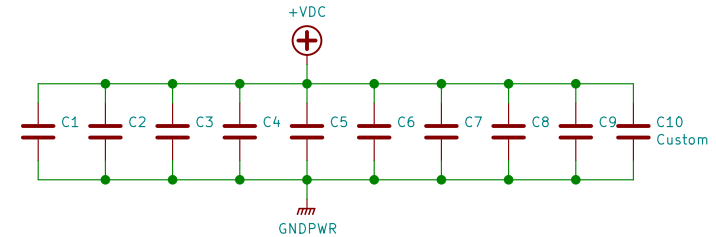


Isolated Flyback Converter
 Direct input range: 6 – 100 V
 1) From +VDC, Vdrive, external supply
 2) Isolated from any DC, especially from any powered bus
 3) With a start up, can add a value to any low voltage source like a single accu
 4) GND can be different from DGND/PGND or isolated
 5) 15 LfFePo 3.2 V + 2.8 = 6 V as input, or 25 * 1.5 V...
 6) Single 1.2 V supply can function, but should not.
 Output:
 1) It can be single output, but should not
 2) Outputs for VDD (3.6 V) and Vdrive (15 V) should be connected via trafo by user
 3) The output of around 38 V can source LM6165 or DRV8876 directly

2.8 – 3.5 V for VDD: (5:1) 5 * 0.036 MOhm = 180k
 10.5 – 11.0 V @ low VDC: (2:4) 0.5 * 0.112 MOhm = 56k
 11.0 – 11.6 V for Vdrive: (4:1) 4 * 0.1175 MOhm = 470k
 33.2 – 33.9 V maximum: (4:2) 2 * 0.340 MOhm = 680k
 Diode: Vf = 0.1 – 0.8 V

JA4456–DL from Coilcraft for TPS23752
 VDD: 7.4 – 8.0 V; 19.2 – 19.9 V; (22:22:9:4:4) 5.5 * 0.0364 MOhm = 200k
 VIO, VDD: 12 V; (22:22:9:4:4) 5.5 * 0.0182 MOhm = 100k

Kondensatoren 1206 (3216) custom values (approx. 1 € p.p.):
 - 100V 4.7µ
 - 50V 10µ
 - 25V 22µ
 - 16V 47µ

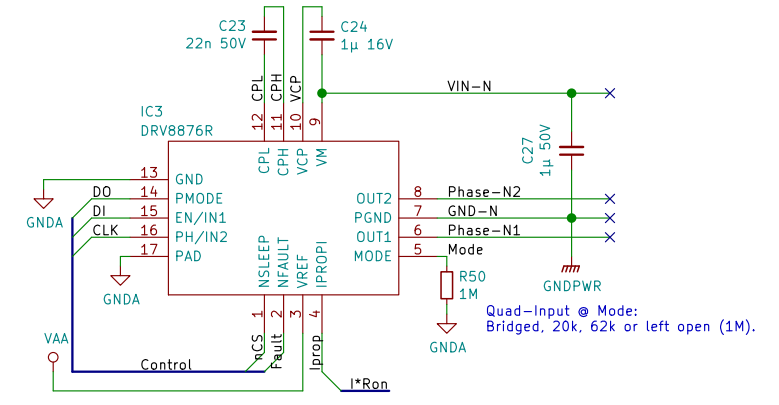
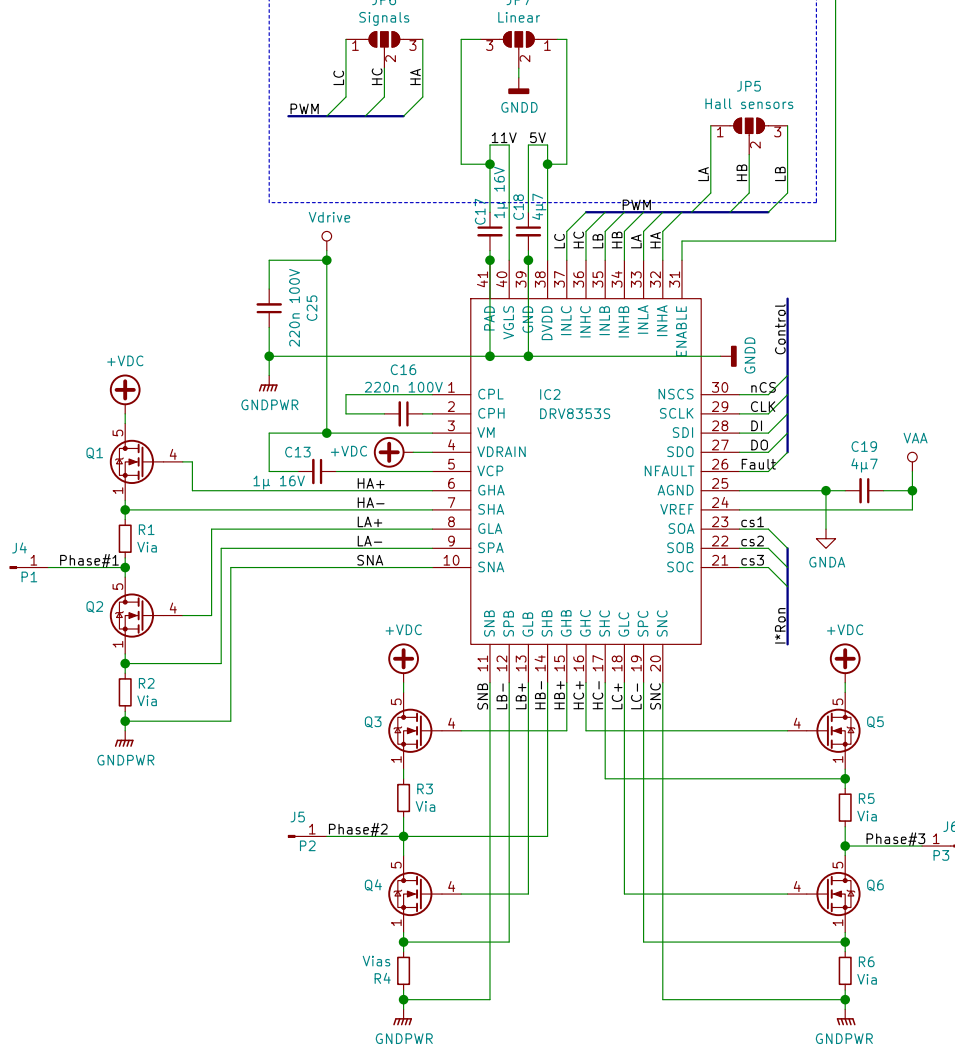
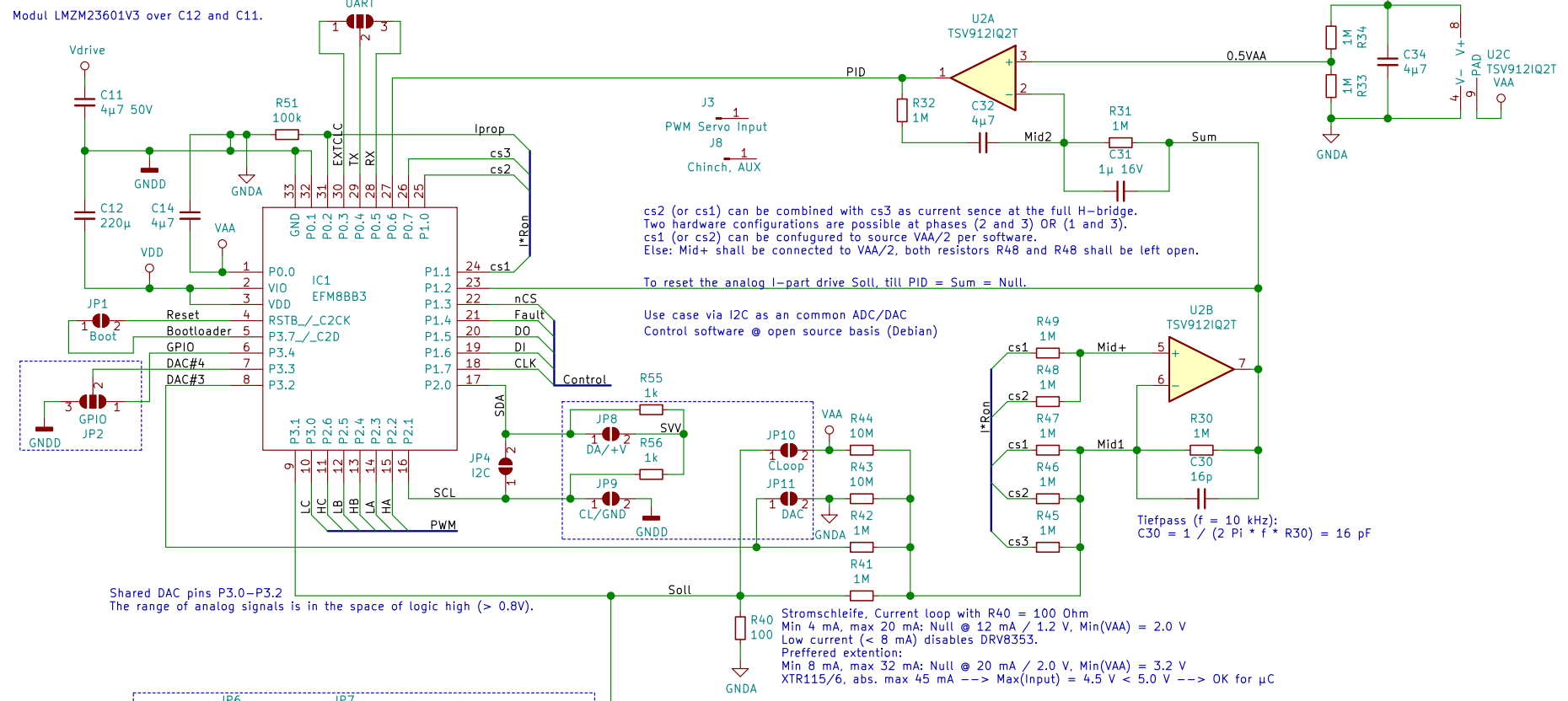


Transistoren (Low Ron, max 175 °C) custom values (approx. 2.60 € p.p.):
 - 200 V, 33 (36) A, 24 mOhm, TPW2900ENH, 8.2 nC, 150 A, max 150 °C
 - 100 V, 90 (150) A, 3.1 mOhm, TPW3R70APL, 21 nC, 500 A
 - 80 V, 116 (440) A, 3.3 mOhm, TPW4R00BNH, 18 nC, 500 A
 * 60 V, 100 (260) A, 0.95 mOhm, TPW1R306PL, 22 nC, 500 A
 - 45 V, 150 (300) A, 0.75 mOhm, TPW1R005PL, 34 nC, 500 A
 - 40 V, 150 (340) A, 0.65 mOhm, TPWR8004PL, 23 nC, 500 A
 * 30 V, 150 (420) A, 0.36 mOhm, TPWR6003PL, 30 nC, 500 A

- 100 V, 100A, 16A, 5.3 mOhm, CSD19531Q5A, 37 nC, 337 A
 - 25 V, 100 A, 59 A, 0.49 mOhm, CSD16570Q5B, 95 nC, 400 A

34 nC per gate, 3 gates, driven to 12 V at 20 kHz result in 24 mA...
 It's nearly < max 20 mA (DRV835x DS P...) --> mostly OK.

RS232–Terminal for configuration
 With CH341A or MCP2221 module bridge to USB like
 MikroElektronika MIKROE–483, MCP2221A Breakout and Adafruit 4471
 With Teensy 4.0 Development Board connect to Cortex–M7 600 MHz power of 100 mA.



Widerstände
 0402 (1005): 1 MOhm nicht gekennzeichnet, automatisch beschückbar
 0603 (1608): 470 kOhm sind vorbelegt, von Hand noch zu löten
 0805 (2012): gut erkennbar, beschriftet, 100 Ohm nicht bestückt

Kondensatoren
 0402 (1005) @ 2 pins with 0.5 mm pitch:
 - 6.3 V 4.7 µF @ 125 °C (sonst auch 10 µF)
 - 16 V 1 (max 2.2) µF
 - 50 V 22 nF
 - 100 V 10 nF

0603 (1608):
 (6.3 V) 47 µF Walsin
 (16 V) 10 µF Walsin
 - 50 V 1 µF Yageo, Taiyo Yuden
 - 100 V 220 nF
 0805 (2012):
 - 100 V 1 µF