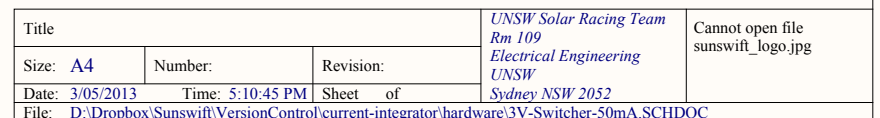


| | | | | |
|--|------------------|-----------|------------------------|---------------------------------------|
| Title | | | UNSW Solar Racing Team | Cannot open file sunswift_logo.jpg |
| Size: A4 | Number: | Revision: | Rm 109 | |
| Date: 3/05/2013 | Time: 5:10:45 PM | Sheet of | Electrical Engineering | |
| File: D:\Dropbox\Sunswift\VersionControl\current-integrator\hardware\3V3-CAN-UNISOLATED.SchDoc | | | UNSW | |
| | | | Sydney NSW 2052 | |



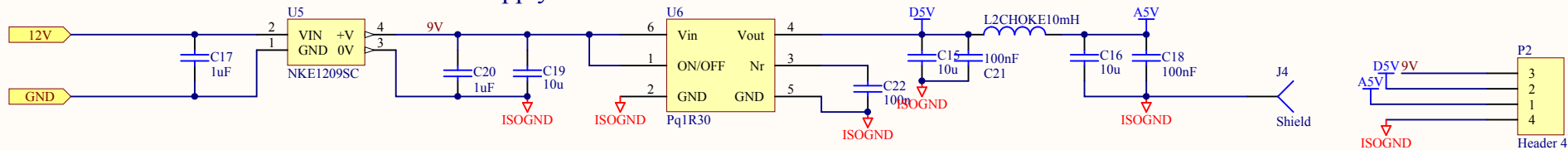
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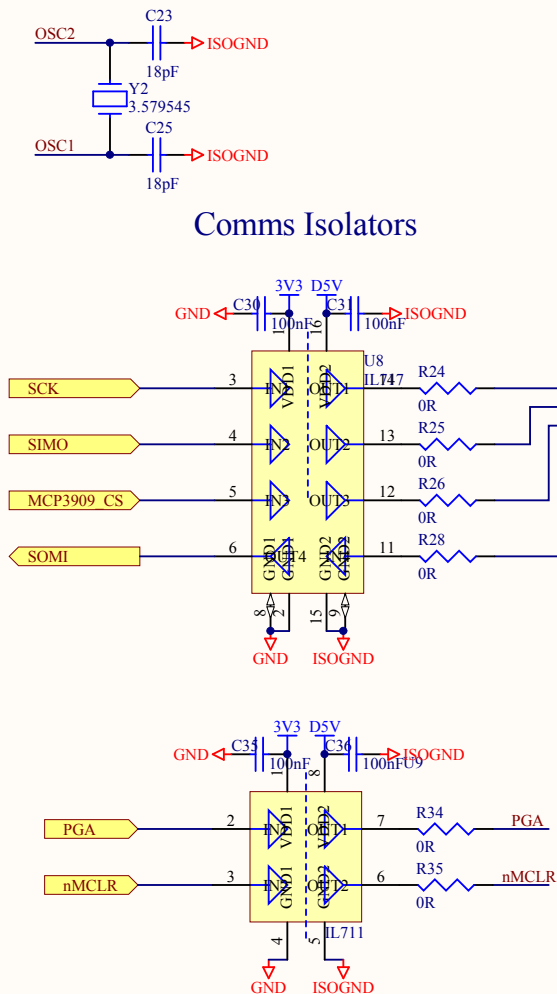
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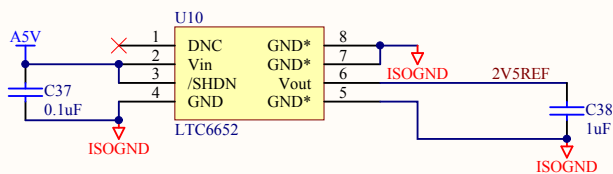
Isolated Power Supply



Comms Isolators



Precision 2V5 reference



| Title | | |
|-------|-------------------------------|-----------|
| Size | Number | Revision |
| A4 | | |
| Date: | 3/05/2013 | Sheet of |
| File: | D:\Dropbox\...\MCP3909.SchDoc | Drawn By: |

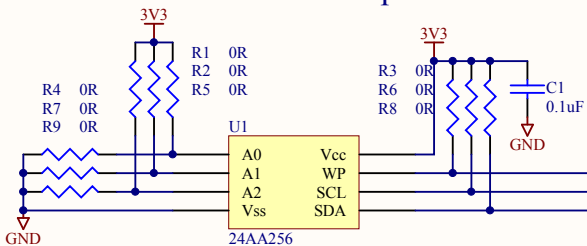
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2

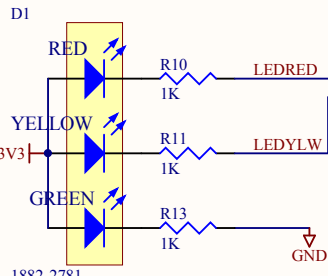
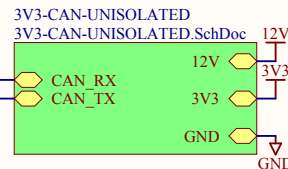
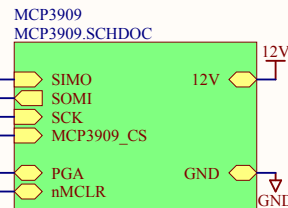
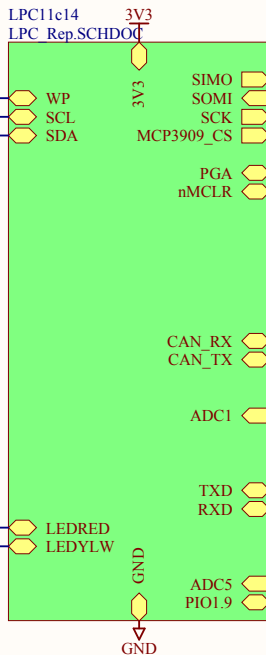
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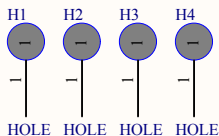
EEPROM Chip



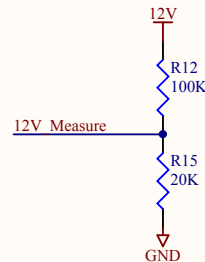
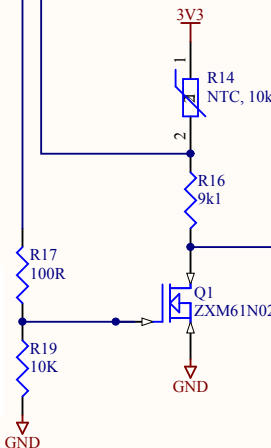
0R resistors are here to allow flexibility in EEPROM addressing - will only need to populate 3 of these. Most likely hardwired to GND.



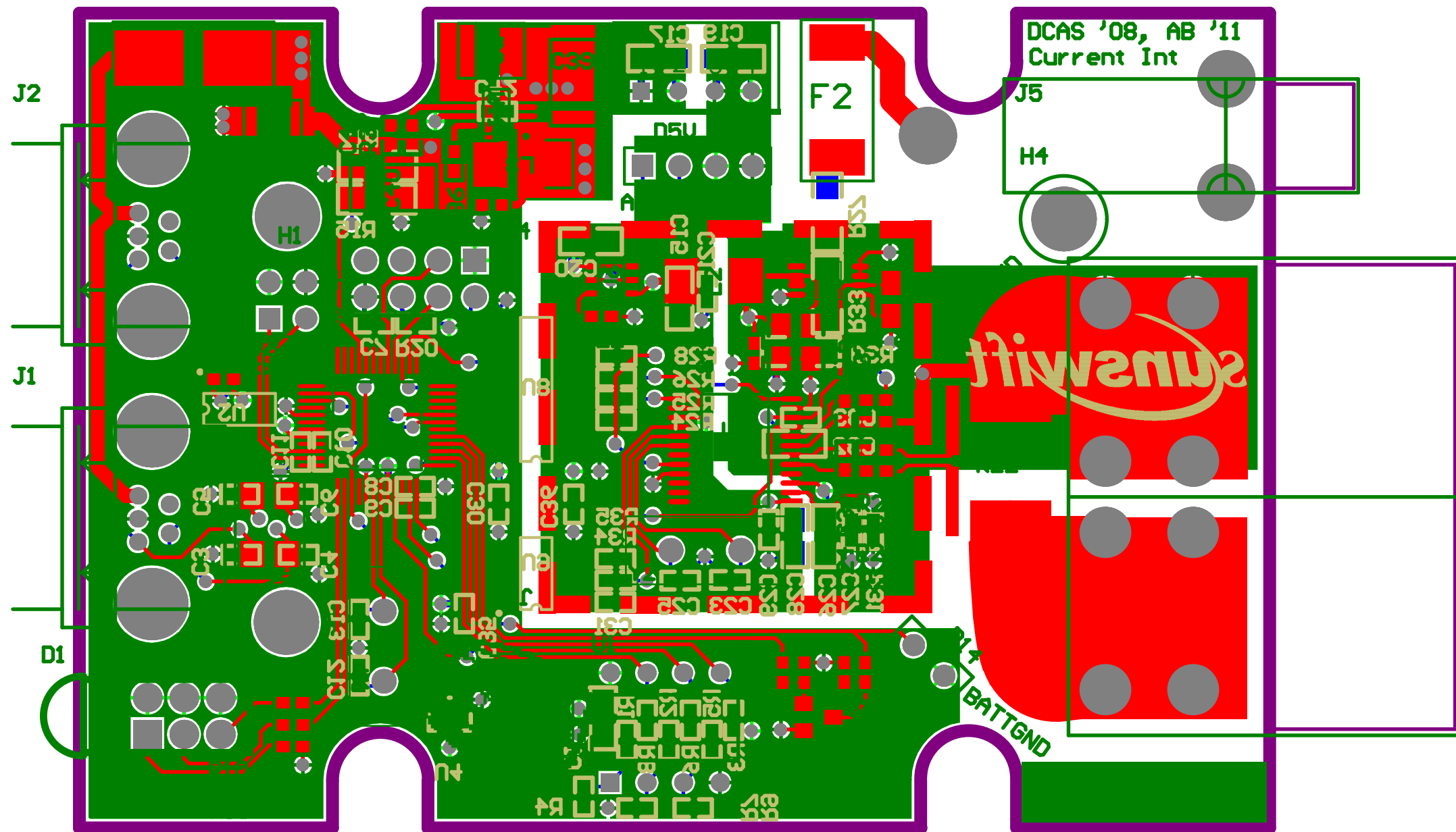
Status LEDs



Populate either the MOSFET circuit [R17, R19, Q1, if current is to flow in the NTC when requested], or only R18 if current is to flow in NTC divider all the time.



| | | | |
|-------|--------------------------------|-----------|----|
| Title | | Revision | |
| Size | Number | | |
| A4 | | | |
| Date: | 3/05/2013 | Sheet | of |
| File: | D:\Dropbox\...\TopLevel.SchDoc | Drawn By: | |



| Comment | Description | Designator | Footprint | LibRef | Quantity |
|--------------------------|--|--|---------------------|-------------------|----------|
| 0.1uF | Capacitor | C1, C37 | 0805 | CAP | 2 |
| 100nF | Capacitor | C2, C3, C4, C8, C8, C9, C11, C14, C18, C21, C27, C29, C30, C31, C33, C35, C36, C42 | 0603 | CAP | 18 |
| 10nF | Capacitor | C7, C8, C10 | 0603 | CAP | 3 |
| 18pF | Capacitor | C12, C13, C23, C25 | 0603 | CAP | 4 |
| 10u | Capacitor | C15, C16, C19, C26, C28, C32 | 0805 | CAP | 6 |
| 1uF | Capacitor | C17, C20, C38 | 0805 | CAP | 3 |
| 100n | Capacitor | C22 | 0603 | CAP | 1 |
| 2.2nF | Capacitor | C24, C34 | 0603 | CAP | 2 |
| 4u7 35V | Polarized Capacitor (Surface Mount) | C39, C40 | MCCT-CASEC | Cap Pol3 | 2 |
| 1n | Capacitor | C41 | 0603 | CAP | 1 |
| 1882-2781 | Three level LED | D1 | LED_TRILEVEL | LED-TRILEVEL | 1 |
| 12V Transient Suppressor | Diode | D2 | SMA | DIODE | 1 |
| MBRS130 | Schottky Diode | D3 | SMB | D SCHOTTKY | 1 |
| 125mA/3A | Fuse | F1 | LITTELFUSE-154 | FUSE2 | 1 |
| 125mA/3A | Fuse | F2 | LITTELFUSE-154-250V | FUSE2 | 1 |
| HOLE | Hole | H1, H2, H3, H4 | M2.5 | HOLE | 4 |
| CON5-S | Connector, 2 pin, with shield @ S | J1, J2 | TRIAD5F | CON5-S | 2 |
| LPC SWD Connector | LPC SWD Connector | J3 | IDC8 | LPCLink_Connector | 1 |
| Shield | Socket | J4 | BMIS-203-SHIELD | Socket | 1 |
| POWERPOLE(MINI) | | J5 | POWERPOLE25A | CON1 | 1 |
| CHOKe | | L1 | Epcos-Choke | CHOKe | 1 |
| CHOKe | Inductor | L2 | 1812 | INDUCTOR | 1 |
| 330uH | Inductor | L3 | 1812 | Inductor | 1 |
| UART | Header, 2-Pin, Dual row | P1 | HDR2X2 | Header 2X2 | 1 |
| Header 4 | Header, 4-Pin | P2 | HDR1X4 | Header 4 | 1 |
| MiniPowerclaw | Header, 2-Pin | P3 | MiniPowerpole-Hrz | Header 2 | 1 |
| ZXM61N02F | 1.7A, 20V N-Channel Enhancement mode FET | Q1 | SOT23-3 | ZXM61N02F | 1 |
| 0R | Resistor | R1, R2, R3, R4, R5, R6, R7, R8, R9, R18, R24, R25, R26, R28, R34, R35 | 0603 | RES1 | 16 |
| 1K | Resistor | R10, R11, R13, R31 | 0603 | RES1 | 4 |
| 100K | Resistor | R12 | 1206 | RES1 | 1 |
| NTC, 10k | Varistor (voltage-Sensitive Resistor) | R14 | NTC_EPCOS | Res Varistor | 1 |
| 20K | Resistor | R15 | 1206 | RES1 | 1 |
| 9k1 | Resistor | R16 | 0603 | RES1 | 1 |
| 100R | Resistor | R17 | 0603 | RES1 | 1 |
| 10K | Resistor | R19, R20 | 0603 | RES1 | 2 |
| 7k15 | Resistor | R21, R23, R29, R32 | 0603 | RES1 | 4 |
| BVR, 0R0005 | | R22 | BVR | BVR | 1 |
| 330k | | R27, R33 | 1206 | RES1 | 2 |
| 1k2 | Resistor | R30 | 1206 | RES1 | 1 |
| 100k | Resistor | R36 | 0603 | RES1 | 1 |
| 1R2 | Resistor | R37 | 0603 | RES1 | 1 |
| 24AA256 | | U1 | DIP8 | 24AA256 | 1 |
| SN65HVD232 | 3.3V CAN Transceiver | U2 | SO8 | SN65HVD232 | 1 |
| LPC11C14 | | U3 | Quad48-LPC11c14 | LPC11C14_Full | 1 |
| XC61CN2002MR | SOT23 reset generator | U4 | SOT23-3 | XC61F | 1 |
| NKE1209SC | Isolated 250mV Single Output | U5 | NPSIP4 | LME1209S | 1 |
| Pq1R30 | | U6 | SOT23-6 | Pq1R30 | 1 |
| MCP3909 | Energy Measurement IC | U7 | SOP24-wide | MCP3909 | 1 |
| IL717 | Isolop IL717 - www.nve.com | U8 | SO16 | IL717 | 1 |
| IL711 | IL711 Optical Isolator | U9 | SO8 | IL711 | 1 |
| LTC6652 | | U10 | SOP8 - duplicate | LTC6652 | 1 |
| LTC1474 | Step-down converter | U11 | TSOP8 | LTC1474 | 1 |
| 12 MHz | Crystal | Y1 | HC49/ 4H | CRYSTAL | 1 |
| 3.579545 | Crystal | Y2 | HC49/ 4H | CRYSTAL | 1 |