

# **6SN3 SRPP Tube Preamplifier User Manual**

**ANALOG METRIC**

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## INTRODUCTION

Two dual triodes 6SN7 vacuum tubes are used for amplification in SRPP configuration. The filaments are supplied by a low dropout voltage regulator LM1085. MKP film capacitors are used for signal paths. Symmetric layout is designed with matching impedances between two signal paths and minimum parasitic, so it provides high linearity, fast responses and low signal distortion. Also, this board has built-in full wave rectification circuit and regulation circuit.

## FEATURES

- Two 6N3 (5670) vacuum tubes are configured in SRPP.
- 6Z4 uses as rectifier tube for high voltage supply.
- A LM1085 IC is employed as regulator for tube filament supply.
- Voltage Gain: 20dB
- MKP film capacitors are used for signal paths.
- Spaces are left for large reservoir decoupling capacitors.

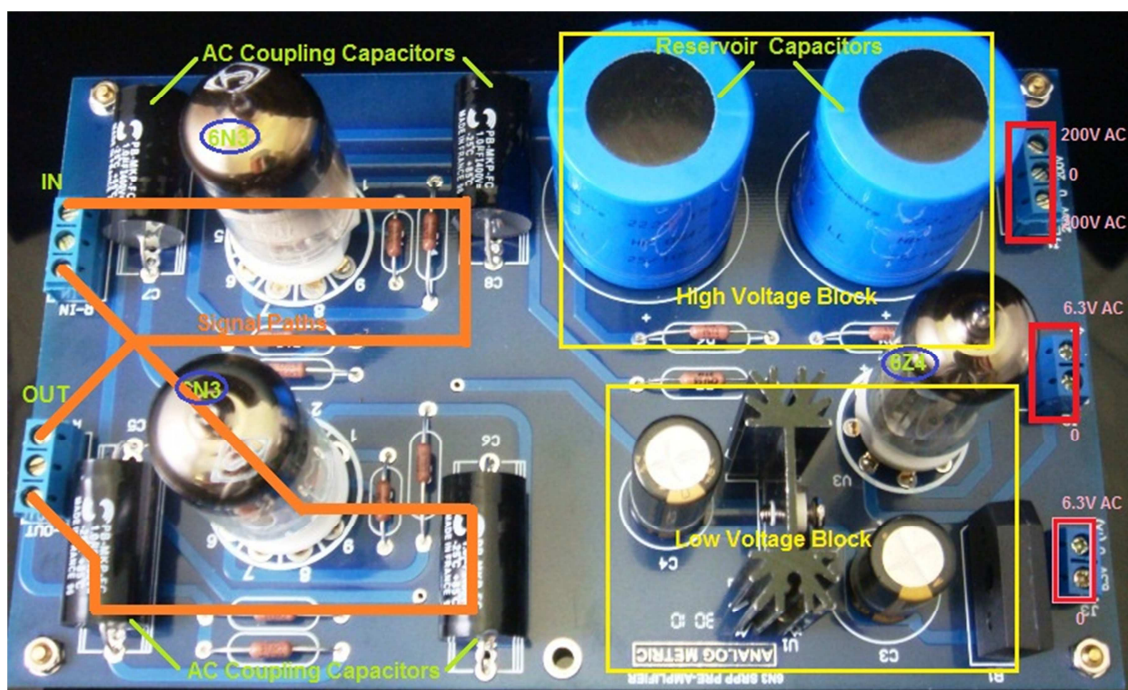
- Symmetric layout design between two channels.
- Dedicated power and ground railings. Shortest signal paths with minimum parasitic.
- Power requirement: two 200V AC (100mA) and two 6.3V AC (0.5A)
- PCB dimension: 177mm x 107mm, 2.4mm thickness and 2oz copper.

## **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 the 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, BOM list, and the photo. Notice to the polarity of the capacitors (C1-C4) and LED (D1 and D2). There is no polarity of the thin film capacitors, so it can place in any directions.
2. Connector power supply to the board according to the following photo. It requires two 200V AC (100mA) for J1, and two 6.3V AC (0.5A) for J2 and J3.
3. Turn on the power supply and then check the voltage at PIN 1 of tubes V1 and V2, 6.3V DC and the voltage at R2, 280V DC. If everything work property, the LED will be led up, and also the tubes.
4. Enjoy it.





## TESTING WAVEFORMS



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