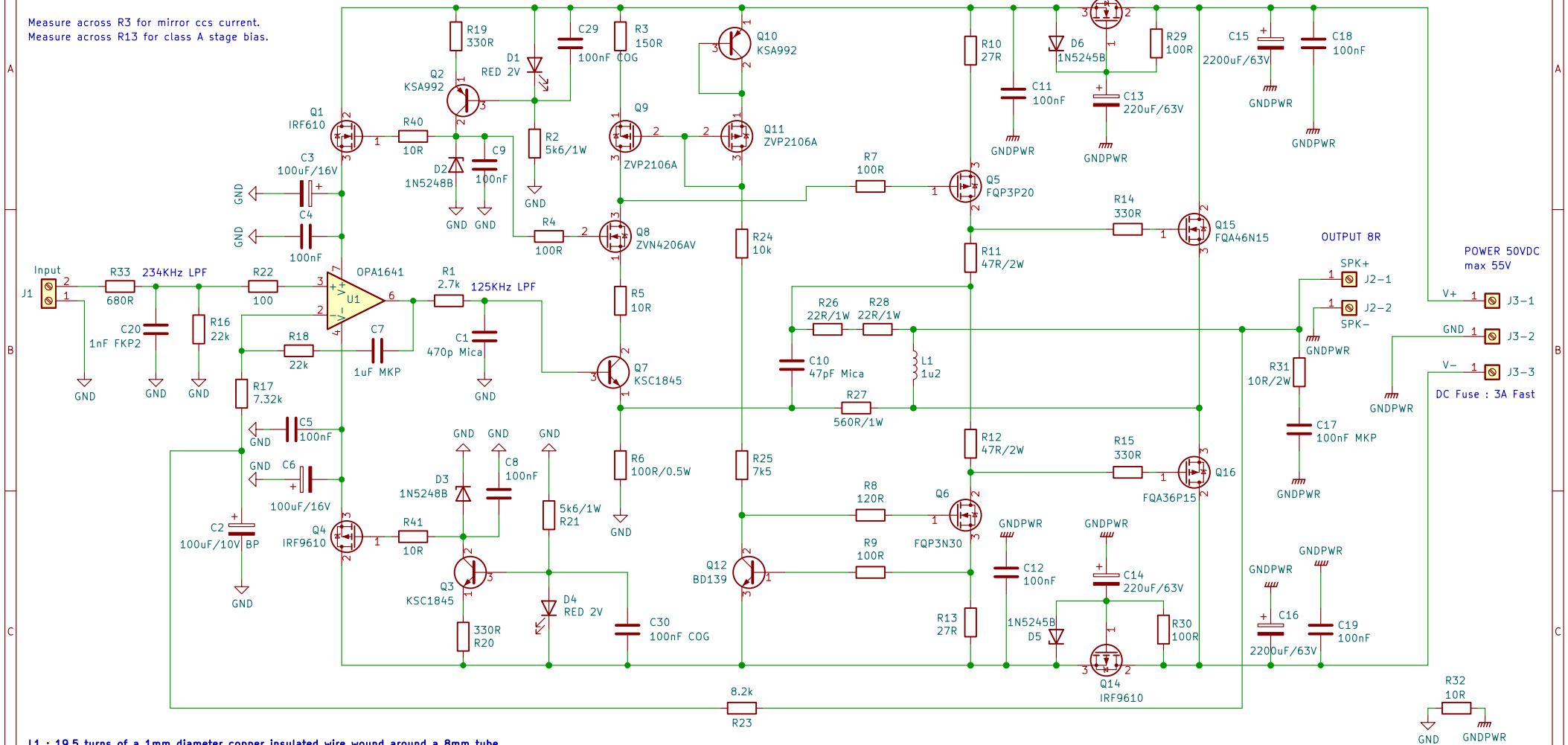


Q7, Q8 : cascode circuit (R3 = current setup, need to adjust R5/R6)  
 Q9, Q11 : current mirror circuit  
 R23, R17, C2 : DC servo  
 Q12 : temperature compensation

Measure across R3 for mirror ccs current.  
 Measure across R13 for class A stage bias.

Do not power on the board without opamp.



L1 : 19.5 turns of a 1mm diameter copper insulated wire wound around a 8mm tube.

This will give you a coil of 10x20mm (see picture on github repository).

U1 : OPA1641 or OPA1611  
 Q1, Q13 : IRF610  
 Q2, Q10 : KSA992  
 Q4, Q14 : IRF9610  
 Q3, Q7 : KSC1845 or 2SC2240  
 Q5 : FQP3P20  
 Q6 : FQP3N30  
 Q8 : ZVN4206AV (not A) or 2N7000 (not TA)  
 Q9, Q11 : ZVP2106A or BS250P (Diodes Inc)  
 Q12 : BD139  
 Q15 : FQA46N15 or IRF610  
 Q16 : FQA36P15 or IRF9610

100nF capacitor : Wima MKS2  
 C3, C5 : ELna Silmic II 100uF 16v  
 1W resistor : Vishay PR01  
 2W resistor : Vishay CCF02 or PR02  
 C13, C14 : Panasonic FC  
 C17 : use MKP capacitor Nichicon Muse UE51A101MPM.  
 D1, D4 : LED RED 2V  
 D2, D3 : 1N5248B  
 D5, D6 : 1N5245  
 C15, C16 : Nichicon UFW (UFW1J222MHD) or Wurth WCAP-ATG8 (860010781028) or Vishay 048 (MAL204858222E3).

For resistor < 150R : sort then or use 1% range.  
 0.25W, 0.5W resistor : Vishay MRS25 or CCF07  
 R27 : 560R 1W 1% Ohmite WNB560FET  
 R26, R28 : 22R 1% 1W TE Connectivity H4P22RFZA  
 C2 : Non polar capacitor Nichicon Muse UE51A101MPM.  
 C7 : use MKP MKP2D041001N00JSSD or MKS4B041002C00JF00.  
 C1, C10 : use Mica CDE CD15 or Polystyrene capacitor.  
 C17 : use MKP capacitor FKP3C031004C00JSSD or MKP1F031004B00KI00.  
 C20 : use Wima FKP2 1nF 63V FKP2C011001D00HSSD or similar.  
 J2 and J3 : FASTON 250 PCB connector (TE Connectivity 63849-1)  
 C15, C16 : Nichicon UFW (UFW1J222MHD) or Wurth WCAP-ATG8 (860010781028) or Vishay 048 (MAL204858222E3).

For input sensibility at 1.5v: R17 = 7.32k  
 For input sensibility at 0.750v: R17 = 3.3k

Exicon ECW laterals:  
 R11,R12 = 10R 2W, R14 = 510R and R15 = 390R

Q17 a QUAD405 audiophile approach

Modified by Stef for the Q17-Mini project  
 by eng. Tiberiu Nicol

Sheet: /  
 File: Q17-Mini.kicad\_sch

**Title: Q17-Mini Amplifier**

Size: A4 Date: 2022-02-02

KiCad E.D.A. kicad (6.0.0-0)

Rev: 1.3b8

Id: 1/1