Document Change Notice (DCN) Title:

Document No. Doc-Rev		New Rev
D0902744-v2	ISI Coil Driver Change Notice	V3

(Continue on sheet 2 if needed)

CHANGE DESCRIPTION (FROM/TO) – Continue on next sheet if needed:

Rev v2 has been changed to v3 by adding a diode "DAdd" between pins 3 and 2 of the negative Voltage Regulator, U2. The diode Anode should be connected to pin 3, and its cathode should be connected to pin2 as in the accompanying pictures.

REASON FOR CHANGE: **To protect the negative Voltage Regulator in the Coil Driver Chassis from input power fluctuations.**

ACTION: ☒ **Incorporate Change** ☐ **Attach DCN to Drawings** ☐ **Other Action (specify):**

DISPOSITION OF HARDWARE (IDENTIFY SERIAL NUMBERS)

- ☐ **No hardware was affected (record change only):**
- ☒ **List S/Ns which comply already: None**
- ☒ **List S/Ns to be reworked/scrapped: All**
- ☒ **List S/N's to be built with this change: all future Chassis.**
- ☐ **List S/Ns to be retested per this change:**
- ☐ **Other disposition/instructions or additional comments:**

DCN DISTRIBUTION

Required:
excomm (Lab Grp Leads, LSC Spokesperson)
Michael Landry (LHO AdL Liaison)
Brian O'Reilly (LLO AdL Liaison)
Bill Tyler (Lab Safety & QA)

Recommended (AdL Area/Subsys Leads & Cog. Sci./Eng., subsystem email distribution lists): *[please delete if/as appropriate for this DCN]*

Ken Mason	Brian Lantz	Richard McCarthy
Celine Remet	Mike Fyffe	

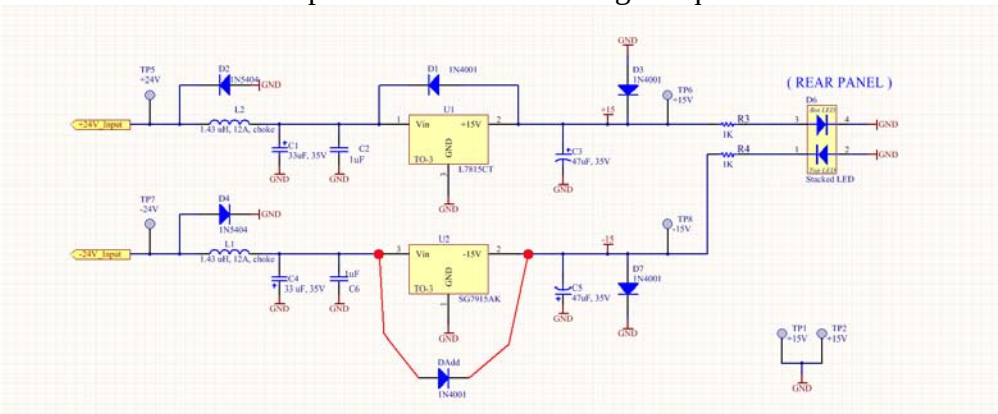
Additional Distribution List for this DCN:

SAFETY, COST, SCHEDULE, REQUIREMENTS IMPACT? ☒ **NO** ☐ **YES**
(If YES, enter CR (CCB) or TCP (TRB) #)

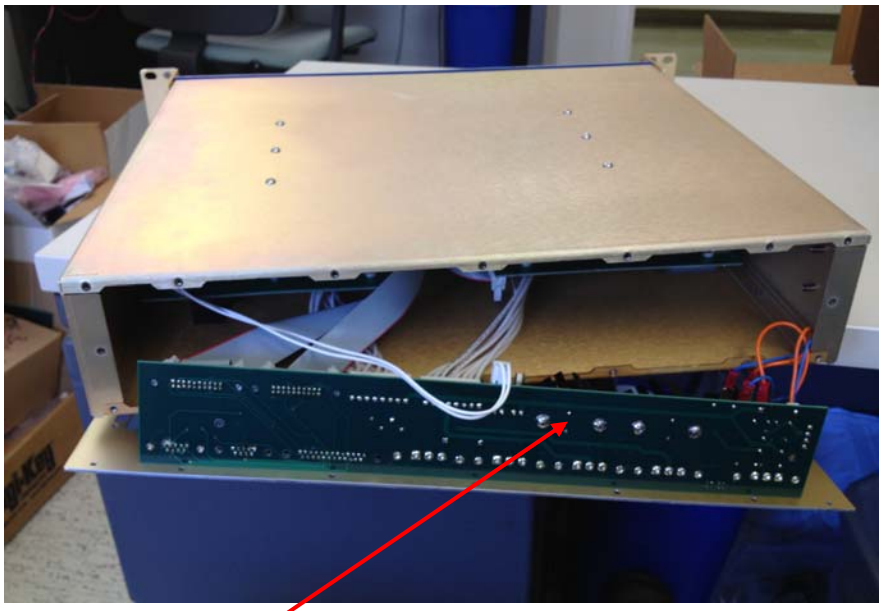
APPROVALS:	DATE	OTHER APPROVALS (SPECIFY)	DATE
ORIGINATOR: Ben Abbott	6/17/2013		
TASK LEADER: Brian Lantz			
GROUP LEADER:			
DCC RELEASE:			

CHANGE DESCRIPTION (FROM/TO) -- continued:

Here is the schematic representation of the change in question:

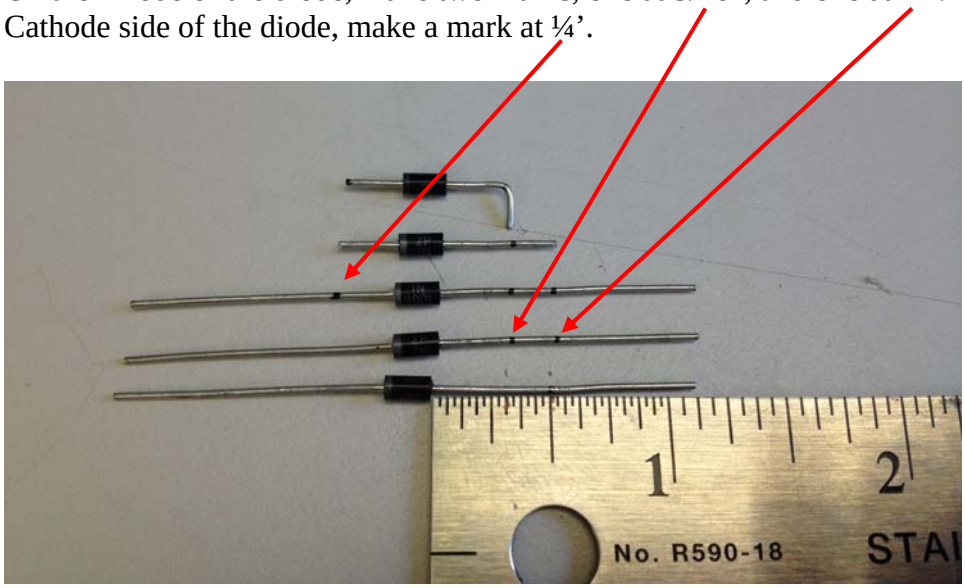


In order to make the change, first the rear panel must be removed from the Coil Driver chassis. This should only involve the removal of the 16 peripheral screws on the back panel. With all of the internal cabling in place, it should be possible to gently pull out the panel, and board, and get to the underside of the board. This is also a good time to verify that the Binary I/O DCN, E1100821 has been performed. If not, please make that change at the same time as this one, and note it on the E-Traveler.



Location of U2:

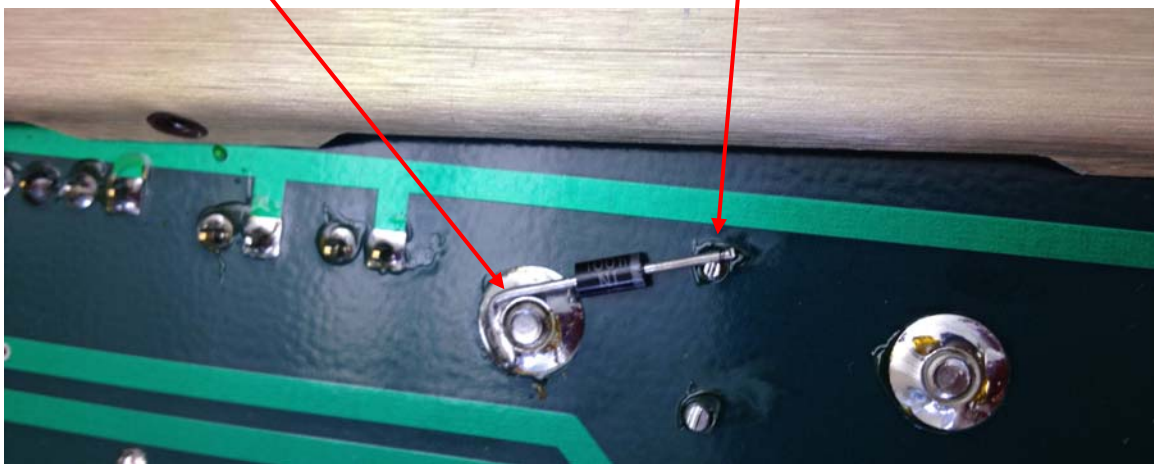
On the Anode of the diode, make two marks, one at 5/16”, and one at ½”. On the Cathode side of the diode, make a mark at ¼’.



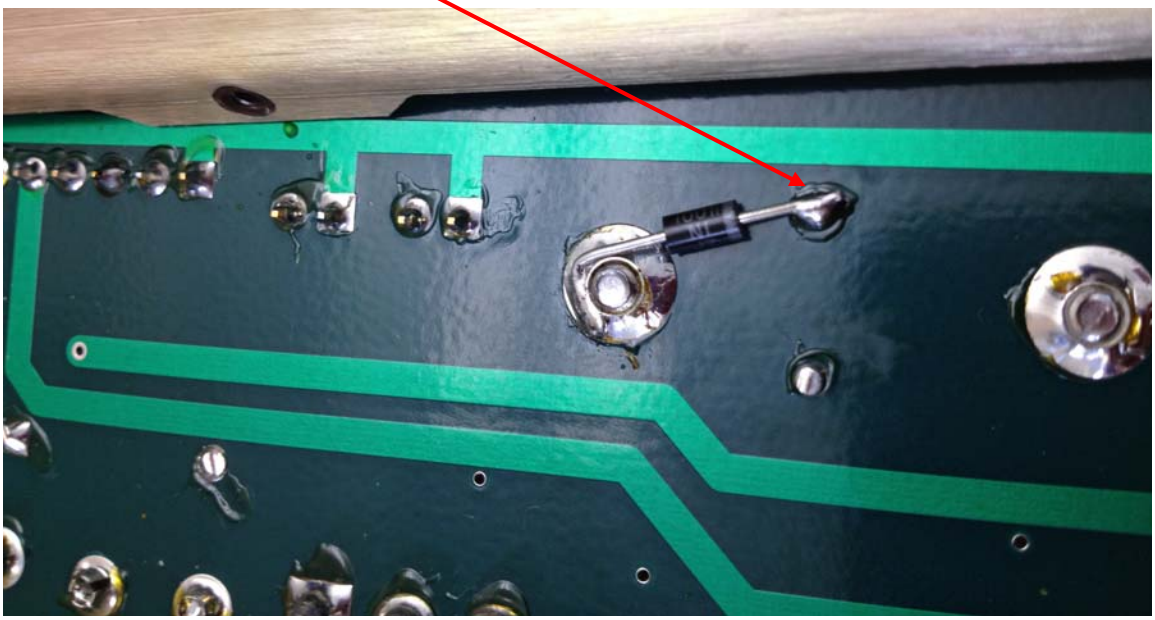
Cut the leads at the ¼” mark, and the ½” mark, as in the second diode from the top, above. Bend the Anode lead 90º at the 1/2” mark as seen in the top diode.

Bend the pins down to a flat surface so that the bent arm of the Anode, and the tip of the Cathode touch the surface. This will make a better solder joint in the next step:

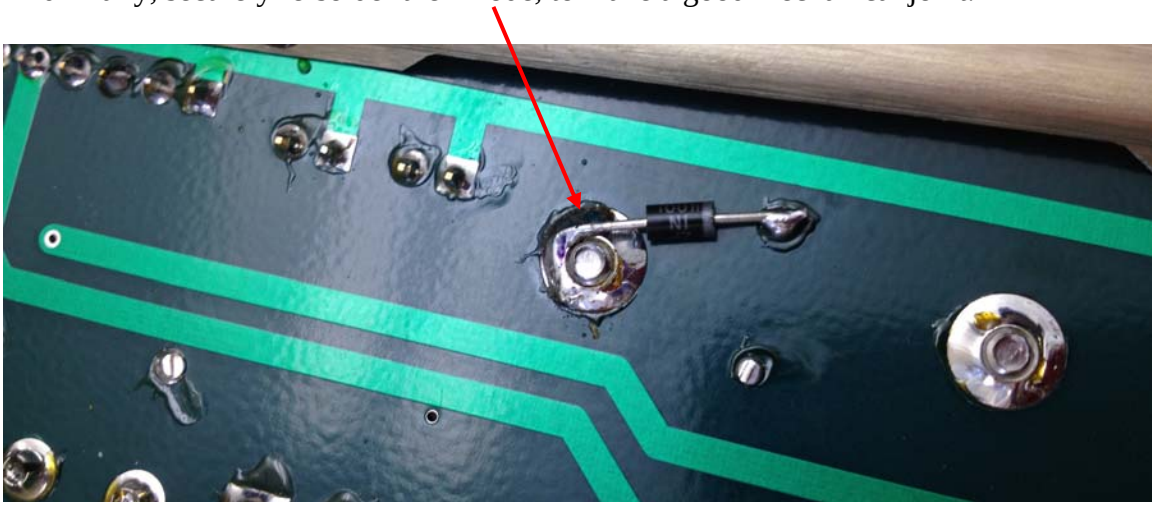
To get good alignment, lightly solder (tack) the bent Anode lead to the large screw-threaded pad (Pin2) of U2, aligning the Cathode with Pin3 of U2.



Now, securely solder the Cathode:



And finally, securely re-solder the Anode, to make a good mechanical joint.



When putting the chassis back together, make sure that all of the connectors that were plugged in, are still plugged in. The 2-pin fan headers (P11 & P12) are especially susceptible to being pulled off during this procedure.

Change From/To Rationale:

Putting this diode in place is a relatively common method of protection in case the supply voltage goes lower than the output voltage. Although the thought seems to be cut off mid-sentence, the sentiment is there on the Microsemi datasheet:

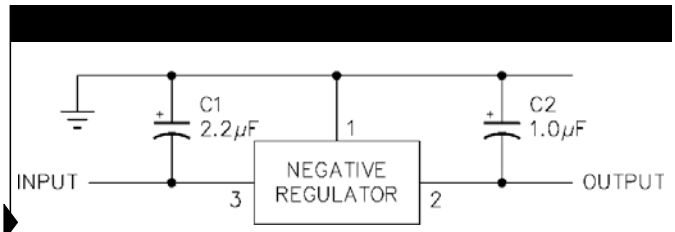


Figure 9 – Fixed Output Regulator

Note: 1. C1 is required only if regulator is separated from rectifier filter.
2. Both C1 and C2 should be low E.S.R. types such as solid tantalum. If aluminum electrolytic capacitors are used, at least 10 times values shown should be selected.
3. If large output capacities are used, the regulators must be protected from momentary input shorts. A high current diode.

I'm sure that the sentence "A high current diode" should have ended with "should be placed from Pin 3 toPin2", as we have done here.