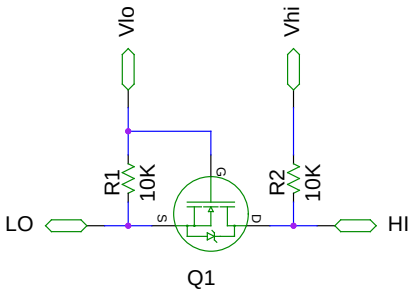


Level Converter

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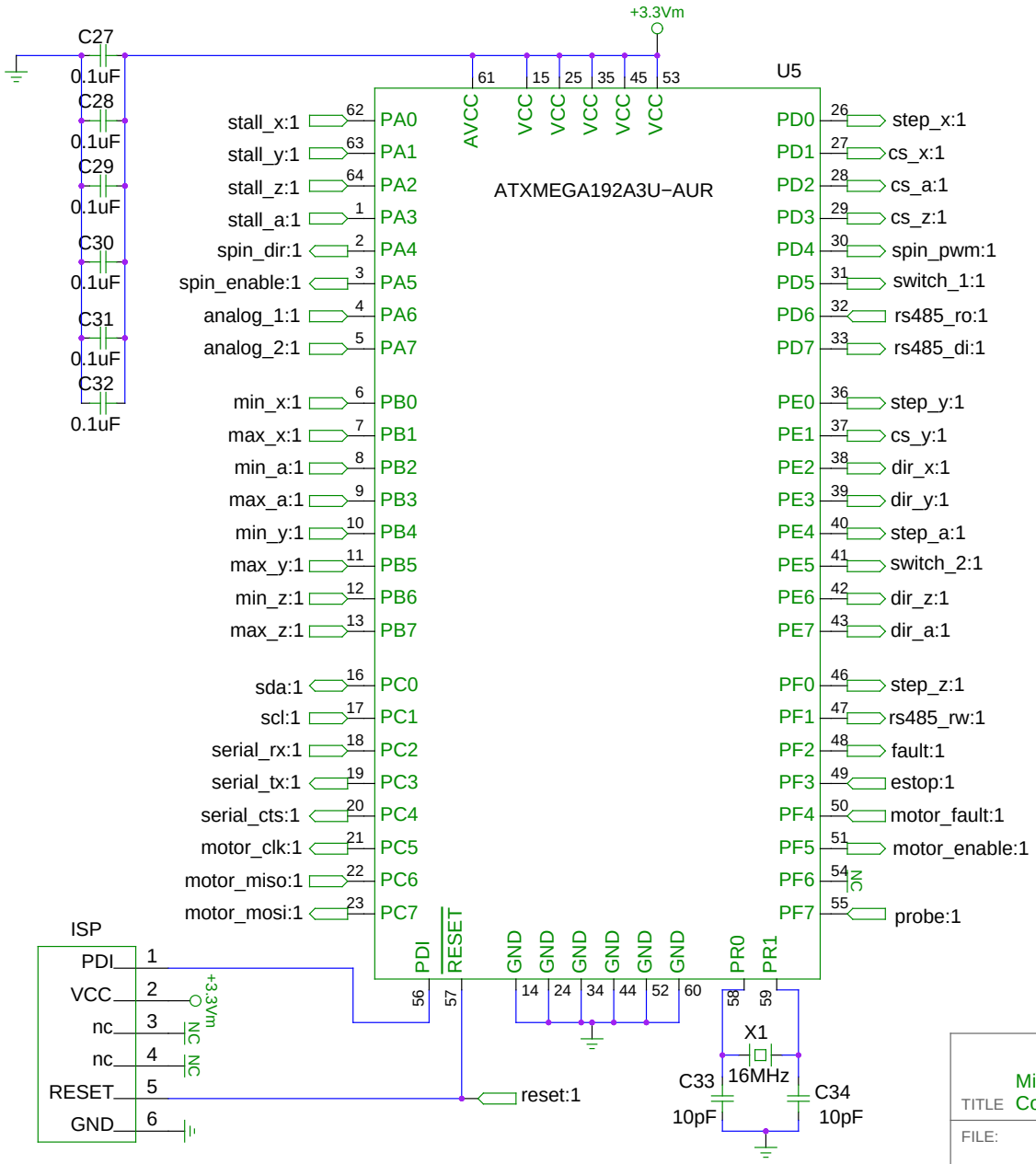


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| | Copyright (c) 2016−2017, Buildbotics LLC |
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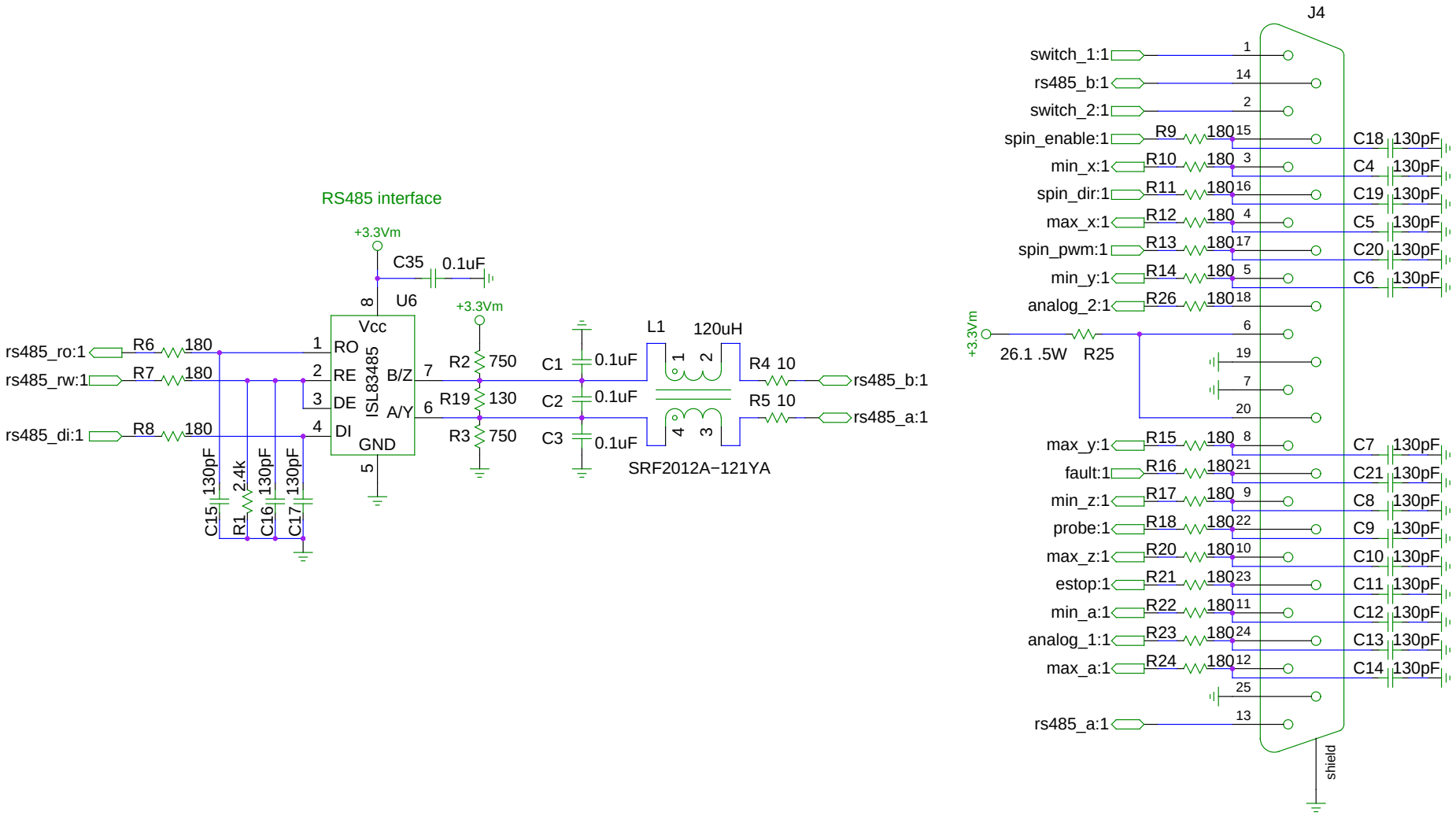


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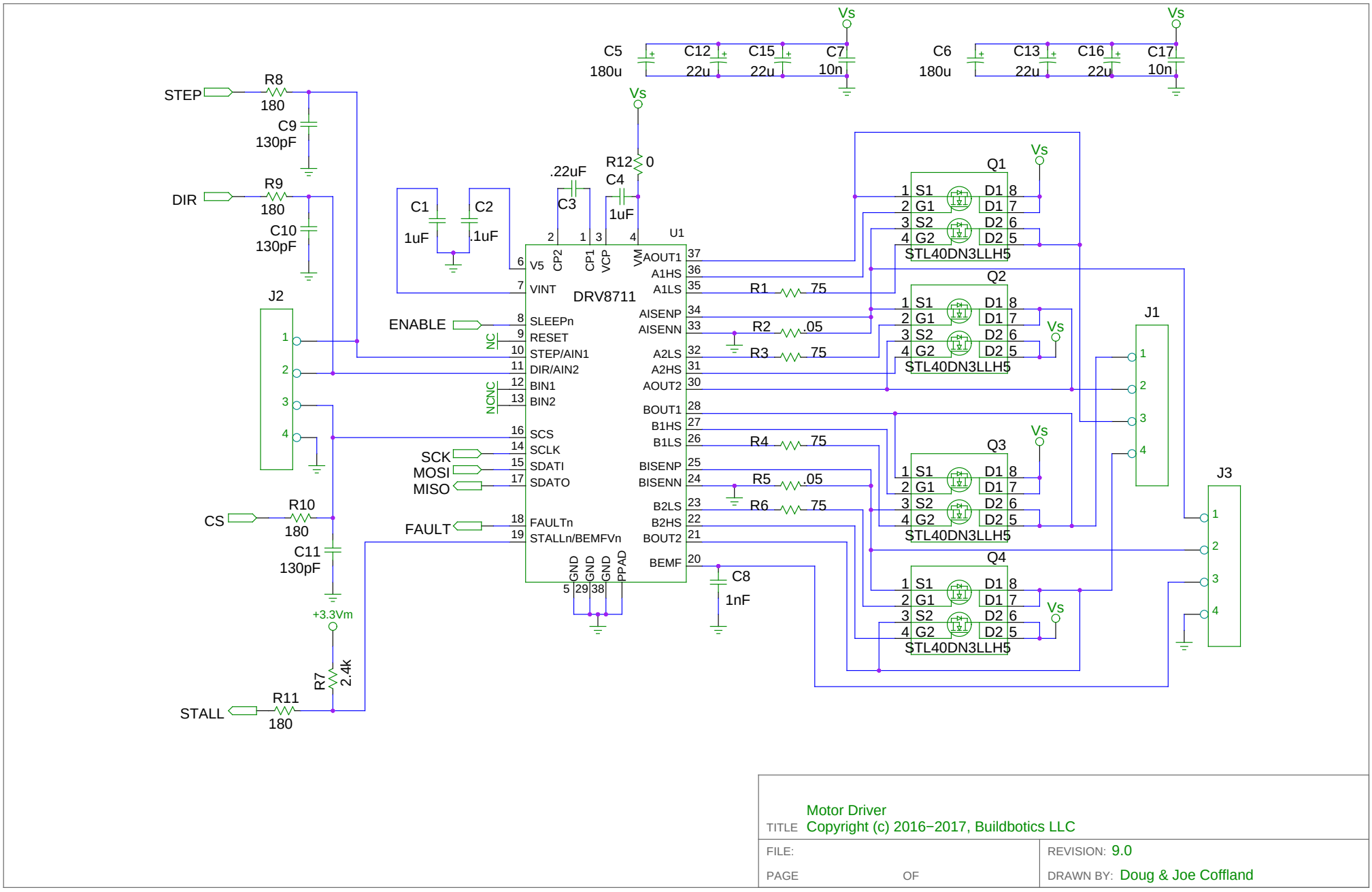


Motor Driver

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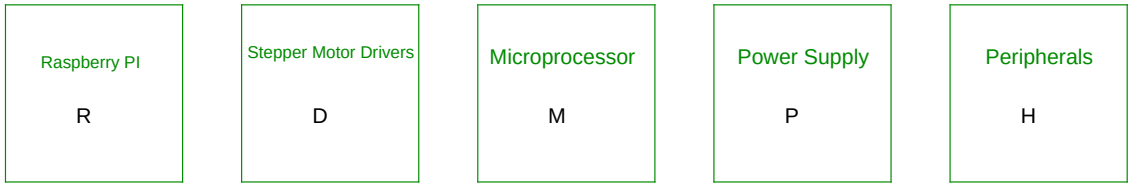


Buildbotics Controller

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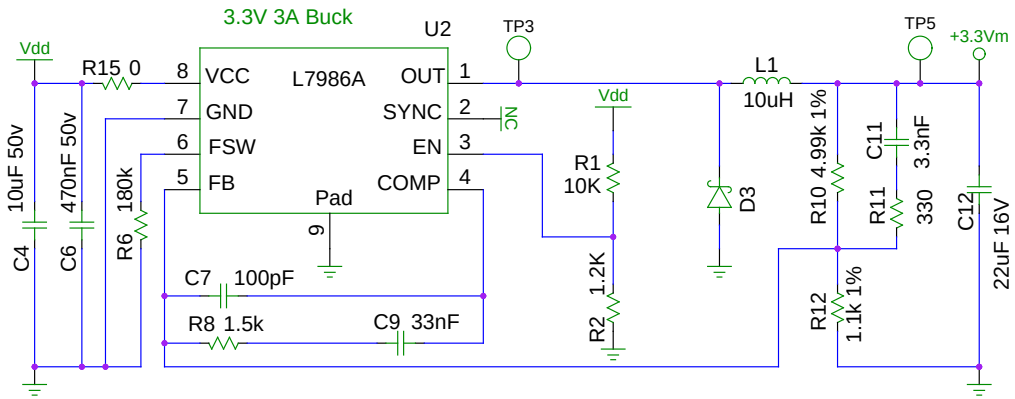
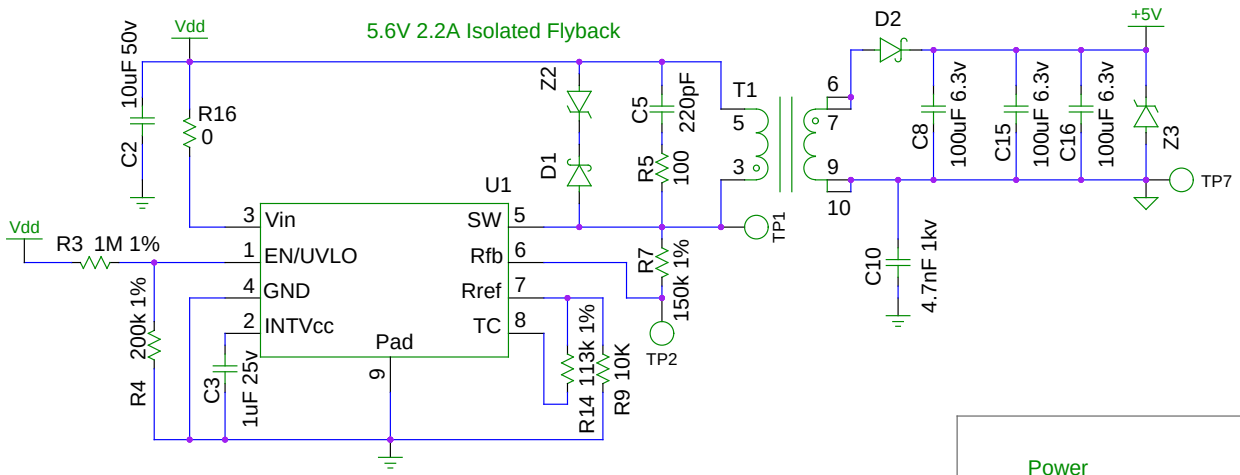
Power Conditioner

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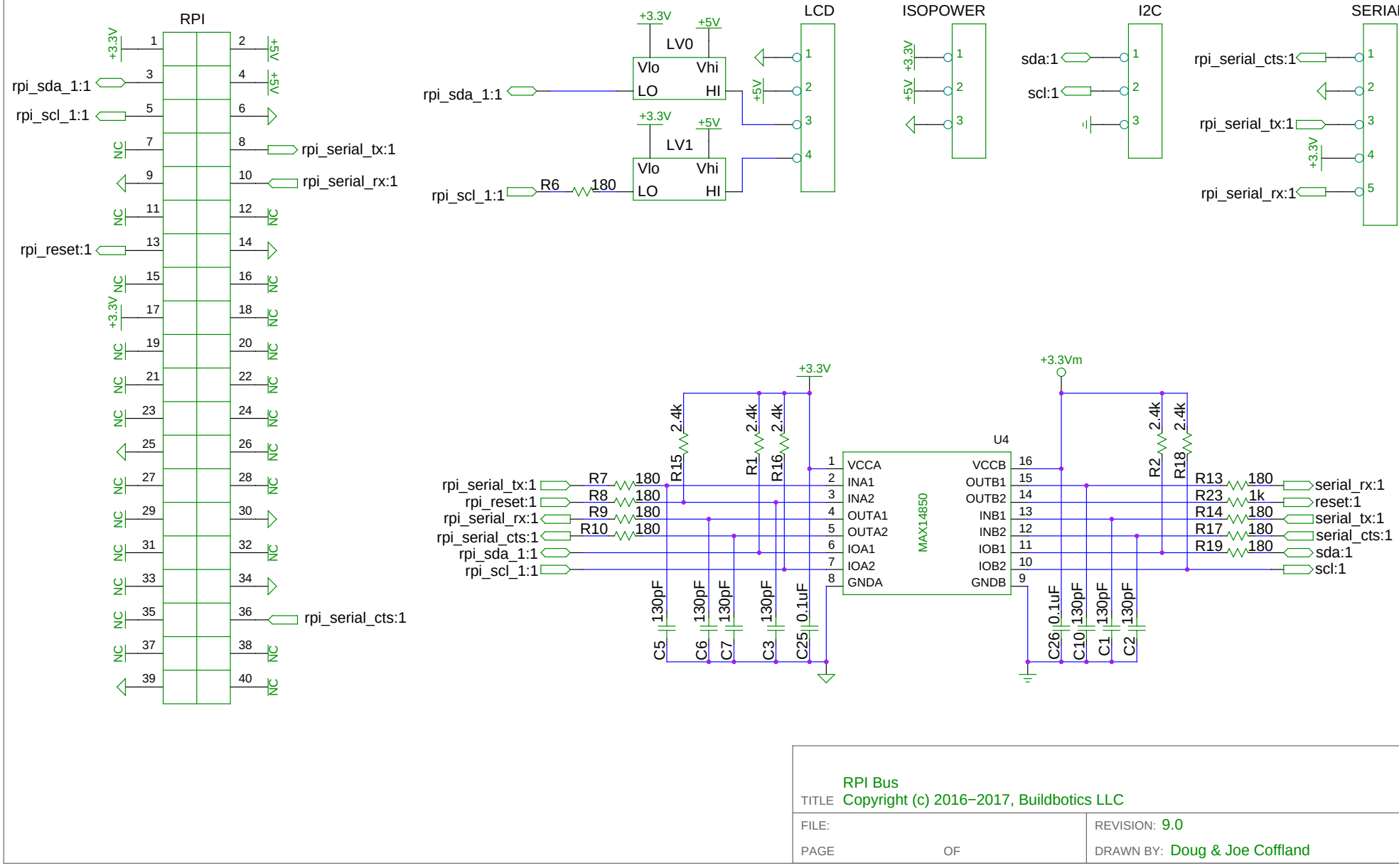


RPI Bus

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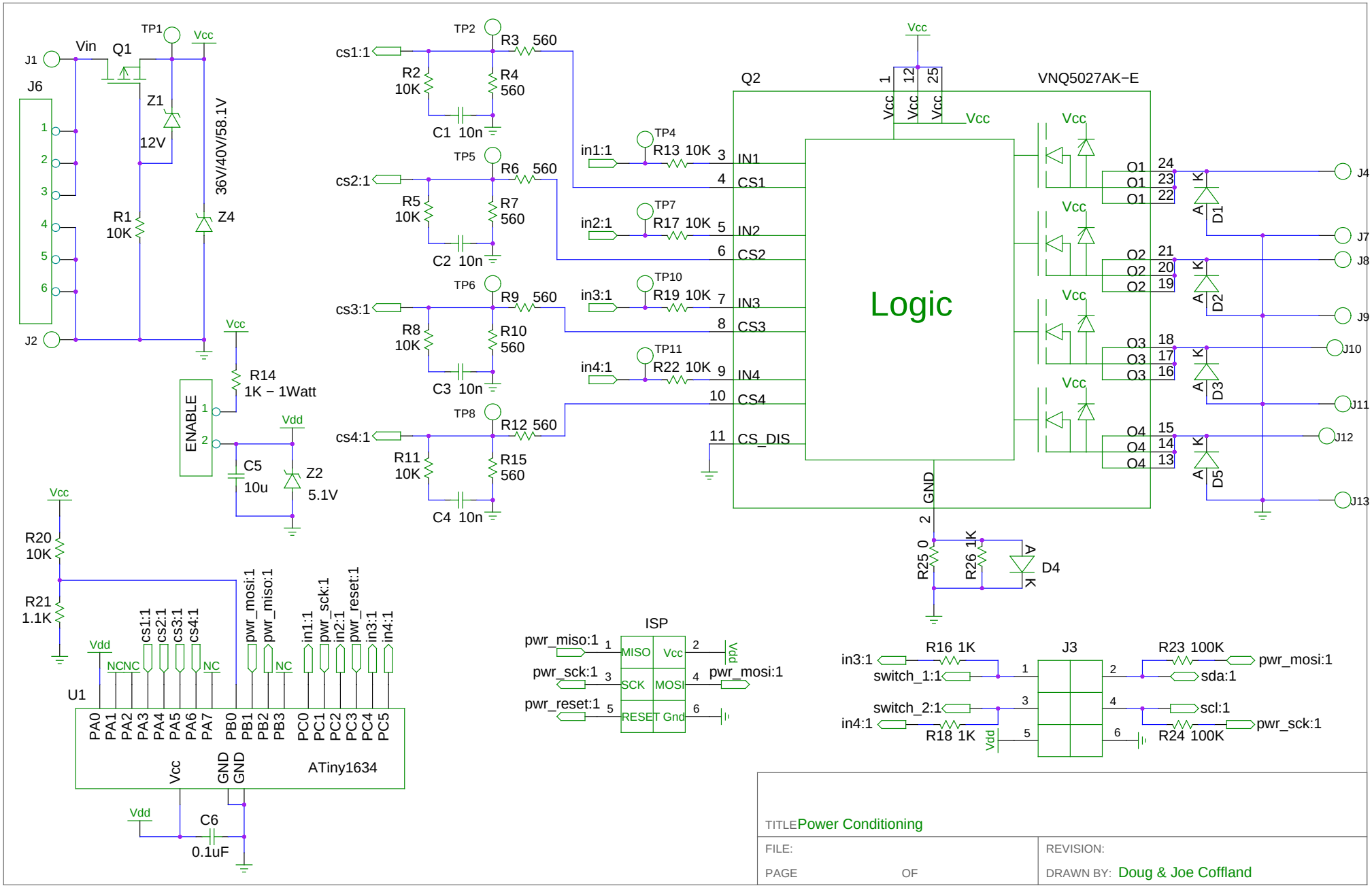
J1
Vin
Q1
TP1
Vcc
J6
Z1
12V
36V/40V/58.1V
R1
10K
Z4
J2
R14
1K − 1Watt
ENABLE
Vdd
C5
10u
Z2
5.1V
TP2
R3 560
cs1:1
R2
10K
R4
560
C1 10n
TP5
R6 560
cs2:1
R5
10K
R7
560
C2 10n
TP6
R9 560
cs3:1
R8
10K
R10
560
C3 10n
TP8
R12 560
cs4:1
R11
10K
R15
560
C4 10n
TP4
in1:1
R13 10K
TP7
in2:1
R17 10K
TP10
in3:1
R19 10K
TP11
in4:1
R22 10K
Q2
VNQ5027AK−E
Logic
IN1
CS1
IN2
CS2
IN3
CS3
IN4
CS4
CS_DIS
GND
O1
O2
O3
O4
D1
D2
D3
D5
J4
J7
J8
J9
J10
J11
J12
J13
R25 0
R26 1K
D4
R20
10K
R21
1.1K
U1
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
PB0
PB1
PB2
PB3
PC0
PC1
PC2
PC3
PC4
PC5
ATiny1634
C6
0.1uF
ISP
pwr_miso:1
pwr_sck:1
pwr_reset:1
MISO
SCK
RESET
pwr_mosi:1
R16 1K
J3
R23 100K
switch_1:1
switch_2:1
R18 1K
R24 100K
sda:1
scl:1
TITLE Power Conditioning
FILE:
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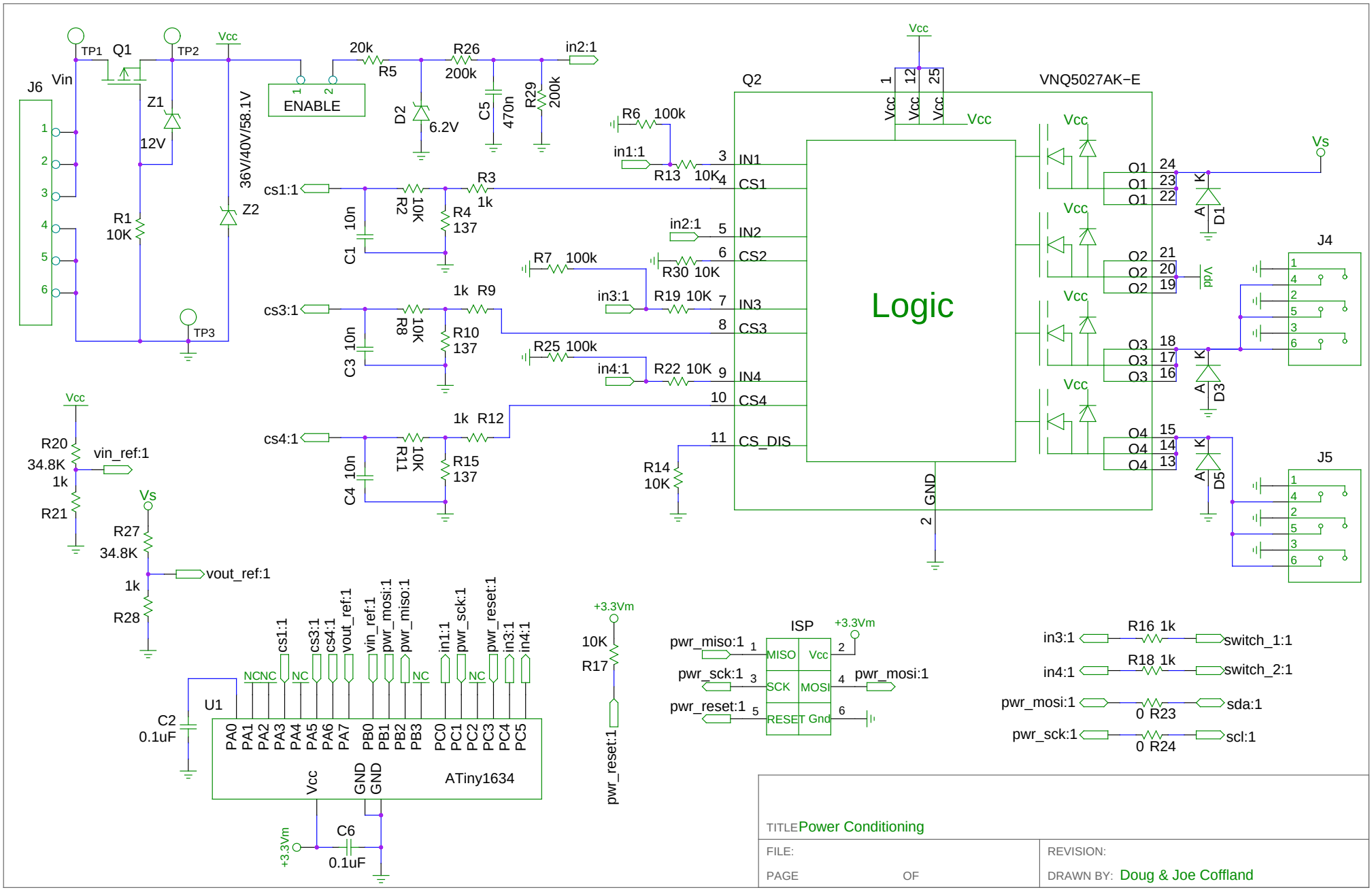


TITLE Power Conditioning

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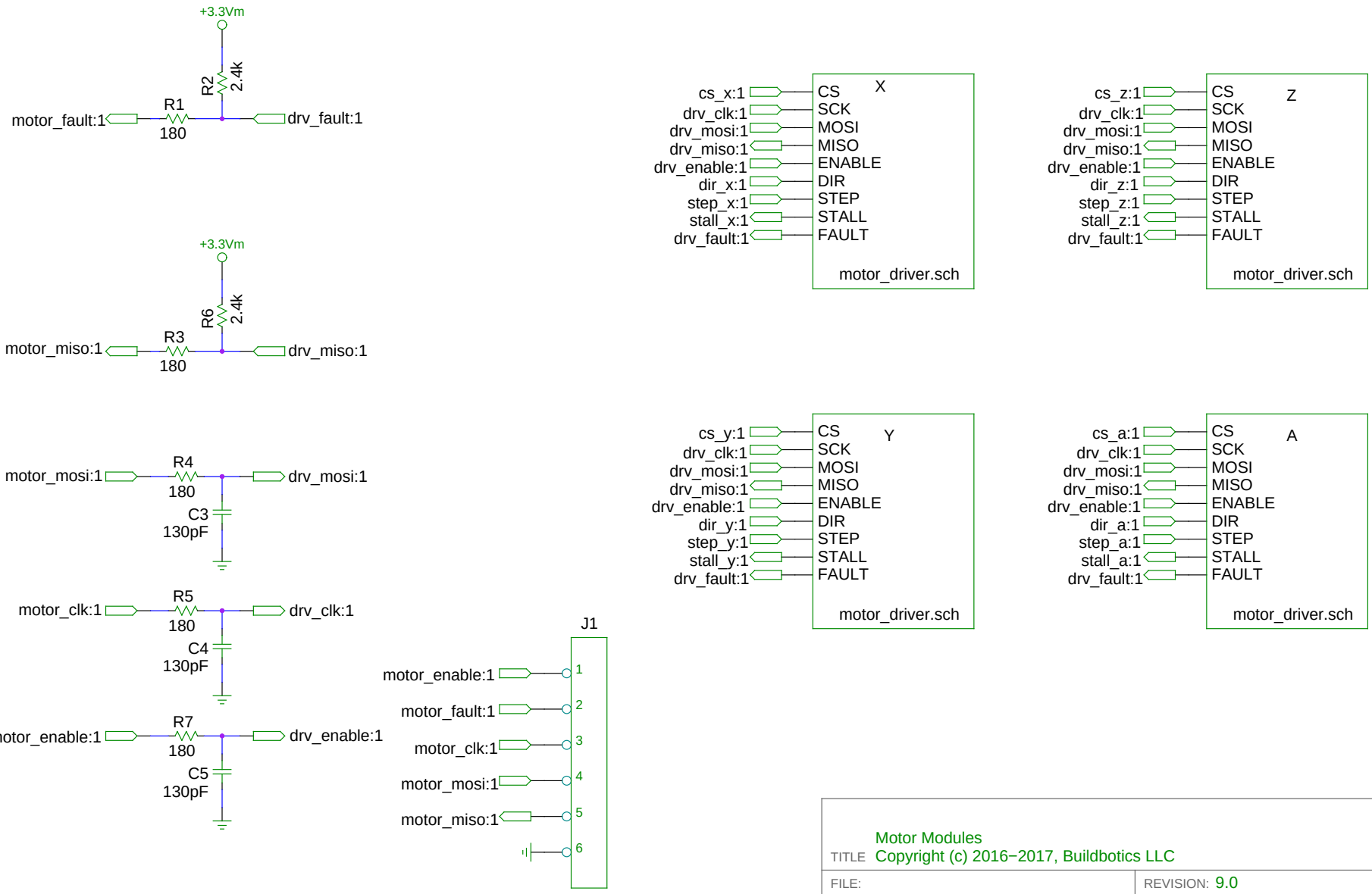
+3.3Vm
R2
2.4k
R1
motor_fault:1
180
drv_fault:1
+3.3Vm
R6
2.4k
R3
motor_miso:1
180
drv_miso:1
R4
motor_mosi:1
180
drv_mosi:1
C3
130pF
R5
motor_clk:1
180
drv_clk:1
C4
130pF
R7
motor_enable:1
180
drv_enable:1
C5
130pF
J1
motor_enable:1
motor_fault:1
motor_clk:1
motor_mosi:1
motor_miso:1
1
2
3
4
5
6
cs_x:1
drv_clk:1
drv_mosi:1
drv_miso:1
drv_enable:1
dir_x:1
step_x:1
stall_x:1
drv_fault:1
CS
SCK
MOSI
MISO
ENABLE
DIR
STEP
STALL
FAULT
X
motor_driver.sch
cs_z:1
drv_clk:1
drv_mosi:1
drv_miso:1
drv_enable:1
dir_z:1
step_z:1
stall_z:1
drv_fault:1
CS
SCK
MOSI
MISO
ENABLE
DIR
STEP
STALL
FAULT
Z
motor_driver.sch
cs_y:1
drv_clk:1
drv_mosi:1
drv_miso:1
drv_enable:1
dir_y:1
step_y:1
stall_y:1
drv_fault:1
CS
SCK
MOSI
MISO
ENABLE
DIR
STEP
STALL
FAULT
Y
motor_driver.sch
cs_a:1
drv_clk:1
drv_mosi:1
drv_miso:1
drv_enable:1
dir_a:1
step_a:1
stall_a:1
drv_fault:1
CS
SCK
MOSI
MISO
ENABLE
DIR
STEP
STALL
FAULT
A
motor_driver.sch
TITLE
Motor Modules
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