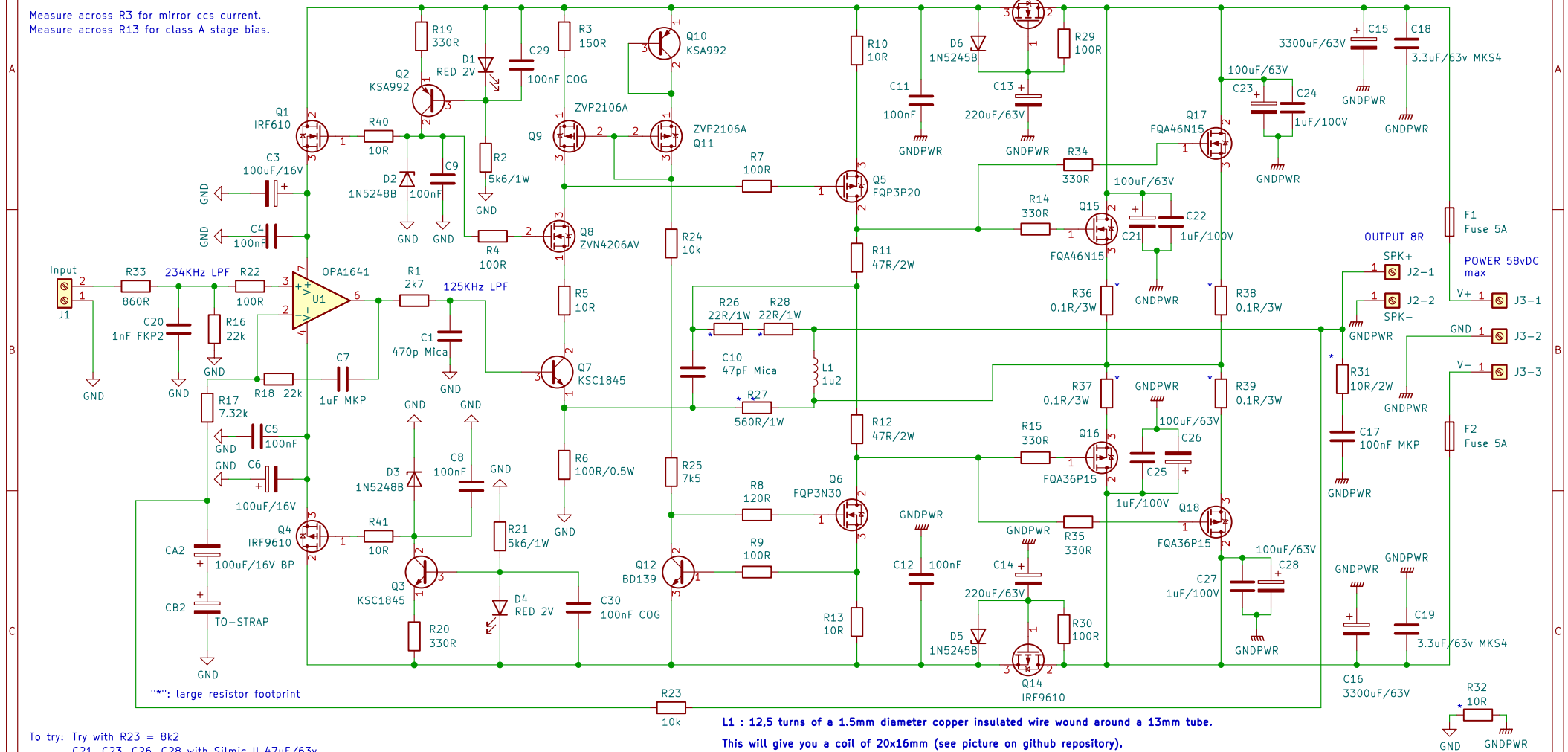


Q7, Q8 : cascode circuit (R3 = current setup, need to adjust R5/R6)
 Q9, Q11 : current mirror circuit
 R23, R17, C2 : DC servo
 Q12 : temperature compensation

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

Do not power on the board without opamp.



To try: Try with R23 = 8k2
 C21, C23, C26, C28 with Silmic II 47uF/63v

L1 : 12.5 turns of a 1.5mm diameter copper insulated wire wound around a 13mm tube.
 This will give you a coil of 20x16mm (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 or 2N7000 (not TA)
 Q12 : BD139
 Q9, Q11 : ZVP2106A or BS250P (Diodes Inc)
 Q15, Q17 : FQA46N15 or IRF610
 Q16, Q18 : FQA36P15 or IRF9610

C0 : CDE 1uF 100v 930C1W1K-F
 C15, C16 : Vishay 256 PMG-SI
 C18, C19 : Wima MKS4C043303G
 C3, C6 : ELNA Silmic II RFS 100uF 16V
 100nF : Wima MKS2
 D1, D4 : LED RED 2V
 D2, D3 : 1N5248B
 D5, D6 : 1N5245
 1W resistor : Vishay PR01
 2W resistor : Vishay CCF02 or PR02
 R26, R28 : TE Connectivity H4P22RFZA
 R27 : 560R 1W 1% Ohmite WNB560FET
 C15, C16 : Nichicon UFW (UFW1J222MHD) or Vishay 048 (MAL204858222E3) or Wurth WCAP-ATG8 (860010781028).

For resistor < 150R : sort then or use 1% range.
 0.25W, 0.5W resistor : Vishay MRS25 or CCF07
 R31 : 10R 2W Ohmite WNC10RFE
 R36, R37, R38, R39 : Noble RGC5 or KOA BPR58 0.1R 5W (white sugar)
 C1 : 470pF CDE CD15FD471J03F or Polystyrene capacitor.
 C2 : Non polar capacitor Nichicon Muse UES1A101MPM.
 C4, C5, C29, C30 SMD : 100nF COG TDK C3216C0G1H104J160AA
 C3, C5, C13, C14, C21, C23, C26, C28 : Panasonic FC
 C7 : 1uF Wima MKP2D041001N00JSSD or MKS4B041002C00JF00.
 C10 : 47pF Mica CDE CD15ED470J03 or Polystyrene capacitor.
 C17 : 1uF MKP capacitor FKP3C031004C00JSSD or MKP1F031004B00KI00.
 C20 : 1nF Wima FKP2C011001D00HSSD or Vishay MKT BFC237085102 or Mica.
 J2 and J3 : FASTON 250 PCB connector (TE Connectivity 63849-1)
 Q15, Q17 : FQA46N15 or IRF610
 Q16, Q18 : FQA36P15 or IRF9610

For input sensibility at 1.5v: R17 = 7K32
 For input sensibility at 0.750v: R17 = 3K3

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

Q17 a QUAD405 audiophile approach

Modified by Stef for the Q17-P2 project
 by eng. Tiberiu Nicol

Sheet: /
 File: Q17-P2.kicad_sch

Title: Q17-P2 Amplifier

Size: A4 Date: 2022-07-15

KiCad E.D.A. kicad (6.0.6-0)

Rev: 1.0b14

Id: 1/1