

adt	MODEL NO.	HPFS46-48-0960CC	SHEET NO	LD201201306
	DESCRIPTION	LED Driver	ISSUED DATE:	

APPROVAL SIGNATURE
DATE:

Customer:

Model No: HPFS46-48-0960CC-00


Input voltage	100~240VAC	Output Voltage	48V DC Max 0.96A Constant Current
AC Input	Conductor 3 Port Pitch 5.0mm X1 AWG16~20		
DC Output	Conductor 2Port Pitch 7.5mm X 1 AWG16~20		

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	MODEL NO.	HPFS46-48-0960CC	SHEET NO	LD201201306
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REVISION RECORD

Date	Revision.	Modified Pages	Revision Description
2012/03/30	A1	--	Initial

adt	MODEL NO.	HPFS46-48-0960CC	SHEET NO	LD201201306
	DESCRIPTION	LED Driver	ISSUED DATE:	

TABLE OF CONTENTS

1.	Description	4
2.	Electrical characteristics	4
2.1	Input Voltage	4
2.2	Input Frequency	4
2.3	Input Current	4
2.4	Inrush Current	4
2.5	Static wasting	4
2.6	Efficiency	4
2.7	Input Wattage at DC output no-load condition	4
2.8	Output Voltage and Current	4
2.9	Ripple & Noise	4
2.10	Switch time	4
2.11	Protection	4
2.12	Safety Test	5
3.	Environment	5
3.1	Temperature	5
3.2	Humidity	5
3.3	Coolant conditions	5
4.	Safety & EMC Standards	5
4.1	Safety	5
4.2	EMC	6
4.3	FCC	6
5.	Reliability	6
5.1	Overloading experiment	6
5.2	Abnormally high pressure output protection	6
5.3	Temperature Rise	6
5.4	Guards against static electricity	6
5.5	Reliability testing	6
6.	Mechanical	6
7.	Sample Test Report	7
8.	10.0 PACKAGING	
9.	11.0 OUTLOOKING	

adt	MODEL NO.	HPFS46-48-0960CC	SHEET NO	LD201201306
	DESCRIPTION	LED Driver	ISSUED DATE:	

1.0 Description.

This document introduces the electrical, mechanical and environmental specifications of a switching power supply.

2.0 Electrical characteristics.

2.1 Input Voltage (AC ~).

240Vac/100Vac Normal.

From 90V~264Vac Maximum

2.2 Input Frequency.

50Hz/60Hz Normal

From 47Hz~63 Hz Maximum

2.3 Input Current.

The maximum input current is 0.56A at 90Vac at full load.

2.4 Inrush Current.

The inrush current will not exceed 40A at 230Vac input for a cold start at 25°C.

2.5 Static wasting.

The maximum Static wasting is 6.0W at 230Vac at full load.

V out (Vdc)			I out (A dc)		
Min	Rated	Max	Min	Rated	Max
40.0	45.0	49.0	0.75	0.88	1.0

2.6 Efficiency.

The efficiency shall be higher than 80% while measuring at 230Vac and full load.

2.8 Output Voltage and Current .

2.9 Ripple & Noise.

Less than 2Vpp , attach capacitor 10uF/EC & 0.1uF/CC to the end of DC loading side with parallel, the oscilloscope bandwidth should be 20MHz.

2.10 Switch time

Turn on delay: when the power supply turns on, the output voltage shall raise 90% in less than 2s at 220Vac.

Hold up time: when the power supply turns off, the output voltage shall decrease 90% in more than 10ms at 220Vac.

2.11 Protection.

2.11.1 Input Current: An input fuse with a rating of 3A/250V Amps, shall be provided to

adt	MODEL NO.	HPFS46-48-0960CC	SHEET NO	LD201201306
	DESCRIPTION	LED Driver	ISSUED DATE:	

protect the power supply and the input wiring. Note: The fuse shall be an unchangeable unit.

2.11.2 SCP : Short-circuit protection, the power supply shall be of hiccup mode when output terminal is a short circuit, and the abnormal condition is removed, the power supply shall be auto-recovery at CD mode.

2.11.3 OCP : Over current protection , range = 1.0A max with auto-recovery function.

2.11.4 OPP: Overload conditions shall cause both the output current and the output voltages to decrease. Removal of an output overload conditions shall permit automatic recovery of the output voltage. The over current protection point Maximum=150% for all outputs. Note: The total output power should not over Rated power to operate, otherwise will caused the power supply to damage.

2.12 Safety Test

2.12.1 Leakage Current.

Less than 0.25mA

2.12.2 Hi-Pot test

Primary to Secondary: 3750Vac for 1 minute, The power source does not have the puncture or flying fox phenomenon, leakage current < 10mA.

Primary to cover: 1500Vac for 1 minute, The power source does not have the puncture or flying fox phenomenon, leakage current< 10mA

2.12.3 Insulation resistance.

Passes over 500Vdc between the input and the output plug at DC voltage, the dielectric resistance is bigger than 4Mohm;

Passes over 500Vdc between the input and the outer covering at DC voltage, the dielectric resistance is bigger than 2Mohm;

Passes over 500Vdc between the output and the outer covering at DC voltage, the dielectric resistance is bigger than 2Mohm.

3.0 Environment.

3.1 Temperature.

a. Operation : -20°C~ 65°C.

b. Storage : -20°C~70°C.

3.2 Humidity.

a. Operation : 10% ~90% non-condensing.

b. Storage : up to 6 months, 5% ~95% non-condensing.

3.3 Coolant conditions

Natural cooling

adt	MODEL NO.	HPFS46-48-0960CC	SHEET NO	LD201201306
	DESCRIPTION	LED Driver	ISSUED DATE:	

4.0 Safety & EMC Standards.

4.1 Safty specification

<i>Safety Referring Standards.</i>		<i>File Records.</i>
CE/EMC	EN 55015, EN 61547 EN 61000-3-2 , EN 61000-3-3	√
CE/LVD	EN 61347-1 , EN 61347-2-13	√

4.2 EMC specification.

The external power supply must meet all specifications in this section. It is required that the external power supply work closely in order to get the best EMC solution. Radiated and Conducted Emission. The power supply compliance to FCC part 15: Class B for radiated and conducted emission. EN55015, Class B for radiated and conducted emission.

4.3 FCC specification

The power supply complier with the FCC part 15 class B.

5.0 Reliability

5.1 Overloading experiment

Request: In the overloading situation, can not appear belches smoke burning phenomenon.

5.2 Abnormal high pressure output protection

Request: In abnormal high pressure input situation, can not occur belches smoke pyrophoricity accident.

5.3 Temperature Rise.

Less than 35°C for both Top & Bottom case, under the test condition of nominal 200-230Vac input & DC output at full load & ambient temperature at 25 +/- 1°C.

5.4 Guards against static electricity

5.4.1 Non-contact electric discharge: 8KV (R=330 megohm, secondary 150PF)

5.4.2 Contact electric discharge: 4 KV (R=330 megohm, secondary 150PF)

5.5 Reliability testing.

5.5.1 High temperature humidity test

Operating temperature: 65°C;

Work humidity: 90%~95%

Operating time: 8 hours

Requests: No destruction of insulating ability at the output voltage in the stipulation scope

5.5.2 Low temperature test

Operating temperature: - 20°C;

Operating time: 8 hours

Requests: No destruction of insulating ability at the output voltage in the stipulation scope

5.5.3 High-low temperature storage experiment

Low temperature: - 20°C; 16h

High temperature: 80°C; 16h

adt	MODEL NO.	HPFS46-48-0960CC	SHEET NO	LD201201306
	DESCRIPTION	LED Driver	ISSUED DATE:	

Time interval: Two hours

Requests: Do not occur outer covering or linear deformation.

5.5.4 The high-low temperature cycle movement

The mains input is rating voltage, the output is full load, operating in 0+/-2°C for 1h; adjusting to 45+/-2°C, and operating for 1h; Cycle 20 times. The power source outward appearance have no evident change, the output voltage-current characteristic, the insulation strength and the leakage electric current can conform to above standard.

6.0 Mechanical.

- 6.1 Metal Case.
 - 6.2 Physical Size : L325XH32xH30mm
 - 6.3 Inputs electric cable:
 - 6.4 Outputs electric cable:
 - 6.5 Weight about g.
- END

7.0 Sample Test Report

7.1. Burn - In Test

Test Purpose: To check reliability of the products.						
Test Condition: Ambient Temperature: 25°C 1. Vin = 110V/60Hz NO test 2. Vin = 220V/60Hz 48V/0.96A 4hours						
Criteria: Power supply should work normally after test.						
Test result: <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail						
Test Data	No.	1	2	3	4	5
	1	---	---	---	---	---
	2	OK	---	---	---	---

7.2. COMBINE REGULATION TEST

Test Purpose: To check if the Total regulation and ripple noise meet the specification.	
Test Condition: Ambient Temperature: 25°C 1. Vin = 90V/60Hz Full load 2. Vin = 110V/60Hz Half load 3. Vin = 132V/60Hz No load	

adt	MODEL NO.	HPFS46-48-0960CC	SHEET NO	LD201201306
	DESCRIPTION	LED Driver	ISSUED DATE:	

4. Vin = 180V/50Hz Full load
5. Vin = 220V/50Hz Half load
6. Vin = 264V/50Hz No load

Criteria:

- Output Voltage Range: 40V ~48V
- Ripple & Noise Range: 2V Max

Test result: Pass Fail

Test Data	Output Voltage (V)						Ripple & Noise (mV)					
	No.	1	2	3	4	5	No.	1	2	3	4	5
1	47.8	---	---	---	---	---	1	0.258	---	---	---	---
2	48.3	---	---	---	---	---	2	0.248	---	---	---	---
3	48.6	---	---	---	---	---	3	0.231	---	---	---	---
4	48.1	---	---	---	---	---	4	0.256	---	---	---	---
5	48.3	---	---	---	---	---	5	0.323	---	---	---	---
6	49	---	---	---	---	---	6	0.248	---	---	---	---

7.3. Efficiency Test

Test Purpose:

To check if the power supply efficiency meets the specification.

Test Condition:

Ambient Temperature: 25°C

- Vin = 110V/60Hz 48V/0.96A
- Vin = 264V/50Hz 48V/0.96A

Criteria:

Efficiency Range: 80% Min @ 220Vac & full load

Test result: Pass Fail

Test Data	No.	1	2	3	4	5
1		87%	---	---	---	---
2		%	---	---	---	---

7.4. OCP Test

Test Purpose:

To check if max. over current meets the specification.

Test Condition:

Ambient Temperature: 25°C

- Vin = 110V/60Hz
- Vin = 264V/50Hz

adt	MODEL NO.	HPFS46-48-0960CC	SHEET NO	LD201201306
	DESCRIPTION	LED Driver	ISSUED DATE:	

Criteria:

- Over Current Range: 1A
- Power supply shall shutdown for over current test, and it shall recover automatically when the protection removed.

Test result: Pass Fail

Test Data	No.	1	2	3	4	5
	1	PASS	---	---	---	---
	2	PASS	---	---	---	---

7.5. Short Circuit Test

Test Purpose:

To verify that no damage, fire or safety problem will occur result from a short circuit.

Criteria:

The output short-circuits, after the power source starts the power failure.

Test Condition:

Ambient Temperature: 25°C

- Vin = 110V/60Hz
- Vin = 220V/50Hz

Test result: Pass Fail

Test Data	No.	1	2	3	4	5
	1	OK	---	---	---	---
	2	OK	---	---	---	---

7.6. Hi-Pot Test

Test Purpose:

To check if Hi-Pot characteristic meets specification requirement.

Test Condition:

Ambient Temperature: 25°C

- H/P TEST: 3750VAC 10.0mA(Max) 3S
- I-R TEST: 500VDC 100MΩ(Min) 3S
- R-Ω TEST: 100mΩ(max) 25A 3S

Criteria:

Power supply should experience no damage.

Test result: Pass Fail

Test Data	No.	1	2	3	4	5
	1	OK	---	---	---	---
	2	OK	---	---	---	---
	3	OK	---	---	---	---

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10.0PACKAGING:

包裝爆炸圖:

單體重: g
淨重: kg
毛重: kg
單體加PE袋包裝,每箱裝
五層,每層裝 10 PCS
每箱裝 50 PCS

產品 10 = 10 PCS

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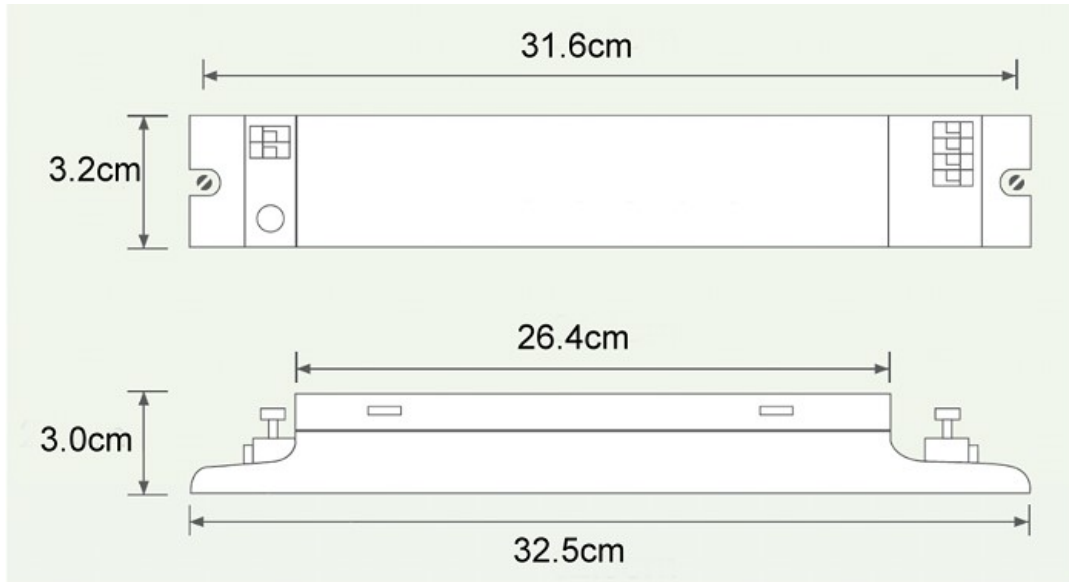
產品 10 = 10 PCS

注:
包裝材料所含的重金屬總
量Pb+Cd+Hg+Cr+6 < 70PPM
且Cd < 5PPM

adt	MODEL NO.	HPFS46-48-0960CC	SHEET NO	LD201201306
	DESCRIPTION	LED Driver	ISSUED DATE:	

11.0 OUTLOOKING

■ DIMENSION CASE: L325X W32X H30mm



■ Input / Output Connection :

AC INPUT	Conductor 3Port Pitch 5.0mm X1 AWG16~20
DC OUTPUT	Conductor 2Port Pitch 7.5mm X 1 AWG16~20

■ Label :

