

ZVZCT PWM Boost DC-DC Converter

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Abstract : This paper introduces a boost converter with a new active snubber cell. In this circuit, all of the semiconductor components in the converter softly turns on and turns off with the help of the active snubber cell. Compared to the other converters, the proposed converter has advantages of size, number of components and cost. The main feature of proposed converter is that the extra voltage stresses do not occur on the main switches and main diodes. Also, the current stress on the main switch is acceptable level. Moreover, the proposed converter can operates under light load conditions and wide input line voltage. In this study, the operating principle of the proposed converter is presented and its operation is verified with the Proteus simulation software for a 1 kW and 100 kHz model.

Keywords : active snubber cell, boost converter, zero current switching, zero voltage switching

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