Project Report On

Auxiliary Switch ZVS-PWM DC–DC Converters with Coupled Inductor

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ABSTRACT

This project is on a novel auxiliary switch zvs PWM DC-DC converter with coupled inductor. The developed circuit achieves loss-less switching for both the main and auxiliary switches without increasing the main device current/ voltage rating. A tapping in the pole inductor is added for the purpose of commutation. The circuit is capable of operating at elevated switching frequencies of several hundreds of KHz, high and low power levels with wide range of load variations. Simulation and experimental results of 33 watt, 400KHz boost converter are carried. The circuit is applicable to all isolated and non-isolated DC-DC converters. The performance and the design equations of the ZVS are identical for all types of DC-DC converters when the throw voltage and the pole current are properly defined. DC-DC converters are widely being used in different electronic devices like laptops, PDA's, cell phones and also electric vehicles to obtain different level of voltages. These converters are nothing but, high frequency switching devices operating on PWM principle.