

MOOS 400-12 Switch
PWB Rev 1.5
Assembly Notes

07 May 2006 create
09 May 2006 move capacitor connection in Item 3, add Item 5
12 May 2006 change Item 5 instructions, add Item 6 for TBD components
15 May 2006 modify Item 5 (again), add Item 7
07 Jun 2006 add Items 8-11 from notes

- 1) AD592 schematic symbol backwards.
 * Install U33 with Pins 1 and 3 reversed.
- 2) Reduce drive to MOC207 optos
 * R118, R126, R140, R143: change value from 220 ohm to 1.1 k.
- 3) SCK Edge Slowdown

 * Cut trace between U7 pin 13 and U2 pin 11.
 * Connect 51 ohm 1/10 W resistor between U7-13 and U2-11
 * Connect 33 pF ceramic between U2-11 and 12_SGND (U2-8)

 * Cut trace between U36 pin 13 and U34 pin 11.
 * Connect 51 ohm 1/10 W resistor between U36-13 and U34-11
 * Connect 33 pF ceramic between U34-11 and 12_SGND (U34-8)
- 4) Strengthen Control Register pullups
 * Change resistor networks R1 and R49 from 33k to 1k (parts on order).
- 5) LTC1871 Limited range on RUN input

 * Replace R31 with 10.2k
 * Add 1.37k from U24-1 to CapChgr_14V_Com

 * Lift U41-1 (or cut trace between U41-1 and via, under U41)
 * Connect 330k leaded resistor between U41-1 and U41-9 (Dirty_+14V supply).
- 6) Initial values for TBD components around U41 Micropower Isolated Flyback:
 * R52 = 11.0k
 * R59 = 1.30k
 * R53 = 475k
 * C59 = 120pF
 * C120 = 39pF
 * R51 = 1k
 * C115 = open (do not install)
 * C60 = resistor 1.82k
 * C61 = R54 = open (do not install)
 * Connect 4.64k leaded resistor
 between U41-8 (can use C62-1) and U41-2 (can use U72-6 or R54 pad)
- 7) Slow down Cap Charger switching to reduce EMI

 Add 10 ohm resistor between U24-7 and Q6-1

- 8) LTC4414 weak STAT output sinking (50uA per LTC email)
* Change R25 to 330k
- 9) 12_SGND open ground loop around Cap Charger supply – picks up noise
* Add AWG #22 bus wire jumper between JMP10-1 and U28-7; secure with epoxy
- 10) DRV103 PWM noise and jitter
* Add 100 pF cap across R41, R44, R46 (per TI datasheet)
- 11) 12_3.3V power supply needs to stay active during Backup Disable (cap and/or batt) in order to maintain disable state. Diode-OR cap and batt busses into 12_3.3V input.
* replace FB1 with SDM10K45 diode – cathode to FB1-Pin 2 pad
* add SDM10K45 diode from Batt +13.5V. Cathode to C1-Pin1 pad, anode via blue wire to Q1 tab.
* add SDM10K45 diode from Cap +13.75V. Cathode to C1-Pin1 pad, anode via blue wire to Q3 tab.