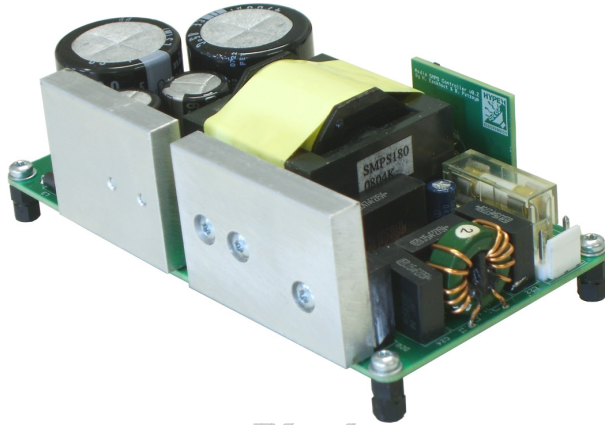


Universal input audio SMPS

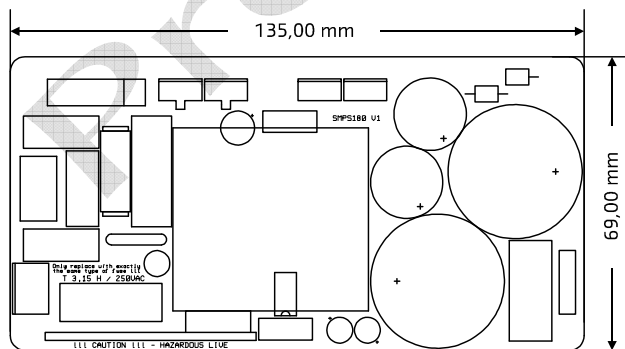


Features

- High efficiency
- Universal input voltage
- Small size
- Advanced overcurrent protection
- Remote Controlled operation
- Low weight: TBD
- Compact: 135 x 69 x 35mm
Fits 1U 19" enclosure

Applications

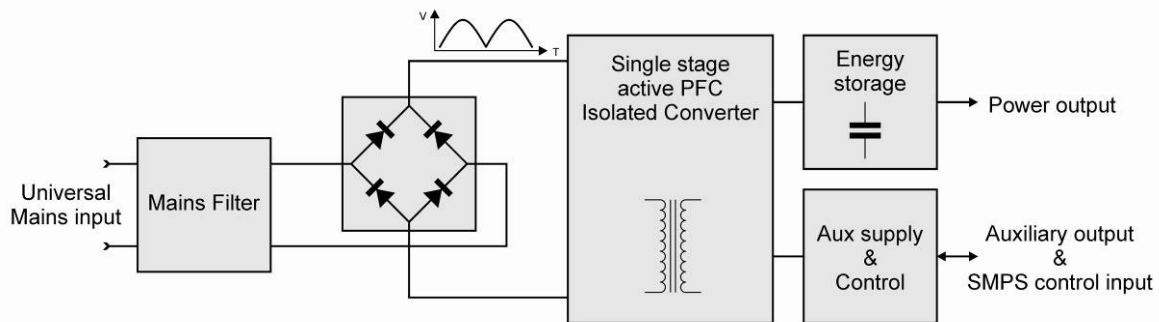
- Supply for single or multiple amplifiers from the UcD™ range



Description

The SMPS180 Power Supply module is a high efficiency switch mode power supply specially designed to be used in combination with our range of UcD™ amplifier modules. Key features are high efficiency over the entire load range, universal input voltage range (100 – 250V 50/60Hz), near unity Power Factor, low weight and very low radiated and conducted EMI. The SMPS180 also features an advanced overcurrent protection which in case of temporary overload simply reduces the output voltage, only when the overload condition remains for a longer time the supply will enter hiccup mode until the overload condition disappears. This feature in combination with the advanced feedback topology and large secondary buffer elcaps leads to the capability of delivering high peak power to the connected amplifier. The SMPS180 includes also an auxiliary isolated $\pm 12V$ supply and a control circuit directly interfacing with our range of UcD™ amplifier modules. Further the SMPS can be on-off controlled from the secondary side or put in a latched off condition in case of serious fault conditions on the secondary side load. Great care has been taken to optimise the power stage and magnetics in order to achieve lowest EMI signature possible.

Principle of operation



The power supply is a Single Stage Active PFC SMPS. Unlike conventional switch mode power supplies incorporating active PFC, this converter uses only a single power stage and one magnetic component to perform power factor correction and provide a regulated and galvanic isolated output voltage to the load. Another main advantage compared to conventional 2-stage PFC-SMPS is the absence of primary energy storage in our design leading to a highly compact design capable to supply huge peak output currents to the connected amplifier due to this all-secondary energy storage inherent to our design.

Absolute maximum ratings

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

Item	Symbol	Rating	Unit	Notes
Input voltage	V_{LINE}	250	Vac	
Air Temperature	T_{AMB}	65	°C	
Heat-sink temperature	T_{SINK}	90	°C	

Recommended Operating Conditions

Item	Symbol	Min	Typ	Max	Unit	Notes
Input Voltage	V_B	100		250	V	

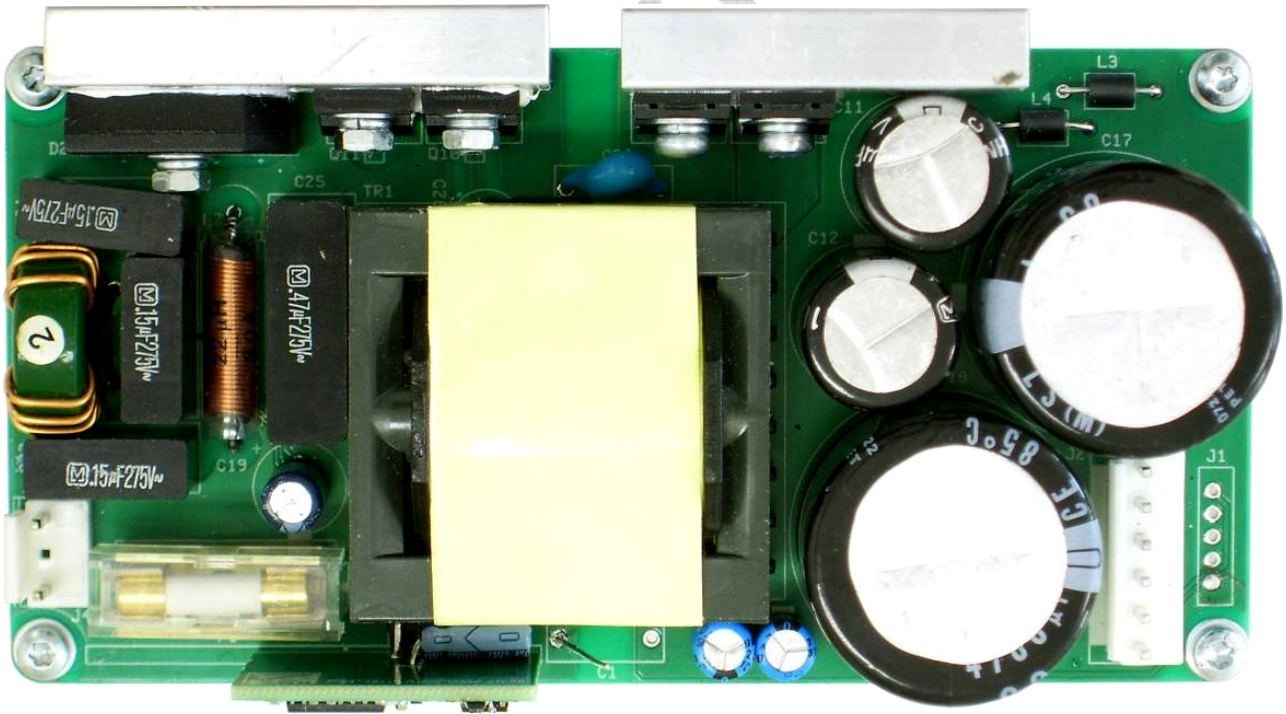
Performance data

Item	Symbol	Min	Typ	Max	Unit	Notes
Output Voltage	V_{OUT}		2x45		V	
Output Current	I_{OUT}		6.67		A	one rail, per rail
Output Voltage Aux			2x12		V	
Output Current Aux			250m		A	one rail, per rail
Output Power	P_R	300	-	-	W	See Note1 below
Audio Output Power @ 20Hz	P_{RALF}	180	-	-	W	See Note2 below
Efficiency	η		90		%	full power
Idle Losses	P_0		2		W	
Switching frequency	F_{SW}		100		kHz	

Note1: Output Power delivered to a resistive dummy load (generally the only specification supplied by other SMPS manufacturers).

Note2: An audio amplifier actually draws twice the RMS power from the power supply. At high frequencies the secondary buffer elcaps are capable to provide this peak power. At very low frequencies however the SMPS is responsible for delivering this peak power to the amplifier.

Connections



- MAINS connector J4: TBD
- OUTPUT connector J2: TBD
- AUXILIARY connector J1: TBD