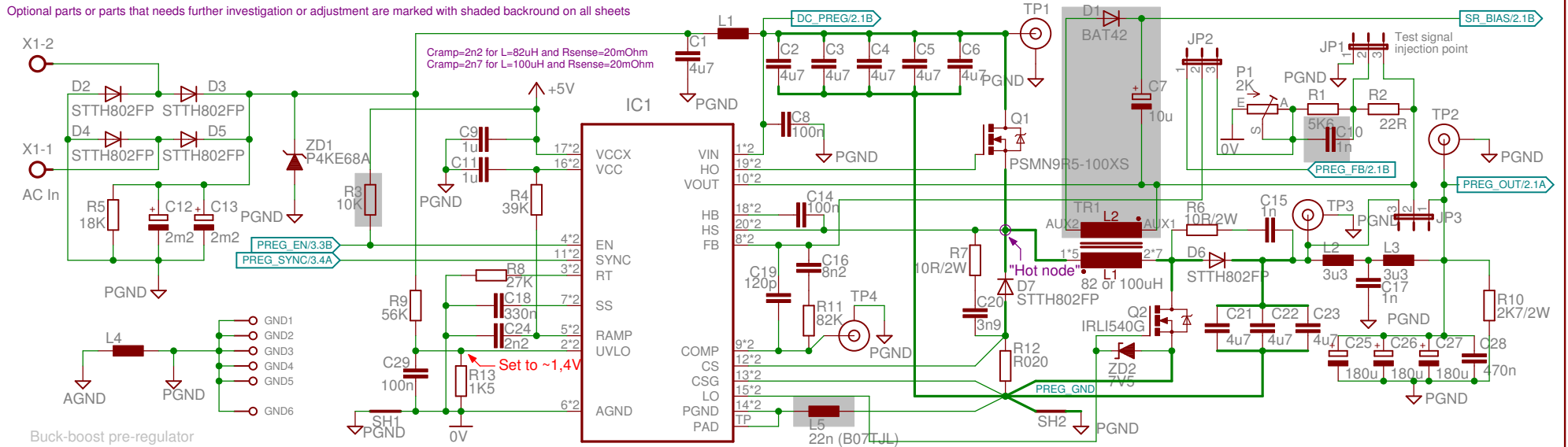
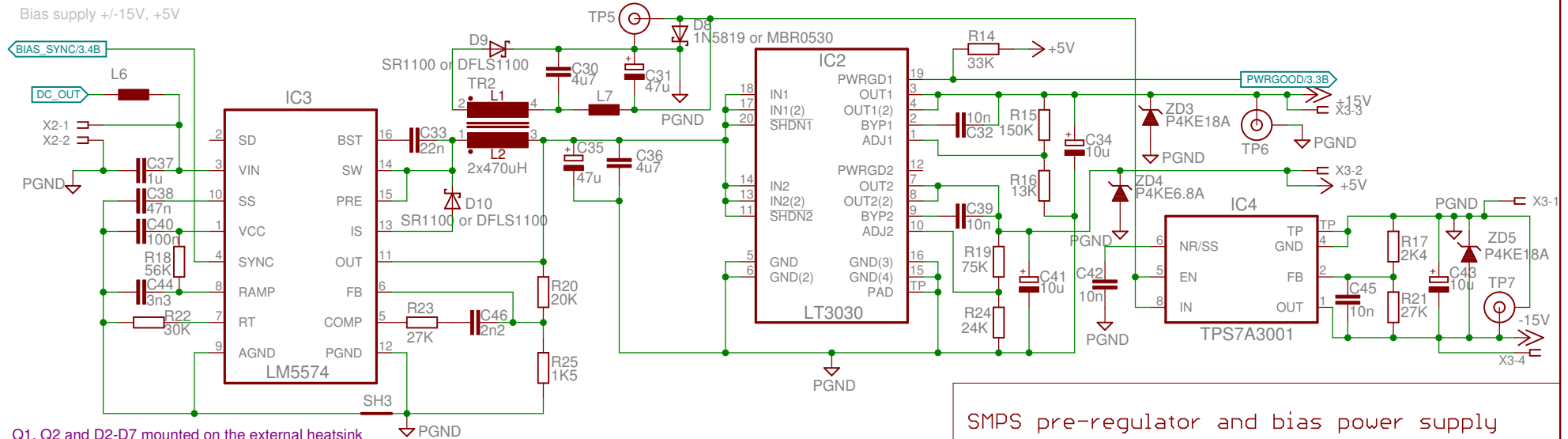


Optional parts or parts that needs further investigation or adjustment are marked with shaded background on all sheets



Buck-boost pre-regulator

Bias supply +/-15V, +5V



SMPS pre-regulator and bias power supply

TITLE: Programmable PSU 0-50V 3A

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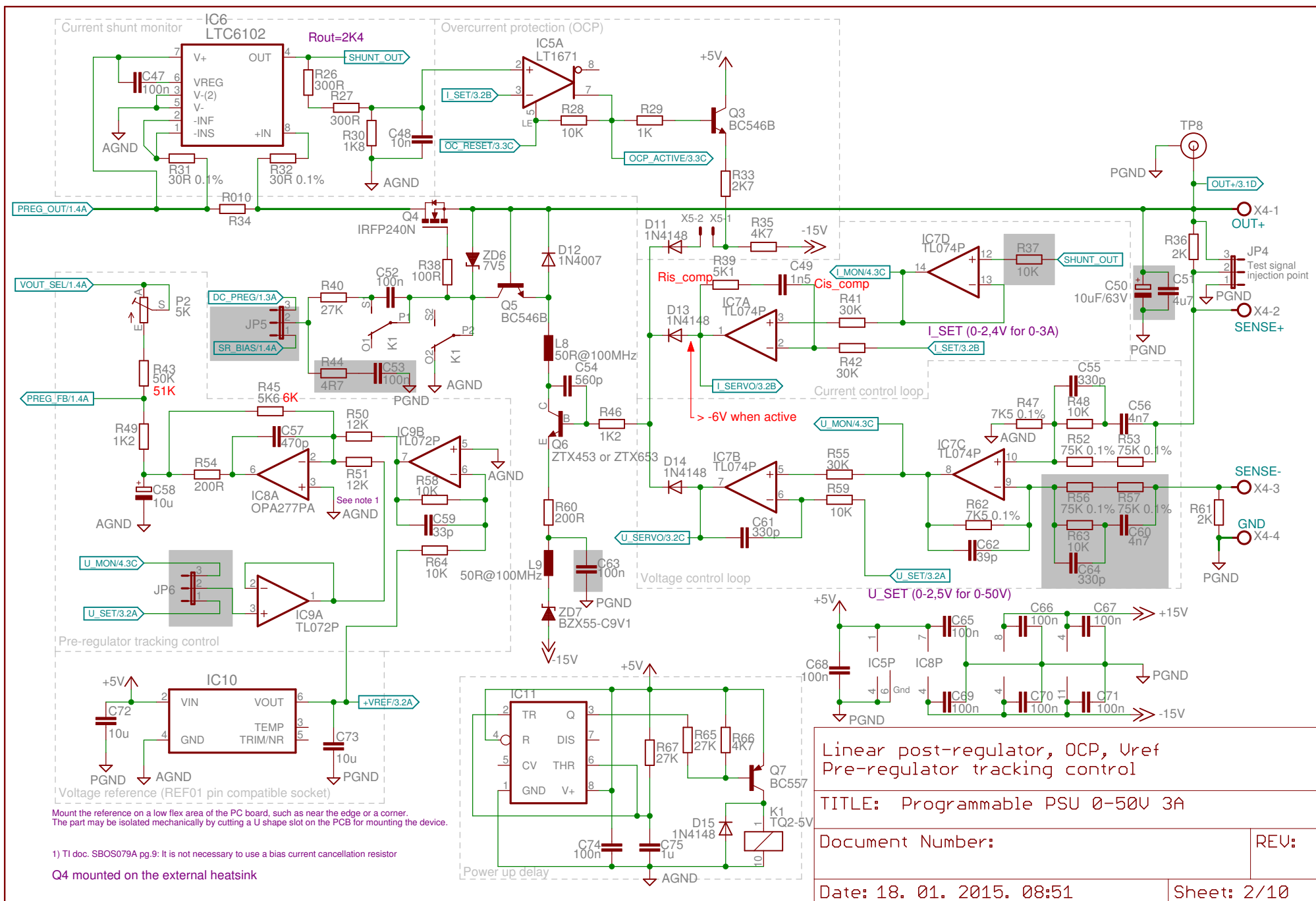
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Q1, Q2 and D2-D7 mounted on the external heatsink

Power inductor has pinouts for:

1. Vishay IHTH1125 series (THT)
2. Bourns PM2120 series (SMD)
3. Bourns 2300 series (THT)
4. Murata 1400 series (THT)
5. WE-HCI Flat Wire High Current Inductor (SMD)
6. Custom made with AUX for power mosfet bias using vertical ETD 29/16/10. Use i.e. ExcellentIT inductor calculator, Inductor5200.exe link: <http://www.diysmps.com/forums/showthread.php?522-Calculation-programs-for-transformers-and-inductors>
Tested with 36 turns 3x0.5mm2 for L1 and 10 turns 0.2mm2 for L2



Mount the reference on a low flex area of the PC board, such as near the edge or a corner.
The part may be isolated mechanically by cutting a U shape slot on the PCB for mounting the device.

1) TI doc. SBOS079A pg.9: It is not necessary to use a bias current cancellation resistor

Q4 mounted on the external heatsink

Manual CV and CC control

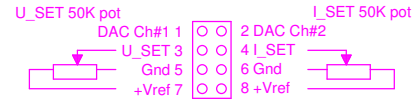
U_SET potentiometer



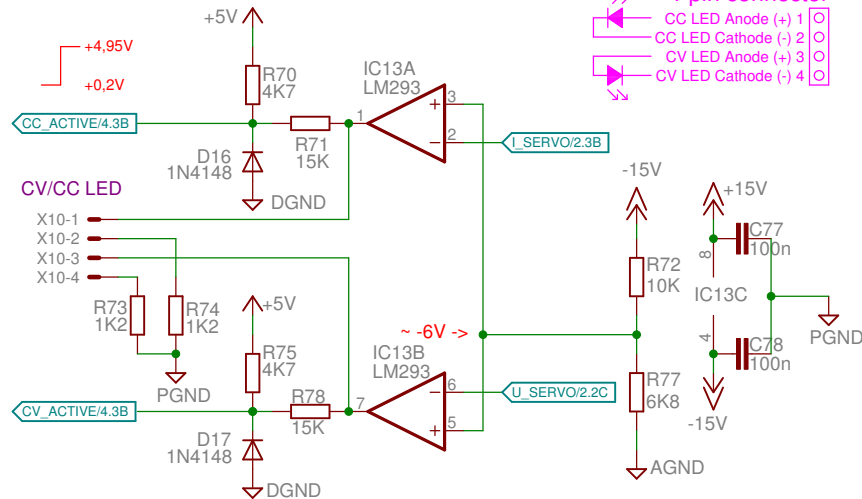
I_SET potentiometer



8-pin connector



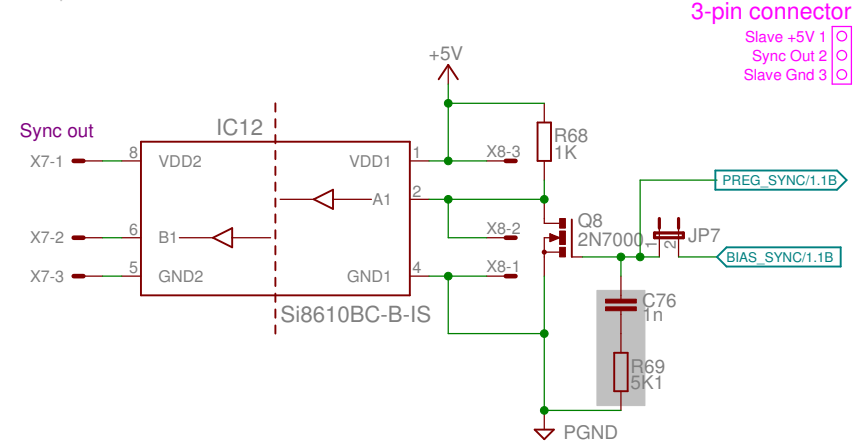
Constant Voltage (CV) and Constant Current (CC) mode indicator



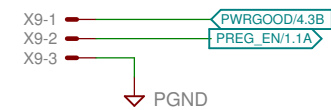
3-pin connector



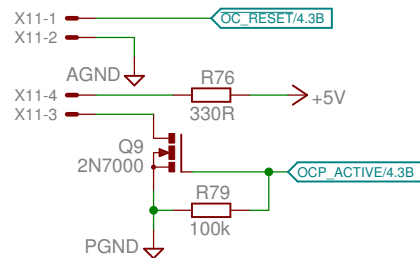
SYNC phase shifter and isolator



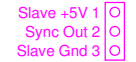
Output enable



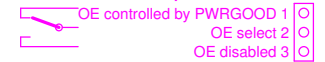
OCP reset



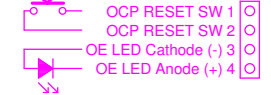
3-pin connector



3-pin connector



4-pin connector



Manual control, CC/CV indicators, Sync isolator

TITLE: Programmable PSU 0-50V 3A

Document Number:

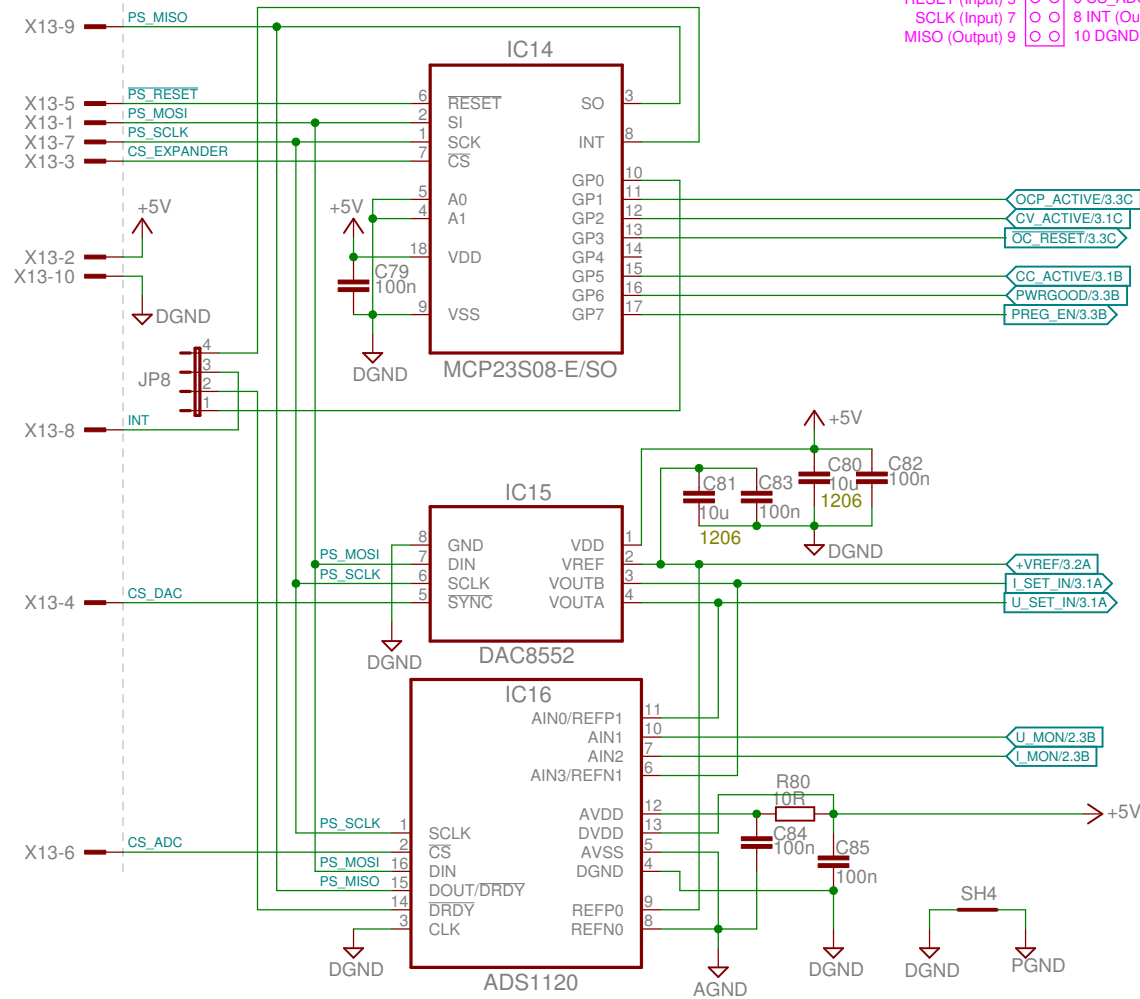
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10-pin IDC (DIN41651) pinout

MOSI (Input) 1	2 +5V
CS_EXPANDER (Input) 3	4 CS_DAC (Input)
RESET (Input) 5	6 CS_ADC (Input)
SCLK (Input) 7	8 INT (Output)
MISO (Output) 9	10 DGND



SPI I/O expander, DAC and ADC

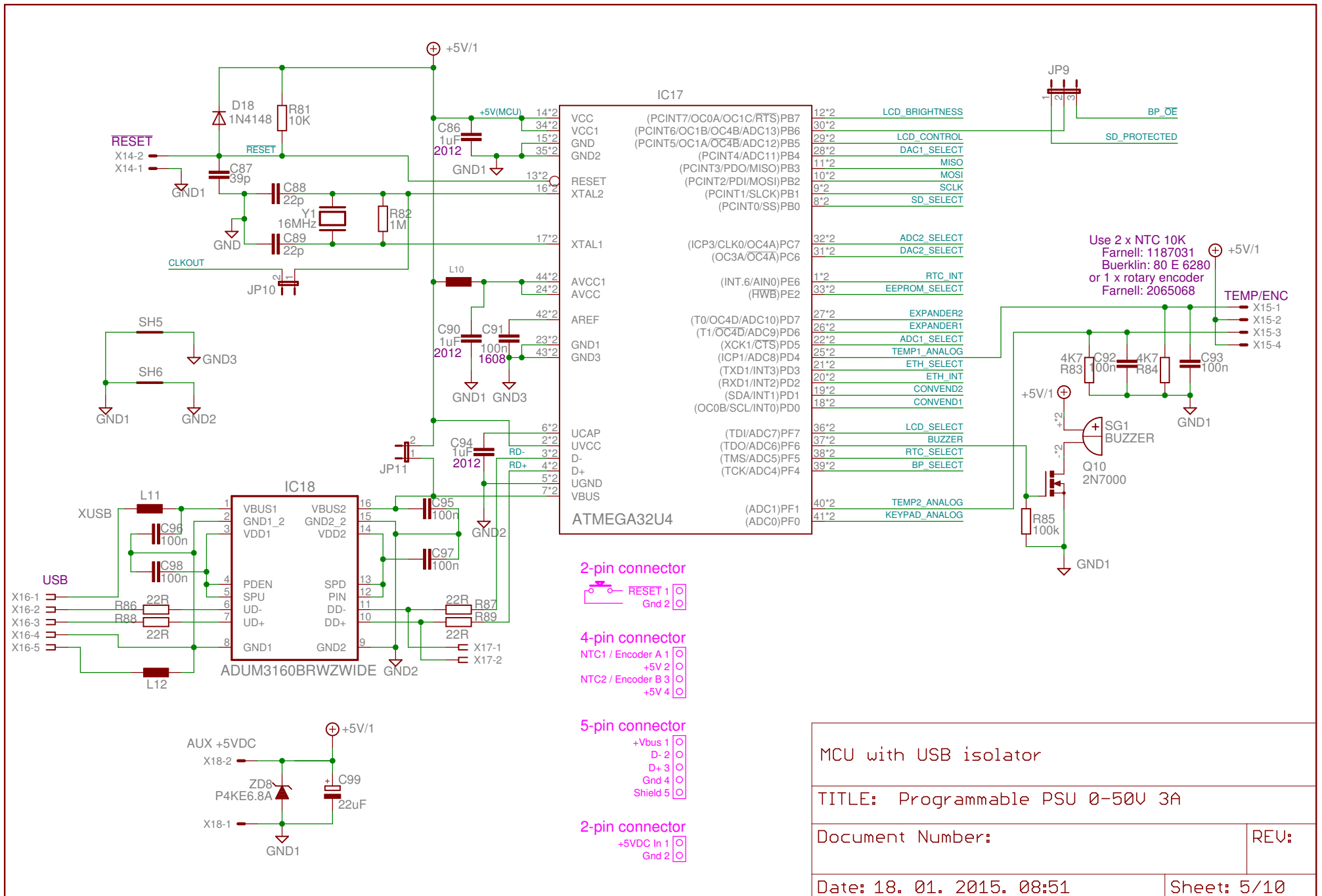
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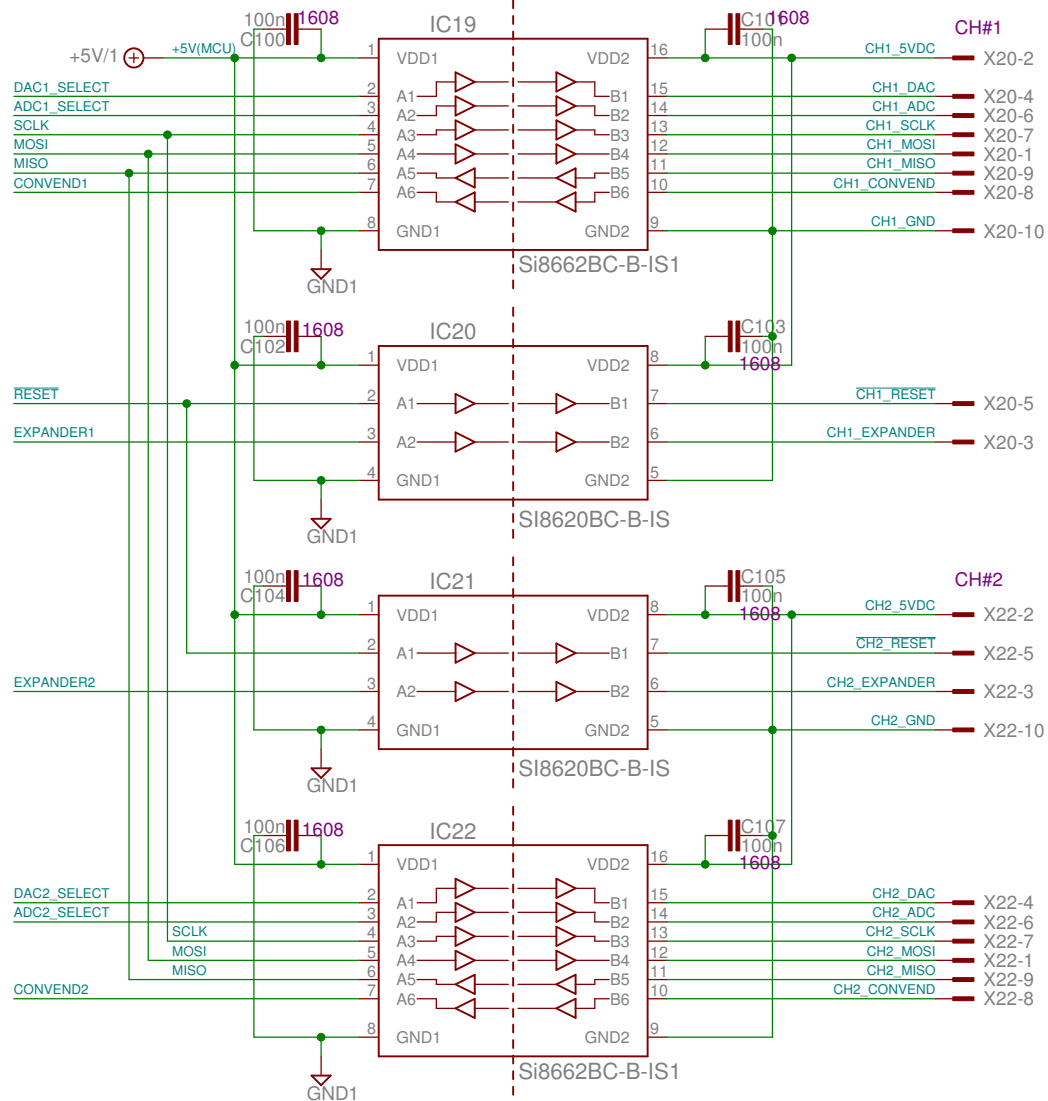
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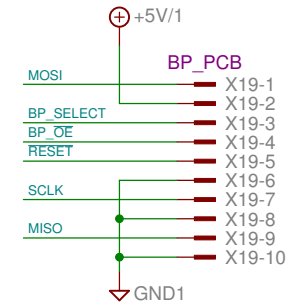
Sheet: 4/10





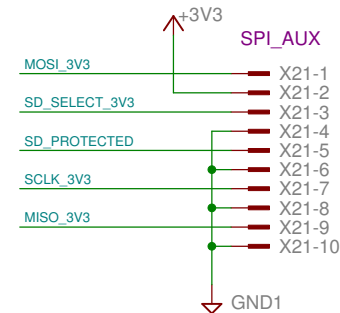
10-pin IDC (DIN41651) pinout

CH_MOSI (Output) 1	○ ○	2 CH_+5V
CH_EXPANDER (Output) 3	○ ○	4 CH_DAC (Output)
CH_RESET (Output) 5	○ ○	6 CH_ADC (Output)
CH_SCLK (Output) 7	○ ○	8 CH_CONVEND (Input)
CH_MISO (Input) 9	○ ○	10 CH_Ground



10-pin IDC (DIN41651) pinout

MOSI (Output) 1	○ ○	2 +5V (Supply)
BP_SELECT (Output) 3	○ ○	4 Ground
BP_OE (Output) 5	○ ○	6 Ground
RESET (Output) 7	○ ○	8 Ground
SCLK (Output) 9	○ ○	10 Ground



10-pin IDC (DIN41651) pinout

MOSI_3V3 (Output) 1	○ ○	2 +3V3
SD_SELECT (Output) 3	○ ○	4 Ground
SD_PROTECTED (Input) 5	○ ○	6 Ground
SCLK_3V3 (Output) 7	○ ○	8 Ground
MISO_3V3 (Input) 9	○ ○	10 Ground

I/O isolators for Power PCBs,
Binding posts PCB and SDcard

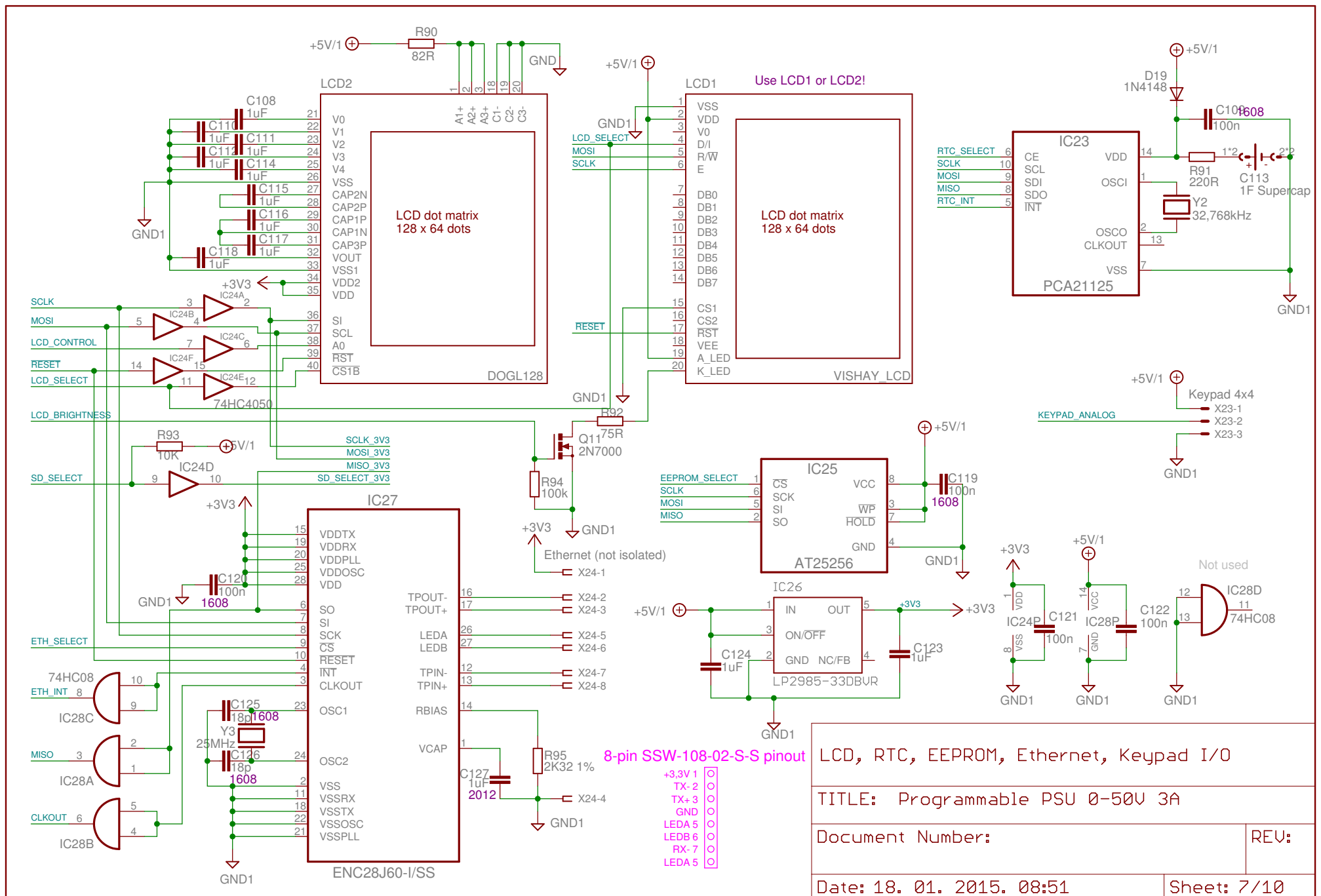
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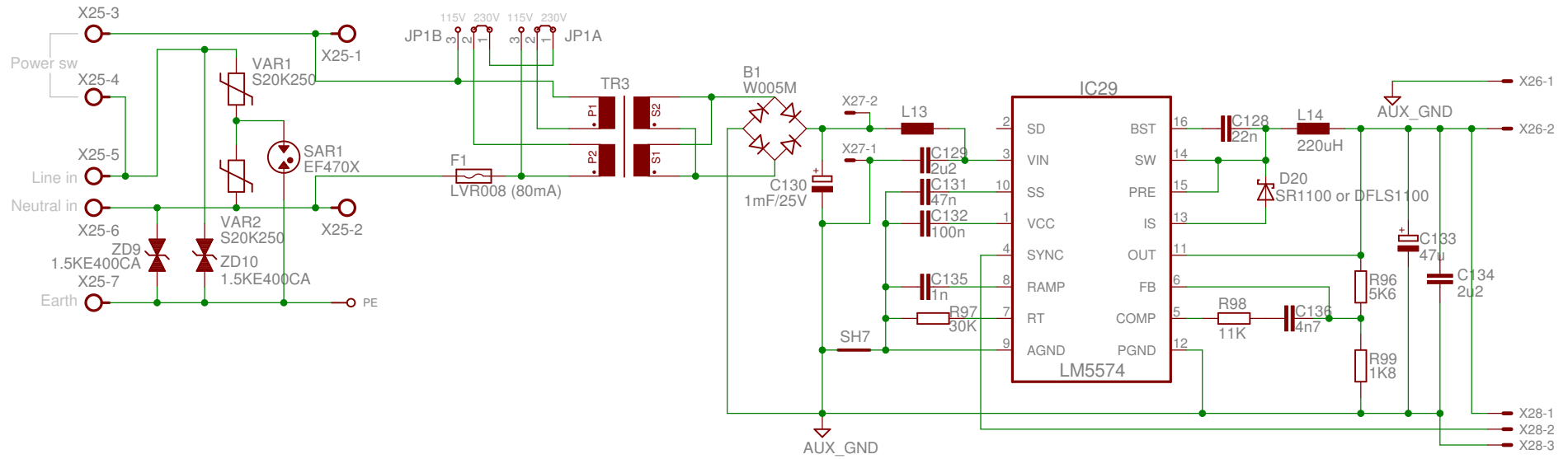
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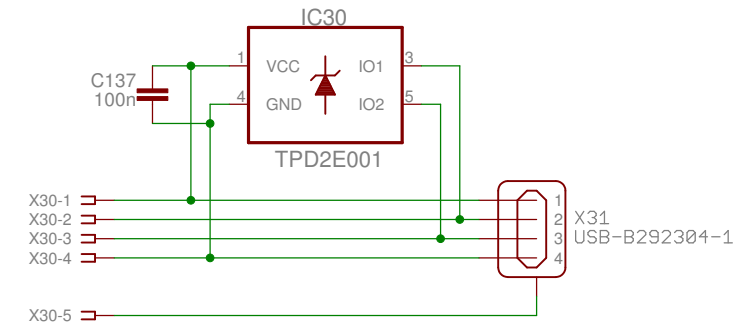
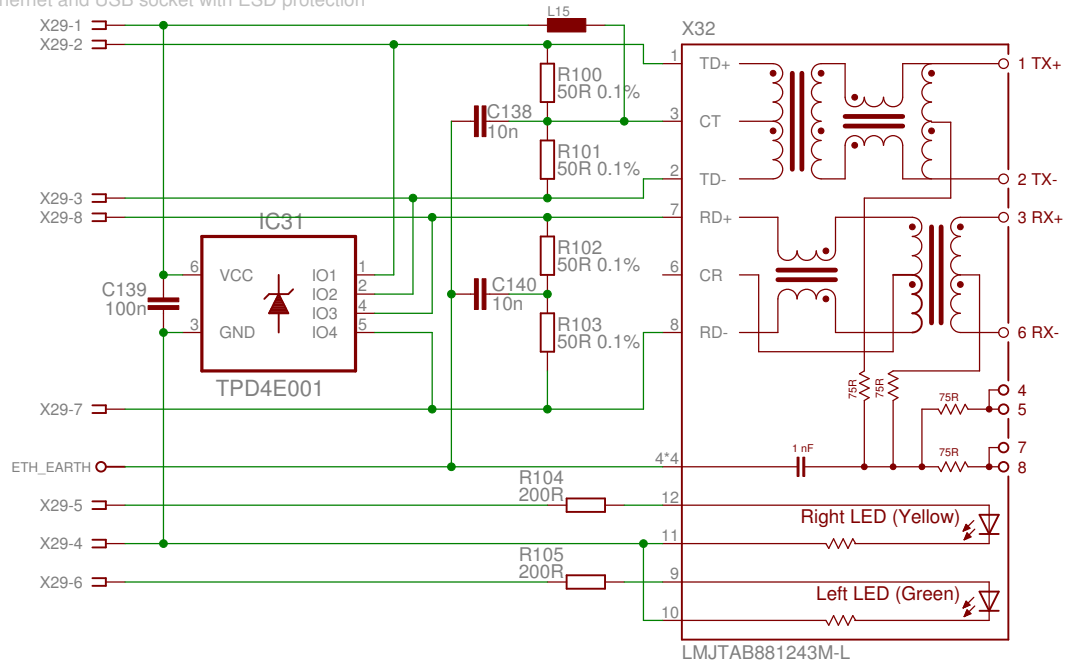
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Ethernet and USB socket with ESD protection



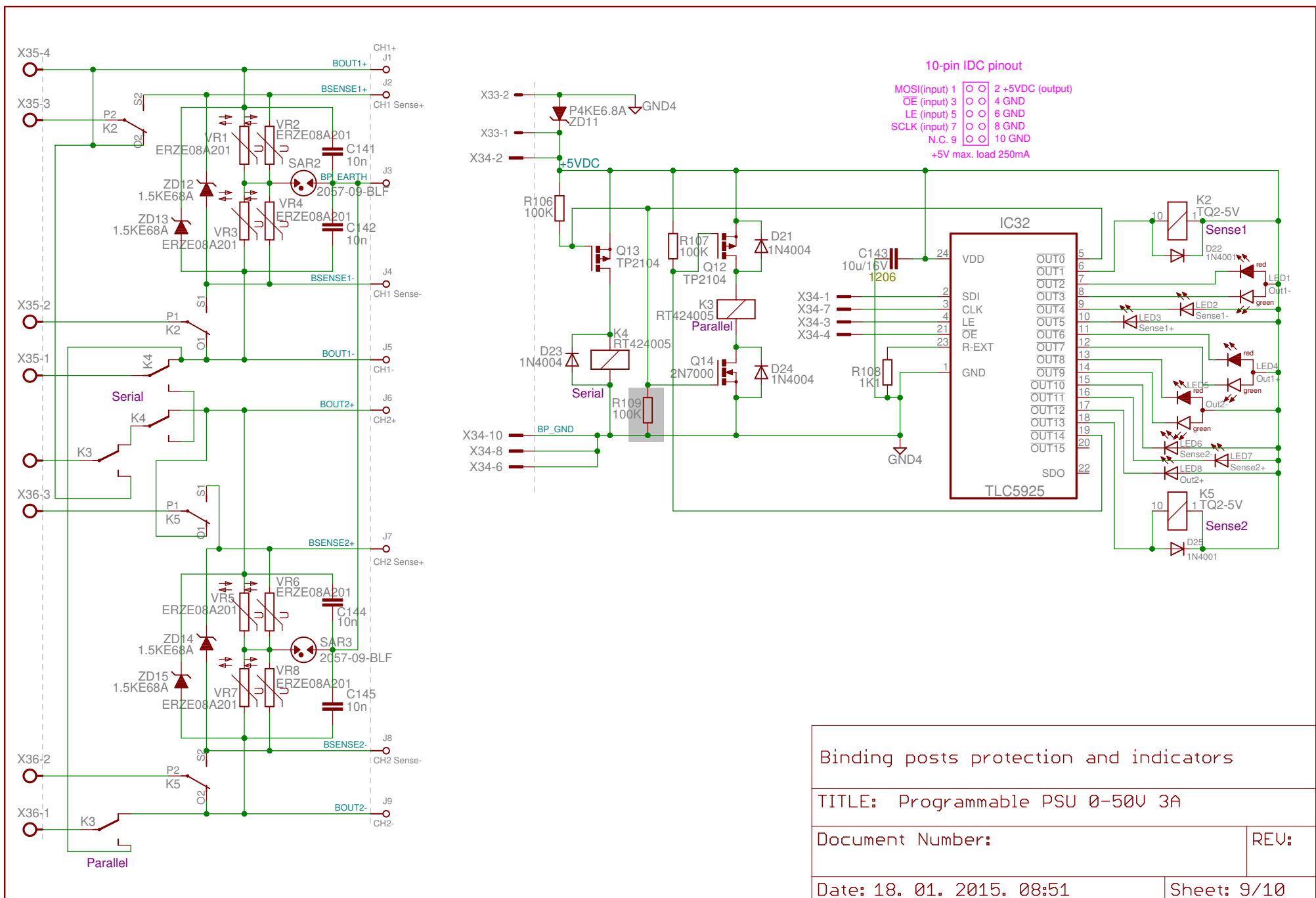
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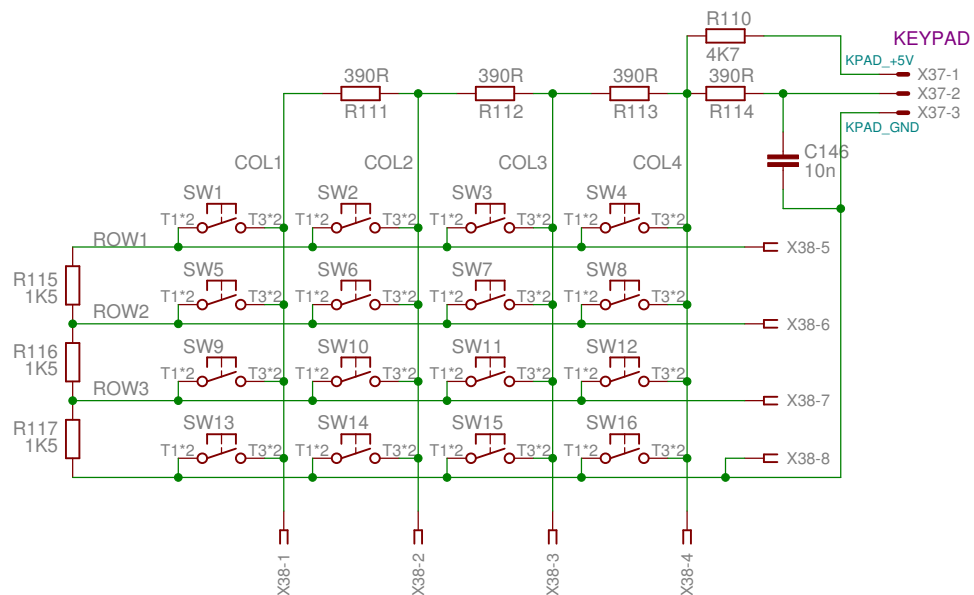
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3-pin connector

+5V 1
Out 2
Gnd 3



4x4 Keypad

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