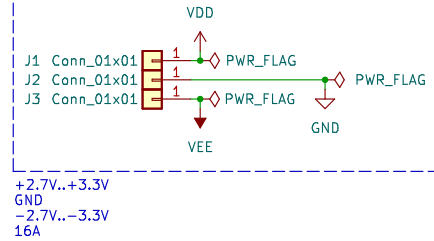
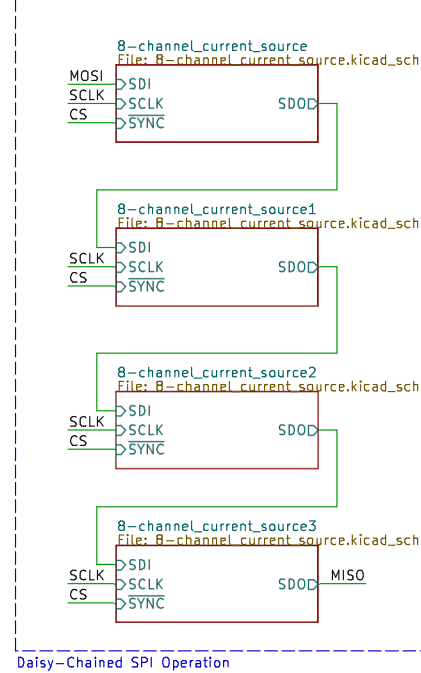


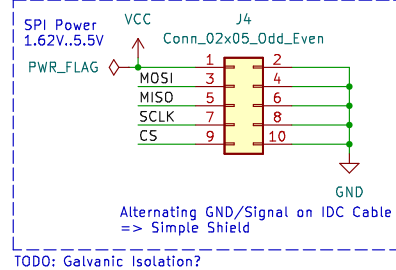
Power Connector



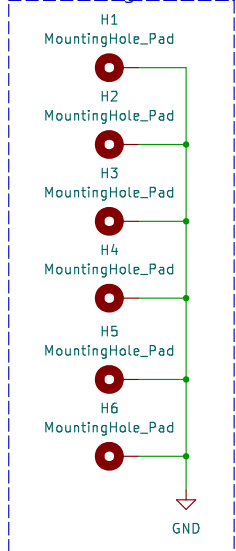
Current Sources



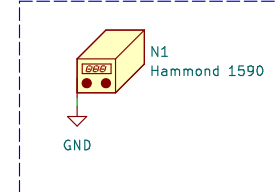
SPI



Mounting Holes



Enclosure



Used for cooling as well
For connectors see "Enclosure-*" entries
Don't forget the cables inside the enclosure

Maximilian Stabel
ETH Zürich

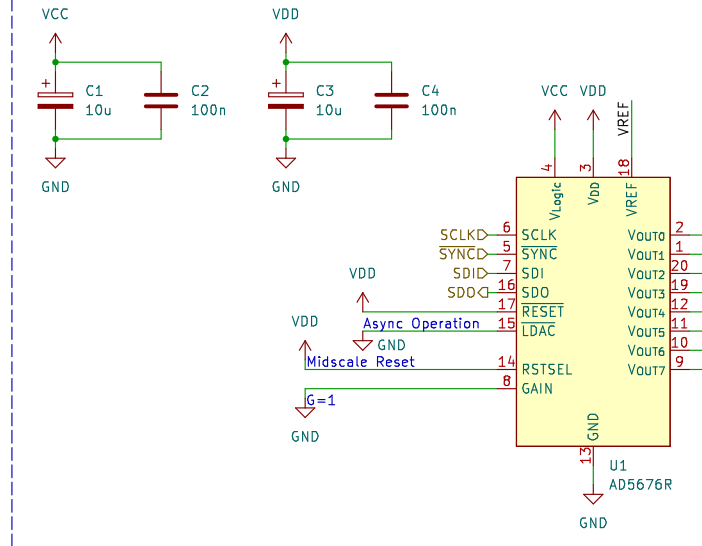
Sheet: /
File: 32-channel_current_source.kicad_sch

Title: 32-Channel Programmable Current Source

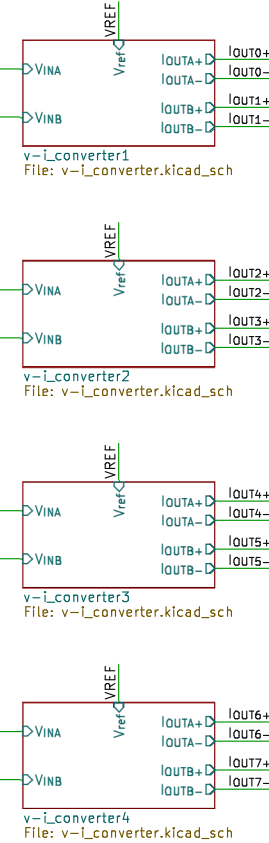
Size: A4 Date: 2023-06-29
KiCad E.D.A. kicad 7.0.7-2.fc38

Rev: 1
Id: 1/21

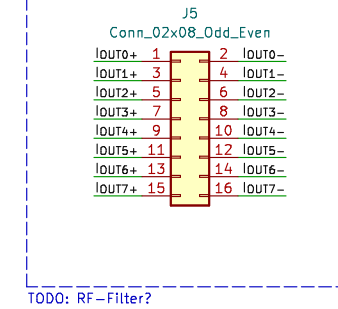
DAC



U-I-Converters



Coil Connector (8x)



Maximilian Stabel
ETH Zürich

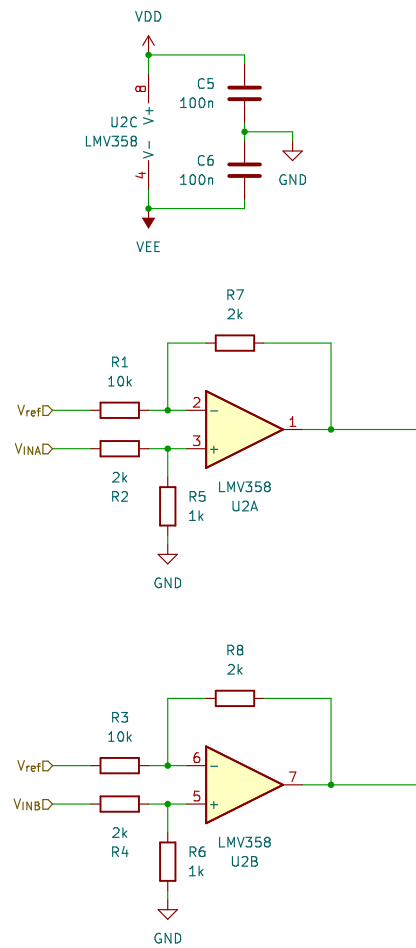
Sheet: /8-channel_current_source1/
File: 8-channel_current_source.kicad_sch

Title: 8-Channel Programmable Current Supply

Size: A4 Date: 2023-06-29
KiCad E.D.A. kicad 7.0.7-2.fc38

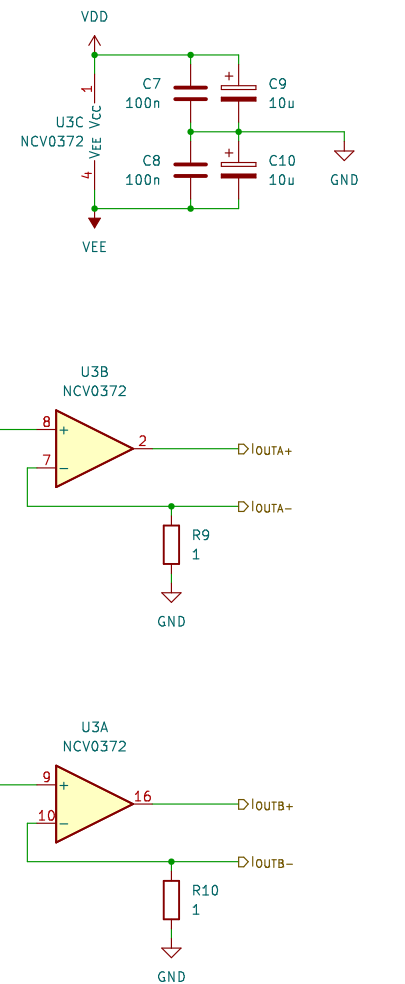
Rev: 1
Id: 2/21

Level Scaling/Shifting



Universal OpAmp

Constant Current Source



Alternative Power OpAmps: TCA0372, TCA0372B, NCV0372, NCV0372B, NCS2372, L2720W, (L272D [S016 narrow])

Maximilian Stabel
ETH Zürich

Sheet: /8-channel_current_source1/v-i_converter1/
File: v-i_converter.kicad_sch

Title: Voltage-to-Current (V-I) Converter

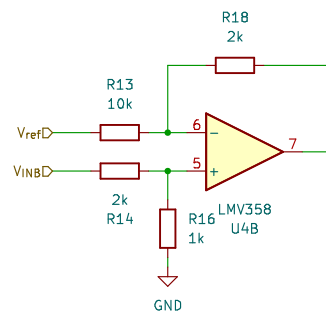
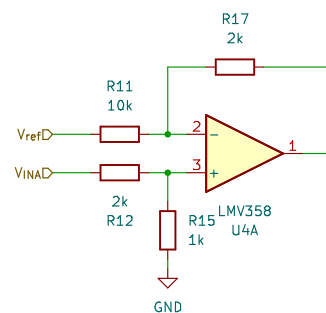
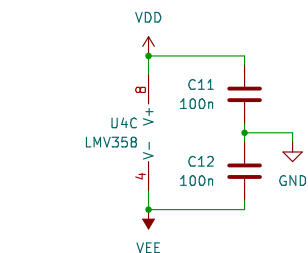
Size: A4 Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

Rev: 1

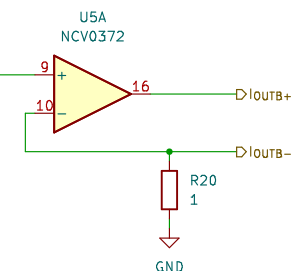
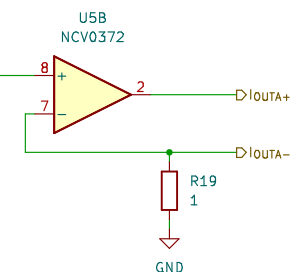
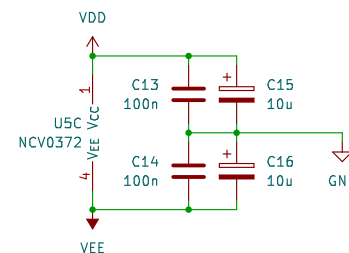
Id: 3/21

Level Scaling/Shifting



Universal OpAmp

Constant Current Source



Alternative Power OpAmps: TCA0372, TCA0372B, NCV0372, NCV0372B, NCS2372, L2720W, (L272D [5016 narrow])

Maximilian Stabel

ETH Zürich

Sheet: /8-channel_current_source1/v-i_converter2/

File: v-i_converter.kicad_sch

Title: Voltage-to-Current (V-I) Converter

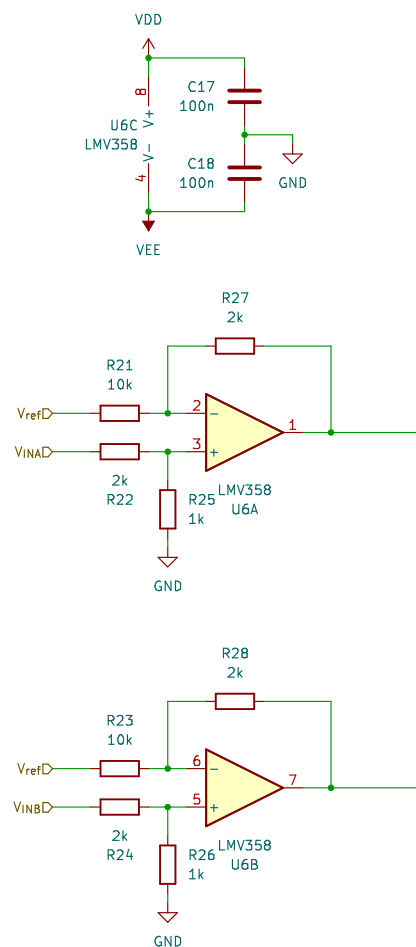
Size: A4 Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

Rev: 1

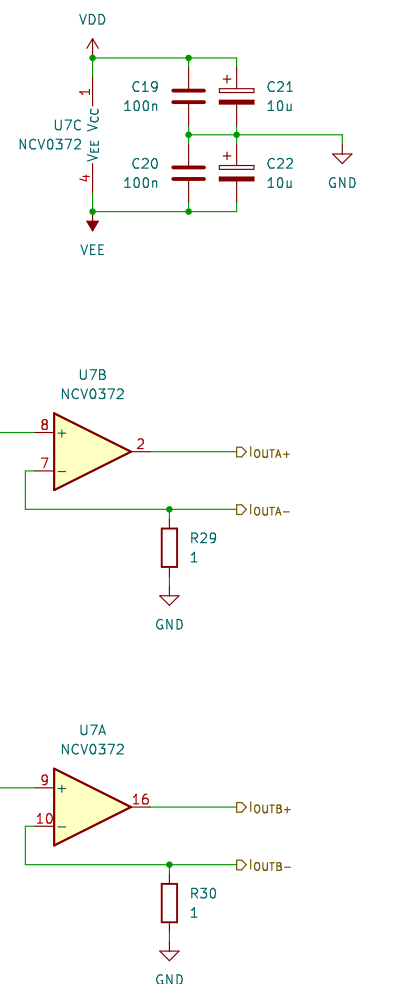
Id: 4/21

Level Scaling/Shifting



Universal OpAmp

Constant Current Source



Alternative Power OpAmps: TCA0372, TCA0372B, NCV0372, NCV0372B, NCS2372, L2720W, (L272D [5016 narrow])

Maximilian Stabel

ETH Zürich

Sheet: /8-channel_current_source1/v-i_converter3/

File: v-i_converter.kicad_sch

Title: Voltage-to-Current (V-I) Converter

Size: A4 Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

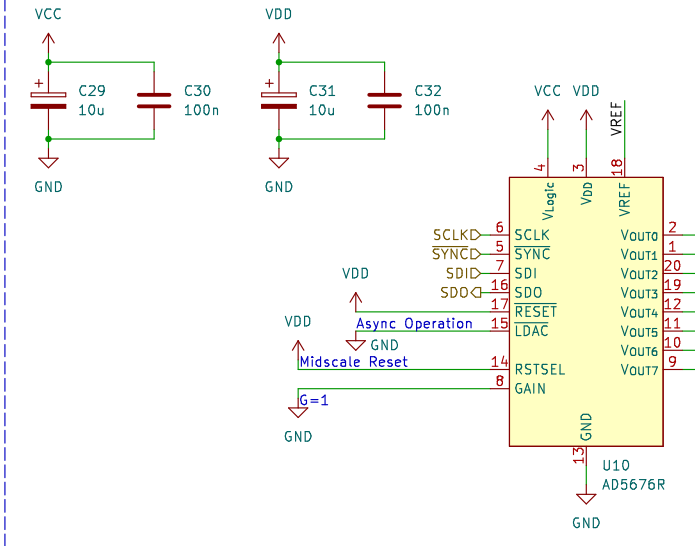
Rev: 1

Id: 5/21

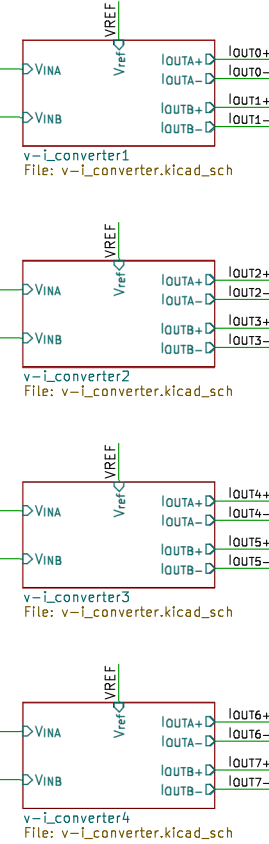
The diagram illustrates the internal structure and external circuitry of the LMV358 op-amp. The top section shows the internal structure with VDD, VEE, UBC, and V+ pins. It includes two 100nF capacitors, C23 and C24, connected to the V+ pin and GND. The bottom section shows two external circuit configurations. The first configuration uses U8A (LMV358) with R31 (10k), R32 (2k), R35 (1k), and R37 (2k) to connect VrefD and VINAD to the op-amp's non-inverting input (pin 3) and output (pin 1). The second configuration uses U8B (LMV358) with R33 (10k), R34 (2k), R36 (1k), and R38 (2k) to connect VrefD and VINB to the op-amp's non-inverting input (pin 5) and output (pin 7).

4

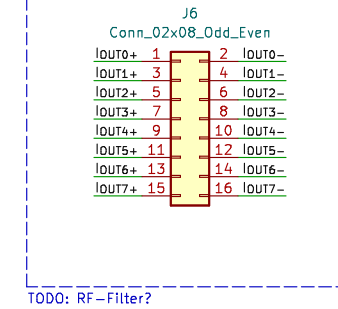
DAC



U-I-Converters



Coil Connector (8x)



Maximilian Stabel

ETH Zürich

Sheet: /8-channel_current_source/

File: 8-channel_current_source.kicad_sch

Title: 8-Channel Programmable Current Supply

Size: A4

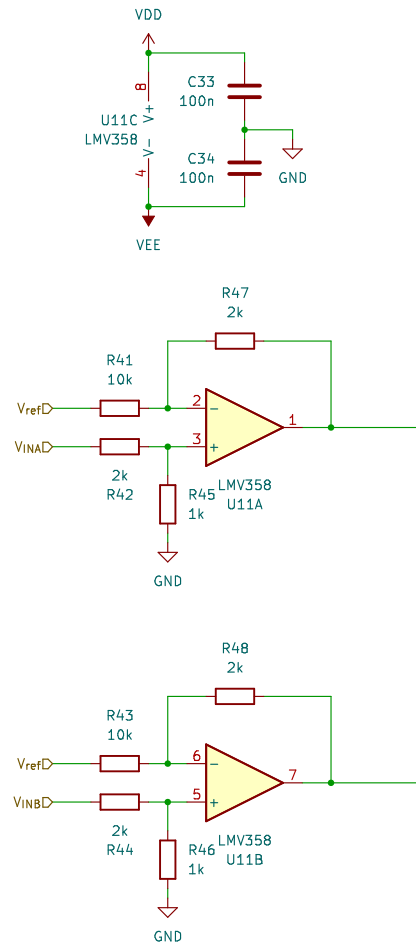
Date: 2023-06-29

Rev: 1

KiCad E.D.A. kicad 7.0.7-2.fc38

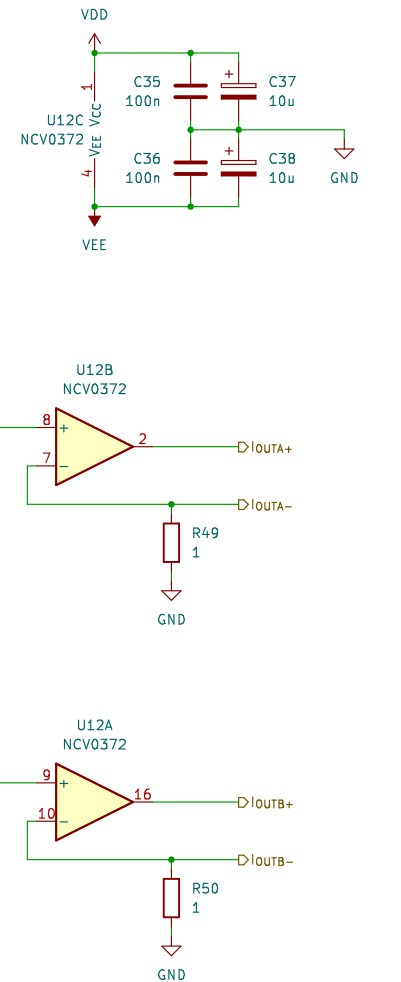
Id: 7/21

Level Scaling/Shifting



Universal OpAmp

Constant Current Source



Alternative Power OpAmps: TCA0372, TCA0372B, NCV0372, NCV0372B, NCS2372, L2720W, (L272D [5016 narrow])

Maximilian Stabel
ETH Zürich

Sheet: /8-channel_current_source/v-i_converter1/
File: v-i_converter.kicad_sch

Title: Voltage-to-Current (V-I) Converter

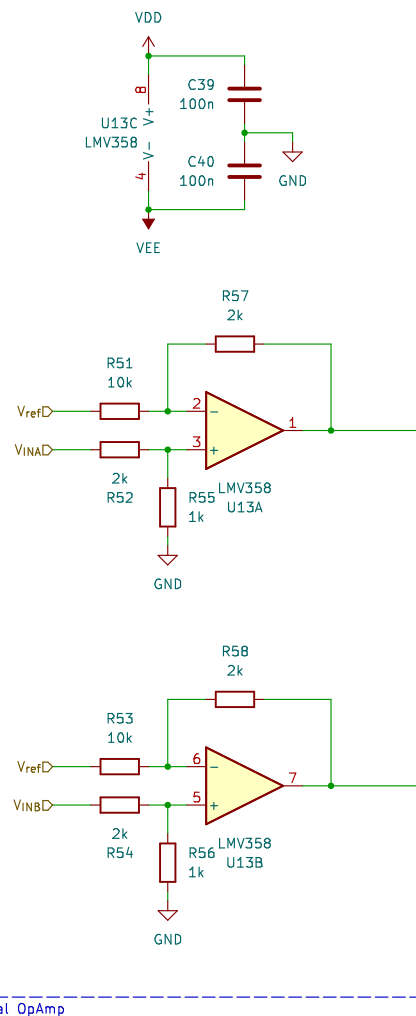
Size: A4 Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

Rev: 1

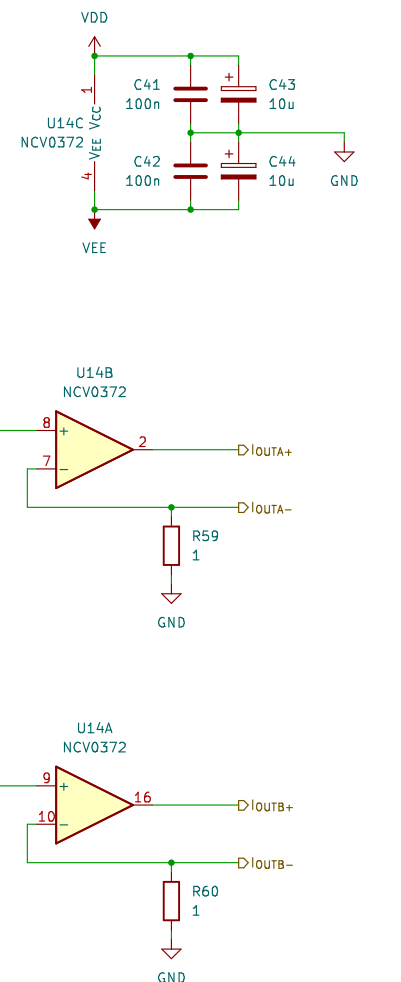
Id: 8/21

Level Scaling/Shifting



Universal OpAmp

Constant Current Source



Alternative Power OpAmps: TCA0372, TCA0372B, NCV0372, NCV0372B, NCS2372, L2720W, (L272D [5016 narrow])

Maximilian Stabel
ETH Zürich

Sheet: /8-channel_current_source/v-i_converter2/
File: v-i_converter.kicad_sch

Title: Voltage-to-Current (V-I) Converter

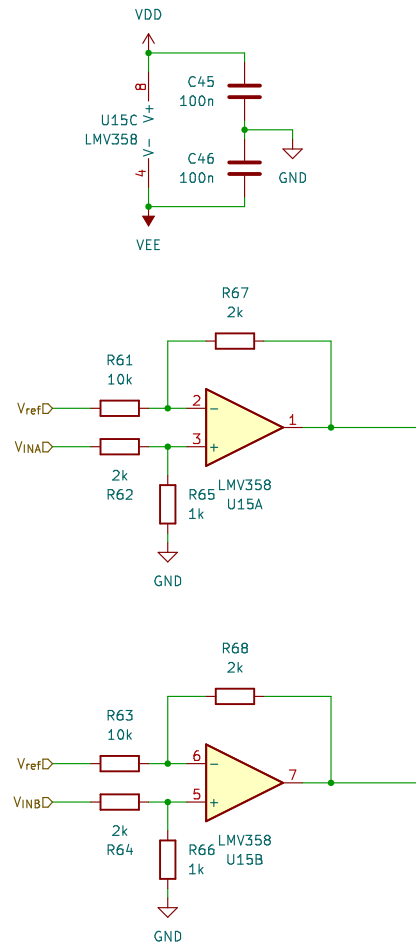
Size: A4 Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

Rev: 1

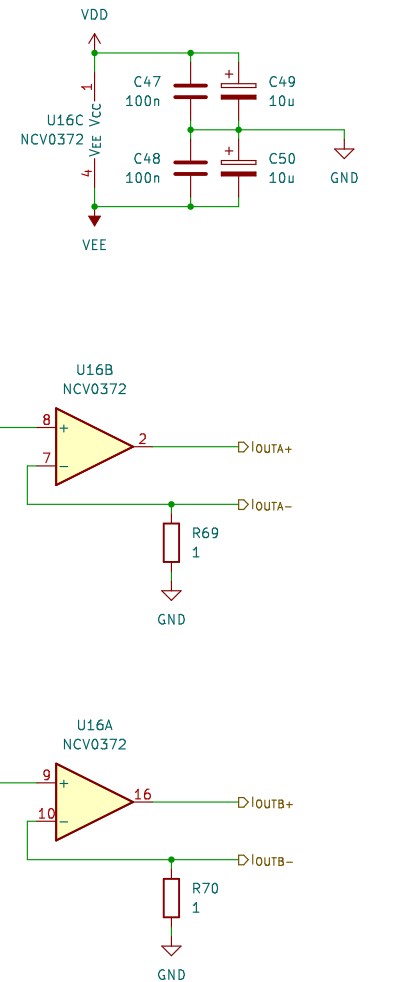
Id: 9/21

Level Scaling/Shifting



Universal OpAmp

Constant Current Source



Alternative Power OpAmps: TCA0372, TCA0372B, NCV0372, NCV0372B, NCS2372, L2720W, (L272D [5016 narrow])

Maximilian Stabel
ETH Zürich

Sheet: /8-channel_current_source/v-i_converter3/
File: v-i_converter.kicad_sch

Title: Voltage-to-Current (V-I) Converter

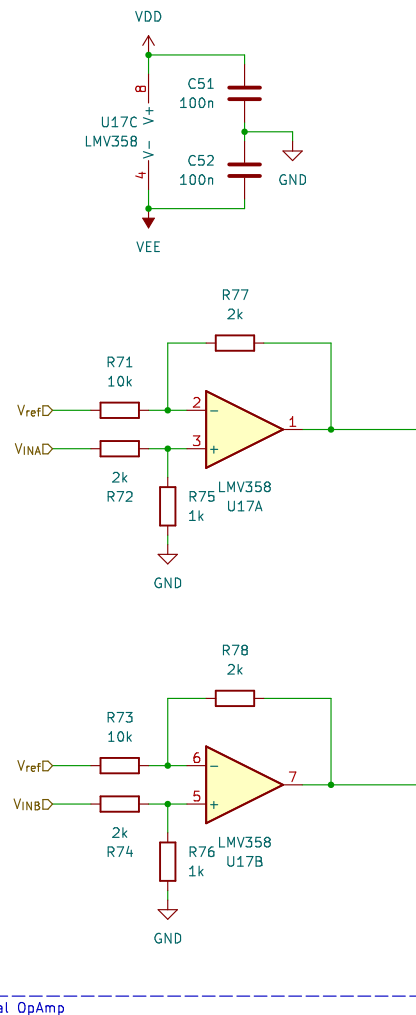
Size: A4 Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

Rev: 1

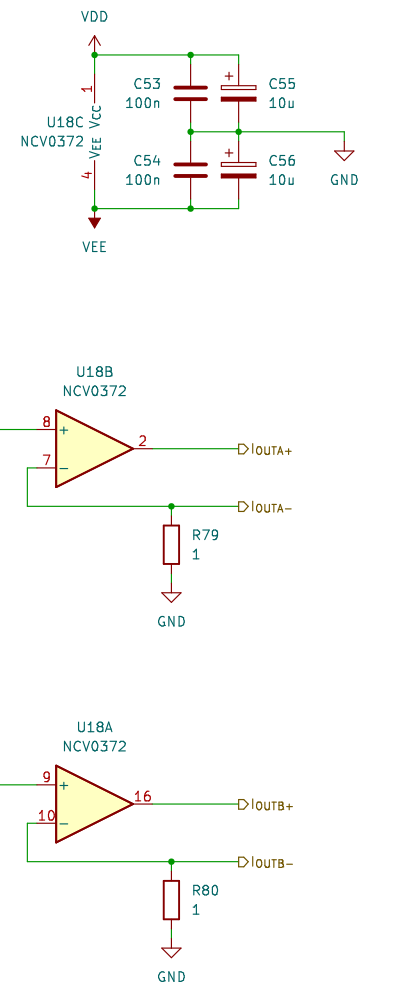
Id: 10/21

Level Scaling/Shifting



Universal OpAmp

Constant Current Source



Alternative Power OpAmps: TCA0372, TCA0372B, NCV0372, NCV0372B, NCS2372, L2720W, (L272D [5016 narrow])

Maximilian Stabel
ETH Zürich

Sheet: /8-channel_current_source/v-i_converter4/
File: v-i_converter.kicad_sch

Title: Voltage-to-Current (V-I) Converter

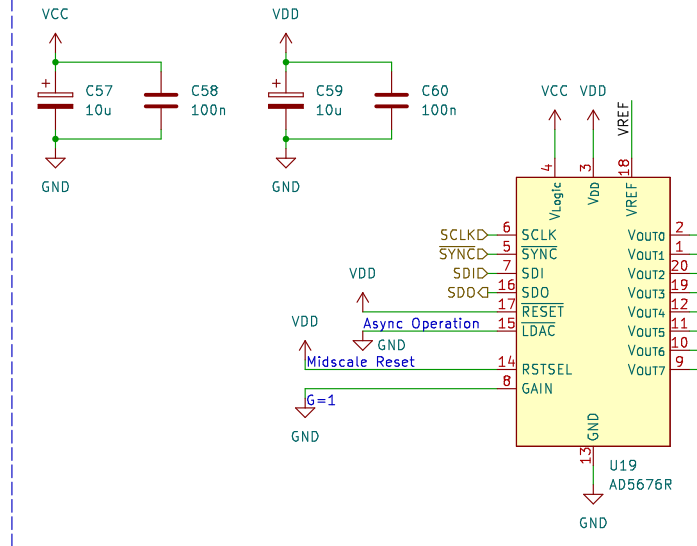
Size: A4 Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

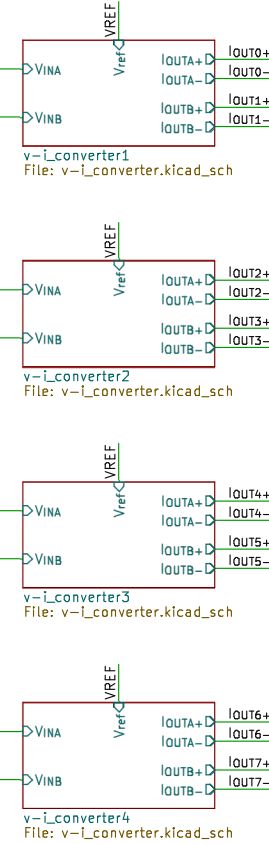
Rev: 1

Id: 11/21

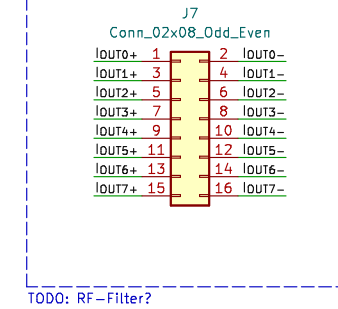
DAC



U-I-Converters



Coil Connector (8x)



Maximilian Stabel

ETH Zürich

Sheet: /8-channel_current_source2/

File: 8-channel_current_source.kicad_sch

Title: 8-Channel Programmable Current Supply

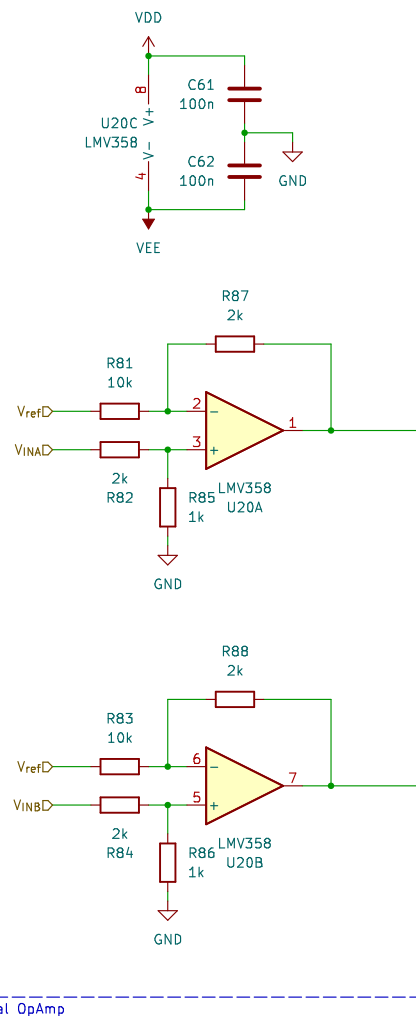
Size: A4 Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

Rev: 1

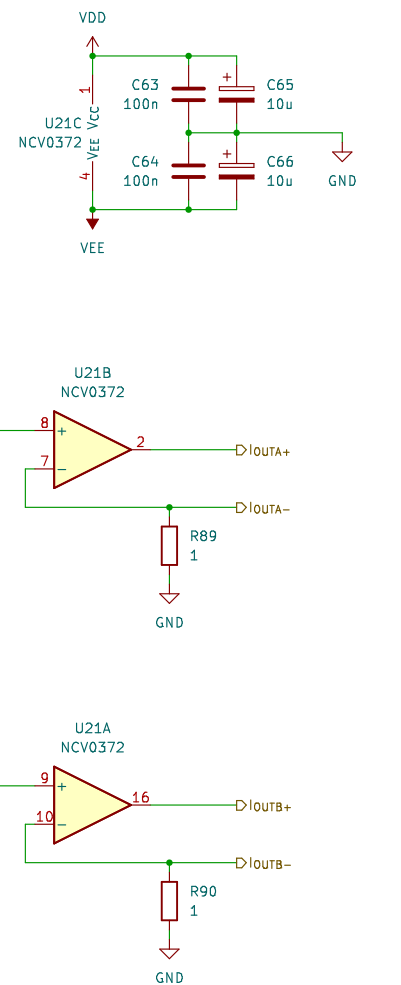
Id: 12/21

Level Scaling/Shifting



Universal OpAmp

Constant Current Source



Alternative Power OpAmps: TCA0372, TCA0372B, NCV0372, NCV0372B, NCS2372, L2720W, (L272D [5016 narrow])

Maximilian Stabel
ETH Zürich

Sheet: /8-channel_current_source2/v-i_converter1/
File: v-i_converter.kicad_sch

Title: Voltage-to-Current (V-I) Converter

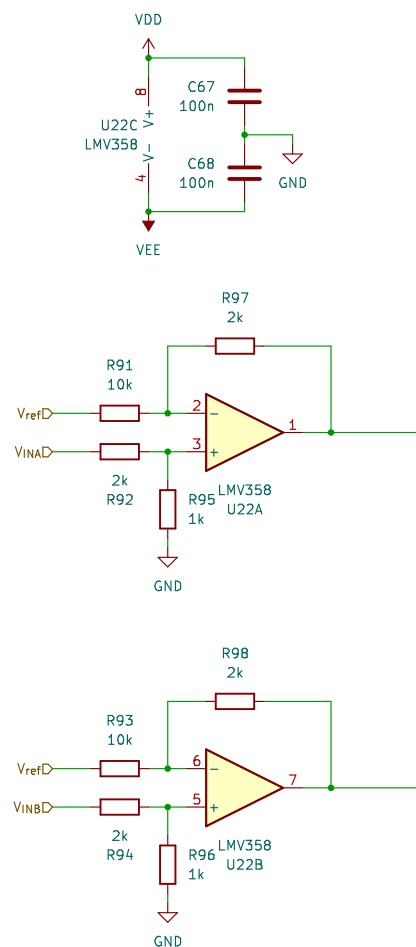
Size: A4 Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

Rev: 1

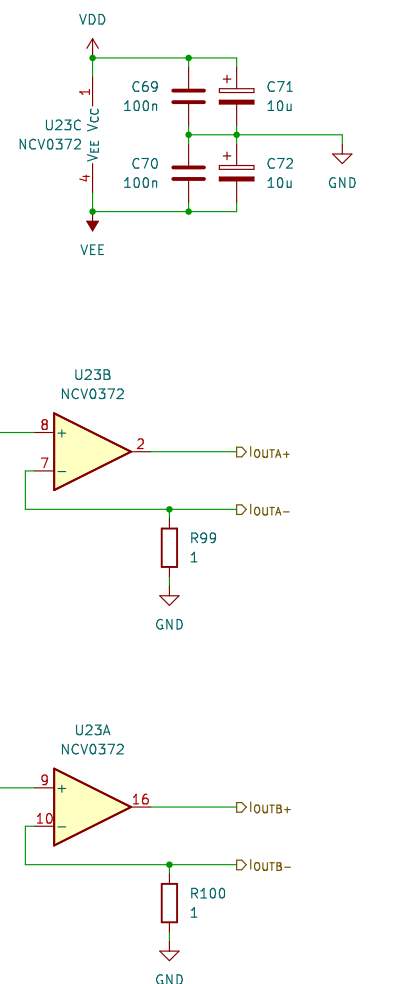
Id: 13/21

Level Scaling/Shifting



Universal OpAmp

Constant Current Source



Alternative Power OpAmps: TCA0372, TCA0372B, NCV0372, NCV0372B, NCS2372, L2720W, (L272D [5016 narrow])

Maximilian Stabel

ETH ZÜRICH

Sheet: /8-channel_current_source2/v-i_converter2/

File: v-i_converter.kicad_sch

Title: Voltage-to-Current (V-I) Converter

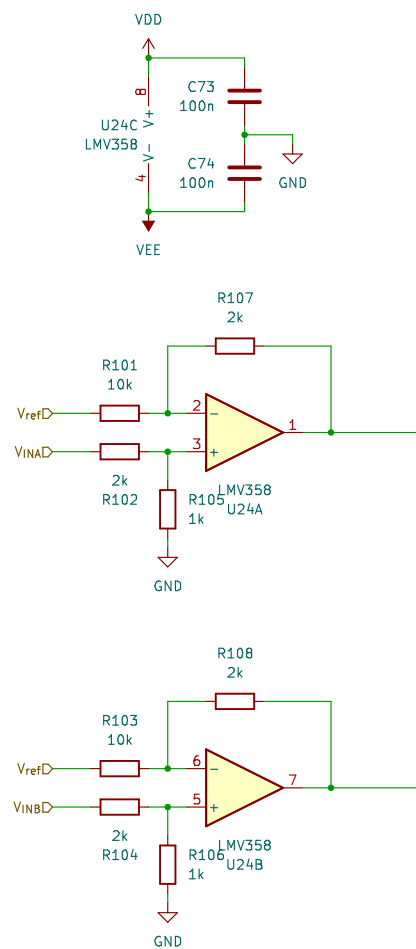
Size: A4 Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

Rev: 1

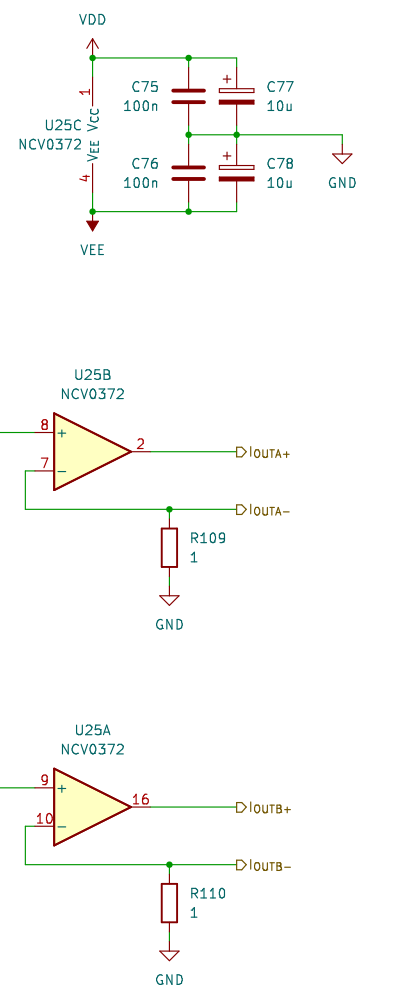
Id: 14/21

Level Scaling/Shifting



Universal OpAmp

Constant Current Source



Alternative Power OpAmps: TCA0372, TCA0372B, NCV0372, NCV0372B, NCS2372, L2720W, (L272D [5016 narrow])

Maximilian Stabel
ETH Zürich

Sheet: /8-channel_current_source2/v-i_converter3/
File: v-i_converter.kicad_sch

Title: Voltage-to-Current (V-I) Converter

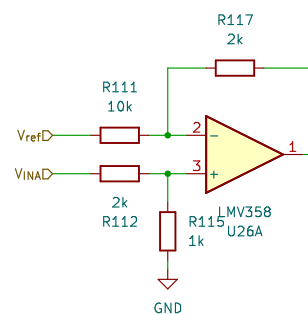
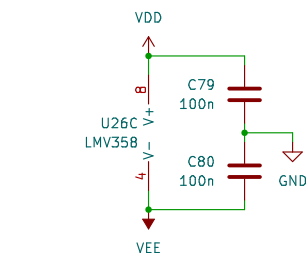
Size: A4 Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

Rev: 1

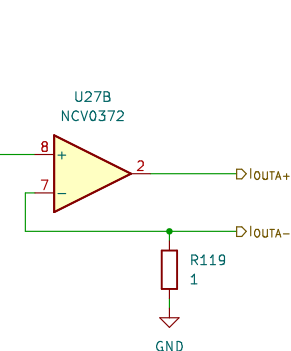
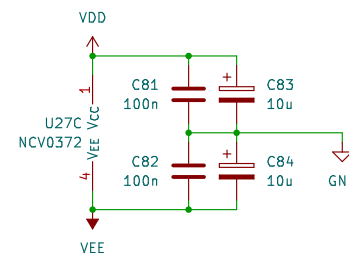
Id: 15/21

Level Scaling/Shifting



Universal OpAmp

Constant Current Source



Alternative Power OpAmps: TCA0372, TCA0372B, NCV0372, NCV0372B, NCS2372, L2720W, (L272D [5016 narrow])

Maximilian Stabel

ETH Zürich

Sheet: /8-channel_current_source2/v-i_converter4/

File: v-i_converter.kicad_sch

Title: Voltage-to-Current (V-I) Converter

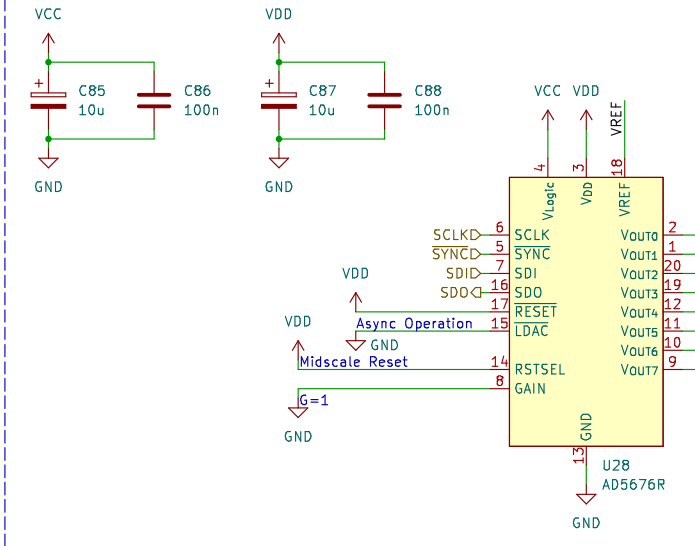
Size: A4 Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

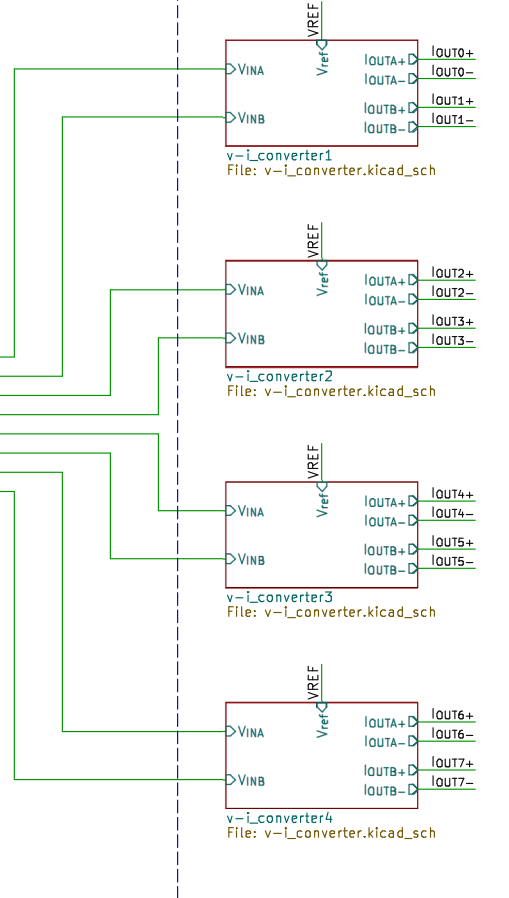
Rev: 1

Id: 16/21

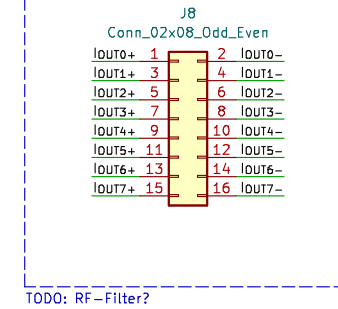
DAC



U-I-Converters



Coil Connector (8x)



Maximilian Stabel

ETH Zürich

Sheet: /8-channel_current_source3/

File: 8-channel_current_source.kicad_sch

Title: 8-Channel Programmable Current Supply

Size: A4

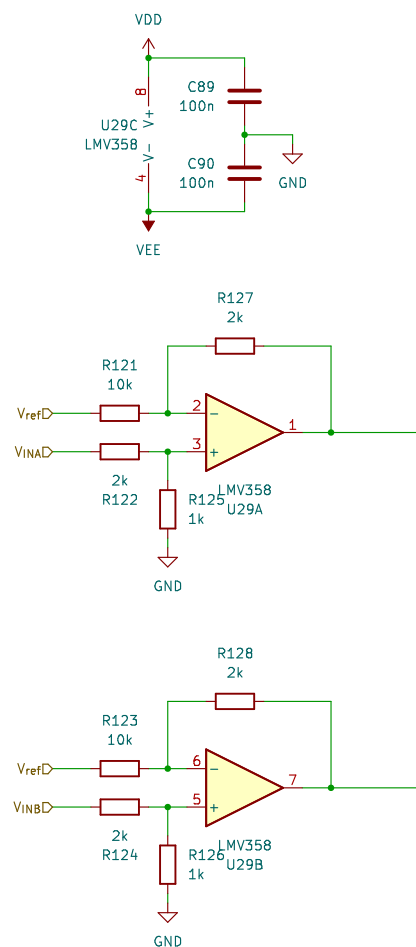
Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

Rev: 1

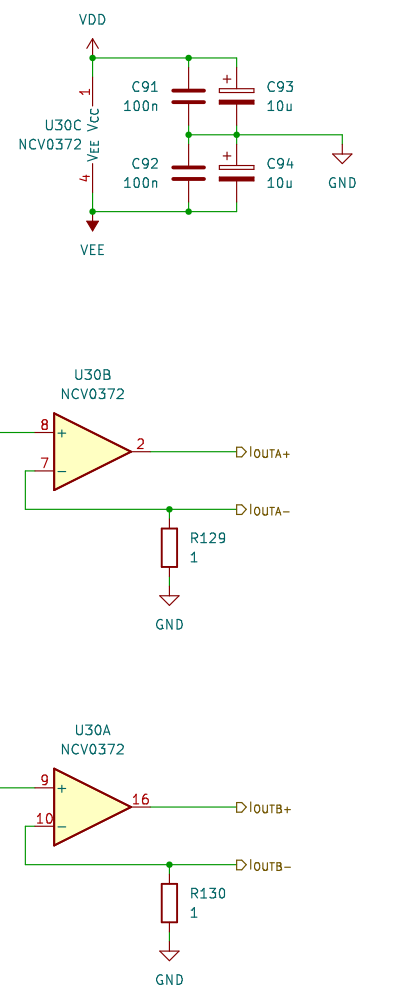
Id: 17/21

Level Scaling/Shifting



Universal OpAmp

Constant Current Source



Alternative Power OpAmps: TCA0372, TCA0372B, NCV0372, NCV0372B, NCS2372, L2720W, (L272D [5016 narrow])

Maximilian Stabel
ETH Zürich

Sheet: /8-channel_current_source3/v-i_converter1/
File: v-i_converter.kicad_sch

Title: Voltage-to-Current (V-I) Converter

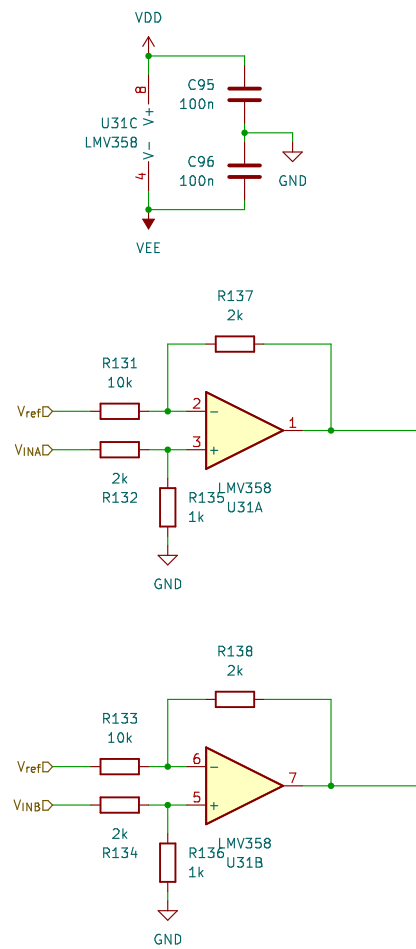
Size: A4 Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

Rev: 1

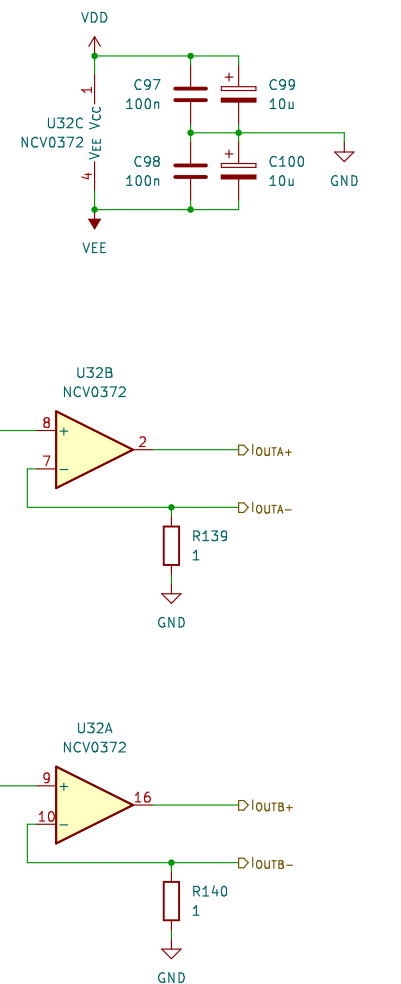
Id: 18/21

Level Scaling/Shifting



Universal OpAmp

Constant Current Source



Alternative Power OpAmps: TCA0372, TCA0372B, NCV0372, NCV0372B, NCS2372, L2720W, (L272D [5016 narrow])

Maximilian Stabel
ETH Zürich

Sheet: /8-channel_current_source3/v-i_converter2/
File: v-i_converter.kicad_sch

Title: Voltage-to-Current (V-I) Converter

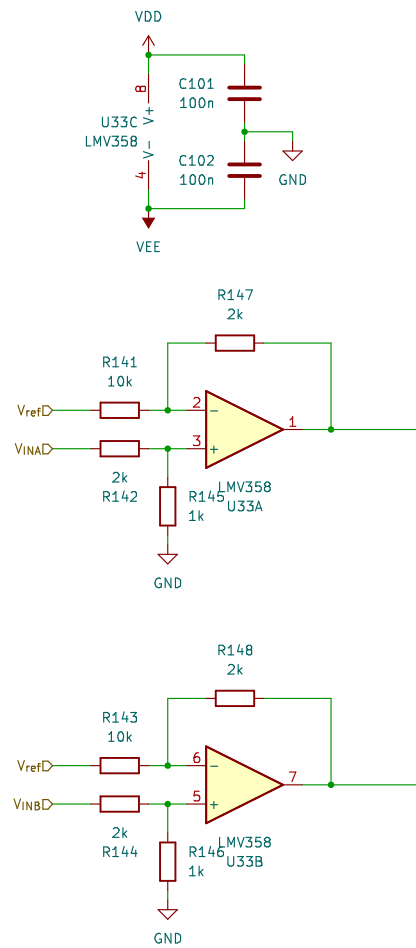
Size: A4 Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

Rev: 1

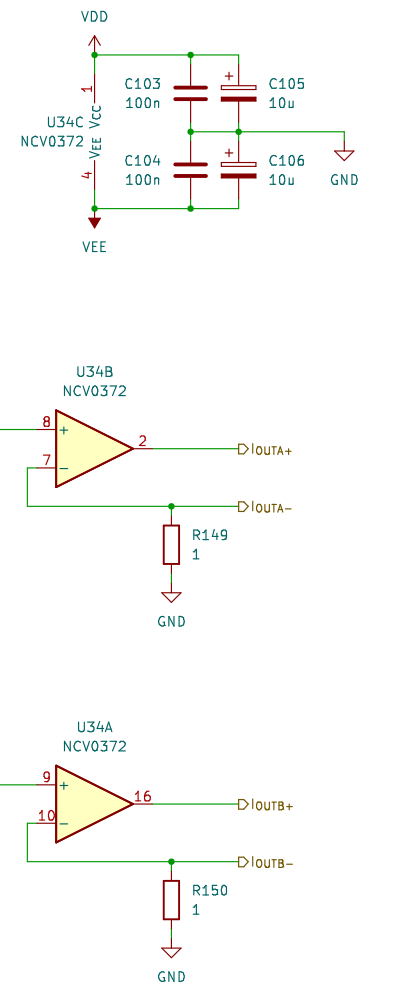
Id: 19/21

Level Scaling/Shifting



Universal OpAmp

Constant Current Source



Alternative Power OpAmps: TCA0372, TCA0372B, NCV0372, NCV0372B, NCS2372, L2720W, (L272D [5016 narrow])

Maximilian Stabel
ETH Zürich

Sheet: /8-channel_current_source3/v-i_converter3/
File: v-i_converter.kicad_sch

Title: Voltage-to-Current (V-I) Converter

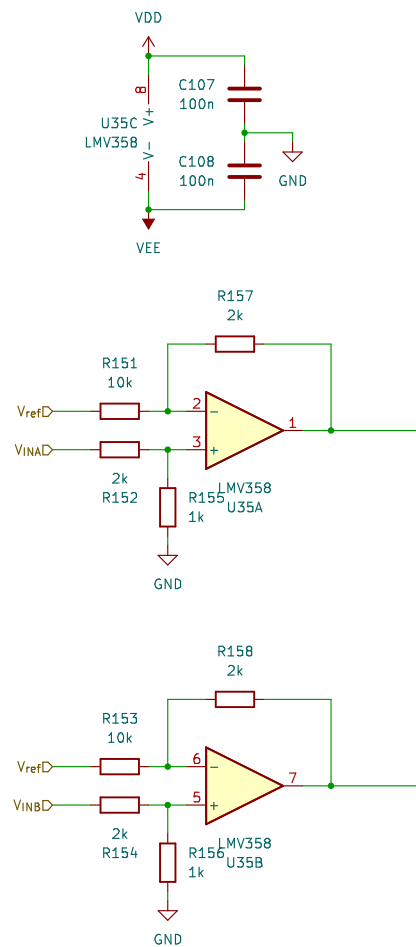
Size: A4 Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

Rev: 1

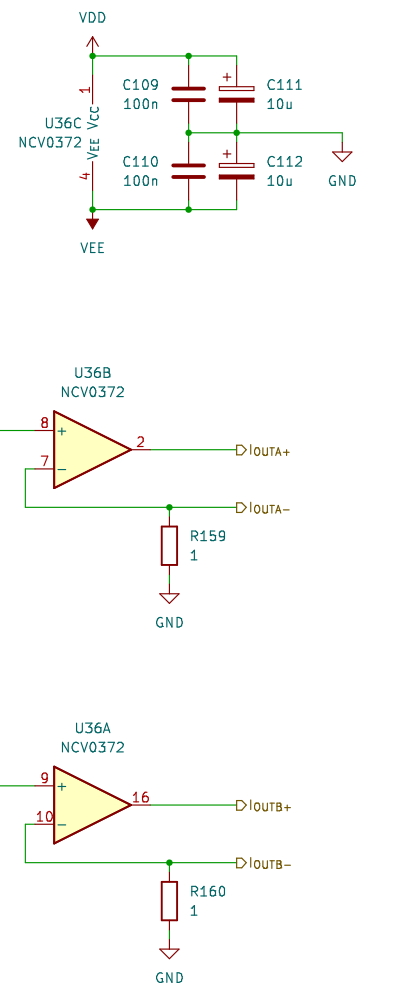
Id: 20/21

Level Scaling/Shifting



Universal OpAmp

Constant Current Source



Alternative Power OpAmps: TCA0372, TCA0372B, NCV0372, NCV0372B, NCS2372, L2720W, (L272D [5016 narrow])

Maximilian Stabel
ETH Zürich

Sheet: /8-channel_current_source3/v-i_converter4/
File: v-i_converter.kicad_sch

Title: Voltage-to-Current (V-I) Converter

Size: A4 Date: 2023-06-29

KiCad E.D.A. kicad 7.0.7-2.fc38

Rev: 1

Id: 21/21