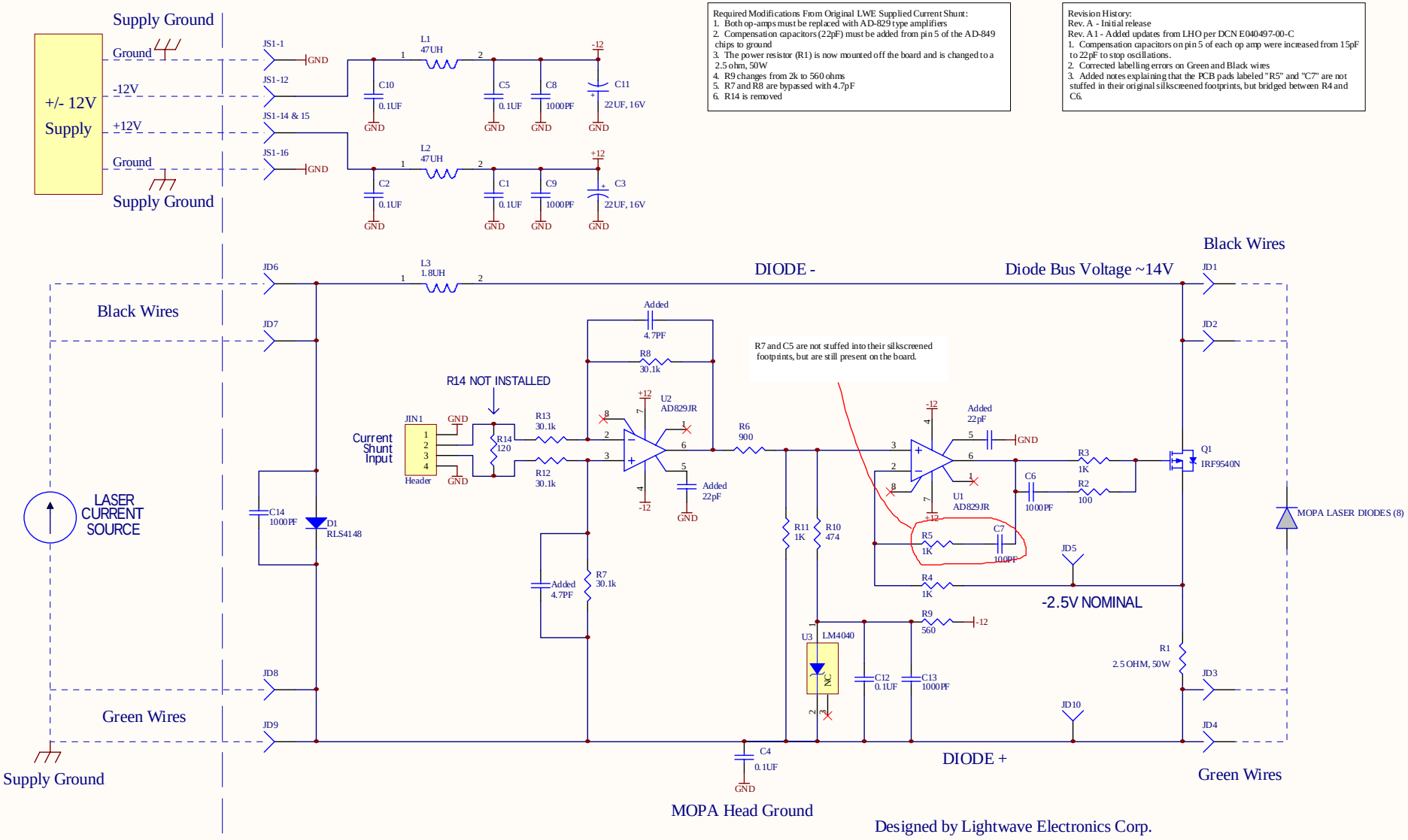
Supply Ground
Ground
-12V
+12V
Ground
Supply Ground
+/- 12V Supply
JS1-1
JS1-12
JS1-14 & 15
JS1-16
GND
L1 47UH
L2 47UH
C10 0.1UF
C5 0.1UF
C8 1000PF
C11 22UF, 16V
C2 0.1UF
C1 0.1UF
C9 1000PF
C3 22UF, 16V
-12
+12
Required Modifications From Original LWE Supplied Current Shunt:
1. Both op-amps must be replaced with AD-829 type amplifiers
2. Compensation capacitors (22pF) must be added from pin 5 of the AD-849 chips to ground
3. The power resistor (R1) is now mounted off the board and is changed to a 2.5 ohm, 50W
4. R9 changes from 2k to 560 ohms
5. R7 and R8 are bypassed with 4.7pF
6. R14 is removed
Revision History:
Rev. A - Initial release
Rev. A 1 - Added updates from LHO per DCN E040497-00-C
1. Compensation capacitors on pin 5 of each op amp were increased from 15pF to 22pF to stop oscillations.
2. Corrected labelling errors on Green and Black wires
3. Added notes explaining that the PCB pads labeled "R5" and "C7" are not stuffed in their original silkscreened footprints, but bridged between R4 and C6.
Black Wires
DIODE -
Diode Bus Voltage ~14V
JD1
JD6
L3 1.8UH
Black Wires
JD7
JD2
Added 4.7PF
R8 30.1k
R14 NOT INSTALLED
JIN1
Current Shunt Input
Header
GND
R13 30.1k
R14 120
R12 30.1k
U2 AD829JR
R6 900
Added 22pF
R7 and C5 are not stuffed into their silkscreened footprints, but are still present on the board.
Rack Mounted Laser Power Supply
LASER CURRENT SOURCE
C14 1000PF
D1 RLS4148
Added 4.7PF
R7 30.1k
R11 1K
R10 474
U1 AD829JR
Added 22pF
C6 1000PF
R3 1K
R2 100
Q1 IRF9540N
MOPA LASER DIODES (8)
C7 100PF
R5 1K
R4 1K
JD5
-2.5V NOMINAL
R9 560
U3 LM4040
NC
C12 0.1UF
C13 1000PF
R1 2.5 OHM, 50W
JD10
JD8
Green Wires
JD9
JD3
JD4
C4 0.1UF
DIODE +
Green Wires
Supply Ground
MOPA Head Ground
Designed by Lightwave Electronics Corp.
Title
Lightwave Electronics Current Shunt
LIGO Laboratory
California Institute of Technology
Massachusetts Institute of Technology
LIGO
Size: B
DCC Number: D040542
SCH / PCB Revision: A1
Engineer: RS Abbott
Date: 1/6/2005
Time: 12:00:58 PM
File: C:\Rich's Files\Mycadfiles\PSL\ISS\Current_shunt\lwe_shunt_b.SchDoc
Sheet 1 of 1