

### 1. Using the ZX Power supply

There will be some extra current capacity available from your +9 volt Spectrum supply, especially if the +12 volt supply is not fully loaded. The author found it quite acceptable to obtain up to 500 mA more from the ZX supply. The circuit for doing this is shown in fig 2e. Only that part of the circuit to the right of the figure is required. This circuit is basically identical to the one used inside your Spectrum. Connect the 7805 regulator as shown in fig 2d, its input pin being connected to +9 volts. This pin diagram shows a view looking down onto the black plastic part of the regulator, which has the device number stamped on it.

Do not forget to bolt a heatsink onto the regulator. Small vaned heatsinks of a suitable type are available from most good electronic stores. A cheap alternative is to bolt a piece of aluminum onto the regulator. A piece similar in size to that in the Spectrum will do nicely. C1 in fig 2e should be included to help regulation. 22uF at 16 volts will do. Another 22 uF capacitor should also be included across the output. It is advisable to scatter some 0.1 uF decoupling capacitors around as well. About one for every two chips should be sufficient. The +5 volts provided by this circuit should not be connected to your main Spectrum +5 volt supply rail. Only the 0 volts connection should be made to all chips.

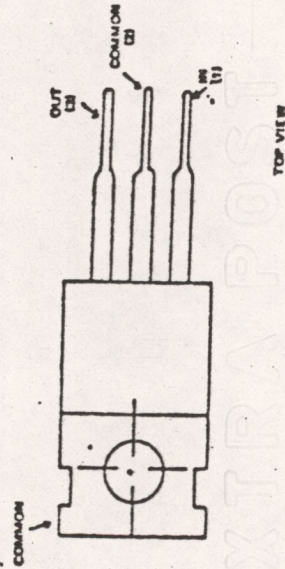


FIG 2d - 7805C 1 AMP/5 VOLT REGULATOR PIN CONNECTIONS

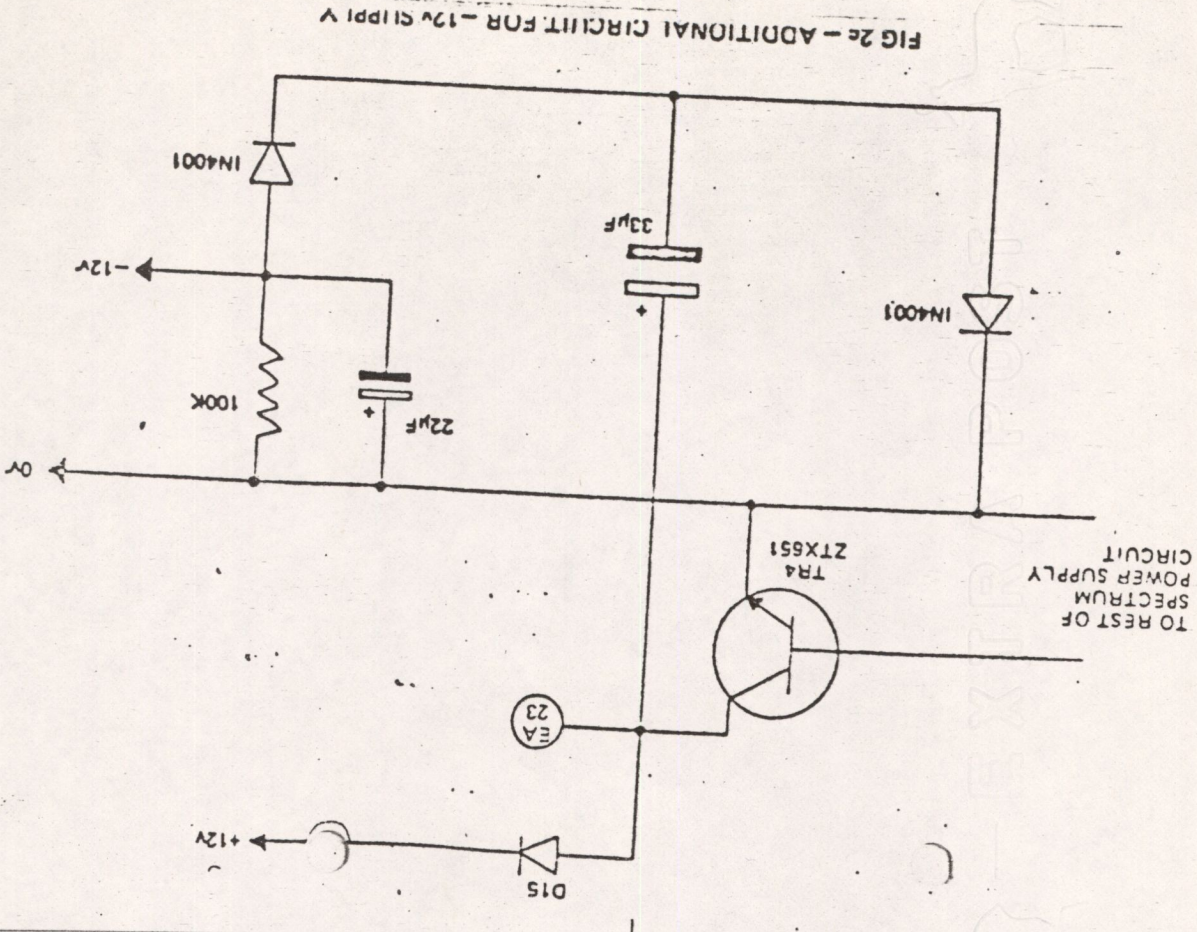


FIG 2e - ADDITIONAL CIRCUIT FOR -12V SUPPLY