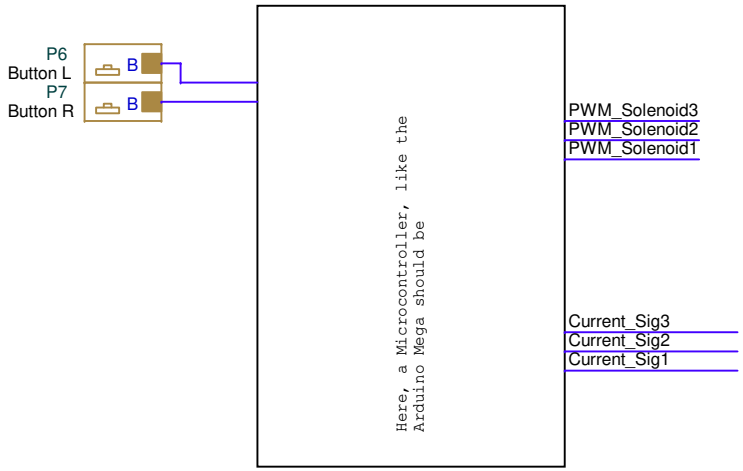
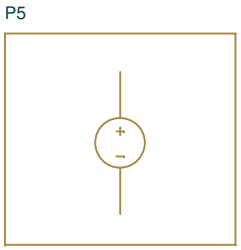
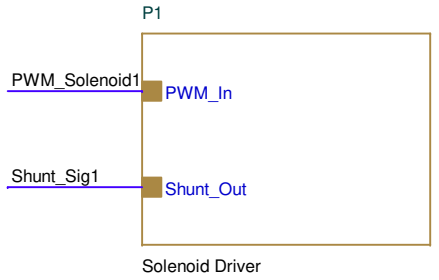
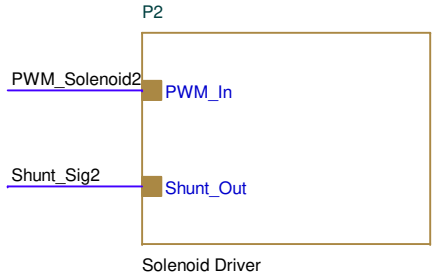
Main Control Board

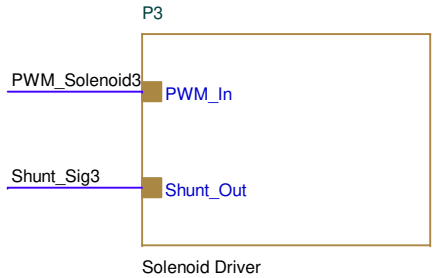
Incorporates
+ 3 Solenoid Driver Cirucuits
+ Current sensinc circuit for Solenoid Driver Circuit
+ Input for two buttons
- Temperature sensors for Solenoid Driver Circuit
- Interface for up to 50 additional LDRs
- Speaker
- NeoPixel Interface

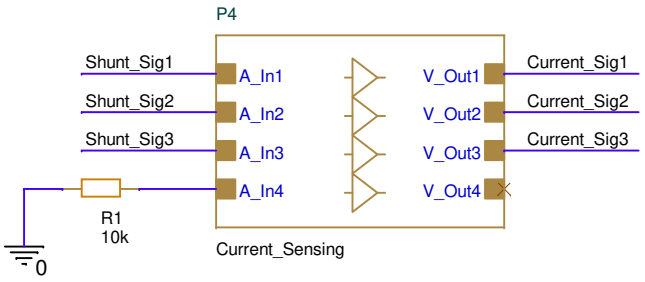


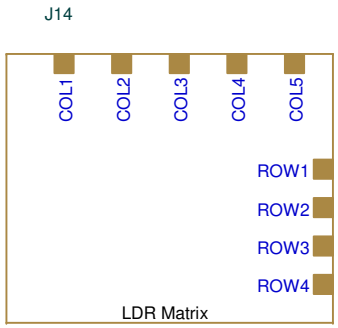












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Title: Main Control Board		
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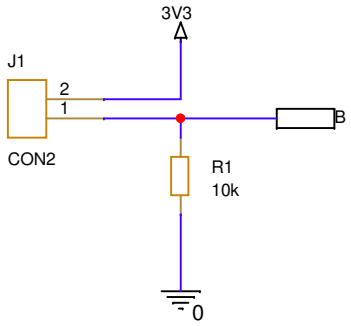

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Title: SG Amplifier		
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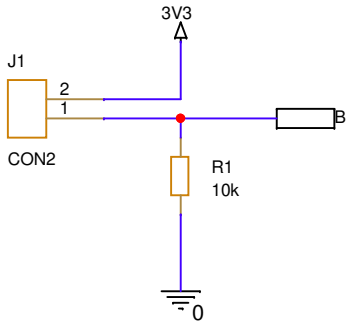

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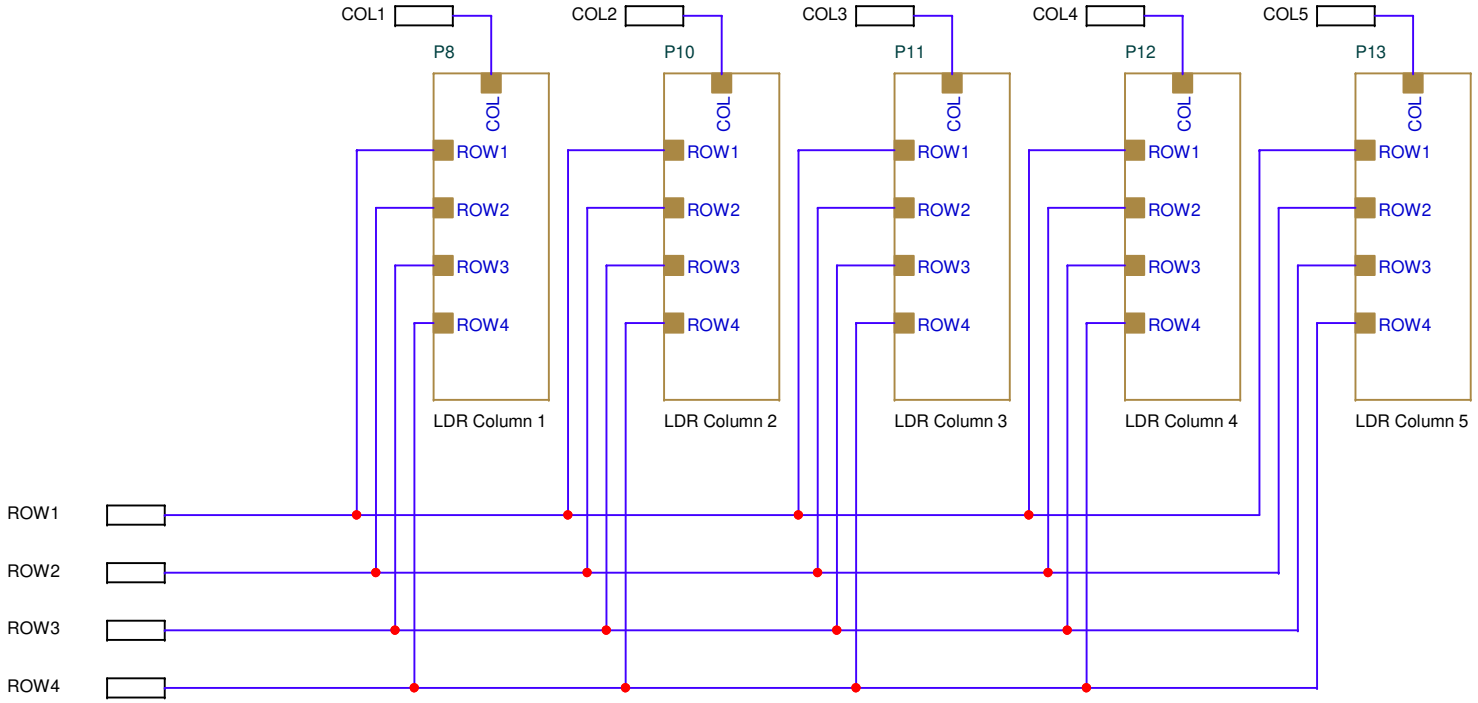

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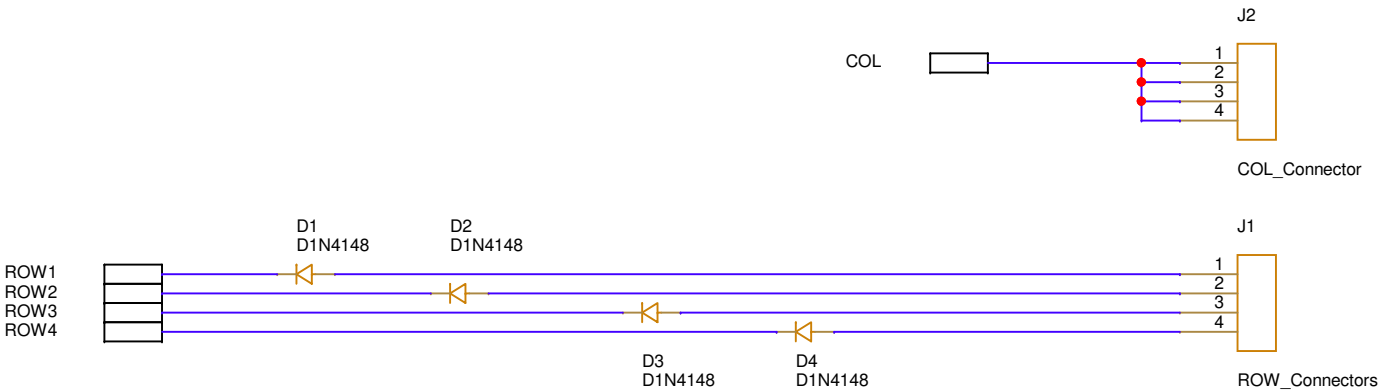

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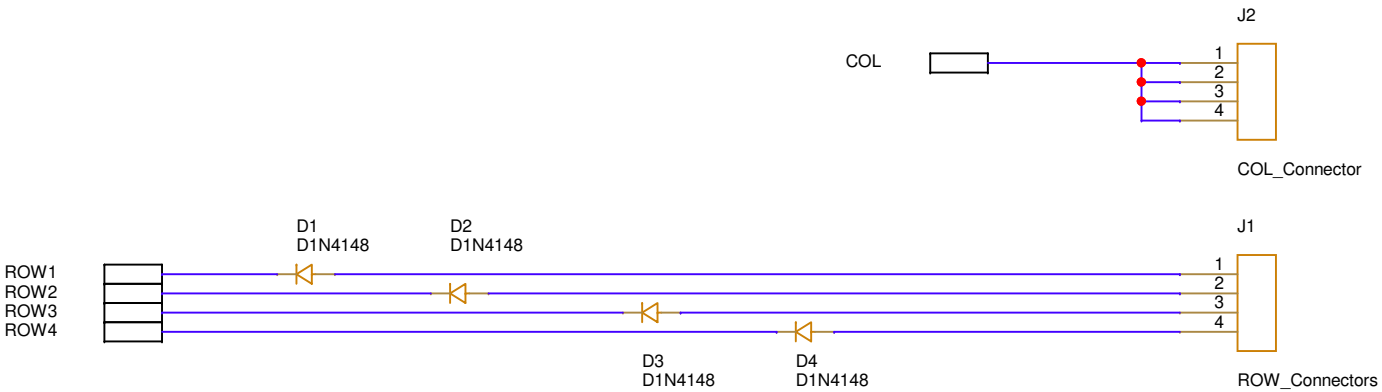

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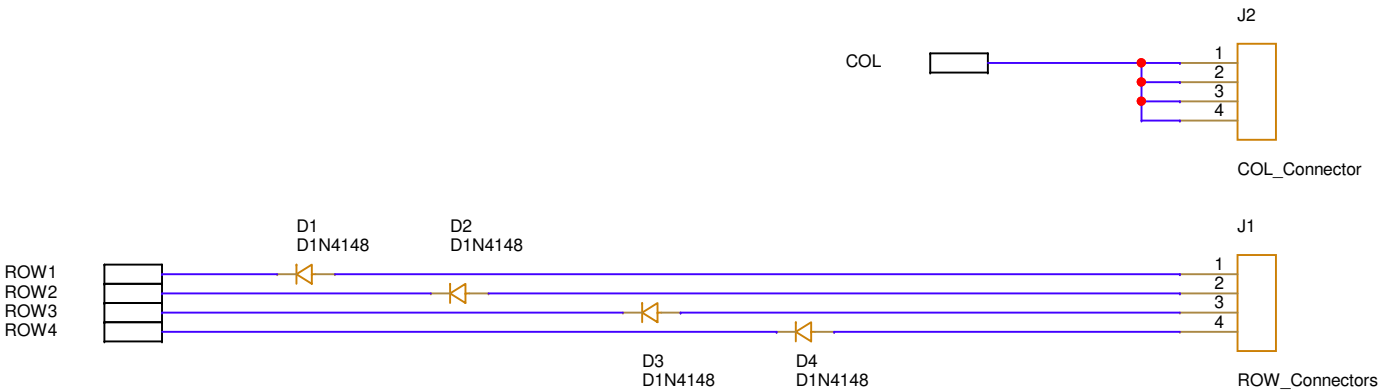

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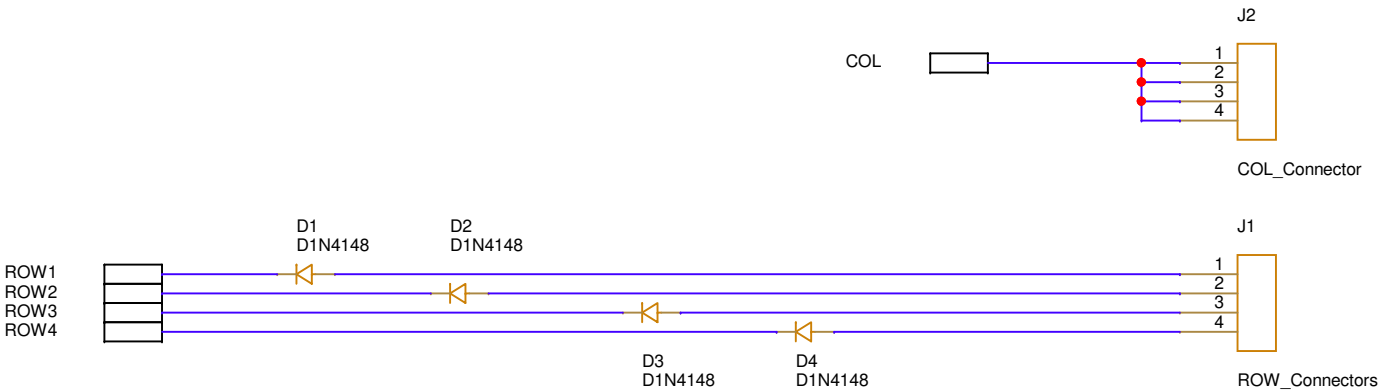

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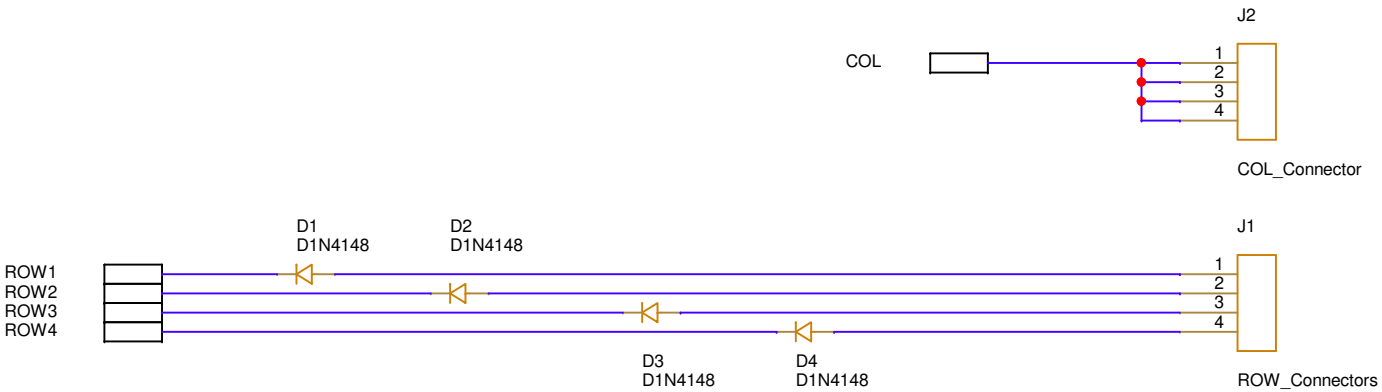

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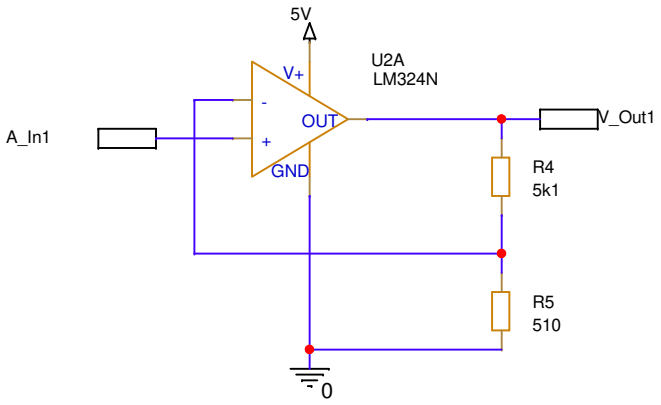

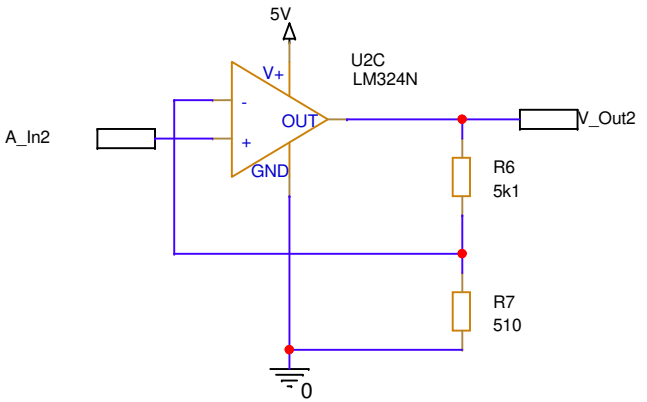

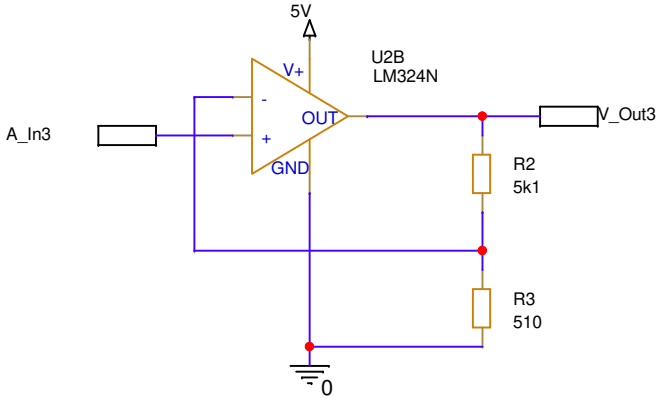

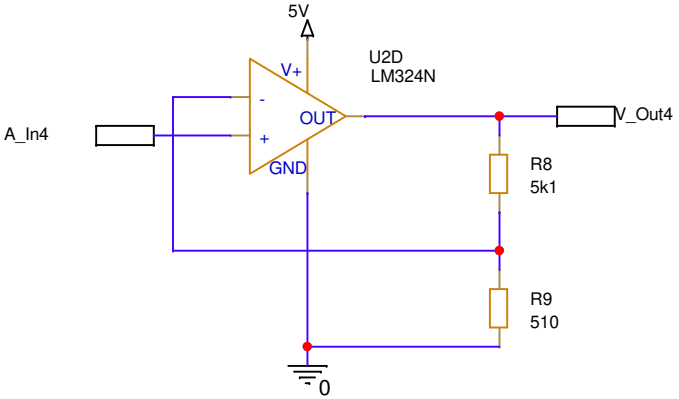

gain calculation:

at 2.5A, 0.1Ohm Resisotr == 0.25 V @ 2.5A

gain of 11 is desirable:
a = 1 + R2/R1
picking R2 = 10k
R1 = R2 / (a - 1) = 1k

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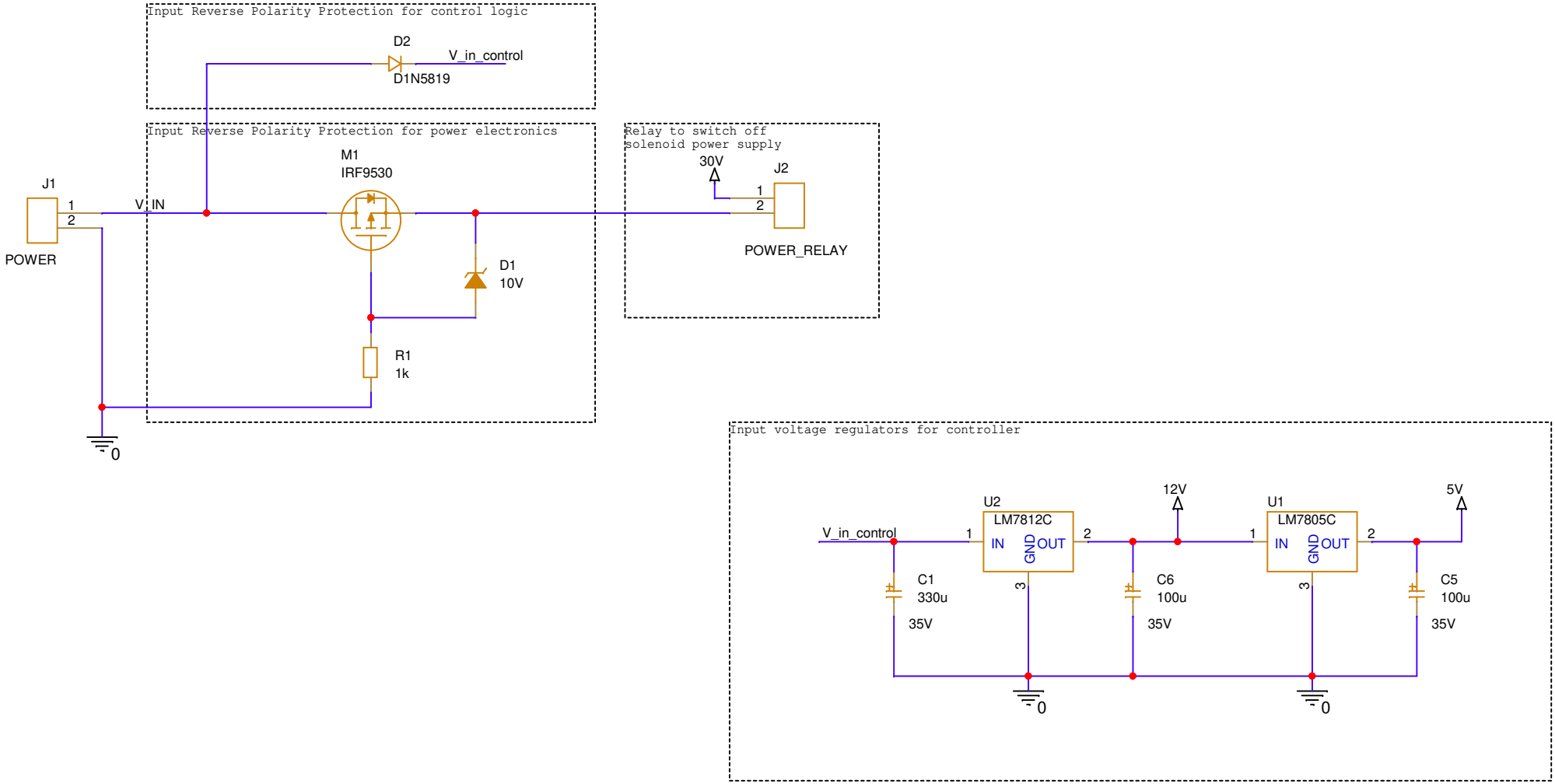

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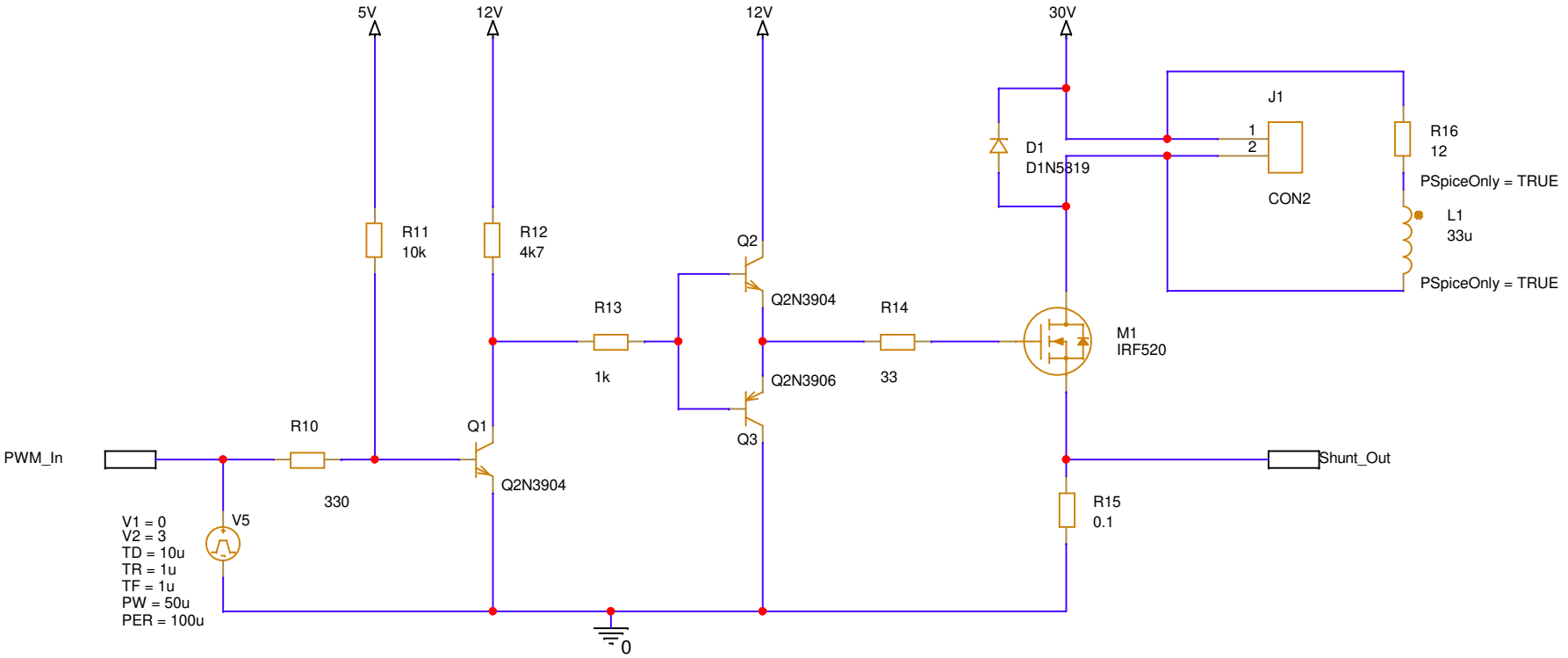
2N3904
hFE = 100 --> I_B = 2 mA

R_Bmax = 12 V / 2 mA = 6k



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Title: SG Amplifier		
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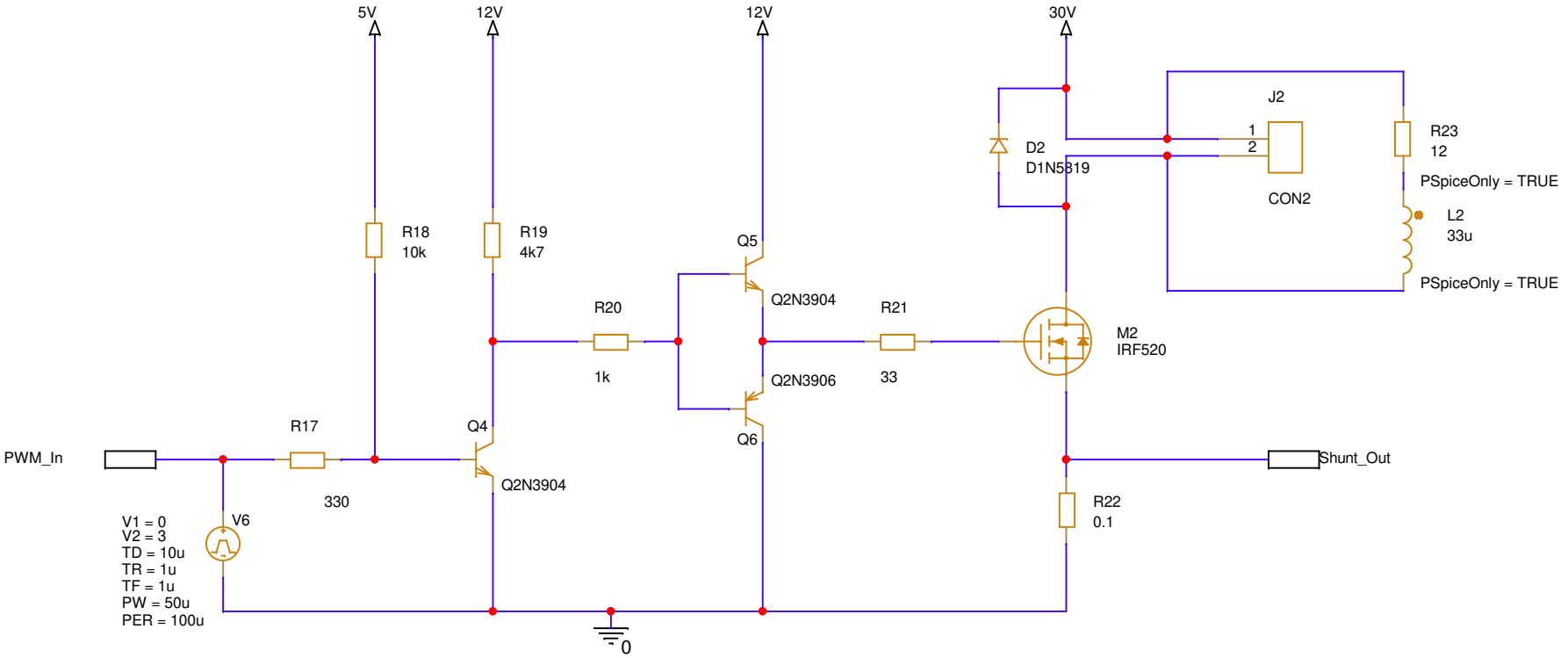
Date: Tuesday, November 09, 2021	Sheet 4 of 6	

2N3904
hFE = 100 --> I_B = 2 mA

R_Bmax = 12 V / 2 mA = 6k



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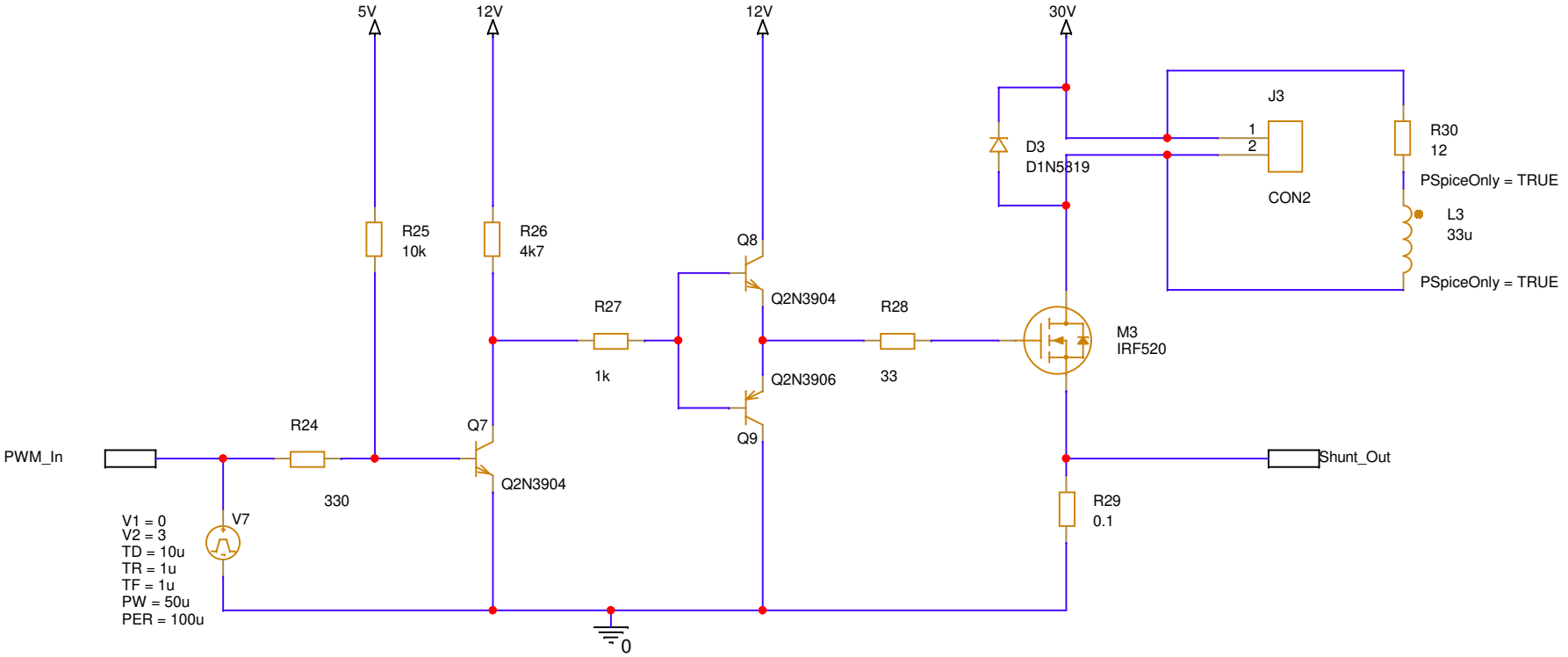
2N3904
hFE = 100 --> I_B = 2 mA

R_Bmax = 12 V / 2 mA = 6k



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