

SPECIFICATION FOR APPROVAL
AC/DC ADAPTOR

CUSTOMER SPEC:INPUT: 100-240V AC 50/60Hz OUTPUT: 5.0VDC 1.0A

CUSTOMER DWG./PART NO.: _____

KTEC PART NO.: KSA-5W-050100VU (PAHS 6P NP REACH ROHS PROP65)

SAMPLE NO.: S99332 REV.: A ISSUE DATE: 2024-05-21

PRODUCT NO.: KS240391

Unit Color: Black ☐ White ☒

APPROVED SIGNATURES/客户确认		
核准/APPROVED BY	审核/ CHECKED BY:	检测/TESTED BY:

Manufacturer/制造商			
业务/SALES	品管/QE	核准/APPROVED BY	制样/MADE BY
Tai	徐海鑫	贺洪明	冯连连

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KTEC 冠德国际科技股份有限公司

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**KTEC P/N:****PRODUCT NO.:**

CUSTOMER P/N:

KSA-5W-050100VU

KS240391

[illegible]

REVISION: A

PREPARED: 余国娟

CHECKED:周柏良 林英青

APPROVED: 贺洪明

DATE: 2024-05-21

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 KTEC 冠德國際科技 KTEC GLOBAL CO., LTD.		Switching power supply specification (class B)		
		KTEC P/N:	PRODUCT NO.:	CUSTOMER P/N:
		KSA-5W-050100VU	KS240391	
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TITLE:		REVISION: A	DRAWING NO.:	
PREPARED : 余国娟	CHECKED:周柏良 林英青	APPROVED : 贺洪明	DATE: 2024-05-21	PAGE: 3 OF 10



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1 GENERAL

1.1 Description

This specification defines the performance characteristics for a class II adapter, single-phase 5.0 watts. Single output level power supply.

- Simple design philosophy.
- Reliability level of 100K hours MTBF @ 25° C (rated input voltage and using the Telcordia SR-332 issue 3 method).
- DC output voltage must be Safe Extra Low Voltage (SELV) & Limited Power as defined by IEC62368-1.
- Cooling: natural convection.

2 INPUT REQUIREMENTS

2.1 Input Conditions

The supply shall operate over the voltage ranges as follows:

Rated input voltage	100-240Vac
Operating range	90-264Vac
Rated input frequency	50/60Hz +/- 3Hz
Rated input current	0.18A max.
Power consumption (no-loading)	0.1W Max.
Primary current protection	An adequate internal fuse on the AC input line is provided.
Configuration	<u>2</u> Conductor

2.2 AC Inrush Current

Peak inrush current shall be limited to 30A for a cold start. No damage shall be occurred and the input fuse shall not be blown up nominal input voltage full load 25°C cold start.

3 OUTPUT REQUIREMENTS

3.1	Nominal DC output voltage	+5.0V
3.2	Minimum load current	0A
3.3	Rating load current	1.0A
3.4	Rating output power	5.0W
3.5	Line regulation	The line regulation is less than <u>±5%</u> while measuring at rated load and +/-10% of input voltage changing.
3.6	Load regulation	The load regulation for <u>+5.0V</u> is less than <u>±5%</u> , at measured output load from 0% to 100% rated load.
3.7	Ripple and noise	<u>150mV</u> nominal input AC voltage at 25°C ambient temperature. Add 0.1uF/50V ceramic capacitor and 10uF/50V aluminum electrolytic capacitor across the output terminal. Measured with 20MHz Bandwidth Oscilloscope.

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3.8	Average efficiency	73.62% minimum 115V/60Hz and 230V/50Hz, output current from 100%, 75%, 50%, 25%.
3.9	Turn on delay time	4000ms max. at nominal input AC voltage and full load.
3.10	Rise time	The supply shall have a start-up rise time of less than 30ms to rise to within regulation limits for all DC outputs.
3.11	Hold up time	8 ms minimum at nominal input 100Vac minimum voltage and full load.
3.12	Output over-shoot	Less than 10% of nominal voltage value.
3.13	Protection function	
	Over-voltage protection	6.3V max. The output voltage shall be clamped by internal protection.
	Short-circuit protection	The adapter shall not be damaged by short the DC output to Ground. The adapter shall resume normal operation when a short circuited fault condition is removed.
	Over current protection	The output shall be protected against the over current conditions.

4MECHANICAL

4.1Enclosure and Layout

Plastic case:

UL94V-0

Weight:

/ g (Max.)

Dimensions:

36.2*20.5*34mm

Colour:

WHITE(WT-07)

4.2Input and Output Configuration

Input pin:

US PIN

Output connector:

DC plug type: USB 4 PIN

Polarity:

Pin1: “-”, pin4: “+” PIN2,3: “short”

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5 REGULATORY COMPLIANCE

5.1 EMC Specifications

The external power supply must meet all specification in this section. It is recommended that the external power supply be tested with the customer's equipment in order to get the best EMC solution.

5.1.1 Radiated and Conducted Emission

FCC part 15: Class B for radiated and conducted emissions.

EN55032, Class B for radiated and conducted emissions.

5.2 Immunity

5.2.1 Electrostatic Discharge Immunity

EN 55035, EN 61000-4-2

- Air Discharge: $\pm 8\text{kV}$

- Contact Discharge: $\pm 4\text{kV}$

- Performance Criteria B

Electrostatic-discharge test by contact or air should be conducted with Static-discharge tester, energy storage capacitance of 150pF, and discharge resistance of 330 Ω , 8kV air discharge, 4kV contact discharge.

5.2.2 Radiated Field Immunity

EN 55035, EN 61000-4-3

- Frequency Range: 80-1000MHz, still need test singly 1800MHz, 2600MHz, 3500MHz, 5000MHz

- Field Strength: 3 V/m with 80% amplitude modulation of 1kHz

- Performance Criteria A

Radio-frequency electromagnetic field susceptibility test, RS 80-1000MHz, 3V/m, 80%AM(1KHz).

5.2.3 Fast Transient Immunity

EN 55035, EN 61000-4-4

- Power line: 1kV

- Signal line: 0.5kV

- Performance Criteria B

5.2.4 Surge Immunity

EN 55035, EN 61000-4-5

- Line to line: $\pm 1\text{kV}$

- Line to earth: $\pm 2\text{kV}$

- + 90°/ -270°

Lightning surge voltage shall be applied in differential and common mode to AC input lines and cross primary AC input and secondary GND.

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5.3 Safety Requirements and Certification

5.3.1 Regulatory Standard

The power supply shall comply with the following international regulatory standards:

for short	Country or region	Certified Status	Standard
UL	USA	Meet	UL 60950-1
CUL	Canada	Meet	CSA C22.2 NO.60950-1

5.3.2 Additional Safety Requirements

- ⊙ Dielectric Withstand Voltage, Primary(input AC short)-to-Secondary(output DC short): 3000Vac, 10m A, 1 minute.
- ⊙ Insulation Resistance, Input to output: 10MΩ(MIN.) at 500VDC.
- ⊙ Reinforced insulation system, Primary-to-Ground and Primary-to-Secondary.
- ⊙ The leakage current shall not exceed 10uA.

6 ENVIRONMENTAL REQUIREMENTS

6.1 Temperature

- ⊙ Operating: 0 °C +40 °C
- ⊙ Non-Operating: -20 °C +70 °C

6.2 Humidity

- ⊙ Operating: 10%~90% (Non Condensing)
- ⊙ Non-Operating: 10%~90% (Non Condensing)

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KTEC P/N:

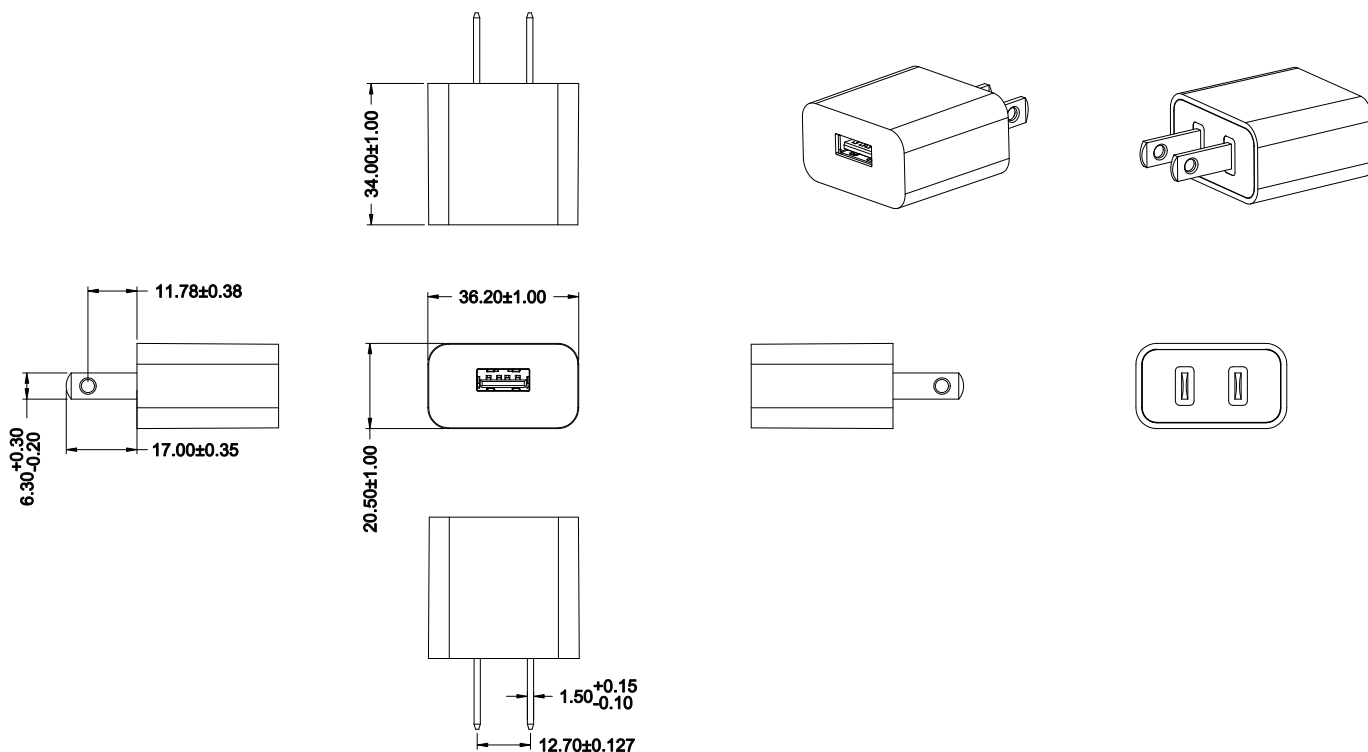
PRODUCT NO.:

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KSA-5W-050100VU

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7 APPEARANCE DRAWING: (Unit: mm)



NOTE: 1. Case cover & chassis material:

PC WHITE(WT-07) (NO KTEC)

2. AC PIN MATERIAL: BRASS (NI PLATED)

3. PAHS 6P NP REACH ROHS PROP65

4. Mill finish

5. Top Model: MSS016064

Bottom Model: MSS016065

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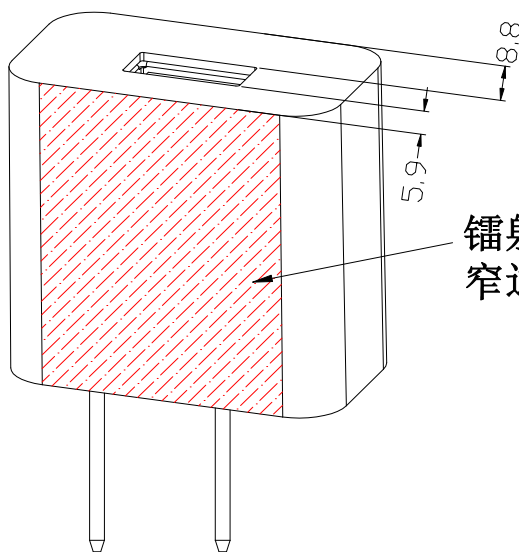
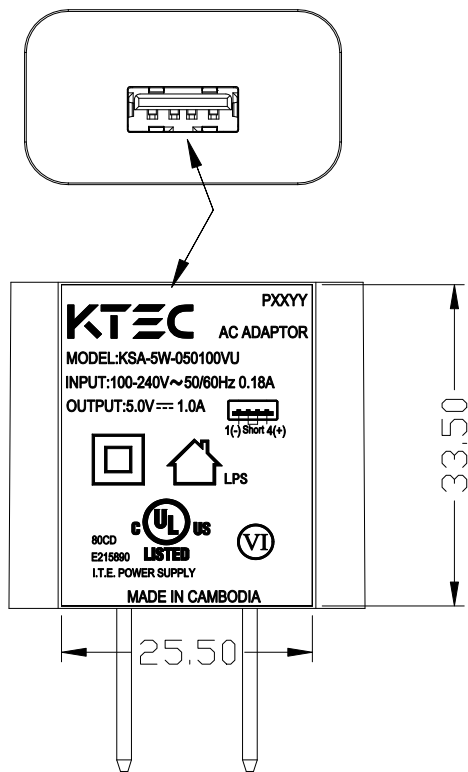
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8 NAME PLATE:



辐射区在USB口
窄边 (5.9MM)侧面

Note: Laser

1. Date code (PXXYY: P=PAHS, 6P, NP; XX=WEEK; YY=YEAR),
按实际生产日期

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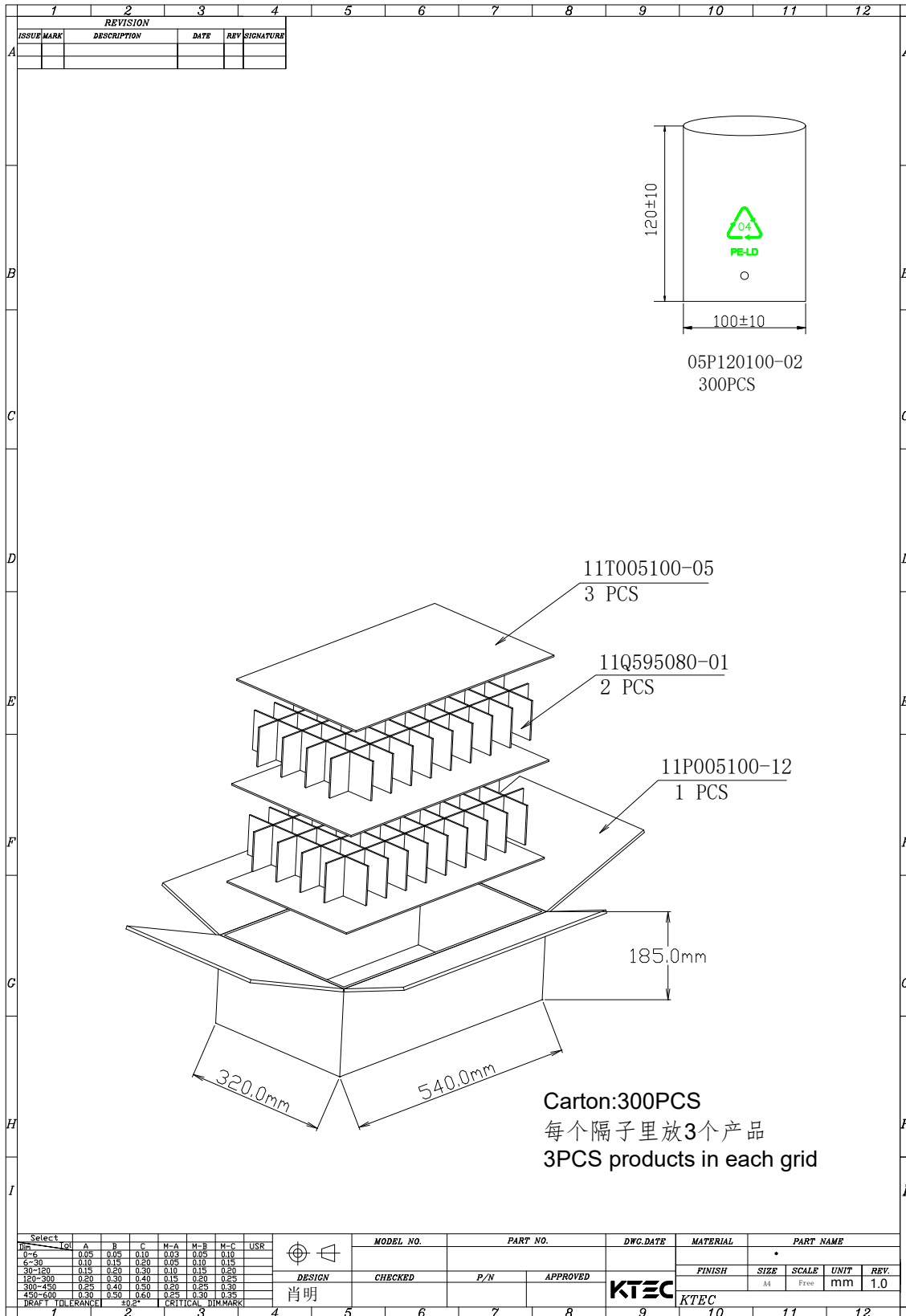
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9 PACKING: (Unit: mm)



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NOTICE OF COMPLETION
AND
AUTHORIZATION TO APPLY THE UL MARK



2016-09-27

MR. Qingang Wang
KUANTECH CO LTD
10TH FL
116 BAUGUAU RD
SHINDIAN DISTRICT
NEW TAIPEI, , 231, TW

Our Reference: File E215890, Vol .X7 Order 11411685
Your Reference:
Project Scope: USL/CNL INVESTIGATION FOR AC Adapter, Models KSA-5W-050YYYYVU
 (YYY=001-100 indicates rated output current range 10-1000 mA), refer to E215890-
 A131-UL.

Dear MR. Qingang Wang:

Congratulations! UL's investigation of your product(s) has been completed under the above Reference Number and the product was determined to comply with the applicable requirements. This letter temporarily supplements the UL Follow-Up Services Procedure and serves as authorization to apply the UL Mark at authorized factories under UL's Follow-Up Service Program. To provide your manufacturer(s) with the intended authorization to use the UL Mark, you must send a copy of this notice to each manufacturing location currently authorized under File E215890, Vol X7.

Records in the Follow-Up Services Procedure covering the product are now being prepared and will be sent in the near future. Until then, this letter authorizes application of the UL Mark for 90 days from the date indicated above.

Additional requirements related to your responsibilities as the Applicant can be found in the document "Applicant responsibilities related to Early Authorizations" that can be found at the following web-site:
<http://www.ul.com/EAResponsibilities>

Any information and documentation provided to you involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

We are excited you are now able to apply the UL Mark to your products and appreciate your business. Feel free to contact me or any of our Customer Service representatives if you have any questions.

Very truly yours,

Reviewed by:

YI HUA HUANG
Engineer Project Associate
Jack.Huang@ul.com

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CPO Director
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KUANTECH CO LTD

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