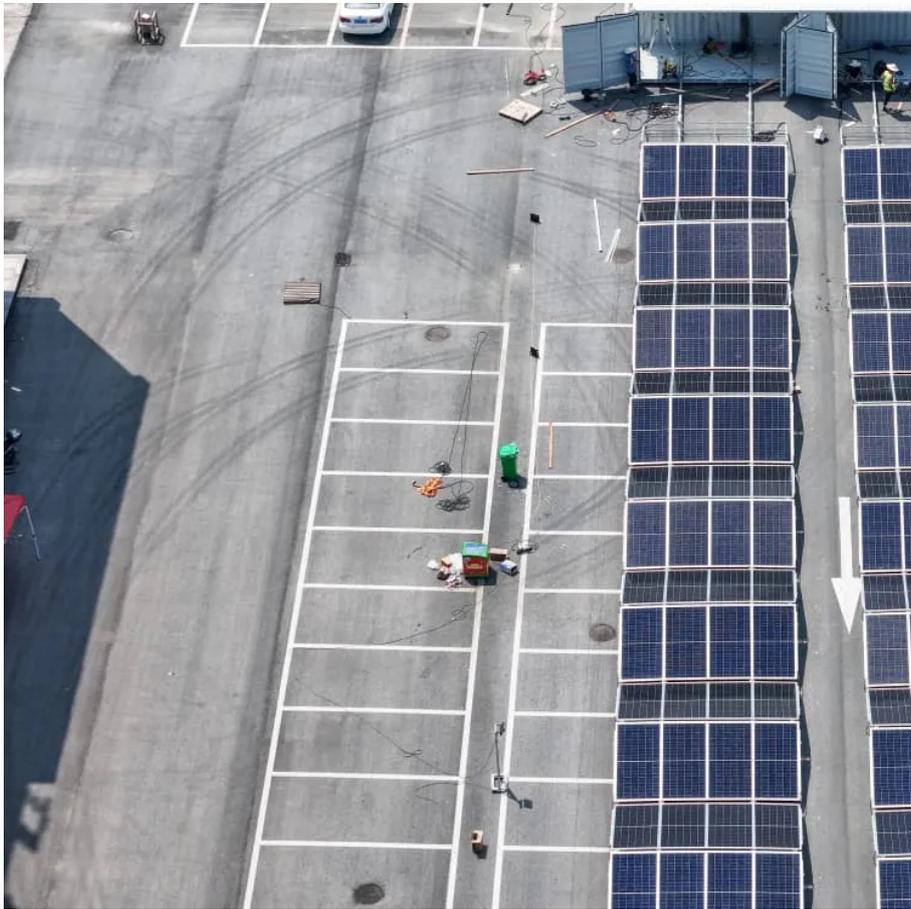


Single-phase inverter high frequency ripple suppression





Overview

What is a single-phase full bridge inverter?

Single-phase full bridge inverter gives high efficiency and high-reliability characteristics. However, it needs a large DC link capacitor to absorb the ripples through it i.e. high frequency voltage/current ripple and low frequency 2ω ripple. The SPWM for a single-phase full bridge inverter can be divided into bipolar and unipolar modulations.

Is there a single phase AC/DC/AC converter with unified ripple power decoupling?

Liu Y, Sun Y, Su M, Li X, Ning S (2018) A single phase AC/DC/AC converter with unified ripple power decoupling. IEEE Trans Power Electron 33:3204–3217
Sun Y, Liu Y, Su M, Xiong W, Yang J (2016) Review of active power decoupling topologies in single-phase systems. IEEE Transact Power Electron 31 (7):4778–4794.

How does current ripple affect MPP of a photovoltaic system?

As shown in Fig. 1, the MPP of the PV power generation system will change with the ripple component in the current. When the power converter operates at the MPP, the current ripple will adversely affect the average power output, thus affecting the efficiency and reliability of the photovoltaic system .

Can a single-phase PV quasi-Z-source inverter reduce capacitance?

Zhou Y, Li H, Li H (2016) A single-phase PV quasi-Z-source inverter with reduced capacitance using modified modulation and double-frequency ripple suppression control. IEEE Trans Power Electron 31:2166–2173
Yu Y, Zhang Q, Liang B, Cui S (2011) Single-phase Z-Source inverter: analysis and low-frequency harmonics elimination pulse width modulation.



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