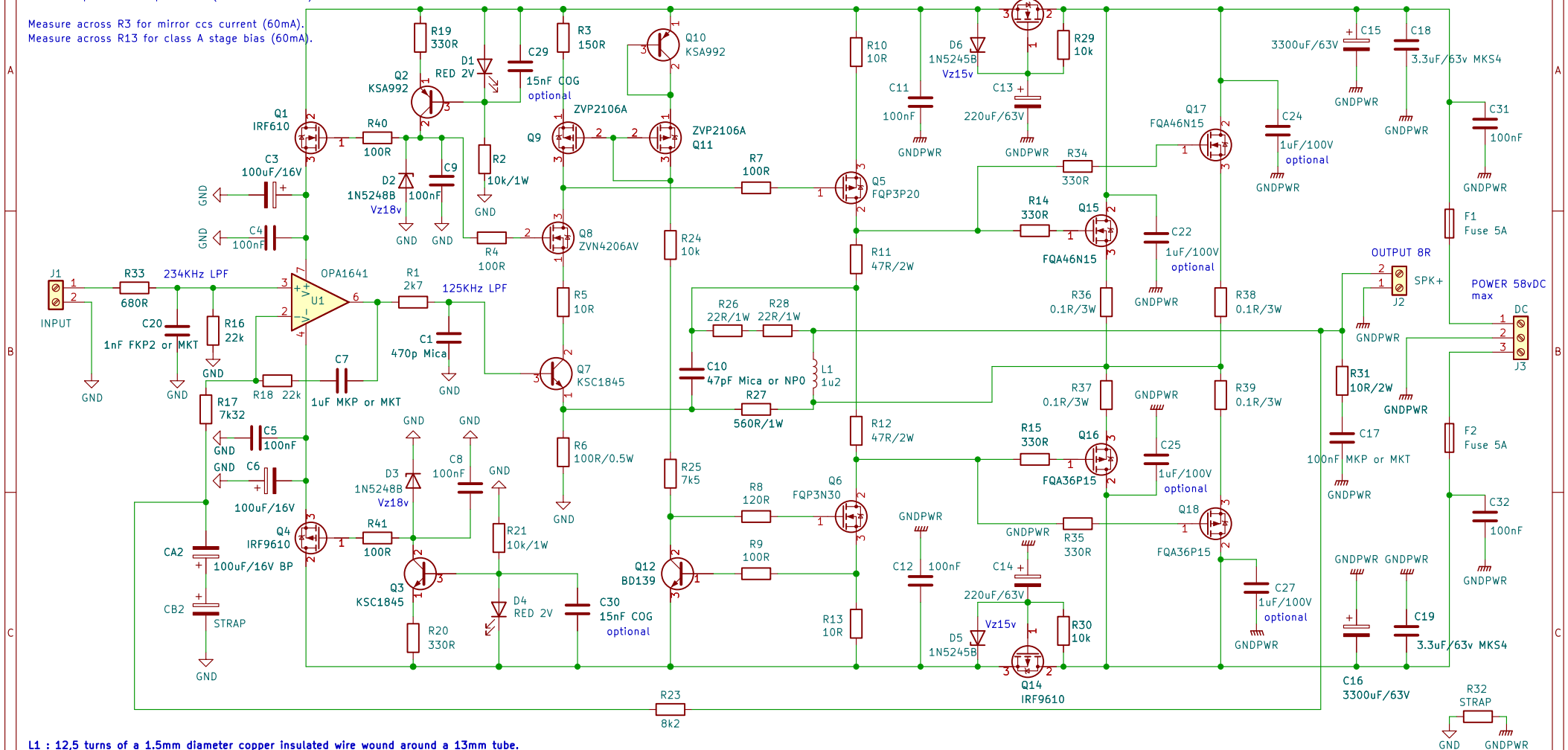


Q7, Q8 : cascode circuit (R3 = current setup, need to adjust R5/R6)  
 Q9, Q11 : current mirror circuit  
 R23, R17, C2 : DC servo  
 Q12 : temperature compensation (stick to heatsink).

Measure across R3 for mirror ccs current (60mA).  
 Measure across R13 for class A stage bias (60mA).

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 : KSC1845 or 2SC2240GR

Q5 : FQP3P20

Q6 : FQP3N30 or FQP3N50C

Q8 : ZVN4206AV or 2N7000G

Q9, Q11 : BS250P or ZVP2106A

Q12 : BD139G

Q15 : FQA46N15 or FQA40N25

Q16 : FQA36P15

J1: KF127 or JST B2B-XH-A-GU.

100nF capacitor : Wima MKS2

C3, C6 : ELna Silmic II 100uF 16v

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: 2022-09-08

KiCad E.D.A. kicad (6.0.7-1)-1

Rev: 1.0b2

Id: 1/1