

# 基于无芯 PCB 变压器多路输出隔离 DC-DC 变换器

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**摘 要:** 介绍一种多路输出隔离式 DC-DC 变换器, 通过两个串联的层叠结构的无芯 PCB 变压器实现四路一致输出, 利用交叉耦合振荡电路和串联无芯 PCB 变压器初级线圈形成持续振荡回路, 次级线圈经过二极管半桥整流和电容滤波获得直流输出. 通过软件仿真设计无芯 PCB 变压器和整体电路. 测试结果表明, 此变换器能够提供四路 14 V 隔离电压输出. 效率为 45% 时输出功率约为 1.5 W.

**关键词:** DC-DC 变换器; PCB 变压器; 多路输出

## Multiple Output Isolated DC-DC Converter With Coreless PCB Transformers

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**Abstract:** A multiple output isolated DC-DC converter with coreless PCB transformer was proposed and demonstrated. The four consistent output voltages were achieved with two series coreless stacked PCB transformer. The cross coupled tank and coreless PCB transformer formed sustaining oscillation. The Schottky diodes were used as rectification devices. The design of the coreless PCB transformer and the overall circuit were implemented by simulation. Experimental results showed that the four output voltages were 14 V. The delivered power was 1.5 W at 45% efficiency.

**Key words:** DC-DC converter; PCB transformer; multiple outputs

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