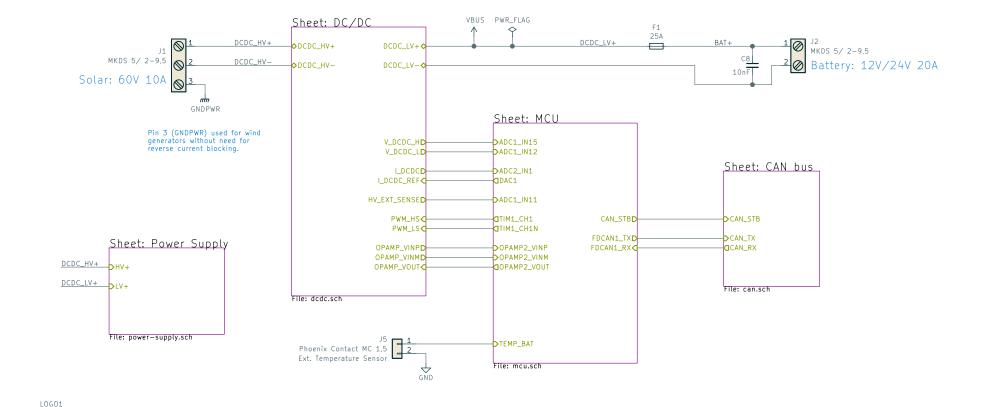
## MPPT charge controller for DIN rail mounting



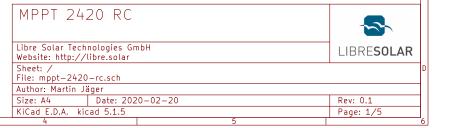




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## DC/DC power stage DCDC\_HV+ D14 SS14FL +12V HS\_DRV IPA045N10N3G RV2 U 56V LS\_DRV L1 ₽HV\_EXT\_SENSE SW\_NODE -♦DCDC\_LV+ D15 SS14FL 33μΗ Q2 IPA C44 LS\_DRV \_\_\_\_\_0.22μF IPA045N10N3G T0.22μF C6 NPO/COG MMBT3904 D8 2.5V DCDC\_HV- < -◆DCDC\_LV-Q8 NT1 IRF135B203 GNDPWR GND MOSFET for reverse polarity protection and PV reverse current blocking The HV\_EXT\_SENSE pin can be used to detect and enable a dump load connected to HV- in a wind charge controller setup (generator connected to HV+ and GNDPWR) +3.3V MOSFET driver D16 1N4148 +12V I\_DCDC\_REFD EE J 1 VDD HB C10 PWM\_HSD 2 HI GND **─**DV\_DCDC\_H 100nF SHUNT\_P 3 LI PWM\_LSDно 6 SW\_NODE HS **₽**I\_DCDC SHUNT\_N LS\_DRV VSS LO GND LM5107 GNDPWR $\dot{}$ GND GND ►DV\_DCDC\_L MPPT 2420 RC GND GND Use MCU internal OPAMP if U3 is not populated. Libre Solar Technologies GmbH LIBRE**SOLAR** Website: http://libre.solar Sheet: /DC/DC/ File: dcdc.sch Author: Martin Jäger If not stated otherwise, all MLCC 50V X7R Size: A4 Date: 2020-02-20 Rev: 0.1 KiCad E.D.A. kicad 5.1.5 Page: 2/5

## HV/LV side to 3.3V (SMPS) PWR\_FLAG Q9 DMP10H4D2S L2 4.7μH PWR\_FLAG+3.3V SMPS\_SUPPLY HV+D-L3 47μH ΕN C18 C19 4.7μF FB GND LMR16006X GND C21 \_\_C23 10µF 10µF 25V, X5R 25V, X5R R60 12k GND GND GND T2 MMBT3904 D9 LV+D-1N4148 12V MOSFET driver supply voltage (emitter follower) GND PWR\_FLAG +12V Use voltage from low side if available. For special cases (e.g. battery—less operation) take power from high—side 12V TP4 \_\_\_\_\_C40 \_\_\_\_\_1μF <del>=</del> 14.7μF D5 GND MPPT 2420 RC Libre Solar Technologies GmbH Website: http://libre.solar LIBRE**SOLAR** Sheet: /Power Supply/ File: power-supply.sch Author: Martin Jäger If not stated otherwise, all MLCC 50V X7R Size: A4 Date: 2020-02-20 Rev: 0.1 Page: 3/5 KiCad E.D.A. kicad 5.1.5

