

< L/S band internally matched power GaAs FET >

# MGFS45B2527B

2.5 – 2.7 GHz BAND / 30W

## 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 – 2.7GHz
- High power gain  
GLP=12.5dB (TYP.) @f=2.5 – 2.7GHz
- Distortion  
EVM=1.0% (TYP.) @f=2.5 – 2.7GHz, Po=34dBm  
EVM=2.0% (TYP.) @f=2.5 – 2.7GHz, Po=37dBm

## RECOMMENDED BIAS CONDITIONS

- VDS=12V • ID=0.9A • 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	10	A
PT *1	Total power dissipation	78	W
Tch	Channel temperature	175	°C
Tstg	Storage temperature	-55 to +150	°C

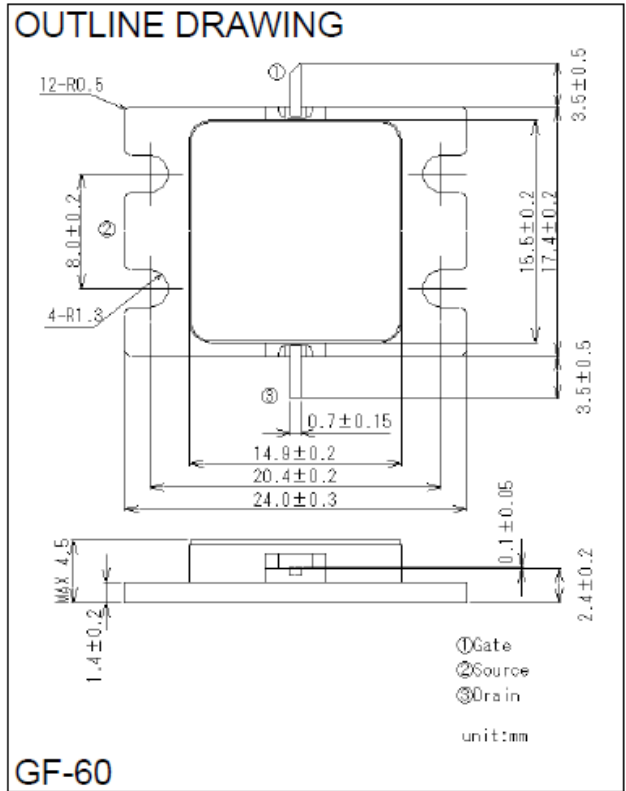
\*1 : Tc=25°C

## 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)=0.9A f=2.5 – 2.7GHz	-	45	-	dBm
GLP	Power Gain	VDS=12V, ID(RF off)=0.9A	10.0	12.5	-	dB
ID	Drain current	f=2.5 – 2.7GHz, Pout=34dBm	-	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	°C/W

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

\*3 : Channel-case



Keep Safety first in your circuit designs!

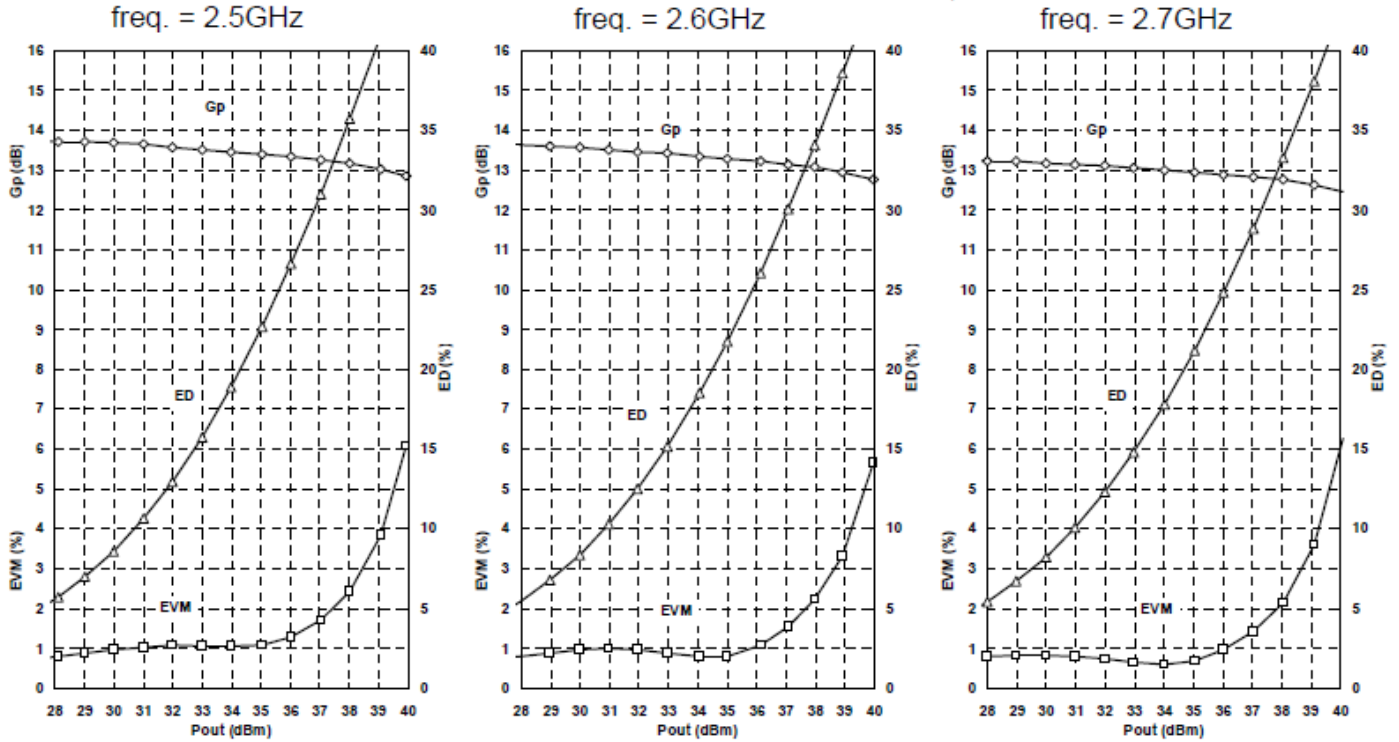
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## MGFS45B2527B TYPICAL CHARACTERISTICS

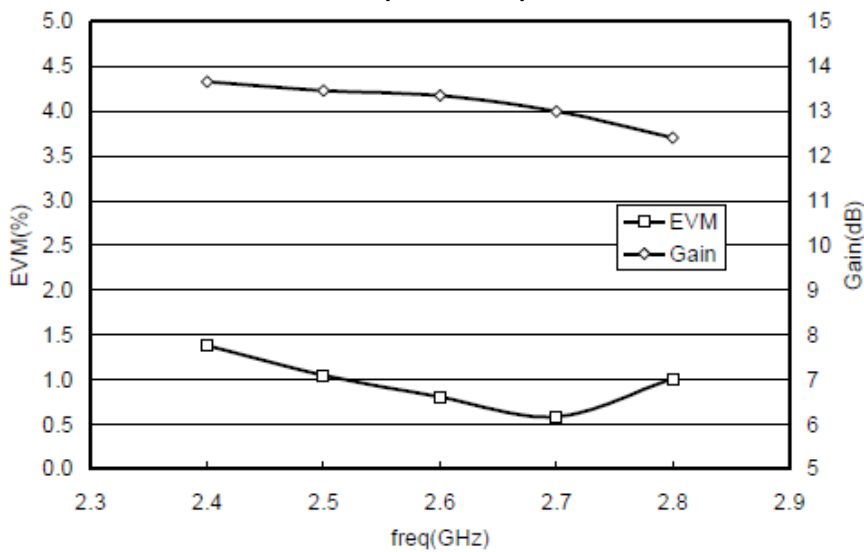
EVM,GP,ED(@WiMAX) vs. Pout



Test Condition

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

EVM, Gain(@WiMAX) vs. f



Test Condition

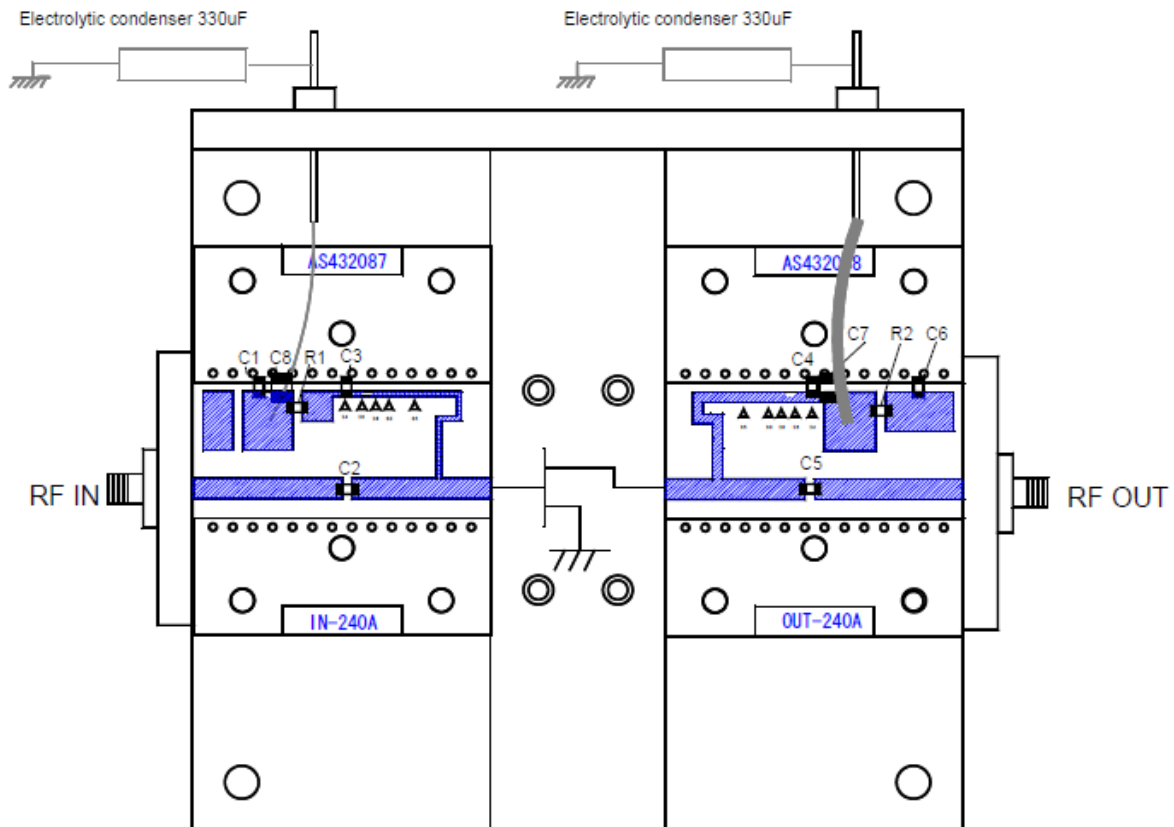
Vds=12V, Idq=0.9A, Pout=34dBm, Ta=25deg.C  
 WiMAX:64QAM-3/4, Bw=6MHz

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## MGFS45B2527B 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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