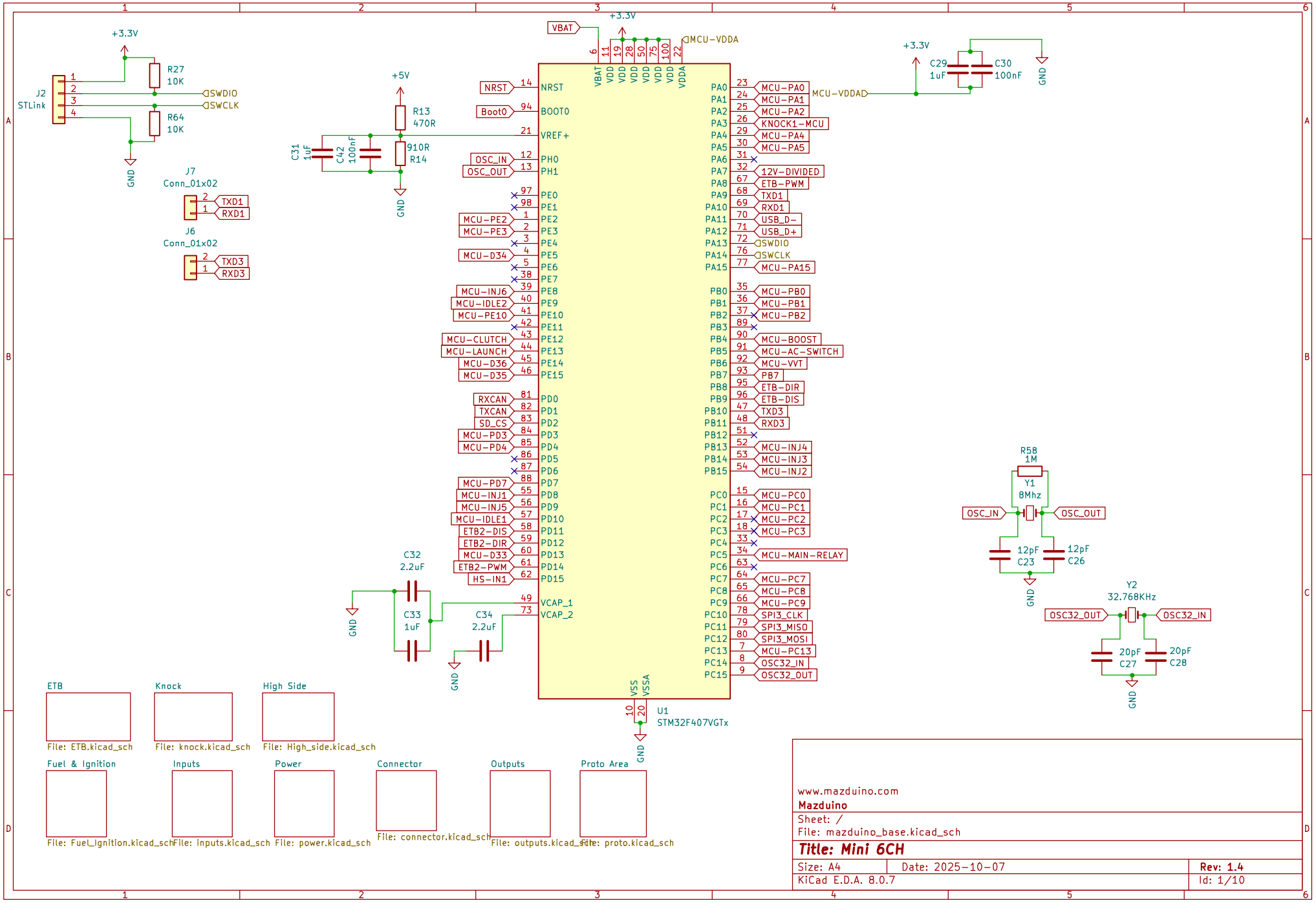
+3.3V
J2
STLink
SWDIO
SWCLK
R27
10K
R64
10K
GND
J7
Conn_01x02
TXD1
RXD1
J6
Conn_01x02
TXD3
RXD3
+5V
R13
470R
R14
910R
C31
1uF
C42
100nF
VBAT
MCU-VDDA
C29
1uF
C30
100nF
NRST
BOOT0
VREF+
OSC_IN
OSC_OUT
MCU-PE2
MCU-PE3
MCU-D34
MCU-INJ6
MCU-IDLE2
MCU-PE10
MCU-CLUTCH
MCU-LAUNCH
MCU-D36
MCU-D35
RXCAN
TXCAN
SD_CS
MCU-PD3
MCU-PD4
MCU-PD7
MCU-INJ1
MCU-INJ5
MCU-IDLE1
ETB2-DIS
ETB2-DIR
MCU-D33
ETB2-PWM
HS-IN1
C32
2.2uF
C33
1uF
C34
2.2uF
VCAP_1
VCAP_2
MCU-PA0
MCU-PA1
MCU-PA2
KNOCK1-MCU
MCU-PA4
MCU-PA5
12V-DIVIDED
ETB-PWM
TXD1
RXD1
USB_D-
USB_D+
SWDIO
SWCLK
MCU-PA15
MCU-PB0
MCU-PB1
MCU-PB2
MCU-BOOST
MCU-AC-SWITCH
MCU-VVT
PB7
ETB-DIR
ETB-DIS
TXD3
RXD3
MCU-INJ4
MCU-INJ3
MCU-INJ2
MCU-PC0
MCU-PC1
MCU-PC2
MCU-PC3
MCU-MAIN-RELAY
MCU-PC7
MCU-PC8
MCU-PC9
SPI3_CLK
SPI3_MISO
SPI3_MOSI
MCU-PC13
OSC32_IN
OSC32_OUT
U1
STM32F407VGTx
R58
1M
Y1
8Mhz
12pF
C23
12pF
C26
Y2
32.768KHz
20pF
C27
20pF
C28
ETB
File: ETB.kicad_sch
Knock
File: knock.kicad_sch
High Side
File: High_side.kicad_sch
Fuel & Ignition
File: Fuel_Ignition.kicad_sch
Inputs
File: inputs.kicad_sch
Power
File: power.kicad_sch
Connector
File: connector.kicad_sch
Outputs
File: outputs.kicad_sch
Proto Area
File: proto.kicad_sch
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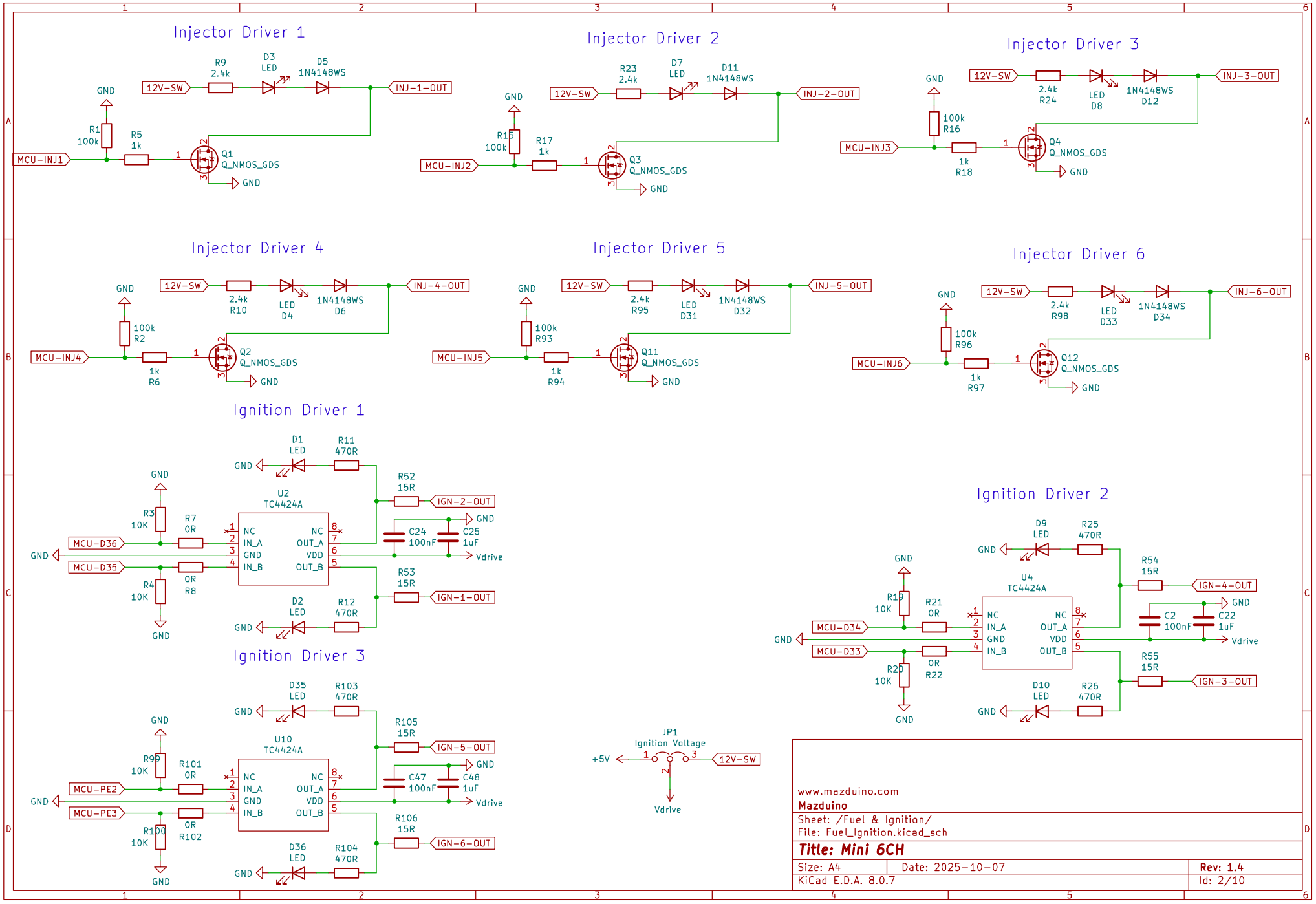
Mazduino
Sheet: /
File: mazduino_base.kicad_sch
Title: Mini 6CH
Size: A4
Date: 2025-10-07
Rev: 1.4
KiCad E.D.A. 8.0.7
Id: 1/10


Injector Driver 1
R9
2.4k
D3
LED
D5
1N4148WS
12V-SW
INJ-1-OUT
GND
R1
100k
R5
1k
MCU-INJ1
Q1
Q_NMOS_GDS
Injector Driver 2
R23
2.4k
D7
LED
D11
1N4148WS
12V-SW
INJ-2-OUT
GND
R15
100k
R17
1k
MCU-INJ2
Q3
Q_NMOS_GDS
Injector Driver 3
12V-SW
2.4k
R24
LED
D8
1N4148WS
D12
INJ-3-OUT
GND
100k
R16
MCU-INJ3
1k
R18
Q4
Q_NMOS_GDS
Injector Driver 4
12V-SW
2.4k
R10
LED
D4
1N4148WS
D6
INJ-4-OUT
GND
100k
R2
MCU-INJ4
1k
R6
Q2
Q_NMOS_GDS
Injector Driver 5
12V-SW
2.4k
R95
LED
D31
1N4148WS
D32
INJ-5-OUT
GND
100k
R93
MCU-INJ5
1k
R94
Q11
Q_NMOS_GDS
Injector Driver 6
12V-SW
2.4k
R98
LED
D33
1N4148WS
D34
INJ-6-OUT
GND
100k
R96
MCU-INJ6
1k
R97
Q12
Q_NMOS_GDS
Ignition Driver 1
D1
LED
R11
470R
R52
15R
IGN-2-OUT
U2
TC4424A
R3
10K
R7
0R
MCU-D36
MCU-D35
R4
10K
OR
R8
C24
100nF
C25
1uF
Vdrive
R53
15R
IGN-1-OUT
D2
LED
R12
470R
Ignition Driver 2
D9
LED
R25
470R
R54
15R
IGN-4-OUT
U4
TC4424A
R19
10K
R21
0R
MCU-D34
MCU-D33
R20
10K
OR
R22
C2
100nF
C22
1uF
R55
15R
IGN-3-OUT
D10
LED
R26
470R
Ignition Driver 3
D35
LED
R103
470R
R105
15R
IGN-5-OUT
U10
TC4424A
R99
10K
R101
0R
MCU-PE2
MCU-PE3
R100
10K
OR
R102
C47
100nF
C48
1uF
R106
15R
IGN-6-OUT
D36
LED
R104
470R
JP1
Ignition Voltage
+5V
12V-SW
Vdrive
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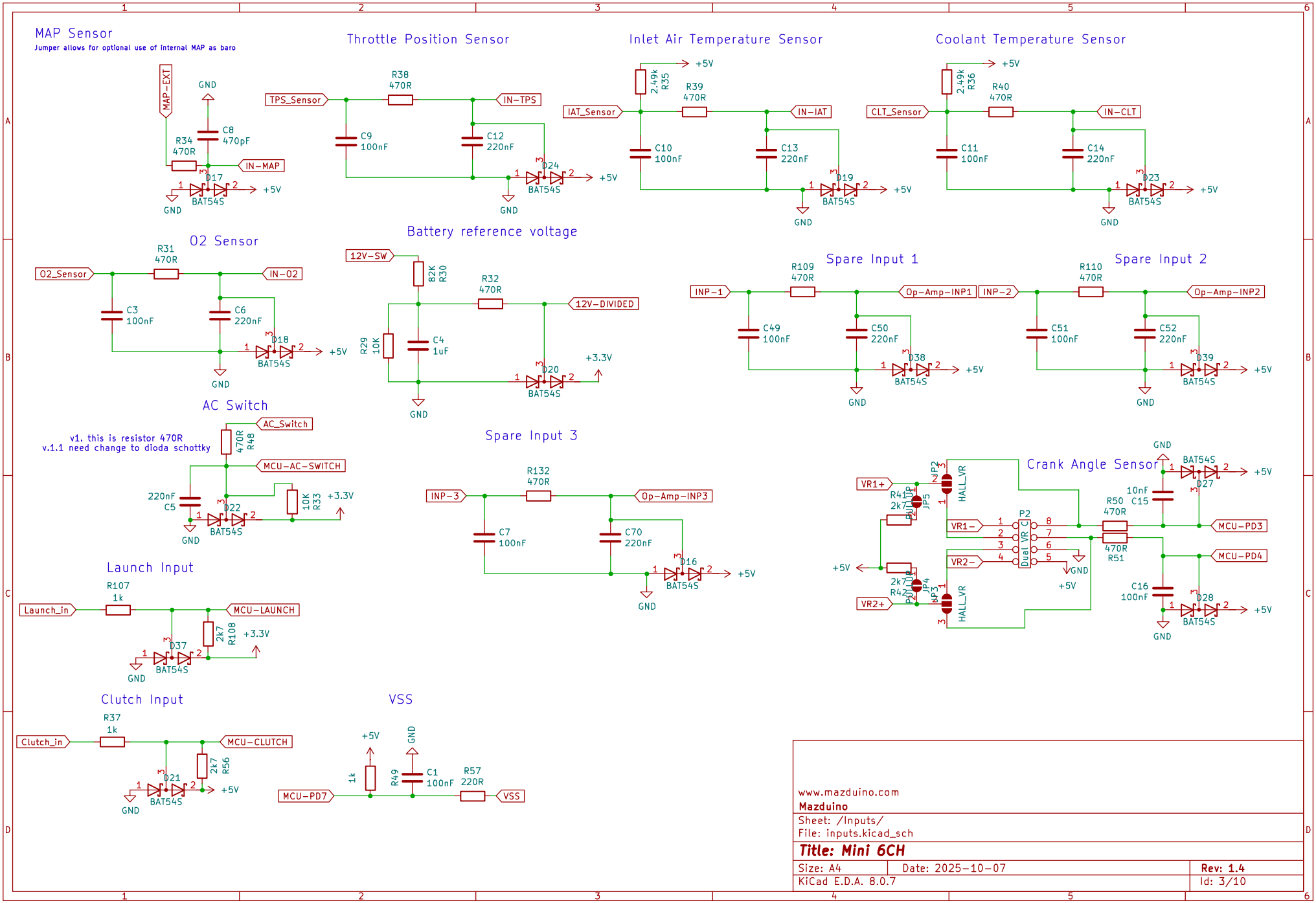
Mazduino
Sheet: /Fuel & Ignition/
File: Fuel_Ignition.kicad_sch
Title: Mini 6CH
Size: A4
Date: 2025-10-07
Rev: 1.4
KiCad E.D.A. 8.0.7
Id: 2/10


MAP Sensor
Jumper allows for optional use of internal MAP as baro
MAP-EXT
GND
C8
470pF
R34
470R
IN-MAP
D17
BAT54S
+5V
Throttle Position Sensor
TPS_Sensor
R38
470R
IN-TPS
C9
100nF
C12
220nF
D24
BAT54S
Inlet Air Temperature Sensor
IAT_Sensor
2.49k
R35
R39
470R
IN-IAT
C10
100nF
C13
220nF
D19
BAT54S
Coolant Temperature Sensor
CLT_Sensor
2.49k
R36
R40
470R
IN-CLT
C11
100nF
C14
220nF
D23
BAT54S
O2 Sensor
O2_Sensor
R31
470R
IN-O2
C3
100nF
C6
220nF
D18
BAT54S
Battery reference voltage
12V-SW
82K
R30
R32
470R
12V-DIVIDED
R29
10K
C4
1uF
D20
BAT54S
+3.3V
Spare Input 1
INP-1
R109
470R
Op-Amp-INP1
C49
100nF
C50
220nF
D38
BAT54S
Spare Input 2
INP-2
R110
470R
Op-Amp-INP2
C51
100nF
C52
220nF
D39
BAT54S
AC Switch
v1. this is resistor 470R
v.1.1 need change to dioda schottky
AC_Switch
470R
R48
MCU-AC-SWITCH
220nF
C5
D22
BAT54S
10K
R33
+3.3V
Spare Input 3
INP-3
R132
470R
Op-Amp-INP3
C7
100nF
C70
220nF
D16
BAT54S
Crank Angle Sensor
VR1+
VR1-
VR2+
VR2-
JP2
JP5
JP4
JP3
HALL_VR
Dual VR C
P2
R41
2k7
R42
2k7
R50
470R
R51
470R
10nF
C15
C16
100nF
D27
D28
BAT54S
MCU-PD3
MCU-PD4
Launch Input
Launch_in
R107
1k
MCU-LAUNCH
2k7
R108
+3.3V
D37
BAT54S
Clutch Input
Clutch_in
R37
1k
MCU-CLUTCH
2k7
R56
D21
BAT54S
VSS
1k
R49
C1
100nF
R57
220R
MCU-PD7
VSS
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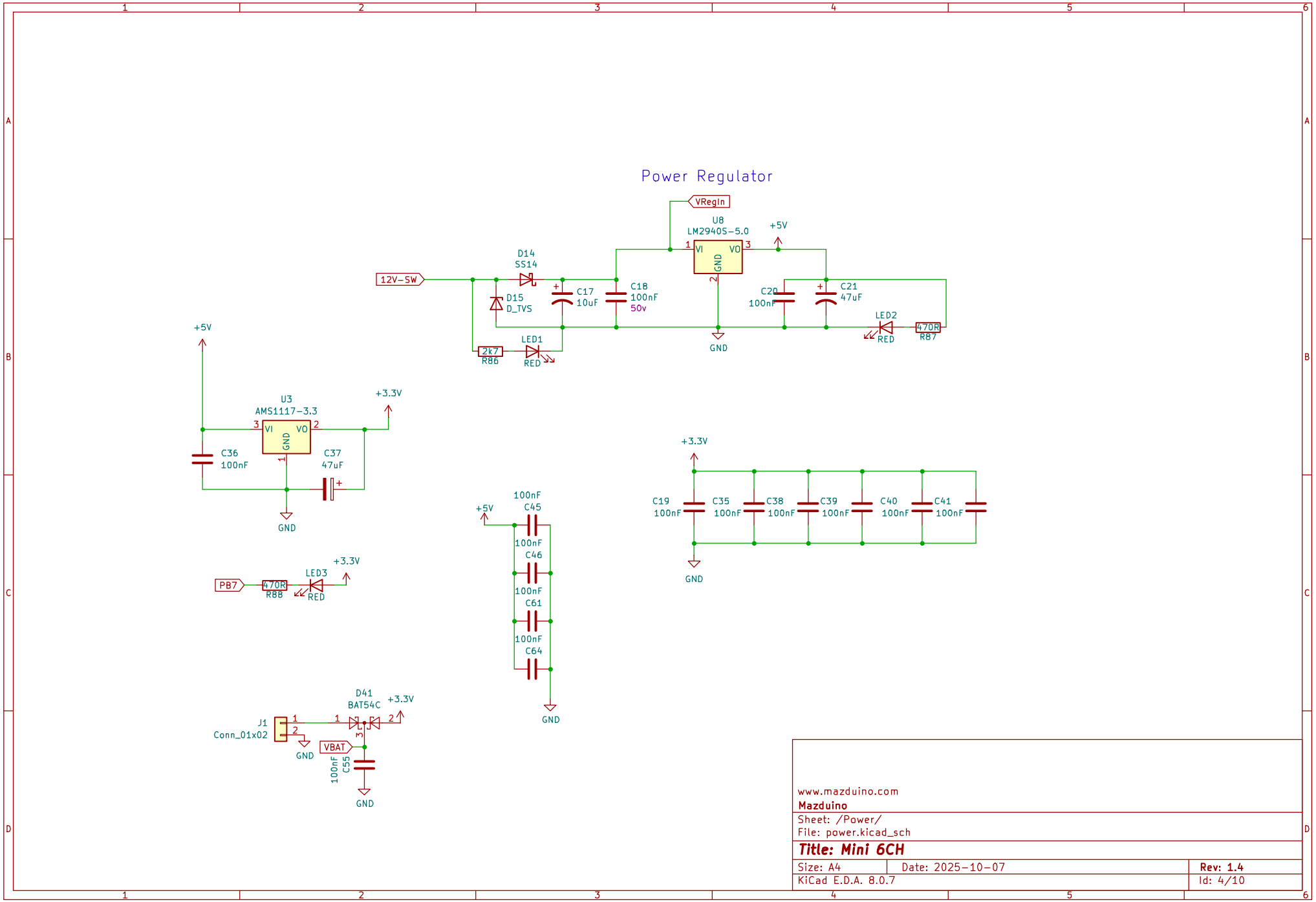
Mazduino
Sheet: /Inputs/
File: inputs.kicad_sch
Title: Mini 6CH
Size: A4
Date: 2025-10-07
Rev: 1.4
KiCad E.D.A. 8.0.7
Id: 3/10


Power Regulator
VRegIn
U8
LM2940S-5.0
VI
VO
GND
+5V
D14
SS14
12V-SW
D15
D_TVS
C17
10uF
C18
100nF
50v
C20
100nF
C21
47uF
LED2
RED
470R
R87
2k7
R86
LED1
RED
GND
+5V
U3
AMS1117-3.3
VI
VO
GND
C36
100nF
C37
47uF
+3.3V
GND
PB7
470R
R88
LED3
RED
+3.3V
100nF
C45
100nF
C46
100nF
C61
100nF
C64
+5V
GND
+3.3V
C19
100nF
C35
100nF
C38
100nF
C39
100nF
C40
100nF
C41
100nF
GND
D41
BAT54C
+3.3V
J1
Conn_01x02
GND
VBAT
100nF
C55
GND
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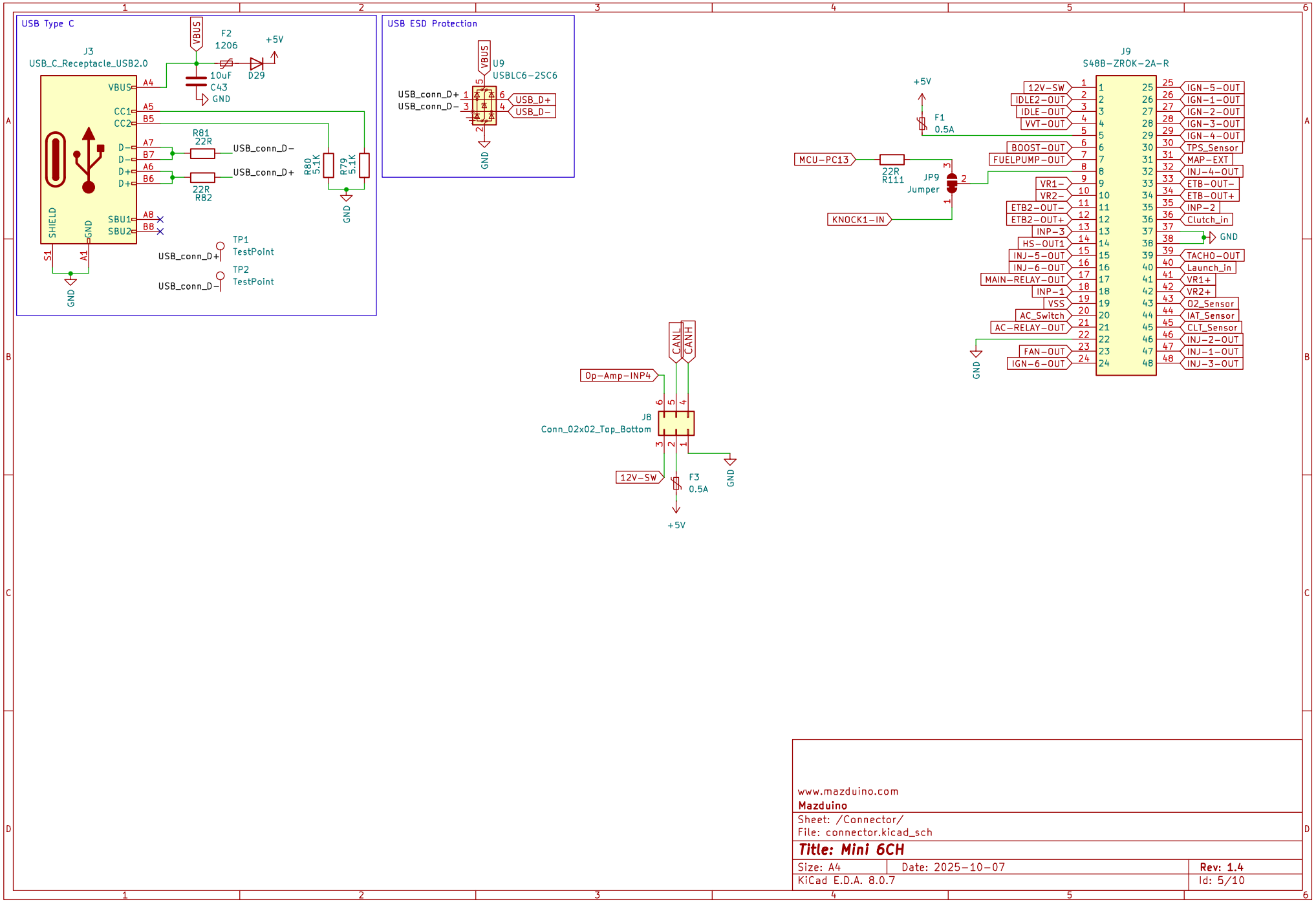
Sheet: /Power/
File: power.kicad_sch
Title: Mini 6CH
Size: A4
Date: 2025-10-07
Rev: 1.4
KiCad E.D.A. 8.0.7
Id: 4/10



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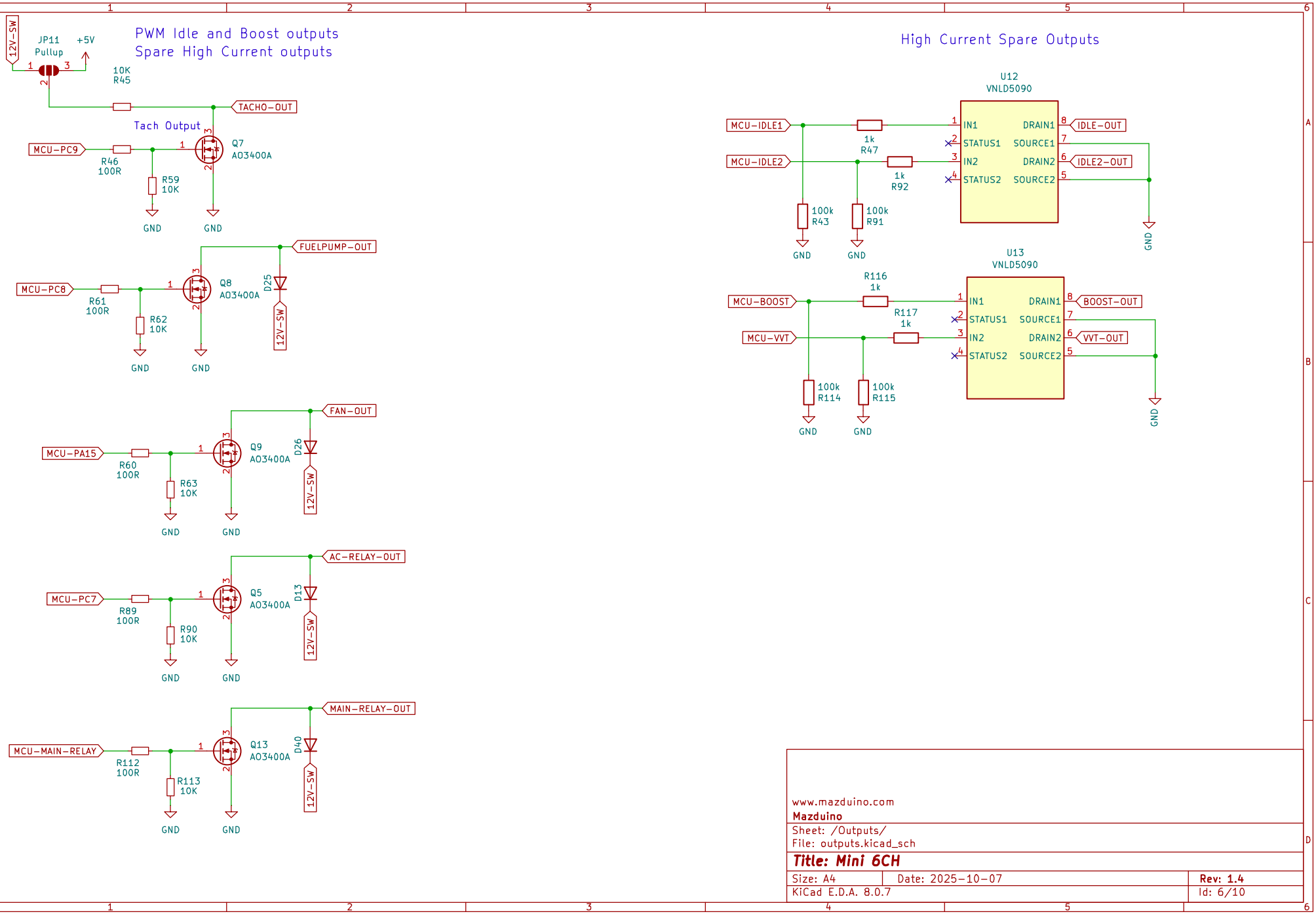
Sheet: /Connector/

File: connector.kicad_sch

Title: Mini 6CH

Size: A4	Date: 2025-10-07	**Rev: 1.4**
KiCad E.D.A. 8.0.7		Id: 5/10



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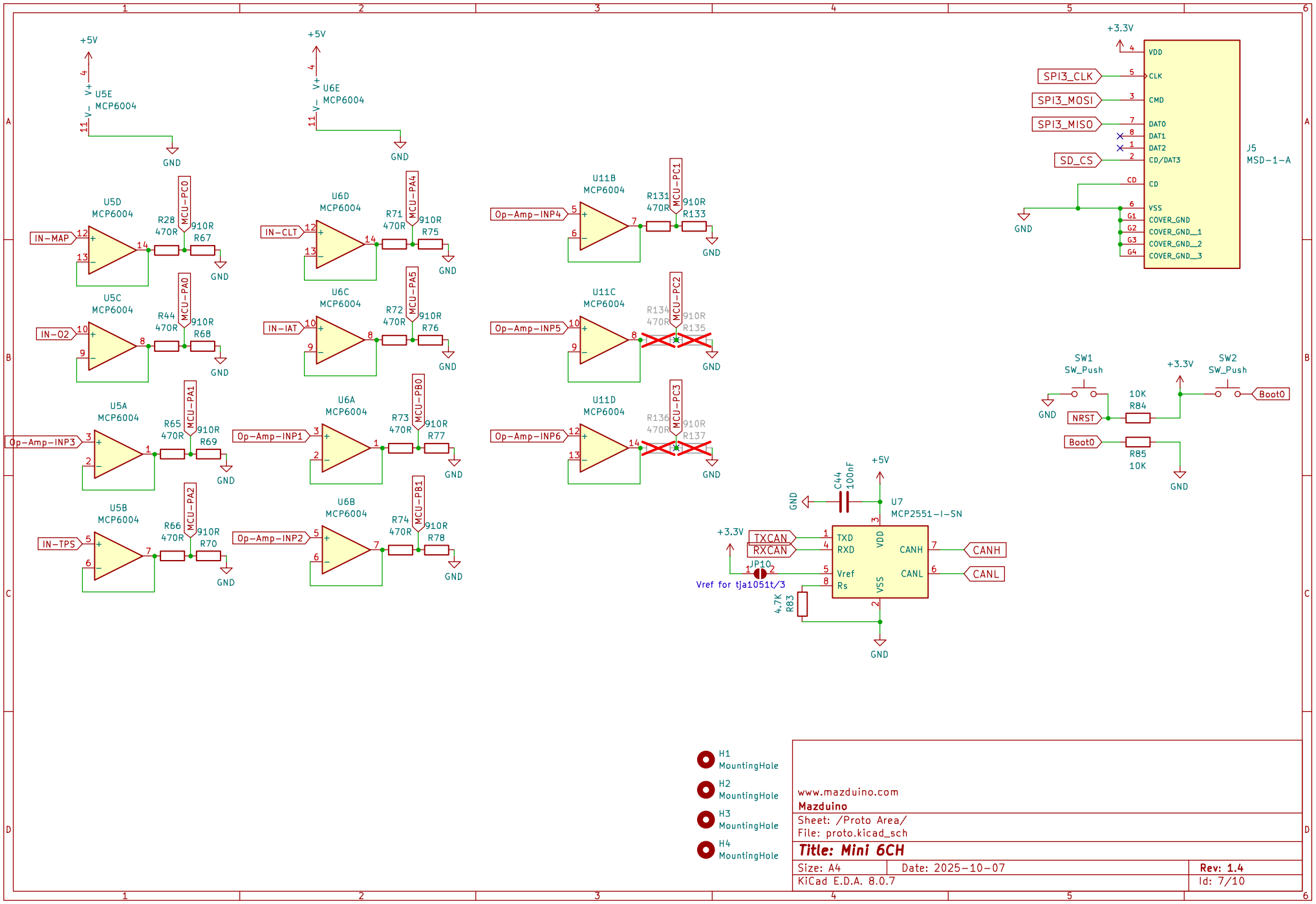
Sheet: /Outputs/

File: outputs.kicad_sch

Title: Mini 6CH

Size: A4	Date: 2025-10-07	**Rev: 1.4**
KiCad E.D.A. 8.0.7		Id: 6/10


+5V
U5E
MCP6004
GND
U6E
MCP6004
U5D
MCP6004
IN-MAP
R28
470R
MCU-PC0
910R
R67
U6D
MCP6004
IN-CLT
R71
470R
MCU-PA4
910R
R75
U11B
MCP6004
Op-Amp-INP4
R131
470R
MCU-PC1
910R
R133
U5C
MCP6004
IN-O2
R44
470R
MCU-PA0
910R
R68
U6C
MCP6004
IN-IAT
R72
470R
MCU-PA5
910R
R76
U11C
MCP6004
Op-Amp-INP5
R134
470R
MCU-PC2
910R
R135
U5A
MCP6004
Op-Amp-INP3
R65
470R
MCU-PA1
910R
R69
U6A
MCP6004
Op-Amp-INP1
R73
470R
MCU-PB0
910R
R77
U11D
MCP6004
Op-Amp-INP6
R136
470R
MCU-PC3
910R
R137
U5B
MCP6004
IN-TPS
R66
470R
MCU-PA2
910R
R70
U6B
MCP6004
Op-Amp-INP2
R74
470R
MCU-PB1
910R
R78
+3.3V
SPI3_CLK
SPI3_MOSI
SPI3_MISO
SD_CS
VDD
CLK
CMD
DAT0
DAT1
DAT2
CD/DAT3
CD
VSS
COVER_GND
COVER_GND__1
COVER_GND__2
COVER_GND__3
J5
MSD-1-A
SW1
SW_Push
SW2
SW_Push
NRST
Boot0
10K
R84
R85
10K
C44
100nF
U7
MCP2551-I-SN
TXCAN
RXCAN
TXD
RXD
Vref
Rs
VDD
VSS
CANH
CANL
JP10
Vref for tja1051t/3
4.7K
R83
H1
MountingHole
H2
MountingHole
H3
MountingHole
H4
MountingHole
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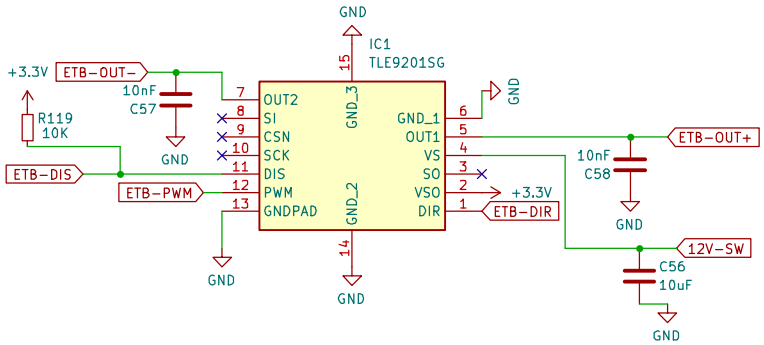
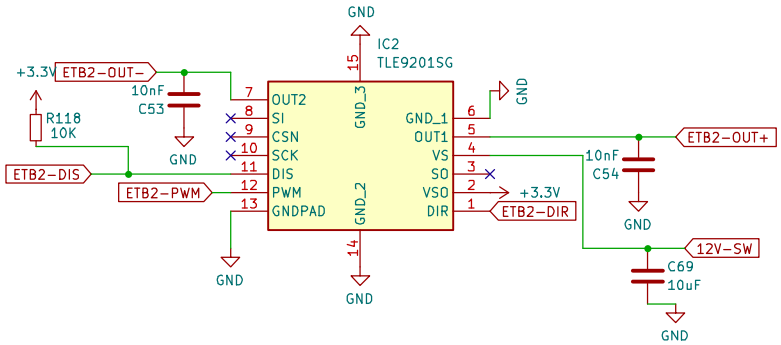
Mazduino
Sheet: /Proto Area/
File: proto.kicad_sch
Title: Mini 6CH
Size: A4
Date: 2025-10-07
Rev: 1.4
KiCad E.D.A. 8.0.7
Id: 7/10





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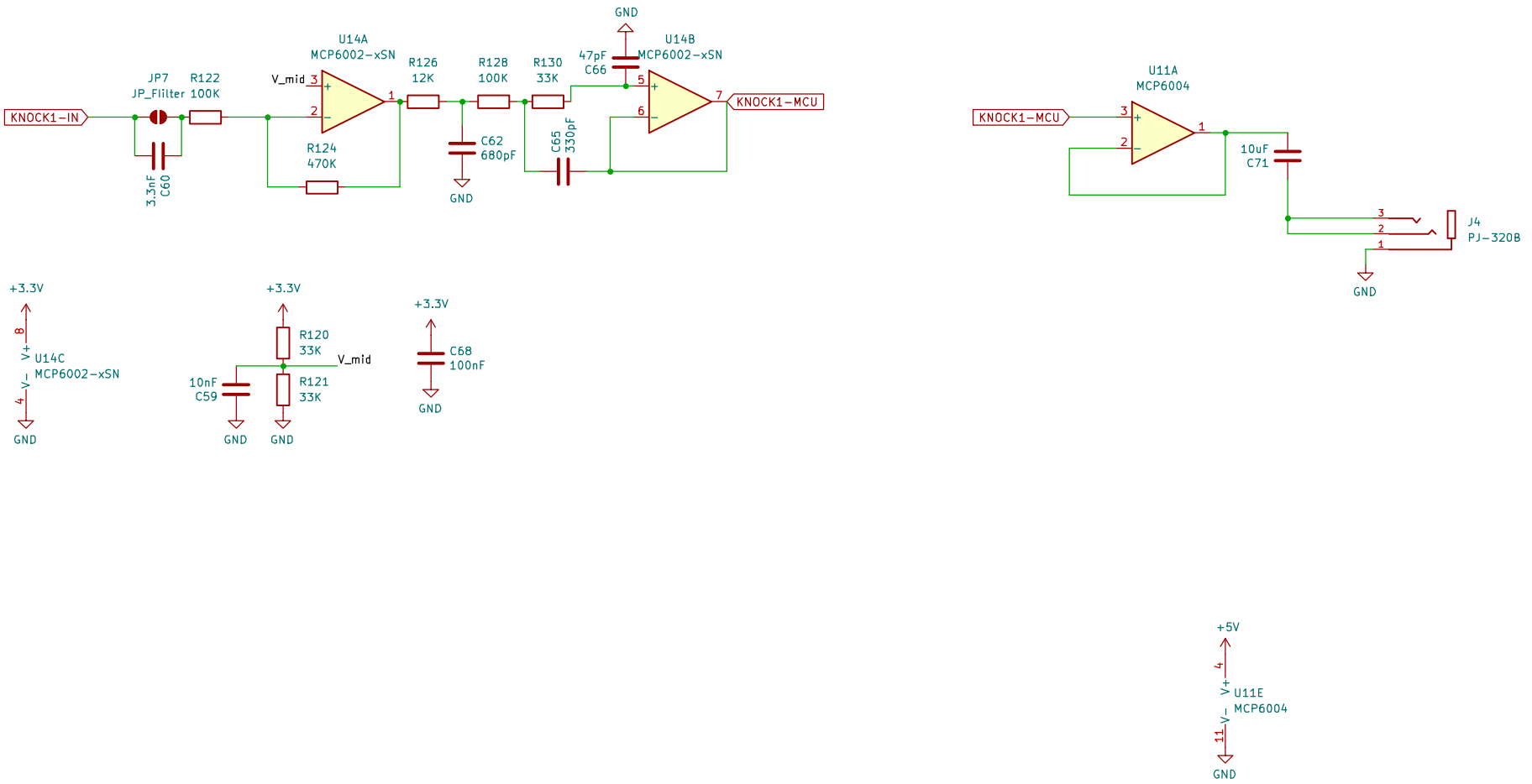
Sheet: /ETB/
File: ETB.kicad_sch

Title: Mini 6CH

Size: A4	Date: 2025-10-07	**Rev: 1.4**
KiCad E.D.A. 8.0.7		Id: 8/10



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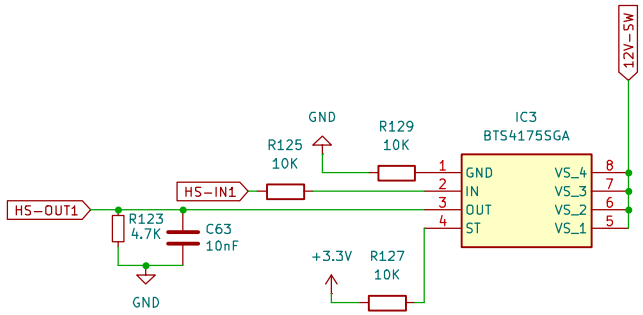
Sheet: /Knock/

File: knock.kicad_sch

Title: Mini 6CH

Size: A4	Date: 2025-10-07	**Rev: 1.4**
KiCad E.D.A. 8.0.7		Id: 9/10



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Sheet: /High Side/ File: High_side.kicad_sch		
Title: Mini 6CH		
Size: A4	Date: 2025-10-07	**Rev: 1.4**
KiCad E.D.A. 8.0.7		Id: 10/10