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(54) SERIES CAPACITOR BUCK CONVERTER WITH PRECHARGE CIRCUIT

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(57) ABSTRACT

Disclosed is a series capacitor buck converter with a pre-charge circuit. The converter includes a switch device unit, a series capacitor, an output inductor, a switch control unit, and a capacitor precharge circuit, etc. The switch control unit is configured to control the switch on and off of a switch unit in the power conversion unit to achieve power conversion; the capacitor precharge circuit includes a capacitor voltage detection circuit configured to detect a voltage at both ends of the series capacitor, and a capacitor charge circuit configured to precharge the series capacitor through a charge switch device in a pulse width modulation control mode, and the current limiting resistor is connected in series with the charge switch device to suppress a transient large current when the charge switch device is switched on.

