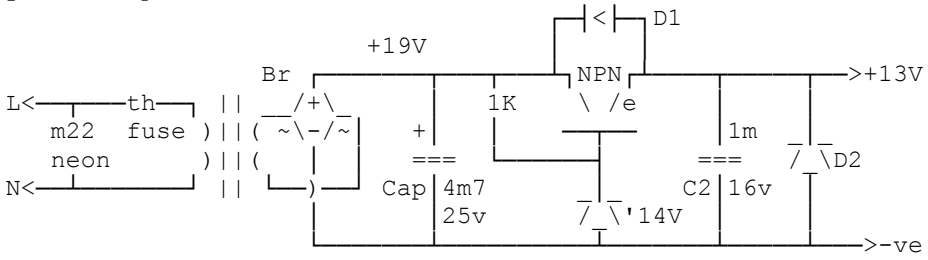
Regulating a Plug Top Power Supply

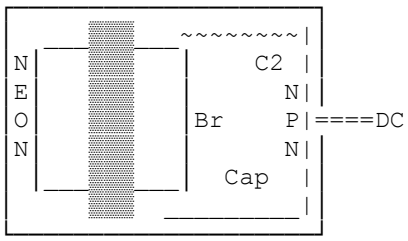
By G8MNY (New Oct 08)

(8 Bit ASCII Graphics use code page 437 or 850)

Small odd PS are available at rallies etc. these are either lightweight Switch Mode regulated types, unsuitable if you want low QRM, or the heavier transformer type with unregulated output (e.g. says 12V but 19V off load). If there is room, here is what is needed to regulate one of these, & if of course you can open box!



If there is room & it safe to do so, I often add a mains neon & series high value mains resistor (e.g. 2x 100k) to warn the unit is on. This MUST be done safely on the mains side of the box with the neon light visible through a small hole, not with the neon poking out!



To keep the regulator circuit simple I used a high gain Darlington TAB transistor mounted on a folded ally plate on the secondary side of the box. The NPN emitter followers the zener 14V voltage to give about 13V regulated.

I could just as easily used a 12V low drop out regulator (uplifted to 13.8V) instead & gained current limiting!

The 2 diodes (1N4001) are protection features, D1 ensures the output can't be more than +0,7V higher than the input, & D2 stops reverse polarity harm (external fuse?).

HEATING

As with all small PS heat can be a problem, derate the PSU if needed, or improve ventilation with bigger holes etc.

Why Don't U send an interesting bul?

73 De John, G8MNY @ GB7CIP