

一种高精度低功耗 RC 振荡器设计

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摘要: 本文设计了一种具有较强的电源电压抑制能力和良好的温度特性的 RC 振荡电路, 它由稳压源电路和 RC 振荡电路组成, 稳压源电路输出不受电源电压和温度影响的调制电平 VREG, 给 RC 振荡电路提供工作电压以产生稳定的振荡频率. 该电路特点是: 结构简单, 功耗低, 振荡频率精确, 受电源电压和环境温度影响较低, 基于 CSMC 0.35 μ m CMOS 工艺设计, 完成 Hspice 仿真.

关键词: RC 振荡器; 带隙基准; 电源电压抑制; 环境温度抑制

Design of a high-precision low-power CMOS RC oscillator

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Abstract: In this paper, a RC Oscillator with lower power consumption, low supply voltage and temperature sensitivity was proposed. It was composed of a voltage regulation and a RC Oscillator. The regulated voltage VREG was not affected by the power supply voltage and temperature. It provided a supply voltage for the RC oscillation circuit to generate a stable oscillation frequency. The circuit is characterized by simple structure, low power consumption, accurate oscillation frequency, less affected by power supply voltage and ambient temperature. Hspice simulation was made based on CSMC 0.35 μ m CMOS process.

Key words: RC oscillator ; lower power consumption; low supply voltage sensitivity; low temperature sensitivity

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