Test Report issued under the responsibility of:

TEST REPORT
IEC 62560
Self-Ballasted LED-Lamp
for general lighting services by voltage > 50V Safety specifications

Report Number. ..... :	ETA22100006S-001
Date of issue ..... :	November 04, 2022
Total number of pages ..... :	34 Pages
Name of Testing Laboratory preparing the Report ..... :	**Hangzhou ETA Testing Technology Co., Ltd** 8/F., Building A, The Western Science Park, Yuhang District, Hangzhou, Zhejiang, China
Applicant's name ..... :	**Hangzhou Tiger Electron & Electric Co., Ltd.**
Address ..... :	No.15 Xingfa Rd., Xingqiao Town, Yuhang District, Hangzhou, P.R. China
Test specification:	
Standard ..... :	IEC 62560:2011, AMD1:2015
Test procedure ..... :	CE-LVD
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC62560C
Test Report Form(s) Originator .... :	DEKRA Certification B.V.
Master TRF ..... :	Dated 2018-12-21

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Test item description ..... :	Self-ballasted LED lamps
Trade Mark ..... :	N/A
Manufacturer ..... :	Same as applicant above
Model/Type reference ..... :	See model list.
Ratings ..... :	220-240V ~, 50/60Hz Details see model list.

Model list 1:

Model	Rated wattage (W)	rated current (A)	Bulb type	Lamp cap	PCB used	CCT.
A70-16W-3000K	16	0,13	A70	E27/ B22d	PCB1	3000K
A70-16W-4000K	16	0,13	A70	E27/ B22d	PCB1	4000K
A70-16W-6500K	16	0,13	A70	E27/ B22d	PCB1	6500K
A70-15W-3000K	15	0,125	A70	E27/ B22d	PCB1	3000K
A70-15W-4000K	15	0,125	A70	E27/ B22d	PCB1	4000K
A70-15W-6500K	15	0,125	A70	E27/ B22d	PCB1	6500K
A70-14W-3000K	14	0,12	A70	E27/ B22d	PCB1	3000K
A70-14W-4000K	14	0,12	A70	E27/ B22d	PCB1	4000K
A70-14W-6500K	14	0,12	A70	E27/ B22d	PCB1	6500K
A60-6W-3000K	6	0,042	A60	E27/ B22d	PCB2	3000K
A60-6W-4000K	6	0,042	A60	E27/ B22d	PCB2	4000K
A60-6W-6500K	6	0,042	A60	E27/ B22d	PCB2	6500K
A60-9W-3000K	9	0,063	A60	E27/ B22d	PCB2	3000K
A60-9W-4000K	9	0,063	A60	E27/ B22d	PCB2	4000K
A60-9W-6500K	9	0,063	A60	E27/ B22d	PCB2	6500K
A60T-11W-3000K	11	0,088	A60	E27/ B22d	PCB2	3000K

A60T-11W-4000K	11	0,088	A60	E27/ B22d	PCB2	4000K
A60T-11W-6500K	11	0,088	A60	E27/ B22d	PCB2	6500K
A60T-10W-3000K	10	0,080	A60	E27/ B22d	PCB2	3000K
A60T-10W-4000K	10	0,080	A60	E27/ B22d	PCB2	4000K
A60T-10W-6500K	10	0,080	A60	E27/ B22d	PCB2	6500K
A60T-9W-3000K	9	0,073	A60	E27/ B22d	PCB2	3000K
A60T-9W-4000K	9	0,073	A60	E27/ B22d	PCB2	4000K
A60T-9W-6500K	9	0,073	A60	E27/ B22d	PCB2	6500K
G45-6W-3000K	6	0,05	G45	E27/ E14	PCB3	3000K
G45-6W-4000K	6	0,05	G45	E27/ E14	PCB3	4000K
G45-6W-6500K	6	0,05	G45	E27/ E14	PCB3	6500K
G45-5W-3000K	5	0,042	G45	E27/ E14	PCB3	3000K
G45-5W-4000K	5	0,042	G45	E27/ E14	PCB3	4000K
G45-5W-6500K	5	0,042	G45	E27/ E14	PCB3	6500K
G45-4W-3000K	4	0,033	G45	E27/ E14	PCB3	3000K
G45-4W-4000K	4	0,033	G45	E27/ E14	PCB3	4000K
G45-4W-6500K	4	0,033	G45	E27/ E14	PCB3	6500K
G45-3W-3000K	3	0,024	G45	E27/ E14	PCB3	3000K
G45-3W-4000K	3	0,024	G45	E27/ E14	PCB3	4000K
G45-3W-6500K	3	0,024	G45	E27/ E14	PCB3	6500K
G45-2W-3000K	2	0,015	G45	E27/ E14	PCB3	3000K
G45-2W-4000K	2	0,015	G45	E27/ E14	PCB3	4000K

G45-2W-6500K	2	0,015	G45	E27/ E14	PCB3	6500K
G45-1W-3000K	1	0,006	G45	E27/ E14	PCB3	3000K
G45-1W-4000K	1	0,006	G45	E27/ E14	PCB3	4000K
G45-1W-6500K	1	0,006	G45	E27/ E14	PCB3	6500K
C37-6W-3000K	6	0,05	C37	E27/ E14	PCB3	3000K
C37-6W-4000K	6	0,05	C37	E27/ E14	PCB3	4000K
C37-6W-6500K	6	0,05	C37	E27/ E14	PCB3	6500K
C37-5W-3000K	5	0,042	C37	E27/ E14	PCB3	3000K
C37-5W-4000K	5	0,042	C37	E27/ E14	PCB3	4000K
C37-5W-6500K	5	0,042	C37	E27/ E14	PCB3	6500K
C37-4W-3000K	4	0,033	C37	E27/ E14	PCB3	3000K
C37-4W-4000K	4	0,033	C37	E27/ E14	PCB3	4000K
C37-4W-6500K	4	0,033	C37	E27/ E14	PCB3	6500K
C37-3W-3000K	3	0,024	C37	E27/ E14	PCB3	3000K
C37-3W-4000K	3	0,024	C37	E27/ E14	PCB3	4000K
C37-3W-6500K	3	0,024	C37	E27/ E14	PCB3	6500K
C37-2W-3000K	2	0,015	C37	E27/ E14	PCB3	3000K
C37-2W-4000K	2	0,015	C37	E27/ E14	PCB3	4000K
C37-2W-6500K	2	0,015	C37	E27/ E14	PCB3	6500K
C37-1W-3000K	1	0,006	C37	E27/ E14	PCB3	3000K
C37-1W-4000K	1	0,006	C37	E27/ E14	PCB3	4000K
C37-1W-6500K	1	0,006	C37	E27/ E14	PCB3	6500K

C37L-6W-3000K	6	0,05	C37	E27/ E14	PCB3	3000K
C37L-6W-4000K	6	0,05	C37	E27/ E14	PCB3	4000K
C37L-6W-6500K	6	0,05	C37	E27/ E14	PCB3	6500K
C37L-5W-3000K	5	0,042	C37	E27/ E14	PCB3	3000K
C37L-5W-4000K	5	0,042	C37	E27/ E14	PCB3	4000K
C37L-5W-6500K	5	0,042	C37	E27/ E14	PCB3	6500K
C37L-4W-3000K	4	0,033	C37	E27/ E14	PCB3	3000K
C37L-4W-4000K	4	0,033	C37	E27/ E14	PCB3	4000K
C37L-4W-6500K	4	0,033	C37	E27/ E14	PCB3	6500K
C37L-3W-3000K	3	0,024	C37	E27/ E14	PCB3	3000K
C37L-3W-4000K	3	0,024	C37	E27/ E14	PCB3	4000K
C37L-3W-6500K	3	0,024	C37	E27/ E14	PCB3	6500K
C37L-2W-3000K	2	0,015	C37	E27/ E14	PCB3	3000K
C37L-2W-4000K	2	0,015	C37	E27/ E14	PCB3	4000K
C37L-2W-6500K	2	0,015	C37	E27/ E14	PCB3	6500K
C37L-1W-3000K	1	0,006	C37	E27/ E14	PCB3	3000K
C37L-1W-4000K	1	0,006	C37	E27/ E14	PCB3	4000K
C37L-1W-6500K	1	0,006	C37	E27/ E14	PCB3	6500K
GU10-6W-3000K	6	0,05	MR16	GU10	PCB4	3000K
GU10-6W-4000K	6	0,05	MR16	GU10	PCB4	4000K
GU10-6W-6500K	6	0,05	MR16	GU10	PCB4	6500K
GU5.3-6W-3000K	6	0,05	MR16	GU5.3	PCB4	3000K

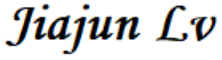
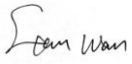
GU5.3-6W-4000K	6	0,05	MR16	GU5.3	PCB4	4000K
GU5.3-6W-6500K	6	0,05	MR16	GU5.3	PCB4	6500K

Model list 2:

Model	Rated wattage (W)	rated current (A)	Bulb type	Lamp cap	PCB used	CCT.
A80-18W-3000K	18	0,145	A80	E27/B22	PCB1	3000K
A80-18W-4000K	18	0,145	A80	E27/B22	PCB1	4000K
A80-18W-6500K	18	0,145	A80	E27/B22	PCB1	6500K
G125-18W-3000K	18	0,145	G125	E27/B22	PCB1	3000K
G125-18W-4000K	18	0,145	G125	E27/B22	PCB1	4000K
G125-18W-6500K	18	0,145	G125	E27/B22	PCB1	6500K
G125-20W-3000K	20	0.16	G125	E27/B22	PCB1	3000K
G125-20W-4000K	20	0,16	G125	E27/B22	PCB1	4000K
G125-20W-6500K	20	0.16	G125	E27/B22	PCB1	6500K
A60-7W-3000K	7	0,055	A60	E27/B22	PCB2	3000K
A60-7W-4000K	7	0,055	A60	E27/B22	PCB2	4000K
A60-7W-6500K	7	0,055	A60	E27/B22	PCB2	6500K
A60-8W-3000K	8	0,062	A60	E27/B22	PCB2	3000K
A60-8W-4000K	8	0,062	A60	E27/B22	PCB2	4000K
A60-8W-6500K	8	0,062	A60	E27/B22	PCB2	6500K
A60W-12W-3000K	12	0,095	A60	E27/B22	PCB2	3000K
A60W-12W-4000K	12	0,095	A60	E27/B22	PCB2	4000K
A60W-12W-6500K	12	0,095	A60	E27/B22	PCB2	6500K

A65W-15W-3000K	15	0,12	A65	E27/B22	PCB2	3000K
A65W-15W-4000K	15	0,12	A65	E27/B22	PCB2	4000K
A65W-15W-6500K	15	0,12	A65	E27/B22	PCB2	6500K
R63-8W-3000K	8	0,062	R63	E27	PCB2	3000K
R63-8W-4000K	8	0,062	R63	E27	PCB2	4000K
R63-8W-6500K	8	0,062	R63	E27	PCB2	6500K
G45-7W-3000K	7	0,055	G45	E27/E14	PCB3	3000K
G45-7W-4000K	7	0,055	G45	E27/E14	PCB3	4000K
G45-7W-6500K	7	0,055	G45	E27/E14	PCB3	6500K
G45-8W-3000K	8	0,062	G45	E27/E14	PCB3	3000K
G45-8W-4000K	8	0,062	G45	E27/E14	PCB3	4000K
G45-8W-6500K	8	0,062	G45	E27/E14	PCB3	6500K
C37-7W-3000K	7	0,055	C37	E27/E14	PCB3	3000K
C37-7W-4000K	7	0,055	C37	E27/E14	PCB3	4000K
C37-7W-6500K	7	0,055	C37	E27/E14	PCB3	6500K
C37-8W-3000K	8	0,062	C37	E27/E14	PCB3	3000K
C37-8W-4000K	8	0,062	C37	E27/E14	PCB3	4000K
C37-8W-6500K	8	0,062	C37	E27/E14	PCB3	6500K
R50-6W-3000K	6	0,048	R50	E14	PCB3	3000K
R50-6W-4000K	6	0,048	R50	E14	PCB3	4000K
R50-6W-6500K	6	0,048	R50	E14	PCB3	6500K
GU10-3W-3000K	3	0,025	MR16	GU10	PCB4	3000K

GU10-3W-4000K	3	0,025	MR16	GU10	PCB4	4000K
GU10-3W-6500K	3	0,025	MR16	GU10	PCB4	6500K
GU10-4W-3000K	4	0,034	MR16	GU10	PCB4	3000K
GU10-4W-4000K	4	0,034	MR16	GU10	PCB4	4000K
GU10-4W-6500K	4	0,034	MR16	GU10	PCB4	6500K
GU10-5W-3000K	5	0,04	MR16	GU10	PCB4	3000K
GU10-5W-4000K	5	0,04	MR16	GU10	PCB4	4000K
GU10-5W-6500K	5	0,04	MR16	GU10	PCB4	6500K
GU10-7W-3000K	7	0,055	MR16	GU10	PCB4	3000K
GU10-7W-4000K	7	0,055	MR16	GU10	PCB4	4000K
GU10-7W-6500K	7	0,055	MR16	GU10	PCB4	6500K
GU10-8W-3000K	8	0,062	MR16	GU10	PCB4	3000K
GU10-8W-4000K	8	0,062	MR16	GU10	PCB4	4000K
GU10-8W-6500K	8	0,062	MR16	GU10	PCB4	6500K

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**Testing Laboratory:**	Hangzhou ETA Testing Technology Co,, Ltd	
Testing location/ address.....:		8/F., Building A, The Western Science Park, Yuhang District, Hangzhou, Zhejiang, China	
Tested by (name, function, signature).....:		Jiajun Lv (Certification Engineer)	
Approved by (name, function, signature)...:		Sean Wan (Reviewer)	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address.....:			
Tested by (name + signature).....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature)...:			
Supervised by (name, function, signature) :			

List of Attachments (including a total number of pages in each attachment):

- Page 1 – 21: test reports;
- Page 22 – 34: photos of the samples;

Summary of testing:

Some representative samples of the product covered by this report have been tested and comply with the applicable requirements of this standard.

Tests performed (name of test and test clause):	**Testing location:**
Full	Same as previous page.

Summary of compliance with National Differences (List of countries addressed):

☒ **The product fulfils the requirements of EN 62560:2012 + A1:2015 + A11:2019.**

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

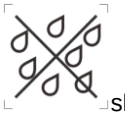
Take model A70-16W-6500K as example.

Model: A70-16W-6500K
220-240V~, 50/60Hz, 0,13A, 16W, E27; 6500K



Hangzhou Tiger Electron & Electric Co., Ltd.
No.15 Xingfa Rd., Xingqiao Town, Yuhang District, Hangzhou, P.R. China

 is on the package or lamp.

The height of graphical symbol  shall not be less than 5 mm.
The height of symbol of WEEE shall not be less than 7 mm.

Label of all models are the same except model name and parameters.
The entity (in EU) who put the product on the market must have their name and address on the product.

Test item particulars.....:	Self-ballasted LED lamps
Classification of installation and use.....:	Normal use
Supply Connection.....:	E27 / E14 / B22d / GU5.3 / GU10 Lamp cap
.....:	
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item .....:	2022.10.01
Date (s) of performance of tests.....:	2022.10.01 – 2022.11.03

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) .....:	**Hangzhou Tiger Electron & Electric Co., Ltd.** No.15 Xingfa Rd., Xingqiao Town, Yuhang District, Hangzhou, P.R. China

General product information and other remarks:

The products covered by this report are self-ballasted LED lamps for normal use;

All models have similar construction, except the bulb type, circuit diagram, PCB layout, lamp cap, lamp bead amount and CCT are different and the different parameter of respective components in order to achieve different power consumption.

The lamp cannot be dismantled without being permanently damaged.

All models are not suitable for water contact, and all models are non-dimmable.

All the tests were performed on models G125-20W-6500K (E27), A65W-15W-6500K (E27), C37-8W-6500K (E27) and GU10-8W-6500K which were considered representative for the series and gave the most unfavourable test results.

Clause 10 Cap temperature rise and Clause 6 Interchangeability tests were also performed on models C37-8W-6500K (E14), G125-20W-6500K (B22d) and GU5.3-6W-6500K.

Incorporated LEDs are low optical emittion and evaluated to meet the requirements of Exempt Group of EN 62471:2008.

According clause 4.2.2 of EN 62493:2015, lighting equipment deemed to comply with the requirements of EN 62493:2015 without testing.

IEC 62560			
Clause	Requirement + Test	Result - Remark	Verdict

4	GENERAL REQUIREMENTS		P
4.1	The lamp shall be so designed and constructed that in normal use cause no danger to the user.		P
4.2	Self-ballasted LED-Lamp are non-repairable.		P

5	MARKING		P
5.1	Mandatory marking		P
	- mark of origin		P
	- rated supply voltage (V) .....:	220-240V~	P
	- rated wattage (W).....:	See model list	P
	- rated frequency (Hz).....:	50/60Hz	P
5.2	Addition marking		P
	- rated current (A) .....:	See model list	P
	- weight significantly higher		P
	- special conditions or restrictions		N/A
	Not suitable for dimming; symbol  used		P
	- not suitable for water contact		P
5.3	Marking durable and legible		P
	rubbing 15 s water, 15 s petroleum; marking legible		P

6	INTERCHANGEABILITY		N/A
6.1	**Cap interchangeability in accordance with IEC 60061-1**		P
	Gauge in accordance with IEC 60061-3		P
6.2	**Bending moment and mass imparted by the lamp at the lampholder**		P
	Bending moment imparted by the lamp at the lampholder (Nm) ..... :	E27: Max. 0,25Nm; E14: Max. 0,02Nm; B22d: Max. 0,25Nm; GU5.3: Max. 0,012Nm; GU10: Max. 0,012Nm;	P

IEC 62560			
Clause	Requirement + Test	Result - Remark	Verdict
	Mass not exceeding value table 2 or as specified in IEC 60061-1 (kg) ..... :	E27: Max. 0,130kg; B22d: Max. 0,131kg; E14: Max. 0,018kg; GU5.3: Max. 0,022kg; GU10: Max. 0,023kg;	P
7	**PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS**		**P**
	Internal, basic insulated or live metal parts not accessible		P
	Tested with a test finger with a force of 10 N		P
	Compliance checked with appropriate gauges		P
8	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		**P**
8.2	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance with d.c. 500 V (MΩ):		P
	≥ 4 MΩ for double or reinforced insulation .....:		P
8.3	Immediately after clause 8.2 electric strength test for 1 min		P
	Double or reinforced insulation, 4U + 2000 V	2960V	P
	No flashover or breakdown		P
9	**MECHANICAL STRENGTH**		**P**
9.2.1	Torsion resistance of unused lamps		N/A
	B15d or E14 Cap..... 1,15 Nm		P
	B22d, E26, E26d or E27 Cap..... 3,0 Nm		P
	E11 or E12 Cap..... 0,8 Nm		N/A
	E17 Cap ..... 1,5 Nm		N/A
	E39 or E40 Cap..... 5,0 Nm		N/A
	GX53 Cap ..... 3,0 Nm		N/A
9.3	**Compliance criteria**		P
	Clause 8 shall comply after the mechanical strength test.		P
9.4	**Axial strength of Edison caps**		P
	After full insertion into the gauge an axial force of Table 4 is applied to the central contact (N) .....:	E27: 120N E14: 80N	P

IEC 62560			
Clause	Requirement + Test	Result - Remark	Verdict
	The insulation around the central contact shall remain intact		P
10	**CAP TEMPERATURE RISE**		**P**
	The cap temperature rise Δt_s of the lamp shall not exceed 120 K.	E27: Max. Δt_s = 65,5K= <120K E14: Max. Δt_s = 49,6K= <120K B22d: Max. Δt_s = 64,3K= <120K GU5.3: Max. Δt_s = 62,3K= <120K GU10: Max. Δt_s = 64,2K= <120K	P
11	**RESISTANCE TO HEAT**		**P**
	Parts of insulating material providing protection against electric shock, retaining live parts in position, ball-pressure test:	(see appended table)	P
12	**RESISTANCE TO FLAME AND IGNITION**		**P**
	External parts of insulating material preventing electric shock glow-wire test 650 °C	(see appended table)	P
13	**FAULT CONDITIONS**		**P**
13.2	Fault conditions: where diagram indicates fault condition impairs safety, electronic components have been short-circuited or disconnected	(see appended table)	P
13.3	When operated under fault conditions the lamp		P
	- does not emit flames or molten material		P
	- does not produce flammable gases or smoke		P
	- live parts not accessible		P
	After the tests the insulation resistance with d.c. 1000 V complies with requirements of Cl. 8.1 ..... :		P
14 (16)	**CREEPAGE DISTANCES AND CLEARANCES**		**P**
	Creepage distances and clearances according to IEC 61347-1	(see appended table)	P

IEC 62560			
Clause	Requirement + Test	Result - Remark	Verdict
	Conductive accessible parts according to IEC 60598-1	(see appended table)	P

15	**ABNORMAL OPERATION**		**P**
	Non-dimmable self-ballasted lamps are tested on a dimmer or an electronic switch according the test circuit shown in Figure 8		P
	Operate the lamp for 8 h at most onerous dimming level		P
	When operated under abnormal operation the lamp		P
	- does not catch fire		P
	- does not produce flammable gases		P
	- live parts not accessible		P

16	**TEST CONDITIONS FOR DIMMABLE LAMPS**		**N/A**
	Test are carried out at maximum power setting for Clause 10 and Clause 17		N/A

17	**PHOTOBIOLOGICAL SAFETY**		**P**
17.1	**UV radiation**		**N/A**
	The LED lamp doesn't exceed 2mW/klm		N/A
17.2	**Blue light hazard**		**P**
	Assessed according to IEC TR 62778		P
	LED lamps shall be RG0 or RG1		P

18	**INGRESS PROTECTION**		**N/A**
18.1	Lamps shall be suitable for water contact unless marked with Figure 6		N/A
18.2	The lamp is subjected to an IPX4 test according to IEC 60598-1		N/A
	The lamp complies with the compliance provisions of 9.2 of IEC 60598-1		N/A
	Lamps constructed so that it is sealed to exclude water need not to be tested		N/A

IEC 62560			
Clause	Requirement + Test	Result - Remark	Verdict

11	TABLE: Ball Pressure Test of Thermoplastics		N/A
Allowed impression diameter (mm) ..... :		2mm	—

Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)
Lamp cap insulator& enclosure& plastic under the MPCB	See ANNEX 1	127	1,2
Lampshade	See ANNEX 1	116	1,3
PCB	See ANNEX 1	125	0,9
Supplementary information: N/A			

12	TABLE: Resistance to heat and fire - Glow wire tests			N/A
Object/ Part No./ Material	**Manufacturer/ trademark**	**Glow wire test (GWT); (°C)**		**Verdict**
		650		
		te	**ti**	
Lamp cap insulator& enclosure& plastic under the MPCB	See ANNEX 1	<30s	<10s	P
Lampshade	See ANNEX 1	<30s	<10s	P

13	TABLE: tests of fault conditions		P
For PCB1 series			
Part	Simulated fault	Result	Hazard
DB1	Short-circuited	Fuse resistor opened	~~YES~~/NO
C1	Short-circuited	Fuse resistor opened	~~YES~~/NO
C2	Short-circuited	Fuse resistor opened	~~YES~~/NO
U1	Short-circuited	Not work	~~YES~~/NO
C3	Short-circuited	Not work	~~YES~~/NO
Output	Short-circuited	Not work	~~YES~~/NO

13	TABLE: tests of fault conditions		P
For PCB2 series			
Part	Simulated fault	Result	Hazard
DB1	Short-circuited	Fuse resistor opened	~~YES~~/NO
C1	Short-circuited	Fuse resistor opened	~~YES~~/NO

IEC 62560			
Clause	Requirement + Test	Result - Remark	Verdict

C2	Short-circuited	Fuse resistor opened	~~YES~~/NO
U1	Short-circuited	Not work	~~YES~~/NO
C3	Short-circuited	Not work	~~YES~~/NO
Output	Short-circuited	Not work	~~YES~~/NO

13	**TABLE: tests of fault conditions**		**P**
For PCB3 series			
Part	Simulated fault	Result	Hazard
DB1	Short-circuited	Fuse resistor opened	~~YES~~/NO
C1	Short-circuited	Fuse resistor opened	~~YES~~/NO
C2	Short-circuited	Fuse resistor opened	~~YES~~/NO
U1	Short-circuited	Not work	~~YES~~/NO
C3	Short-circuited	Not work	~~YES~~/NO
Output	Short-circuited	Not work	~~YES~~/NO

13	**TABLE: tests of fault conditions**		**P**
For PCB4 series			
Part	Simulated fault	Result	Hazard
DB1	Short-circuited	Fuse resistor opened	~~YES~~/NO
C1	Short-circuited	Fuse resistor opened	~~YES~~/NO
C2	Short-circuited	Fuse resistor opened	~~YES~~/NO
U1	Short-circuited	Not work	~~YES~~/NO
C3	Short-circuited	Not work	~~YES~~/NO
Output	Short-circuited	Not work	~~YES~~/NO

14	**TABLE: Clearance And Creepage Distance Measurements**					**P**
For PCB1 series						
clearance cl and creepage distance dcr at/of:	**Up (V)**	**U r.m.s. (V)**	**Required cl (mm)**	**cl (mm)**	**Required dcr (mm)**	**dcr (mm)**
Between live parts and accessible parts	--	240	3,0	5,3	5,0	>5,5
Between L & N on lamp cap	--	240	1,5	4,9	2,5	4,9
Supplementary information:						

IEC 62560			
Clause	Requirement + Test	Result - Remark	Verdict

14	TABLE: Clearance And Creepage Distance Measurements					P
For PCB2 series						
clearance cl and creepage distance dcr at/of:	**Up (V)**	**U r.m.s. (V)**	**Required cl (mm)**	**cl (mm)**	**Required dcr (mm)**	**dcr (mm)**
Between live parts and accessible parts	--	240	3,0	5,0	5,0	>5,5
Between L & N on lamp cap	--	240	1,5	5,1	2,5	5,1
Supplementary information:						

14	TABLE: Clearance And Creepage Distance Measurements					P
For PCB3 series						
clearance cl and creepage distance dcr at/of:	**Up (V)**	**U r.m.s. (V)**	**Required cl (mm)**	**cl (mm)**	**Required dcr (mm)**	**dcr (mm)**
Between live parts and accessible parts	--	240	3,0	4,9	5,0	>5,5
Between L & N on lamp cap	--	240	1,5	3,8	2,5	3,8
Supplementary information:						

14	TABLE: Clearance And Creepage Distance Measurements					P
For PCB4 series						
clearance cl and creepage distance dcr at/of:	**Up (V)**	**U r.m.s. (V)**	**Required cl (mm)**	**cl (mm)**	**Required dcr (mm)**	**dcr (mm)**
Between live parts and accessible parts	--	240	3,0	4,1	5,0	>5,5
Between L & N on lamp cap	--	240	1,5	4,2	2,5	4,2
Supplementary information:						

IEC 62560			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1	TABLE: Critical components information					P
Object / part No.	**Code**	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
Lamp cap insulator& enclosure& plastic under the MPCB	C	NINGBO RS PLASTIC TECHNOLOGY CO LTD	PA-PS-1	PPS; V-0; 130°C	EN 62560	UL E471541 Test with appliance
Lampshade	C	Fujian Huasu Innovative Plastics Material Co Ltd	HS20(aa)	PC; 130°C	EN 62560	UL E477366 Test with appliance
Internal wire	C	Shenzhen Runqi Wire Co Ltd	3239	10-24AWG; 200°C; 60000V	EN 62560	UL E495994 Test with appliance
Fuse resistor	C	Guangdong Xinxuyuan Precision Electronic Technology Co Ltd	RXF-0.5WS	1W; 0,22-100Ω	EN 62560	UL E522284 Test with appliance
Heat-shrinkable tube	C	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR; RSFR-H	600V; 125°C	EN 62560	UL E203950 Test with appliance
PCB	C	JIANGXI HONGYU CIRCUIT TECHNOLOGY CO LTD	HY-6; HY-8	V-0; 130℃	EN 62560	UL E309772 Test with appliance
LED	C	HuNan Pusisat Opto Technology Co., Ltd	2835	Vf=9V; If=100mA; 2700-6500K	IEC TR 62778 EN 62471	Test with appliance

Supplementary information:

[1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.

The codes above have the following meaning:

A - The component is replaceable with another one, also certified, with equivalent characteristics

B - The component is replaceable if authorised by the test house

C - Integrated component tested together with the appliance

D - Alternative component

IEC 62560			
Clause	Requirement + Test	Result - Remark	Verdict
	COMMON MODIFICATIONS (EN 62560:2012+A1:2015+A11:2019)		**P**
	Lamps with the following caps are excluded		**P**
	E11		N/A
	E12		N/A
	E17		N/A
	E26		N/A
	E26d		N/A
	E29		N/A
	Bibliography		**P**
	IEC 60432-1		N/A
	IEC 62471		P
7	**Protection against accidental contact with live parts**		**P**
7.Z2	Fixing of conductors		P
7.Z2.1	The fixing of the conductors inside the lamp shall be such that, if a conductor becomes loose or detached, the conductor cannot reduce clearances or creepage distances below the values as specified in 14.		P
7.Z2.2	Applying a force of 10 N in the most unfavourable direction		P
	EXAMPLE Constructions regarded as meeting the requirements include		P
	close-fitting tubing (for example, a heat shrink or rubber sleeve), applied over the wire and its termination;		N/A
	conductors connected by soldering and held in place near to the termination, independently of the soldered connection;		N/A
	conductors connected by soldering and securely hooked in before soldering, provided that the hole through which the conductor is passed is not unduly large;		P
	conductors connected to screw terminals, with an additional fixing near to the terminal that clamps, in the case of stranded conductors, the insulation and not only the conductors;		N/A
	conductors connected to screw terminals and provided with terminators that are unlikely to become free (for example, ring lugs crimped onto the conductors), however, the pivoting of such terminators is considered; or		N/A
	short rigid conductors that remain in position when the terminal screw is loosened.		N/A

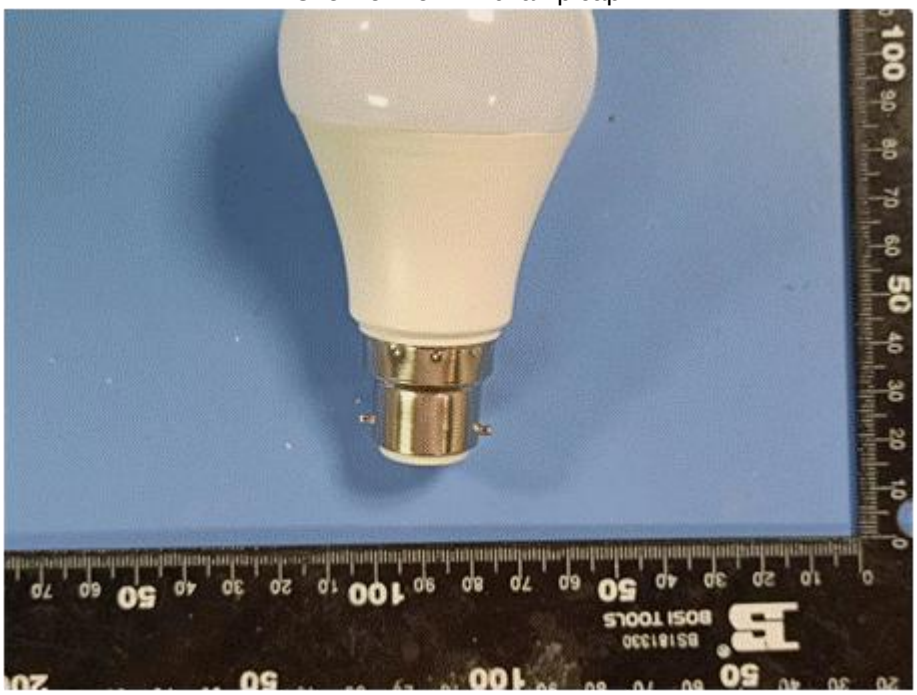
Remarks

Overview

From left to right: GU10 lamp cap,GU5.3 lamp cap, E14 lamp cap, E27 lamp cap



Overview for B22d lamp cap



Remarks

Overview for A70



Overview for A60



Remarks

Overview for C37

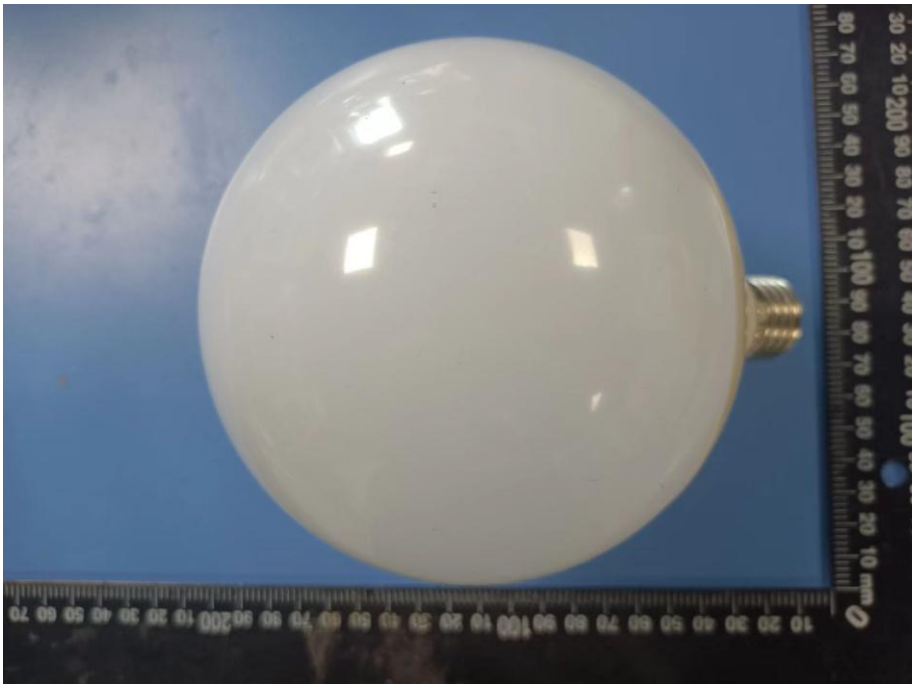


Overview for MR16



Remarks

Overview for G125



Overview for A65



Remarks

Overview for A80



Overview for R63



Remarks

Overview for R50

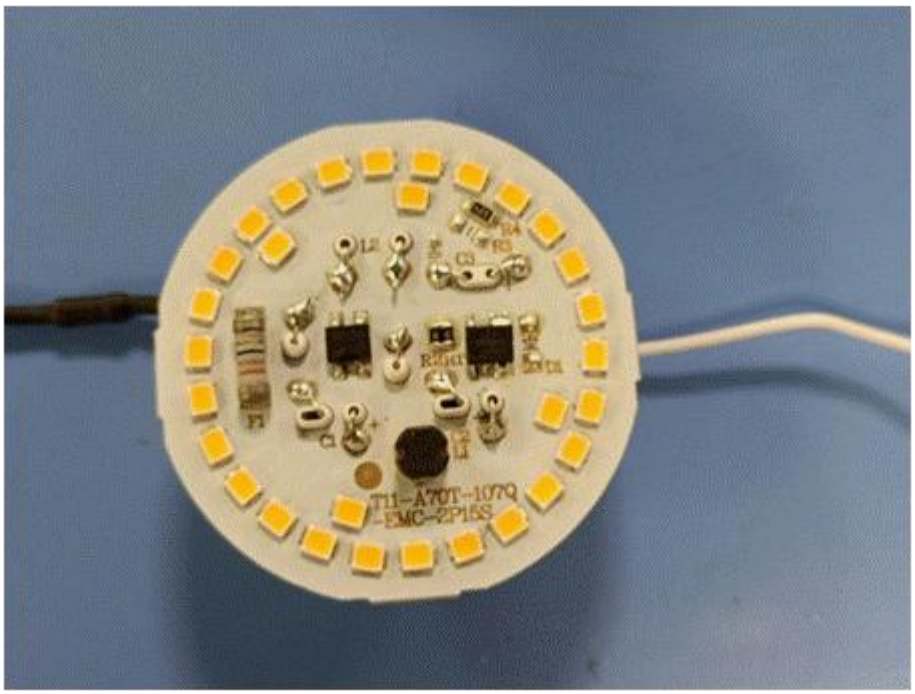


Remarks

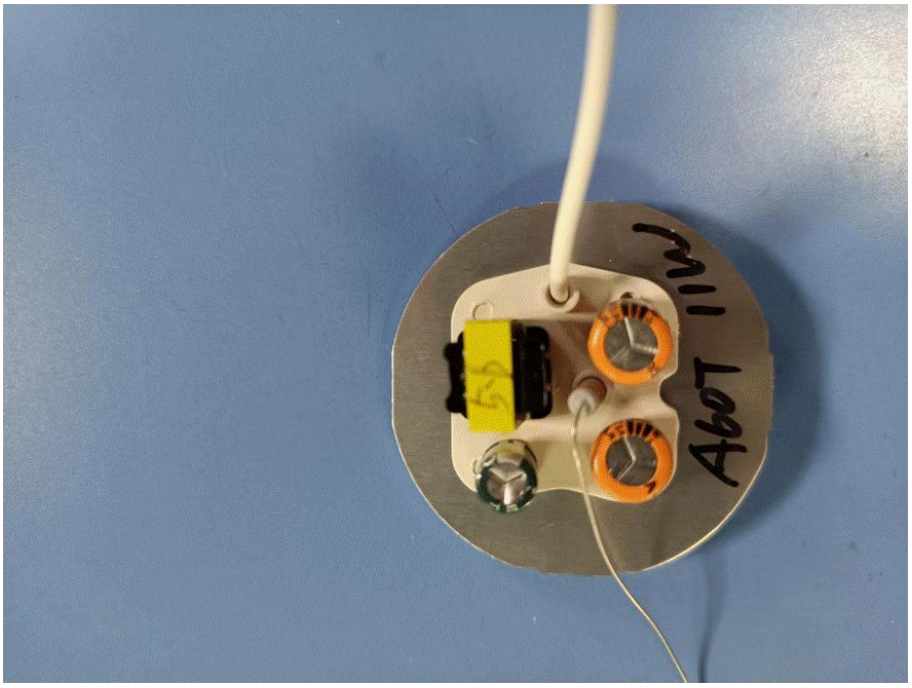
Open view



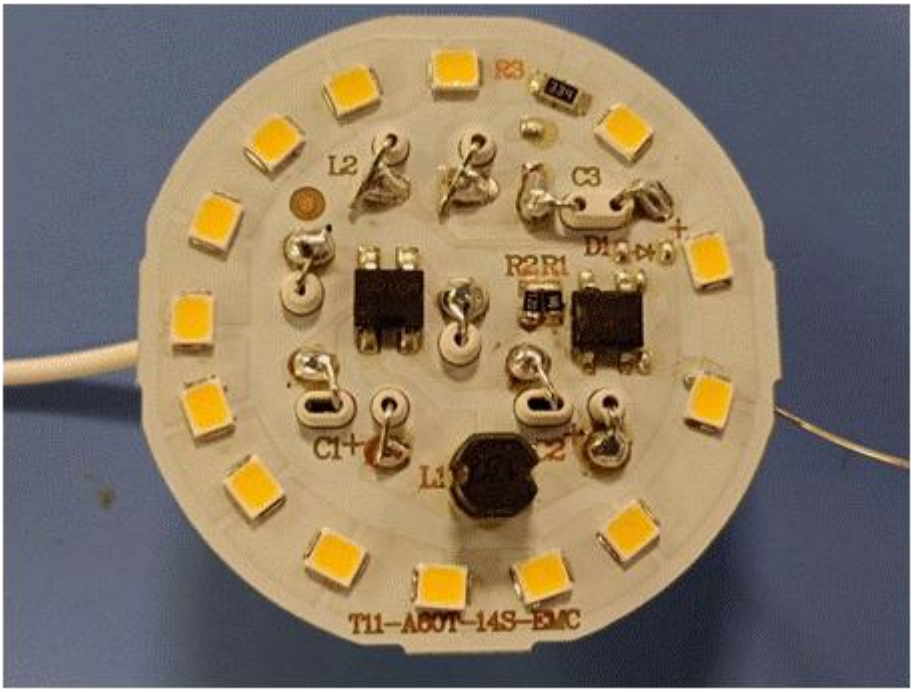
For PCB1 series



Remarks

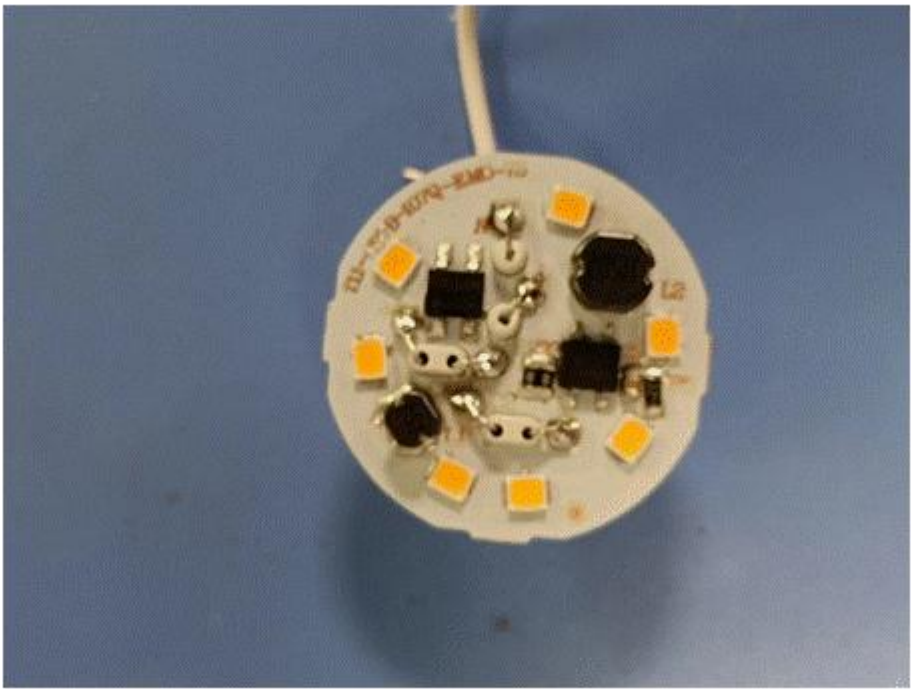


For PCB2 series

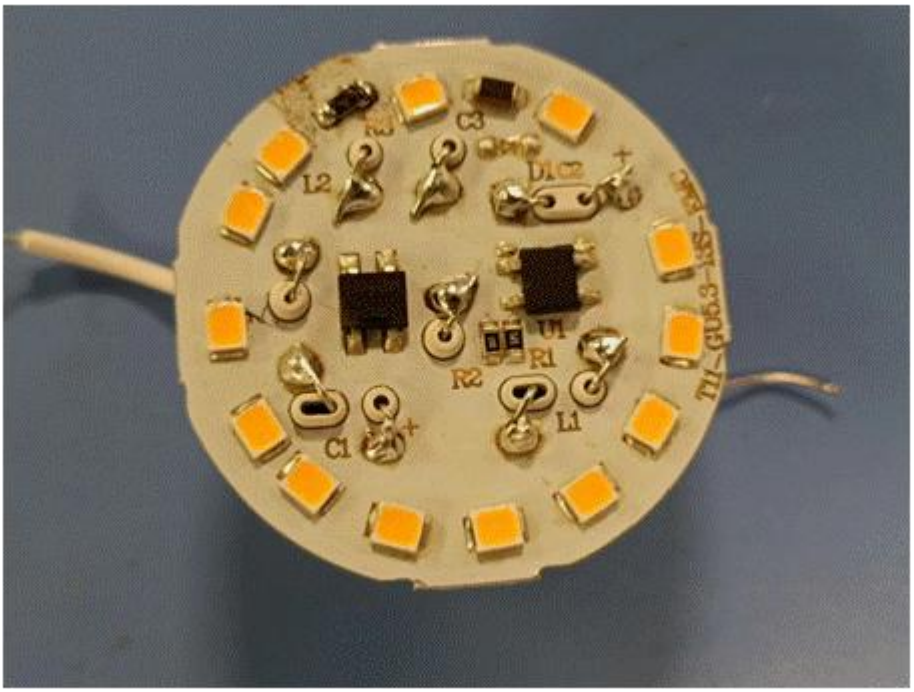


Remarks

For PCB3 series



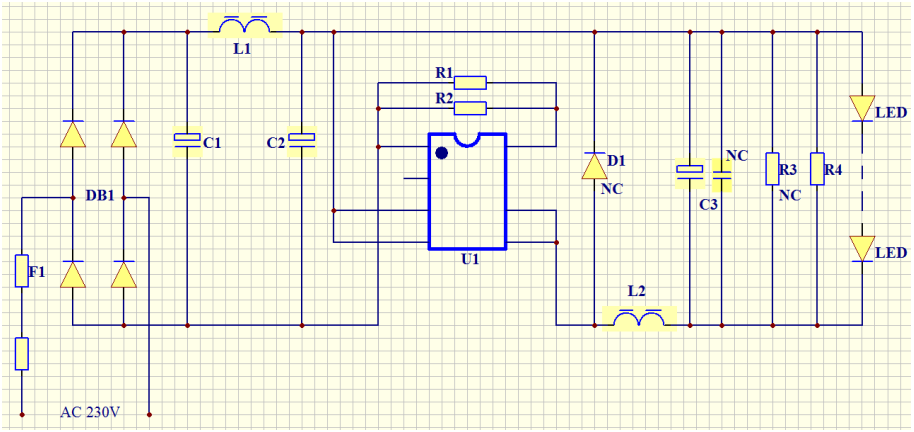
For PCB4 series



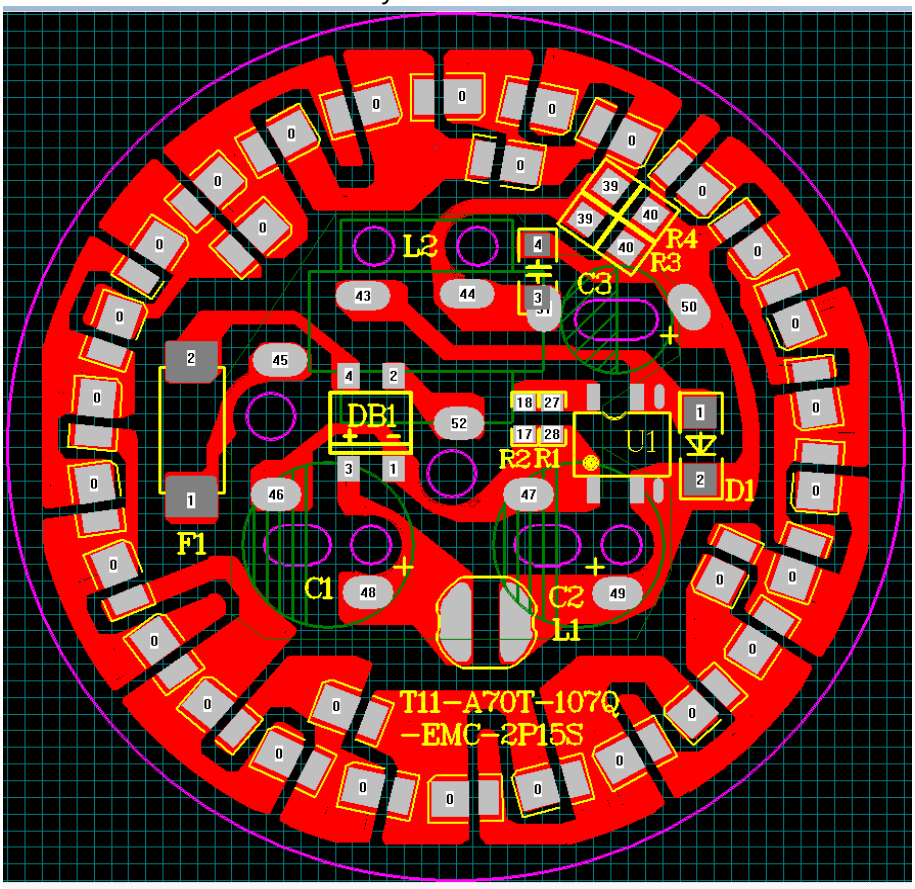
Remarks

Circuit Schematic and PCB Layout

Circuit Schematic for PCB1 series

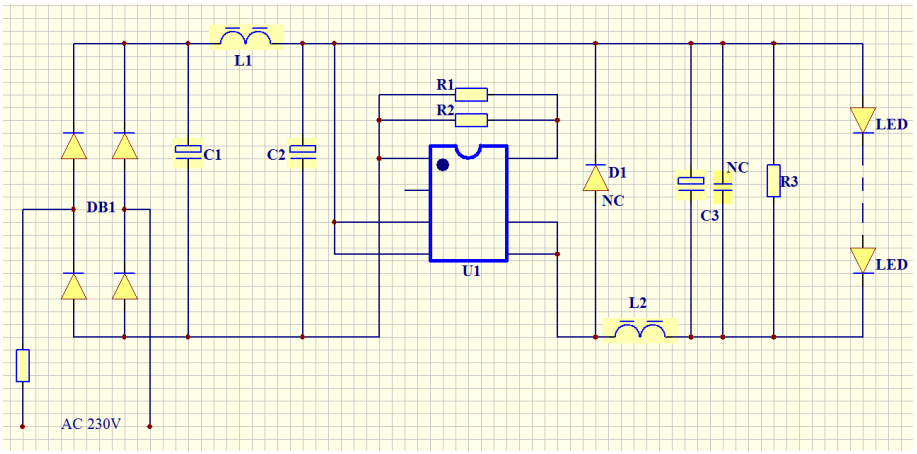


PCB Layout for PCB1 series

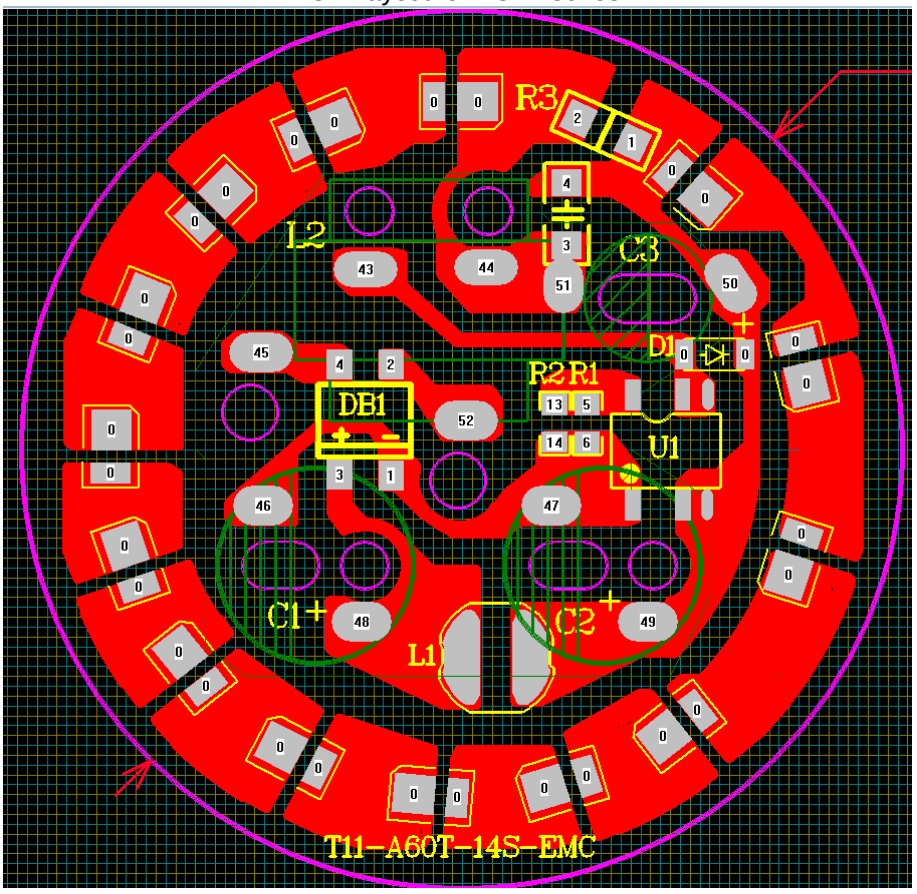


Remarks

Circuit Schematic for PCB2 series

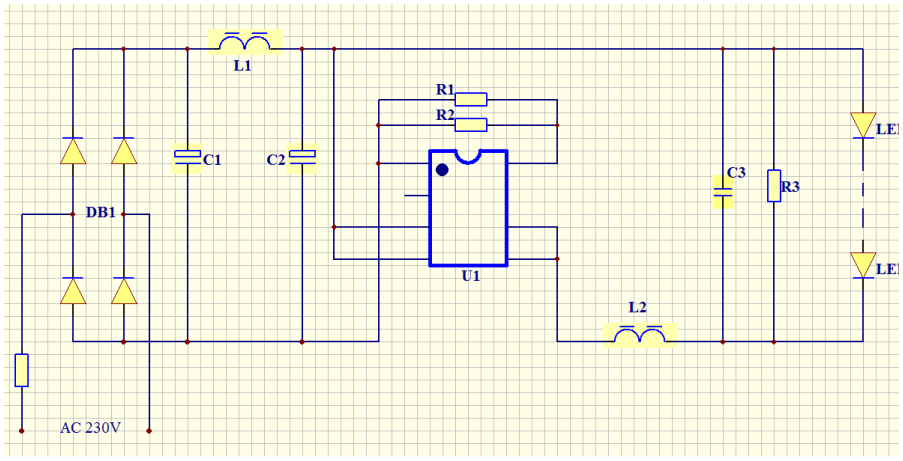


PCB Layout for PCB2 series

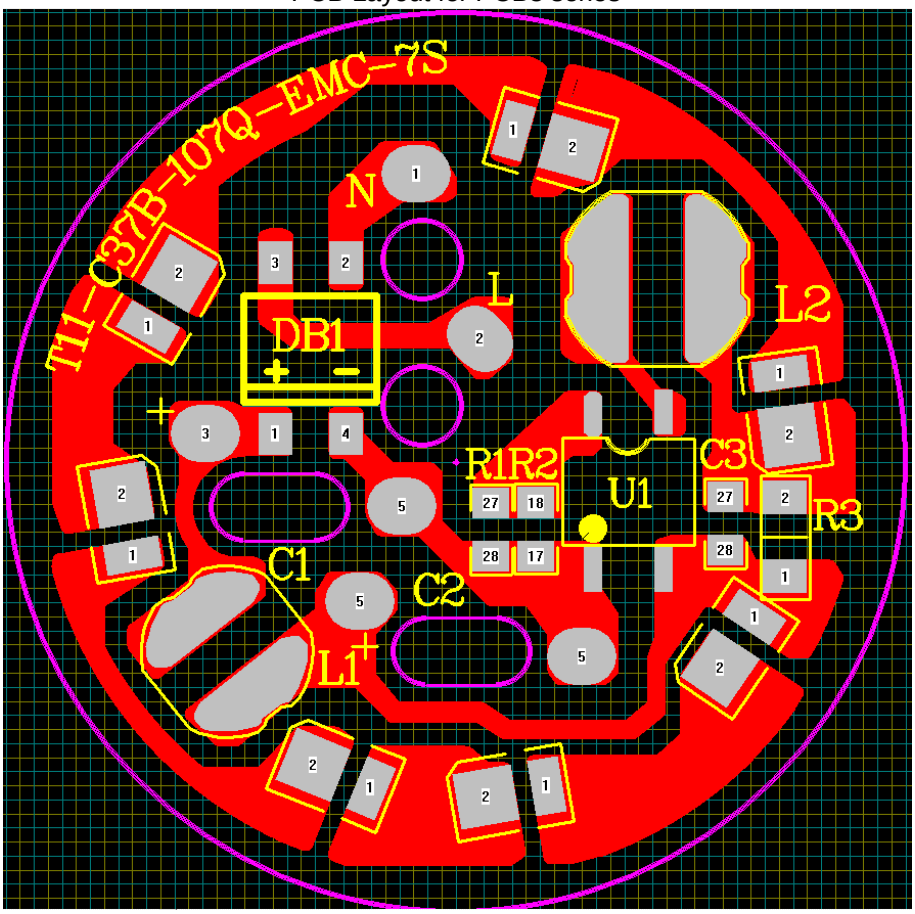


Remarks

Circuit Schematic for PCB3 series

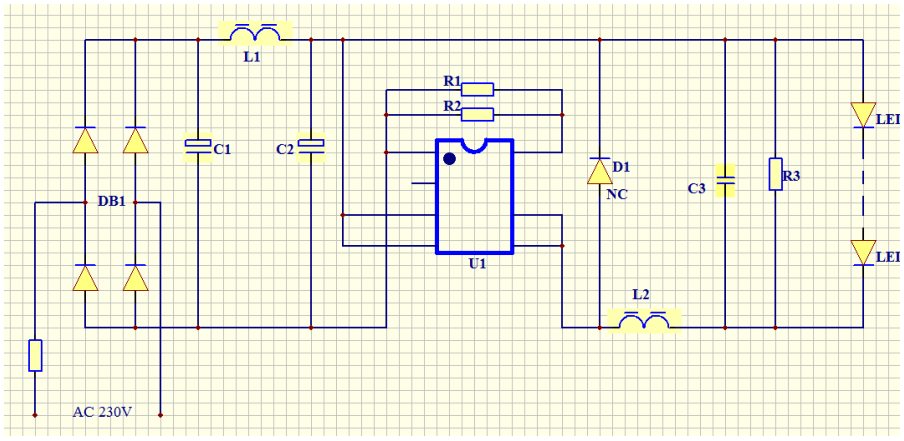


PCB Layout for PCB3 series



Remarks

Circuit Schematic for PCB4 series



PCB Layout for PCB4 series

