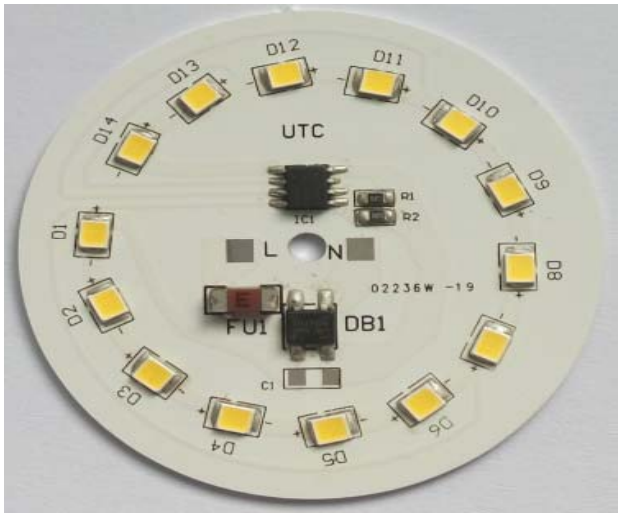
UNISONIC TECHNOLOGIES CO., LTD

12W LED Driver Using UL52B



Subject

UL52B 12W/50mA LED Driver Demo Board Manual

特点：

- 外围电路极其简单，无需变压器及电感器件
- 具有过温保护及自恢复功能
- 可将元件直接布于LED 灯板上，可自动化生产
- 方案元件极少，超低成本
- 高PF
- 具有良好的EMI 性能

Revision History

Revise Date	Version	Reason/Issue
2017/10/11	A	First Issue

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12W LED Driver Using UL52B

1. LED Driver Demo Board Specification

1.1. Input Characteristics

● AC input voltage rating	200Vac~240Vac
● AC input voltage range	180Vac ~ 264Vac
● AC input frequency range	47Hz ~ 53Hz

1.2. Output Characteristics

● Typical Output voltage	188V@220Vac
● Typical output current	50mA@220Vac

1.3. Performance Specifications

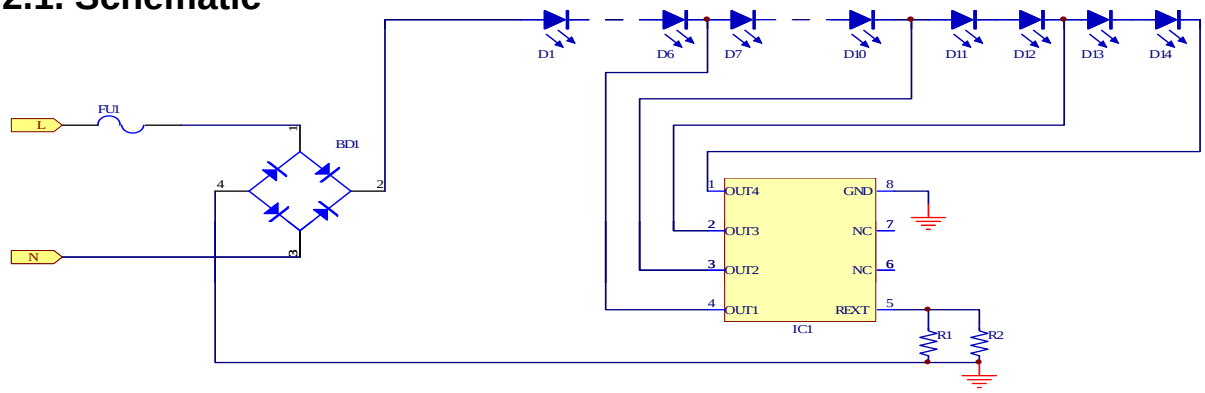
● Maximum output power	12W
● Efficiency	74.81%@220Vac

1.4. Environment

● Operation Temperature	0℃ to 40 ℃
● Operation Humidity	20% to 90% R.H
● Storage Temperature	-40℃ to 60 ℃
● Storage Humidity	0% to 90% R.H

2. LED Demo Board Information

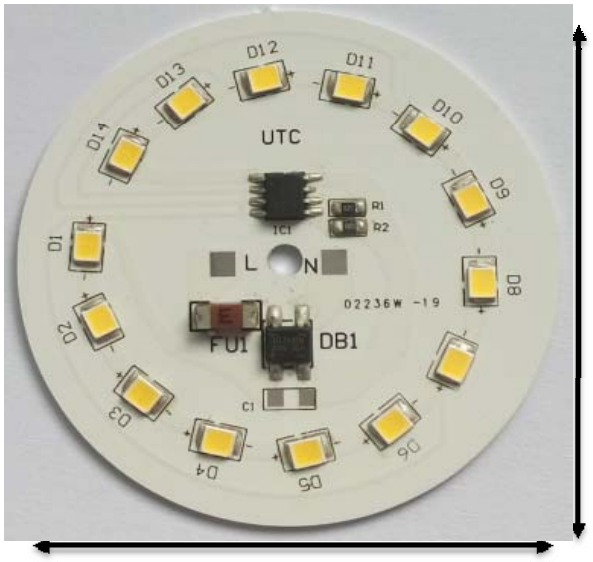
2.1. Schematic



2.2. BOM

No.	Position	Description	Quantity
1	FU1	1A/250V,2410贴片保险	1
2	BD1	UTC MB6S	1
3	R1	22R,1%,0805	1
4	R2	27R,1%,0805	1
5	LED1-LED14	18V/1W LED灯珠 ,2835	14
6	IC1	UTC UL52B HSOP-8	1

2.3. Demo Board Snapshot



56.0mm

56mm

3. Performance Evaluation

This document presented here is to describe the power module performance.

The measuring data are tested at the board end, unless otherwise specified.

The Summarized Result :

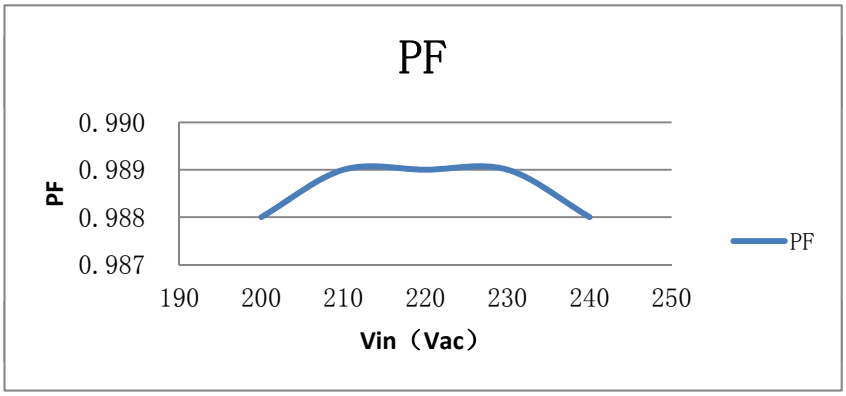
Item	Test result
1. Input Characteristics	
Efficiency (@220Vac)	74.81%@220Vac
2. Output characteristics	
Maximum Output Power	12W
Output Typical Voltage	188V@220Vac
Output Typical Current	50mA@220Vac

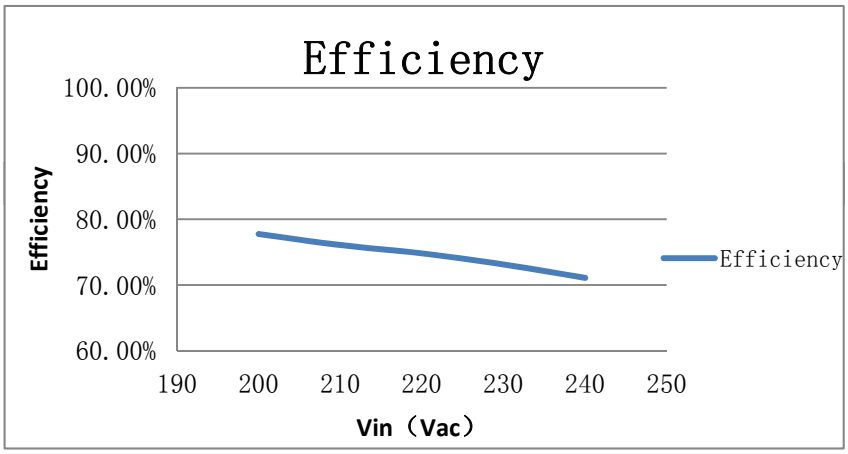
Test Equipment:

Item	Vendor	Model No:
1.AC Source	**GW INSTEK**	**APS-9501**
2.Digital Power meter	**DECTECH**	**3330S**
3. LED Load		
4.Digital Oscilloscope	**Tektronics**	**DPO3012**
5.Multi-meter		

3.1 Test data

VIN(Vac)	Pin(W)	PF	Io(mA)	Vo(V)	EFF
200	10.88	0.988	47.9	177	77.75%
210	11.89	0.989	49.29	184	76.07%
220	12.74	0.989	50.67	188	74.81%
230	13.57	0.989	51.95	191	73.12%
240	14.29	0.988	52.75	193	71.08%





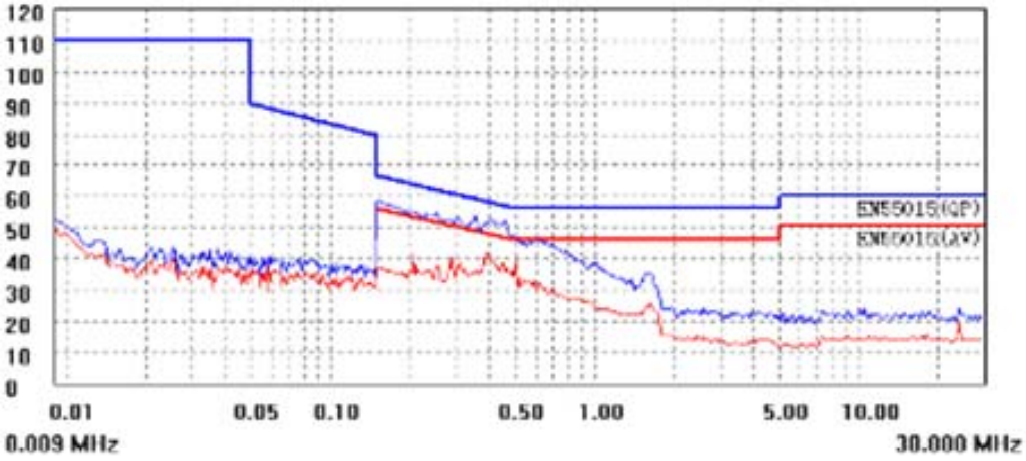
3.2 温升

测试条件：置于无对流的恒温箱中点亮30min，Vin=220Vac

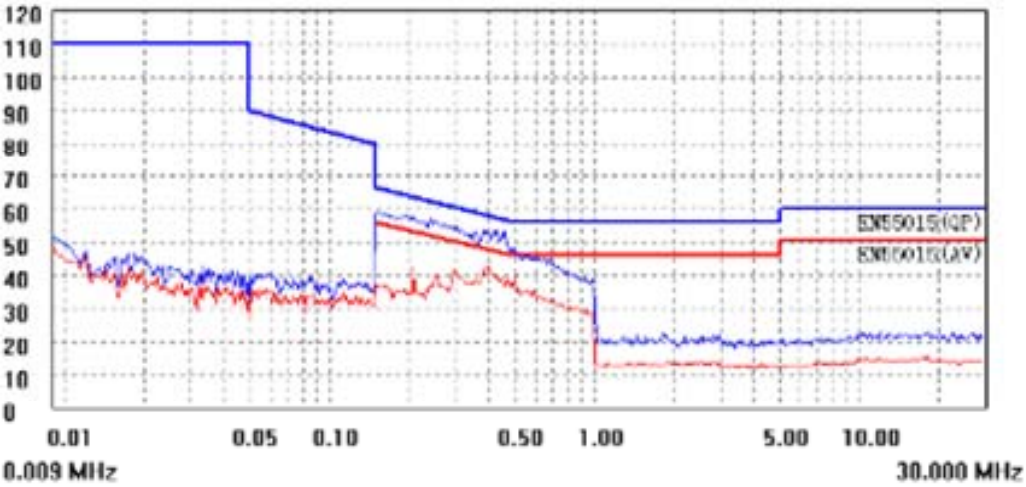
IC温度	光源板温度	环境温度	输出电流
99℃	102℃	25℃	50.11mA

4.EMI

Live Conduction@220Vac/50Hz, full load



Netural Conduction@220Vac/50Hz, full load



Vertical Radiated@220Vac/50Hz, full load