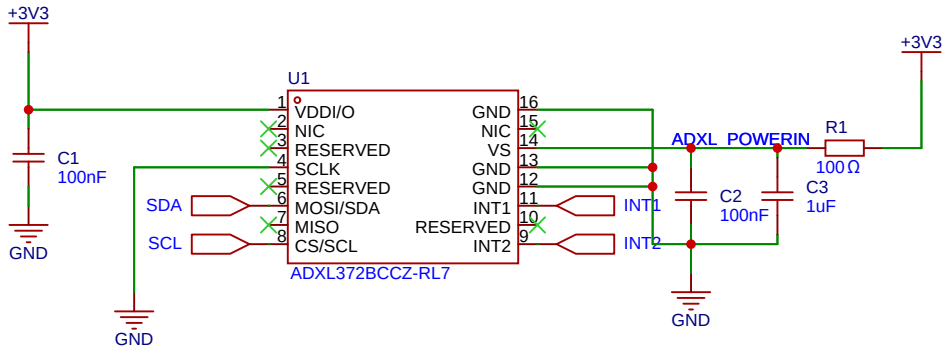
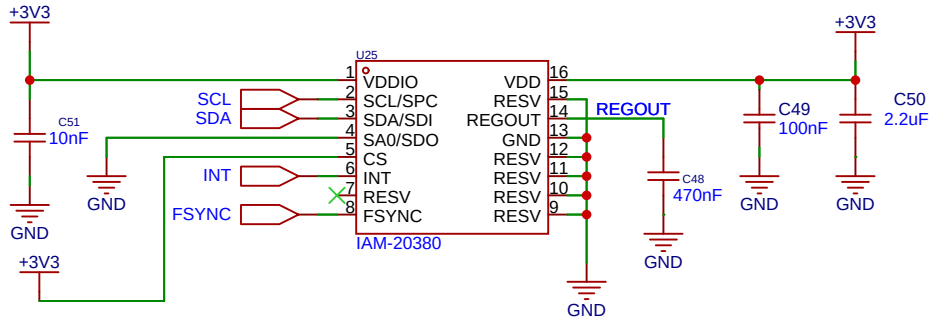
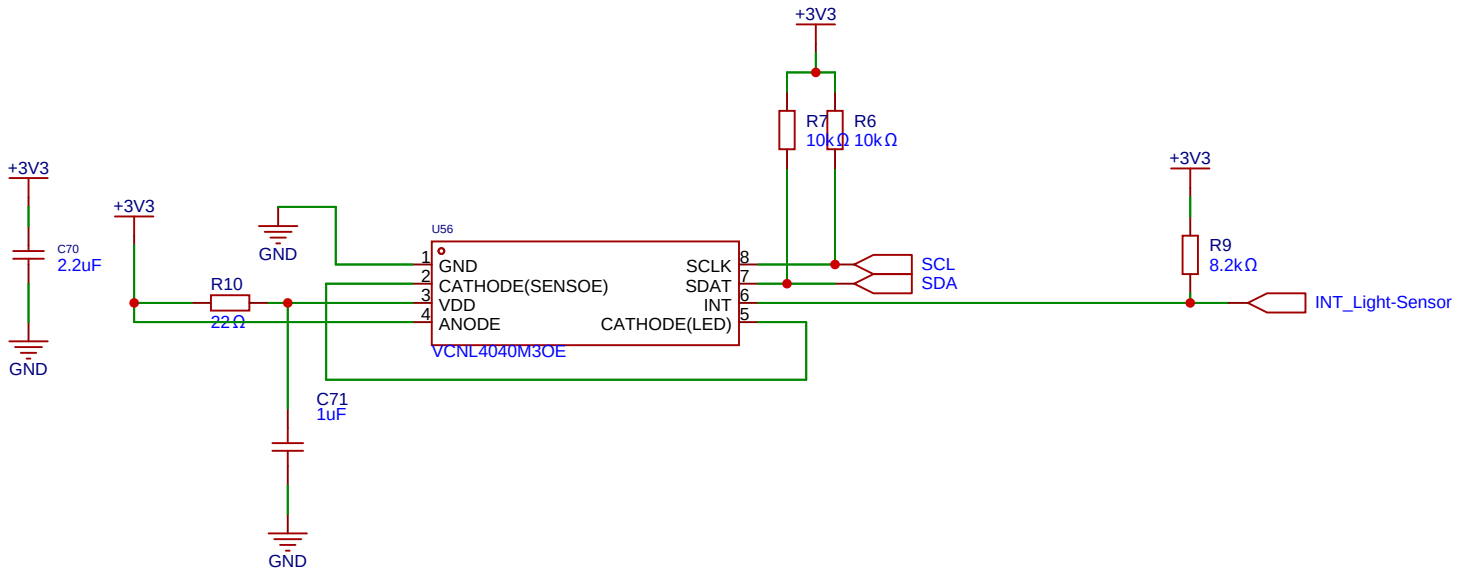



| | | | |
|---|---|---|---|
| Schematic | Schematic1 | Update Date | 2024-05-28 |
| | | Create Date | 2024-03-06 |
| Page | ADXL372BCCZ-RL7 | Part Number | JLCPCB-002 |
| Drawed | EasyEDA Pro | Brainsim MG Design V1.2 | |
| Reviewed | EasyEDA Pro | | |
| | | | |
| | | VER / SIZE / PAGE 1 OF 5 | |
| EasyEDA | | V0.1 / A4 | EasyEDA.com |




For I2C Configuration (CS=1 & SD0=0) or (CS=1 & SD0=1)

| | | | |
|---|---|---|---|
| Schematic | Schematic1 | Update Date | 2024-04-19 |
| | | Create Date | 2024-03-06 |
| Page | IAM-20380 | Part Number | JLCPCB-002 |
| Drawed | EasyEDA Pro | Brainsim MG Design V1.2 | |
| Reviewed | EasyEDA Pro | | |
| | | VER / SIZE / PAGE 2 OF 5 | |
| EasyEDA | V0.1 / A4 | EasyEDA.com | |




| | | | |
|---|---|---|---|
| Schematic | Schematic1 | Update Date | 2024-07-03 |
| | | Create Date | 2024-03-06 |
| Page | VCNL4040 | Part Number | JLCPCB-002 |
| Drawed | EasyEDA Pro | Brainsim MG Design V1.2 | |
| Reviewed | EasyEDA Pro | | |
| | | VER | SIZE |
| | | V0.1 | A4 |
| EasyEDA | | PAGE 3 OF 5 | EasyEDA.com |

***Peak inductor Current: 247.35mA***

***Vout=3.3V***
***Vin=2.7V***
***Iout= 50mA***
***Efficiency=0.9***
***f=***
***L=2.2uH***
***Vout=3.3V***
***Vout=3.3V***

the smaller the inductor ripple current and the lower the core and conduction losses of the converter. Conversely, larger inductor values cause a slower load transient response. To avoid saturation of the inductor, the peak current for the inductor in steady state operation is calculated using Equation 5. Only the equation that defines the switch current in boost mode is shown because this provides the highest value of current and represents the critical current value for selecting the right inductor.

Duty Cycle Boost $$D = \frac{V_{OUT} - V_{IN}}{V_{OUT}} \quad (4)$$

$$I_{PEAK} = \frac{Iout}{\eta \times (1 - D)} + \frac{Vin \times D}{2 \times f \times L} \quad (5)$$

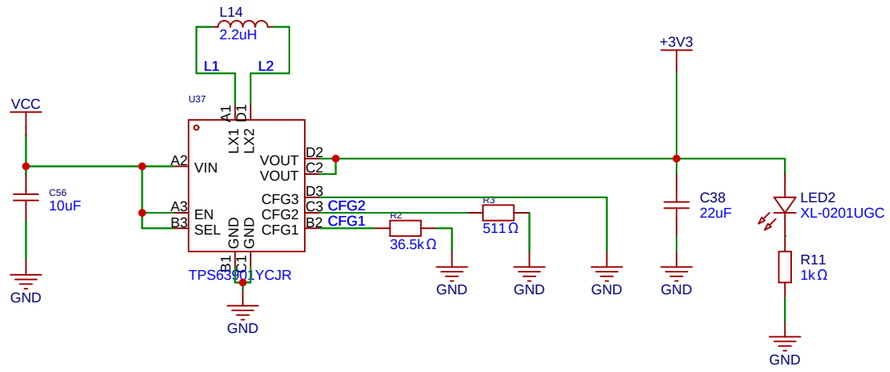
where

- D is duty cycle in boost mode.
- *f* is the converter switching frequency.
- L is the inductor value.
- η is the estimated converter efficiency (use the number from the efficiency curves or 0.9 as an assumption).

**Note**

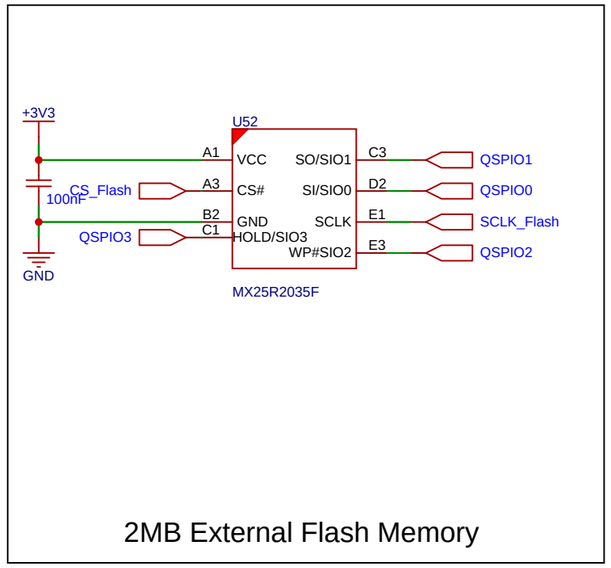
The calculation must be done for the minimum input voltage in boost mode.

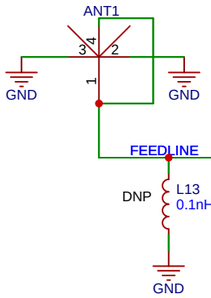
# *Calculation of Inductor Peak current*




Rcfg1=36.5k sets the output voltage to 3.3V and
Rcfg2=511Ohn sets the max output current to 100mA
SEL Pin high selects Vo2 as output voltage. Which is set to 3.3V

| | | | |
|---|---|---|---|
| Schematic | Schematic1 | Update Date | 2024-07-19 |
| | | Create Date | 2024-03-06 |
| Page | Power Section | Part Number | JLCPCB-001 |
| Drawed | EasyEDA Pro | Brainsim MG Design V1.2 | |
| Reviewed | EasyEDA Pro | | |
| | | VER / SIZE / PAGE 4 OF 5 | |
| EasyEDA | | V0.1 / A3 | EasyEDA.com |



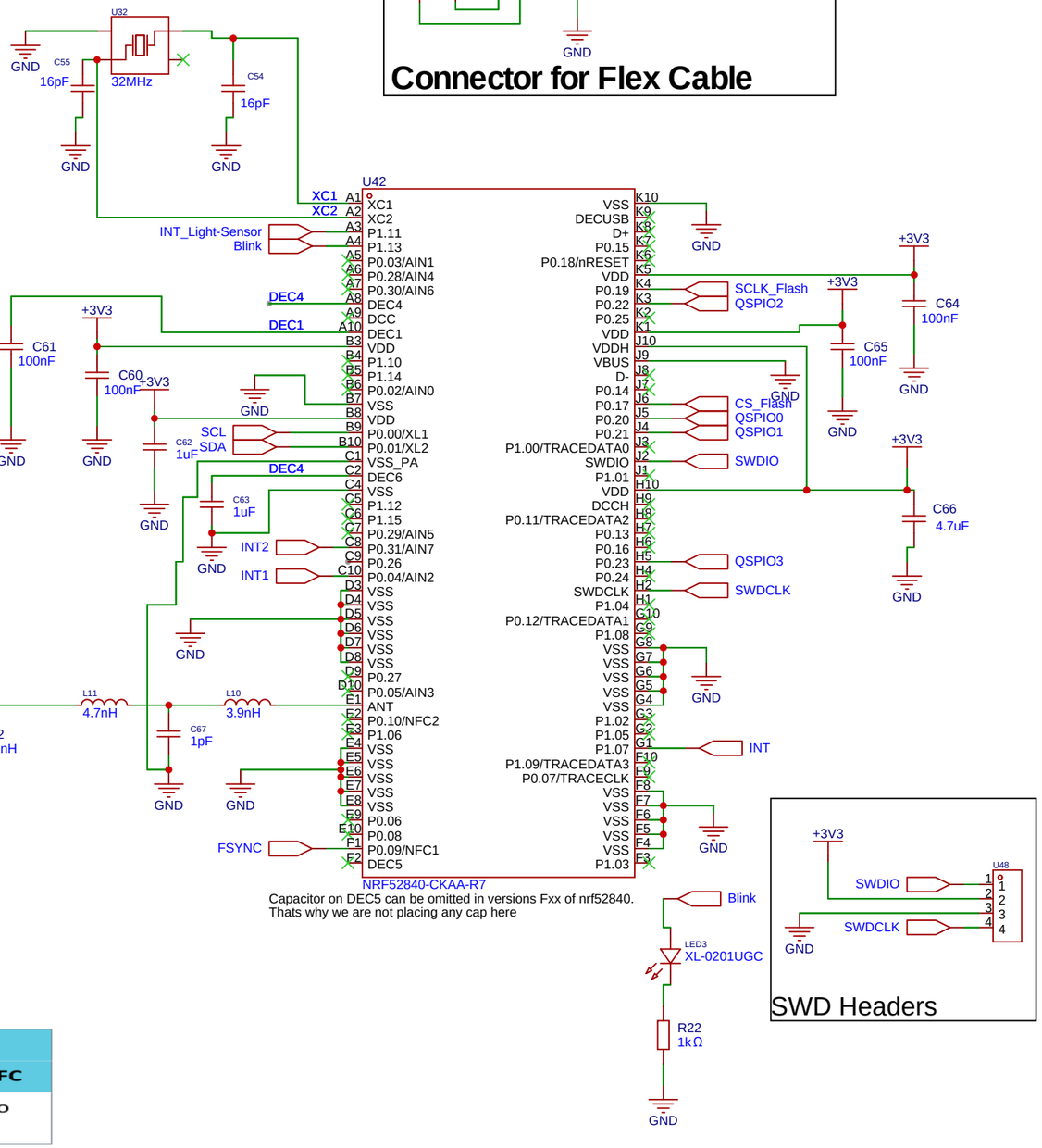




*Table 179: Bill of material for circuit configuration no. 5*

## 7.3.14 Circuit configuration no. 6 for CKAA WLCSP

Circuit configuration number 6 for CKAA WLCSP, showing the schematic and the bill of materials.

| Config no. | Supply configuration | | Enabled features | | | | |
|---|---|---|---|---|---|---|---|
| | VDDH | VDD | EXTSUPPLY | DCDCEN0 | DCDCEN1 | USB | NFC |
| Config. 6 | N/A | Battery/Ext. regulator | No | No | No | No | No |

*Table 180: Configuration summary for circuit configuration no. 6*

| | | | |
|---|---|---|---|
| Schematic1 | | Update Date | 2024-06-11 |
| | | Create Date | 2024-03-06 |
| NRF52840 | | Part Number | JLCPCB-001 |
| EasyEDA Pro | Brainsim MG Design V1.2 | | |
| EasyEDA Pro | | | |
| | | VER | SIZE |
| | | V0.1 | A4 |
| | | PAGE 5 OF 5 | |
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