

ABSTRACT

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In a switch mode power supply, a full wave rectified AC mains supply voltage (V1) is produced from an AC mains supply voltage (VM) without low-pass filtering. The unfiltered rectified voltage is applied to a winding (W1) of a flyback transformer (T) that is coupled to a switching transistor (Q1). A first plurality of current pulses (iP1) are generated in the winding from the rectified voltage at a frequency (20 KHz) that is higher than the frequency (50 HZ) of the mains supply voltage and at peak amplitudes that vary in accordance with the rectified voltage in a manner to increase a power factor. The rectified voltage is further rectified via a rectifier (D2) coupled in series with a resistor (R13) and a low-pass filter capacitor (C2) and produces current pulses (i3) in the capacitor. A voltage (V2) in the capacitor is coupled via a second switching transistor (Q2) to the winding to produce in the winding a second plurality of current pulses (iP2) that reduce a ripple component at an output (37) of the power supply. The resistor increases the pulse-width and decreases the magnitude of the capacitor current pulses in a manner to reduce input harmonic contents and increase the power factor.

USE FIGURE 1.

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