PRELIMINARY

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

MITSUBISHI SEMICONDUCTOR <GaAs MMIC>

MGFC5110

Ka-Band 3-Stage Self Bias Low Noise Amplifier

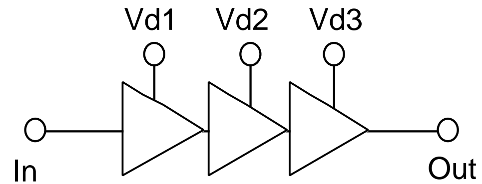
DESCRIPTION

The MGFC5110 is a GaAs MMIC chip especially designed for 37.0 ~ 40.0 GHz band Low Noise Amplifier.(LNA) .

FEATURES

- RF frequency : 37.0 to 40.0 GHz
- Super Low Noise NF=3.5dB (TYP.)

BLOCK DIAGRAM



PHOTOGRAPH

ABSOLUTE MAXIMUM RATINGS (Ta=25˚C)

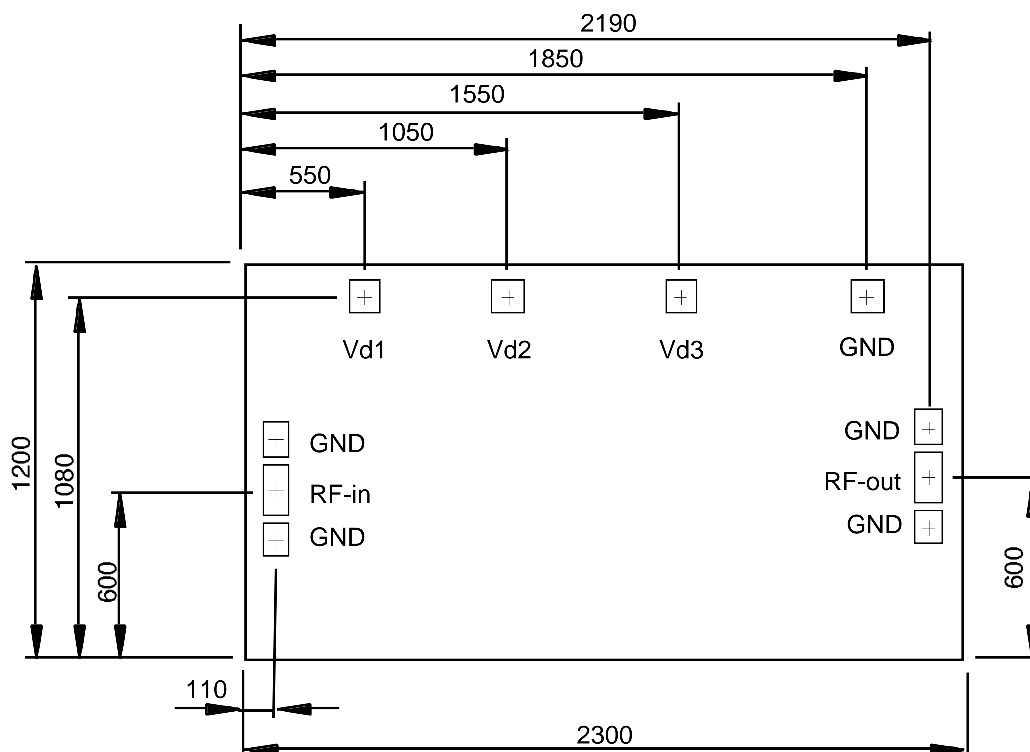
Symbol	Parameter	Values	Unit
Vd	Drain bias voltage	3	V
Id	Drain bias current	30	mA
Vg	Gate bias voltage	-	V
Pin	Maximum peak input power overdrive (Duration < 1sec)	TBD	dBm
Ta	Operating temperature range	TBD	˚C

TARGET SPECIFICATIONS (Ta=25˚C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
Fop	Operating frequency range	On-wafer measurement	37.0		40.0	GHz
Gain	Small signal gain		17.0	18.0		dB
Delta gain	Small signal gain flatness			1.5		dB
NF	Noise figure			3.5		dB
VSWR in	Input VSWR			2.0:1		
VSWR out	Output VSWR			2.0:1		
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			2.5		V
Id	Drain bias current			30		mA
Vg	Gate bias voltage			No need		V

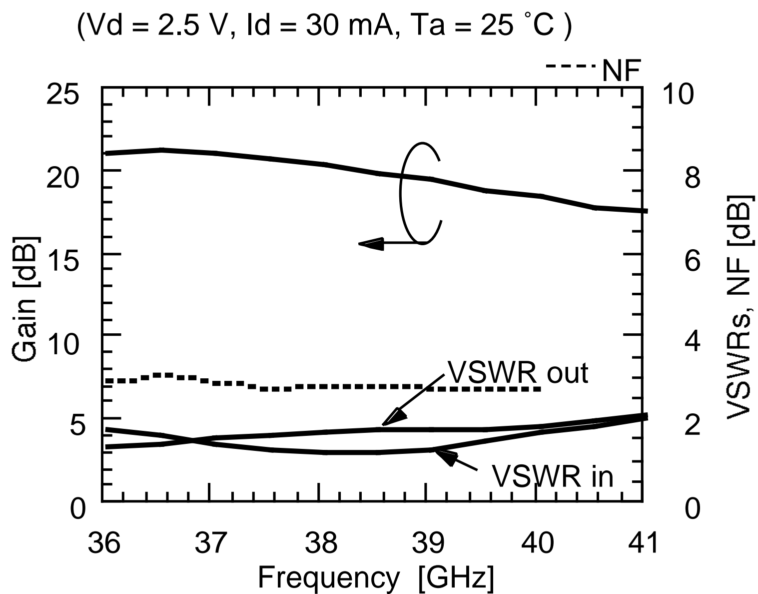
as of July '98

DIE SIZE AND BOND PAD LOCATION(UNIT : μm)

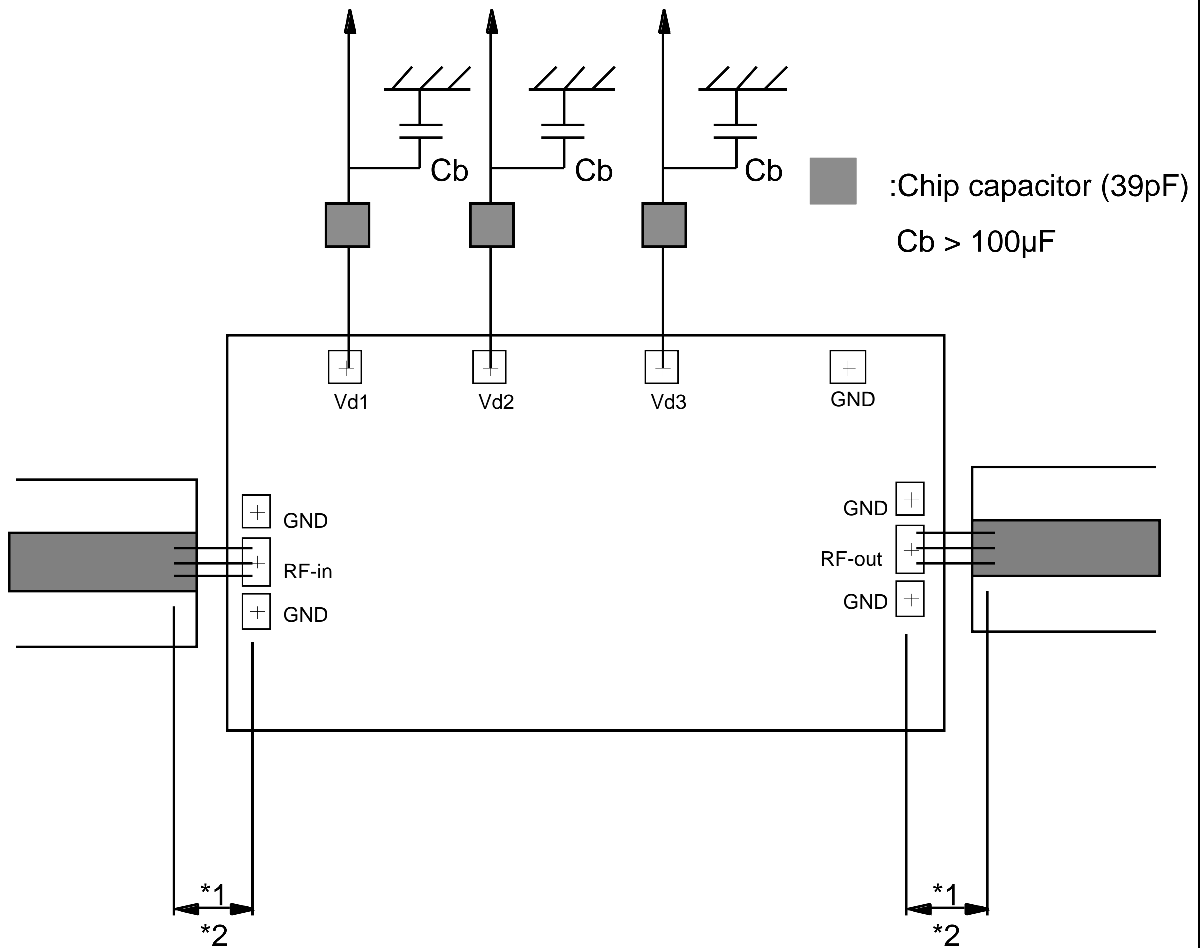


TYPICAL CHARACTERISTICS

Small Signal Performances



AN EXAMPLE OF TEST CIRCUIT



*1 Length of bonding wire < 200 μm
*2 Number of bonding wire 3