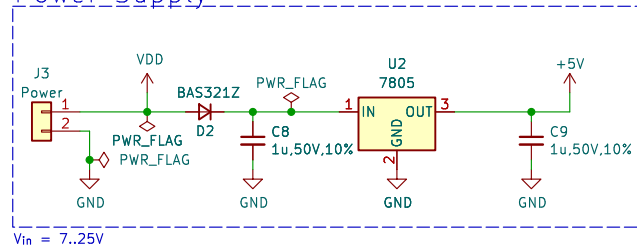
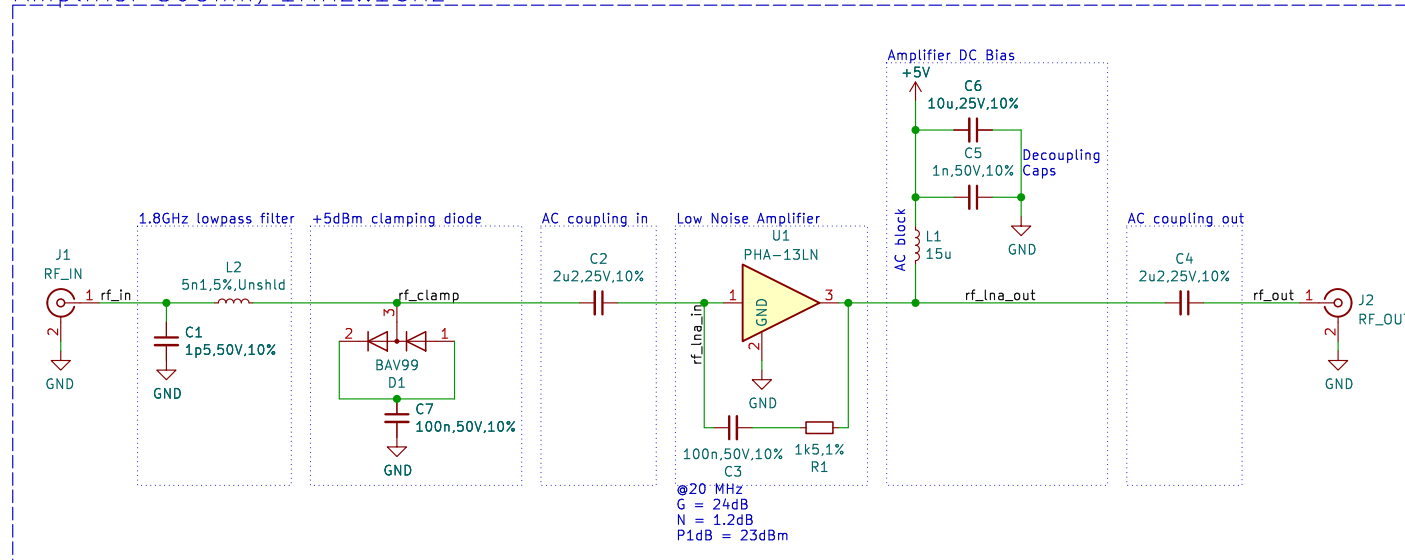


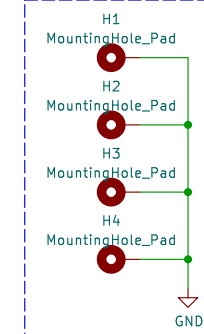
Power Supply



Amplifier 500hm, 1MHz..1GHz



Mount



PCB:

- 1.51mm (60mil) FR4 ($D_k = 4.5$)
- 35um (1oz) copper (both sides)

Coplanar Wave Guide with ground plane (KiCAD Calculator Tools)

- $\epsilon_r = 4.5$
- $\tan\delta = 0.02$
- $\rho = 1.72e-08$
- $H = 1.51mm$
- $T = 35um$
- $f = 25MHz$
- $S = 0.2mm$ (used 2.405mm for JLCPCB as per their impedance calculator)
- => $W = 1.066mm$

Design Goals:

- Easy to solder/fix/adjust
- Standard parts
- Standard PCB (FR4)
- Standard manufacturing (standard design constraints)

Based on martinof rflab and recommended circuit
https://rflab.martinof.org/index.php?title=Low-noise_RF_Preamplifier
<https://www.minicircuits.com/pdfs/PHA-13LN+.pdf>
 Maximilian Stabel

ETH Zürich

Sheet: /
 File: preamp.kicad_sch

Title: Low-noise RF Preamplifier

Size: A4 Date: 2023-05-15

KiCad E.D.A. kicad 7.0.5-1.fc38

Rev: 1

Id: 1/1