

Re: linear PS's

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Abstract Dissonance wrote:

I'm building a PSU and I've got a 40VCT @.25A transformer. I want to have two outputs of +V1 and -V2 volts... i.e., two outputs that are adjustable. I've done it for the +V already using the LM317T and a circuit that they have in there data sheet... I get from 1.25 to 30V...

I'm curious though as when I do it for the negative supply(V2) if I could take the ground as V2 and the "hot" as V1 so I'd get $V1 - V2 = V1 + |V2|$ to get a new voltage(which would $\approx 2 * 30$)? or, say, if I needed two positive "hots"(not sure what to call them) could I just reverse the ground the V2(i.e., swapping ground and V2 "behind the scenes"(well, lets say with a toggle switch)) or does this cause problems?

i.e., I'd like to get the most out of my psu but I'm not quite sure what I can do... right now I just have some voltage regulators(LM317 and some fixed ones).

I suggest you use the center tap of the secondary as common, with a bridge rectifier across the 40 volts. Connect 2 storage capacitors in series, with the positive end of one to the + output of the bridge and the negative of the other to the - output of the bridge. This should give you about positive and negative 28 volts, no load. Your LM317 regulator is fine for the positive output (with the reference divider to the center tap). You need the negative version of the 317, and LM337, for a symmetrical negative regulator.

One more thing... I was messing around monitoring the voltage and the output(of the regulator) seemed to fluxuate with 1/100th of a volt or 2 and at some points it was about 1/2 a volt or so. Is this normal? (I wasn't able to monitor the input voltage at the same but it seems to fluxuate too).

Do you have a high frequency bypass capacitor (e.g. .1uF 50 V ceramic)

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connected directly from the grounded end of the reference divider to the regulator input, and a second one from the common to the regulator output? If not, you may have an oscillating regulator.

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