

Specification For Approval

客户名称/Customer Name : _____

客户项目/Customer Project : _____

产品名称/Product Name : PD-20W USB-C CHARGER

认证型号/Certification Model : _____

型号/ Model : _____

日期/Date : 2022-03-24

Please return to us one copy of "Specification For Approval" with your approved signatures

拟制 Prepared by	平面 Graphic Design	结构 Structural Design	电子 Electronic Design	批准 Approve
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Customer Approval				
结构 Structure	项目 project	品质 Quality	商务 Business Affairs	签样日期 Signature Date

1. Introduction

1.1 Power Supply Overview

This product has the feature such as high efficiency and high reliability, and it also has the protection function such as short-circuit protection, over voltage protection and over current protection.

2. Electrical Specification

2.1 AC Input

2.1.1 Input Voltage

Table 1: Lists the AC input operating voltage range. The power shall work normally and meet all electrical requirements throughout this range.

Minimum	Nominal	Maximum
90Vac	90-240Vac	264Vac

Table 1: AC Input Voltage Limitations

2.1.2 Input Frequency

Table 2: List the AC input operating frequency range. The power shall work normally and meet all electrical requirements throughout this range.

Table 2: AC Input Frequency Limitations AC 输入频率限值

Minimum	Nominal	Maximum
47Hz	50/60Hz	63Hz

2.1.3 Inrush Current

Peak inrush current shall be limited to 30A of rated input voltage and cold start at 25 degrees C, and shall not result in a permanent damage of the power supply under any conditions of load and input voltage as specified at any input voltage as specified in table 1.

2.1.4 Standby Input Power

The standby input power should no more than 0.15W under the rated input voltage condition.

2.1.5 Input Current Limiting

The input current should be less than 0.2A, under minimum AC input and full load.

2.1.6 Average Efficiency

In the 25% 50% 75% 100% load conditions, the average power efficiency more than 78%.

2.1.7 Backing up Current

Analog power from 0V to 5V, monitor stable current which flow to charger. In any case, whether the charger plugged in or not, backing up Current less than 5mA.

2.2 Output Specification

2.2.1 DC Voltage Regulation

The DC output voltages will remain within the regulation ranges shown in Table 3 when measured at the load end of the output connectors.

The voltage regulation limits do not include the transient DC load changes, which are covered in Section 2.2.4.

Table 3: DC Output voltage regulation limits

Parameter	Unload Output Voltage	Load regulation	Test Mode
5.0V	4.75~5.3V	4.75~5.25V	CC
9.0V	8.55~9.45V	8.55~9.45V	CC
12V	12.4~12.6V	12.4~12.6V	CC

2.2.2 DC Output Current

Table4: DC output current limits

Parameter	Min Current	Rate Current	Max Current	Unit	Test Mode
V1:5.0V	--	3000	--	mA	CC
V2 : 9V	--	2220	--	mA	CC
V3 : 12V	--	1670	--	MA	CC

2.2.3 Charger Output Voltage/Current Characteristics

2.2.4 Output Ripple and Noise

The following table 5 is output ripple and noise requirements, it will be met throughout the load ranges specified in Section 2.2.2 and rated input voltage conditions as specified Section 2.1.1, Measurements will be made with an oscilloscope set to 20MHz bandwidth limit. The outputs will be bypassed with one 0.1uF multilayer (type X7R) and one 10uF tantalum electrolytic (low ESR) capacitors.

Table 5: Output ripples and noise limits

Parameter	Max.
V1:5.0V	350mVp-p@25 degrees C
V2:9.0V	500mVp-p@25 degrees C
V3:12V	600mVp-p@25 degrees C

2.2.5 Output Dynamic Load Response

The output voltages will remain within specified regulation limit of the nominal set voltage for changes in load as specified below under the following load steps defined below table 6. At a slew rate of 0.1Amps/uS between 50Hz to 10 KHz.

Table6: Output dynamic load response limits

Dynamic Load	DC Voltage Regulation
10%~90%~10%	± 10%

2.2.6 Overshoot at turn-on/ turn-off

Any overshoot at turn on or turn off shall be less than 15% of rated output voltage.

2.3 Protection Function

2.3.1 Over Voltage Protection

The power supply will provide OVP function.

2.3.2 Short Circuit Protection

An output short circuit is defined as any output impedance of less than 0.1 ohms. The power supply will protect without damage to overseers of to the unit (components, connectors, etc) under the input conditions specified in Section 2.1.1 above...

2.3.3 Over Current Protection

The power supply shall meet the limitation requirement as below table without any damage, the unit shall recover and function automatically after the protection is removed.

Table 7: Over Current Protection limits

Parameter	Min.	-	Max	Unit
V1:5.0V	3300	-	4200	mA
V2:9V	2600		3200	mA
V3:12V	2000		2400	mA

2.4 Timing

2.4.1 Hold up Time

Hold-up time no less than 5mS at 100Vac60Hz input and no less than 10mS at 220Vac50Hz input, the output loading should be set up with full load during the test.

2.4.2 Start up Time

Start up time no more than 3 seconds at 100Vac60Hz input and no more than 2 seconds at 220Vac50Hz, the output loading should be set up with full load during the test.

3. Environment Requirement

3.1 Temperature

Operating Ambient: 0°C~ 40°C

Non-operating Ambient: -10°C~ +55°C

3.2 Humidity

Operating: 5%~90% relative humidity (Non- condensing)

Non-operating: 5%~90% relative humidity (Non- condensing)

4. Reliability

4.1 Burn-in and Life test

In the case of the rated input voltage at room temperature under the condition of 25°C,C-PORT 9V Load 2220mA aging 2H,shell temperature less than 45°C.

5. Mechanical Dimensions (Unit:mm)

5.1 Mechanical Dimensions



※59±0.3mm*※42.3±0.3mm*※27±0.30mm (L*W*H)

5.2 Mechanical Appendix

Output port:

A: USB QC3.0 A PORT(5V3A;9V2.22A;12V1.67A);

B: TYPE-C C PORT PD3.0 (5V3A;9V2.22A;12V1.67A; PPS);

C: A+C 5V3 A 15W(MAX).