Power

File: power.kicad_sch

IC101
PCM3168APAP

+3.3V +5V +5V
VDD1 VDD2 VCCDA1 VCCDA2 VCCAD1 VCCAD2
46   12   14   34   49   3

RST   4   RST
LRCK_ADC 6   LRCKAD
BCK_ADC   7   BCKAD

LRCK_DAC 35 LRCKDA
BCK_DAC   36 BCKDA
SDIN   37 DIN1
DIN2   38 DIN2
DIN3   39 DIN3
          40 DIN4
MCLK   41 SCKI

SCL   42 MC/SCL/FMT
SDA   43 MDI/SDA/DEMP

R103 0R
R104 0R
          45 MS/ADR0/MD0
R105 0R   44 MDO/ADR1/MD1

GND

Analog Inputs
VIN1−   51 VIN1−
VIN1+   52 VIN1+
VIN2−   53 VIN2−
VIN2+   54 VIN2+
VIN3−   55 VIN3−
VIN3+   56 VIN3+
VIN4−   57 VIN4−
VIN4+   58 VIN4+
VIN5−   61 VIN5−
VIN5+   62 VIN5+
VIN6−   63 VIN6−
VIN6+   64 VIN6+
VCOMAD   VCOMAD

File: ain.kicad_sch

DOUT1   8   DOUT1
DOUT2   9   DOUT2
DOUT3   10 DOUT3

VOUT1− 32 VOUT1−
VOUT1+ 31 VOUT1+
VOUT2− 30 VOUT2−
VOUT2+ 29 VOUT2+
VOUT3− 28 VOUT3−
VOUT3+ 27 VOUT3+
VOUT4− 26 VOUT4−
VOUT4+ 25 VOUT4+
VOUT5− 24 VOUT5−
VOUT5+ 23 VOUT5+
VOUT6− 22 VOUT6−
VOUT6+ 21 VOUT6+
VOUT7− 20 VOUT7−
VOUT7+ 19 VOUT7+
VOUT8− 18 VOUT8−
VOUT8+ 17 VOUT8+

Analog Outputs

ZERO   13 ZERO
OVF   5   OVF

File: aout.kicad_sch

VCOMAD VCOMDA AGNDDA1 AGNDDA2 DGND1 DGND2 MODE AGNDAD1 AREFAD1 VREFAD2 EP
1   15   16 2   33   47 11   48   50   59 60   65

C102   C103   C104   C105
10uF   10uF   10uF   10uF
X5R   X5R   X5R   X5R

GNDA GNDA GNDA GNDA GNDAGNDA GNDA GNDA

R101 0R   BCK_ADC
R102 0R   LRCK_ADC

J101
I2S   +3.3V
1   LRCK_DAC
2   BCK_DAC
3   SDIN
4   MCLK
5
6
GND

+3.3V
J102
I2C
1
2 SCL
3 SDA
4
GND

J103
MISC
1 RST
2 DIN3
3 DIN2
4
GND

J104
DOUT
1 DOUT1
2 DOUT2
3 DOUT3
4
GND

+5V
C106 C107 C108
10uF 100pF 100pF
X5R   X7R   X7R
GNDA

+5V
C109 C110 C111
10uF 100pF 100pF
X5R   X7R   X7R
GNDA

+3.3V
C112 C113 C114
10uF 100pF 100pF
X5R   X7R   X7R
GNDA

+3.3V
TP101 ZERO
IC102
SN74LVC2G34DRLR

ZERO 1 1A VCC 5
OVF   3 2A GND 1Y 6
TP102 OVERFLOW   2

D101 GREEN R106 360R
D102 YELLOW R107 360R

+3.3V
C101
100pF
X7R
GNDA

NOTES
MODE (pin 48):
  − Tied to Vpp: SPI
  − Pull−up: H/W single−ended input
  − Pull−down: H/W & differential input
  − Tied to GND: I2C
As configured: I2C device, address 0x88

Sheet: /
File: PCM3168APAP−breakout.kicad_sch
Title: PCM3168PAP Evaluation Board
Size: A3   Date: 2026−01−13   Rev: 0.1
KiCad E.D.A. 9.0.4   Id: 1/4
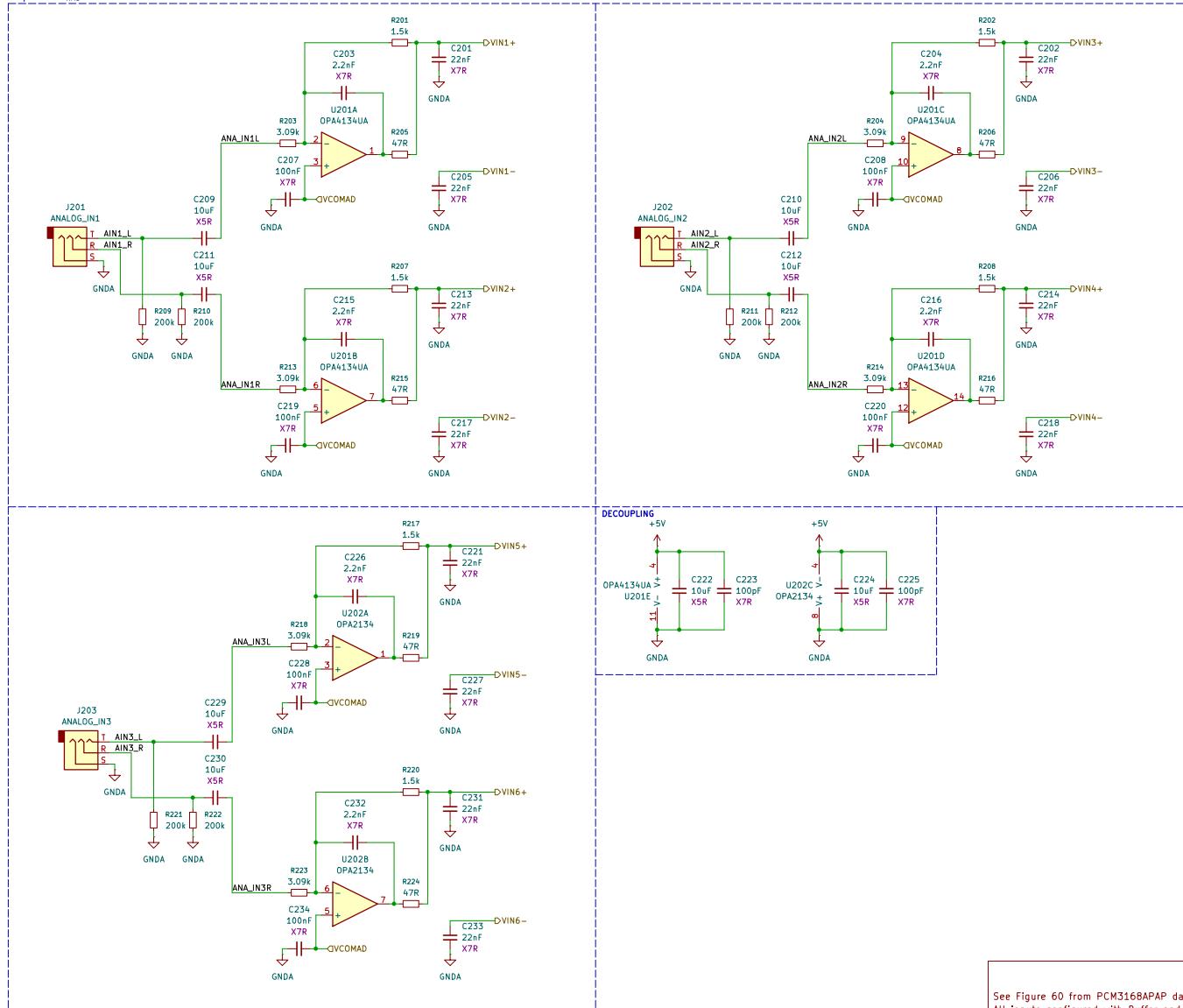
BUFFER / ANTI-ALIASING LPF

As configured:
Analog Input (from Jack) = 2 V_{RMS}
Gain = 0.5;
f−3 dB = 48kHz;
Output = 1 V_{RMS}

DECOUPLING

See Figure 60 from PCM3168APAP datasheet, p. 54
All Inputs configured with Buffer and Anti-Aliasing LPF for Single-Ended ADC Input

Sheet: /Analog Inputs/		
File: ain.kicad_sch		
Title: PCM3168APAP Analog Input		
Size: A3	Date: 2026-01-13	Rev: 0.1
KiCad E.D.A. 9.0.4		Id: 2/4
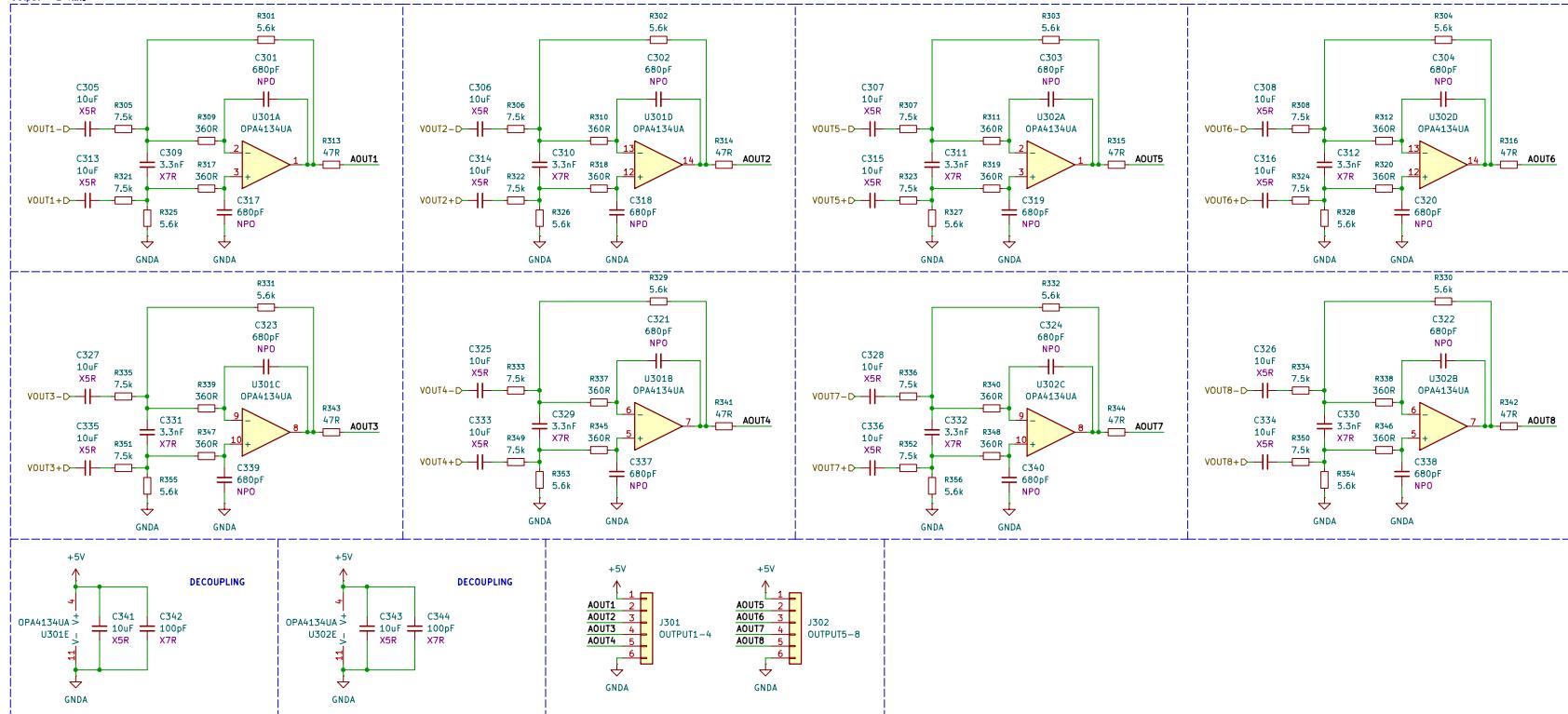
AC-COUPLED DAC OUTPUT BUFFER

As configured:
Analog Input (from DAC) = 4 Vpp
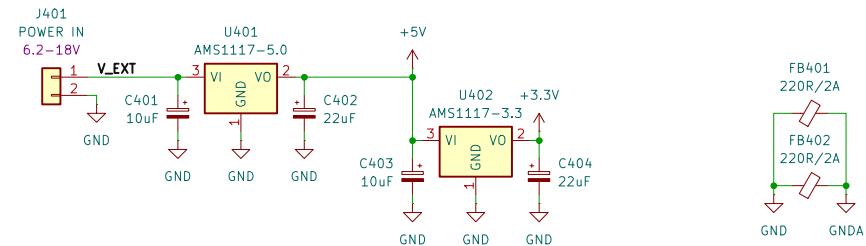Gain = 0.747:
f−3 dB = 53kHz:
Output = 2 Vrms

Channel 1 (AOUT1)
R301 5.6k
C301 680pF NPO
C305 10uF X5R
R305 7.5k
R309 360R
U301A OPA4134UA
VOUT1−
C313 10uF X5R
R321 7.5k
C309 3.3nF X7R
R317 360R
R325 5.6k
C317 680pF NPO
R313 47R
AOUT1
VOUT1+
GNDA GNDA

Channel 2 (AOUT2)
R302 5.6k
C302 680pF NPO
C306 10uF X5R
R306 7.5k
R310 360R
U301D OPA4134UA
VOUT2−
C314 10uF X5R
R322 7.5k
C310 3.3nF X7R
R318 360R
R326 5.6k
C318 680pF NPO
R314 47R
AOUT2
VOUT2+
GNDA GNDA

Channel 5 (AOUT5)
R303 5.6k
C303 680pF NPO
C307 10uF X5R
R307 7.5k
R311 360R
U302A OPA4134UA
VOUT5−
C315 10uF X5R
R323 7.5k
C311 3.3nF X7R
R319 360R
R327 5.6k
C319 680pF NPO
R315 47R
AOUT5
VOUT5+
GNDA GNDA

Channel 6 (AOUT6)
R304 5.6k
C304 680pF NPO
C308 10uF X5R
R308 7.5k
R312 360R
U302D OPA4134UA
VOUT6−
C316 10uF X5R
R324 7.5k
C312 3.3nF X7R
R320 360R
R328 5.6k
C320 680pF NPO
R316 47R
AOUT6
VOUT6+
GNDA GNDA

Channel 3 (AOUT3)
R331 5.6k
C323 680pF NPO
C327 10uF X5R
R335 7.5k
R339 360R
U301C OPA4134UA
VOUT3−
C335 10uF X5R
R351 7.5k
C331 3.3nF X7R
R347 360R
R355 5.6k
C339 680pF NPO
R343 47R
AOUT3
VOUT3+
GNDA GNDA

Channel 4 (AOUT4)
R329 5.6k
C321 680pF NPO
C325 10uF X5R
R333 7.5k
R337 360R
U301B OPA4134UA
VOUT4−
C333 10uF X5R
R349 7.5k
C329 3.3nF X7R
R345 360R
R353 5.6k
C337 680pF NPO
R341 47R
AOUT4
VOUT4+
GNDA GNDA

Channel 7 (AOUT7)
R332 5.6k
C324 680pF NPO
C328 10uF X5R
R336 7.5k
R340 360R
U302C OPA4134UA
VOUT7−
C336 10uF X5R
R352 7.5k
C332 3.3nF X7R
R348 360R
R356 5.6k
C340 680pF NPO
R344 47R
AOUT7
VOUT7+
GNDA GNDA

Channel 8 (AOUT8)
R330 5.6k
C322 680pF NPO
C326 10uF X5R
R334 7.5k
R338 360R
U302B OPA4134UA
VOUT8−
C334 10uF X5R
R350 7.5k
C330 3.3nF X7R
R346 360R
R354 5.6k
C338 680pF NPO
R342 47R
AOUT8
VOUT8+
GNDA GNDA

Decoupling
+5V
OPA4134UA V+
U301E
C341 10uF X5R
C342 100pF X7R
GNDA
DECOUPLING

+5V
OPA4134UA V+
U302E
C343 10uF X5R
C344 100pF X7R
GNDA
DECOUPLING

Connectors
+5V
AOUT1 1
AOUT2 2
AOUT3 3
AOUT4 4
5
J301 OUTPUT1−4
GNDA

+5V
AOUT5 1
AOUT6 2
AOUT7 3
AOUT8 4
5
6
J302 OUTPUT5−8
GNDA

J401
POWER IN
6.2-18V

V_EXT

GND

C401
10uF

U401
AMS1117-5.0

3 VI VO 2
GND
1

GND

GND

C402
22uF

GND

+5V

C403
10uF

GND

U402
AMS1117-3.3

3 VI VO 2
GND
1

GND

+3.3V

C404
22uF

GND

FB401
220R/2A

FB402
220R/2A

GND   GNDA