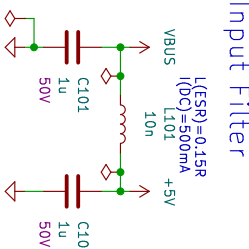


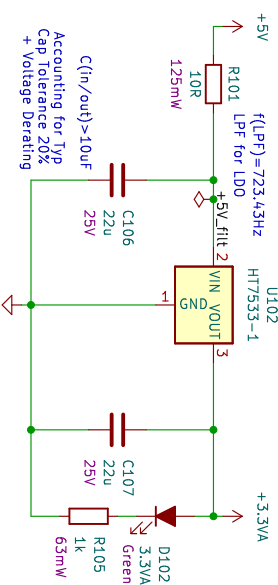
LP	
Sheet: /	
File: rp2040_audioboard.kicad_sch	
Title: RP2040 Audio Board	
Size: A4	Date: 2023-05-01
KiCad E.D.A. kicad (7.0.0)	
	Rev: 0.2
	Id: 1/5



Input Filter

$L(ESR)=0.15R$
 $I(DC)=500mA$

VBUS power comes from USB Type C Connector



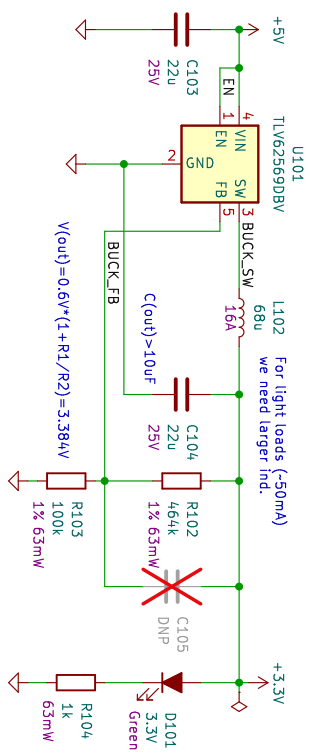
3.3V Analog Supply (LDO)

$V_{in}(MAX)=5V$
 $I_{out}(MAX)=100mA$

$f(PF)=723.43Hz$
 LPF for LDO
 $C(in/out)>10uF$
 Accounting for Typ
 Cap Tolerance 20%
 + Voltage Derating

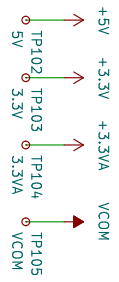
3.3V Digital Supply (BUCK)

$V_{in}(MAX)=5V$
 $I_{out}(MAX)=250mA$
 $f(sw)=1.5MHz$

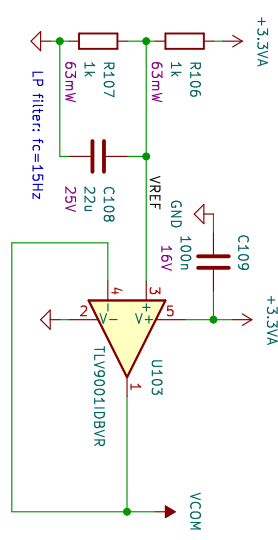


$L(Loadmax)=Vo(Vi-Vo)/dIL*(fsw)*Vi$
 $=3.3(3-3.3)/0.25*load(max)*1.56e*5$
 $=3.3(3-3.3)/0.25*0.25*1.56e*5$
 $=12uH \rightarrow$ next size 15uH

Test Points



Bias Generator



LP

Sheet: / [1] Power/
 File: power.kicad_sch

Title: **RP2040 Audio Board**

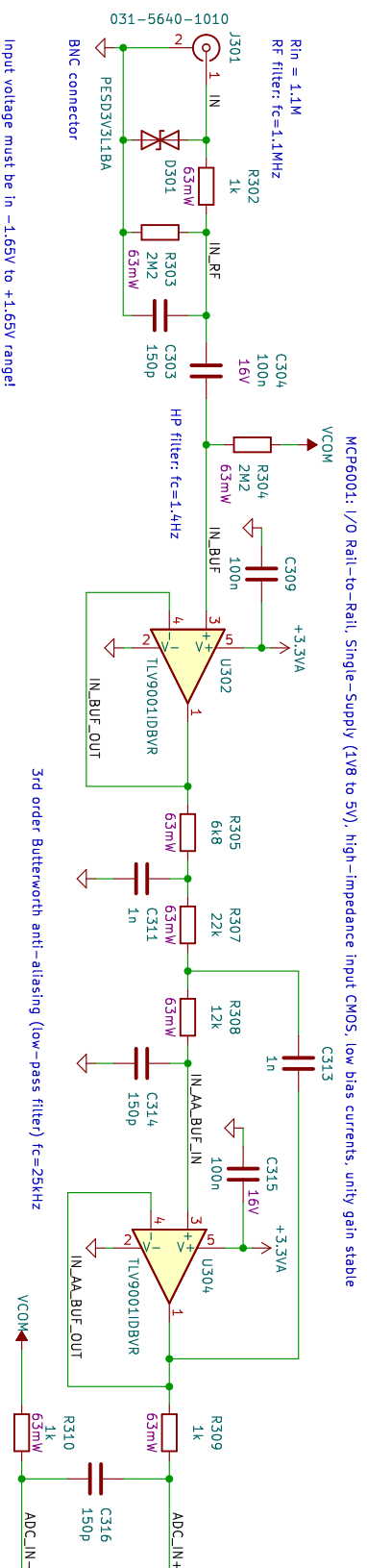
Size: A4

Kicad E.D.A. kicad (7.0.0)

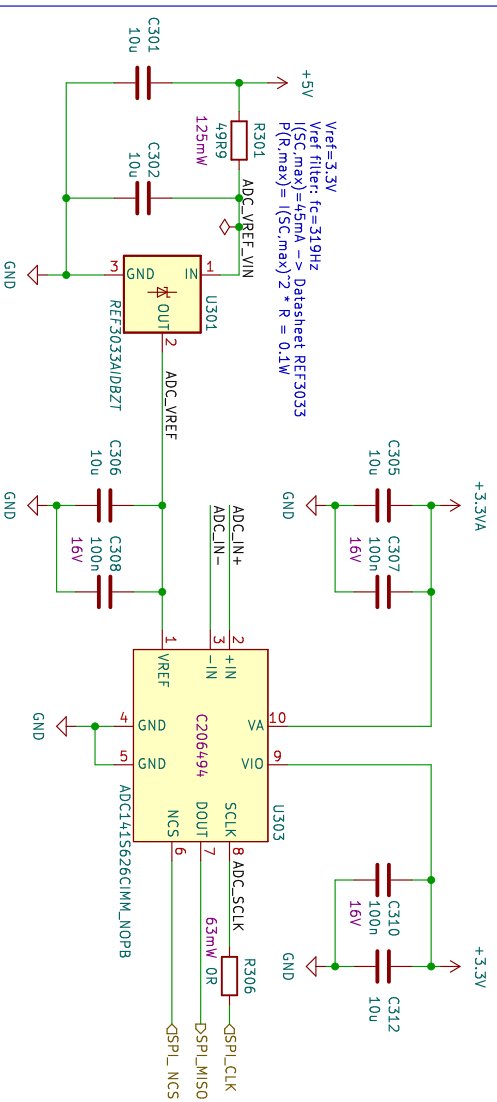
Rev: 0.1

Id: 2/5

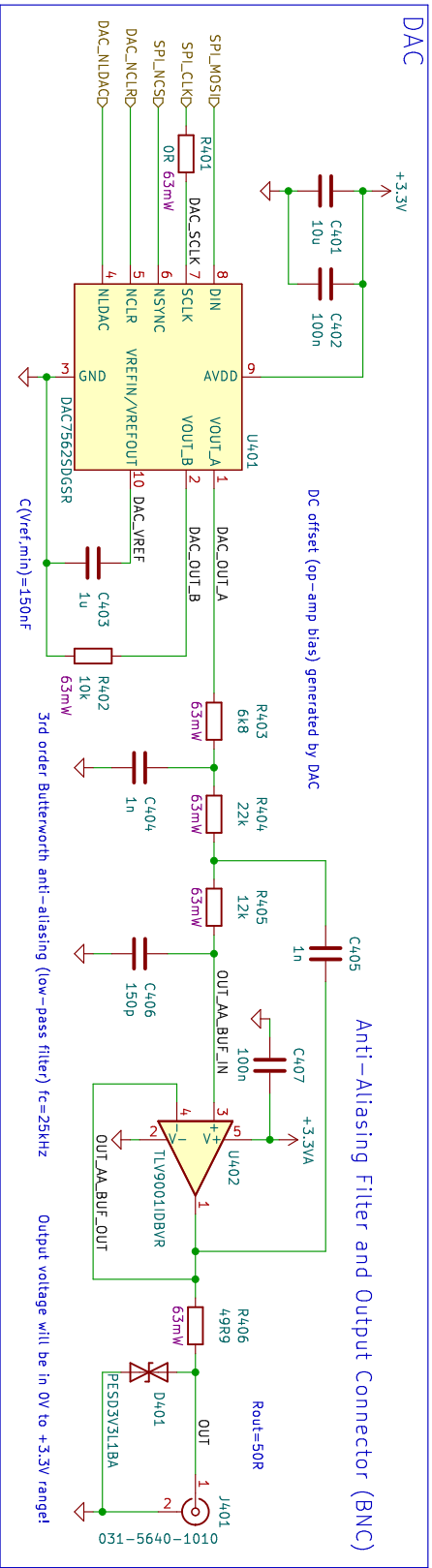
Analog Front End



14-Bit S/H ADC



LP	
Sheet: / [3] ADC/ File: adc.kicad_sch	
Title: RP2040 Audio Board	
Size: A4	
KiCad E.D.A. kicad (7.0.0)	Date: 2023-05-01
	Rev: 0.1
	Id: 4/5



LP	
Sheet: / [4]	DAC/
File: dac.kicad_sch	
Title: RP2040 Audio Board	
Size: A4	Date: 2023-05-01
KiCad E.D.A. kicad (7.0.0)	Rev: 0.1