

Test Point tip Jacks (in red):

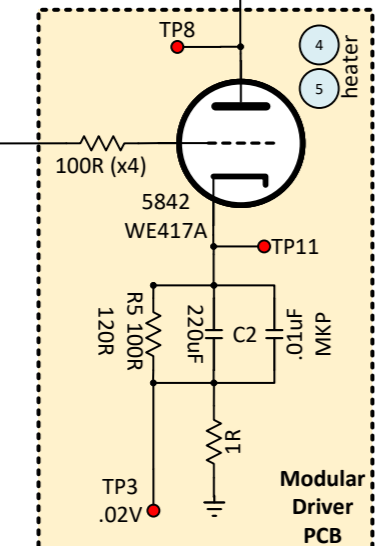
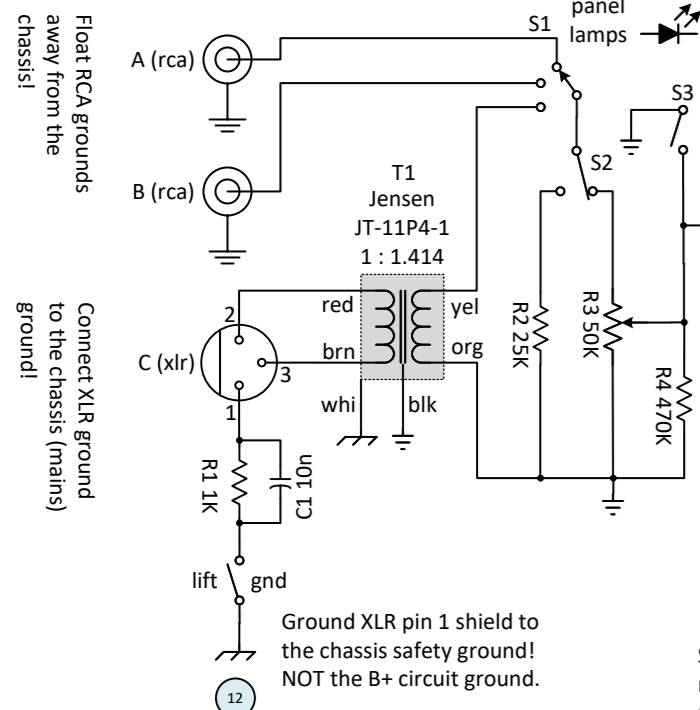
- TP1A – red/blk – 300B filament voltage 1
- TP1B – red/blk – 300B filament voltage 2
- TP2A – blu/yel – 300B pass current 1
- TP2B – blu/yel – 300B pass current 2
- TP3 – blu/yel – driver tube pass current
- TP4 – blu/yel – bias voltage
- TP5 – red/yel – 300B anode voltage
- TP6 – red/yel – B+ voltage
- TP7 – red/yel – driver B+ voltage
- TP8 – red/yel – driver anode voltage
- TP9 – grn chassis (mains) ground
- TP10 – yel circuit ground
- TP11 – driver cathode voltage

Switches:

- 1) S1 Input select
 - 2) S2 Volume defeat
 - 3) S3 Mute
 - 4) S4 Speaker / headphone
- all switches are implemented with relays (except headphone switch)
All LED indicators are powered from umbilical pins 4,6 12V.

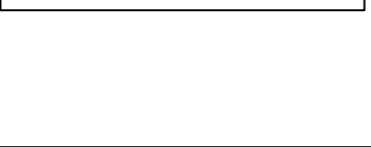
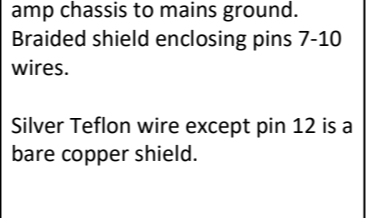
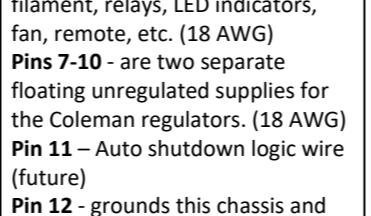
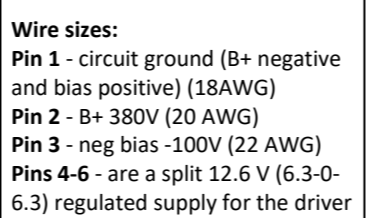
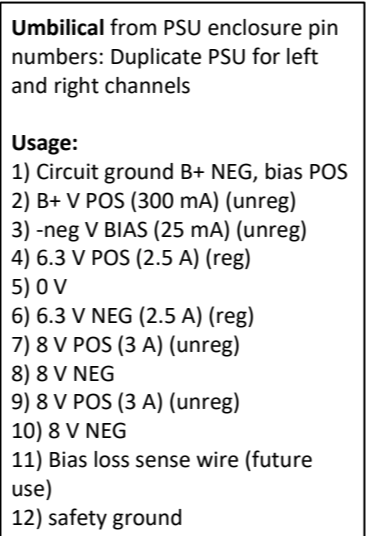
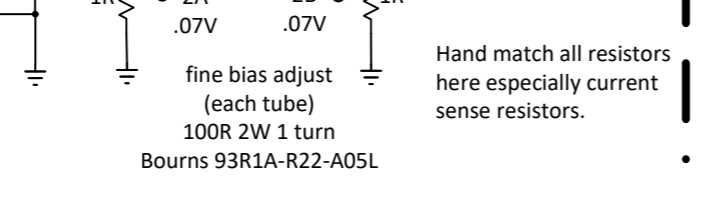
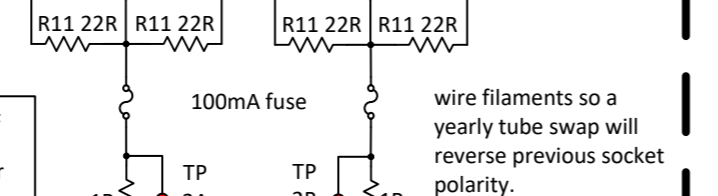
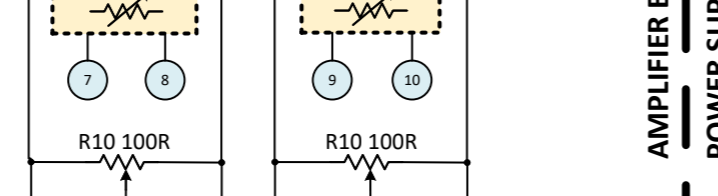
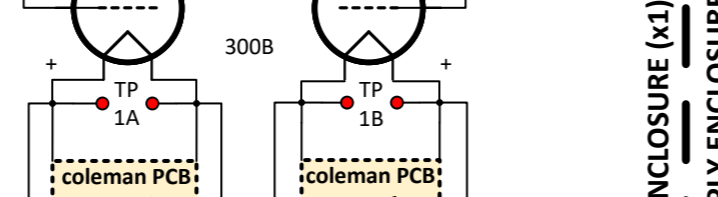
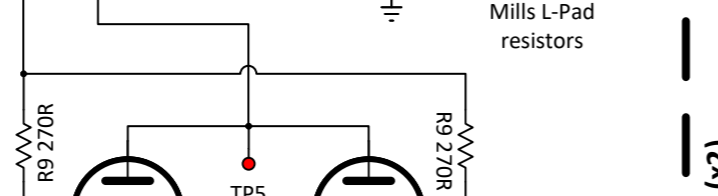
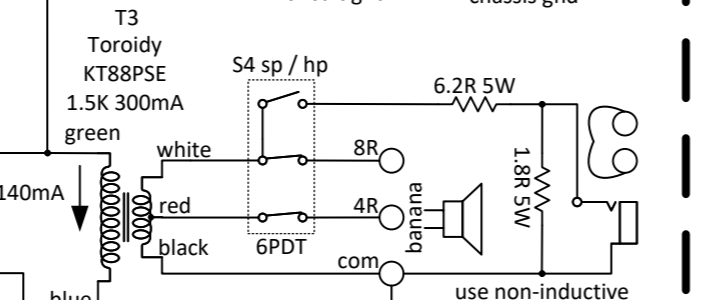
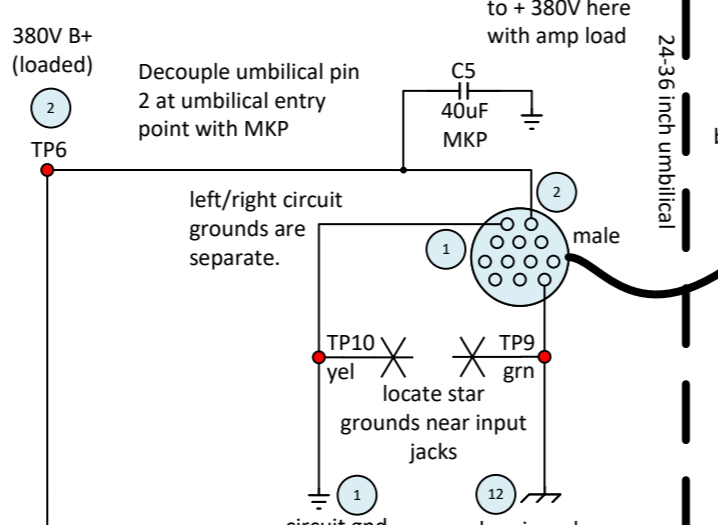
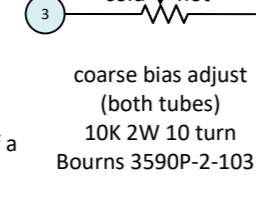
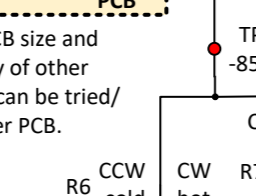
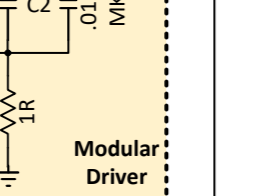
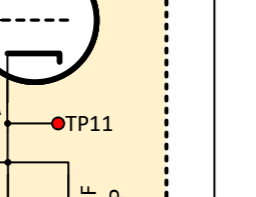
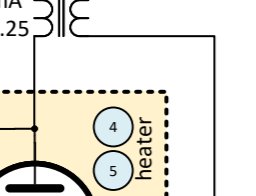
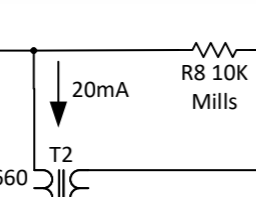
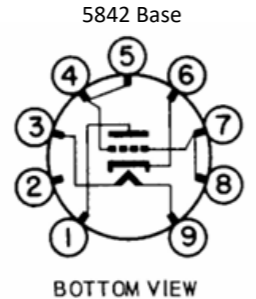
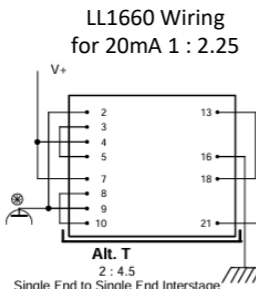
Calibration Procedure (verify this after build):

- TP6 – set PSU to 0V
- TP4 – set coarse bias fully counter clockwise (max negative bias)
- TP1A – set Coleman to 5V
- TP1B – set Coleman to 5V
- TP6 – set PSU to 380V
- TP2A and TP2B – set coarse bias so these are nearly matched at .07V
- TP2A and TP2B – set fine bias so these are nearly matched at .07V
- Repeat above two steps as needed to get .07V as matched as possible
- TP3 – verify driver current it should be about .02V
- TP4 – verify bias voltage it should be about -85V (verify after)?
- Verify all other test points for reasonableness



Standardize driver PCB size and mounting so a variety of other tubes/driver circuits can be tried/ swapped with another PCB.

select an upper limit resistor that prevents the pot from outputting higher than -50V to 0V (too hot) of a bias voltage.



Umbilical from PSU enclosure pin numbers: Duplicate PSU for left and right channels

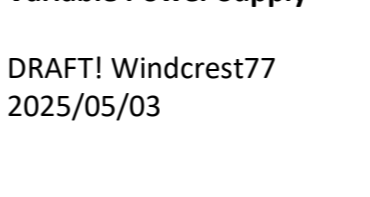
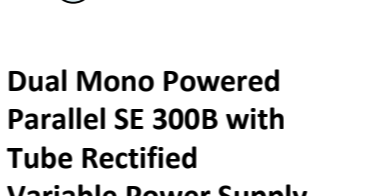
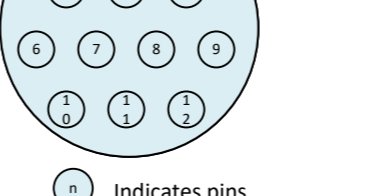
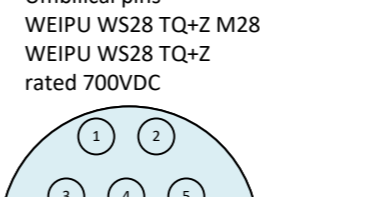
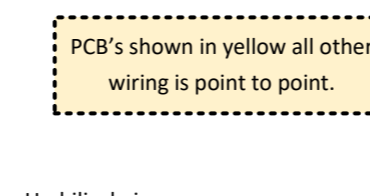
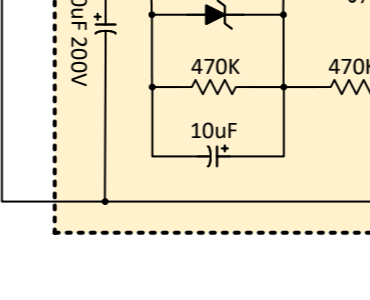
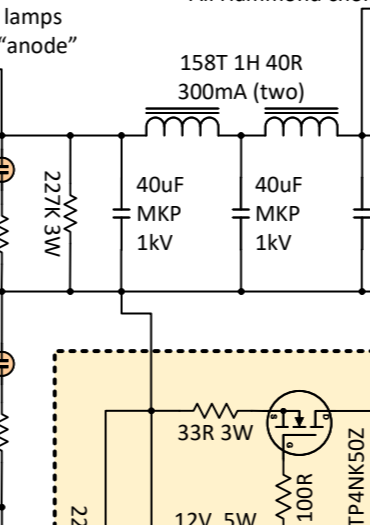
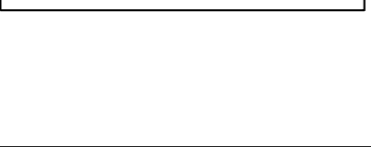
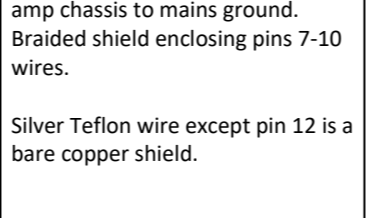
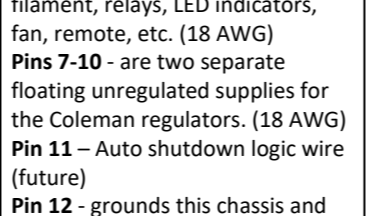
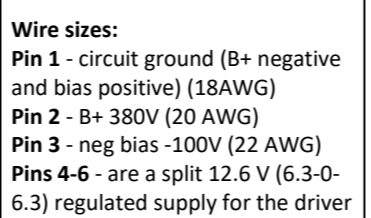
Usage:

- 1) Circuit ground B+ NEG, bias POS
- 2) B+ V POS (300 mA) (unreg)
- 3) -neg V BIAS (25 mA) (unreg)
- 4) 6.3 V POS (2.5 A) (reg)
- 5) 0 V
- 6) 6.3 V NEG (2.5 A) (reg)
- 7) 8 V POS (3 A) (unreg)
- 8) 8 V NEG
- 9) 8 V POS (3 A) (unreg)
- 10) 8 V NEG
- 11) Bias loss sense wire (future use)
- 12) safety ground

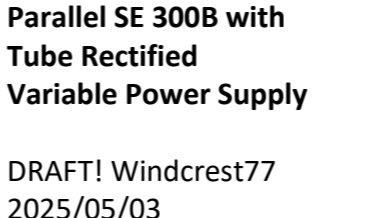
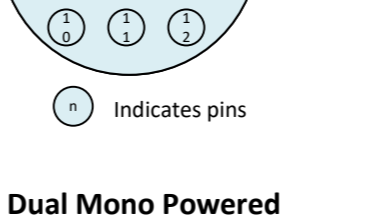
Wire sizes:

- Pin 1 - circuit ground (B+ negative and bias positive) (18AWG)
- Pin 2 - B+ 380V (20 AWG)
- Pin 3 - neg bias -100V (22 AWG)
- Pins 4-6 - are a split 12.6 V (6.3-0-6.3) regulated supply for the driver filament, relays, LED indicators, fan, remote, etc. (18 AWG)
- Pins 7-10 - are two separate floating unregulated supplies for the Coleman regulators. (18 AWG)
- Pin 11 – Auto shutdown logic wire (future)
- Pin 12 - grounds this chassis and amp chassis to mains ground. Braided shield enclosing pins 7-10 wires.

Silver Teflon wire except pin 12 is a bare copper shield.



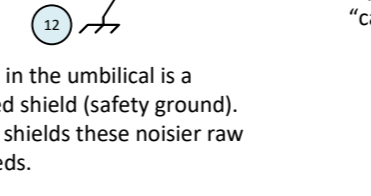
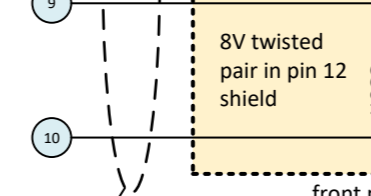
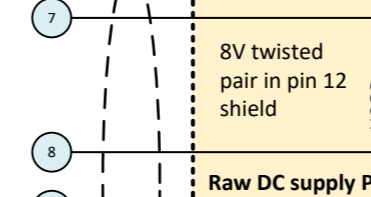
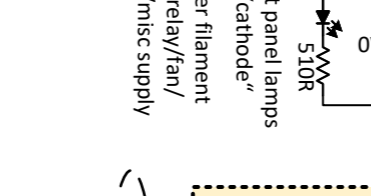
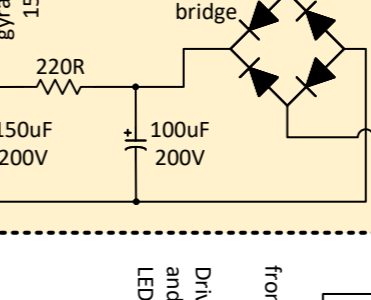
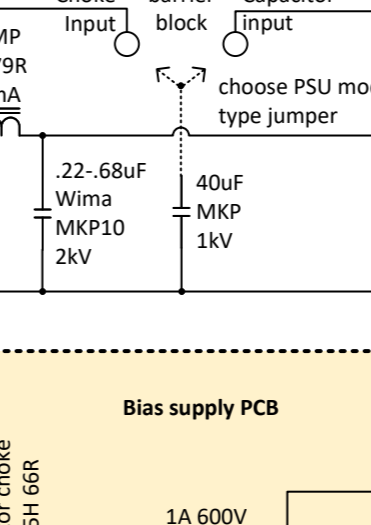
Umbilical pins
WEIPU WS28 TQ+Z M28
WEIPU WS28 TQ+Z
rated 700VDC



Dual Mono Powered Parallel SE 300B with Tube Rectified Variable Power Supply

DRAFT! Windcrest77
2025/05/03

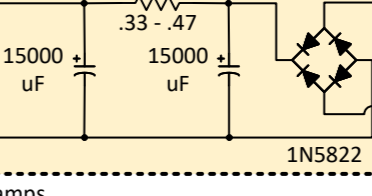
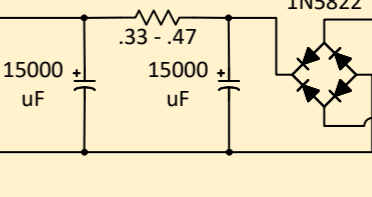
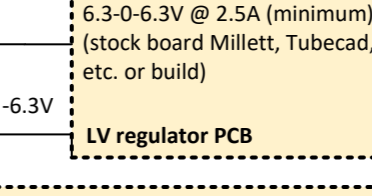
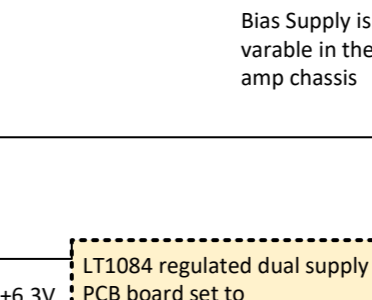
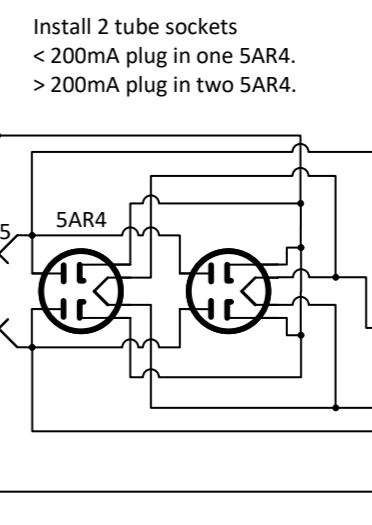
Pin 12 in the umbilical is a braided shield (safety ground). It also shields these noisier raw DC feeds.



Bias supply PCB

Raw DC supply PCB

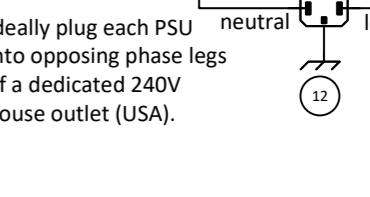
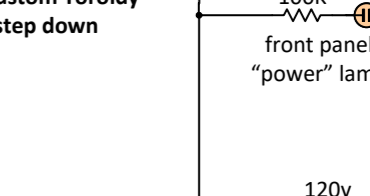
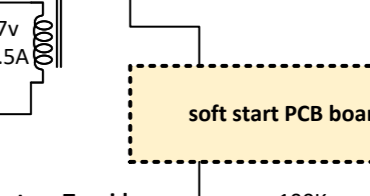
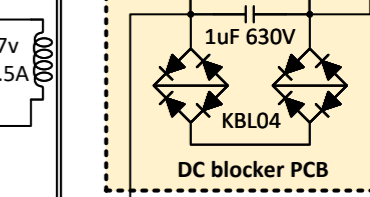
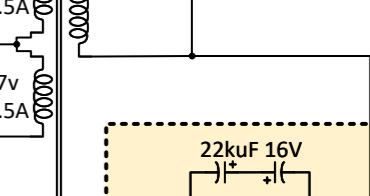
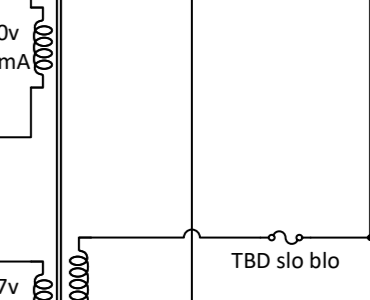
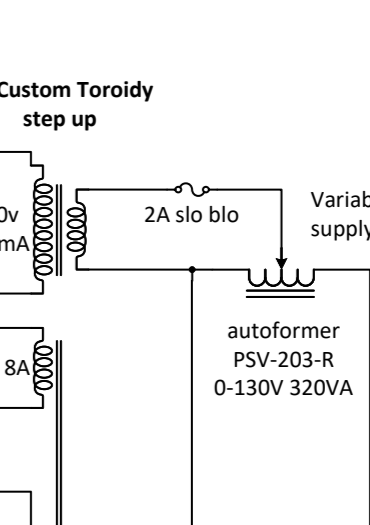
front panel lamps "cathode"



LT1084 regulated dual supply
PCB board set to 6.3-0-6.3V @ 2.5A (minimum) (stock board Millett, Tubecad, etc. or build)

front panel lamps "cathode"

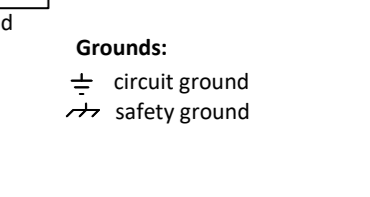
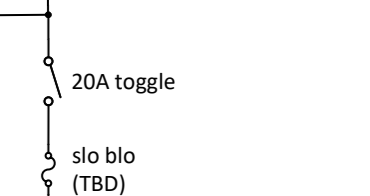
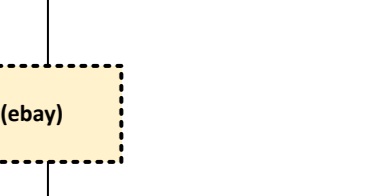
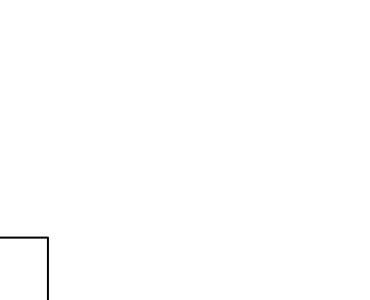
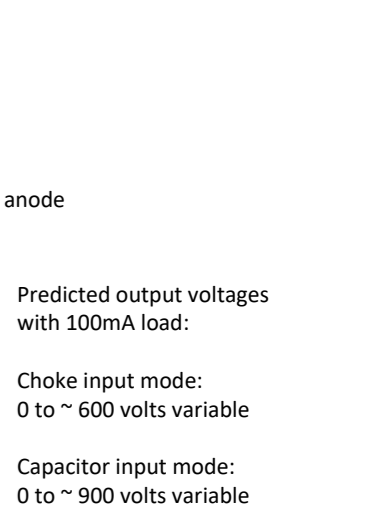
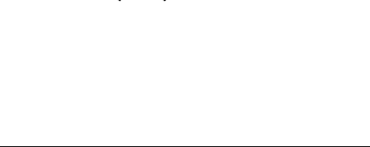
front panel "power" lamp



T1 Custom Toroid step up

T2 Custom Toroid step down

soft start PCB board (ebay)



DC blocker PCB

soft start PCB board (ebay)

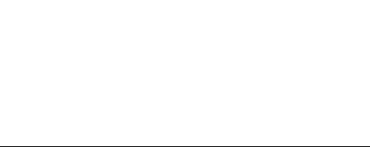
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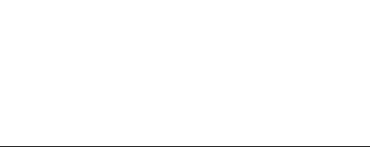
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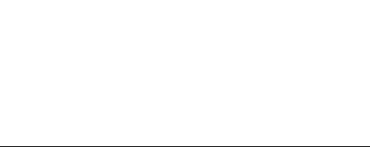
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soft start PCB board (ebay)

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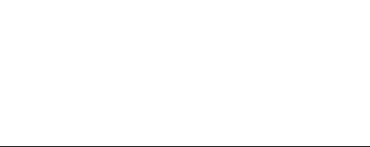
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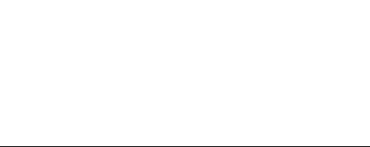
front panel "power" lamp



DC blocker PCB

soft start PCB board (ebay)

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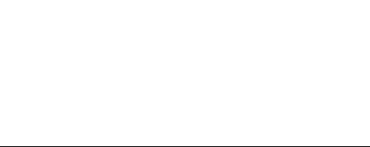
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