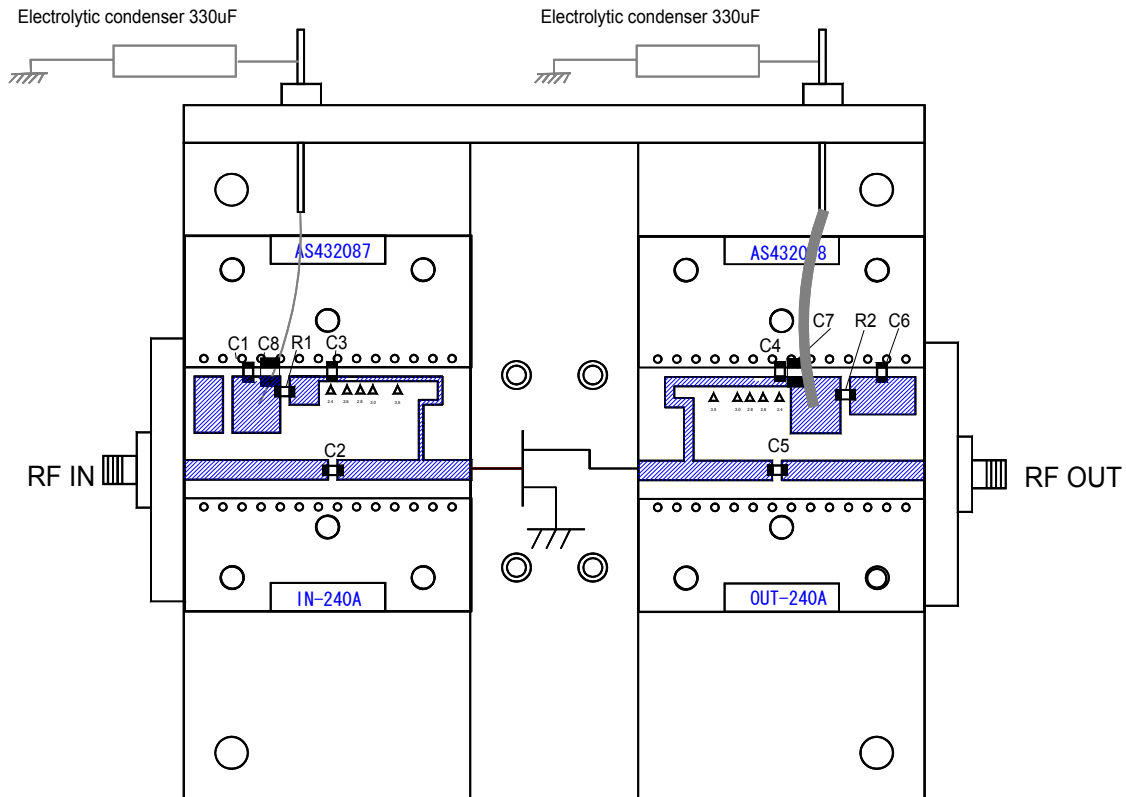
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RF TEST FIXTURE



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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