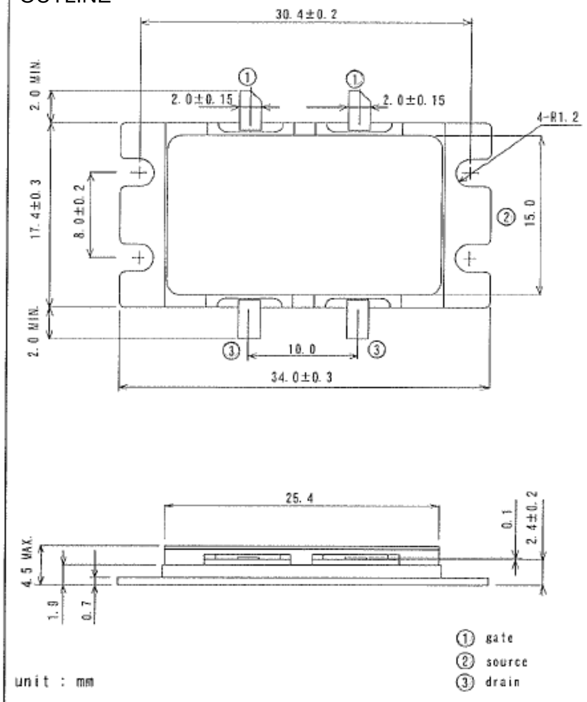
MITSUBISHI ELECTRIC

< L/S band internally matched power GaAs FET >

MGFS52BN2122A

2.1 – 2.2 GHz BAND / 160W

OUTLINE



GF-49

DESCRIPTION

The MGFS52BN2122A is a 160W push-pull type GaAs power FET especially designed for use in 2.1 – 2.2GHz band amplifiers. The hermetically sealed metal-ceramic package guarantees high reliability.

FEATURES

Push-pull configuration

- High output power
  Pout=160W (TYP.) @f=2.17GHz
- High power gain
  GLP=12.0dB (TYP.) @f=2.17GHz
- High power added efficiency
  P.A.E.=48% (TYP.) @f=2.17GHz

APPLICATION

- 2.1-2.2GHz band power amplifier for W-CDMA Base Station

QUALITY

- IG

RECOMMENDED BIAS CONDITIONS

- VDS=12V • ID=4.0A • RG=5ohm for each gate

Absolute maximum ratings (Ta=25°C)

Symbol	Parameter	Ratings	Unit
VGDO	Gate to drain breakdown voltage	-20	V
VGSO	Gate to source breakdown voltage	-10	V
PT *1	Total power dissipation	187.5	W
Tch	Cannel temperature	175	°C
Tstg	Storage temperature	-65 to +175	°C

*1 : Tc=25°C

Keep Safety first in your circuit designs!

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Electrical characteristics (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
GLP	Linear Power Gain	VDS=12V,ID(RF off)=4.0A,f=2.17GHz Pin=32dBm	11	12	-	dB
Pout	Output Power	VDS=12V,ID(RF off)=4.0A,f=2.17GHz Pin=43dBm	50.8	51.8	-	dBm
ID	Drain current		-	23	30	A
P.A.E.	Power added efficiency		-	48	-	%
Rth(ch-c) *2	Thermal resistance	delta Vf method	-	0.55	0.8	°C/W

*2 :Channel-case

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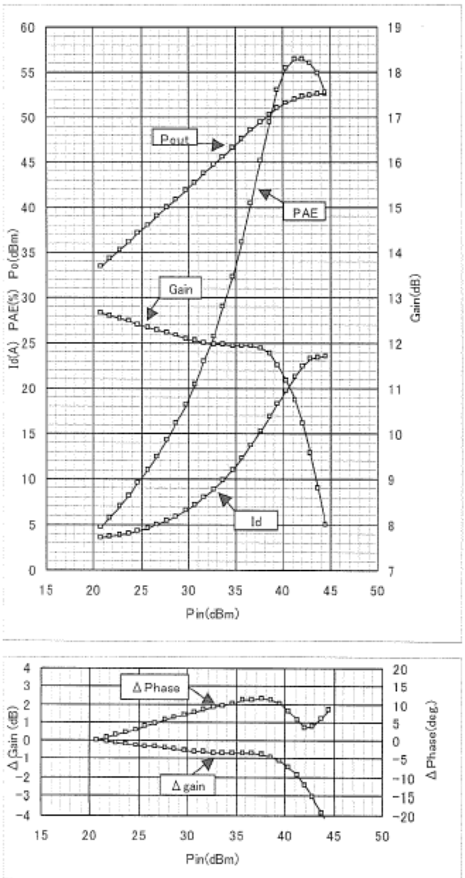
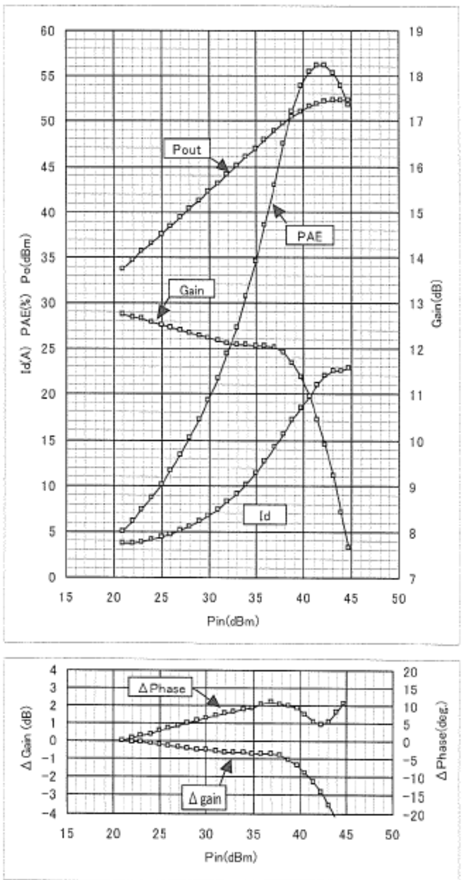
MGFS52BN2122A TYPICAL CHARACTERISTICS

Pout , Id , PAE , GAIN , ΔGAIN , ΔPHASE vs. Pin (CW 1-tone)

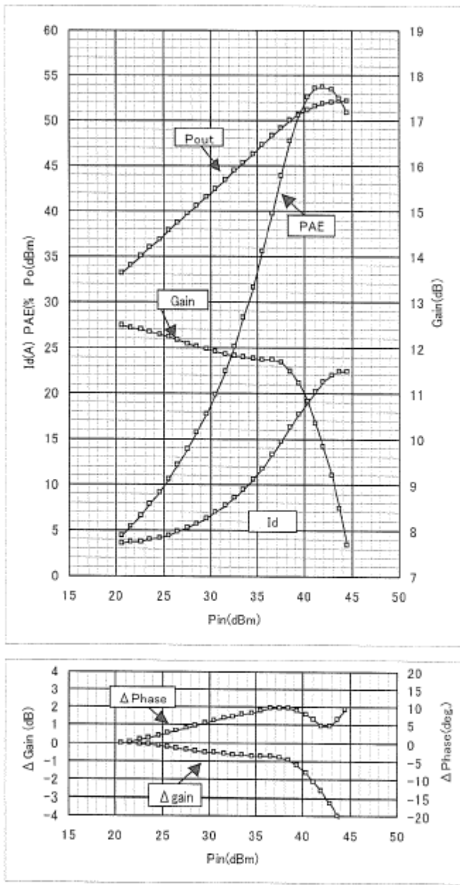
f=2.11GHz



f=2.14GHz



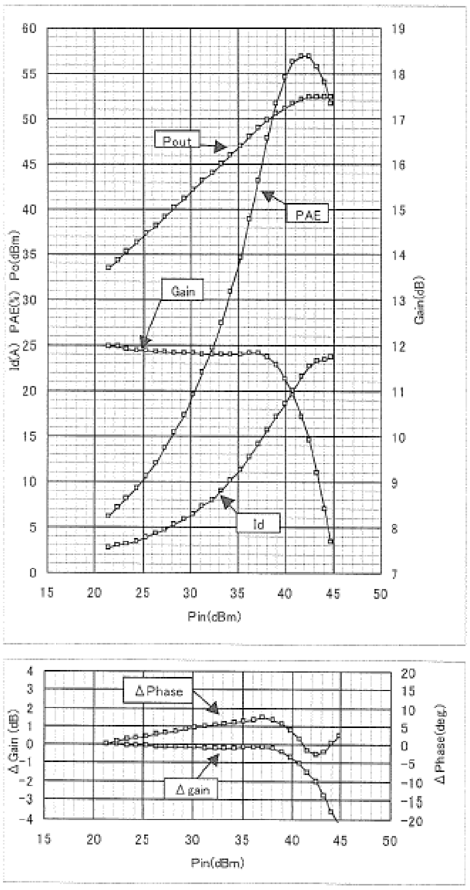
f=2.17GHz



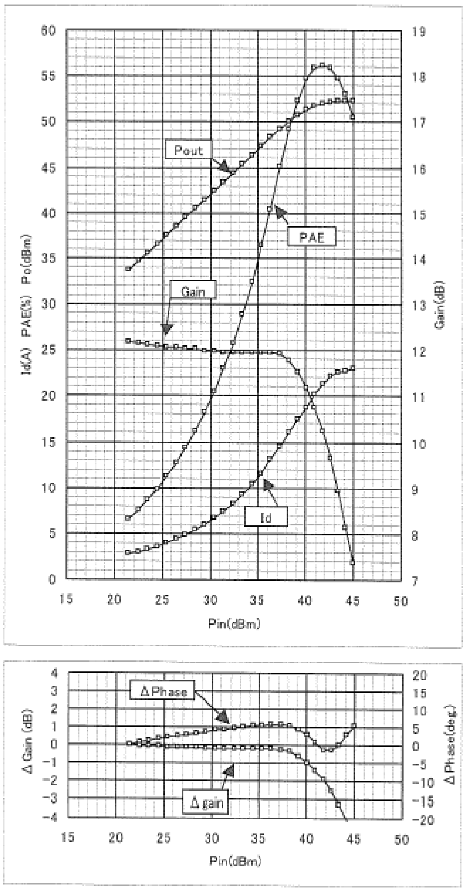
Test Condition : Vds=12V,Idq=4A,Ta=25deg.C

Pout , Id , PAE , GAIN , ΔGAIN , ΔPHASE vs. Pin (CW 1-tone)

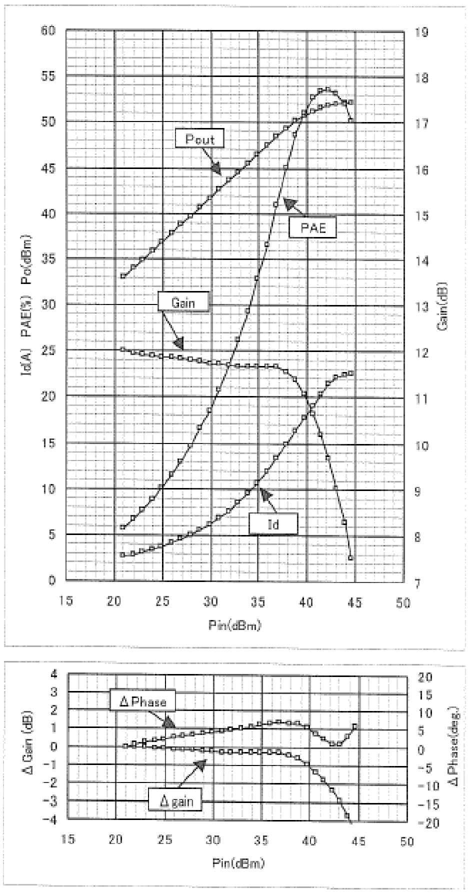
f=2.11GHz



f=2.14GHz



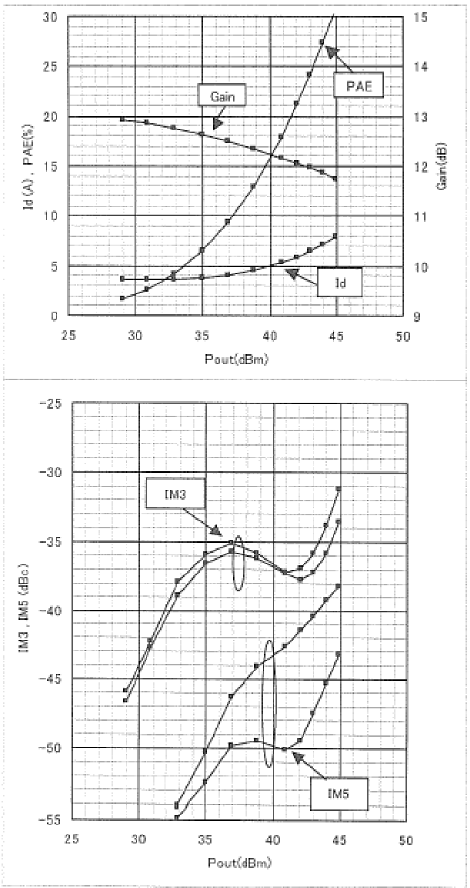
f=2.17GHz



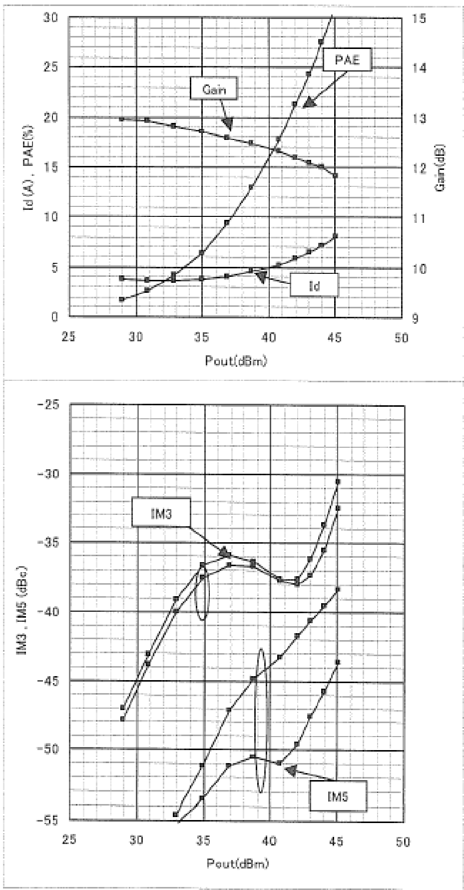
Test Condition : Vds=12V,Idq=2A,Ta=25deg.C

IM3 , IM5 , Id , PAE , GAIN vs. Pout
(W-CDMA signal , 2-tone 3GPP test model 1 w/64DPCH)

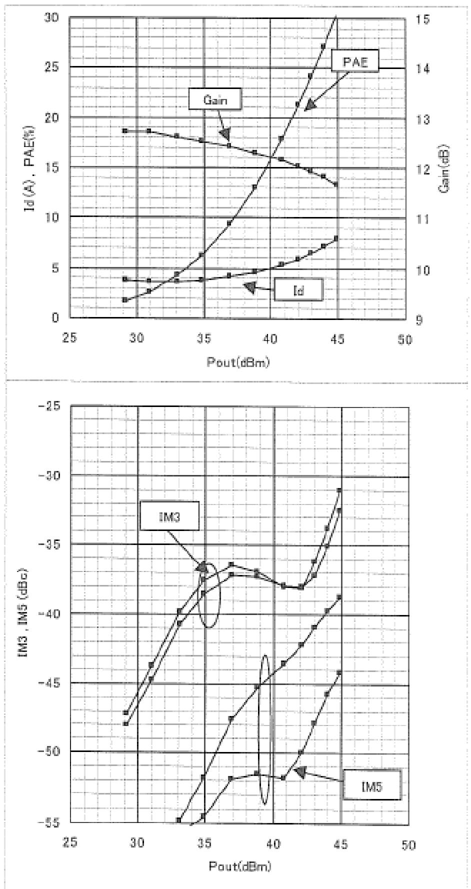
f=2.11GHz



f=2.14GHz



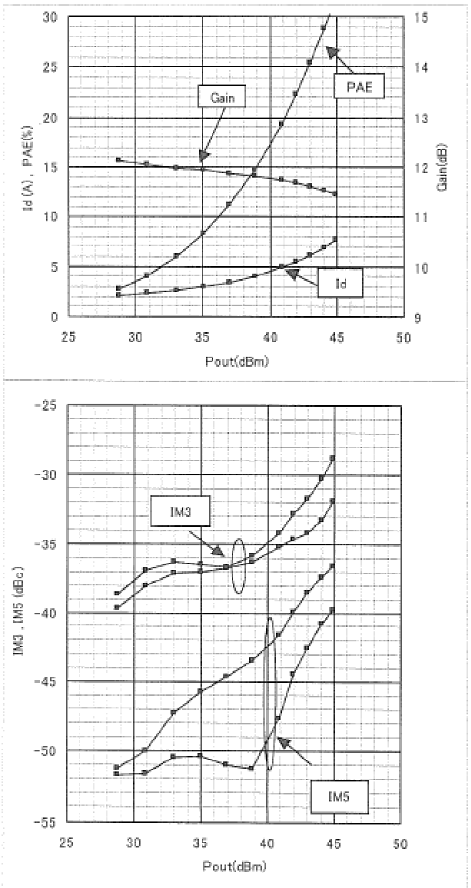
f=2.17GHz



Test Condition : Vds=12V,Idq=4A,Ta=25deg.C

IM3 , IM5 , Id , PAE , GAIN vs. Pout
(W-CDMA signal , 2-tone 3GPP test model 1 w/64DPCH)

f=2.11GHz



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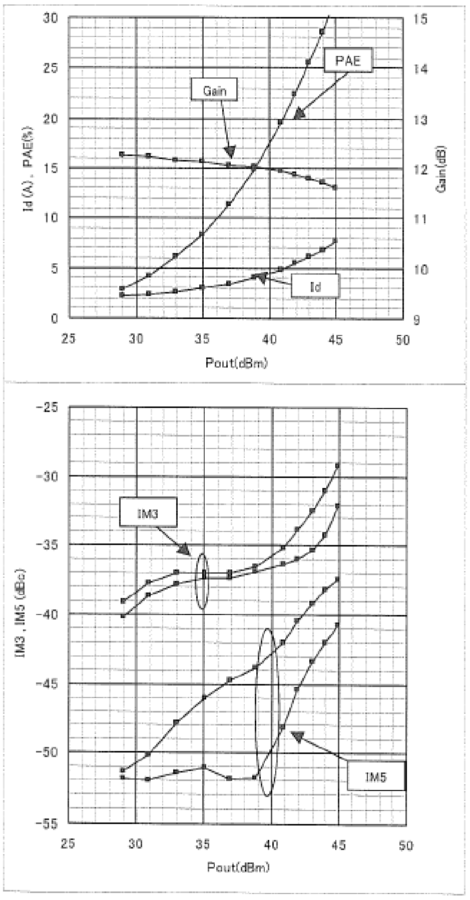
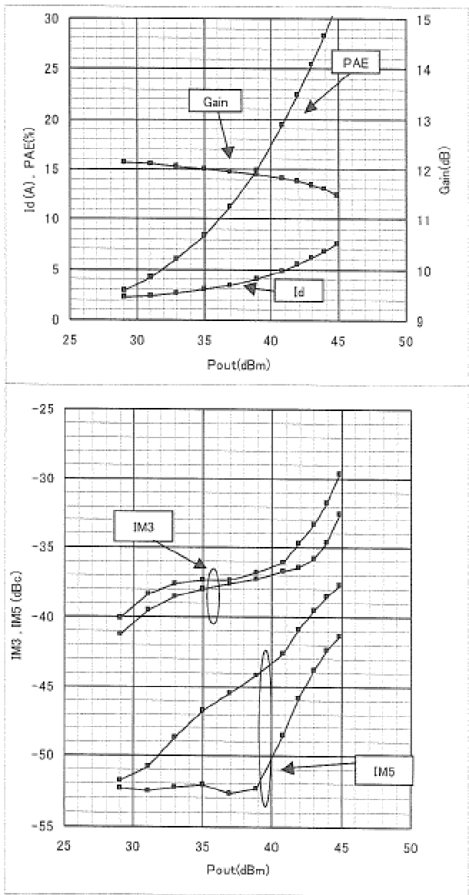
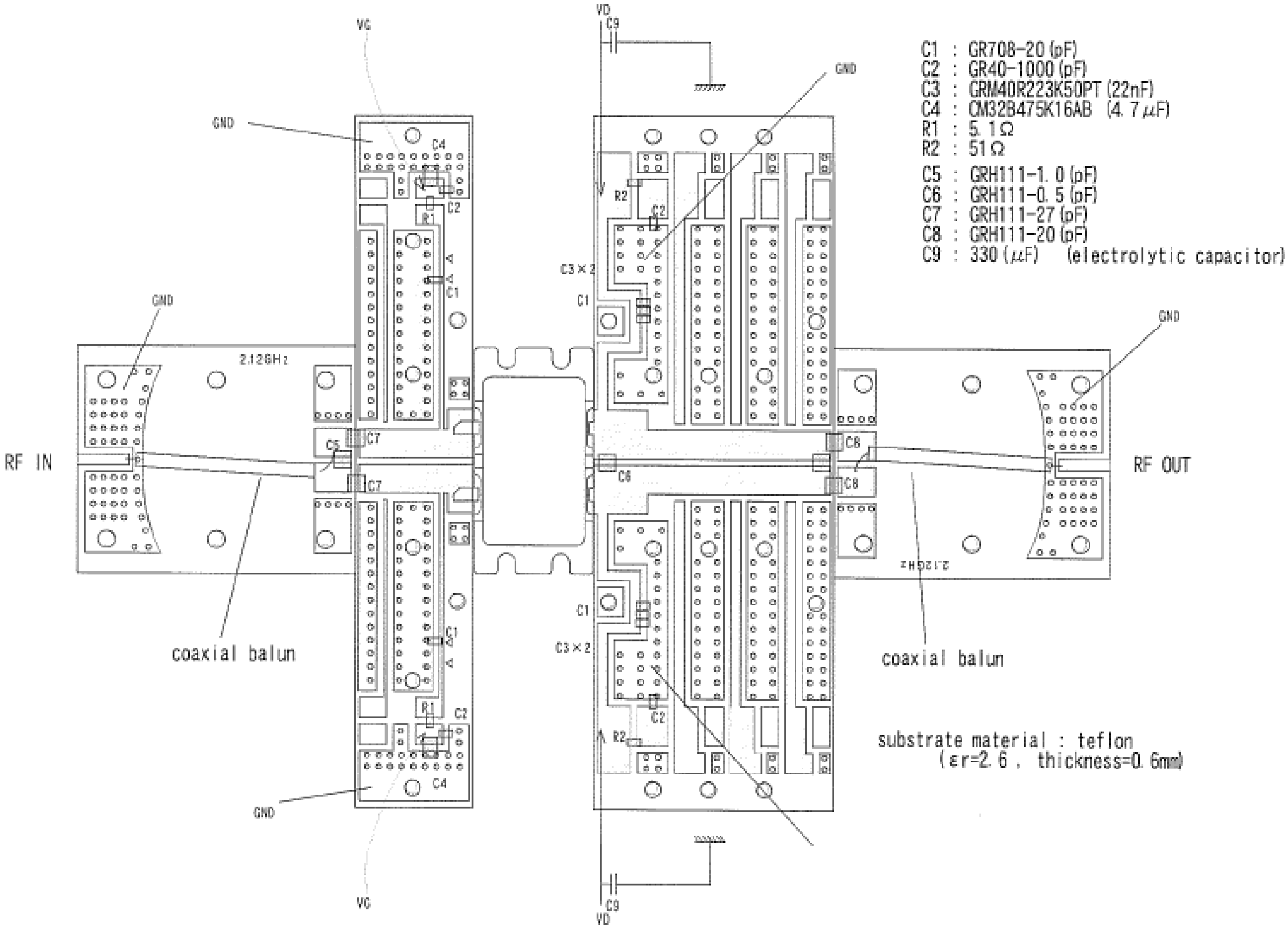


f=2.17GHz

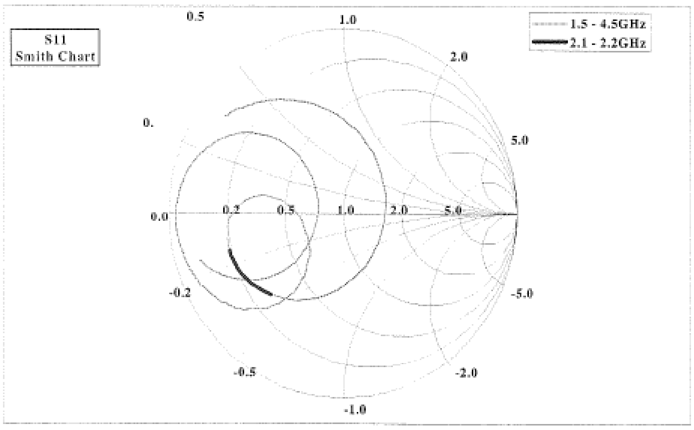


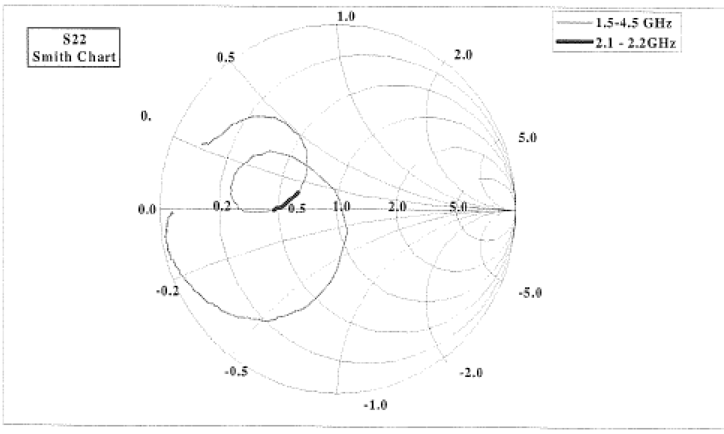
Test Condition : Vds=12V,Idq=2A,Ta=25deg.C

MGFS52BN2122A RF TEST FIXTURE



MGFS52BN2122A S-parameters(Ta=25deg.C , VDS=12(V),IDS=2.0(A) for one side FET)





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