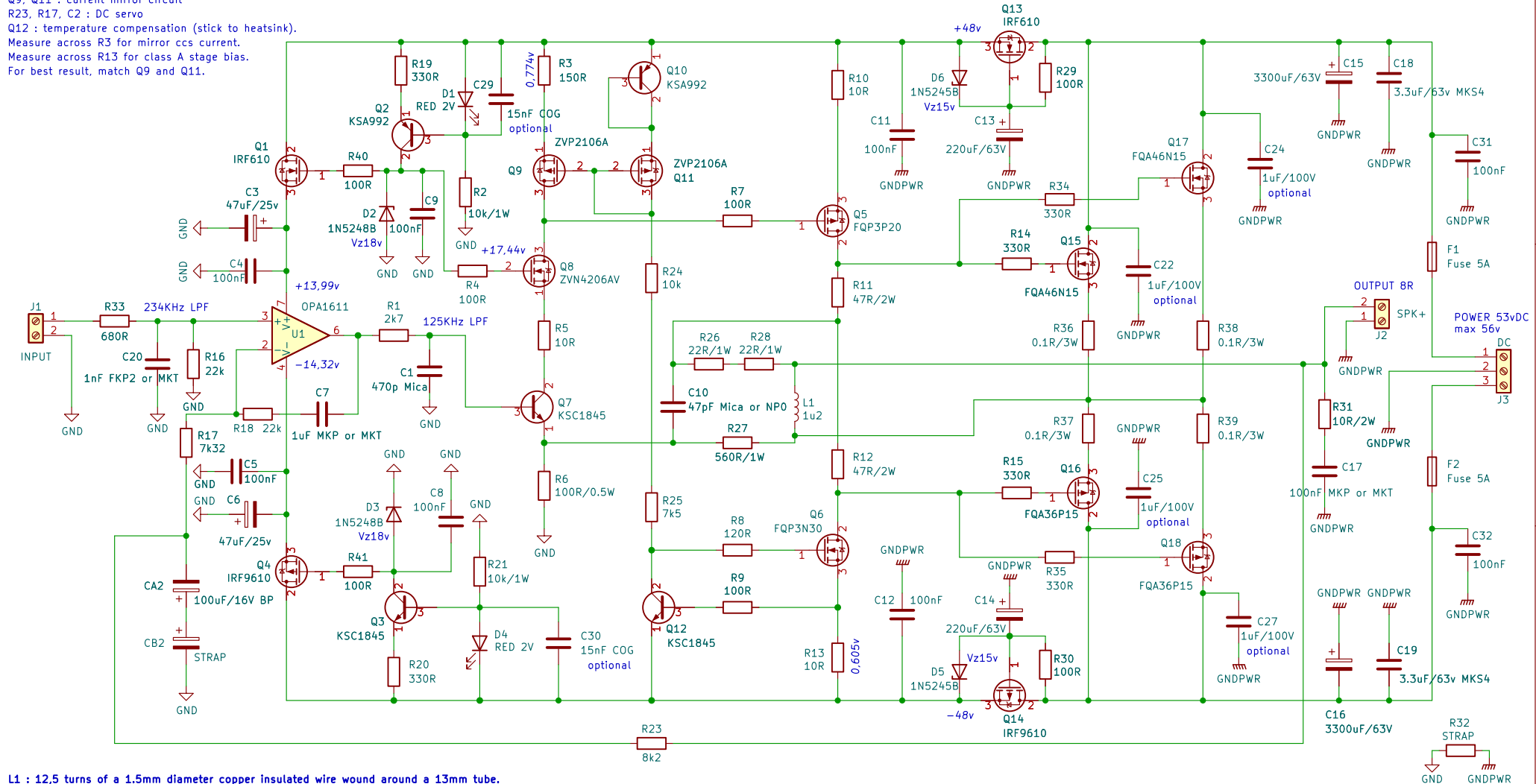


Q7, Q8 : cascode circuit (R3 = current setup, need to adjust R5/R6)
 Q9, Q11 : current mirror circuit
 R23, R17, C2 : DC servo
 Q12 : temperature compensation (stick to heatsink).
 Measure across R3 for mirror ccs current.
 Measure across R13 for class A stage bias.
 For best result, match Q9 and Q11.

Do not power on the board without opamp.



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, Q12 : KSC1845 or 2SC2240GR
 Q5 : FQP3P20 (need isolator)
 Q6 : FQP3N30 or FQP3N50C (need isolator)
 Q8 : ZVN4206AV or 2N7000G
 Q9, Q11 : BS250P or ZVP2106A or VP2206N3
 Q15 : FQA46N15 or FQA40N25 (need isolator)
 Q16 : FQA36P15 or IXTH48P20P (need isolator)

U2: NDC7003P (replace Q9/Q11)
 Transformer: 2x35v AC 250VA
 J1: KF127 or JST B2B-XH-A-GU.
 100nF capacitor : Wima MKS2
 C3, C6 : Nichicon UKZ1E470MPM
 1W resistor : Vishay PR01
 2W resistor : Vishay CCF02 or PR02
 D1, D4 : LED RED 2V TLHR5400
 D2, D3 : 1N5248B
 D5, D6 : 1N5245
 C13, C14 : Vishay MAL215058221E3
 C15, C16 : Vishay MAL225638332E3

For resistor < 150R : sort then or use 1% range.
 0.25W, 0.5W resistor : Vishay MRS25 or CCF07
 R27 : 560R 1W 1% Ohmite WNB560FET or Vishay CMF60560R00JKR6
 R26, R28 : 22R 1% 1W TE Connectivity H4P22RFZA
 R36, R37, R38, R39 : 0R1
 C1 : 470pF CDE CD15FD471J03F or polystyrene capacitor.
 C2 : Non polar capacitor Nichicon Muse UES1A101MPM.
 C7 : 1uF CDE 930C1W1K-F
 C10 : 47pF Mica CDE CD15ED470J03 or ceramic NP0.
 C17 : 100nF capacitor FKP3C031004C00J5SD or MKT1822410255.
 C18, C19 : 3.3uF 63v capacitor Vishay MKS4C043304D00KF00
 C20 : 1nF Wima FKP2C011001D00H5SD or Vishay MKT BFC237085102.
 C22, C24, C25, C27 : 1uF 63v Wima MAL225638332E3.
 J2 and J3: FASTON 250 PCB connector (TE Connectivity 63849-1)

For input sensibility at 1.5v: R17 = 7.32k
 For input sensibility at 0.750v: R17 = 3.3k
 Remember to take off the resistors of 1W and more from the PCB when you solder them.

Q17 a QUAD405 audiophile approach

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

Sheet: /
 File: Q17-TURBO.kicad_sch

Title: Q17-TURBO (P2) Amplifier

Size: A4 Date: 2023-06-26
 KiCad E.D.A. kicad (6.0.11-0)

Rev: 1.0.6
 Id: 1/1