

## 基于标准CMOS工艺太阳能电池的微电源管理系统

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摘要:

文章基于CMOS太阳能电池设计了一款微电源管理系统。此电源管理系统适用于传感器网络节点和半有源电子标签之系统中包含一个电荷泵, 一个片外储能电容, 控制电路和一个线性稳压器。控制电路采用一种全新的结构, 静态功耗输出电流为30uA, 储能电容为1uF时, 一个周期可达到大于20ms的供电时间, 输出电压1.8V, 电源管理系统的静态电

关键词: 微电源管理, CMOS, 片上集成, 太阳能电池

## A Micro Power Storage Management System for CMOS Compatible Integrated N

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**Abstract:**

In this paper, a micro power management system based on CMOS micro solar cell is presented. The proposed system is suitable for power supply periodically for short time slots, such as sensor network nodes and the UHF RFID tag. The power management system includes a charge pump, an off-chip storage capacitor, a control circuit and a linear voltage regulator. The control circuit is a completely new design and the quietest is implemented in UMC 0.18 $\mu$ m CMOS technology. When the output current is 30uA and the storage capacitor is 1uF, the low output voltage is 1.8V and the current consumption of the system is less than 1.5uA.

**Keywords:** Micro Power Management; CMOS; On-chip integration; Micro Solar Cell

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