

### POWERING UP LS7631 AT MAXIMUM INTENSITY

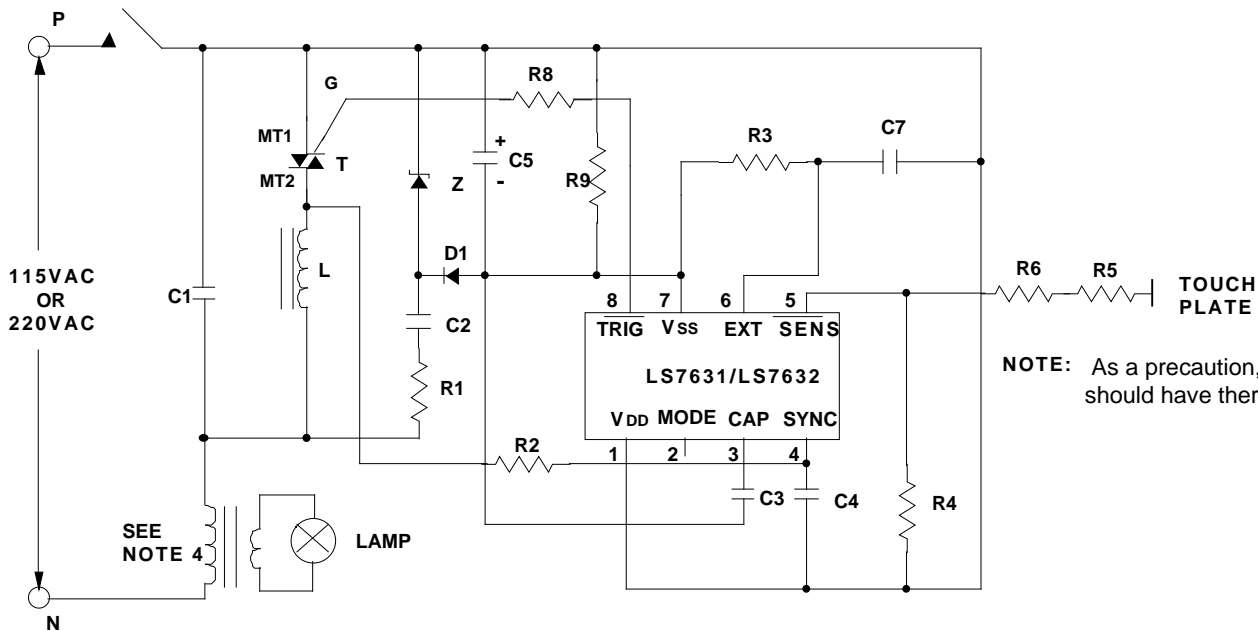
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The LS7631 (LS7632) will normally power up in the Off condition when AC power is first applied or when there is an AC power interruption of at least a second or more (the exact timing is determined by the value of certain application circuit component values). It is possible to force the LS7631 to power up at maximum intensity by adding a resistor (R9) and capacitor (C7) to the application schematic shown in Figure 6 of the LS7631 data sheet. Minor component value changes are required for some other R and C components (see **bolded components** below).

The C7 capacitor produces a short activation at the EXT input when AC power turns on. This short activation forces the

LS7631 to produce triac gate pulses corresponding to maximum intensity. The R9 resistor is used to quickly discharge the DC power supply holding capacitor, C5, when AC power is interrupted. This action ensures that the LS7631 under goes a Power-On-Reset (POR) so that it is set up to react correctly when AC power is restored.

The schematic shown in this Application Note will work for all AC power interruptions that are greater than approximately 350ms in duration. Shorter AC power interruptions will cause the LS7631 to power up in the Off condition.



**NOTE:** As a precaution, transformer should have thermal protection

- R1 = 270  $\Omega$ , 1/2W
- \* R1 = 1k  $\Omega$ , 1W
- R2 = 680k  $\Omega$ , 1/4W
- \* R2 = 1.5M  $\Omega$ , 1/4W
- R3 = 1.0M $\Omega$ , 1/4W**
- R4 = 1M to 5M  $\Omega$ , 1/4W  
(Select for sensitivity)
- R5, R6 = 2.7M  $\Omega$ , 1/4W
- \* R5, R6 = 4.7M  $\Omega$ , 1/4W
- R7 = 150k  $\Omega$ , 1/4W
- R8 = 62  $\Omega$ , 1/4W
- R9 = 6.8k  $\Omega$ , 1/4W

- C1 = 0.15 $\mu$ F, 200V
- \* C1 = 0.15 $\mu$ F, 400V
- C2 = 0.33 $\mu$ F, 200V**
- \* **C2 = 0.22 $\mu$ F, 400V**
- C3 = 0.02 $\mu$ F, 10V
- C4 = 0.002 $\mu$ F, 10V
- C5 = 50 $\mu$ F, 10V**
- C6 = 0.1 $\mu$ F, 10V
- C7 = 0.22 $\mu$ F, 10V

- D1 = 1N4148
- Z = 5.6V, 1W (Zener)
- T = Q4004L4 Typical Triac
- \* T = Q5003L4 Typical Triac
- L = 100 $\mu$ H (RFI Filter)
- \* L = 200 $\mu$ H (RFI Filter)

\* = component change for 220VAC