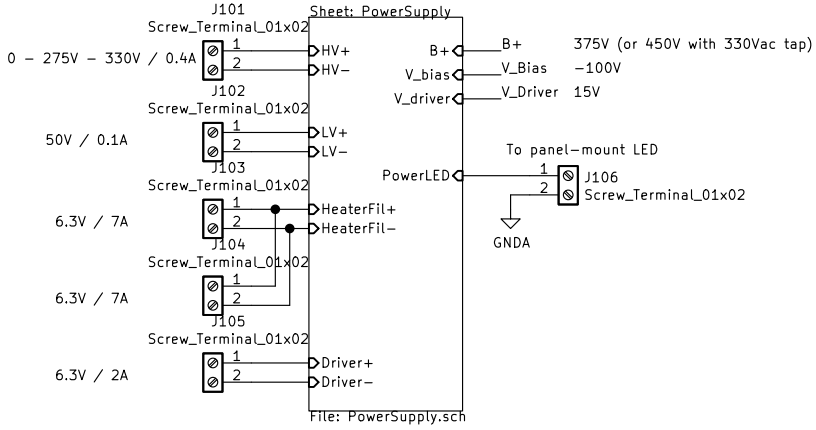
Notes / Questions

- Which HV tap?
- If 330Vac then change caps to 500V

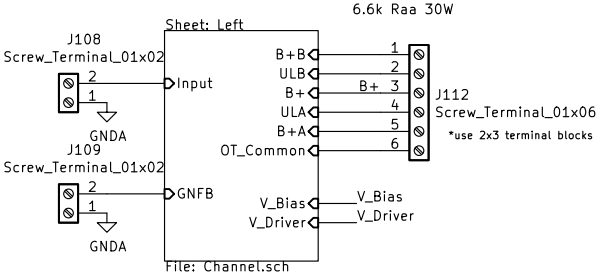
Power Transformer Inputs
Toroidy
TSTA 0250/001

DC Outputs



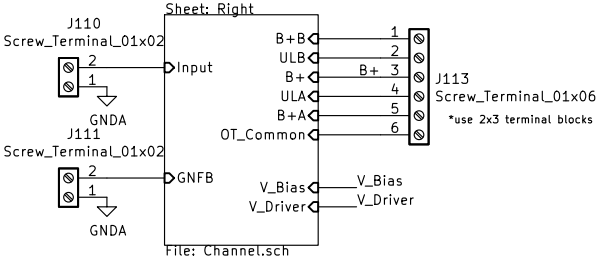
Left Input

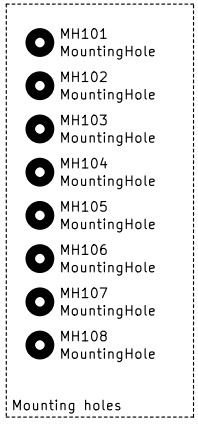
Left Output Transformer
Primary Windings
PWPP30W6K6
6.6k Raa 30W

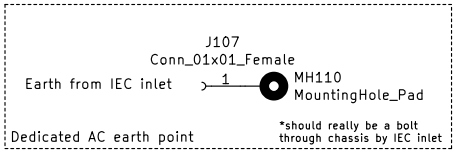


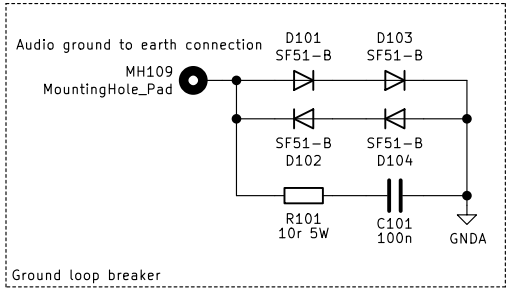
Right Input

Right Output Transformer
Primary Windings
PWPP30W6K6
6.6k Raa 30W





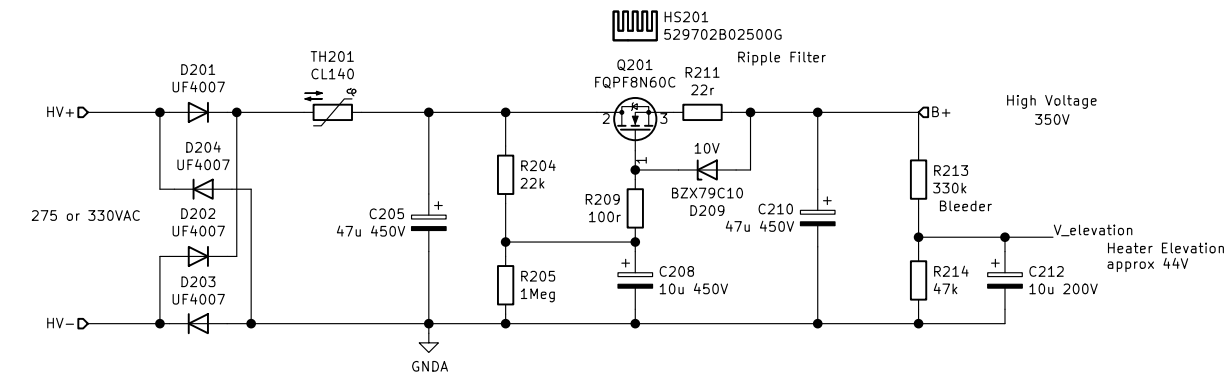


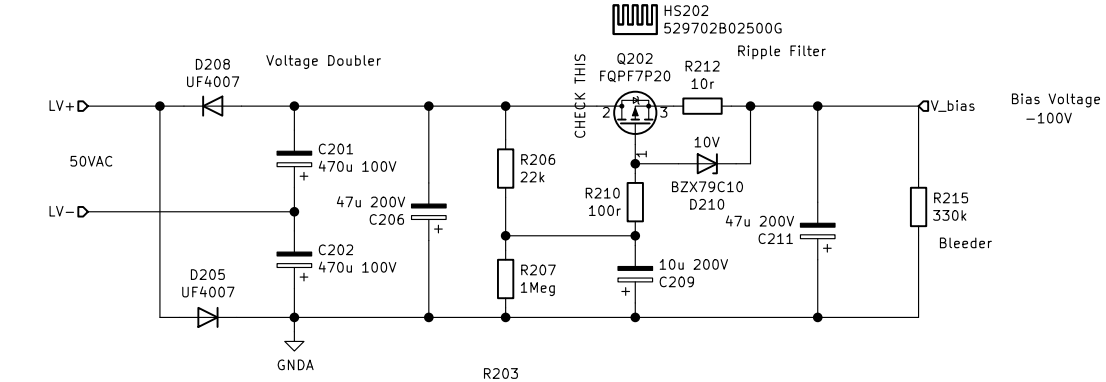


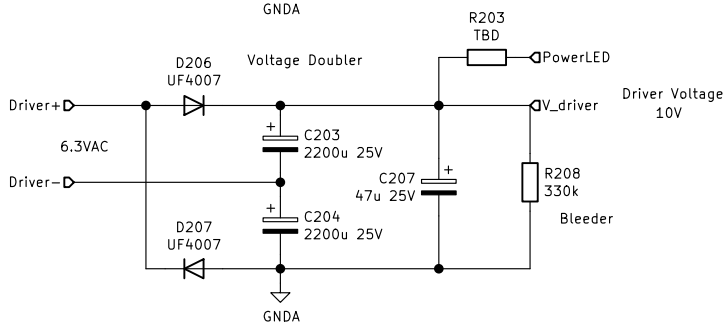
Sheet: /
File: Baby Huey.sch

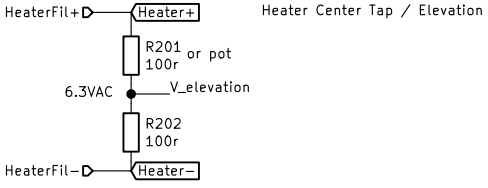
Title: Baby Huey – "Engineer's Version"

Size: A4	Date: 2021−04−25	**Rev:**
KiCad E.D.A. kicad (5.1.9−0−10_14)		Id: 1/4







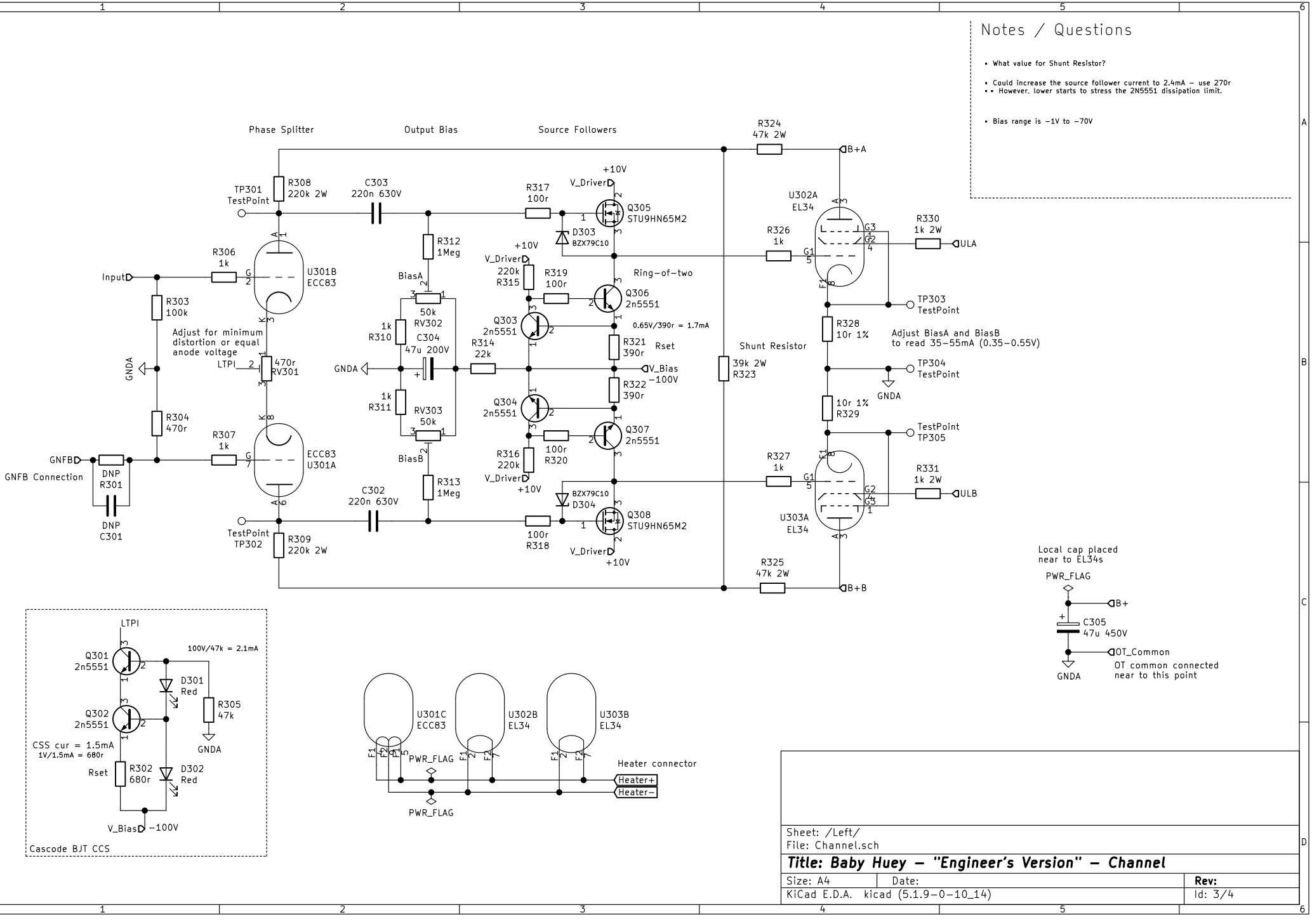


Notes

* Both FETs are encapsulated in plastic
  – no isolation pad / shoulders needed
  – use heat transfer pad / paste

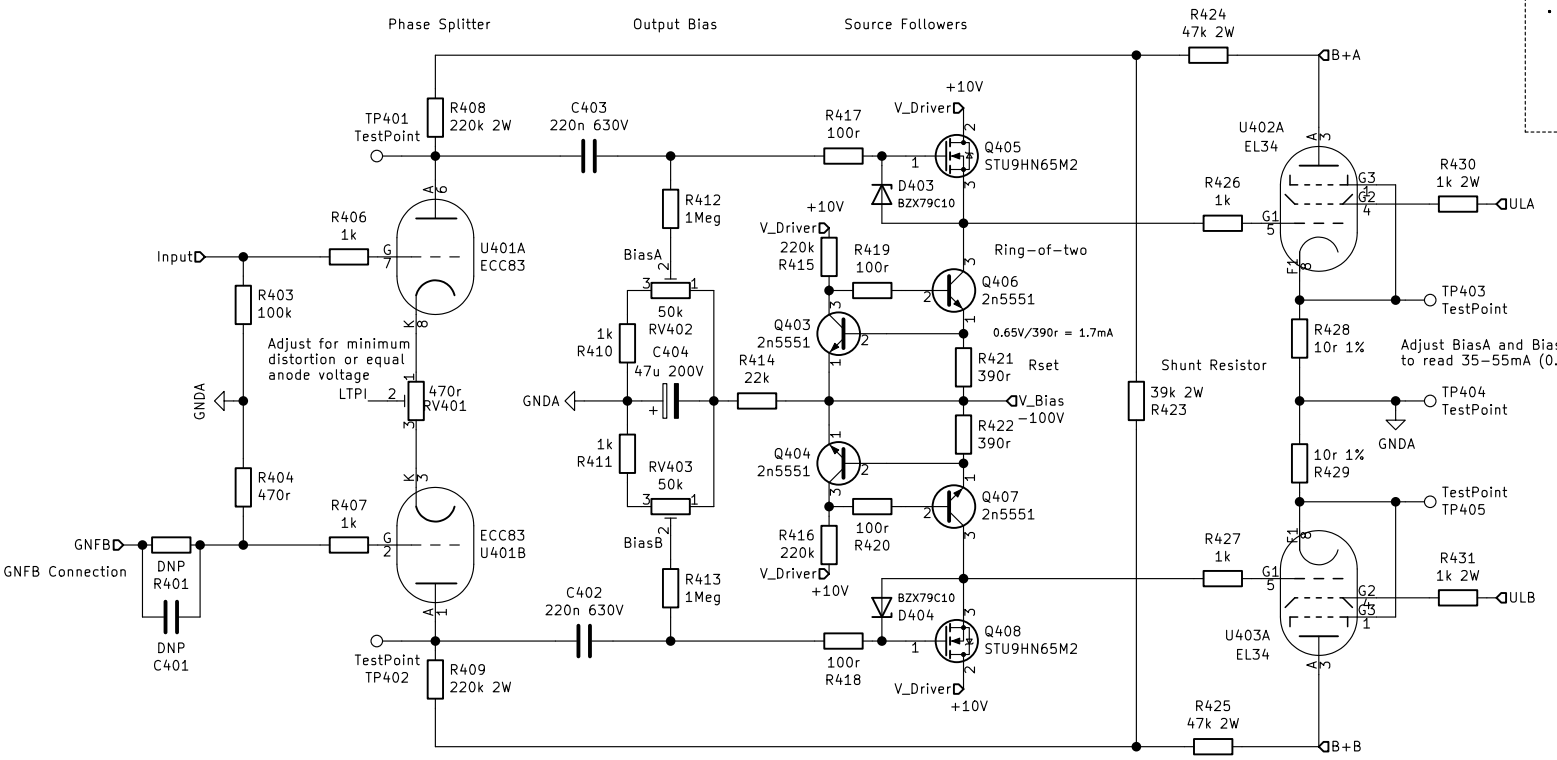
The regulator gives protection to inrush
Max V across the 22r resistor is V_Z − V_GS = 10 − 4 = 6
Max current is 6/22 = 270mA

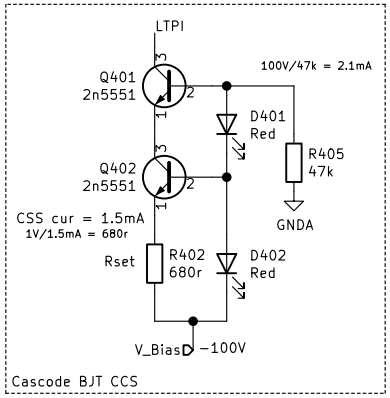
Sheet: /PowerSupply/ File: PowerSupply.sch		
Title: Baby Huey – "Engineer's Version" – Power Supply		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.9−0−10_14)		Id: 2/4

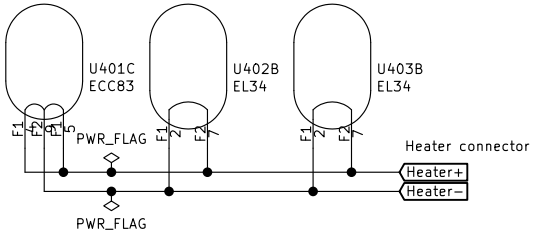

Notes / Questions
• What value for Shunt Resistor?
• Could increase the source follower current to 2.4mA – use 270r
• • However, lower starts to stress the 2N5551 dissipation limit.
• Bias range is –1V to –70V
Phase Splitter
Output Bias
Source Followers
Ring–of–two
Shunt Resistor
Adjust for minimum distortion or equal anode voltage
Adjust BiasA and BiasB to read 35–55mA (0.35–0.55V)
0.65V/390r = 1.7mA
GNFB Connection
Cascode BJT CCS
100V/47k = 2.1mA
CSS cur = 1.5mA
1V/1.5mA = 680r
Heater connector
Heater+
Heater–
Local cap placed near to EL34s
OT common connected near to this point
PWR_FLAG
GNDA
V_Bias –100V
+10V
B+A
B+B
B+
ULA
ULB
TP301 TestPoint
TP302 TestPoint
TP303 TestPoint
TP304 TestPoint
TP305 TestPoint
R301 DNP
C301 DNP
R302 680r
R303 100k
R304 470r
R305 47k
R306 1k
R307 1k
R308 220k 2W
R309 220k 2W
R310 1k
R311 1k
R312 1Meg
R313 1Meg
R314 22k
R315 220k
R316 220k
R317 100r
R318 100r
R319 100r
R320 100r
R321 390r Rset
R322 390r
R323 39k 2W
R324 47k 2W
R325 47k 2W
R326 1k
R327 1k
R328 10r 1%
R329 10r 1%
R330 1k 2W
R331 1k 2W
C302 220n 630V
C303 220n 630V
C304 47u 200V
C305 47u 450V
RV301 470r
RV302 50k
RV303 50k
D301 Red
D302 Red
D303 BZX79C10
D304 BZX79C10
Q301 2n5551
Q302 2n5551
Q303 2n5551
Q304 2n5551
Q305 STU9HN65M2
Q306 2n5551
Q307 2n5551
Q308 STU9HN65M2
U301A ECC83
U301B ECC83
U301C ECC83
U302A EL34
U302B EL34
U303A EL34
U303B EL34
Input
GNFB
LTPI
BiasA
BiasB
V_Driver
Sheet: /Left/
File: Channel.sch
Title: Baby Huey – "Engineer's Version" – Channel
Size: A4
Date:
Rev:
KiCad E.D.A. kicad (5.1.9–0–10_14)
Id: 3/4

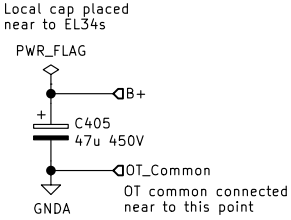
Notes / Questions

- What value for Shunt Resistor?
- Could increase the source follower current to 2.4mA – use 270r
  - However, lower starts to stress the 2N5551 dissipation limit.
- Bias range is −1V to −70V









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File: Channel.sch		
Title: Baby Huey – "Engineer's Version" – Channel		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.1.9−0−10_14)		Id: 4/4