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Resonant Demagnetization PWM Forward Converter

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Abstract: In this paper, a new approach to demagnetization process of a PWM forward converter (FC) is proposed. According to this approach, the demagnetization winding and diode of a conventional FC are removed, and an external capacitor is added in parallel with the secondary diode. This replacement changes the linear demagnetization process of a conventional FC into a resonant demagnetization process. The theoretical performance results of the proposed resonant demagnetization forward converter (RDFC) are compared with those of a conventional FC. A side by side comparison made between the two types of demagnetization strategies has shown that RDFC has some advantages over FC. The results obtained are also verified experimentally on a prototype 60 W, 333 kHz forward converter.

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