

ABSTRACT

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 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 a manner to reduce a power factor. A second supply voltage (V2) is applied 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 of the power supply. The second plurality of current pulses are pulse-width modulated in a feed-forward manner during a period of the mains supply voltage in accordance with the mains supply voltage. An overload threshold point is also shifted to a higher value remotely from the peak of the mains voltage, in a feed-forward manner (via R1). This results in the power factor being less affected by load variations.

USE FIGURE 1

This Sheet Has Been Replaced

