

PRELIMINARY

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

MITSUBISHI SEMICONDUCTOR <GaAs MMIC>

MGFC5111S

Ka-Band 2-Stage Low Noise Amplifier

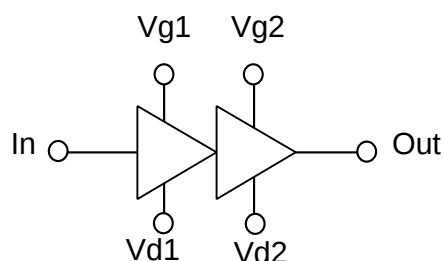
DESCRIPTION

The MGFC5111S is a GaAs MMIC chip especially designed for 29.5 ~ 32.0 GHz band Low Noise Amplifier.(LNA) for Space use.

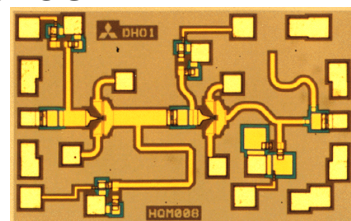
FEATURES

- RF frequency : 29.5 to 32.0 GHz
- Super Low Noise NF=1.4dB (TYP.)

BLOCK DIAGRAM



PHOTOGRAPH



ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Symbol	Parameter	Values	Unit
Vd	Drain bias voltage	4	V
Id	Drain bias current	20	mA
Vg	Gate bias voltage	-2	V
Pin	Maximum peak input power overdrive (Duration < 1sec)	TBD	dBm
Ta	Operating temperature range	TBD	°C

TARGET SPECIFICATIONS (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
Fop	Operating frequency range	On-wafer measurement	29.5		32.0	GHz
Gain	Small signal gain			16.0		dB
Delta gain	Small signal gain flatness			1.5		dB
NF	Noise figure			1.4		dB
VSWR in	Input VSWR			2.0:1		
VSWR out	Output VSWR			1.6:1		
P1dB	Output power at 1 dB compression	Freq=30GHz Vd=2V, Id=20mA		(5) TBD		dBm
Output IP3	Output power at 3rd-order intercept point			(17) TBD		dBm
Vd	Drain bias voltage			2.0		V
Id	Drain bias current			20		mA
Vg	Gate bias voltage			-0.5		V



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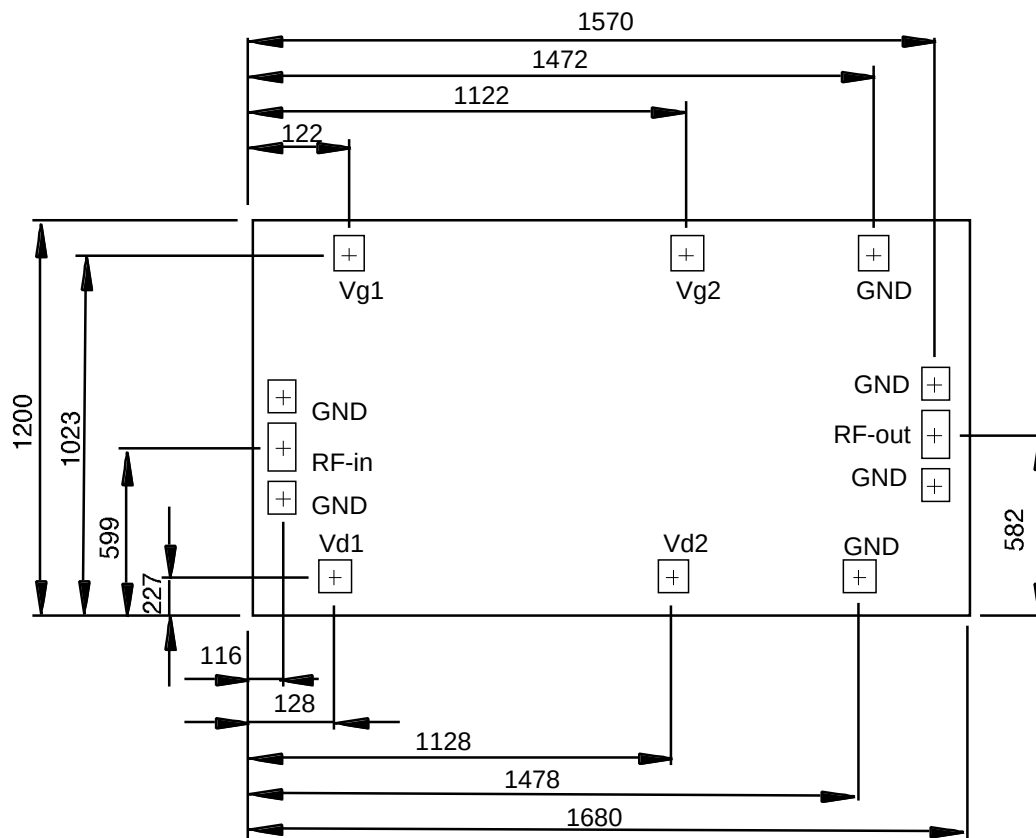
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DIE SIZE AND BOND PAD LOCATION(UNIT : μm)



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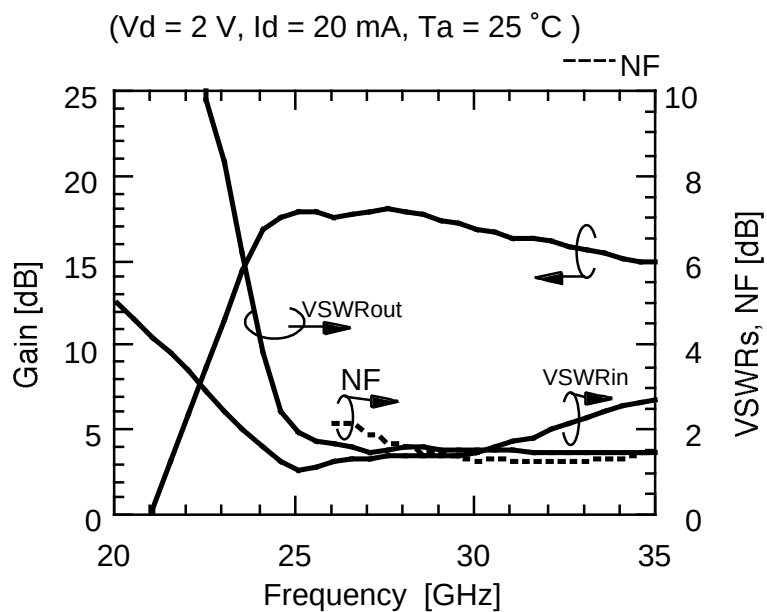
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TYPICAL CHARACTERISTICS

Small Signal Performances



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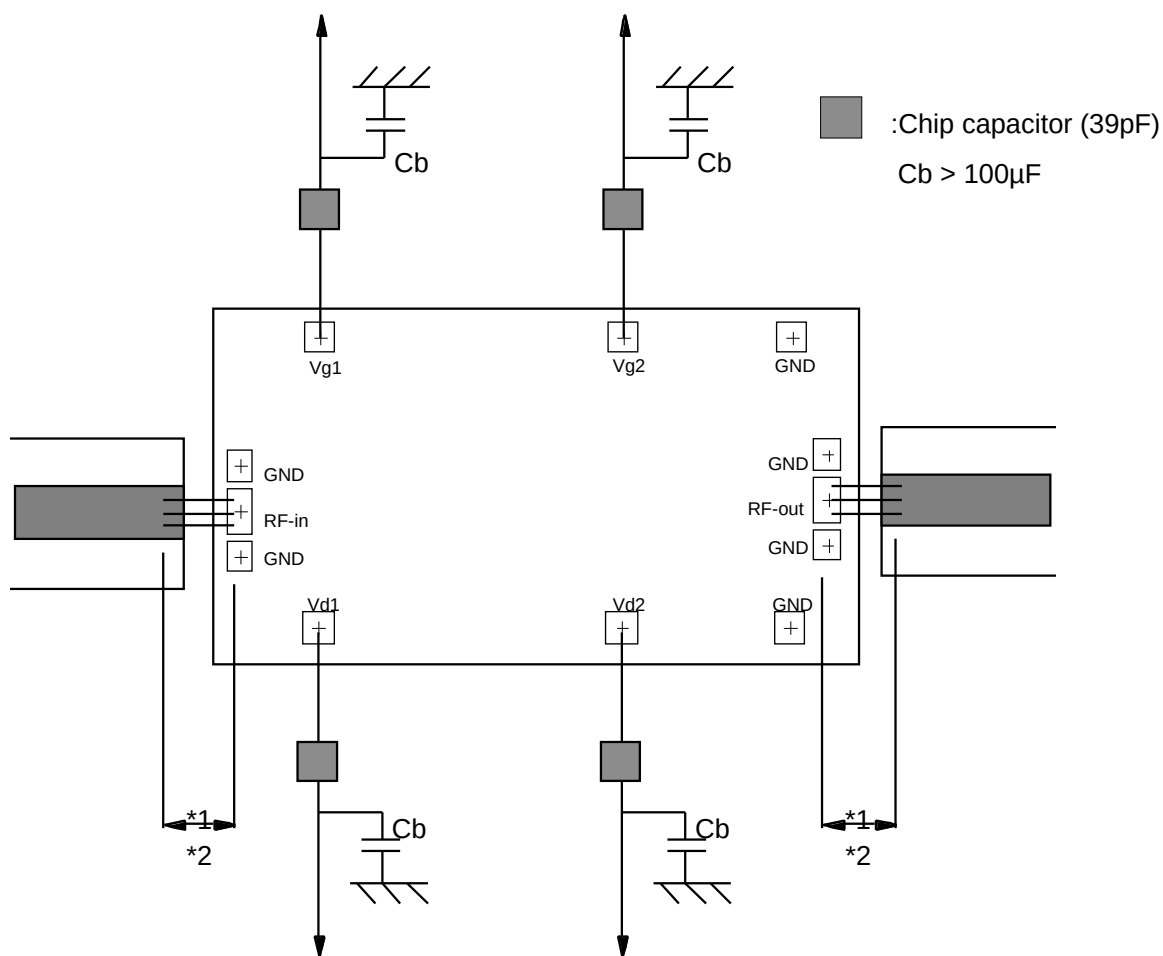
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AN EXAMPLE OF TEST CIRCUIT



*1 Length of bonding wire < 200 μm

*2 Number of bonding wire ≥ 3



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