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High frequency inverter voltage doubler rectification

Overview

Can a resonant converter have a secondary rectifier?

However, implementing the secondary rectifier of an LLC resonant converter often requires the use of jumpers on the PCB to construct circuit topologies such as the center-tap rectifier (CTR), full-bridge rectifier, and voltage-doubler rectifier (VDR).

Is synchronous rectification possible in a HF/VHF resonant converter?

Synchronous rectification is advantageous for low-voltage high-power applications but is challenging to implement in a high-frequency (HF) dc–dc converter. This article proposes an HF/very HF (VHF) resonant converter structure in which the rectifier and the inverter switches can be driven with the same gate signal.

What is a conventional voltage doubler rectifier circuit?

The conventional voltage doubler rectifier circuit 7, 13, 16, 21, 22, 25, 26 is shown in Fig. 1 a. The basic components used in this circuit are two Schottky diodes (D 1 and D 2), one series pump capacitor (C 1), and one shunt filter capacitor (C 2), which is in parallel with the load.

Are voltage doubling rectifier circuits suitable for high frequency circuits?

Therefore, voltage doubling rectifier circuits are suitable for circuits with high frequency. Within a certain frequency range, the higher the circuit frequency, the higher the average output voltage of the circuit, the smaller the output voltage ripple of the circuit, and the more stable the circuit. 3.2. Capacitance characteristic

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Analysis and design of voltage doubling rectifier circuit for ...

In this study, the frequency, capacitance and load characteristics of the paralleling excitation voltage doubling rectifier circuit are studied by simulation. According to the design ...

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In this letter, a high-efficiency 2.45 GHz class-F voltage doubler rectifier is proposed for radio frequency energy harvesting (RFEH). In the proposed topology, two ...

Analysis and design of diode physical limit bandwidth ...

Theory of the proposed diode physical-limit-bandwidth efficient rectification The conventional voltage doubler rectifier circuit 7, 13, 16, 21, 22, 25, 26 is shown in Fig. 1 a. The ...

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Abstract--An isolated high step-up converter, which is derived from the reverse structure of a regular LLC resonant converter, is proposed in this paper. The proposed ...

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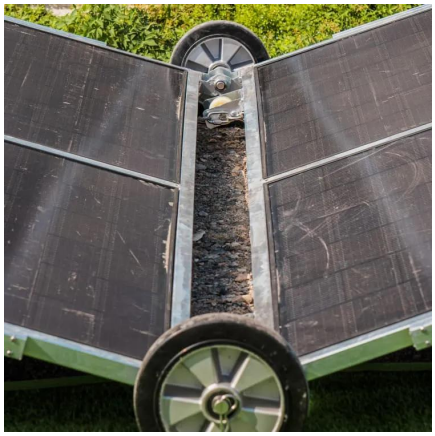

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The LLC resonant converter is widely recognized as an effective solution for achieving high efficiency in high-frequency operations. This is primarily due to its ability to ...

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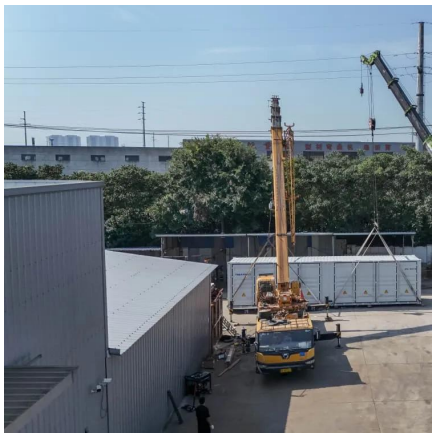

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To address these challenges, this paper proposes a novel rectification circuit based on the VDR topology, specifically designed for LLC resonant converters, offering ...

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