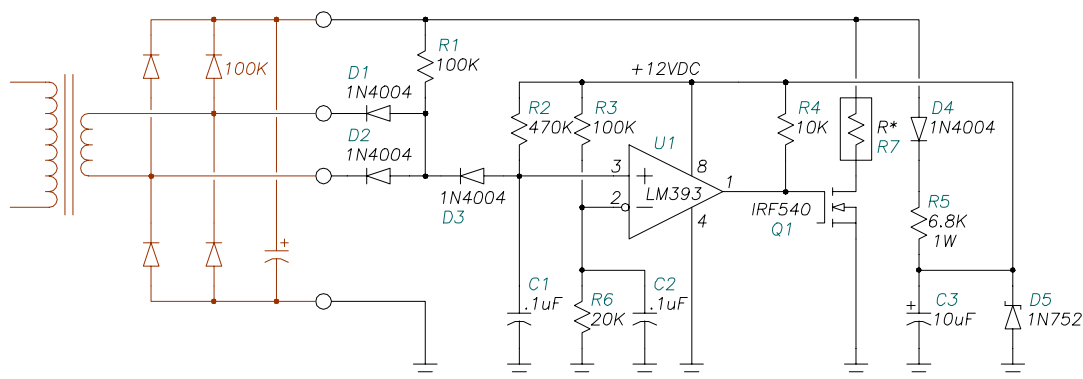




GECKODRIVE INC. JUNE 16, 2002

The circuit in RED is the existing power supply. The circuit in BLACK does two things, it rapidly discharges the main filter capacitor when AC power is removed from the supply and it shunts to ground current returned from the load.

How it works:

D1 and D2 works in conjunction with the top 2 diodes in the power supply bridge to place a full-wave rectified voltage across R1 that is equal to the transformer secondary voltage. This voltage is referenced to the “+” voltage on the main filter capacitor. R2 and C1 forms a 50 ms time constant. D3 dumps C1 to a voltage equal to the difference between power supply voltage and the transformer secondary voltage. Between dumps the voltage on C1 ramps up to 2V. The comparator output goes high when the ramp voltage exceeds 2V. The output going high turns on Q1, which places R7 across the supply, lowering the supply voltage.

The choice of R7 should be such that it will carry the power supply rated current. Since it only conducts for a short period of time, 20W wire-wound resistor can be used.

This is the “no-frills” version. I will add the indicator LEDs on the next go around. Ignore the “100K” label by the rectifier. It’s a typo and I will correct it the next time.

Mariss Freimanis
Geckodrive Inc.
June 16, 2002

