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Abstract
This thesis presents a full-bridge phase-shift zero-voltage-switching converter. Its advantages include low switching loss, low switching stresses, low EMI, etc.. An additional boost-type power factor corrected (PFC) is cascaded in the front to improve the input power factor. The zero-voltage-switching converter uses UC3895 to take as PWM controller. It adopts the phase-shift control algorithm for drive signal to change duty cycle in order to handle the load variation. The resonant inductor and the MOSFET ‘s parasitic capacitance are used to achieve the zero-voltage-switching effect. The operating theorem of each state in the circuit has been explained. Simulations based on the IsSpice program have also be made in this thesis. Finally, a prototype with 400W rating was built to demonstrate the performance of the proposed techniques.
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