

[54] **LOW-NOISE SWITCHING POWER SUPPLY HAVING VARIABLE RELUCTANCE TRANSFORMER**

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[57] **ABSTRACT**

There is provided a low-noise switching power supply for producing a regulated output voltage from an unregulated supply. The power supply includes a main transformer having first, second and third legs. A primary winding associated with a first leg produces an alternating magnetic flux in the core. A load winding associated with a second leg produces the output voltage from the power supply. A control winding is associated with the third leg. The regulated output voltage is compared to a reference voltage and used to operate a control circuit which alternately short circuits the control winding so as to vary the reluctance pass in the transformer and maintain the output voltage at a substantially constant predetermined value. A feedback circuit including a coupling transformer connects the primary coil to the switching circuit to improve regulation and provide a "soft start" capability.

17 Claims, 5 Drawing Sheets

