Hybrid MPPT / PWM charge controller VBUS PWR_FLAG Sheet: DC/DC 25A J2 MKDS 5/ 2-9,5 DCDC_LV+ ODCDC_HV+ DCDC_LV+ MPPT input: 60V 10A ♥ DCDC_HV-H⊘ Battery: 12V/24V 20A Sheet: LV switches I_DCDCD V_DCDC_HD V_DCDC_LD ODCDC_LV+ PWM_HS PWM_LS POC_ALERTD NOC_ALERTD DI_DCDC_REF J3 MKDS 5/ 2-9,5 LOAD+ al_LOAD al_LOAD_COMP USB data File: dcdc.sch Load output: 20A Power supply for MCU w/o battery LOAD_DIS LOAD-C CP_PWM J4 MKDS 5/ 2-9,5 V_PWM_SW PWM_SW+ 200mA 1N4148 al_PWM_SW Sheet: MCU PWM in/out: 50V 20A DPWM_SW_EN PWM_SW-Shield GND ADC12_IN1 DI_LS_REF TIM1_CH1 ADC1_IN15 TIM1_CH1N ADC1_IN12 DAC1 TIM1_BKIN File: lv-switches.sch USB_DP TIM1_BKIN2 USB_DM ADC12_IN2 COMP3_INP Sheet: Accessories Sheet: Power Supply GPIOB_15D TIM8_CH1D DCDC_HV+ HV+ USART1_RX Peripheral power supply (e.g. GSM) USART1_TX COM_TX ADC1_IN4 DCDC_LV+ DLV+ ADC2_IN5 CAN_RXD FDCAN1_RX TIM3_CH2D FDCAN1_TX CAN_TX DAC2D SPI1_MISO COM_MISOD For testing of LOAD- internal OpAmp COM_MOSIC SPI1_MOSI File: power-supply.sch COM SCK SPI1 SCK OPAMP2 VINP SPI1_SSEL COM_SSEL Phoenix Contact MC 1,5 TEMP_BAT COM_I2C_SCL SWCLK_SCL Ext. Temperature Sensor COM_I2C_SDA SWCLK_SDA **♦**GPI0B_14 COM_PWRI File: accessories.sch File: mcu.sch ADC2 only for fast current measurement MPPT 2420 HPX Libre Solar Technologies GmbH LIBRE**SOLAR** Website: http://libre.solar MK2 Mounting_Hole MK4 Mounting_Hole Sheet: / File: mppt-2420-hpx.sch Author: Martin Jäger Date: 2019-10-08 Size: A4 Rev: 0.1 KiCad E.D.A. kicad 5.1.4 Page: 1/6









