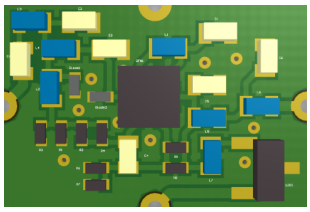
GLA-02
Low Noise Amplifier Module



Key Features :

- Frequency : 128.23MHz
- Input impedance : 0.5Ω
- Noise : 0.4dB
- Gain : 29dB
- P_{1dB} : 10dBm
- OIP_3 : 19dBm
- Output VSMR : 1.2
- Magnet free
- 6V single supply
- Applications : MRI, RF telemetry, medical.

Description :

GLA-02 is a Low Noise Amplifier (LNA) with low input impedance, it is designed to work with 50Ω source impedance of multi-channel coils, the front end amplifier exhibits superior performance on noise figure. Also, with its wider noise contour map, the front end amplifier can increase its blocked impedance by using higher source impedance design, at the same time, keep its superior signal noise ratio.

Electrical Characteristics (Ta = 25°C)

Symbol	Parameter	Test Conditions	Value			Unit
			Min	Typical	Max	
S_{21}	Gain	128.23 MHz	29	29.5	30	dB
ΔG	Gain Variation	128.23 MHz ± 1MHz	-	-	±0.1	dB
RE[Zin]	Input Impedance	128.23 MHz	0.5	0.55	0.6	Ω
IM[Zin]		128.23 MHz	-2	0	2	Ω
SWR_2	Output VSMR	128.23 MHz	-	-	1.2	-
S_{12}	Reverse Isolation	128.23 MHz	63	70	-	dB
NF	Noise Figure	128.23 MHz	-	0.35	0.45	dB
P_{1dB}	Output Power at 1dB Compression Point	63.87 MHz	9.5	10	-	dBm
OIP_3	3 dB Point Output	Each signal channel P_{out} = 0dBm, 1MHz isolation	18	19.5	-	dBm
I_{dd}	Consumption Current	V_{dd} = 6V		23	25	mA
V_{dd}	Supply Operating Voltage		5.9	6	30	V

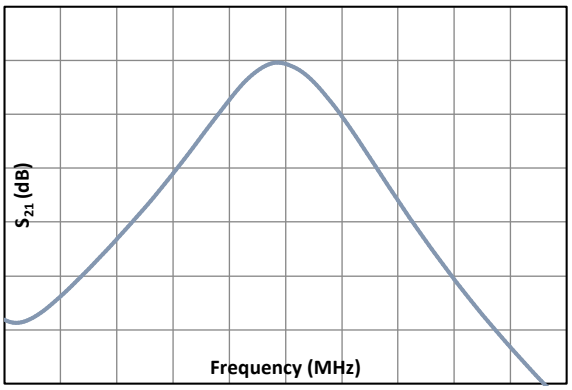
Absolute Maximum Ratings (Ta = 25°C)

Parameter	Unit	Value	Remark
Supply Voltage	V	+30V	
Input Signal Power	dBm	15dBm	
Operating Temperature	°C	-55 ~ +125°C	
Sintering Temperature	°C	-40 ~ +150°C	
Storage Temperature	°C	-65 ~ +150°C	

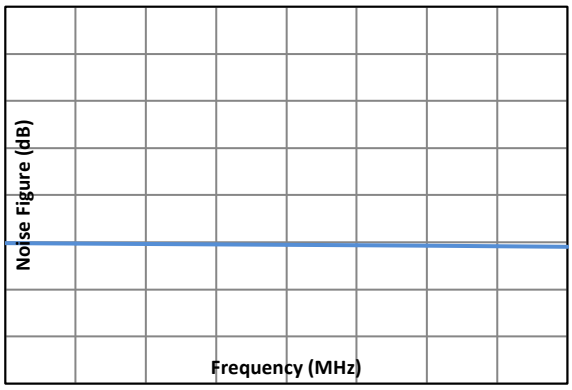
[1] Operation outside any of the Absolute Maximum Ratings may cause permanent device damage.

Typical Performance

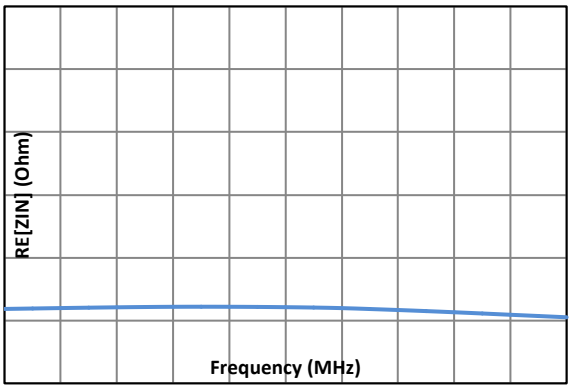
S_{21} Curve



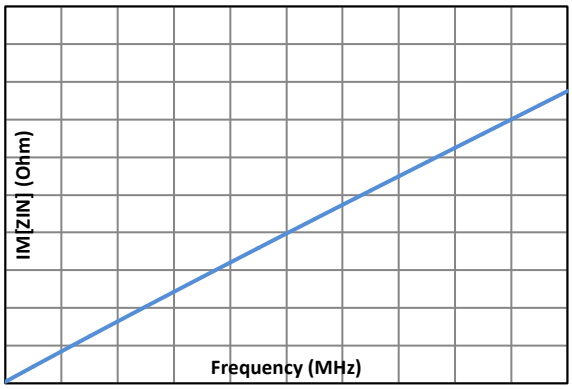
Noise Curve



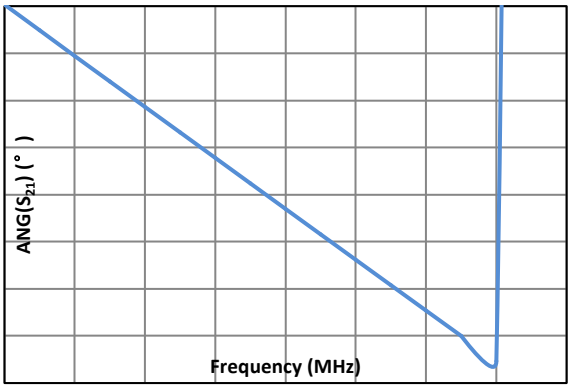
RE [Zin] Curve



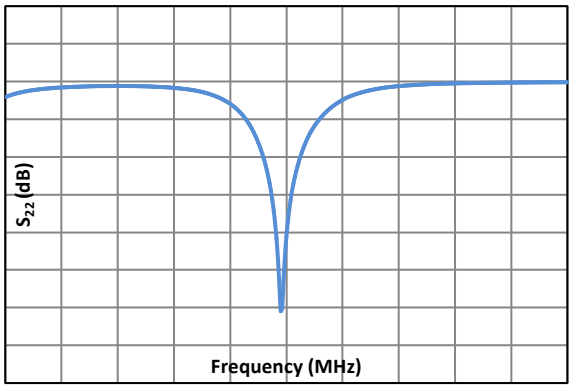
IM[Zin] Curve



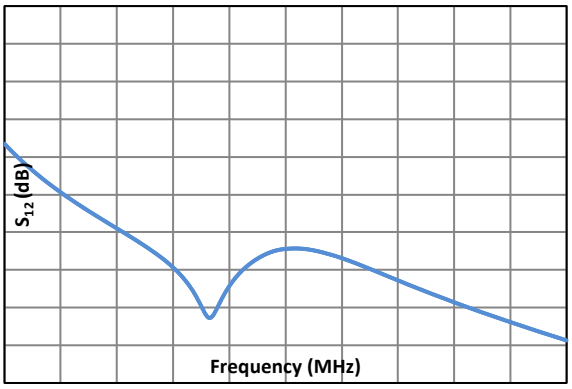
Phase Curve



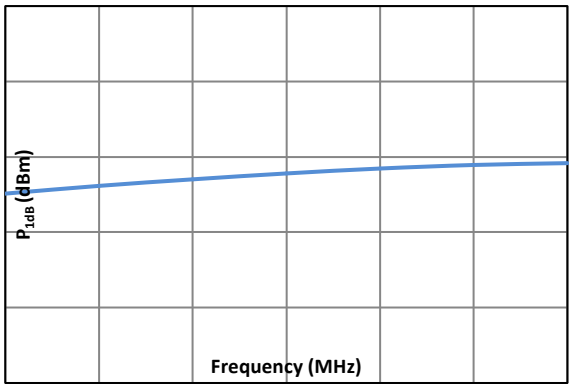
S_{22} Curve



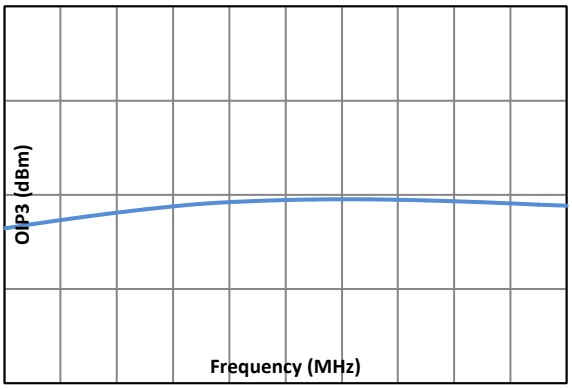
S_{12} Curve



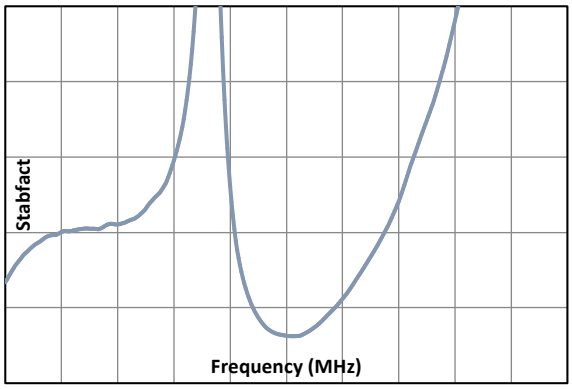
P_{1dB} Curve



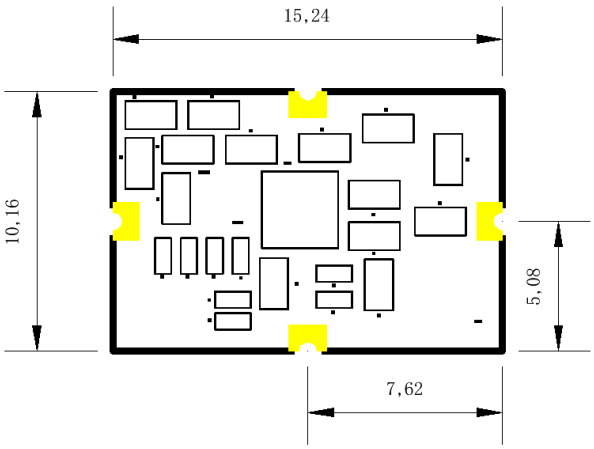
OIP_3 Curve

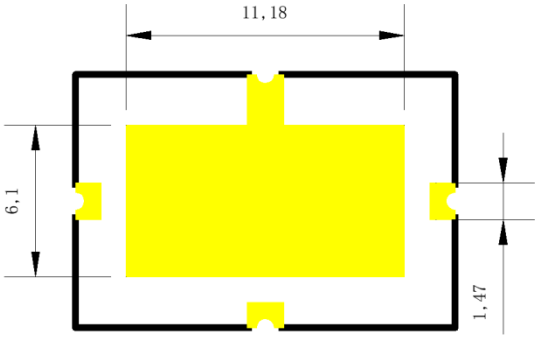


Stability Curve

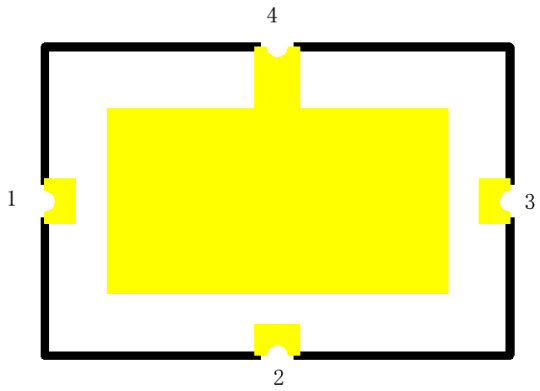


Chip Dimensions (Unit : μm)





Chip Layout Diagram



Lead	1	2	3	4
Use	IN	NC/V_{dd}	OUT/ V_{dd}	GND