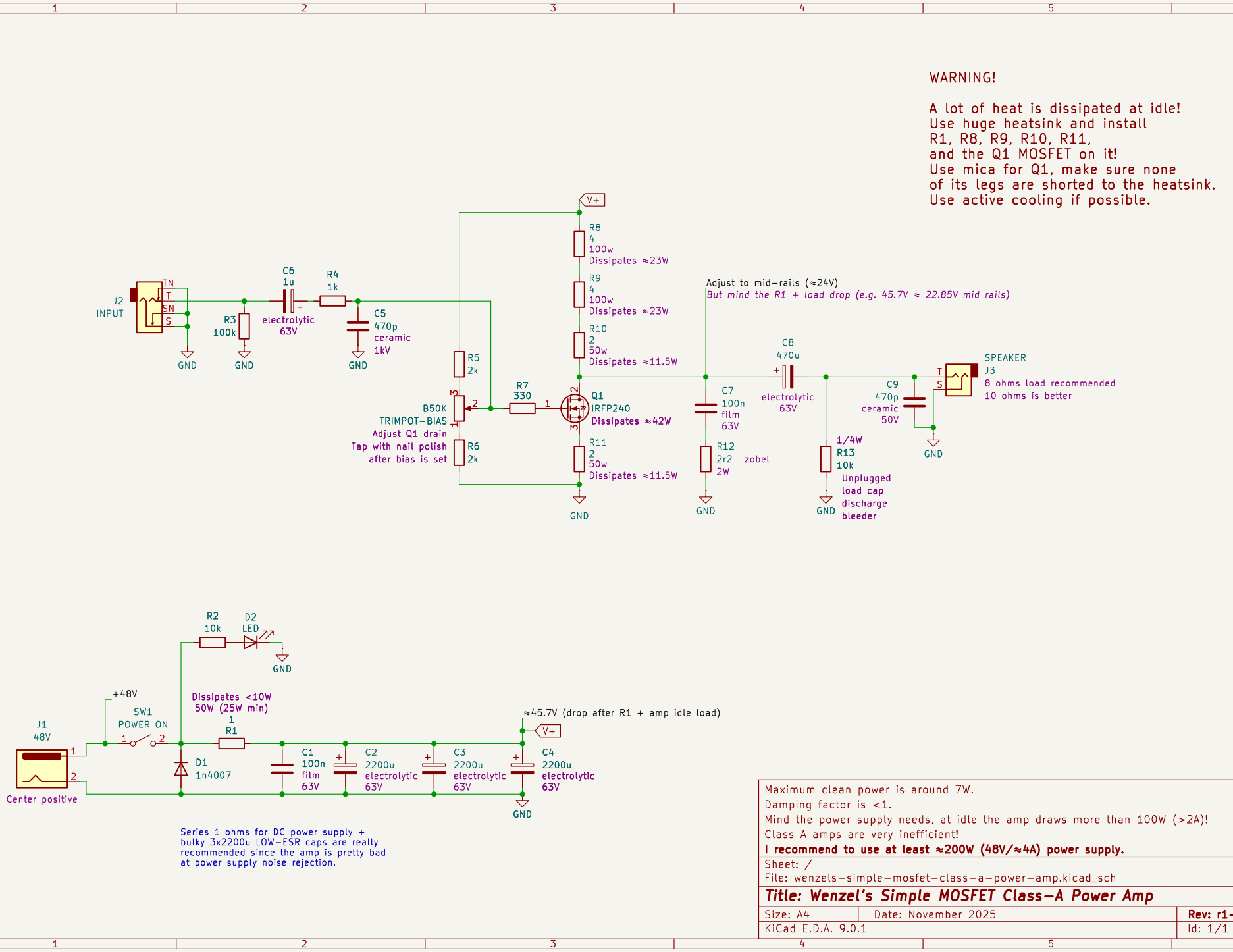
WARNING!
A lot of heat is dissipated at idle!
Use huge heatsink and install
R1, R8, R9, R10, R11,
and the Q1 MOSFET on it!
Use mica for Q1, make sure none
of its legs are shorted to the heatsink.
Use active cooling if possible.
J2
INPUT
TN
T
SN
S
GND
R3
100k
C6
1u
electrolytic
63V
R4
1k
C5
470p
ceramic
1kV
V+
R8
4
100w
Dissipates ≈23W
R9
4
100w
Dissipates ≈23W
R10
2
50w
Dissipates ≈11.5W
R5
2k
B50K
TRIMPOT-BIAS
Adjust Q1 drain
Tap with nail polish
after bias is set
R6
2k
R7
330
Q1
IRFP240
Dissipates ≈42W
R11
2
50w
Dissipates ≈11.5W
Adjust to mid-rails (≈24V)
But mind the R1 + load drop (e.g. 45.7V ≈ 22.85V mid rails)
C7
100n
film
63V
R12
2r2
2W
zobel
C8
470u
electrolytic
63V
1/4W
R13
10k
Unplugged
load cap
discharge
bleeder
C9
470p
ceramic
50V
SPEAKER
J3
8 ohms load recommended
10 ohms is better
R2
10k
D2
LED
+48V
SW1
POWER ON
J1
48V
Center positive
Dissipates <10W
50W (25W min)
R1
D1
1n4007
C1
100n
film
63V
C2
2200u
electrolytic
63V
C3
2200u
electrolytic
63V
C4
2200u
electrolytic
63V
≈45.7V (drop after R1 + amp idle load)
Series 1 ohms for DC power supply +
bulky 3x2200u LOW-ESR caps are really
recommended since the amp is pretty bad
at power supply noise rejection.
Maximum clean power is around 7W.
Damping factor is <1.
Mind the power supply needs, at idle the amp draws more than 100W (>2A)!
Class A amps are very inefficient!
I recommend to use at least ≈200W (48V/≈4A) power supply.
Sheet: /
File: wenzels-simple-mosfet-class-a-power-amp.kicad_sch
Title: Wenzel's Simple MOSFET Class-A Power Amp
Size: A4
Date: November 2025
Rev: r1-wip-1
KiCad E.D.A. 9.0.1
Id: 1/1