

TWO PHASE INTERLEAVED DC- DC CONVERTER

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ABSTRACT

This paper presents a high-efficiency nonisolated interleaved dc–dc inductor boost converter with a common active clamp circuit. Interleaved boost converters are highly preferred as it reduces the ripple current. A boost converter is used to clamp the voltage stresses of all the switches in the interleaved converter which is caused by the leakage inductances. The leakage energies of the interleaved converters are collected in a clamp capacitor and recycled to the separate load by the clamp boost converter. The proposed converter achieves high efficiency because of the recycling of the leakage energies, reduction of the switch voltage stress, mitigation of the output diode's reverse recovery problem, and interleaving of the converters. Single input given and multiple outputs are taken. Detailed analysis and design of the proposed converter are carried out.

KEYWORDS: Conversion Efficiency, Interleaved Dc – Dc Inductor Boost Converter, Onstate Resistance (R_{DS-ON}), Power Factor Correction (PFC), Pulse Width Modulation (PWM).