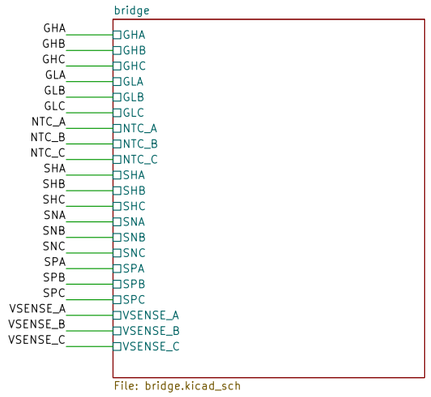
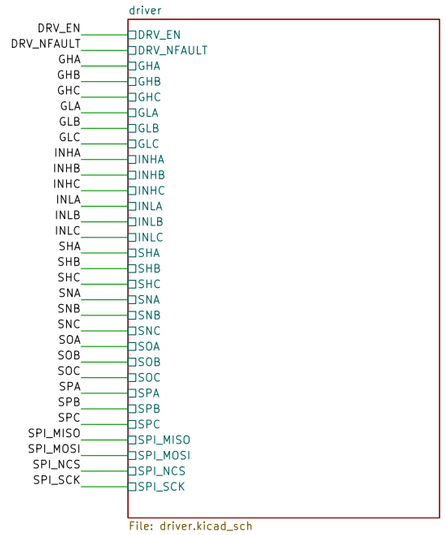
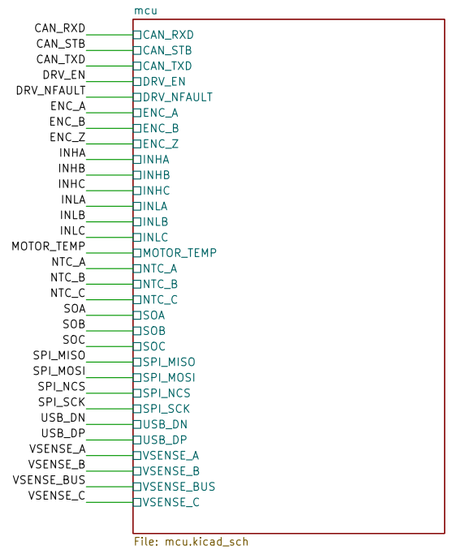
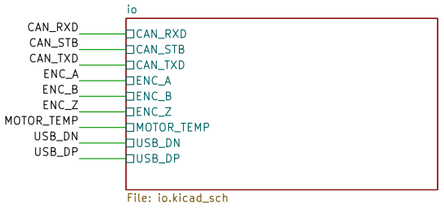
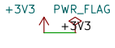


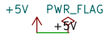


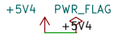






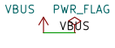


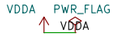












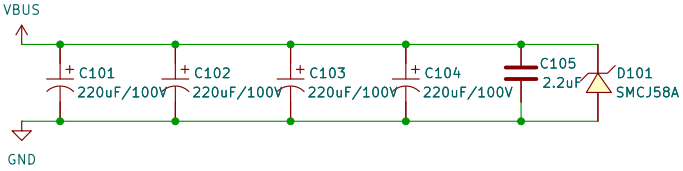
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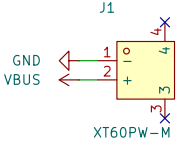
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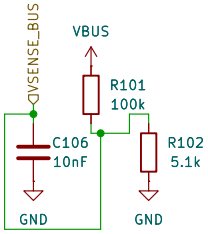
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Title: bldc-drive: 12-48 V 20 A 3-phase FOC motor drive

Size: A3	Date:	**Rev: 1**
KiCad E.D.A. 10.0.6		Id: 1/6







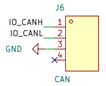
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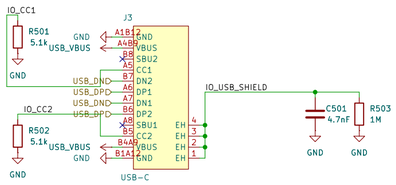
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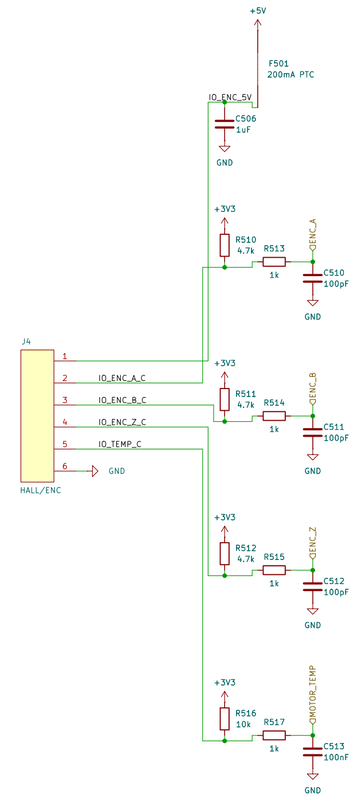
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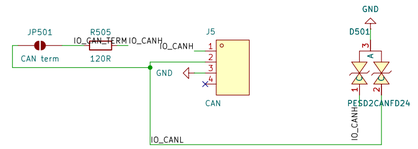
Title: bldc-drive: XT60 bus input, TVS, polymer bulk caps, bus voltage sense

Size: A5	Date:	**Rev: 1**
KiCad E.D.A. 10.0.6		Id: 2/6

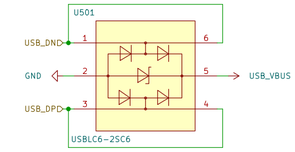


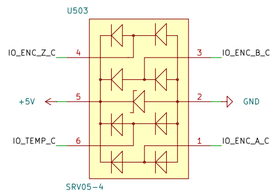


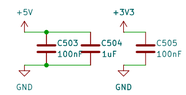


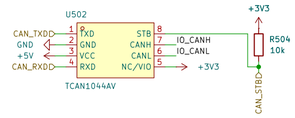




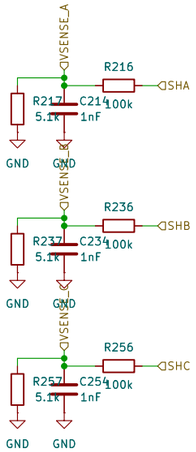


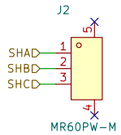


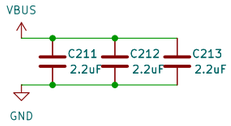


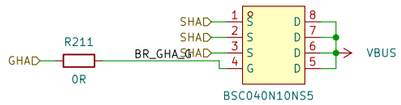


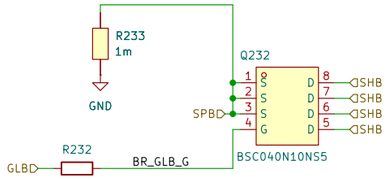
hwde		
Sheet: /io/		
File: io.kicad_sch		
Title: bldc-drive: USB-C, CAN FD (TCAN1044AV), Hall/encoder connector and		
Size: A2	Date:	**Rev: 1**
KiCad E.D.A. 10.0.6		Id: 3/6

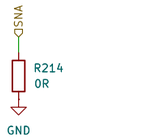


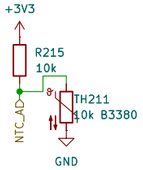


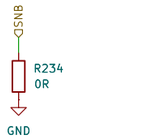


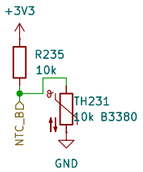


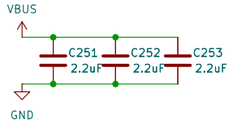


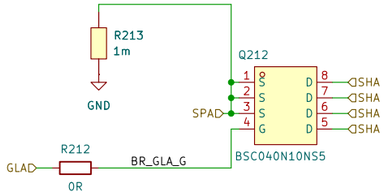


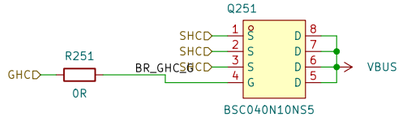


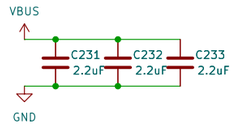


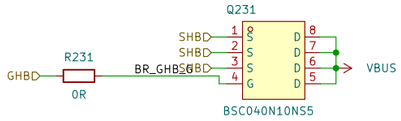


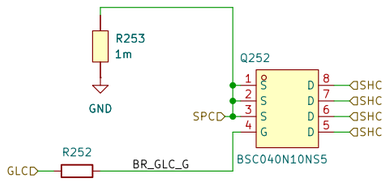


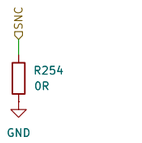


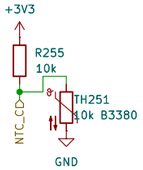










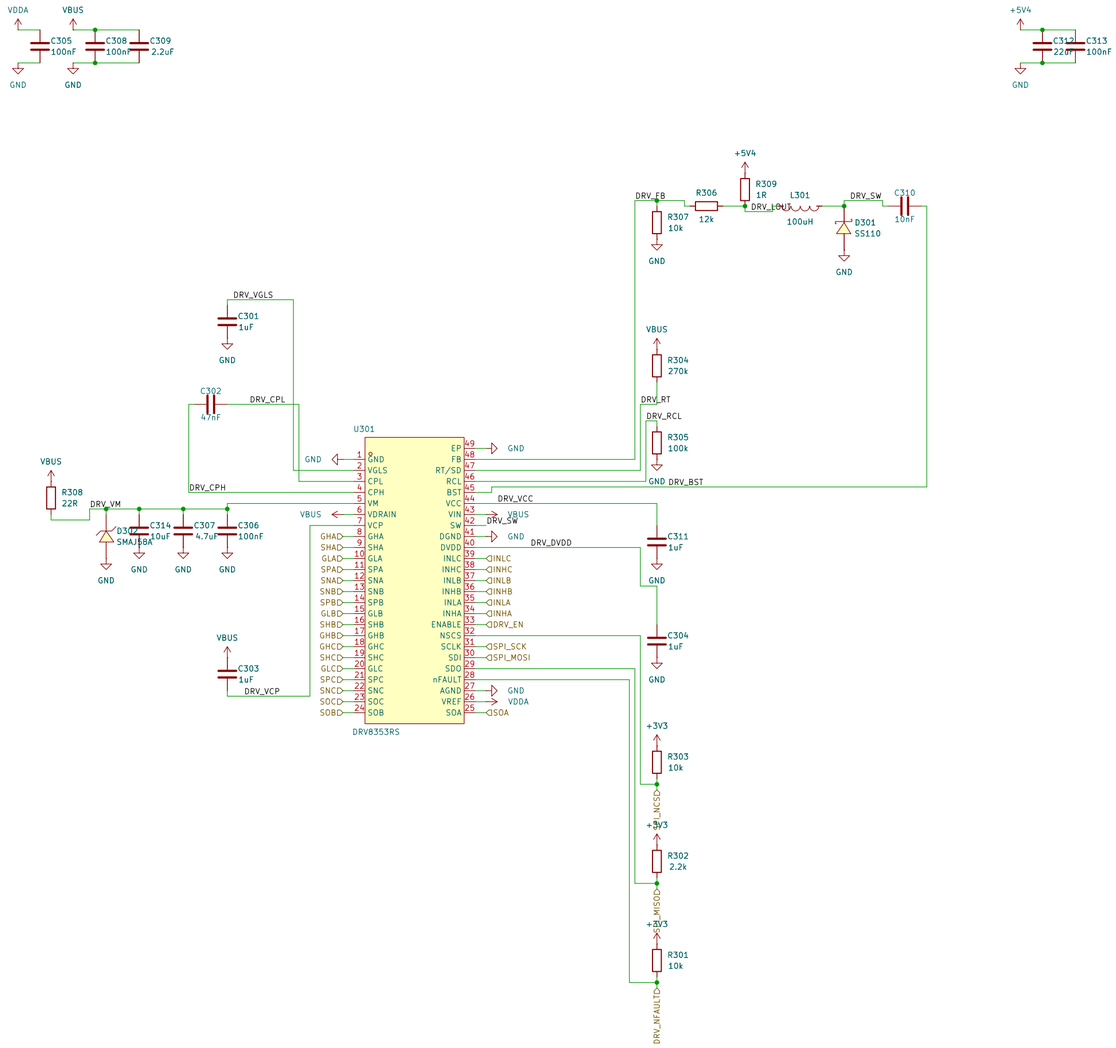


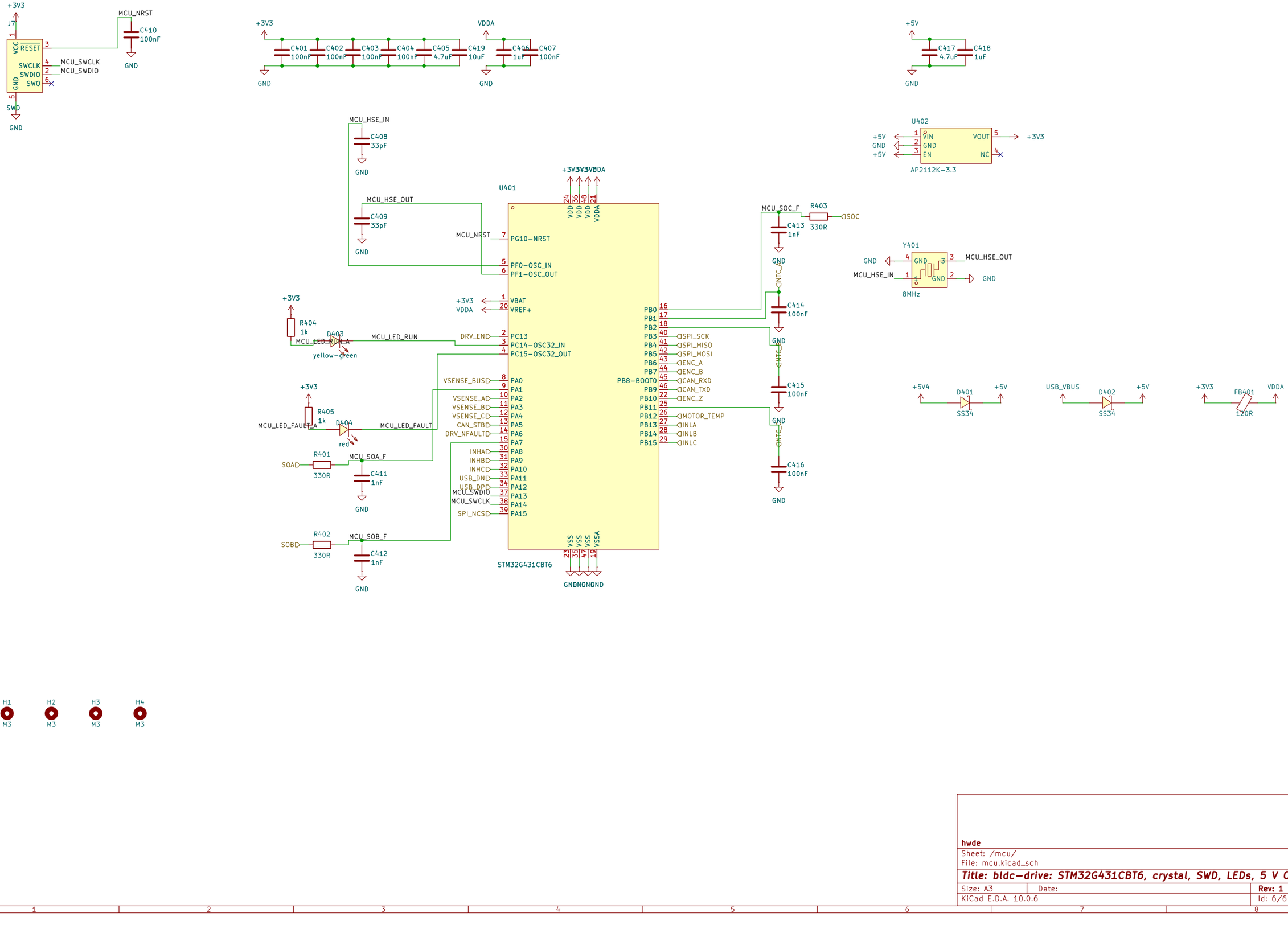
hwde

Sheet: /bridge/
File: bridge.kicad_sch

Title: bldc-drive: 3 half-bridges (BSC040N10NS5), 1 mOhm shunts, NTCs, p

Size: A3	Date:	**Rev: 1**
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VDDA
VBUS
C305
100nF
C308
100nF
C309
2.2uF
GND
GND
+5V4
C312
22nF
C313
100nF
GND
+5V4
R309
1R
DRV_FB
R306
12k
L301
100uH
DRV_SW
C310
10nF
R307
10k
D301
SS110
GND
GND
DRV_VGLS
C301
1uF
GND
VBUS
R304
270k
C302
47nF
DRV_CPL
DRV_RT
DRV_RCL
R305
100k
U301
GND
DRV_BST
VBUS
R308
22R
DRV_VM
DRV_CPH
DRV_VCC
VBUS
DRV_SW
D302
SMAJ58A
C314
10uF
C307
4.7uF
C306
100nF
GND
GND
GND
GND
GND
DRV_DVDD
C311
1uF
GND
C304
1uF
GND
VBUS
C303
1uF
DRV_VCP
GND
VDDA
DRV8353RS
+3V3
R303
10k
DRV_NCS
+3V3
R302
2.2k
DRV_MISO
+3V3
R301
10k
DRV_NFAULT
GND
GND
GND
GND
GND


J7
VCC
RESET
SWCLK
SWDIO
GND
SWO
SWD
MCU_NRST
MCU_SWCLK
MCU_SWDIO
C410
100nF
C401
100nF
C402
100nF
C403
100nF
C404
100nF
C405
4.7uF
C419
10uF
C406
1uF
C407
100nF
C417
4.7uF
C418
1uF
U402
VIN
VOUT
GND
EN
NC
AP2112K-3.3
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C408
33pF
MCU_HSE_OUT
C409
33pF
U401
PG10-NRST
PF0-OSC_IN
PF1-OSC_OUT
VBAT
VREF+
PC13
PC14-OSC32_IN
PC15-OSC32_OUT
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PB9
PB10
PB11
PB12
PB13
PB14
PB15
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330R
SOC
C413
1nF
C414
100nF
C415
100nF
C416
100nF
Y401
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R404
1k
D403
yellow-green
MCU_LED_RUN
MCU_LED_RUN_A
DRV_EN
R405
1k
D404
red
MCU_LED_FAULT
MCU_LED_FAULT_A
VSENSE_BUS
VSENSE_A
VSENSE_B
VSENSE_C
CAN_STB
DRV_NFAULT
INHA
INHB
INHC
USB_DN
USB_DP
MCU_SWDIO
MCU_SWCLK
SPI_NCS
R401
330R
MCU_SOA_F
SOA
C411
1nF
R402
330R
MCU_SOB_F
SOB
C412
1nF
SPI_SCK
SPI_MISO
SPI_MOSI
ENC_A
ENC_B
CAN_RXD
CAN_TXD
ENC_Z
MOTOR_TEMP
INLA
INLB
INLC
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H3
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Size: A3
Date:
Rev: 1
KiCad E.D.A. 10.0.6
Id: 6/6