

## 一种 DC-DC 转换器中斜坡与反斜坡补偿电路的设计

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**摘要:** 介绍了一种基于  $2\ \mu\text{m}$  BJT 工艺的斜坡和反斜坡补偿电路, 分析了分段线性斜坡补偿给负载能力带来的影响, 提出了反斜坡补偿电路结构, 该结构在保证斜坡补偿的补偿效果情况下, 消除了斜坡补偿使峰值限制电流下降的缺点, 有效地提高了电路的负载能力. 最后基于  $2\ \mu\text{m}$  BJT 工艺对电路进行了仿真, 得到了较为理想的结果.

**关键词:** 分段线性斜坡补偿; 反斜坡补偿; 峰值电流; 带负载能力

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### Design of Slope and Antislope Compensation in DC-DC Buck Converter

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**Abstract:** A kind of slope and antislope compensation circuit based on  $2\ \mu\text{m}$  BJT IC process is presented. The effects of piecewise linear slope compensation to the load capacity are analyzed. Based on the analysis we propose the antislope compensation circuit structure. The structure overcomes slope compensation's shortcoming which is the compensation decreases the peak current. And at the same time, the structure guarantees the effect of slope compensation and improves load capacity. At the end of this article, results of the simulation based on  $2\ \mu\text{m}$  BJT process are presented, which obtain that the structure performs well.

**Key words:** piecewise linear slope compensation; antislope compensation; peak current; load capacity

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