

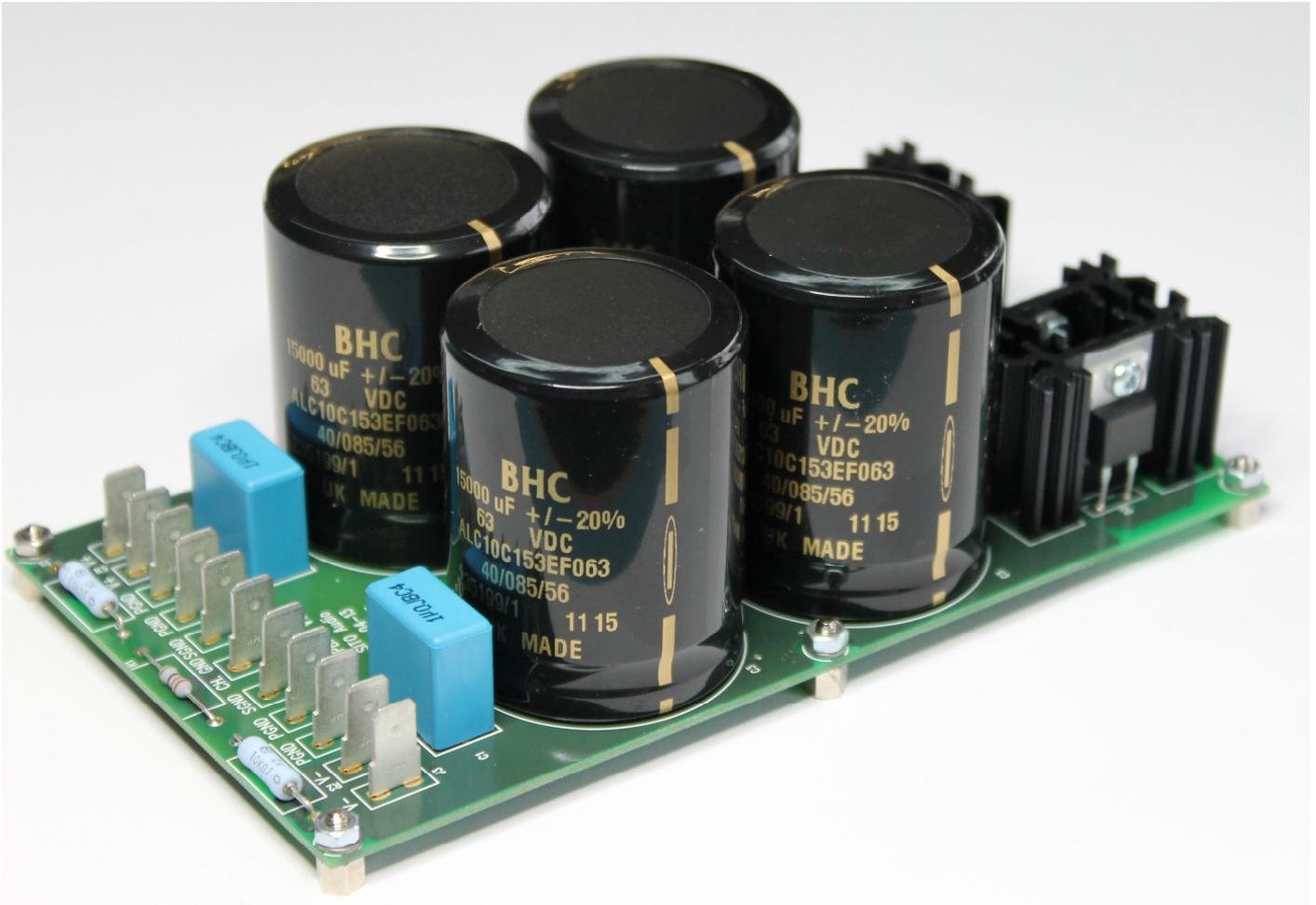
# Power supply building instructions for SITO Audio amplifiers

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## Preface:

The intention with this building instruction for power supply is to make it easier to build SITO Audio amplifiers. Of course it is based on modules from SITO Audio, but it can be used with many other amplifiers.

It is block diagram showing the modules and wiring. To gain more insight in building we would suggest reading from Douglas Self "Audio power amplifier design handbook" and TI AN-1849 "An Audio Amplifier Power Supply Design".



## Wire dimension:

If we break the power supply up in primary and secondary side of the transformer, we have two different current levels. On the primary side we have 120VAC and 240VAC typically. The table below shows the expected current through the wiring for transformer of different VA power rating and a suggested AWG wire thickness.

Transformer VA Rating	120VAC rms Current	120VAC AWG	240VAC rms Current	240VAC AWG
300VA	2.5Arms	25	1.3Arms	27
500VA	4.2Arms	23	2.1Arms	25
625VA	5.3Arms	22	2.7Arms	24
800VA	6.7Arms	22	3.4Arms	23
1KVA	8.4Arms	21	4.2Arms	22

For the secondary wire dimension we would suggest 20 – 14AWG which most FASTON female 6.3mm blade connectors should be able to take. Look at the table below.

Wire dimension secondary side	Current
20AWG	11Arms
18AWG	16Arms
16AWG	22Arms
15AWG	28Arms
14AWG	32Arms

## Wire dimension for chassis GND.

Always use 14 – 16AWG wires for chassis GND. Use as short wires as possible.

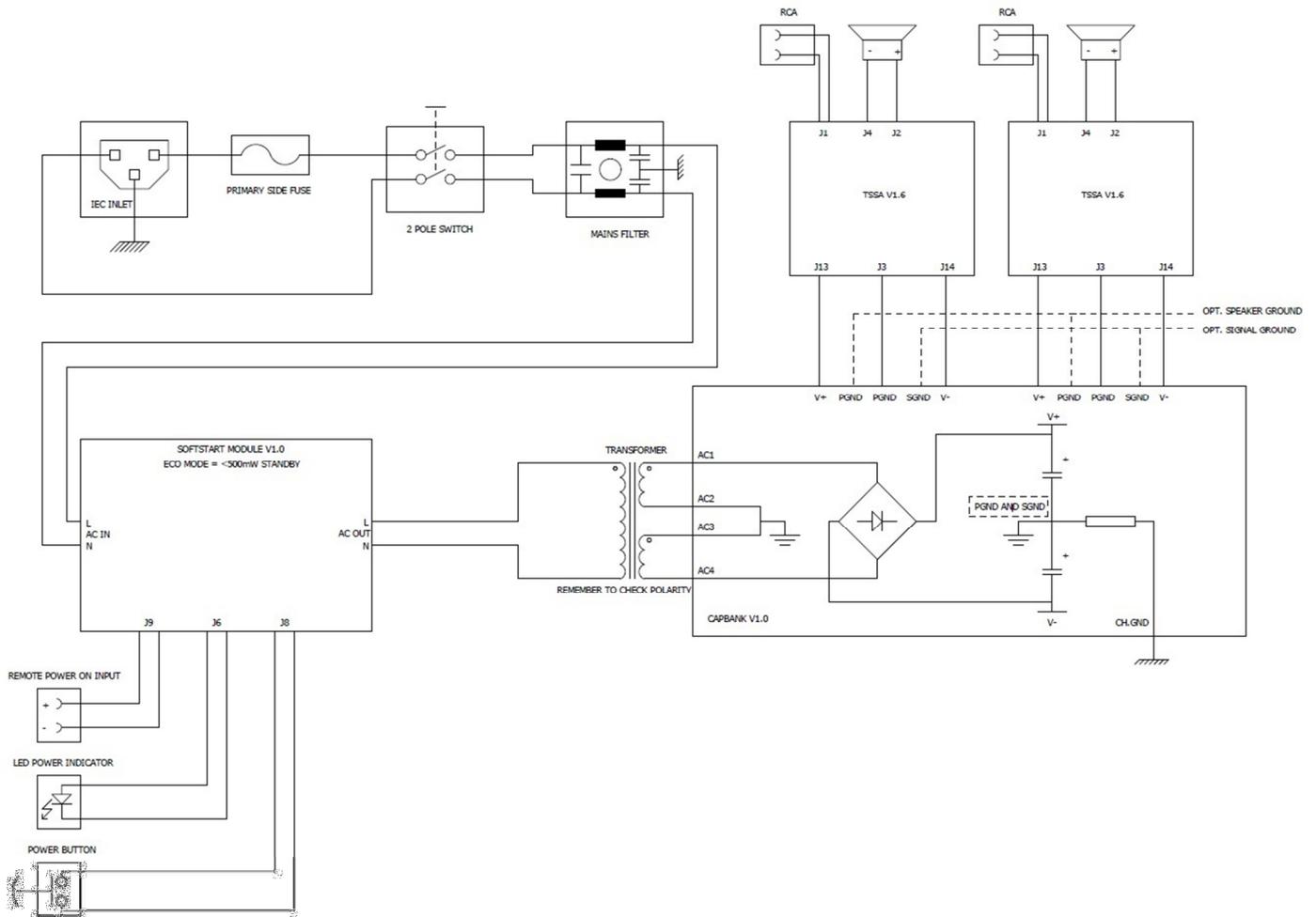
## Primary fuse rating:

The primary fuse rating is set to 200% of the Current rms value. Look in the table below. The fuse chosen should be a T type (Time Lag) The will withstand there current marking 200% for 2 minutes before breaking and 0.1 second for 1000% load capacity.

Transformer VA Rating	120VAC rms Current	120VAC fuse	240VAC rms Current	240VAC fuse
300VA	2.5Arms	T5A	1.3Arms	T3A
500VA	4.2Arms	T9A	2.1Arms	T4A
625VA	5.3Arms	T11A	2.7Arms	T6A
800VA	6.7Arms	T13A	3.4Arms	T7A
1KVA	8.4Arms	T17A	4.2Arms	T8A

## Circuit breakers and IEC inlet:

IEC inlet with or without filter should be able the same current as the chosen Transformers rms current. For the circuit breakers we would suggest the same rating as the chosen Fuse.



## Optional Speaker and Signal GND

In case of the TSSA V1.6 amp we can use the optional speaker and signal GND. If you want to get rid of 10R resistor in series with GND the following should be done.

To do:

- resistor R15 should be removed.
- SGND on CAPBANK should be connected to J1 Pin2 which is signal GND for the line input as well.
- Speaker should be connected to PGND on CAPBANK instead of J4.

## FASTON connector guidelines

A good practice is to use isolated FASTON connectors as we speak high currents and also high voltage inside an amplifier. It is a good safety precaution.