

产品概述

RLD1301是一款直接交流供电的LED驱动IC。用它设计的电路不需要电解电容和电感。因此，LED灯具的寿命主要取决于LED灯珠的使用寿命。RLD1301的输出电流可通过一个外接电阻来调节，并可通过电流控制电路或者可控硅进行调光。自带NTC（负温度系数）功能，保护LED灯具在过压或者过温时能够稳定工作。THD低于20%，PF接近于1。RLD1301提供了非常有竞争优势的、AC交流直接供电的、长寿命、低成本的LED灯具方案。

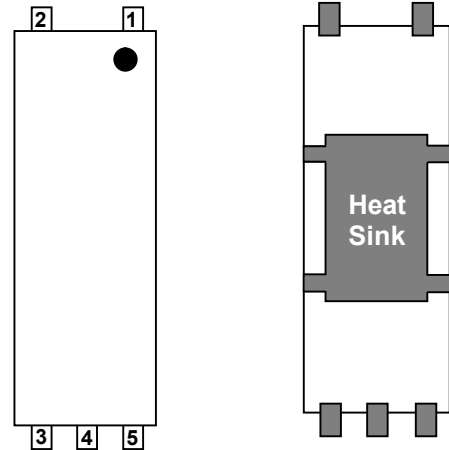
主要特点

- 交流直接驱动
- 不需要电解电容和电感
- 低频闪
- 高PF
- 长寿命
- 没有EMI干扰
- 可调光
- 负温度系数（NTC）

应用

- 交流直接驱动LED灯泡类型灯
- 交流直接驱动LED PAR类型灯
- 交流直接驱动LED面板灯
- 交流直接驱动LED路灯
- 交流直接驱动LED筒灯
- 交流直接驱动LED筒灯

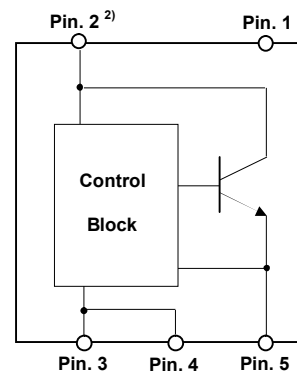
Package Type : P-6020G



[Top view]

[Bottom view]

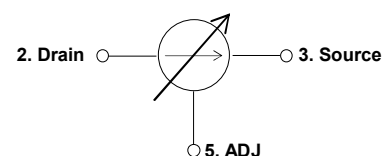
Schematic & PIN Configuration



1 : NC 2 : Drain 3,4 : Source 5 : ADJ

²⁾ Heat sink connected to pin. 2

Device Symbol



RLD1301

最大额定值 (Ta=25)

参数	符号	范围	单位
最大耐压	V _{DD}	80	V
输出最大电流	I _D	100	mA
最大功耗	P _D	2.0	W
工作温度	T _{OP}	-40 ~ 85	°C
结温	T _J	150	°C
存储温度	T _{STG}	-65 ~ 150	°C

(注：最大耐压和最大输出电流取决于IC的最大功耗。)

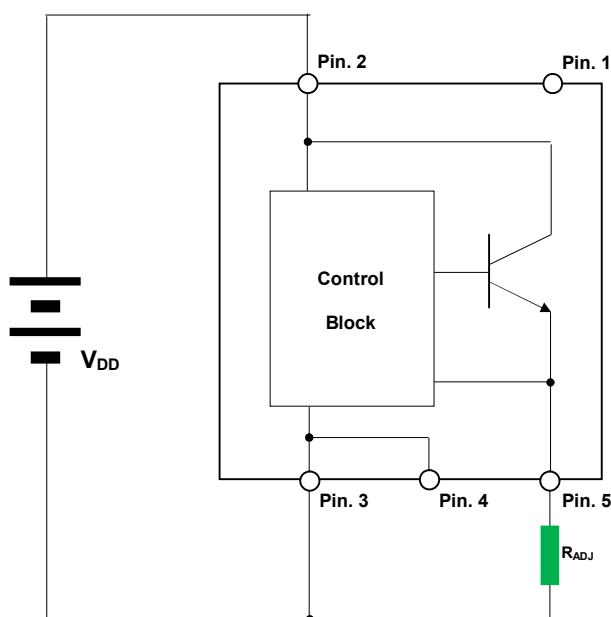
电参数

500mm²的散热板²⁾, T_A= 25°C

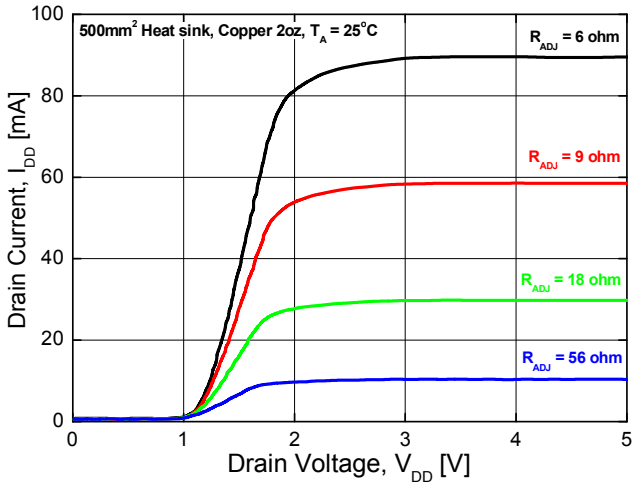
参数	符号	条件	Min.	Typ.	Max.	Unit
工作电压	V _{DD}		4		80	V
输出电流	I _D	R _{ADJ} = 6Ω, V _{DD} =5V	79	83	88	mA
		R _{ADJ} = 9Ω, V _{DD} =5V	54	57	60	mA
		R _{ADJ} = 18Ω, V _{DD} =5V	26	27	29	mA
		R _{ADJ} = 55Ω, V _{DD} =5V	8	9	10	mA

²⁾ IC固定在2oz铜厚的玻纤板上。

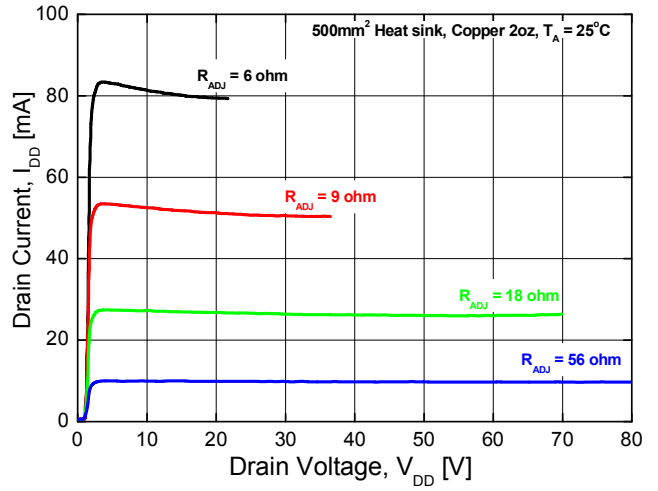
测试电路



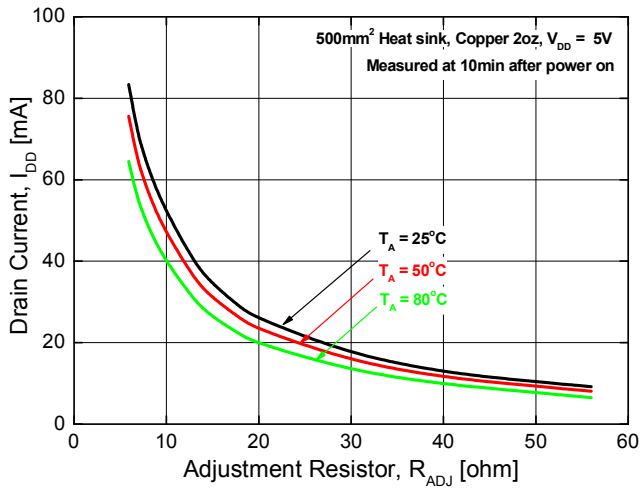
输出电流VS工作电压



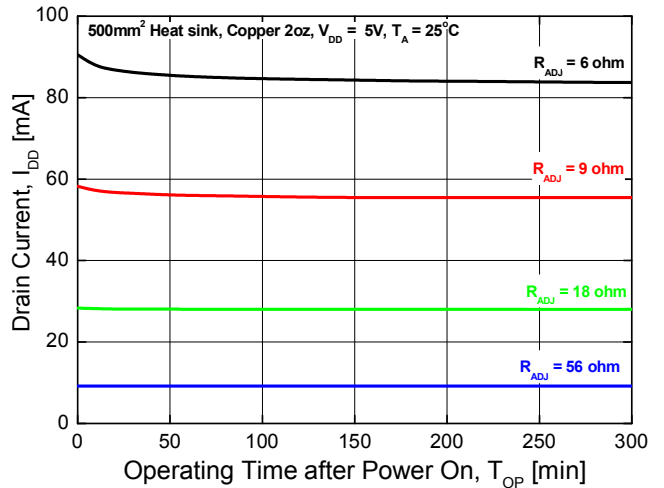
工作电流VS耐受电压



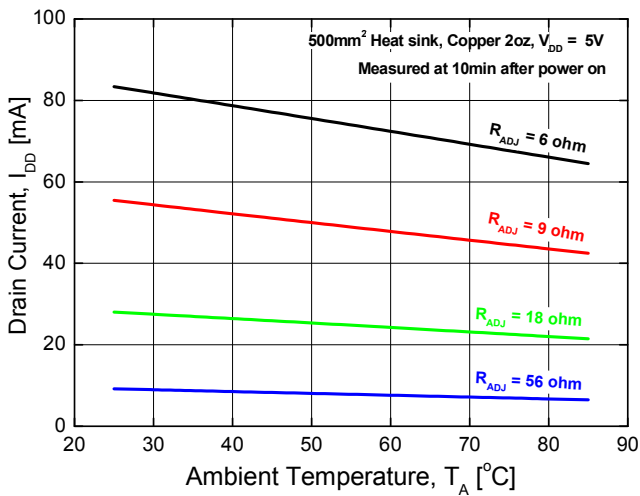
输出电流VS调节电阻



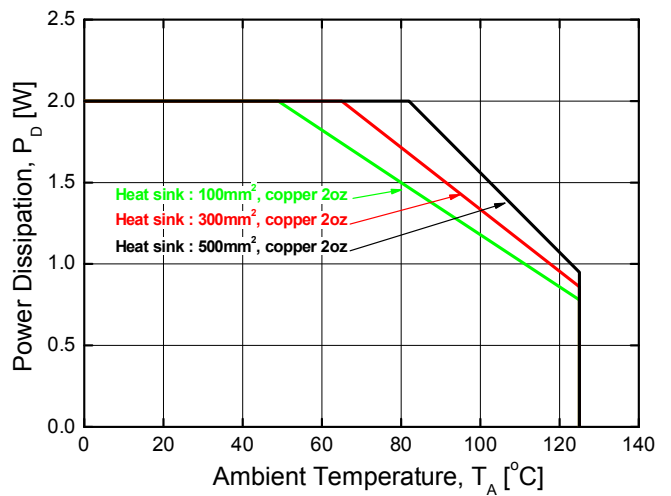
工作电流VS工作时间



工作电流VS环境温度



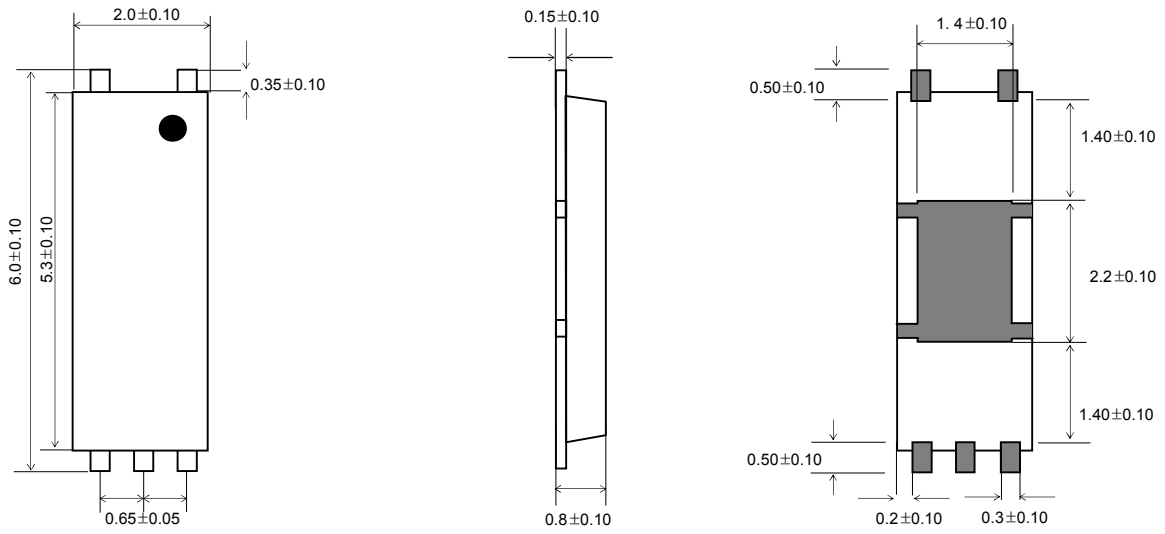
功耗VS环境温度



RLD1301

PKG 封装尺寸

Unit : mm

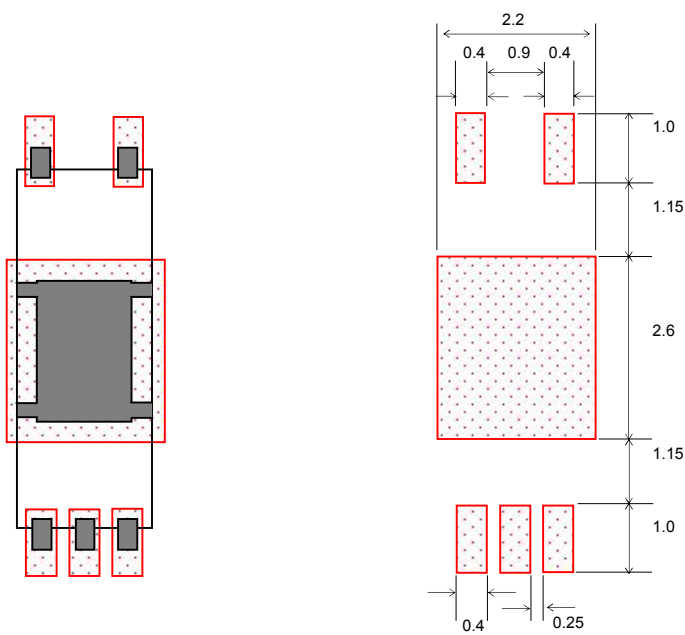


标记信息



焊盘图形

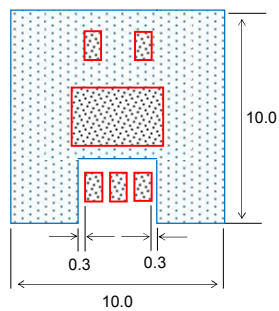
Unit : mm



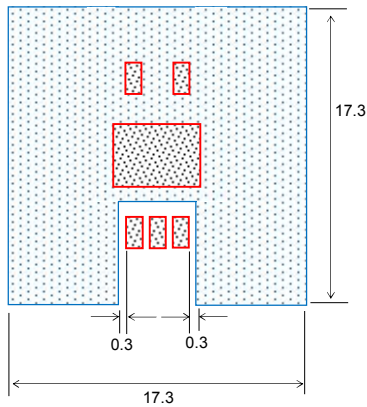
热沉设计

Unit : mm

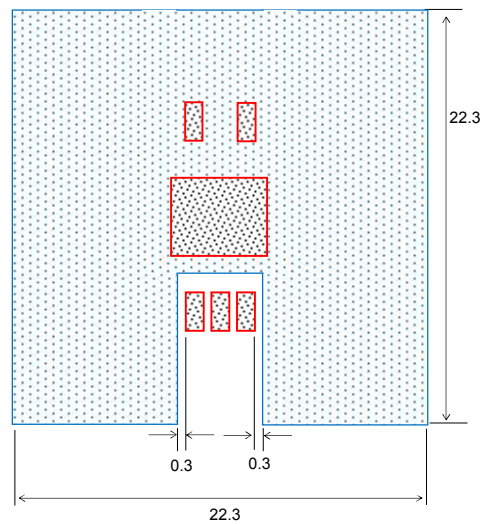
100mm² / Copper 2oz



300mm² / Copper 2oz



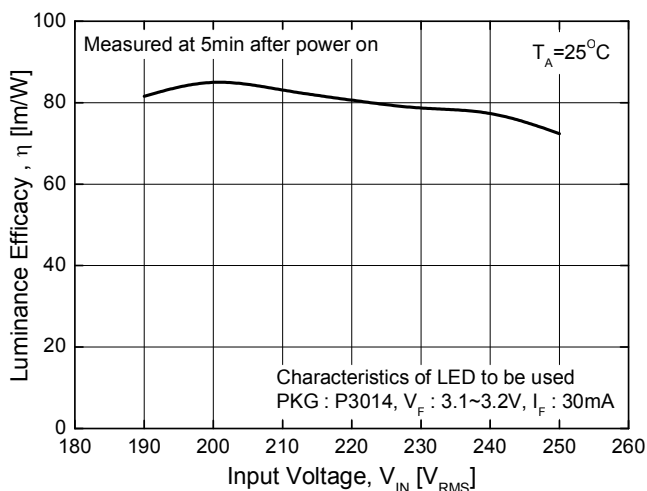
500mm² / Copper 2oz



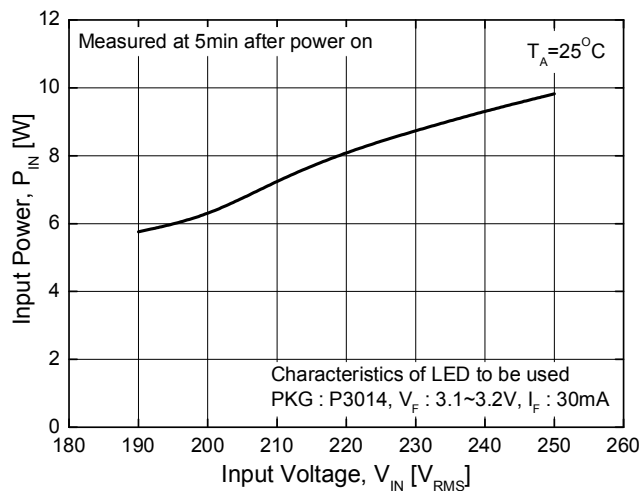
示例：8W球泡灯



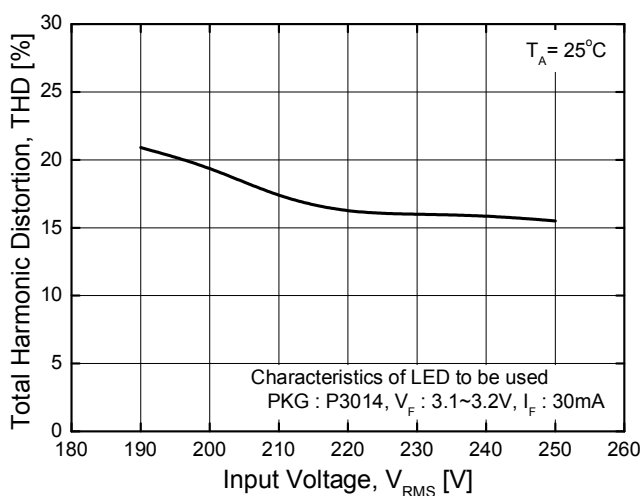
光效VS输入电压



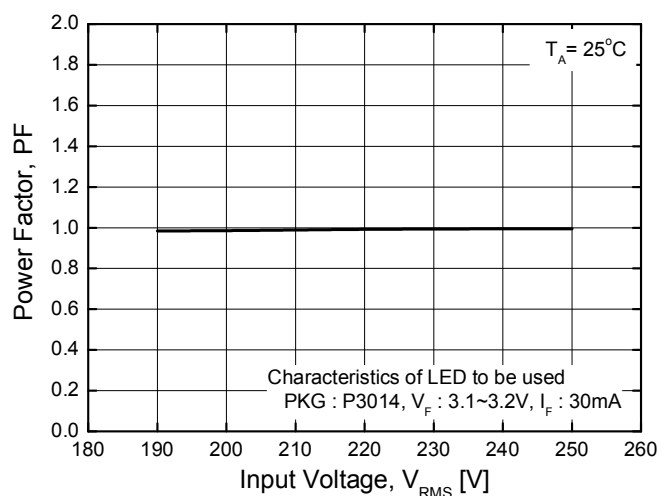
输入功率VS输入电压



THD VS 输入电压

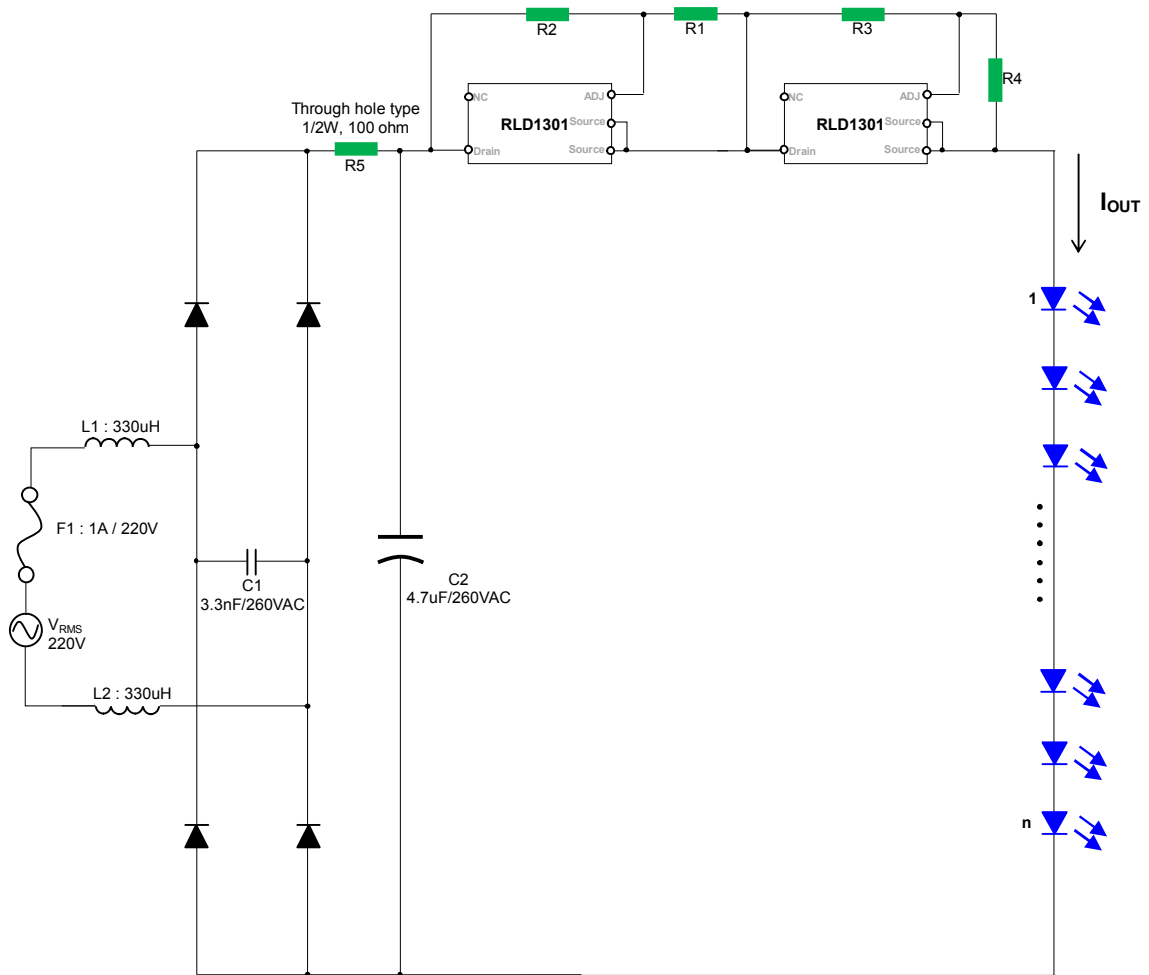


功率因数VS输入电压

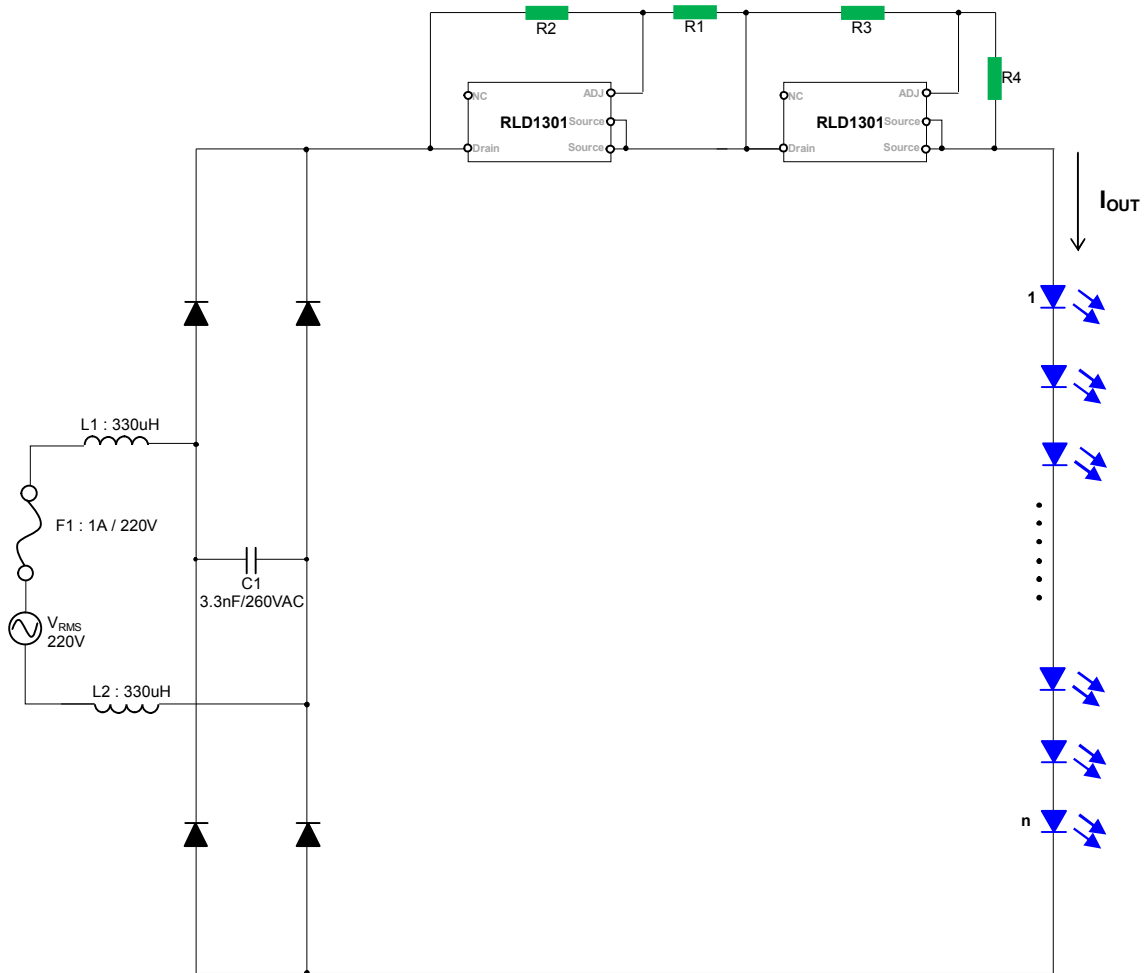


Bulb case was covered when testing

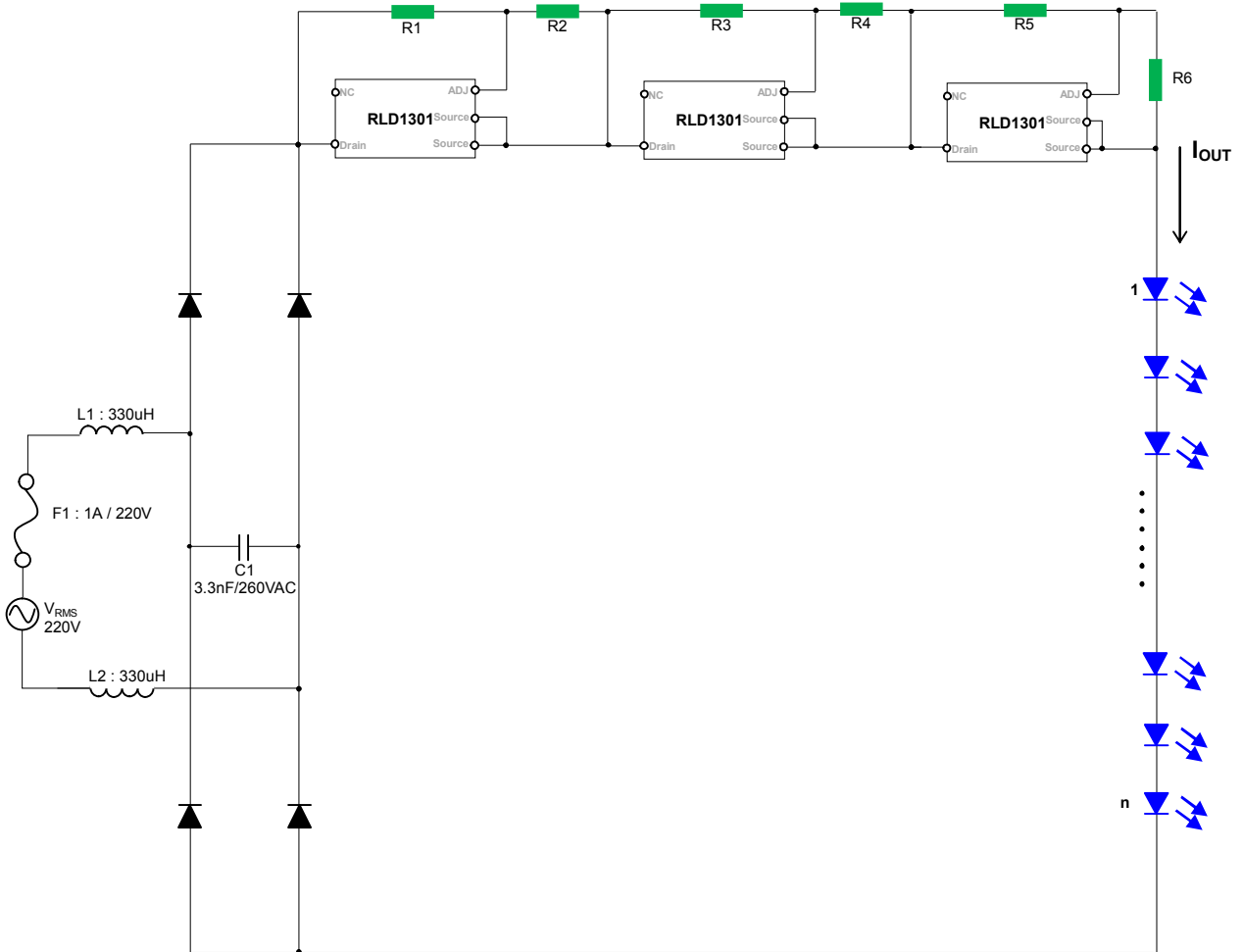
3-12W带电容低成本的LED灯具方案示例



3-5W低成本无电解电容LED灯具方案示例

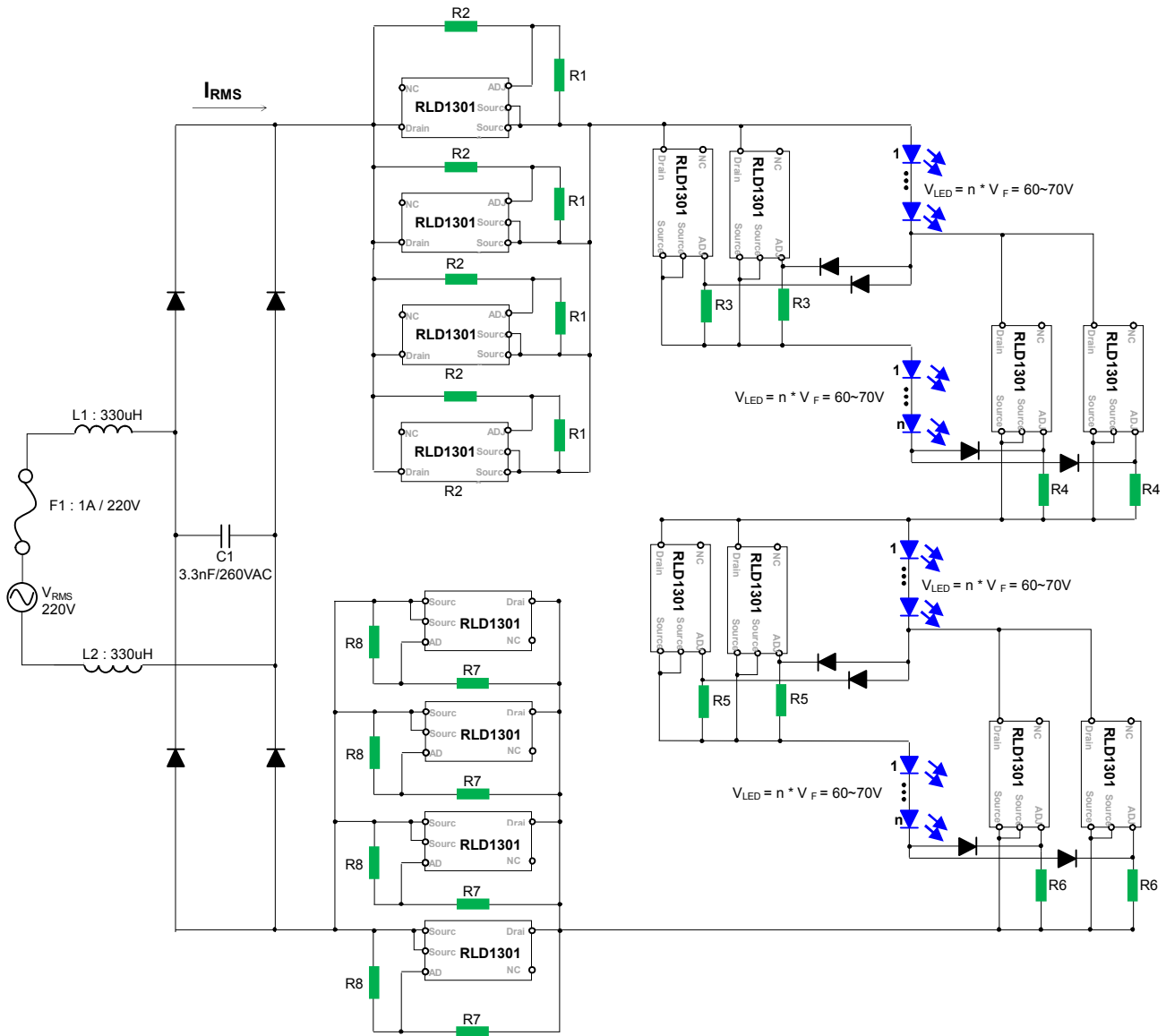


6-10W低成本无电解电容方案示例



RLD1301

40W LED灯具方案示例



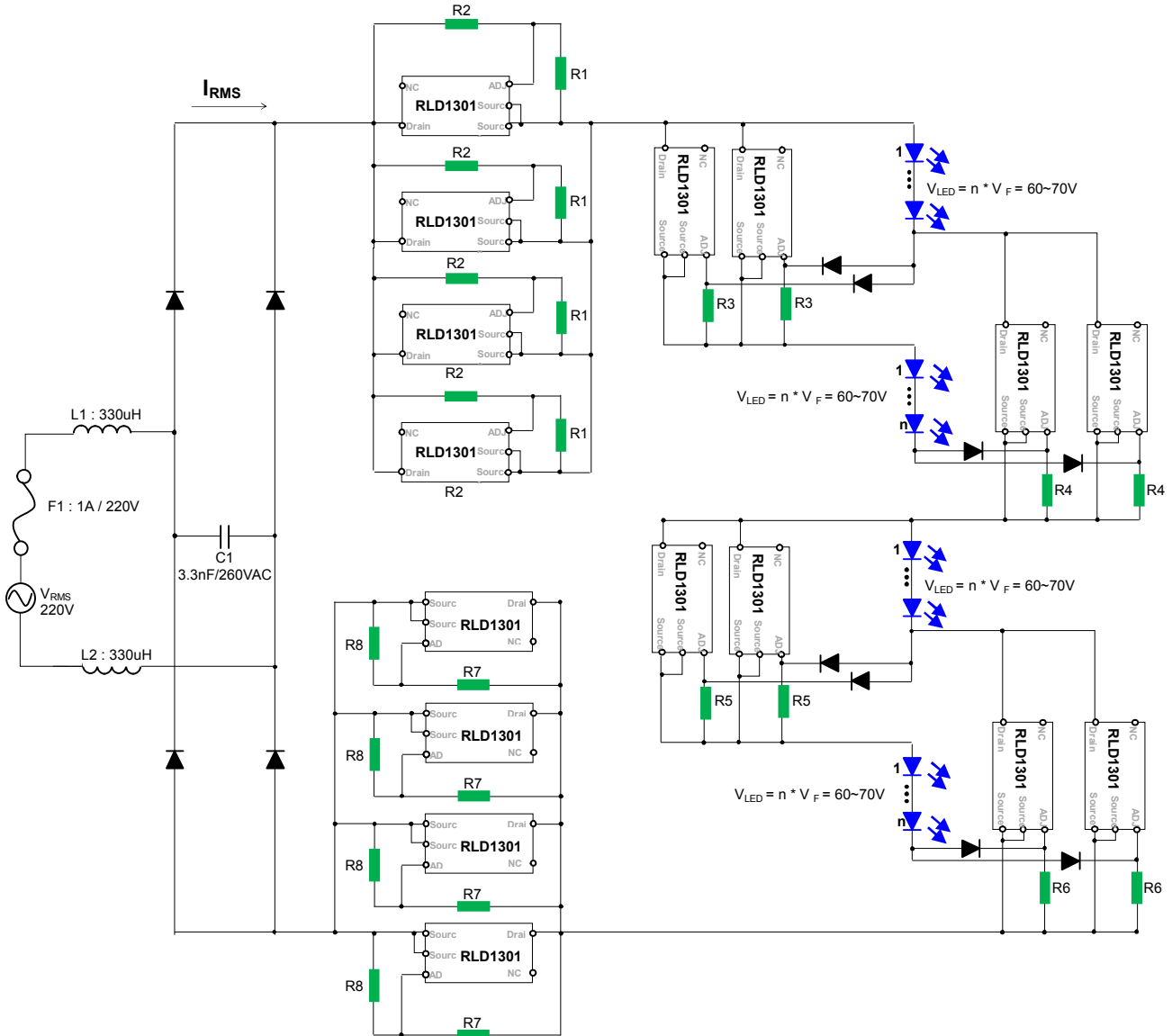
Unit : Ω

		I_{RMS}	R1	R2	R3	R4	R5	R6	R7	R8
$T_A = 25^\circ C$	40W	180mA	8	860	12	6	12	6	860	8

- 1) R2 R7 must use resistor above 1/2 W
- 2) R1, R3, R4, R5, R6, R8 must use resistor above 1/4 W

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30W LED灯具方案示例



Unit : Ω

		I_{RMS}	R1	R2	R3	R4	R5	R6	R7	R8
$T_A = 25^\circ\text{C}$	30W	140mA	10	1100	16	8	16	8	1100	10

1) R2 R7 must use resistor above 1/2 W

2) R1, R3, R4, R5, R6, R8 must use resistor above 1/4 W