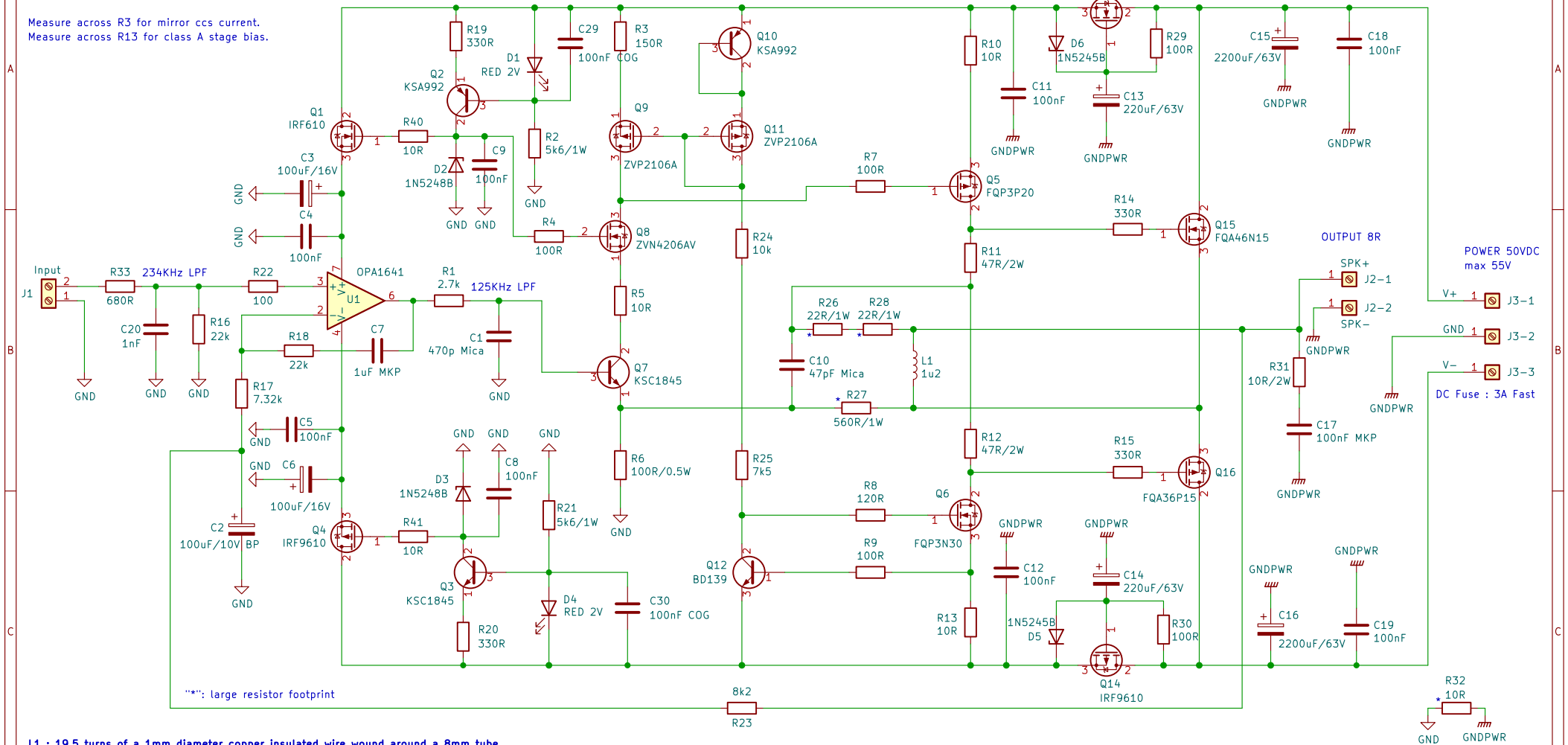


Q7, Q8 : cascode circuit (R3 = current setup, need to adjust R5/R6)  
 Q9, Q11 : current mirror circuit  
 R23, R17, C2 : DC servo  
 Q12 : temperature compensation

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 (JFET) or OPA1611 (BIPOLAR)

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 : 1uF MKP capacitor FKP3C031004C00JSSD or MKP1F031004B00K100.

D2, D3 : 1N5248B

D5, D6 : 1N5245

C15, C16 : Nichicon UFW (UFW1J222MHD) or Vishay 048 (MAL204858222E3) or Wurth WCAP-ATG8 (B60010781028).

For resistor < 150R : sort then or use 1% range.

0.25W, 0.5W resistor : Vishay MR525 or CCF07

R27 : 560R 1W 1% Ohmite WNB560FET

R26, R28 : 22R 1% 1W TE Connectivity H4P22RFZA

C1 : 470pF CDE CD15FD471J03F or Polystyrene capacitor.

C2 : Non polar capacitor Nichicon Muse UES1A101MPM.

C7 : 1uF Wima MKP2D041001N00JSSD or MKS4B041002C00JF00.

C10 : 47pF Mica CDE CD15ED470J03 or Polystyrene capacitor.

C17 : 1uF MKP capacitor FKP3C031004C00JSSD or MKP1F031004B00K100.

C20 : 1nF Wima FKP2C011001D00HSSD or Vishay MKT BFC237085102 or Mica.

J2 and J3 : FASTON 250 PCB connector (TE Connectivity 63849-1)

C15, C16 : Nichicon UFW (UFW1J222MHD) or Vishay 048 (MAL204858222E3) or Wurth WCAP-ATG8 (B60010781028).

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 Vicol

Sheet: /

File: Q17-Mini.kicad\_sch

**Title: Q17-Mini Amplifier**

Size: A4 Date: 2022-02-20

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

Rev: 1.3b16

Id: 1/1