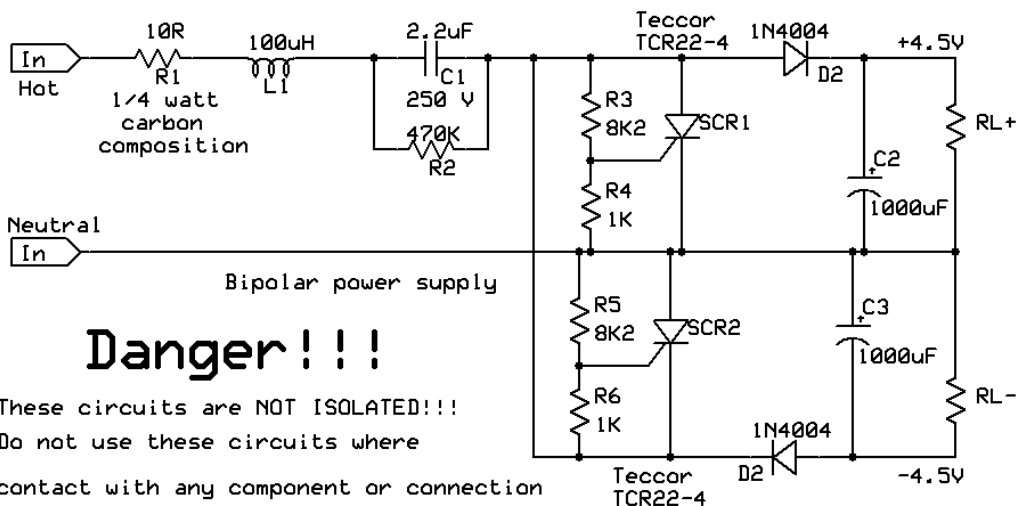
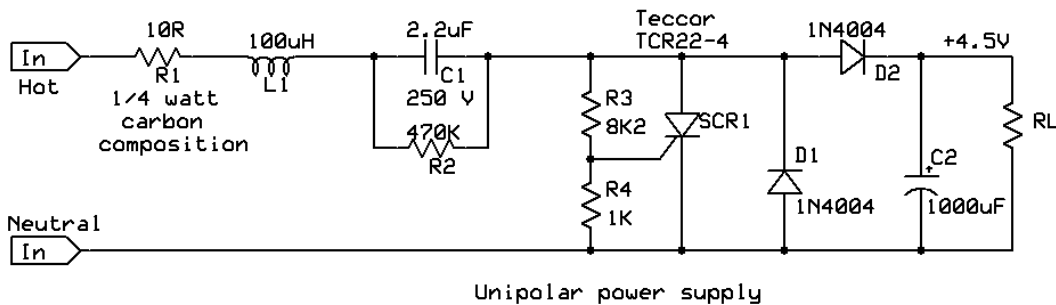


Category: Power supplies

## Line Power Supply

This circuit provides a regulated output without a power transformer. It is similar to common circuits, except that a zener diode is replaced with an SCR. This is far more robust against line voltages surges than a zener diode version, plus there is no heat generation. C1 sets the available current (20mA/uF @ 60Hz). R3 sets the output voltage (~.55V/K). The bipolar outputs are separately adjustable by R3 and R5.

In the bipolar version, you could replace SCR1 with a small triac and delete SCR2. L1 can be deleted, but it prevents possible interference with X-10 units. R1 acts as a fuse and an inrush current limiter. The high side of R3 can be moved to the other side of D2 for slightly better regulation, but slower transient protection and a little more energy loss. This circuit is ideal for applications where a relay or heavy load is switched on and off, that would cause overheating of a zener diode regulator.



**Danger!!!**

These circuits are NOT ISOLATED!!!  
Do not use these circuits where  
contact with any component or connection  
to these circuits or the load is possible!!!

## Line Power Supply

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