THE FEASIBILITY OF A CORELESS PCB ISOLATION TRANSFORMER IN A LOW-PROFILE LOW POWER DC-DC CONVERTER

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MOHD HAFIZHUZAIMI BIN ELEAS
FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
40450 SHAH ALAM
SELANGOR DARUL EHSAN

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ABSTRACT

A low-profile low power converter is in high demand especially for portable electronics applications such as laptops and notebooks. The term low-profile means low cost, low input voltage, low power and small in size. An isolation transformer is used in a converter to block dc signals and only allows ac signals. A new design of low-profile power converter is addressed in this project. It uses a low-profile printed circuit board (PCB) transformer as the isolation transformer and a resonant mode controller to generate the signal instead of using traditional pulse width modulation (PWM) techniques. The low-profile isolation transformer is a coreless transformer that doesn't require manual bobbin and windings. The transformer windings are etched on the opposite side of a double sided PCB. The technique of switching the power converter is also addressed in this paper. The high frequency capability, high reliability and low-profile structure makes coreless PCB transformer a viable and attractive option for a reliable mega hertz switching converters and micro circuits.

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