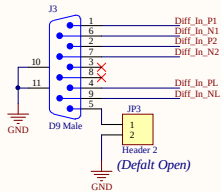


OMC Piezo Drive Inputs from DAC



OMC High Voltage Piezo Drive HV1 OMC_HV.SchDoc



Floating BNC Alternate Input Located on Front Panel



Floating BNC Alternate Input Located on Front Panel



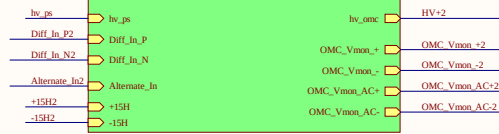
Dither from alternate front panel input



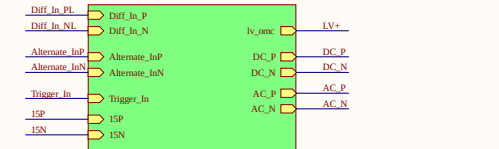
Front Panel Trigger Input Typical Low on Fault



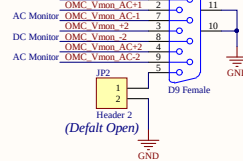
OMC High Voltage Piezo Drive HV2 OMC_HV.SchDoc



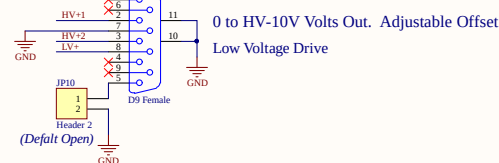
OMC Low Voltage Piezo Drive LV LVPiezo.SchDoc



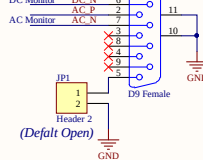
Output Voltage Monitors to ADC



OMC Piezo Interface



Output Voltage Monitors to ADC



Revision History: D060283 OMC High Voltage Piezo Driver

Revision History:
Rev A: Initial release
Rev B: Correction of footprint error from Rev. A
Rev B1: Changed R122 from 100k to 200k
Added 1k in feedback of unity gain follower stage, U116 in sheet 3 of 4. This was to correct abnormal noise performance in this opamp
Rev B2: Changed R155 from 49.9K to 10K for more signal amplification.
Changed R136 from 1K to 0.1M as it is not needed.
MUST FIX D108 IF BOARD IS REVISED

27 April 2009, RA
Revision B3:
R155 was 10k is 1k
R136 is still 0.1M
R137 was 10k is 100k
R146, R140, R145, R148 was 1k is 4.99k
R133 is still 71.5k

HV Cable + Piezo measured to be 2.41nF

V1 in the new DCC was added in May, 2013. The design was updated to cure D108 and to add R156 (1k) in the feedback of U116 (OP-27) to cure the noise found due to the chip being in a follower configuration. The dither path was eliminated, and some footprints were updated for availability. Changes were made to better provide a whitered monitor of output high voltage.

Version 2 - Made following part value changes:

Designator - From - To
R134 - 200k - 100k
C125 - 0.1uF ceramic - 0.47uF Poly, 250VDC
C111 - 0.47 ceramic - 0.47uF Poly, 250VDC
R151 - 10k SMT - 50k Axial
R130 - 10k thick film - 10k thin film
R127 - 10k thick film - 4.99k thin film
R155 - 10k thick film - 1k thin film
R137 - 100k thick film - 10k thin film
R139 - 1k thick film - 499 thin film (for output voltage adj.)
R126 - 75 ohm thick film to 200 ohm thin film (set output current limit to 3.9mA)

Version 3 Made the following changes:

The input from the high voltage was changed from 200 VDC to 100 VDC.
R151 - Footprint SMT to Through Hole
C126 - Footprint SMT to Through Hole
C111 - Footprint updated
R139 - Was 499 is 0.49m
R142 - Set for a 10V Output

Revision History: D1300024 OMC Low Voltage Piezo Driver

Revision History:

Version 2 - Made following part value changes:

R54 from 10 to 1 ohm
R38 from 20k to 1M ohm
C29 from 0.1 to 0.47 uF (must be poly)
R44 from 10k to 1k (thin film)
R41 from 100k to 10k (thin film)

Version 3 - Made following part value changes:
C30 from 0.1uF to 100uF

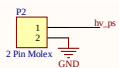
KAGRA Revision History:

Version 1 2019 05 30

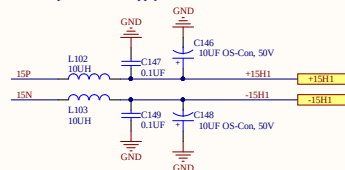
1. 基板構成
D060283 OMC High Voltage Piezo Driver x2
D1300024 OMC Low Voltage Piezo Driver

Input From High Voltage Power Supply 100 VDC Nominal / 200 VDC Maximum

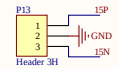
NOTE:
To change HV from 200 VDC to 400 VDC C111, C126, R124, and R151 need to be evaluated



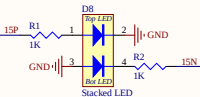
Input from Bipolar Power Supply Module



Input from Bipolar Power Supply Module



DC Power Indication on Front Panel

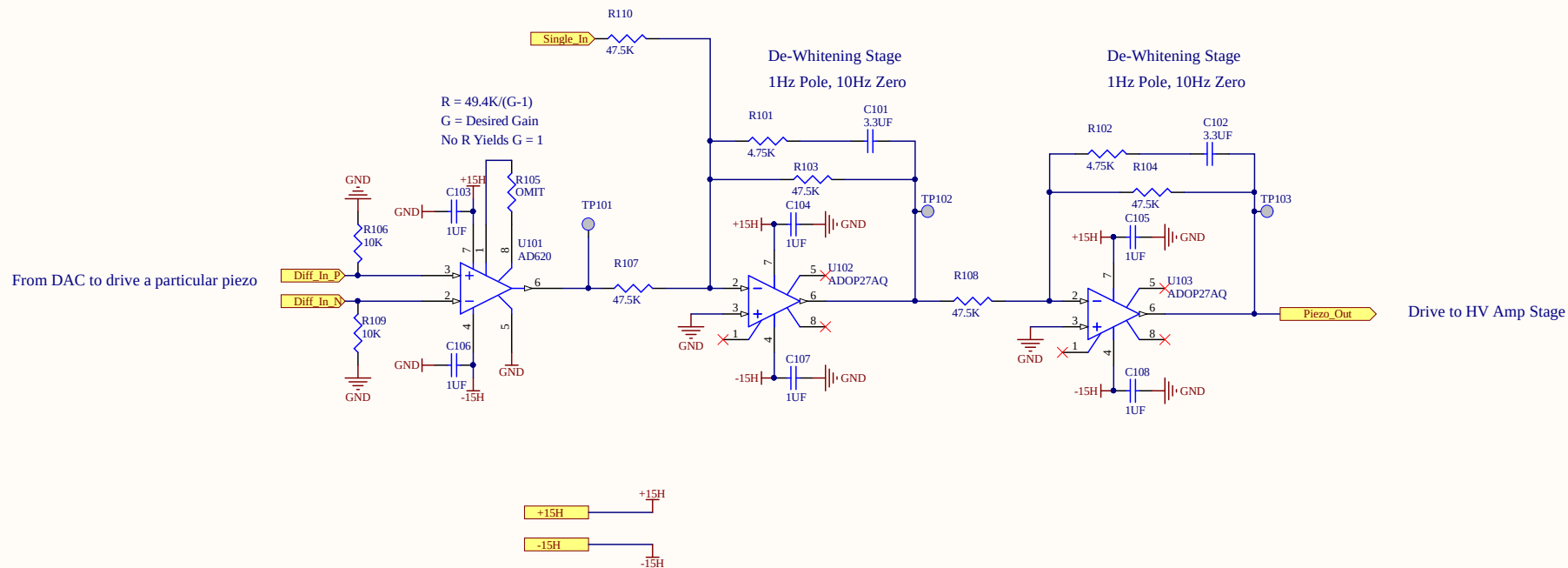


Modified design based on LIGO-D060283 aLIGO OMC High Voltage Piezo Driver Board
LIGO-D1300024 aLIGO OMC Low Voltage Piezo Driver Board
Based Designed by R. Abbott

1st version 2019 05 30

Title OMC Piezo Driver		KAGRA Project ICRR University of Tokyo		KAGRA	
Size: C	Doc Number: D1910348	SCHPCB Revision: v1.0	Engineer: Kamizumi M.	Date: 2019/05/26	Time: 16:54:46
File: OMC_Piezo_Driver.SchDoc				Sheet: 1	of: 6





1st version 2019 05 30

Title <i>OMC Differential Receiver</i>			KAGRA Project ICRR University of Tokyo		
Size: B	Doc Number: D1910348	SCH/PCB Revision: V1.0	Engineer: Kamizumi M.		
File: diff_rec_OMC.SchDoc			Date: 2019/06/26 Time: 16:54:47		
			Sheet 4 of 6		

A

B

C

D

A

B

C

D

