

SWITCHING POWER SUPPLY APPARATUS

ABSTRACT OF THE DISCLOSURE

A switching power supply apparatus designed for suitably controlled stabilization of its output. The apparatus has a charge control circuit. If the voltage across an input capacitor is lower than a set voltage when a main power supply switching element turns on, a control circuit switching element turns on and energy is transferred from an input power source by conduction through the control circuit switching element and an inductance, and the inductance stores transferred energy. When the main switching element turns off, the charge control circuit turns off the control circuit switching element to supply the stored energy in the inductance to the input capacitor. If the voltage across the input capacitor is equal to or higher than the set voltage when the main switching element turns on, the control circuit switching element is maintained in the off state and the inductance cannot store energy. The voltage across the input capacitor is thereby limited. In this manner, the voltage across the input capacitor is controlled so as to be stabilized at the set voltage. This stabilizes the output voltage of the apparatus and improves its circuit efficiency.

FIG. 1

