

# **EL34 SE Amplifier**

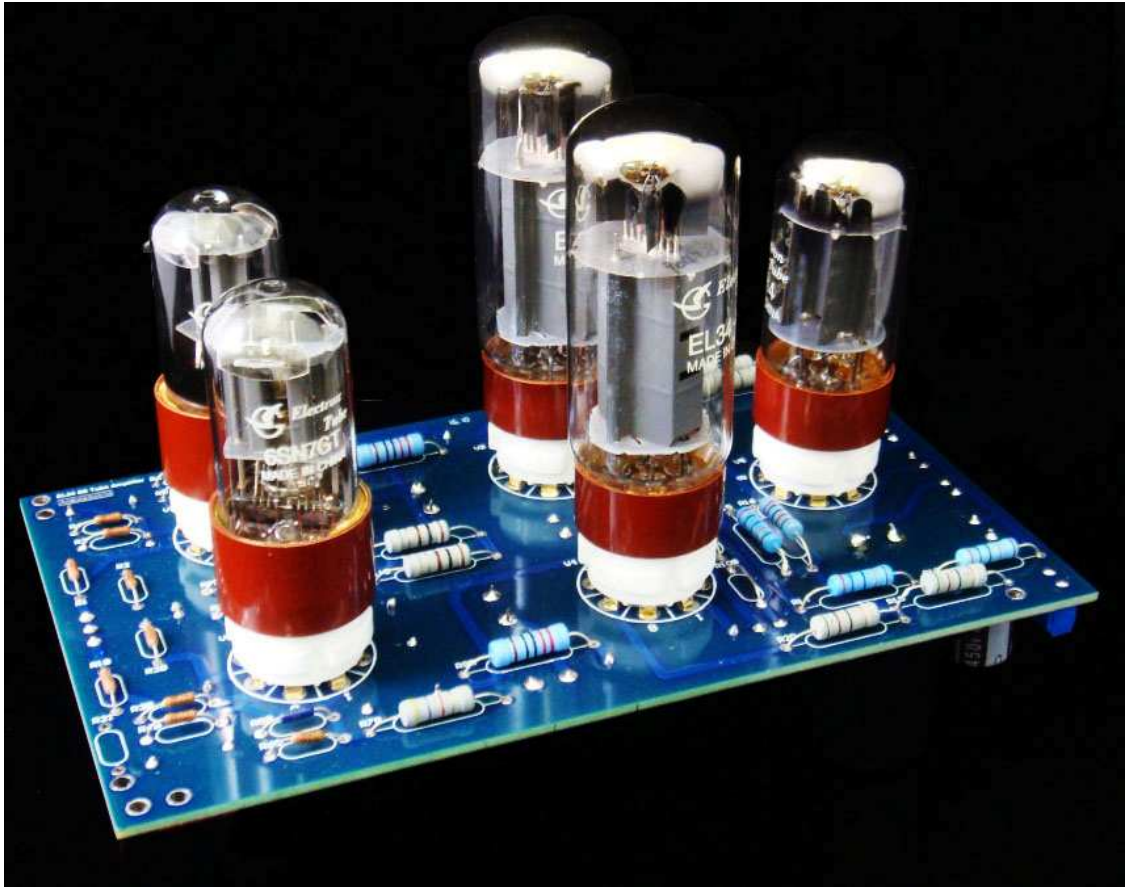
## **User Manual**

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## INTRODUCTION

This kit employs commonly used pentode EL34 vacuum tubes for the class A output amplifier with 6SN7 as input stage. The 6SN7 tubes formation of two cascading stages which are configured in common-cathode and cathode follower. The output power can reach 10W for each channel. A rectifier tube 5AR4 is used for power rectification and then followed by a 10H 250mA choke for noise filtering.



## FEATURES

- Two EL34, two 6SN7 and one 5AR4 tubes.
- The first two stages use triodes of 6SN7 which are configured as common-cathode and cathode follower.
- The output stage uses one EL34 tube configured as class A amplifier with single-end output.
- Output power can reach 10W for each channel.
- Built-in rectifier and LC noise filtering circuitry.
- Symmetrical layout design in signal paths for both channels.
- Dedicated ground and power rails layout design.
- Two large reservoir decoupling capacitors for power rails.
- Power requirements: two 260V AC (100mA), one 5V (2A) and two 6.3V AC (1.5A)
- PCB dimension: 218mm (W) x 132mm (L)
- PCB thickness: 2.4mm, double layer, 2oz copper.

## PRECAUTIONS

- Do not use any body parts to touch the metal parts of the kit after power up or power off, since the high voltage capacitors may not fully discharge. It may cause serious electric shock.
- Use a power transformer with fuse (1-3A) socket to limit the supply current in case of short circuit or incorrect assembly.
- Double check the assembled components with the schematics.
- Do not attempt to measure the voltage by multimeter with hand after power up. The probes of the multimeter should be mounted by some stands to the points of the measurement before switching on the power supply.
- Turn off the power supply if you observe any smokes or hear strange sound coming out from the transformer or board. If there is short circuit, the transformer will be getting very hot shortly.

## PROCEDURES

1. Solder all the components according to the schematic and part list. Notice to the direction of the electrolytic capacitors C1, C4, C8, C11 and C12. There is no direction of the thin film capacitors. Either use rectifier tube V5 or diode bridge DB1. Left unsolder for the capacitor C13.
2. Short the L1 if not use the 10H 250mA choke.
3. Apply 6.3V AC or DC to J2 and J3; 5V AC to P2; two 260V AC to P1. Measure the B+ voltage at P3 which should be 350V DC.
4. If the B+ voltage is correct, turn off the power supply until all HV capacitors are discharged which may take a few minutes. Short the B1 and B+ of P3.
5. Enjoy it.

If you have any problem in assembly, please contact us by email to [tech@analogmetric.com](mailto:tech@analogmetric.com)