

A



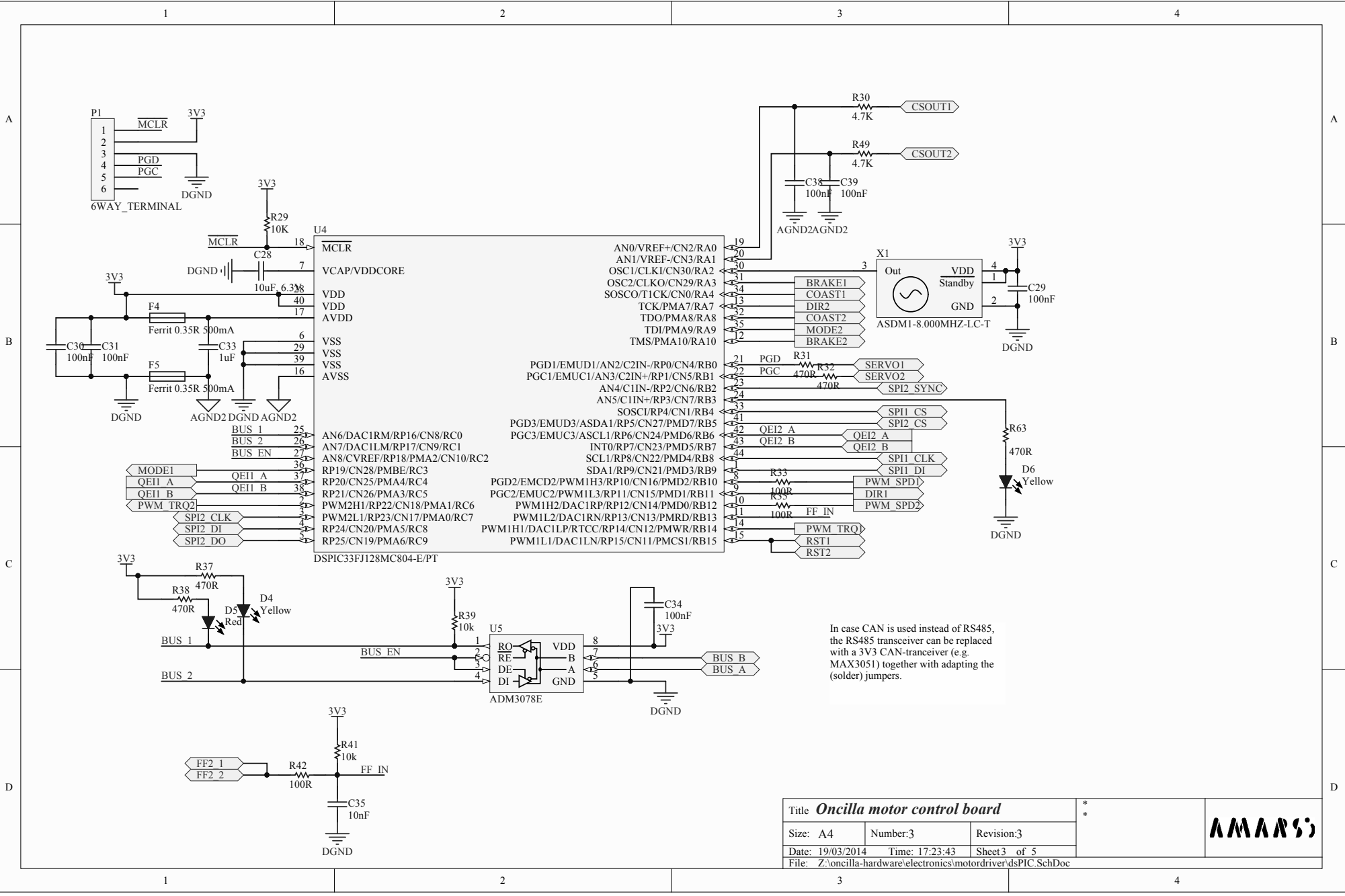
D

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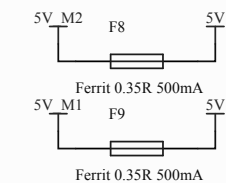
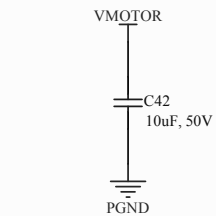
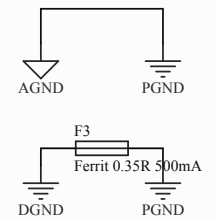
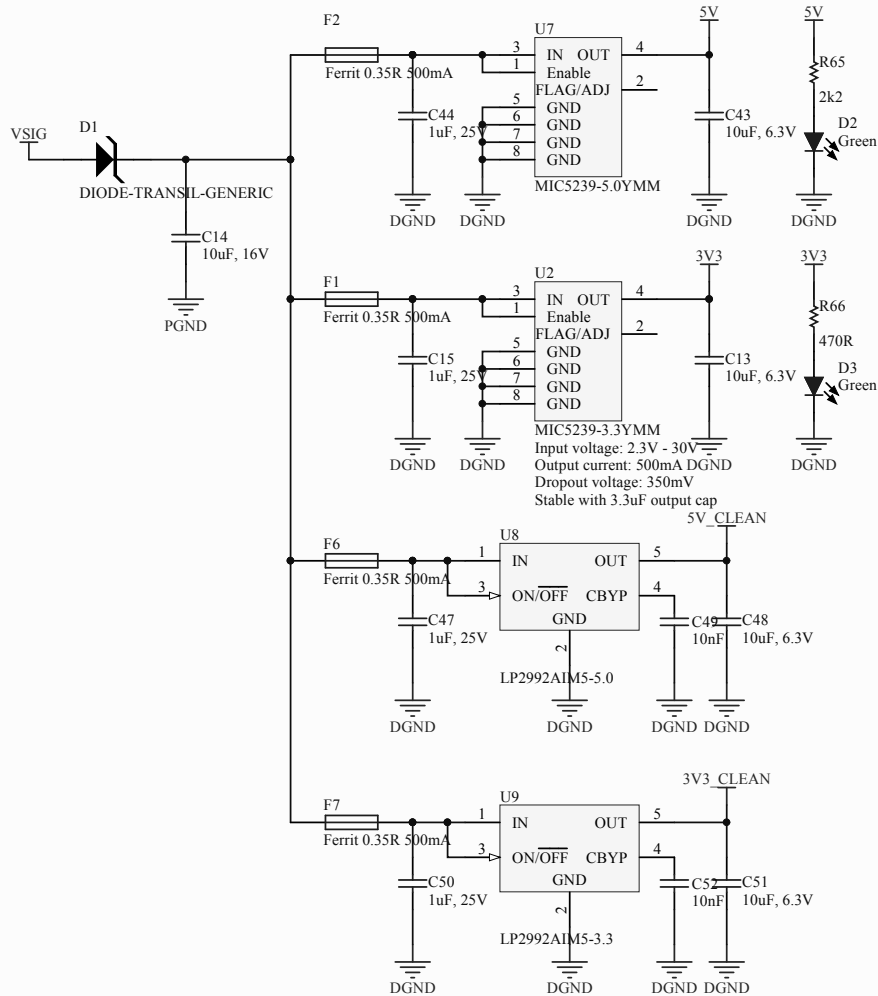
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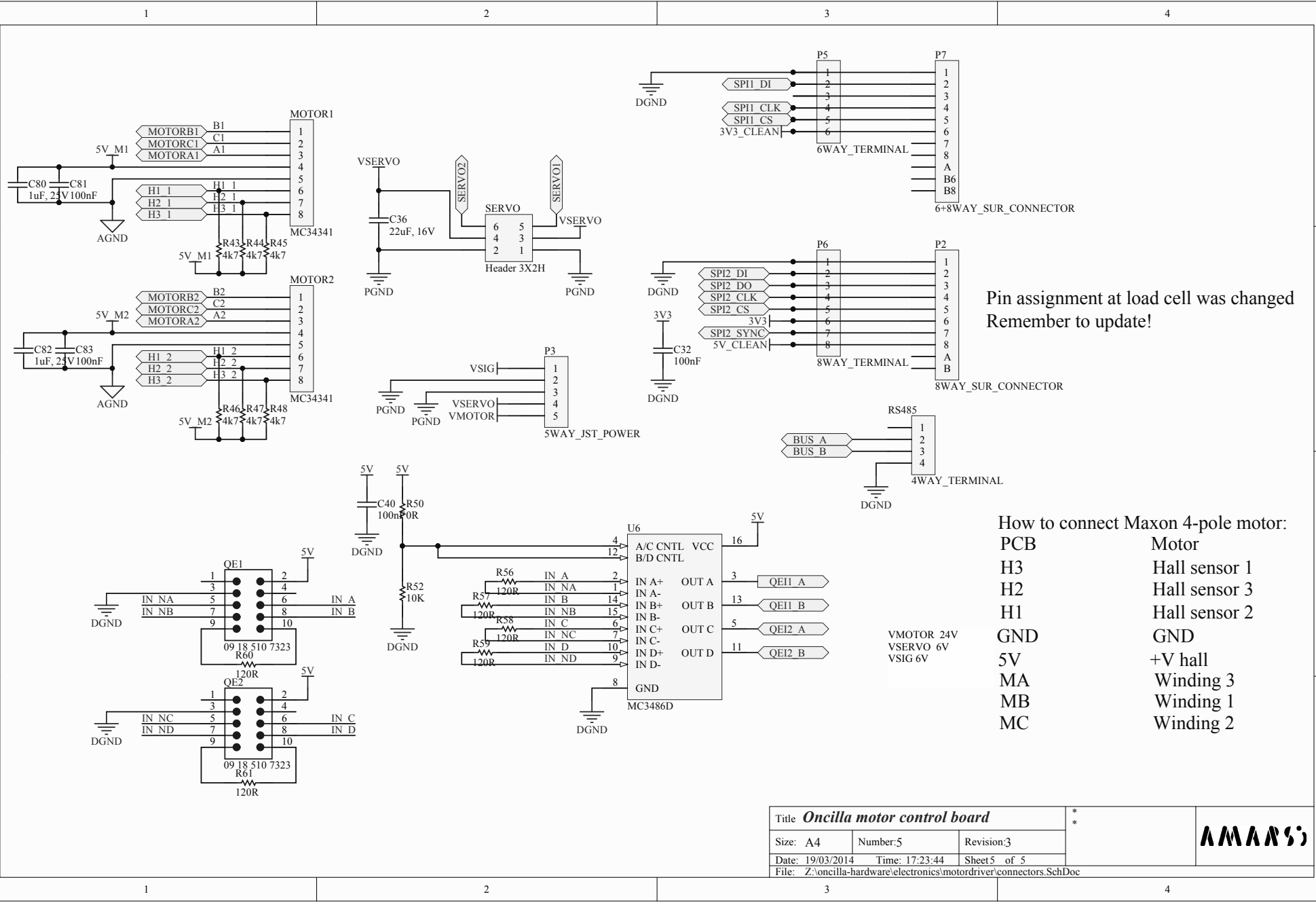




|  |                |             |        |              |
|--|----------------|-------------|--------|--------------|
| Title <i><b>Oncilla motor control board</b></i>                |                |             | *<br>* | <b>AMARS</b> |
| Size: A4   | Number:3       | Revision:3  |        |              |
| Date: 19/03/2014   | Time: 17:23:43 | Sheet3 of 5 |        |              |
| File: Z:\oncilla-hardware\electronics\motordriver\dsPIC.SchDoc |                |             |        |              |



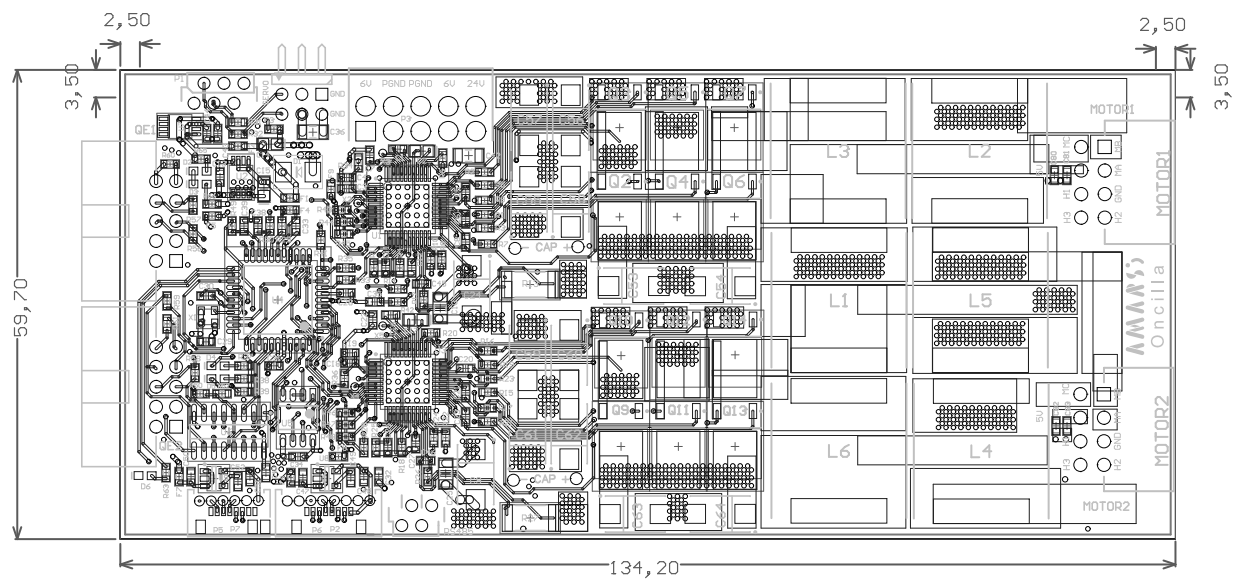
|  |                |             |        |   |
|--|----------------|-------------|--------|---|
| Title <i><b>Oncilla motor control board</b></i>                |                |             | *<br>* |  |
| Size: A4   | Number:4       | Revision:3  |        |   |
| Date: 19/03/2014   | Time: 17:23:44 | Sheet4 of 5 |        |   |
| File: Z:\oncilla-hardware\electronics\motordriver\power.SchDoc |                |             |        |   |

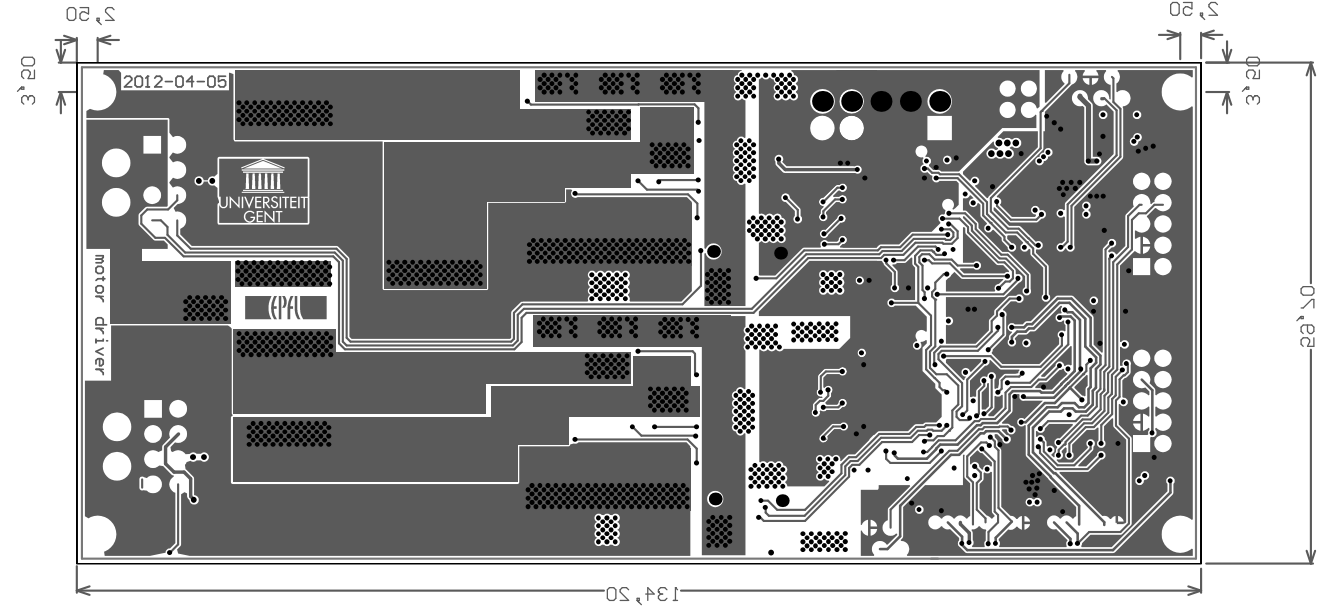


Pin assignment at load cell was changed  
Remember to update!

|                                    |               |
|------------------------------------|---------------|
| How to connect Maxon 4-pole motor: |               |
| PCB                                | Motor         |
| H3                                 | Hall sensor 1 |
| H2                                 | Hall sensor 3 |
| H1                                 | Hall sensor 2 |
| GND                                | GND           |
| 5V                                 | +V hall       |
| MA                                 | Winding 3     |
| MB                                 | Winding 1     |
| MC                                 | Winding 2     |

|   |                |             |                        |
|---|----------------|-------------|------------------------|
| Title <i>Oncilla motor control board</i>                            |                |             | **<br><br><b>AMARS</b> |
| Size: A4  | Number:5       | Revision:3  |                        |
| Date: 19/03/2014  | Time: 17:23:44 | Sheet5 of 5 |                        |
| File: Z:\oncilla-hardware\electronics\motordriver\connectors.SchDoc |                |             |                        |





# Part List

motordriver\_bom For PCB Document [motordriver.PcbDoc]

Source Data From:

motordriver.PcbDoc

Project:

motordriver.PrjPCB

Variant:

None

Report Date: 19/03/2014

17:24:09

Print Date: 19-Mar-14

5:24:19 PM

| Designator  | Comment               | LibRef                | Footprint                 | Description  |
|---|-----------------------|-----------------------|---------------------------|--|
| C1, C16   | 470nF, 25V            | Cap Semi              | CAPC1608L                 | Capacitor (Semiconductor SIM Model)  |
| C2, C17   | 4.7uF, 25V            | Cap Semi              | CAPC2512L                 | Capacitor (Semiconductor SIM Model)  |
| C3, C5, C6, C7, C8, C12, C18, C20, C21, C22, C23, C27, C29, C30, C31, C32, C34, C38, C39, C40, C81, C83 | 100nF                 | Cap Semi              | CAPC1608L                 | Capacitor (Semiconductor SIM Model)  |
| C4, C19   | 4.7uF, 10V            | Cap Semi              | CAPC1608L                 | Capacitor (Semiconductor SIM Model)  |
| C9, C24, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64                                     | 47uF, 35V             | 255D157X06R3D2T045    | 7343                      |  |
| C10, C25, C42   | 10uF, 50V             | Cap Semi              | CAPC3216L                 | Capacitor (Semiconductor SIM Model)  |
| C11, C26, C45, C46  | 1nF                   | Cap Semi              | CAPC1608L                 | Capacitor (Semiconductor SIM Model)  |
| C13, C28, C43, C48, C51   | 10uF, 6.3V            | Cap Semi              | CAPC1608L                 | Capacitor (Semiconductor SIM Model)  |
| C14   | 10uF, 16V             | Cap Semi              | CAPC2512L                 | Capacitor (Semiconductor SIM Model)  |
| C15   | 1uF, 25V              | Cap Semi              | CAPC2512L                 | Capacitor (Semiconductor SIM Model)  |
| C33, C44, C47, C50  | 1uF, 25V              | Cap Semi              | CAPC1608L                 | Capacitor (Semiconductor SIM Model)  |
| C35, C49, C52   | 10nF                  | Cap Semi              | CAPC1608L                 | Capacitor (Semiconductor SIM Model)  |
| C36   | 22uF, 16V             | Cap Semi              | CAPC3216L                 | Capacitor (Semiconductor SIM Model)  |
| C80, C82  | 1uF                   | Cap Semi              | CAPC1608L                 | Capacitor (Semiconductor SIM Model)  |
| D1  | DIODE-TRANSIL-GENERIC | DIODE-TRANSIL-GENERIC | DIODE-SMB                 | GENERIC TRANSIL  |
| D2, D3, D6  | LED Green             | LED                   | CD1608-0603               | LED  |
| D4  | LED Yellow            | LED                   | CD1608-0603               | LED  |
| D5  | LED Red               | LED                   | CD1608-0603               | LED  |
| Designator1   | Comment               |                       |                           |  |
| F1, F2, F3, F4, F5, F6, F7, F8, F9  | Ferrit 0.35R 500mA    | Fuse 1                | RESC1608L                 | Ferrit Bead  |
| L1, L2, L3, L4, L5, L6  | 68uH                  | IHLP-6767GZ-11        | IHLP-6767GZ-11            | IHLP-6767GZ-11 Low Profile, High Current Inductors   |
| MOTOR1  | MC34341               | MC34341               | MC34341                   | MC34341- STECKER#07 ,BKONT   |
| MOTOR2  |                       |                       |                           |  |
| P1  | 8WAY_TERMINAL         | 8WAY_TERMINAL         | MICROMATCH_8WAY_SE        |  |
| P2  | 8WAY_SUR_CONNECTOR    | 8WAY_SUR_CONNECTOR    | CONNECTOR_8WAY_0.8MM      |  |
| P3  | 8WAY_JST_POWER        | 8WAY_JST_POWER        | TERMINAL_8WAY_35          |  |
| P5  | 8WAY_TERMINAL         | 8WAY_TERMINAL         | CONNECTOR_8WAY_RA_5MM     |  |
| P6  | 8WAY_TERMINAL         | 8WAY_TERMINAL         | CONNECTOR_8WAY_RA_5MM     |  |
| P7  | 6+8WAY_SUR_CONNECTOR  | 6+8WAY_SUR_CONNECTOR  | CONNECTOR_6+8WAY_0.8MM    |  |
| Q2, Q3, Q4, Q5, Q6, Q7, Q9, Q10, Q11, Q12, Q13, Q14   | IRFR48Z               | IRFR110               | TO-252AA_N                | HEXFET Power MOSFET  |
| QE1, QE2  | 09 18 510 7323        | 09 18 510 7323        | 918510x323                | Flat Cable Connector (IDC), Low-Profile Male Header, Angled Solder Pin, 10 Contacts, Performance Level 3           |
| R1, R2, R3, R5, R7, R8, R15, R16, R17, R19, R21, R23  | 22R                   | Res Semi              | RESC1608L                 | Semiconductor Resistor   |
| R4, R8, R18, R22, R29, R39, R41, R52  | 10k                   | Res Semi              | RESC1608L                 | Semiconductor Resistor   |
| R6, R10, R20, R24   | 1k                    | Res Semi              | RESC1608L                 | Semiconductor Resistor   |
| R11, R26  | 27k                   | Res Semi              | RESC1608L                 | Semiconductor Resistor   |
| R12, R28, R34, R36, R50   | 0R                    | Res Semi              | RESC1608L                 | Semiconductor Resistor   |
| R13, R27  | 20mR                  | Res2                  | RESC6332N                 | Resistor   |
| R14, R28, R30, R43, R44, R45, R46, R47, R48, R49  | 4.7k                  | Res Semi              | RESC1608L                 | Semiconductor Resistor   |
| R31, R32, R37, R38, R63, R66  | 470R                  | Res Semi              | RESC1608L                 | Semiconductor Resistor   |
| R33, R35, R42   | 100R                  | Res Semi              | RESC1608L                 | Semiconductor Resistor   |
| R56, R57, R58, R59, R60, R61  | 120R                  | Res Semi              | RESC1608L                 | Semiconductor Resistor   |
| R65   | 2k2                   | Res Semi              | RESC1608L                 | Semiconductor Resistor   |
| RS485   | 4WAY_TERMINAL         | 4WAY_TERMINAL         | MICROMATCH_4WAY_SE        |  |
| SERVO   | Header 3X2H           | Header 3X2H           | HDR2X3H                   | Header, 3-Pin, Dual row, Right Angle   |
| U1, U3  | A3930                 | A3930                 | TS1QFP50P900X900X160_348N | brushless motor driver, 3-phase  |
| U2  | MIC5239-3.3YMM        | MIC5239               | MSOP-8                    | LDO, 500mA, Vin:2.3V-30V   |
| U4  | DSPIC33FJ128MC804-E/P | DSPIC33FJ128MC804-E/P | TQFP-PT44_N               | High-Performance 16-bit Digital Signal Controller, 128 KB Flash, 16 KB RAM, 44-Pin TQFP, Extended High Temperature |
| U5  | ADM3078E              | ADM3078E              | SOIC-8_M                  | Half-Duplex RS485 Transceiver, 3.3V, 16MB  |
| U6  | MC3486D               | MC3486D               | 751B-03_N                 | Quad EIA-422/423 Line Receiver   |
| U7  | MIC5239-5.0YMM        | MIC5239               | MSOP-8                    | LDO, 500mA, Vin:2.3V-30V   |
| U8  | LP2992AIM5-5.0        | LP2992AIM5-5.0        | MF05A_N                   | Micropower 250 mA Low-Noise Ultra Low-Dropout Regulator in SOT-23 and LLP Packages                                 |
| U9  | LP2992AIM5-3.3        | LP2992AIM5-5.0        | MF05A_N                   | Micropower 250 mA Low-Noise Ultra Low-Dropout Regulator in SOT-23 and LLP Packages                                 |
| X1  | ASDM1-8.000MHZ-LC-T   | Oscillator            | Crystal-Oscillator-2520   | Oscillator   |
| X2, X3, X4, X5  | 1WAY_TERMINAL         | 1WAY_TERMINAL         | TESTPIN 0.5MM             |  |