

SPECIFICATION FOR APPROVAL

CUSTOMER NAME/客户名称: _____

CUSTOMER ITEM/客户料号: _____

PRODUCTION MODEL/产品型号: PD-DOCK120W

PRODUCTION ITEM/产品料号: _____

客户承认后盖章 APPROVAL STAMP	客户负责人签名（日期） APPROVAL SIGNATURE

Please return to us one copy of “SPECIFICATION FOR APPROVAL” with you approved signature.

批准 APPROVED	品管 QUALITY ASSURE	工程 ENGINEERING	样机制作员 SAMPLE BY	业务 SALES BY

1. Scope

1.1. The purpose of the document is to specify the functional requirements of a **120W** switching power supply. PD-DOCK120W (818H).

1.2. The power supply shall meet the RoHS requirement.

2. Input Characteristics

2.1. Input Voltage

Voltage	Minimum	Nominal	Maximum
Input Voltage	90Vac	100Vac~240Vac	264Vac

2.2. Frequency

Frequency	Minimum	Nominal	Maximum
Input Frequency	47Hz	50Hz/60Hz	63Hz

2.3. Input AC Current

3Amax. Full load

2.4. Inrush Current (cold)

30Amax. 240Vac input & Ambient temperature 25°C

2.5. AC Input Connector

Spec: 2pin CN

2.6. Input Fuse

The Line side of the input shall have a fuse: T5A/250V.

2.7. Energy Consumption

At 100-240Vac input, Energy Consumption ≤ 0.5W

3. Output Requirements

3.1. Output Voltage and Current

Model No : HHW-818H

Input : AC 100-240V/50-60Hz

Output : DC 120W

USB-C1 /C2: 5V/3A, 9V/3A, 12V/3A, 15V/3A, 20V/3.25A

PPS : 3.3V-11V 5A 65W(Max),

QC2.0, QC3.0, QC4.0+, AFC, FCP, SCP, PD2.0, PD3.0

USB-C3 : 5V/3A, 9V/3A, 12V/2.5A, 15V/2A, 20V/1.5A

PPS : 3.3V-11V/ 3A 30W(Max)

QC2.0, QC3.0, QC4.0+, AFC, FCP, SCP, PD2.0, PD3.0

USB-A1/A2/A3 : 5V/3A, 9V/2A, 12V/1.5A, 4.5V/5A 22.5W(Max)

QC2.0, QC3.0, QC4.0+, AFC, FCP, SCP

USB-C1+USB-C2 : 45W+20W

USB-C3+ USB-A1 : 12W+12W

USB-A2+USB-A3 : 12W+12W

3.2. Output Voltage Regulation

The total output voltage regulation shall be $\pm 5\%$.

3.3. Ripple and Noise

Output	Rated Load	Ripple and Noise	
PD:+5V/9V/12V/15V/20Vdc	3A-3.25A	200mV	PD1,2
PD:+5V/9V/12V/15V/20Vdc	3A-1.5A	200mV	PD3
+5V/9V/12Vdc	1.5A-3A	200mV	QC1,2,3

Ripple & Noise: Measurement is done by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 10uF electrolysis capacitor. (test under the condition of rated input and rated output)

3.4. Turn-on Delay Time

3S Max. At 100Vac input and output Max Load

3.5. Hold-up Time

10mS Max. At 100Vac input and output Max Load

3.6. Output Overshoot

15% Max. When power supply at turn on or turn off.

3.7. Energy Efficiency

When 100-240Vac line input voltage, the efficiency shall be 88% or better under maximum load.

3.8. Rise Time

20mS max. Rated load

3.9. Fall Time (下降时间)

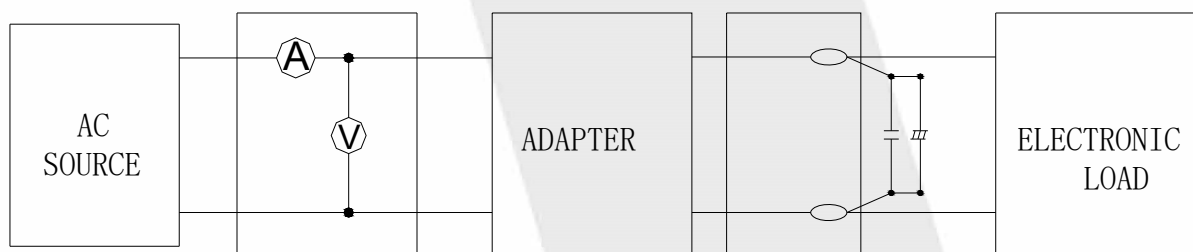
20mS max. Full load

3.10. Output Load Transient Response (输出负载瞬态响应)

Output voltage meets the specification when load changes within definite range , load variate is 0.1Amps/uS, 50Hz ~ 10 KHz.

Dynamic Load (动态负载)	DC Voltage Regulation (电压调整率)
10%~100%~10%	±10%
10%~50%~10%	±5%
0%~100%~50%	±5%

3.11. Test Measures



4. Protection

4.1. Over Current Protection

The power supply will be auto recovered when over current faults remove.

4.2. Short Circuit Protection

The power supply will be auto recovered when short circuit faults remove.

5. Environment Requirements

5.1. Temperature

Operating: 0°C to +25°C

Storage : -30°C to +85°C

5.2. Humidity

Operating: 10% to 90% non-condensing

Storage. : 5% to 95% non-condensing

5.3. Altitude

Operating: 2000 meters

Non-operating: 2000meters

6. Reliability Requirements

6.1. Reliability Test

Test Items(试验项目)	Test conditions(试验条件)	Test quantity(数量)
Storage at high temperature test(高温储存)	+85℃ 16Hrs	2 Pcs
Storage at low temperature (低温储存)	-30℃ 16Hrs	2 Pcs
Operating at high temperature test(高温工作)	+25℃ 24Hrs	2 Pcs
Operating at low temperature test(低温工作)	0℃ 24Hrs	2 Pcs
Low Temperature turn on test(低温启动试验)	EUT should start-up normally after storage at 0℃ of 2 hours under minimum input voltage and maximum load.	2 Pcs
thermal circle test (热循环试验)	0℃(30min)——40℃(30min)——0℃(30min) Continually work 4 cycles	2 Pcs
Constant temperature and humidity test (恒温恒湿试验)	+40℃ 90%RH, continually operating 24 hours	2 Pcs

6.2. Burn-in

6.3. MTBF Qualification

The MTBF shall be at least 50,000hours at 25℃, Full load and nominal input condition

6.4. Vibration

10 to 300Hz sweep at a constant acceleration of 1.0G(Breadth: 3.5mm) for 1Hour for each of the perpendicular axes X, Y, Z

6.5. Drop test

Height: 1m; the product should be fell off on the hardwood with the thickness of 20mm, and the hardwood should be put on the base of the cement or on the ground without flexibility. Apply two times on all surface.

4 hours at 35℃(+/-5℃),Nominal input voltage , Nominal load.

7. Certificate Standards

7.1. EMC Standards

GB/T9254-2008,GB 17625.1-2012
J62368-1(H30)
EN55032:2012+AC:2013
EN 55035:2017
EN 61000-3-2:2014
EN 61000-3-3:2013
FCC Part 15,Subpart B:2016
ANSI C63.4:2014
K00022;K00024

7.2. Regulatory Standards

Certificate	Country	Certified Status	Standard
CCC	CHINA(中国)	NO	GB4943.1-2011
PSE	JAPAN(日本)	NO	J55032(H29)
CB	IECEE(国际)	NO	IEC 62368-1:201
ETL	North (北美)	NO	UL 62368-1:2014
KC	Korea (韩国)	NO	K60950-1

7.3. Dielectric Strength(Hi-pot)

Primary to Secondary: 1500Vac / 10mAMax / 60second(3second for production)

Item(项目)	Specification(规格要求)	Remark(备注)
Primary to Secondary	3Kvdc <5mA	No arcing
Primary to P.G	-	No arcing

7.4. Leakage Current

0.25mAMax. at 250Vac / 50Hz

7.5. Insulation Resistance

20MΩ min. at primary to secondary add 500Vdc test voltage

8. Mechanical Features:

8.1. Dimensions (Case Size)

Length:105mm

Width :40mm

Height:77mm

AC Line: 1.2M

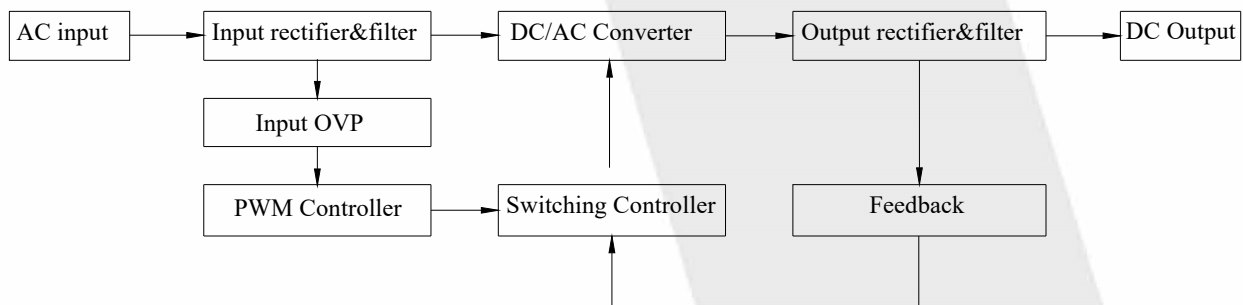
8.2. Weight

Weight about: 550 g

9.Outline Drawing



9.1 Block diagram



10.Inspection Standards

NO.	Test project (检查项目)	Test standard (检验标准)	Sample Level (抽样水准)	Test standard (检验水准)
1	Performance (电气性能)	GB2828-2003	II	Serious defect: CR=0 (严重缺点): CR=0
2	Size(尺寸)			Main defect: AQL=0.65 (主要缺点): AQL=0.65
3	Shell , Package (外观、包装)			Petit defect: AQL=1.0 (次要缺点): AQL=1.0