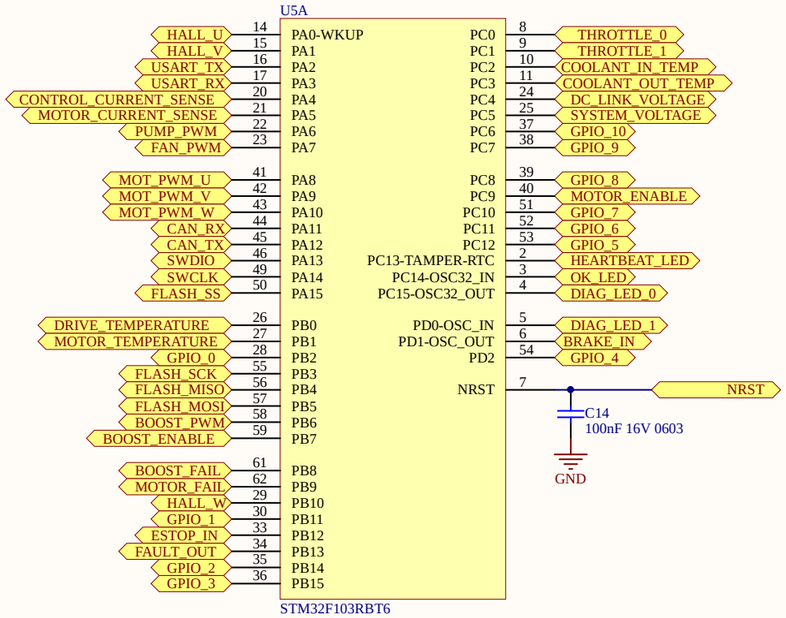
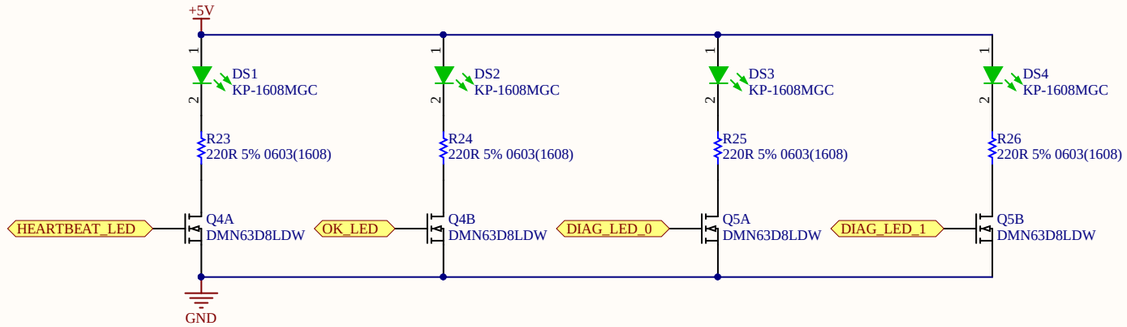
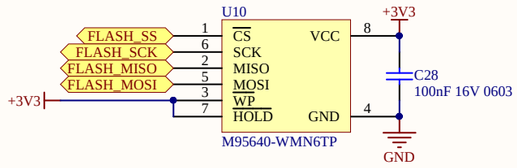
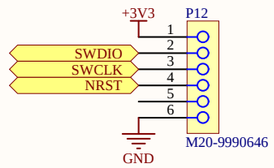
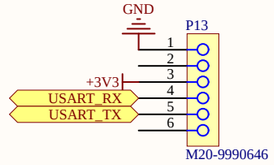
Comment	Description	Value	Designator	Quantity
220nF 16V 0603	CAP 220nF 16V ±10% 0603 (1608 Metric) Thickness 1mm SMD	220nF	C1, C11, C12, C13	4
100nF 16V 0603	CAP 100nF 16V ±20% 0603 (1608 Metric) Thickness 1mm SMD	100nF	C2, C3, C4, C5, C6, C8, C9, C14, C19, C35	10
1uF 25V 0603	CAP 1uF 25V ±10% 0603 (1608 Metric) Thickness 1mm SMD	1uF	C7, C10	2
CAP 100nF 16V 0603(1608)	CAP 100nF 16V ±20% 0603 (1608 Metric) Thickness 1mm SMD	100nF	C15, C16, C17, C18	4
EEEFK1E470P	Aluminum Electrolytic Capacitors (SMD Type)	47uF	C20, C21, C24, C25	4
CAP 100nF 16V 0603	CAP 100nF 16V ±20% 0603 (1608 Metric) Thickness 1mm SMD	100nF	C22	1
1uF 10V 0603	CAP 1uF 10V ±10% 0603 (1608 Metric) Thickness 1mm SMD	1uF	C23	1
2.2uF 16V 0603	CAP 2.2uF 16V ±10% 0603 (1608 Metric) Thickness 1mm SMD	2.2uF	C26, C27	2
KP-1608MGC	LED, SMT, 0603(1608), 1.1mm thickness, Green		DS1, DS2, DS3, DS4	4
744777910	SMD-Shielded Power Inductor WE-PD, L = 10.0 µH		L1, L2	2
Harwin M20-9990245	Connector Header Through Hole 2 position		P1	1
Harwin M30-9980745	Connector Header Through Hole 7x2 position		P2	1
39-30-0040	Mini-Fit Jr. Header, 4 Circuits, Dual Row, Right-Angle, with Snap-in Plastic Peg PCB Lock, PA Polyamide Nylon 6/6 94V-0, 2.54µm Matte Tin (Sn) Plating	39-30-0040	P3, P9	2
Molex 430451000	Micro-Fit 3.0 Right Angle Header, Dual Row, 10 Circuits, with Snap-in Plastic Peg PCB Lock, Tin		P4	1
Molex 430450600	Micro-Fit 3.0 Right Angle Header, 3.00mm Pitch, Dual Row, 6 Circuits, with Snap-in Plastic Peg PCB Lock, Tin, Glow-Wire Capable, Black		P5, P6, P8	3
Harwin M20-9990345	Connector Header Through Hole 3 position		P7	1
Molex 430450800	Micro-Fit 3.0 Right Angle Header, 3.00mm Pitch, Dual Row, 8 Circuits, with Snap-in Plastic Peg PCB Lock, Tin, Glow-Wire Capable, Black		P10	1
Molex 39-30-0020	Mini-Fit Jr. Header, 2 Circuits, Dual Row, Right-Angle, with Snap-in Plastic Peg PCB Lock, PA Polyamide Nylon 6/6 94V-0, 2.54µm Matte Tin (Sn) Plating	39-30-0020	P11	1
M20-9980646	6 Pos. Male SIL Vertical Throughboard Conn.		P12, P13	2
DMN3026LVT	30V 6.6A N-CHANNEL ENHANCEMENT MODE MOSFET		Q1, Q2	2
RUC051UNTCL	N-channel 20V 100mA Small Signal MOSFET		Q3	1
DMN63D8LDW	DUAL N-CHANNEL ENHANCEMENT MODE MOSFET		Q4, Q5	2
120R 5% 0805	120R 0.125W 5% 0805 (2012 Metric) SMD	120R	R1	1
100K 1% 0603	100K 0.1W 1% 0603 (1608 Metric) SMD	100000.00 Ohm	R2, R3, R5	3
10K 1% 0603	10K 0.1W 1% 0603 (1608 Metric) SMD	10000.00 Ohm	R4, R6, R7, R31	4
22K 5% 0603	22K 0.1W 5% 0603 (1608 Metric) SMD	22000.00 Ohm	R8, R14	2
33K 5% 0603	33K 0.1W 5% 0603 (1608 Metric) SMD	33000.00 Ohm	R9, R15	2
5K1 1% 0603	5K1 0.1W 1% 0603 (1608 Metric) SMD	5100.00 Ohm	R10, R16	2
10K 5% 0603	10K 0.1W 5% 0603 (1608 Metric) SMD	10000.00 Ohm	R11, R12, R13, R17, R18, R19, R37	7
1K 5% 0603	1K 0.1W 5% 0603 (1608 Metric) SMD	1000.00 Ohm	R20, R21, R22	3
220R 5% 0603(1608)	220R 0.1W 5% 0603 (1608 Metric) SMD	220.00 Ohm	R23, R24, R25, R26	4
Jumper 0603(1608)	Jumper 0603 (1608 Metric)	0.00 Ohm	R27	1
0.01R 5% 1/4W 0805	10 mOhms ±5% 0.25W, 1/4W Chip Resistor 0805 (2012 Metric) Current Sense Thin Film	0.01 Ohms	R28	1
56K 1% 0603	56K 0.1W 1% 0603 (1608 Metric) SMD	56000.00 Ohm	R29	1
61K9 1% 0603	61K9 0.1W 1% 0603 (1608 Metric) SMD	61K9	R30	1
20K5 1% 0603	20K5 0.1W 1% 0603 (1608 Metric) SMD	20K5	R32	1
2K2 5% 0603	2K2 0.1W 5% 0603 (1608 Metric) SMD	2200.00 Ohm	R33	1
105K 1% 0603	105K 0.1W 1% 0603 (1608 Metric) SMD	105000.00 Ohm	R34	1
20K 1% 0603	20K 0.1W 1% 0603 (1608 Metric) SMD	20000.00 Ohm	R35	1
330K 1% 0603	330K 0.1W 1% 0603 (1608 Metric) SMD	330000.00 Ohm	R36	1
TP1MM	1mm test pad		TP1, TP2, TP4	3
TI-SN65HVD232-SOIC D-8	3.3 V Can Transceiver, 17 mA, -40 to 85 degC, 8-pin SOIC (D), Green (RoHS & no Sb/Br)		U1	1
TC4468COE	1.2A Quad MOSFET Driver, AND, Commercial Temperature		U2, U4	2
LMC7101AIM5X	Tiny Low Power Operational Amplifier with Rail-to-Rail Input and Output, 5-pin SOT-23		U3	1
STM32F103RBT6	STM32 ARM Cortex M3 microcontroller		U5	1
TPS56220ODBVR	4.5-V to 17-V Input, 500-mA Synchronous Step-Down Converter With Advanced Eco-Mode™	TPS56220ODBVR	U6, U8	2
LMP8640MK-H/NOPB	Precision High Voltage Current Sense Amplifier, 6-pin TSOT		U7	1
LM2664M6X/NOPB	Switched Capacitor Voltage Converter, 6-pin SOT-23, Pb-Free		U9	1
M95640-WMN6TP	64-Kbit serial SPI bu		U10	1

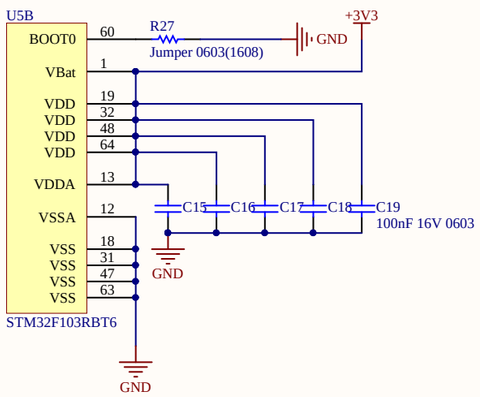












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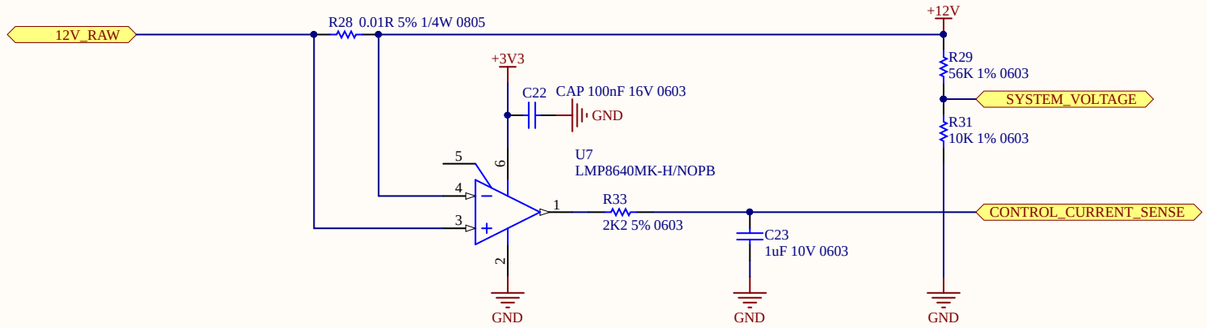

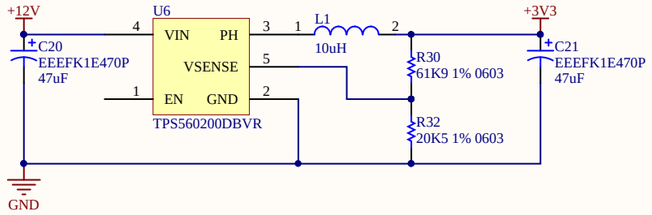

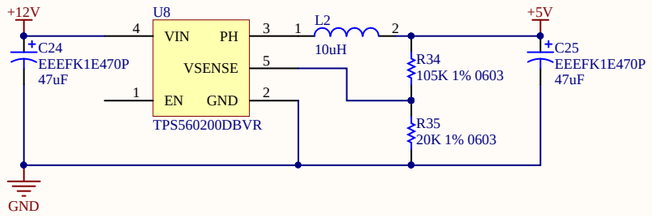

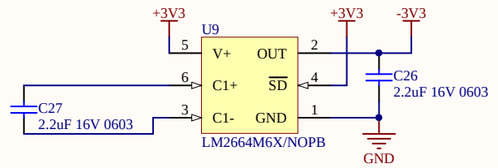

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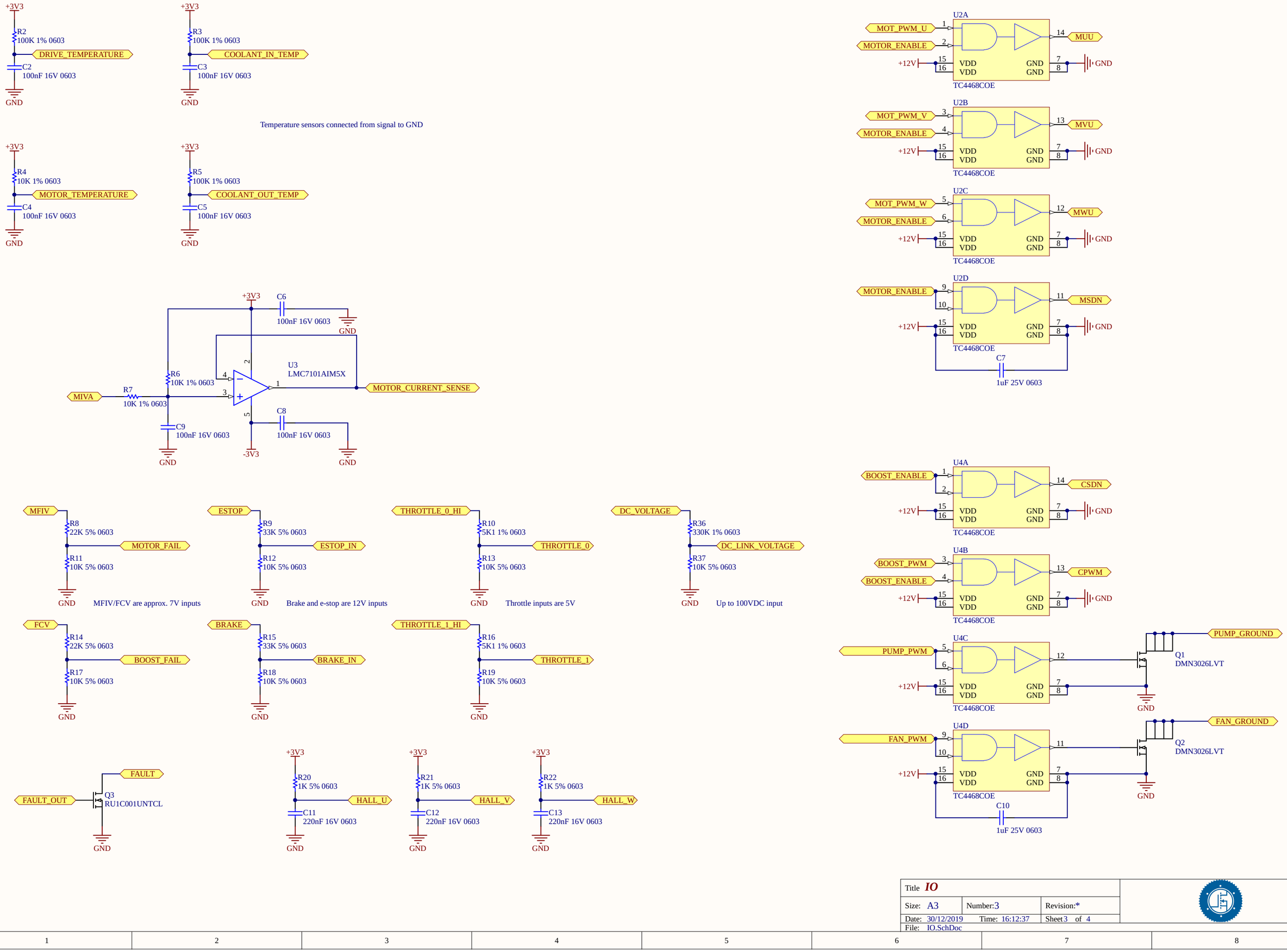
+3V3
R2
100K 1% 0603
DRIVE_TEMPERATURE
C2
100nF 16V 0603
GND
+3V3
R3
100K 1% 0603
COOLANT_IN_TEMP
C3
100nF 16V 0603
GND
Temperature sensors connected from signal to GND
+3V3
R4
10K 1% 0603
MOTOR_TEMPERATURE
C4
100nF 16V 0603
GND
+3V3
R5
100K 1% 0603
COOLANT_OUT_TEMP
C5
100nF 16V 0603
GND
+3V3
C6
100nF 16V 0603
GND
R6
10K 1% 0603
MIVA
R7
10K 1% 0603
U3
LMC7101AIM5X
MOTOR_CURRENT_SENSE
C9
100nF 16V 0603
C8
100nF 16V 0603
GND
-3V3
GND
MFIV
R8
22K 5% 0603
MOTOR_FAIL
R11
10K 5% 0603
GND
MFIV/FCV are approx. 7V inputs
ESTOP
R9
33K 5% 0603
ESTOP_IN
R12
10K 5% 0603
GND
Brake and e-stop are 12V inputs
THROTTLE_0_HI
R10
5K1 1% 0603
THROTTLE_0
R13
10K 5% 0603
GND
Throttle inputs are 5V
DC_VOLTAGE
R36
330K 1% 0603
DC_LINK_VOLTAGE
R37
10K 5% 0603
GND
Up to 100VDC input
FCV
R14
22K 5% 0603
BOOST_FAIL
R17
10K 5% 0603
GND
BRAKE
R15
33K 5% 0603
BRAKE_IN
R18
10K 5% 0603
GND
THROTTLE_1_HI
R16
5K1 1% 0603
THROTTLE_1
R19
10K 5% 0603
GND
FAULT
FAULT_OUT
Q3
RU1C001UNTCL
GND
+3V3
R20
1K 5% 0603
HALL_U
C11
220nF 16V 0603
GND
+3V3
R21
1K 5% 0603
HALL_V
C12
220nF 16V 0603
GND
+3V3
R22
1K 5% 0603
HALL_W
C13
220nF 16V 0603
GND
U2A
MOT_PWM_U
MOTOR_ENABLE
+12V
VDD
VDD
GND
GND
MUU
GND
TC4468COE
U2B
MOT_PWM_V
MOTOR_ENABLE
+12V
MVU
GND
TC4468COE
U2C
MOT_PWM_W
MOTOR_ENABLE
+12V
MWU
GND
TC4468COE
U2D
MOTOR_ENABLE
+12V
MSDN
GND
TC4468COE
C7
1uF 25V 0603
U4A
BOOST_ENABLE
+12V
CSDN
GND
TC4468COE
U4B
BOOST_PWM
BOOST_ENABLE
+12V
CPWM
GND
TC4468COE
U4C
PUMP_PWM
+12V
PUMP_GROUND
Q1
DMN3026LVT
GND
TC4468COE
U4D
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FAN_GROUND
Q2
DMN3026LVT
GND
TC4468COE
C10
1uF 25V 0603
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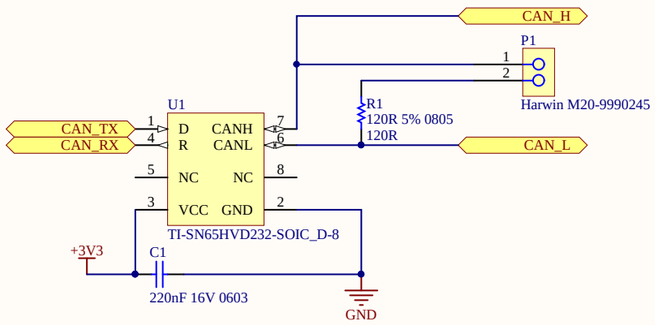
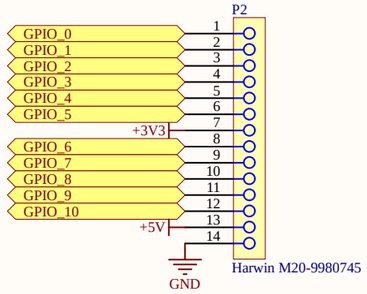
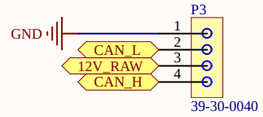
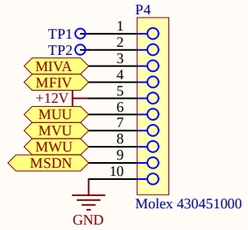
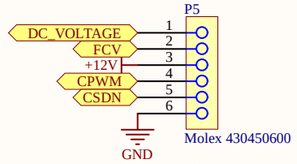


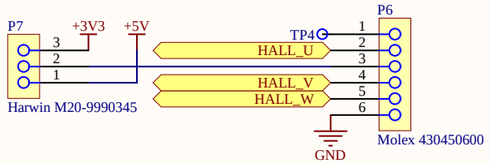


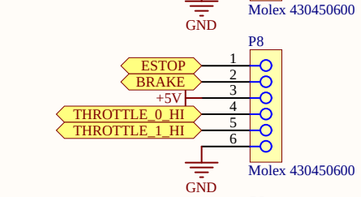


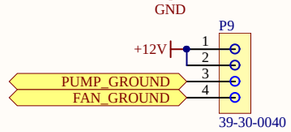
Case Hammond 1455L801

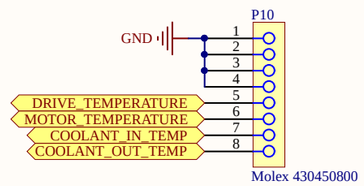


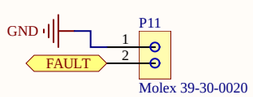












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