

WARNING HIGH VOLTAGE

I wrote this guide to show some basics on winding the transformer of the SMPS found at:-

[http://www.diysmps.com/forums/showthread.php?79-1kW-smps-project-\(based-on-MicrosiM-design\)#post1304145494](http://www.diysmps.com/forums/showthread.php?79-1kW-smps-project-(based-on-MicrosiM-design)#post1304145494)

SMPS was built by ludo3232 @ diysmps website. All necessary files can be found there.

1- Wire needed

0.2mm or 0.3mm or 0.4mm, or litz **wire 0.1 x 130 strands minimum**

Strand the required number of the above to reach 1.5 ~1.7mm at least. Depends on the wire you have on hand.

Make sure you don't scratch the wires during this process, otherwise transformer will burn. Do things slowly.

If you can't make it, you can use single wire 1.5mm but I don't think you will be able to make a good transformer.



Transformer at winding stage (Primary section)

In the picture above we used 0.4mm x 4 wires that's equal to 1.6mm

Transformer: **ETD49, N87 Core material**, or 3C90 or 3C92.

For other transformers, new calculations should be made

Transformer TURNS ratio and winding order:-

Winding order:-

Half primary

All secondary

Half primary

Turns ratio:-

Half primary 11 turn

All secondary (which is your output voltage, we had 8 turns – 8 turns for +-50VDC)

Half primary 11 turn

For more information's on transformer calculations go here:-

<http://www.diysmps.com/forums/showthread.php?77-SMPS-Transformer-Primary-Turns-Calculations/page4>

Winding on bobbin

½ primary 11 turn xoooooooooooo

½ secondary 8 turn xoooooooooooo

½ secondary 8 turn xoooooooooooo

½ primary 11 turn xoooooooooooo

(x) indicates winding direction and phase

Start by winding 11 turns, 3 layers of tape, ½ secondary 8 turns, 2 layers of tape, ½ secondary 8 turns, 3 layers of tape, 11 turns then 3 layers of tape.

Winding direction should be the SAME for all, if you start from pin1 Clock wise; you have to start from it again for ALL other parts of the windings.

Make sure you strip the strands carefully, solder them to the desired pins to the transformer as per the schematic

Windings MUST be organized, no random windings at all.

Don't use THICK tape for isolation between layers, use Mylar tape.

This task may take 1 hour for the first time, and may be more if you want to succeed from first time.

If you plan to build this SMPS, Post at forums EVERY thing you are doing, we are there to HELP you.

And BE sure to read the below file before you start making SMPS:-

<http://www.diysmps.com/forums/showthread.php?72-Necessary-Equipments-needed-for-SMPS-development>.

If you still have questions, ask at forums while

++++ Warning +++++

SMPS deals with high voltage 340VDC, that voltage is lethal!

And

→ DEATH IS PERMANENT ←

www.diysmps.com/forums web site and owner, Or any one ARE not responsible for any mistakes you do or any damage MAY OCCURE from building ANY SMPS units found at www.diysmps.com/forums.

BEFORE you think building SMPS, ASK at forums, we will help you