

Can coupled inductor based four port topology multiport converter integrate multiple PV sources?

This article is one among the kind, which proposes a novel Coupled Inductor based Four Port topology Multiport Converter (CI-FP-MPC) for integrating multiple PV sources with different voltages. The adoption of coupled inductor contributes an increased voltage gain with reduced stress on the switches and diodes.

What is soft switching dual-switch forward converter topology?

An improved soft switching dual-switch forward converter topology is proposed in this paper. Compared with conventional dual-switch forward converter, the proposed converter employs an auxiliary switch and a clamp capacitor to instead of two reset diodes.

Does a coupled inductor high-gain converter work for EV batteries?

The proposed coupled inductor high-gain converter minimizes ripples and operates efficiently but lacks consideration for heat management, long-term reliability, power scaling, and compatibility with modern EV batteries.

What is isolated solar photovoltaic (PV) array & SEPIC converter?

An isolated solar photovoltaic (PV) array with a SEPIC converter is also being used in the system configuration. The purpose of the PV array is to support batteries during the non-availability of grid power supply and to feed auxiliary loads. The lithium-ion batteries are being used in light electric vehicles.

Why is coupled inductor a good choice for a four-port topology?

The adoption of coupled inductor contributes an increased voltage gain with reduced stress on the switches and diodes. In addition, reduced number of switches and diodes for a four-port topology provides an increase in efficiency due to its reduced switching and conduction losses.

Why is dual-switch forward converter better than other converters?

In addition, there is an important reason which has better robust than other converters. Details operation has been analyzed [2, 3]. However, the dual-switch forward converter has several major disadvantages, such as maximum duty cycle is not exceed to 0.5, hard switching is commutated, large filter inductor is required.

A 0.5V start-up 87% efficiency 0.75mm<sup>2</sup> on-chip feed-forward single-inductor dual-output (SIDO) boost DC-DC converter for battery and solar cell operation sensor network micro-computer integration.

To alleviate the power losses caused by the fluctuation of the output current of the photovoltaic (PV) array, a DC/DC converter with high-voltage gain ...

An on-chip low power single-inductor dual-output (SIDO) DC-DC boost converter is proposed for battery and

solar cell operating sensor network applications. A proposed feed forward ...

An improved soft switching dual-switch forward converter topology is proposed in this paper. Compared with conventional dual-switch forward converter, the proposed converter employs an auxiliary switch ...

This paper proposes a new high gain DC/DC converter. The proposed converter achieves higher voltage-gain with reduced voltage-stress and lower duty cycle in comparison to ...

A family of inductorless forward-flyback converters utilizing dual constant on-time modulation is proposed, in order to maintain high efficiency over a wide load and input range. The ...

Abstract--In this paper, a non-isolated high step-up dc-dc converter is presented. The proposed converter is composed of an interleaved structure and diode-capacitor multiplier cells for interfacing ...

A novel non-isolated high-gain double-switch coupled inductor magnetic integrated DC-DC topology is proposed. It can be applied to photovoltaic (PV) power generation and other ...

A 10 MHz synchronous boost converter with the subthreshold startup scheme and predictive dead-time control for energy-harvesting systems is presented in this study. The input feed ...

The invention relates to a ZVZCS interleaved parallel double-transistor forward circuit using a center-tapped inductance filter, and relates to a ZVZCS interleaved parallel double-transistor forward circuit. ...

Abstract: An on-chip low power single-inductor dual-output DC-DC converter is proposed for battery and solar cell operating sensor network applications. By a new feed-forward ...

Due to the large number of passive components, the traditional double switch forward soft switching converter has the disadvantages of larger prototype size and higher magnetic component loss.

An isolated bidirectional forward DC/DC converter is presented. The proposed converter is formed by combining two identical two-switch forward converters through.

Design and development of a bidirectional high gain converter (BHGC) that can operate efficiently in both Grid-to-Vehicle (G2V) and Vehicle-to-Grid (V2G) modes, utilizing hybrid energy ...

TDK's dual inductor series offers compact robust inductors designed for coupling a variety of DC/DC converter topologies & offering functional isolation voltages.

This paper presents a single inductor multiple outputs parallel string LED driver with time multiplexing control schemes. Two kinds of pulse-width modulation schemes are presented and compared.

A novel single-inductor dual-input dual-output dc-dc converter with pulse width modulation control is proposed for a solar energy harvesting system. The first input of the converter is from photovoltaic ...

A 0.5V start-up 87% efficiency 0.75mm<sup>2</sup> on-chip feed-forward single-inductor dual-output (SIDO) boost DC-DC converter for battery and solar cell operation sensor ...

Single-inductor multiple-output (SIMO) DC-DC converters face the challenges of large inductor current, discontinuous charge to each output ...

Bibliographic details on A 0.5V start-up 87% efficiency 0.75mm<sup>2</sup> on-chip feed-forward single-inductor dual-output (SIDO) boost DC-DC converter for battery and solar cell operation sensor ...

A single inductor dual input-dual output dc-dc converter for renewable energy based power system is presented in this paper. The converter integrates solar and wind energy sources at ...

A non-time-division multiplexing single-inductor solar and piezoelectric energy multi-input harvesting interface circuit is proposed in this paper, which can harvest solar energy and ...

This work proposes a new, non-isolated, high-gain, and highly efficient DC-DC converter that uses active linked inductor impedance source to boost a solar panel's output power.

This study introduces an innovative dual switch coupled inductor high boost DC-DC converter, addressing the challenges of low gain and high stress in conventional high gain DC-DC ...

An on-chip low power single-inductor dual-output (SIDO) DC-DC boost converter is proposed for battery and solar cell operating sensor network applications. A proposed feed forward control determines the ...

An improved scheme of a dual-switch forward converter is proposed in this paper. Compared with the original converter, the new one can ...

Abstract When driving the paralleled LED strings, the large forward tolerance across the LED will result in the current non-uniformly distributed between each string, which causes LEDs to be overdriven ...

Compared with the traditional dual-switch forward converter, a smaller capacitor can improve the power density of the converter. HEC is a very simple form in which only one capacitor and one switch are ...

Papers put forward integrated scheme of transformer and filter inductance, magnetic integration is derived resonant reset and integrated winding magnetic reset is the excitation converter.

A 10 MHz synchronous boost converter with the subthreshold startup scheme and predictive dead-time control for energy-harvesting systems is presented in this study. The input feed-forward technique is ...

An isolated bidirectional forward DC/DC converter is presented. The proposed converter is formed by combining two identical two-switch forward converters through a shared ...

In the current scenario of high energy demand, renewable energy sources like solar cells, fuel cells are gaining importance day by day. A new converter topology i.e. dual output switched ...

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