updated February 19th, 2021

PS-UN63S

Universal, symmetrical output Power Supply modules

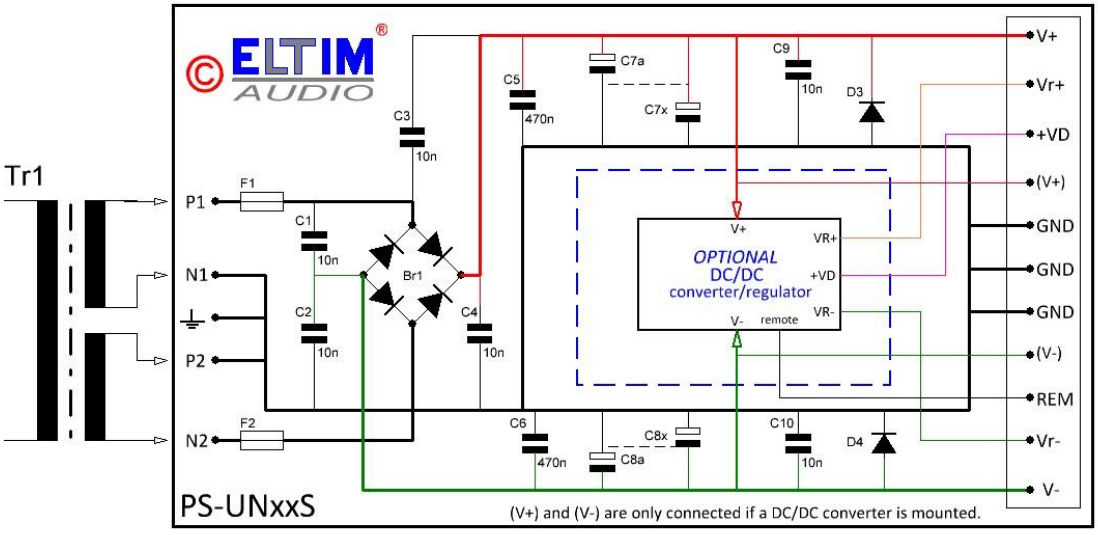
In our universal Power Supply range this one is a high power, symmetrical voltage version.
It can develop up to ±63V/15A, and so very suitable for High-End power amplifiers.
Besides all the regular standard components of a linear power supply, we added several parts about nobody else does, but required as well in order to make a difference.

You can add one of our DC/DC converter/regulator modules, providing up to three (single, symmetrical and symmetrical/digital) regulated voltages for extra electronics. 3,3V; 5V; 12V; 15V.

With this Power Supply module we provide the proven design philosophy of a linear Power Supply, which is in dynamics performance way superior to the more and more used Switched Mode power supplies. High frequency (40-100kHz) ripple voltages of over 100mV is common, hardly useful in high quality audio, since this signal interferes with your precious audio gear.
Compared to all the (very) cheap linear supplies you'll find all over the internet, there is hardly any difference noticed indeed, but building it the way as it should be done with quality components and wide copper tracks on a solid FR4 board as we do, its different cake!
With us no "stressed" components, no RF, etc. Just plain, solid and pure power without fuzz.

PS-UN-63S highlights:

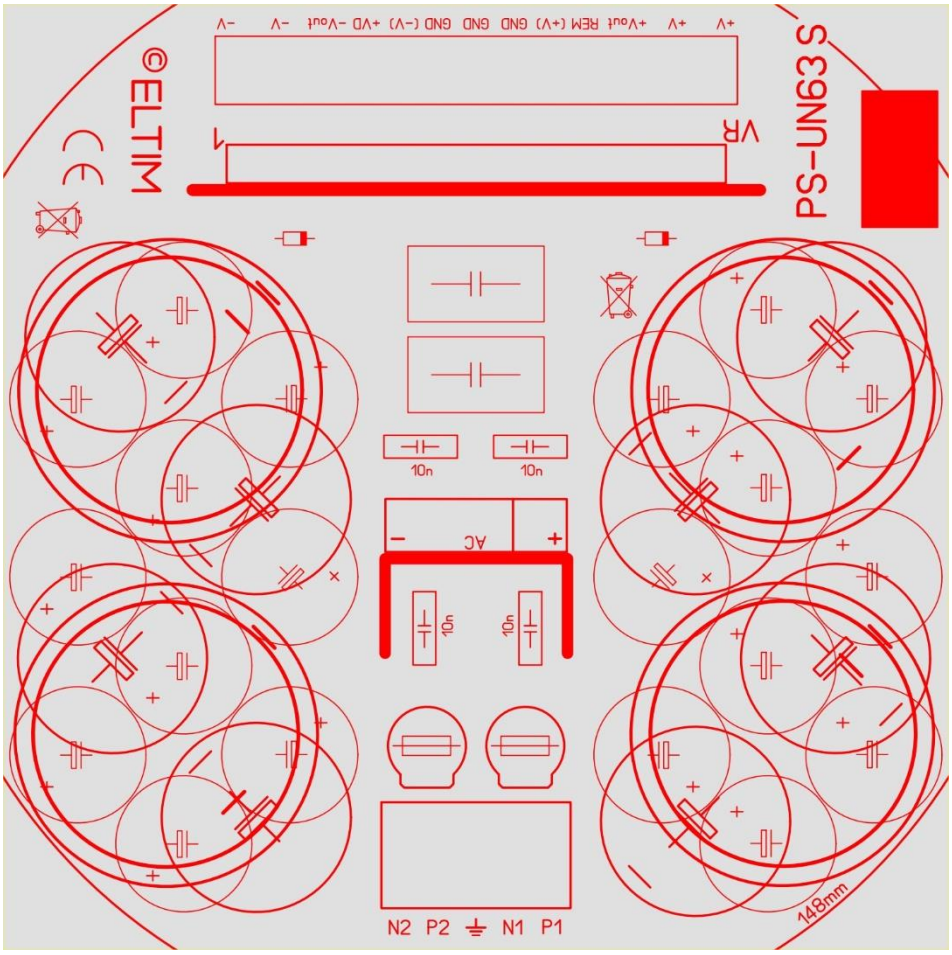
- European manufactured FR4 PCB, 35um copper, solder mask and parts printing
- 15A/600Vac rectifier with cooler
- PCB tracks are over dimensioned (25A) for optimal dynamic performance
- Several types of power supply capacitors fit:
  - 2x10 Ø16/18mm, pitch 7,5mm for low profile and/or cost effective solutions
  - 2x4 Ø25mm, pitch 10mm for low profile/low ESR figures.
  - 2x2 Ø35mm, pitch 10mm for high power/low cost solutions.
  - 2x2 Ø40mm, pitch 22,5mm, 2-pole, 4-pin professional (f.e. KEMET) long life types.
- OPTIONAL DC/DC converter/Voltage regulator with up to three low voltage supply outputs.



Introduction
With this PS-UN-63S range we provide linear power supply modules with all the parts these kind of supplies should have and all have a function. Leaving some out, as many do, would degrade its quality level.
Our module is instant powerful with a high/wide dynamic range, low ESR and free of noise and RF signals.

As an ELTIM built module, this PS-UN63S module can handle up to **±63 Volts** at a current of **10-15A max**.
This voltage limit is based on the rated voltage of the supply capacitors we use.
Use a quality transformer of 40V / 500VA or less. This module fits on top (<Ø150mm) of it then, saving space.
The max. current varies with the available storage capacity on board, depending on the model.

Kit builders can use other voltages/values as well, since with our kits the supply capacitors have to be bought separately in order to give you maximum freedom of choice. We have a lot to choose from.
The V+ and GND screw terminals can handle 3,3mm² wires for extraction of this significant current.



PS-UN63S layout, with multiple capacitor types fitting, 125x125mm

Schematics explanation
The secondary windings of a suitable transformer (not included) are connected to P1 – N1 and P2 – N2.
As recommended by most transformer manufacturers, both secondary windings are fused.
The 50/60Hz AC power is rectified by a cooled 15A/600Vac bridge rectifier.
As it always should be, every diode of this bridge is decoupled with a small capacitor (C1-4) in order to avoid noise and sparks. The rectifier will charge the capacitors to the Vac peak level, being **√2 (1,414) higher** as listed (=Veff) in the transformer specifications! For beginners: The required transformer can be calculated as **Uac = Udc/√2+1**. So, f.e. for 60Vdc you need 60/1,42 +1 = 43Vac. The Vac of the trafo is given as an effective voltage (giving the same power as a dc voltage of this value would give). Calculate with "free running" values! **While using f**.e. a TALEMA 500VA/40V transformer, it's free running voltage is 43Veff. After rectifying there will be around 61V over the 63V storage capacitors. We ourselves would use a 35V trafo to play safe, especially if you use transformers with a lower power rate. Due to their higher internal resistance, their free running voltages are higher and after rectifying most probably will exceed the 63V the capacitors can handle. 35V versions are always at the safe side! While loaded there will be around 50V available.

Power reserve
The power reserve comes from C6a/C6x, with different number, values and qualities depending the model.
Here we have a huge difference compared to SM supplies: we already have the power reserve available in the capacitors if required, resulting in a way better "punch" and impulse power.
Also the ESR value ("internal resistance") is way lower, noticed by f.e. more solid bass response.
High frequency response is way less "***ph***ointy" a***ss*** we hear everywhere **t*s***oday. With us cymbals singgggggg ! Most SMPS supplies are meant to use in more or less constant current electronics like laptops, chargers.

Models/specifications

Max. output voltage of ±63V, ±15 amps max. (transformer max. 40V). Board size: 125x125mm.

PS-UN63S RND	2x2	RND, 10mF/63V, 85ºC, 1000 hours	Ø35x50
PS-UN63S UKWlp	2x10	NICHICON UKW, 85ºC,1000uF/63V, 2000 hours	Ø16x25
PS-UN63S UKW	2x10	NICHICON UKW, 85ºC, 2200uF/63V, 2000 hours	Ø18x36
PS-UN63S LKG	2x2	NICHICON LKG, 10mF/63V, 85ºC, 1000 hours	Ø35x50
PS-UN63S LKG+	2x2	NICHICON LKG, 15mF/63V, 85ºC, 1000 hours	Ø40x68
PS-UN63S MLGOlp	2x4	MUNDORF MLGO, 2200uF/63V, 125ºC, 8000 hours	Ø25x30
PS-UN63S MLGO	2x2	MUNDORF MLGO, 10mF/63V, 125ºC, 8000 hours	Ø30x50
PS-UN63S ALC	2x2	KEMET ALC10, 15mF/63V, 85ºC, Ø40mm, 18000 hours	Ø40x50

Regulated, single or symmetrical extra output voltage(s) OPTIONAL
On this PS-UN40Sxx modules our symmetrical, linear voltage regulator modules fit. With those you can make lower, linear regulated ± supply voltages, meant to supply preamplifier, DSP, DAC, etc. circuits.
Please note that the differential voltage (Vin – Vout) <37V ! With higher voltage difference the IC's damage.

In February 2018 we developed a wide range of switching DC/DC converter/regulator modules.
With these, one can extract up to three independent and completely different voltages from about any available voltage. Also these fit on all our PS-UNxx modules. There are ranges in 8, 10, 12, 15, 20, 30 and 40W. Input voltage ranges from 9Vdc to 256Vdc. Available output voltages are 3,3V; 5V; 12V, 15V, ±12V and ±15V as single, symmetrical and even symmetrical + digital supply voltage (VR-JTL30T only, see picture below).
While using a version with a header connector you can mount them on about any of our Power Supplies.
So, while having one of our PS-UNxx(S) modules, you also can have supply voltages for preamplifier, DSP, etc.

Triple version with header

Triple version with screw connector

This sounds interesting to you, but you already have a power supply? Then select the screw terminal option and receive a separate module which can be mounted with 4x M3 bolts and connected with the other electronics by a screw terminal instead of a header. Here some more info about these modules.
Just connect it to about any power supply and have the low voltage supply voltage(s) you require as well.
Actually, you could even use a 12/24V battery from a car, RV or boat and make ±12V and +5V.
As by now people expect from us, we use the best DC/DC converters we could find, not the cheapest ones.
These last a lifetime, have an efficiency of around 90% and use a harmless high (>300kHz) switching frequency.
Of course, as it always should be while using high frequency devices, it is metal shielded/grounded, so ours don't spread around magnetic fields at the switching frequency all around, causing oscillations, etc.

Check our website for ordering. Dealers and OEM are welcome.

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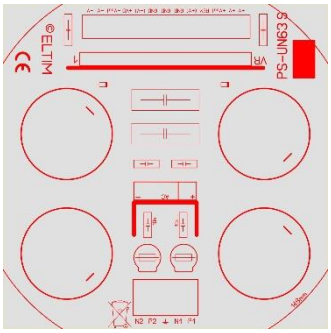
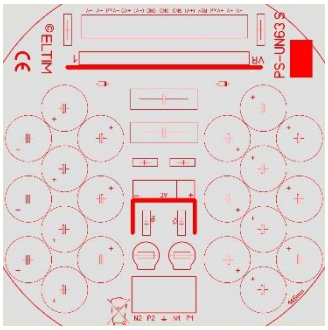
PS-UN63S Model program

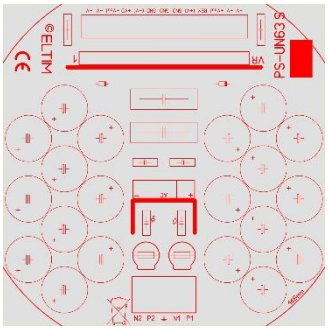
Click on a picture to go to the product in our webshop



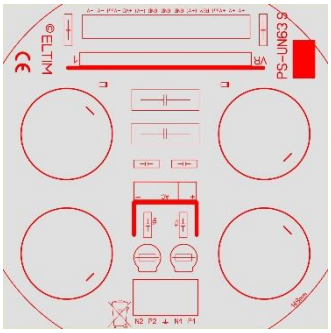
PS-UN63S RND



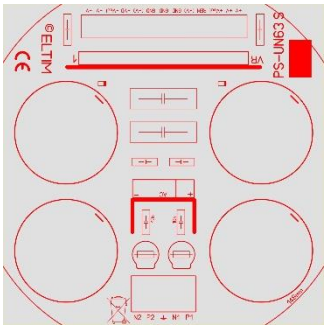
PS-UN63S UKWlp



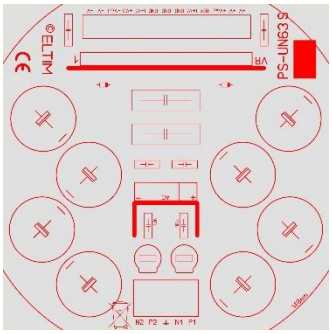
PS-UN63S UKW



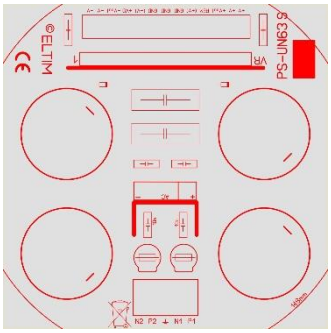
PS-UN63S LKG



PS-UN63S LKG+



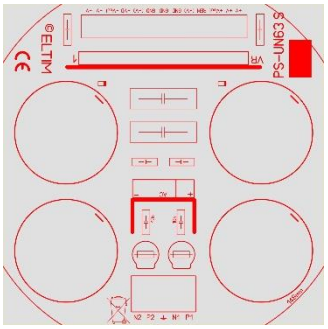
PS-UN63S MLGOlp



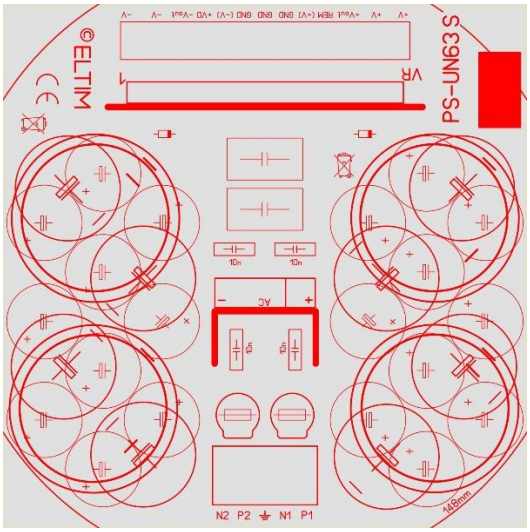
PS-UN63S MLGO

Since we produce
on demand, we can
mount capacitors of
your preference
as well.
MAIL

We also sell them as DIY kits.



PS-UN63S ALC



50% scaled !

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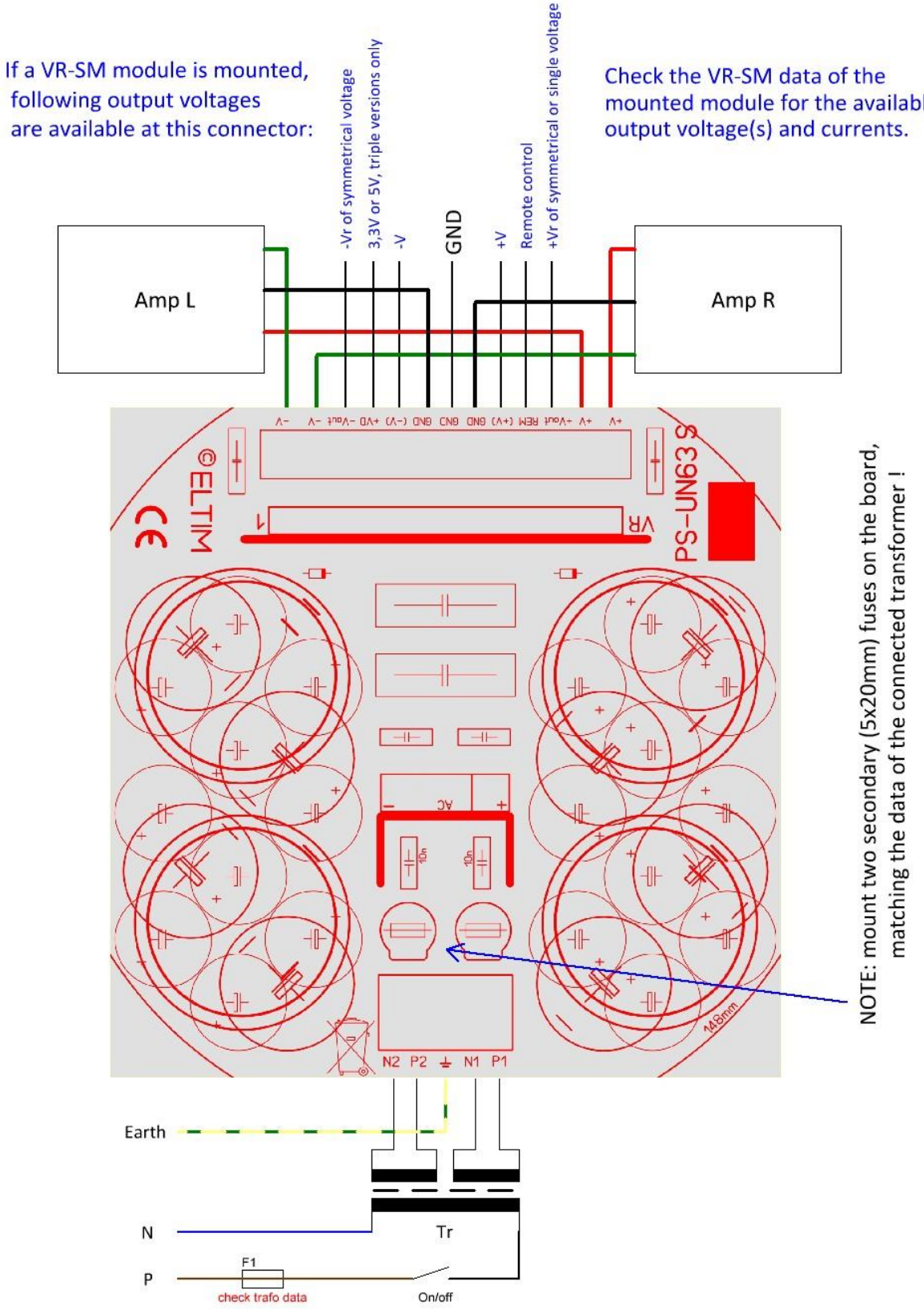
PS-UN63S wiring diagram:



ELTIM audio BV is using parts, matching common rules of VDE, UL, CE, RoHs, etc.
The transformer and the primary side wiring of it needs to comply local rules, laws, etc.
ELTIM audio BV cannot be held accountable for inappropriate wiring, nor any
physical, mechanical, financial, etc. damage whatsoever. Be aware of shock and fire hazard !

The person and/or company mounting this device is single responsible !

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