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High Efficiency ZPS-PWM Dual-Output Converters with EMI Reduction Method

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Abstract : In this paper, we study a Pulse-WidthModulation (PWM) controlled Zero-Voltage-Switching (ZVS) for single-inductor dual-output (SIDO) converters. This method can meet the industry demands for high efficiency due to ZVS and small size and low cost, thanks to single-inductor per multiple voltages. We show the single inductor single-output (SISO) ZVS buck converter with its operation and simulation and then the experimental results. Next proposed ZVS-PWM controlled SIDO converters are explained in the simulation. Finally we have proposed EMI reduction method with spread spectrum.

Keywords : DC-DC switching converter, zero-oltage switching control, single-inductor dual-output converter, EMI reduction, spread spectrum
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