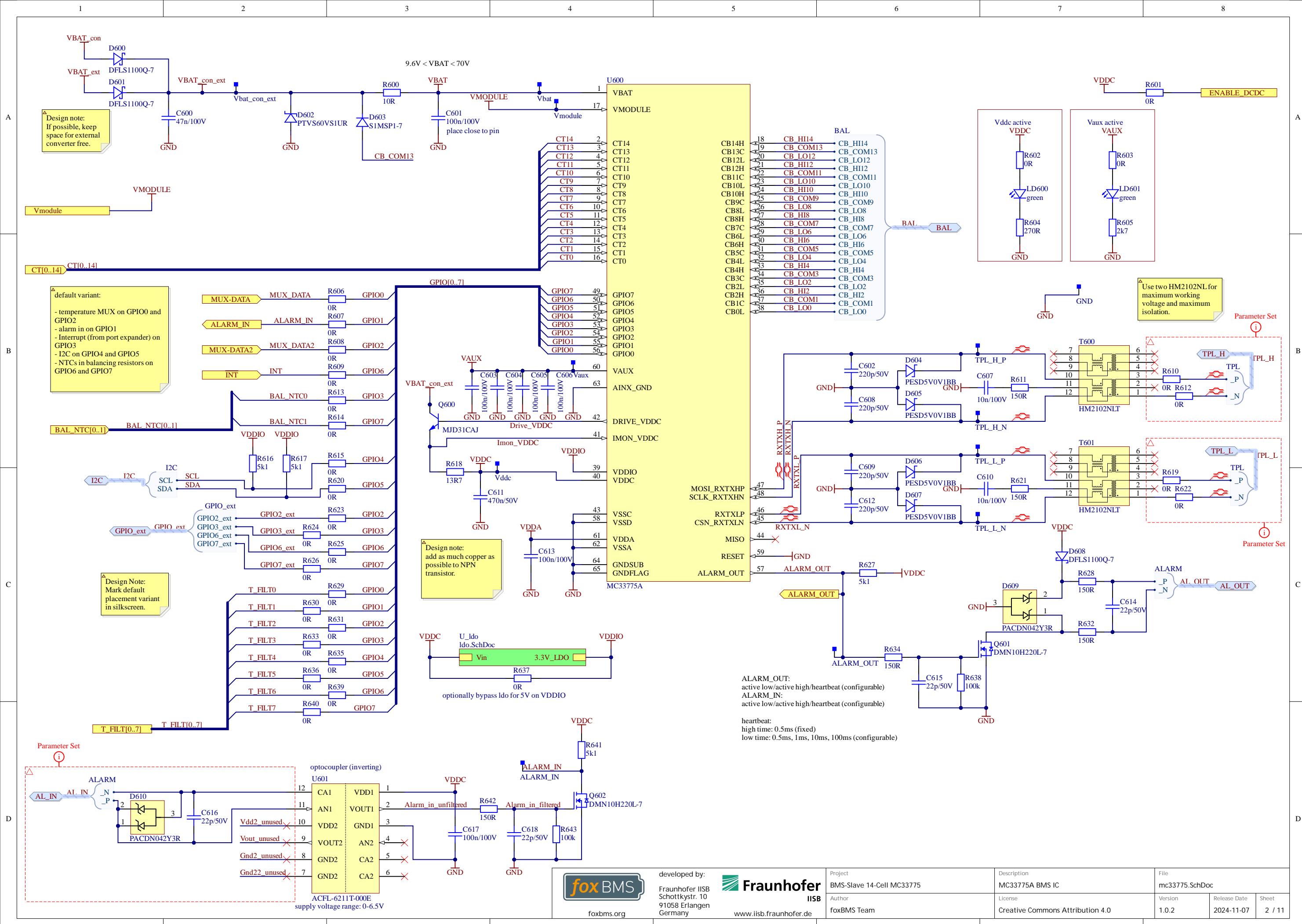
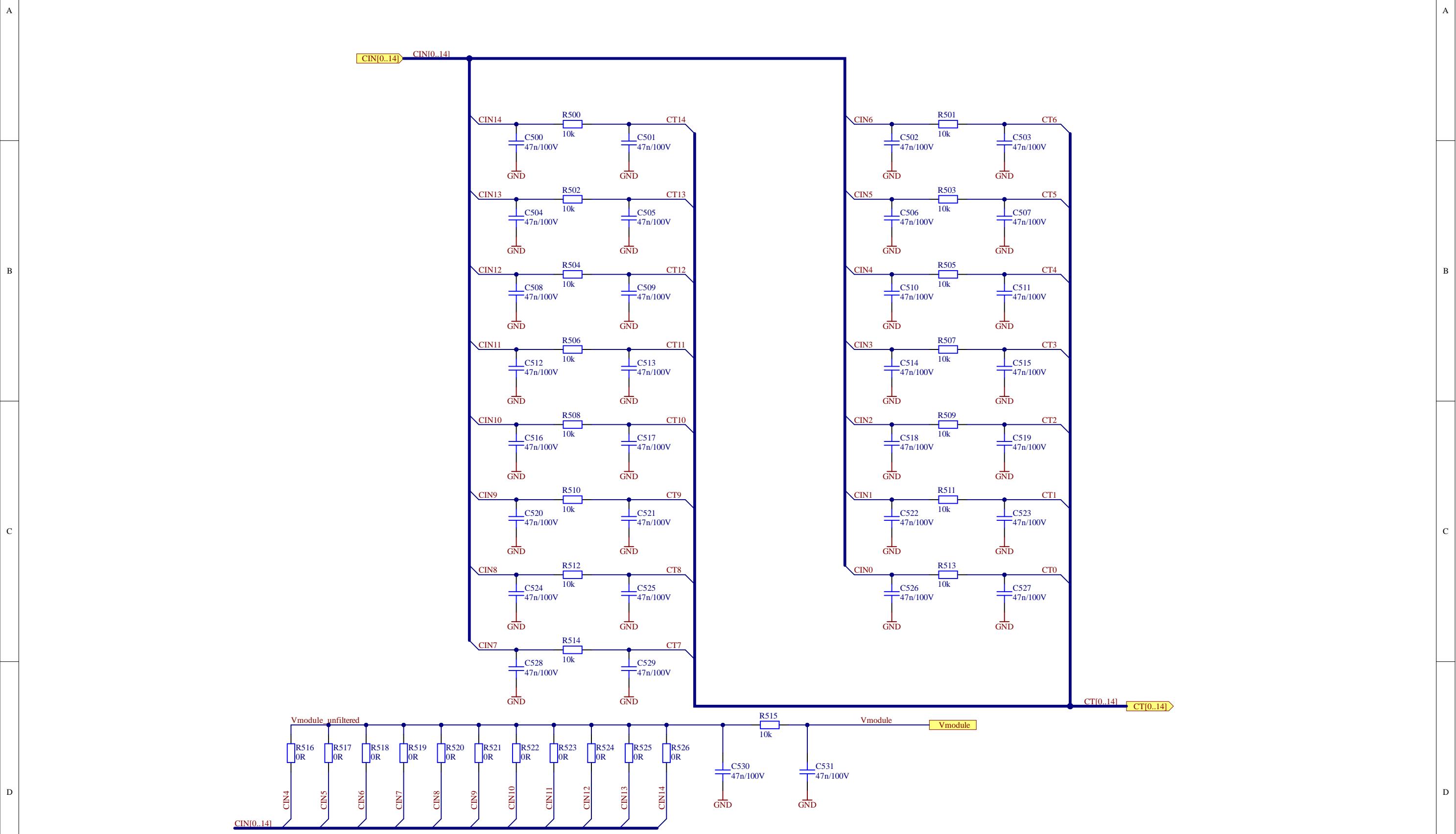


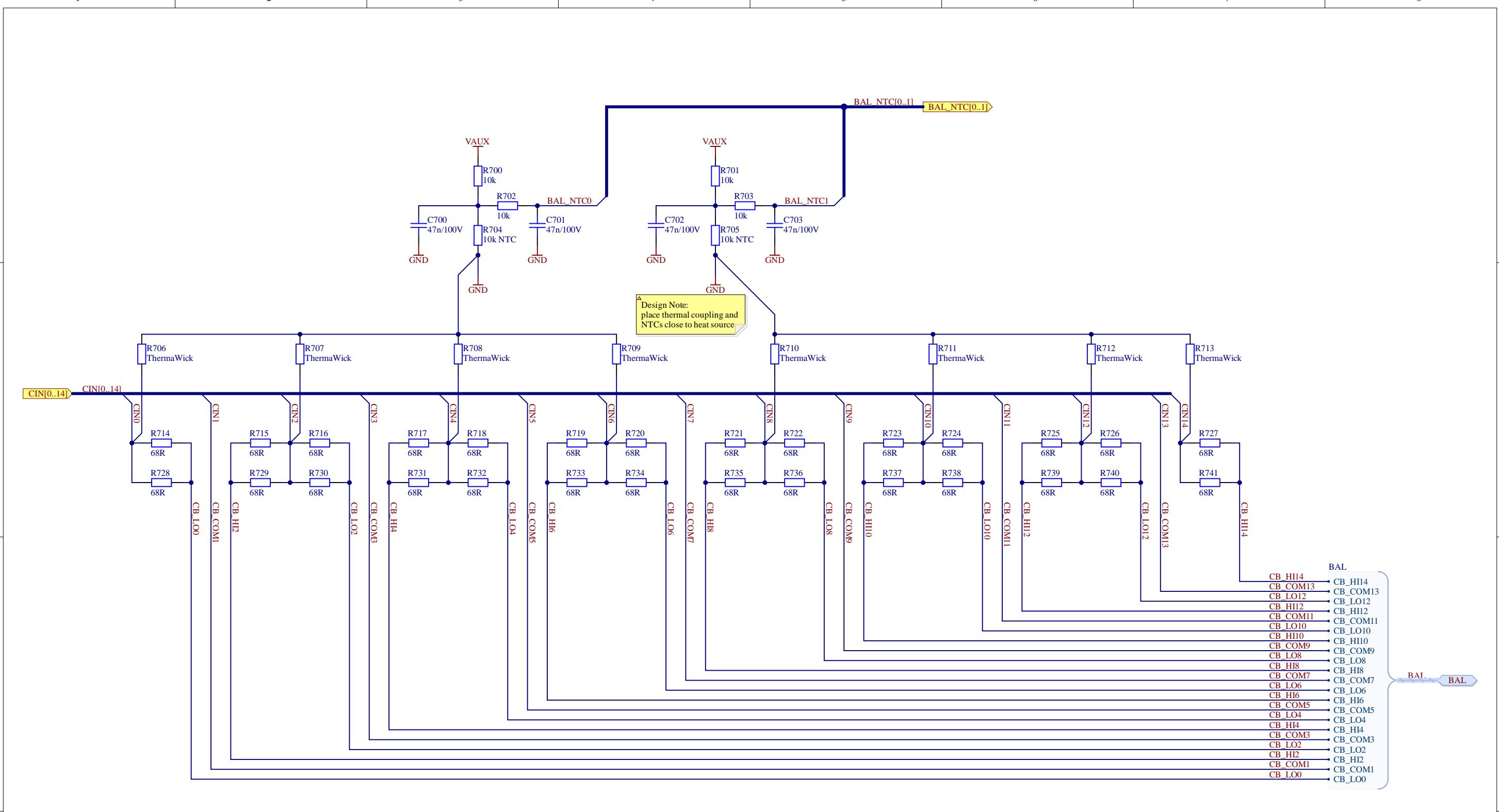
Rationale for creepage and clearance distances

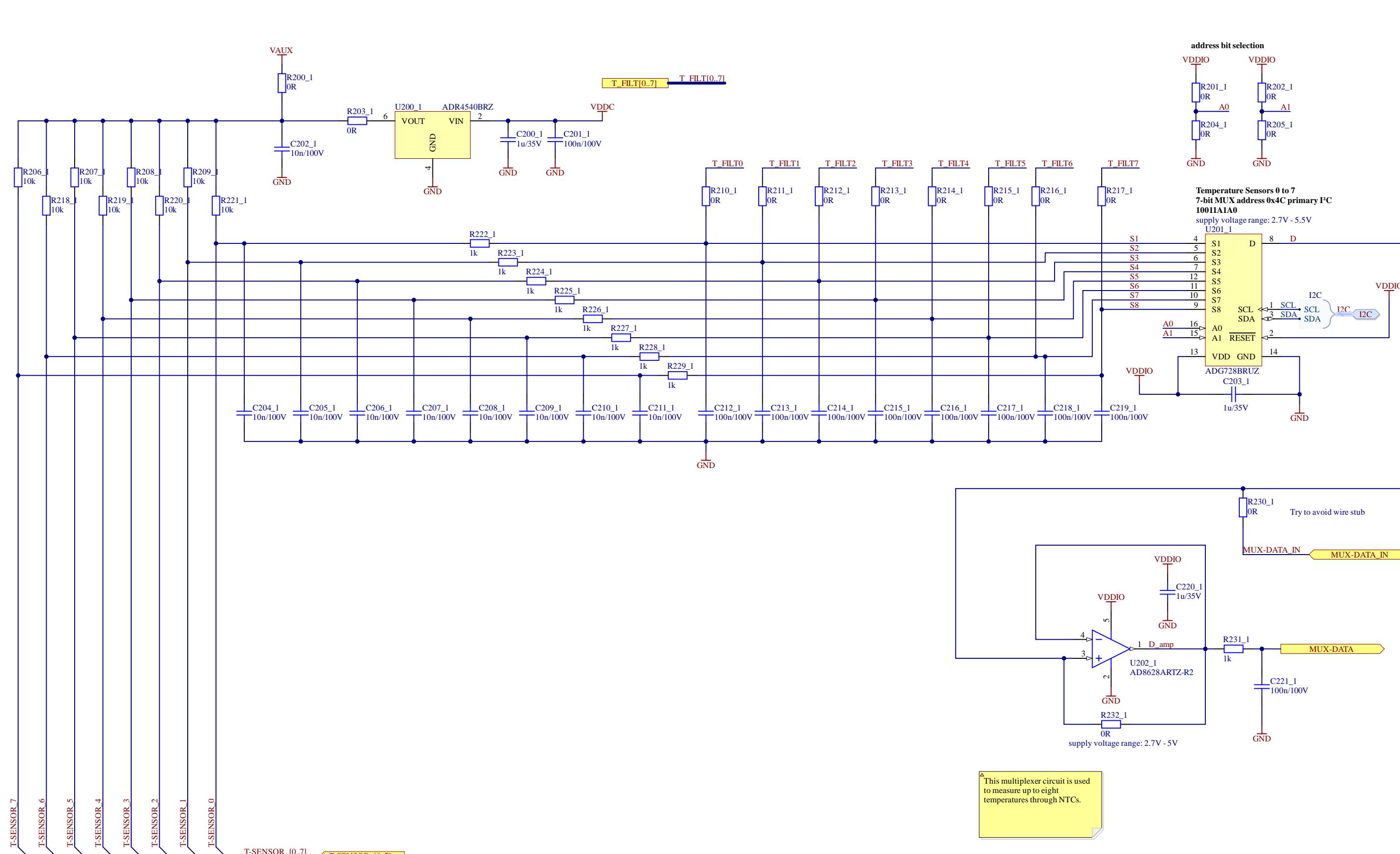
- * according to DIN EN 60664-1 (VDE 0110-1):2008-01
- * working voltage up to 1600Vdc
- * functional isolation for 1600Vdc
- * assume "Verschmutzungsgrad 2" and "Isolierstoffklasse 3b"
- * creepage distance: 16.0mm (table F.4)
- * design note: set creepage distance rule between net classes in PCB design
- * assumptions for clearance: 3600V (based on requirements for transient overvoltage), homogenous field: 1.1mm (table F.7)
- * design note: set clearances to net classes in PCB design

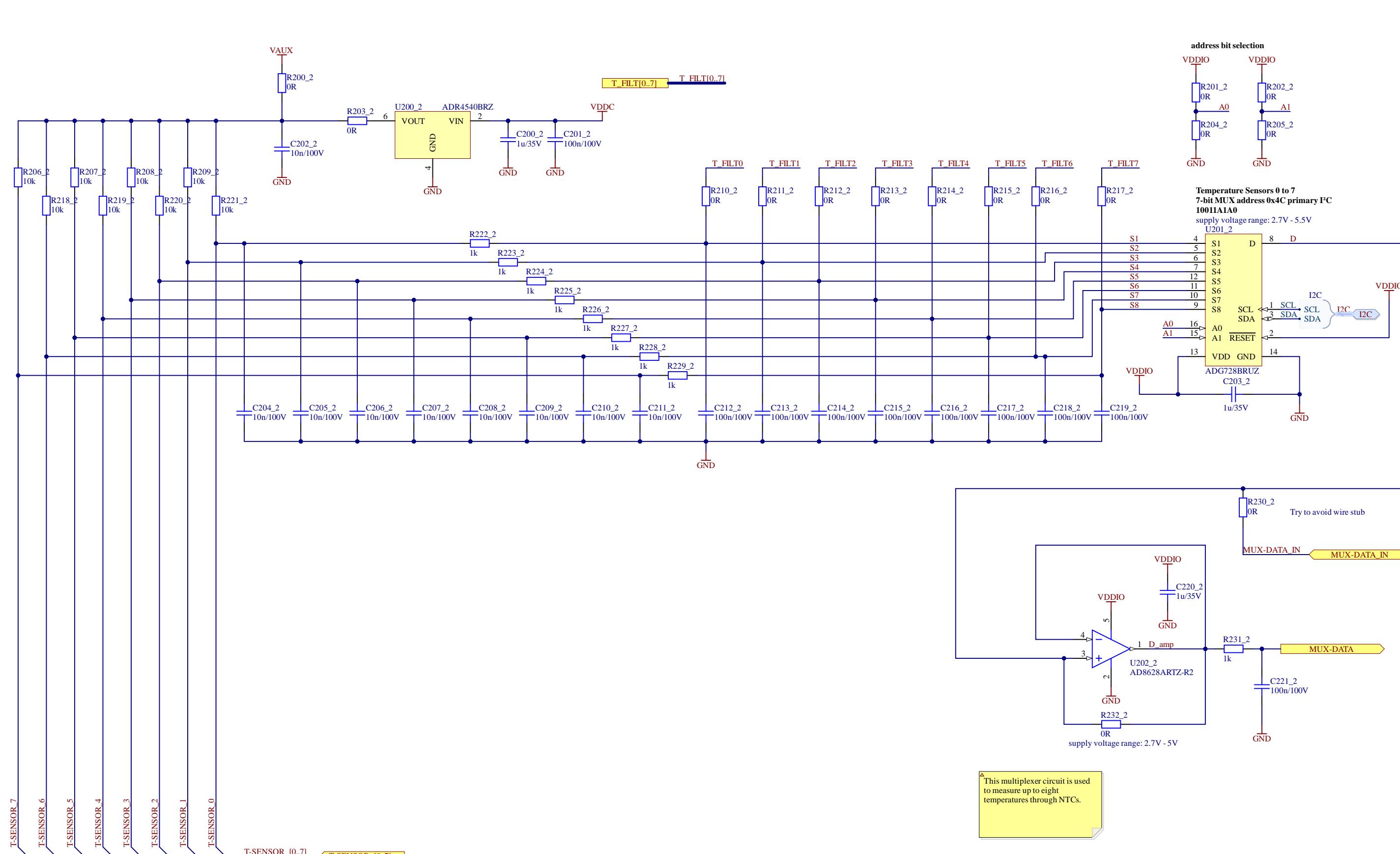
* take care with the mounting points: The spacing around them (6.05mm) is designed for a working voltage of 605Vdc at "Verschmutzungsgrad 2" and "Isolierstoffklasse 3b" or a working voltage of 1600Vdc at a "Verschmutzungsgrad 1" and "Isolierstoffklasse 3b". Consider potential connections to chassis when mounting the board and critically assess the situation.







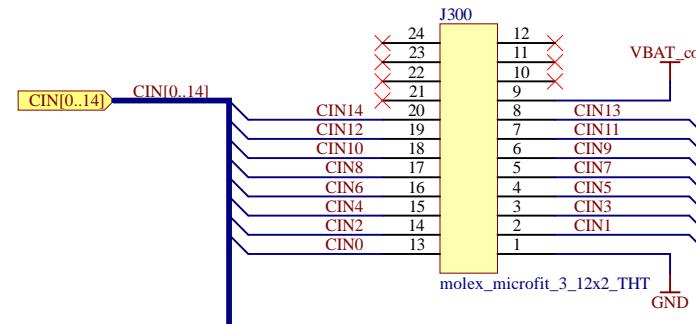
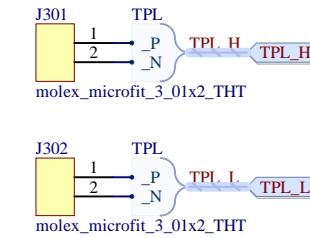
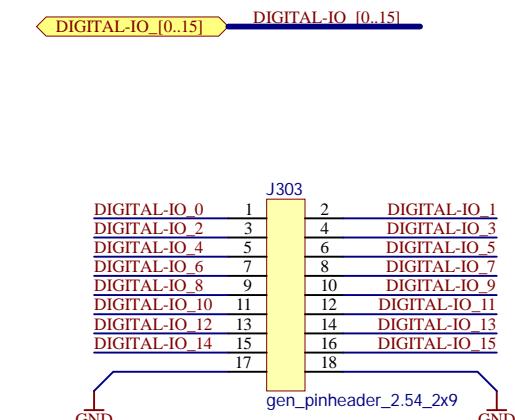




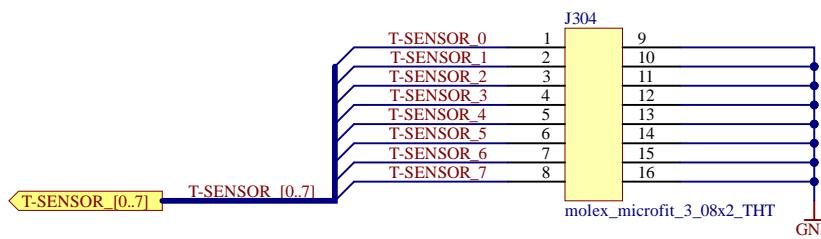
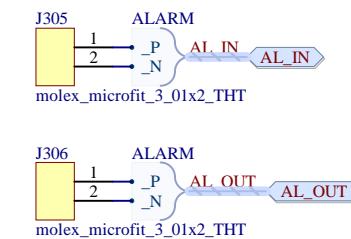
T-SENSOR_7
T-SENSOR_6
T-SENSOR_5
T-SENSOR_4
T-SENSOR_3
T-SENSOR_2
T-SENSOR_1
T-SENSOR_0

T-SENSOR [0..7] → T-SENSOR [0..7]

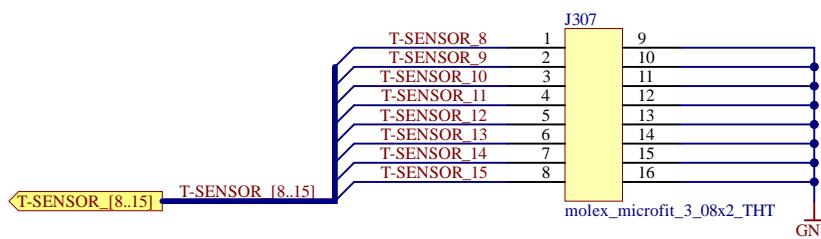
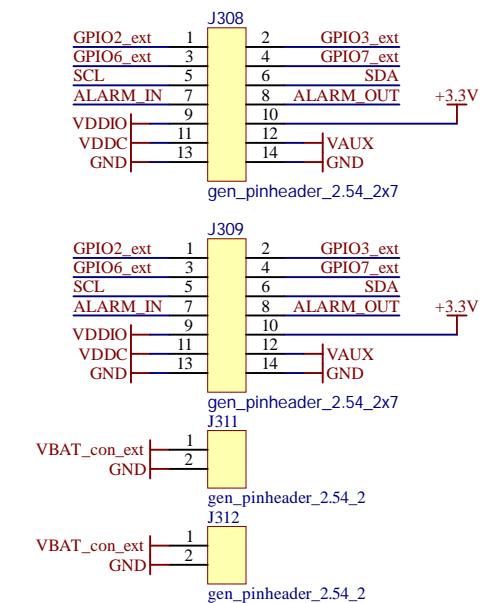
A

Battery cell connector**TPL communication connectors****GPIO extension**

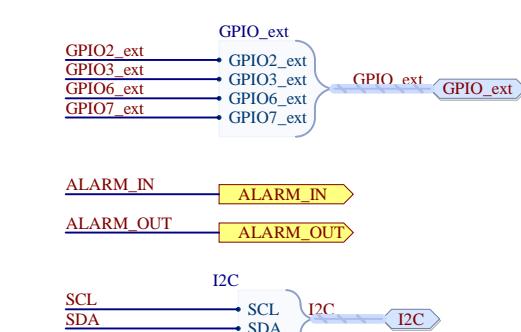
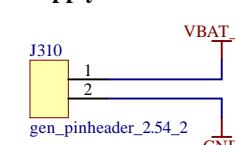
B

Temperature sensor connector**Alarm communication connectors**

C

**Extension connectors**

D

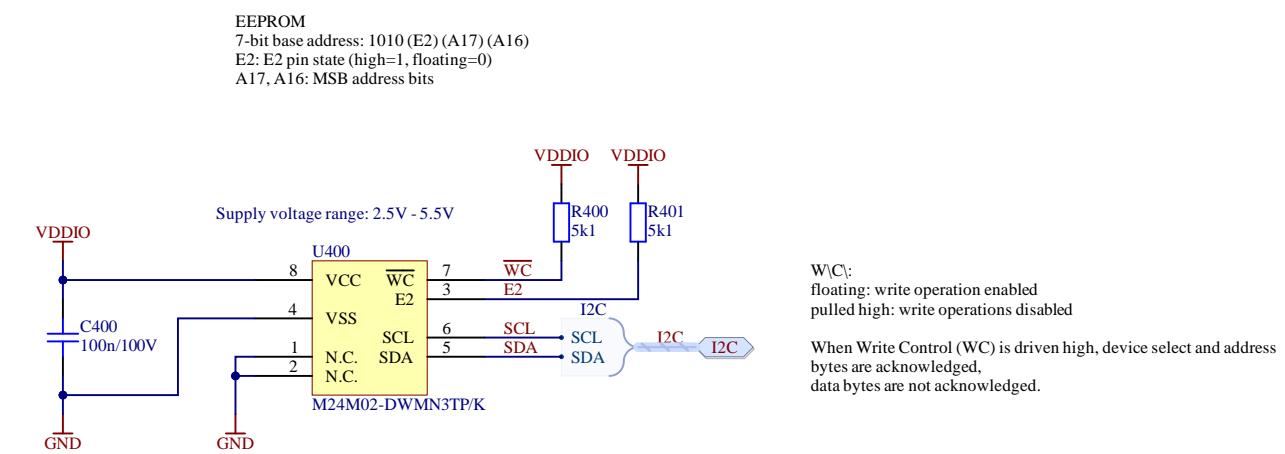
External supply connector

A

A

B

B



Replace with Cypress CY15B256J-SXE (supply voltage range: 2.0V - 3.6V) for FRAM option.

C

C

D

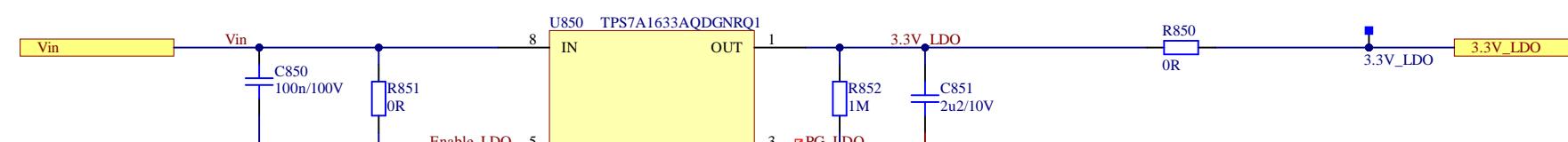
D

A

A

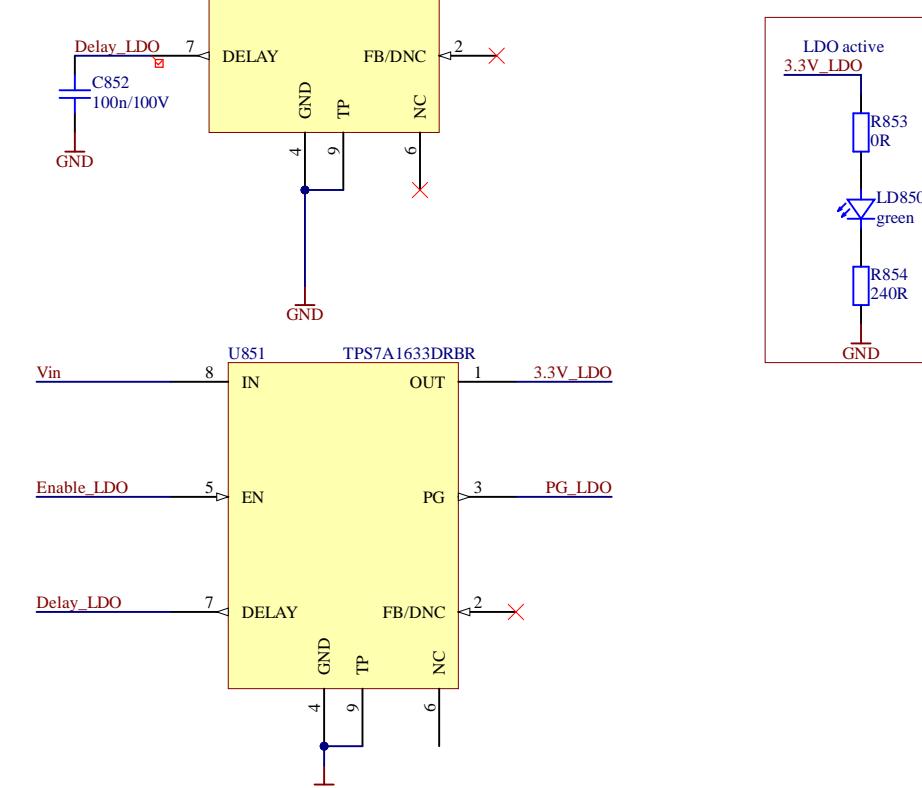
B

B



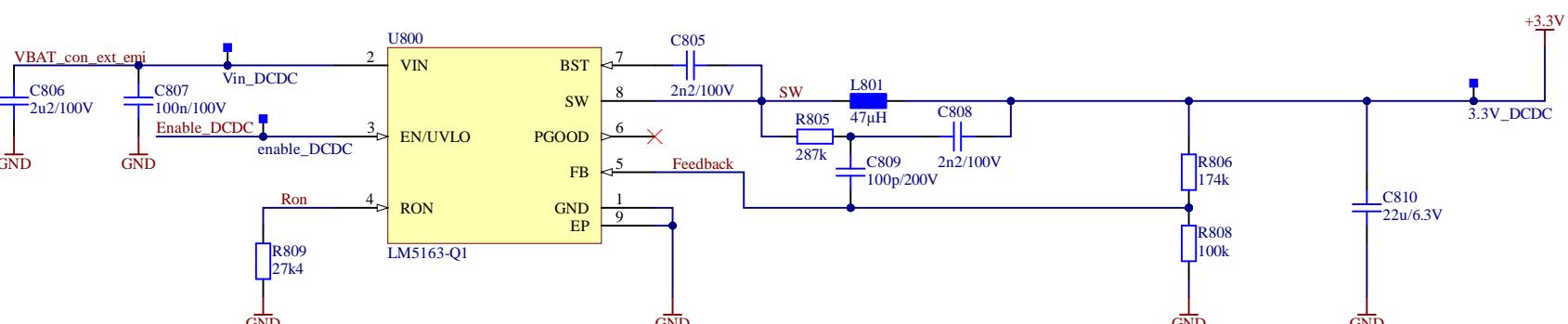
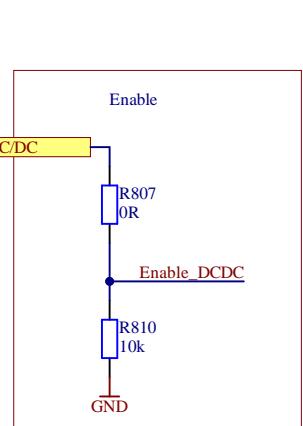
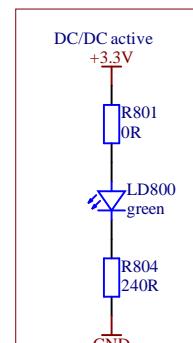
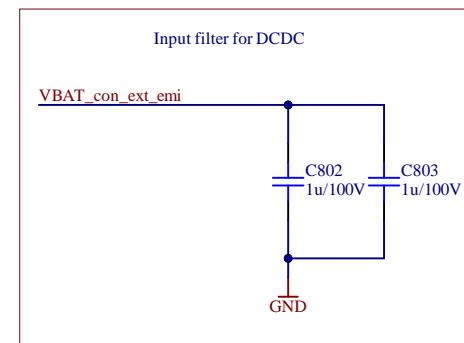
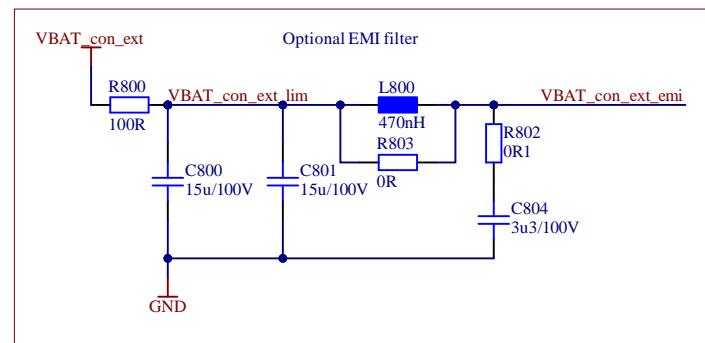
C

C



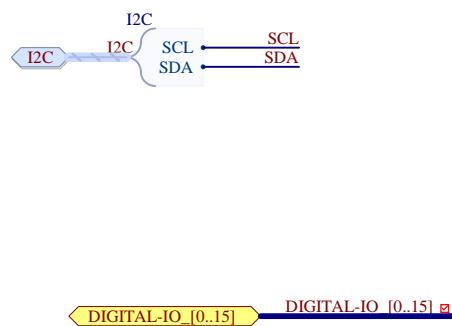
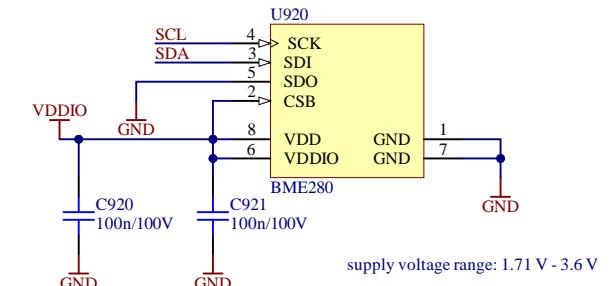
D

D



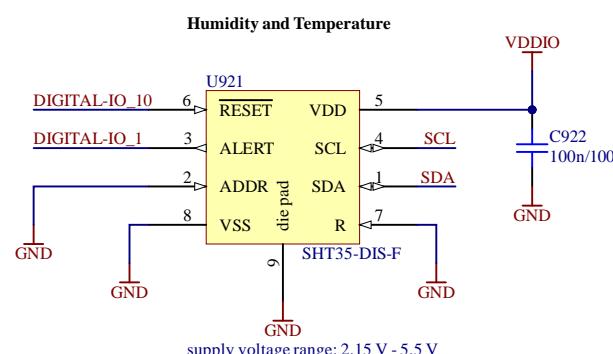
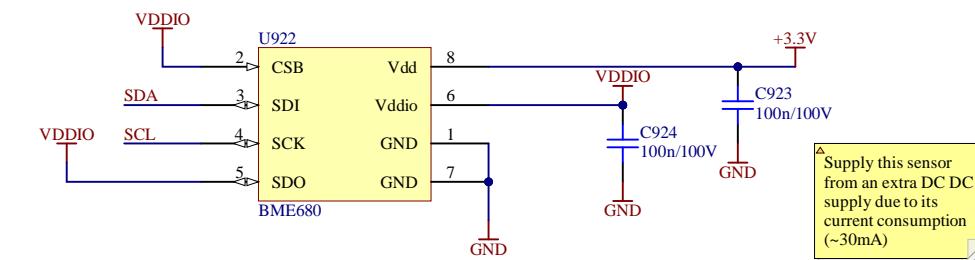
The DC/DC converter is used for applications where larger currents than the LDO can supply are needed.

A

**Humidity, Pressure and Temperature**

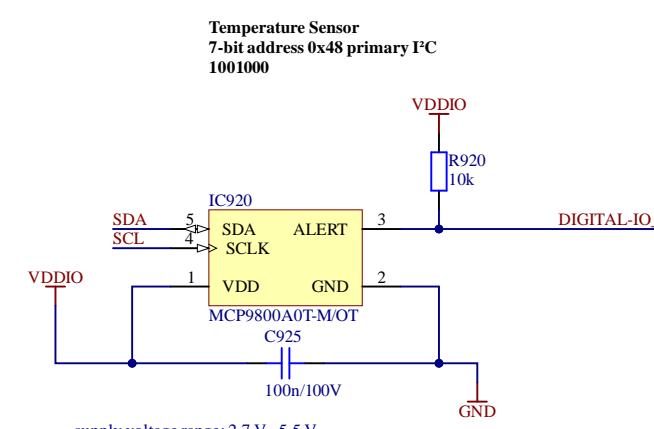
supply voltage range: 1.71 V - 3.6 V

B

**Humidity, Pressure, Temperature, Volatile Organic Compounds (VOC)**

Supply this sensor from an extra DC DC supply due to its current consumption (~30mA)

C



±0.5°C (typ.) at +25°C
 ±1°C (max.) from -10°C to +85°C
 ±2°C (max.) from -10°C to +125°C
 ±3°C (max.) from -55°C to +125°C

Attention: use -A0T Type (I2C address conflict otherwise)!

Alert temperature can be configured via I2C

I2C addresses

Analog MUX bank0: 1001100
 Analog MUX bank0: 1001101
 port expander: 0100000

M24M02-A125: 101xxxx
 CY15B256J-SXE: 1010xxx

SHT35: 1000100
 MCP9800A0T: 1001000
 BME280: 1110110
 BME680: 1110111

Temperature Sensor MCP9800 is qualified AEC-Q100

D

1

2

3

4

5

6

7

8

