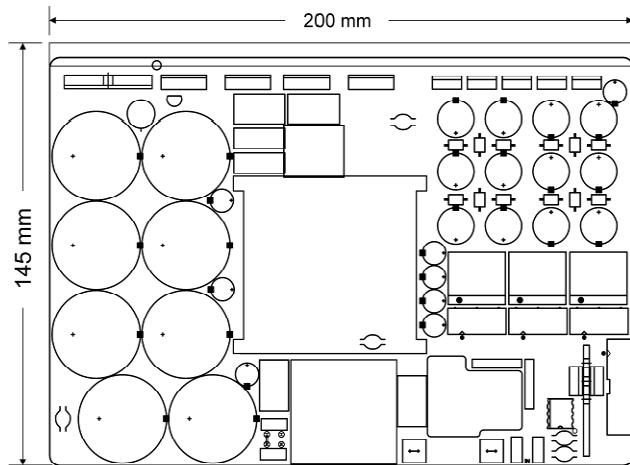


High Efficiency High Power Audio SMPS

! Caution: Please read the datasheet for more detailed information



Highlights

- High efficiency
- Selectable input voltage range
- Extremely small form factor
- Low EMI

Features

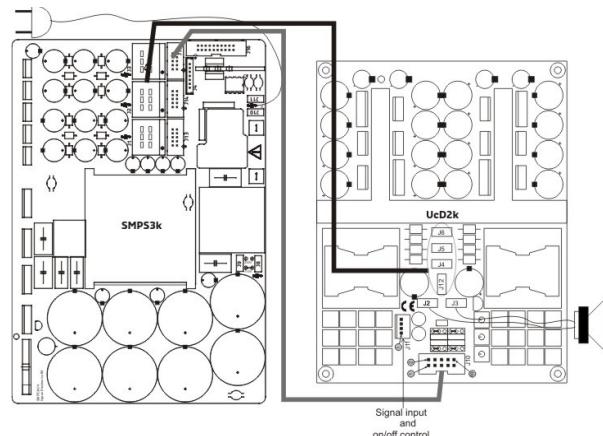
- Advanced over current protection
- Remote controlled operation
- Fixed output voltage
- Dimensions: 200 x 145 x 55mm
- Low Weight: 1500gms

Applications

- Supply for single or multiple amplifiers of the UcD® range
- Active loudspeakers

Description

The SMPS3K is a high efficiency Safety Class 1 switch mode power supply specifically designed for use with our range of UcD® amplifier modules. The SMPS3K includes an auxiliary isolated supply and a control circuit directly interfacing with our range of (OEM and standard) UcD® amplifier modules. The SMPS3K is optimized from the first phase of design to final implementation to realize the low EMI signature required of the most demanding audio applications.



Absolute maximum ratings

Correct operation at these limits is not guaranteed. Operation beyond these limits may result in irreversible damage.

Item	Symbol	Rating	Unit
Input voltage	V_{LINE}	270	Vac
Air Temperature	T_{AMB}	50	°C
Heat-sink temperature	T_{SINK}	95	°C

Recommended Operating Conditions

Item	Symbol	Min	Typ	Max	Unit
High Line Input Voltage	V_B	190	230	264	Vac
Low Line Input Voltage	$V_{B,FP}$	95	115	132	Vac

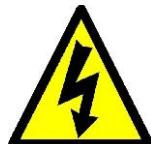
Cooling

The SMPS3K is designed for music reproduction and is therefore not able to deliver its maximum output power long-term. The RMS value of any common music signal generally doesn't exceed 1/8th of the maximum peak power. The SMPS3K is therefore perfectly capable of driving the connected amplifier in clipping continuously with a music signal without the need of forced cooling.



WARNING: These voltages can be potentially hazardous.

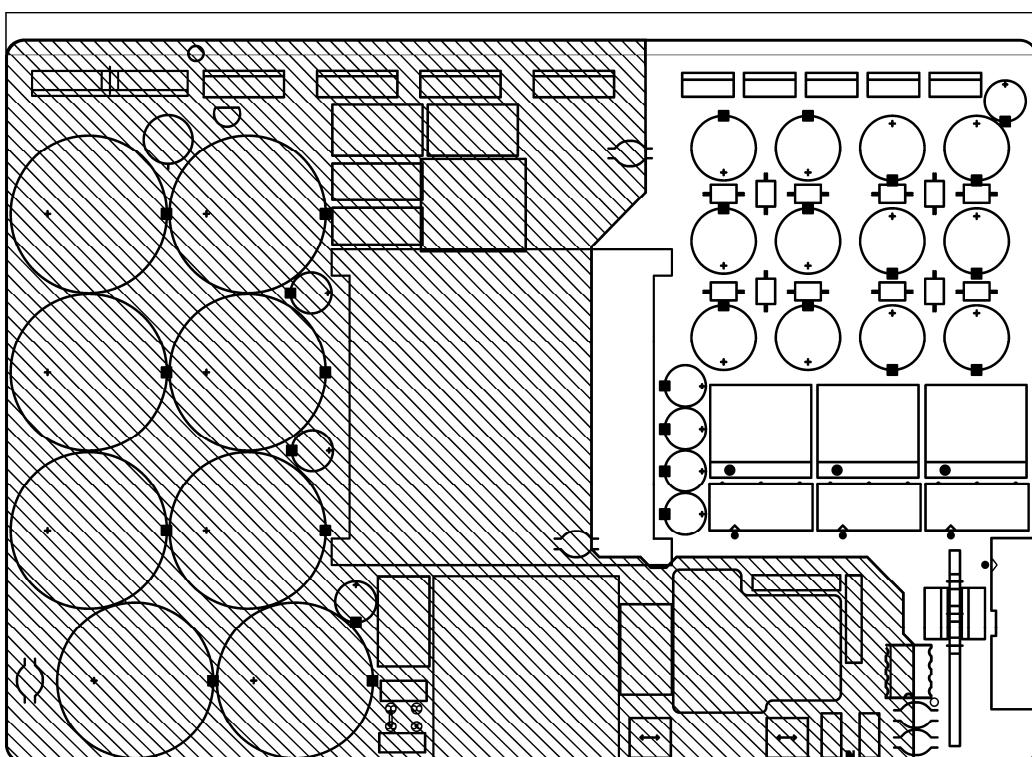
Safety precautions



The SMPS3K operates at mains voltage and carries hazardous voltages at accessible parts. These parts may never be exposed to inadvertent touch. Observe extreme care during installation and never touch any part of the unit while it is connected to the mains. Disconnect the unit from the mains and allow all capacitors to discharge for 30 minutes before handling it.

This product has no serviceable parts other than the on-board fuse. Replace the fuse only with the same type and rating (250V T30AH).

This is a Safety Class 1 device. It is very important to maintain a 3mm clearance with all possible conducting parts (housing etc.) and cables. All parts enclosed by the hatched area carry hazardous voltages. This includes parts on the top and the bottom of the board.



Standard the SMPS3K is supplied as a module mounted on an L-shaped aluminium frame. This creates the mandatory 3mm clearance from the bottom side of the PCB to the chassis without the need for additional insulating material. However, If the enclosure is limited in height one could consider to drop the L-frame and use shorter spacers to mount the PCB onto the chassis providing a layer of insulation both above and below the SMPS with a minimum thickness of 0.4mm in order to comply with the Class 1 Safety Directive.

Application restrictions

The SMPS3K is intended to power our high power UcD2K amplifier modules. As a result this SMPS product does not feature the 2 quadrant operation as most of our other SMPS products do, so they are unable to handle large reverse currents generated by half-bridge amplifiers operated at low frequencies. For this reason it is not advisable to use this SMPS to power half bridge amplifiers like our UcD700 modules especially when used in the frequency range below 100Hz.

Instructions For Installation

Warning: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

Warning: Disconnect the unit from the mains and allow all capacitors to discharge for at least 30 minutes before handling it.

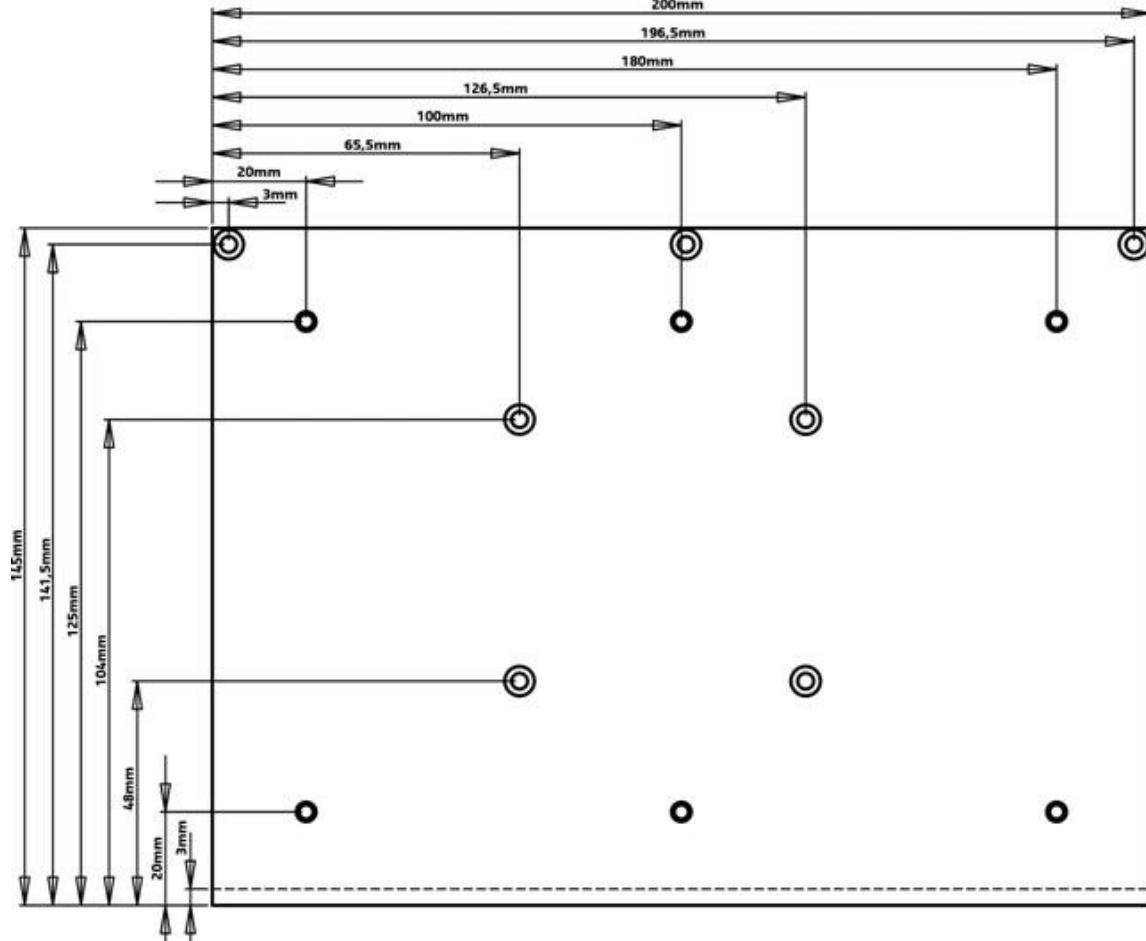


This symbol indicates the presence of hazardous voltages at accessible conductive terminals on the board. Hatched parts are conductively connected to the mains and carry lethal voltages! Not hatched parts are not conductively connected to the mains also carry voltages up to 200VDC!

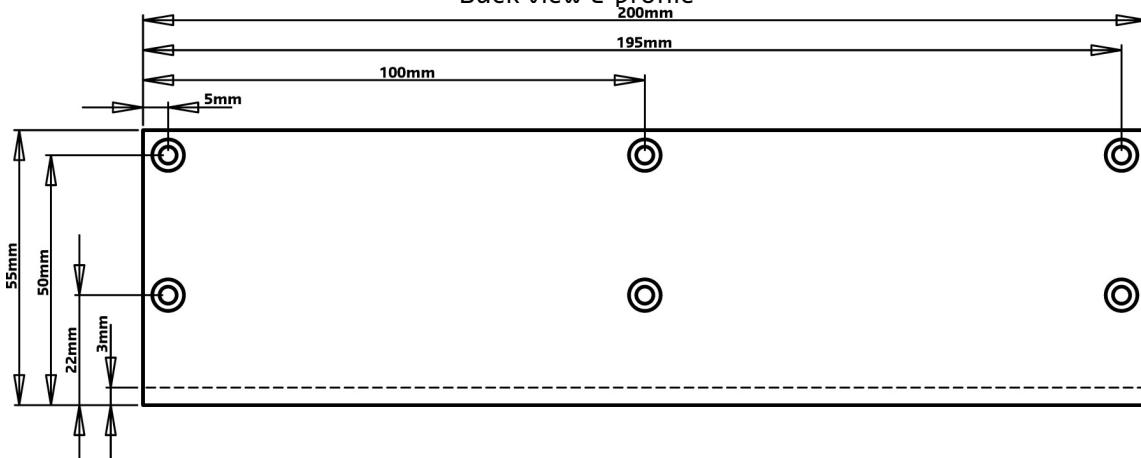
- 1.** Read these instructions.
- 2.** Keep these instructions.
- 3.** Heed all warnings.
- 4.** Follow all instructions.
- 5.** Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the application.
- 6.** Only use attachments/accessories specified or approved by the manufacturer.
- 7.** Unplug this apparatus during lightning storms or when unused for long periods of time.
- 8.** Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally or has been dropped.
- 9.** This product is to be used with Hypex amplifier modules only.
- 10.** Only the ready-made cable sets provided by Hypex may be used for external wiring of the SMPS3k.
- 11.** Don't run any cables across the top or the bottom of the SMPS3k. Apply fixtures to cables to ensure that this is not compromised.
- 12.** Observe a minimum distance of at least 3mm clearance with all possible conducting parts (housing etc.). This includes parts on the top and the bottom of the board. When the SMPS3k is mounted in a tight space there needs to be at least 3mm clearance or a layer of insulation with a minimum thickness of 0.4mm between the top of the transformer and the housing.
- 13.** Natural convection should not be impeded by covering the SMPS3k (apart from the end applications housing).

Dimensions

Bottom view L-profile



Back view L-profile



Document Revision	Description	Date
R1	Initial draft.	26.04.2011
R2	Minimum mains voltage to 95Vac	29.11.2011