

Analysis and Design of Single Switch Mosfet Dimmer for AC Driven Lamp

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Abstract : In this paper a new solution to implement and control single-stage electronic ballast based on the integration of a buck-boost power factor correction stage and a half bridge resonant inverter is presented. The control signals are obtained using the inverter resonant current by means of a saturable transformer. Core saturation is used to control the required dead time between the control pulses on both switches. The turn-on time of one of the inverter switches is controlled to provide proper cathode preheating during the lamp ignition process. No special integrated circuits are required to control the ballast and the total number of components is minimized. Analysis and basic design of phase cut dimmer.

Keywords : MOSFET dimmer, PIC 16F877A, voltage regulator, bridge rectifier

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