

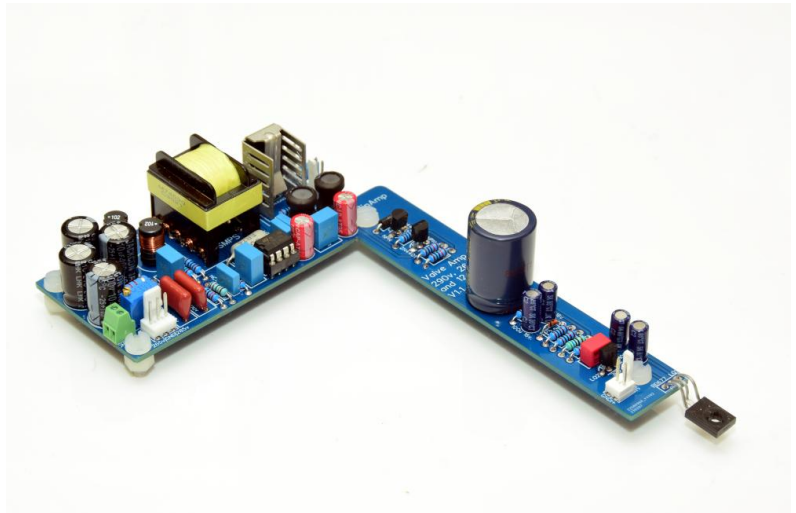
### Application & Purpose:

A high-voltage Switch-mode power supply and a low-voltage Linear Regulated Power supply for powering small-signal valve phono and pre-amps.

12.6vDC filament supply supplies up to 900mA.

High voltage supply is adjustable between 220 and 320vDV and provides up to 20mA. Sufficient to power one phono amp or one pre amp.

*WARNING: Very high DC voltage device. Care must be taken to avoid painful electric shock.*



### Specification:

<b>PCB Dimensions</b>	Thick section: 87mm x 42mm x 1.6mm Thin section: 117mm x 22mm x 1.6mm
<b>Voltage Input</b>	18v DC - wall-wart type supply min 2.5A or 12-15v AC transformer with rectifier
<b>Flyback Transformer</b>	Myra 74030
<b>Max Output Current</b>	HV 20mA LV 900mA
<b>Ripple</b>	< 1mv
<b>Hash</b>	10-20mv - depending on load
<b>Output Voltage</b>	220v to 320vDC - adjustable A second voltage terminal is settable using a resistor of between 4.7k and 22k. Used to dual-rail circuits.
<b>Switching Frequency</b>	140kHz

### Details:

Power supply for running ZinAmp Class-A Tube Phono or Pre-Amplifiers. Switch-mode 'flyback' type, with very low levels of ripple and hash. 50-60Hz ripple is barely measurable and some minimal hash is measurable above 120KHz and is less than 50mV. This can be considered a 'quiet' switch mode supply.

PCB has terminals for power switch, a barrel fuse and a 18v DC output for connecting a

12v regulated supply for powering tube filaments is also on the same board.

This is a relatively straightforward module to build, but the very high DC output voltages mean extreme care must be taken during testing and connection. Whilst low current, it is unlikely to kill, but a 280vDC shock will be painful and debilitating!

### **Power Requirements - IMPORTANT**

Generating high voltages using flyback creates heat and some noise!! This circuit has provisions to filter the noise and dissipate most of this heat, but the more power you try to draw, the more noise and heat you will generate. To minimise heat and noise issues we only approve this module to provide a high-voltage supply up to 20mA

### **Boosting voltage with Flyback Transformers:**

In order to boost voltage, the flyback transformer is being used in reverse. This means the secondary winding(s) of the transformer are being used as the primary.

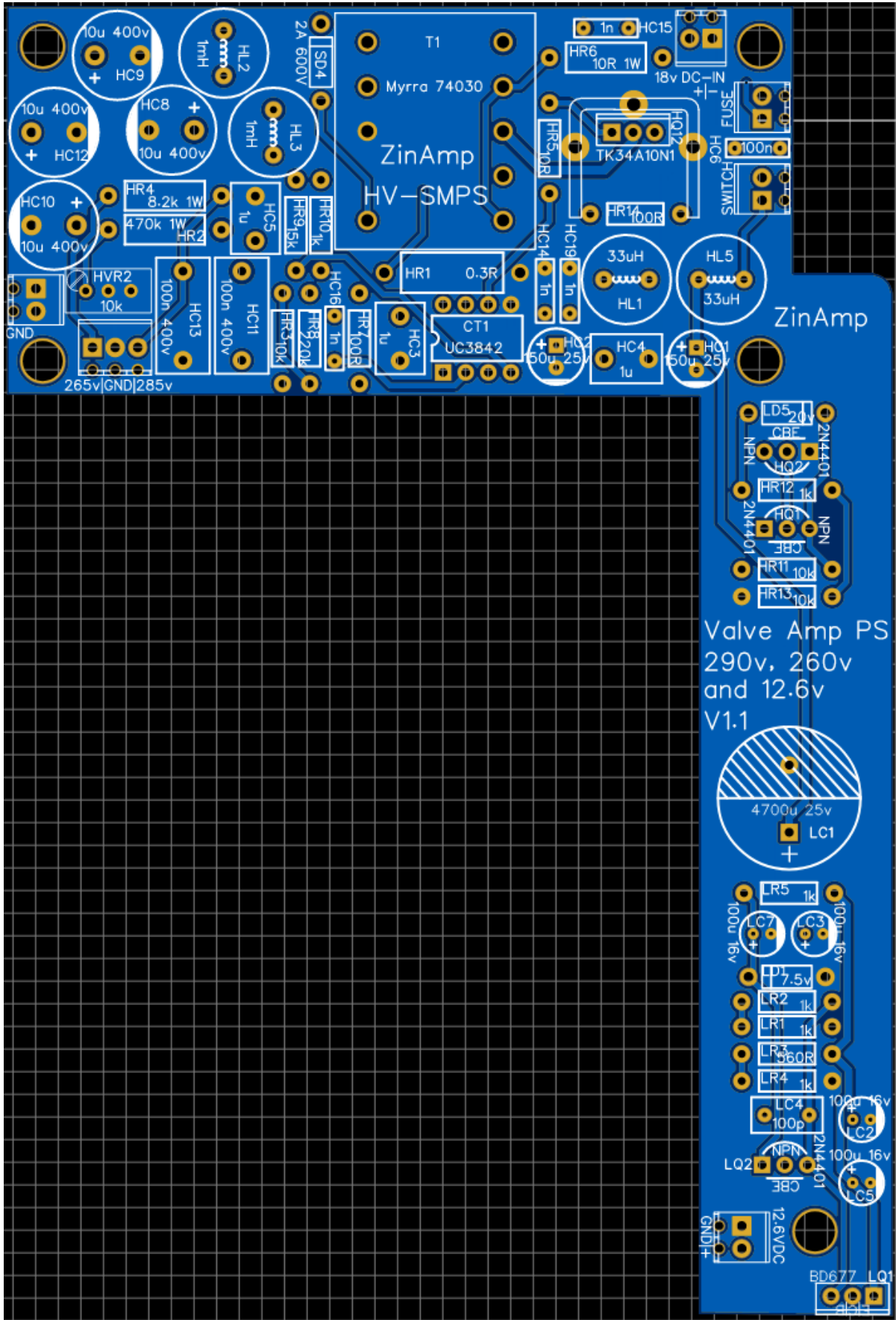
### **Outputs and Voltages:**

- ZinAmp Valve Phono Amp - (250v and 290v DC) - requires HR4 to be 15k
- ZinAmp Valve Pre-amp (270v and 290vDC) - requires HR4 to be 8.2k
- note: only one of these modules can be powered at a time - not both

### **Safety:**

*WARNING: Very high DC voltage device. Care must be taken to avoid painful electric shock.*

Bare PCB:



## Parts List:

Please email [parts@zinamp.co.uk](mailto:parts@zinamp.co.uk) for latest parts list

**CONNECTORS:** Both blank and ready-built PCB requires connectors be purchased and soldered on by the constructor. This is to give the constructor a choice of how they wire their own particular installation. Terminal block connectors are indicated in the list below in [blue](#) and can be swapped for equivalent 2.54mm pitch connectors e.g. Molex KK254 headers, which are provided to the constructor in self-wire kits.

Parts available from [RS Online](#). Also try [Farnell](#), [Mouser](#) and other online suppliers.

Parts from different manufacturers can be substituted where spec is sufficient