

论文

高精度可编程恒流驱动白光LED芯片设计研究

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摘要:

实现了一种高精度可控白光LED恒流驱动芯片的设计. 使用自动调零技术在内部集成了自动调零运算放大器, 并采用外接电阻和使能设计控制恒定LED驱动电流, 可在2.9 V到4.4 V的工作电压范围内提供3个不同的恒定驱动电流, 最大驱动电流可达1 A. 测试结果表明, 当驱动电流从200 mA变化到800 mA时, 外接电阻电流和LED驱动电流之比变化小于2.3%; 电源电压跳变±10%的情况下, 800 mA的驱动电流变化小于0.46%.

关键词: 运算放大器 LED 恒流驱动 自动调零

Design research on the high-precision programming constant current driver of the white light LED

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Abstract:

An accurate programmable constant current driver for the white light LED is designed. An autozero amplifier, based on the autozero technique, is constructed in the chip. The current delivered to the LED load is controlled by the external resistor and the enable pins. Three discrete constant current settings are available and may be selected at the supply voltage from 2.9 V to 4.4 V, which is up to 1 A. Measurement results show that the variation in the ratio of the external resistor current to the LED load current is less than 2.3%, when the LED load current changes from 200 mA to 800 mA. The driving current of 800 mA varies by less than 0.46% when the supply voltage changes by ±10%.

Keywords: amplifier light emitting diode constant-current driving autozeroing

收稿日期 2008-07-03 修回日期 2008-08-20 网络版发布日期 2009-05-25

DOI:

基金项目:

国家部委重点预研资助(D1120060967, Y30306270105);教育部超高速电路与电磁兼容重点实验室专项资助(YZCB2008001);国家自然科学基金

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