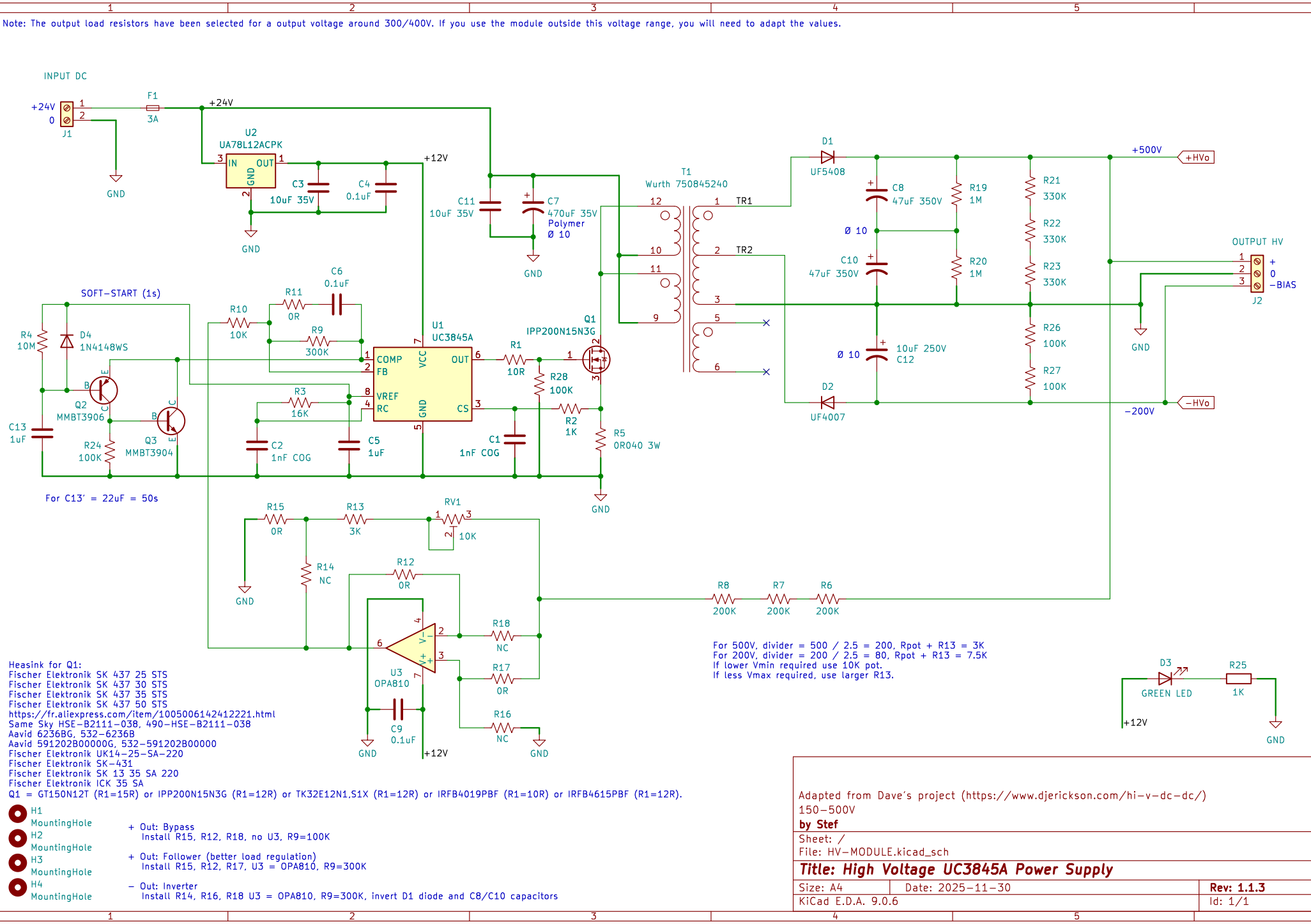
Note: The output load resistors have been selected for a output voltage around 300/400V. If you use the module outside this voltage range, you will need to adapt the values.
INPUT DC
+24V
0
J1
F1
3A
GND
+24V
U2
UA78L12ACPK
IN
OUT
GND
C3
10uF 35V
C4
0.1uF
+12V
C11
10uF 35V
C7
470uF 35V
Polymer
Ø 10
GND
T1
Wurth 750845240
TR1
TR2
D1
UF5408
D2
UF4007
C8
47uF 350V
Ø 10
C10
47uF 350V
Ø 10
10uF 250V
C12
R19
1M
R20
1M
R21
330K
R22
330K
R23
330K
R26
100K
R27
100K
+500V
+HVo
-HVo
-200V
GND
OUTPUT HV
+
0
-BIAS
J2
SOFT-START (1s)
R4
10M
D4
1N4148WS
Q2
MMBT3906
Q3
MMBT3904
C13
1uF
R24
100K
For C13' = 22uF = 50s
C6
0.1uF
R11
0R
R10
10K
R9
300K
U1
UC3845A
COMP
FB
VREF
RC
VCC
OUT
GND
CS
R3
16K
C2
1nF COG
C5
1uF
Q1
IPP200N15N3G
R1
10R
R28
100K
R2
1K
C1
1nF COG
R5
0R040 3W
GND
R15
0R
R13
3K
RV1
10K
R14
NC
R12
0R
U3
OPA810
R18
NC
R17
0R
R16
NC
C9
0.1uF
GND
+12V
R8
200K
R7
200K
R6
200K
For 500V, divider = 500 / 2.5 = 200, Rpot + R13 = 3K
For 200V, divider = 200 / 2.5 = 80, Rpot + R13 = 7.5K
If lower Vmin required use 10K pot.
If less Vmax required, use larger R13.
D3
GREEN LED
R25
1K
+12V
GND
Heasink for Q1:
Fischer Elektronik SK 437 25 STS
Fischer Elektronik SK 437 30 STS
Fischer Elektronik SK 437 35 STS
Fischer Elektronik SK 437 50 STS
https://fr.aliexpress.com/item/1005006142412221.html
Same Sky HSE-B2111-038, 490-HSE-B2111-038
Aavid 6236BG, 532-6236B
Aavid 591202B00000G, 532-591202B00000
Fischer Elektronik UK14-25-SA-220
Fischer Elektronik SK-431
Fischer Elektronik SK 13 35 SA 220
Fischer Elektronik ICK 35 SA
Q1 = GT150N12T (R1=15R) or IPP200N15N3G (R1=12R) or TK32E12N1,S1X (R1=12R) or IRFB4019PBF (R1=10R) or IRFB4615PBF (R1=12R).
H1
MountingHole
H2
MountingHole
H3
MountingHole
H4
MountingHole
+ Out: Bypass
Install R15, R12, R18, no U3, R9=100K
+ Out: Follower (better load regulation)
Install R15, R12, R17, U3 = OPA810, R9=300K
- Out: Inverter
Install R14, R16, R18 U3 = OPA810, R9=300K, invert D1 diode and C8/C10 capacitors
Adapted from Dave's project (https://www.djerickson.com/hi-v-dc-dc/)
150-500V
by Stef
Sheet: /
File: HV-MODULE.kicad_sch
Title: High Voltage UC3845A Power Supply
Size: A4
Date: 2025-11-30
Rev: 1.1.3
KiCad E.D.A. 9.0.6
Id: 1/1