

SPECIFICATION FOR APPROVAL

AC/DC ADAPTOR

CUSTOMER SPEC: INPUT: 100-240V AC 50/60Hz

OUTPUT1: 5V-20VDC 3.25A Max. OUTPUT2: 5V-12VDC 1.67A Max.

CUSTOMER DWG./PART NO. _____

KTEC PART NO. KSA-65P4-D5 (PAHS 6P NP REACH ROHS PROP65)

SAMPLE NO: S99311 REV.: A ISSUE DATE: 2024-06-05

PRODUCT NO: KS240370

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 |
| Candy | 徐海鑫 | 贺洪明 | 冯连连 |

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Switching power supply specification (Class B)

KTEC P/N:

PRODUCT NO:

CUSTOMER P/N:

KSA-65P4-D5

KS240370

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TITLE:

REVISION: A

DRAWING NO.:

PREPARED: 廖小艳

CHECKED: 林永海 明奇

APPROVED: 贺洪明

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1 GENERAL

1.1 Description

This specification defines the performance characteristics for a Class II adapter, single-phase 65 watts. Single of two segment voltage output level power supply.

- Simple design philosophy.
- Reliability level of 50K hours MTBF @ 25°C (rated input voltage, 80% load and using the Telcordia SR-332 issue 3 method).
- DC output voltage must be Safe Extra Low Voltage (SELV) & Limited Power as defined by UL62368-1.
- Compliant with Class B USB Type-C Power Delivery Specification.
- The adapter meets PD 3.0, PPS, Apple 2.4A, BC1.2.

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 | 1.7A max. @ 100Vac to 240Vac |
| Power consumption (no-loading at 5V) | 0.3W max. @ 230Vac |
| Primary current protection | An adequate internal fuse on the AC input line is provided. |
| Input Configuration | <u> 2 </u> Conductor |

2.2 AC Inrush Current

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

| No. | Parameter | Type | Fixed PDO | | | | | PPS |
|-----|---------------------------|------------------------|-----------|-------|-------|-----------|-------|-----------|
| | | | 5V | 9V | 12V | 15V | 20V | 5.0-21V |
| 3.1 | Nominal DC output voltage | OUTPUT1 (PD+type C) | 5V | 9V | 12V | 15V | 20V | 5.0-21V |
| 3.2 | Minimum load current | | 0.0A | | | | | |
| 3.3 | Rating load current | | 3A | 3A | 3A | 3A | 3.25A | 3.0A Max. |
| 3.4 | Rating output power | | 15~65W | | | | | 63W Max. |
| No. | Parameter | Type | Fixed PDO | | | PPS | | |
| | | | 5.0V | 9.0V | 12.0V | 5.0-11.0V | | |
| 3.5 | Nominal DC output voltage | OUTPUT2 (PD+type C) | 5.0V | 9.0V | 12.0V | 5.0-11.0V | | |
| 3.6 | Minimum load current | | 0.0A | | | | | |
| 3.7 | Rating load current | | 3.0A | 2.22A | 1.67A | 2.0A Max | | |

| | | | | | |
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| | | | | | | |
|------|--------------------------|---|----------|-----------|----------|-----------|
| 3.8 | Rating output power | 20W Max. | | | | |
| 3.9 | Line regulation | The line regulation is less than <u>±5%</u> while measuring at rated load. | | | | |
| 3.10 | Load regulation | The load regulation for +5.0V,+9.0V,+12.0V,+15.0V,+20.0V is less than <u>±5%</u> , at measured output load from 0% to 100% rated load. | | | | |
| 3.11 | Ripple and noise | Fixed PDO | | | | |
| | | 5.0V | 9.0V | 12.0V | 15.0V | 20.0V |
| | | 150mVp-p | 200mVp-p | 250 mVp-p | 250mVp-p | 350 mVp-p |
| | | Add 0.1uF/50V ceramic capacitor and 10uF/50V aluminum electrolytic capacitor in parallel the output terminal. Measured with 20MHz Bandwidth Oscilloscope at full load land rated input voltage 115Vac & 230Vac. | | | | |
| 3.12 | Average efficiency | Meet DOE VI | | | | |
| | | AC115V/60Hz and 230V/50Hz,full load The test point: end PCBA board, no include DC cable. | | | | |
| 3.13 | Turn on delay time | <u>3000 ms max.</u> at nominal input AC voltage and output full load. | | | | |
| 3.14 | Rise time | The supply shall have a start-up rise time of less than <u>100 ms</u> to rise to within regulation limits for all DC outputs. | | | | |
| 3.15 | Hold up time | When power off, DC output must be maintained <u>8 ms</u> in regulation limit at 115V/230Vac and full load. | | | | |
| 3.16 | Output over-shoot | Less than <u>10%</u> of nominal voltage value. | | | | |
| 3.17 | indication function | / | | | | |
| 3.18 | Protection function | | | | | |
| | Over-voltage protection | 7.5V max. (5.0V mode); 11.25V max. (9.0V mode); 15.0V max. (12.0V mode); 19.0V max. (15.0V mode); 25.0V max. (20.0V mode), 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 | When overload is applied to the output, the power supply shall be shut down and enter auto-recovery or latch mode 4.5A max. | | | | |
| 3.19 | Dynamic Response | Output voltage limit shall remain within +/- 10% Adaptor shall be subjected to increases and decreases from 0 to 25% to 50% of maximum load current, 50% to 75% of maximum load current, and 75% to 100% of maximum load current. In all tests, the load slew rate shall be no less than 100mA/us. | | | | |

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4 POWER DISTRIBUTION

| PD 65W | | | Output power(Max.) |
|--------------------|---|--------|--------------------|
| Output port | C1 | C2 | |
| Single port output | PD 65W | - | 65W |
| | PD 45W (The power drop to 45W after reaching the preset temperature) | - | 45W |
| | - | PD 20W | 20W |
| Combined output | PD 45W | PD 20W | 65W |
| | PD 20W (The power drop to 20W after reaching the preset temperature) | PD 20W | 40W |

5 MECHANICAL

5.1 Enclosure and Layout

Plastic case: UL94V-0
 Weight: /g (Max.)
 Dimensions: 58.2*58*32.5mm
 Colour: WHITE(WT-07)

5.2 Input and Output Configuration

Input pin: US 2Pin
 Output connector: USB Type-C1: 5V 3A, 9V 3A, 12V 3A, 15V 3A, 20V 3.25A, 5.0-21V 3.0A Max.
USB Type-C2: 5V 3A, 9V 2.22A, 12V 1.67A, 5.0-11V 2A Max.

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6 REGULATORY COMPLIANCE

6.1 EMC Specifications

The external power supply must meet all specification in this section. it is required that the external power supply work closely with the customer's equipment in order to get the best EMC solution.

6.1.1 Radiated and Conducted Emission

The power supply shall comply to:
FCC part 15: Class B for radiated and conducted emissions.
EN55032, Class B for radiated and conducted emissions.

6.2 Immunity

6.2.1 Electrostatic Discharge Immunity

EN 55035, EN 61000-4-2
- Air Discharge: ±8kv
- Contact Discharge: ±4kv
- 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 330Ω) 8kv air discharge, 4kv contact discharge.

6.2.2 Radiated Field Immunity

EN 55035, EN 61000-4-3
Frequency Range: 80-1000MHz, still need test singly 1800MHz, 2600MHz, 3500MHz, 5000MHz
Field Strength: 3V/m with 80% amplitude modulation of 1kHz
Performance Criteria A
Radio-frequency electromagnetic field susceptibility test, RS 80-1000MHz, 3V/m, 80%AM(1KHz).

6.2.3 Conducted Field Immunity

EN 55035, EN 61000-4-6
- Frequency Range: 0.15-80MHz(0,15 to 10 MHz, 3V; 10 to 30 MHz, 3-1V; 30 to 80 MHz, 1V)
- Field Strength: 3A/m with 80% amplitude modulation of 1KHz
- Performance Criteria A

6.2.4 Fast Transient Immunity

EN 55035, EN 61000-4-4
- Power line: 1kv
- Performance Criteria B

6.2.5 Surge Immunity

EN 55035, EN 61000-4-5
- Line to line: ±1kv

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

- + 90°/ -270°

Lighting surge voltage of differential and common modes shall be applies across AC input lines and across input and frame ground.

6.3 Safety Requirements and Certification

6.3.1 Regulatory Standard

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

| for short | Country | Certified Status | Standard |
|-----------|-------------|------------------|------------|
| UL/CUL | USA/ Canada | / | UL 62368-1 |

6.3.2 Additional Safety Requirements

- ⊙ Dielectric Withstand Voltage, Primary(input AC short)-to-Secondary(output DC short): 3000 Vac, 5mA, 1 minute.
- ⊙ Insulation Resistance, Input to output: 100M Ω (MIN.) at 500 VDC.
- ⊙ Reinforced insulation system, Primary-to-Ground and Primary-to-Secondary.
- ⊙ The leakage current shall not exceed 0.25mA.

7 ENVIRONMENTAL REQUIREMENTS

7.1 Temperature

- ⊙ Operating : 0 °C +25 °C
- ⊙ Non-Operating : -20 °C +70 °C

7.2 Humidity

- ⊙ Operating : 5%~95% (Non Condensing)
- ⊙ Non-Operating : 5%~95% (Non Condensing)

7.3 Altitude

Sea level to 2000m

7.4 Vibration

Meet IEC721-3-3

7.5 Drop Test

At 0.75m drop on concrete surface, one times on each side

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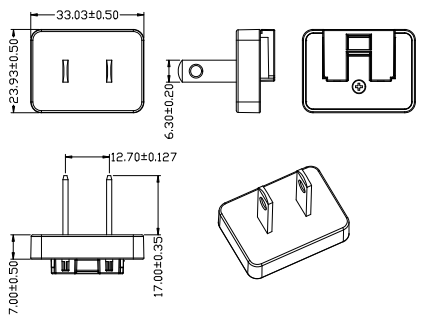
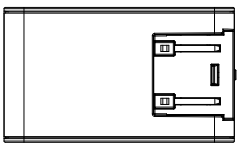
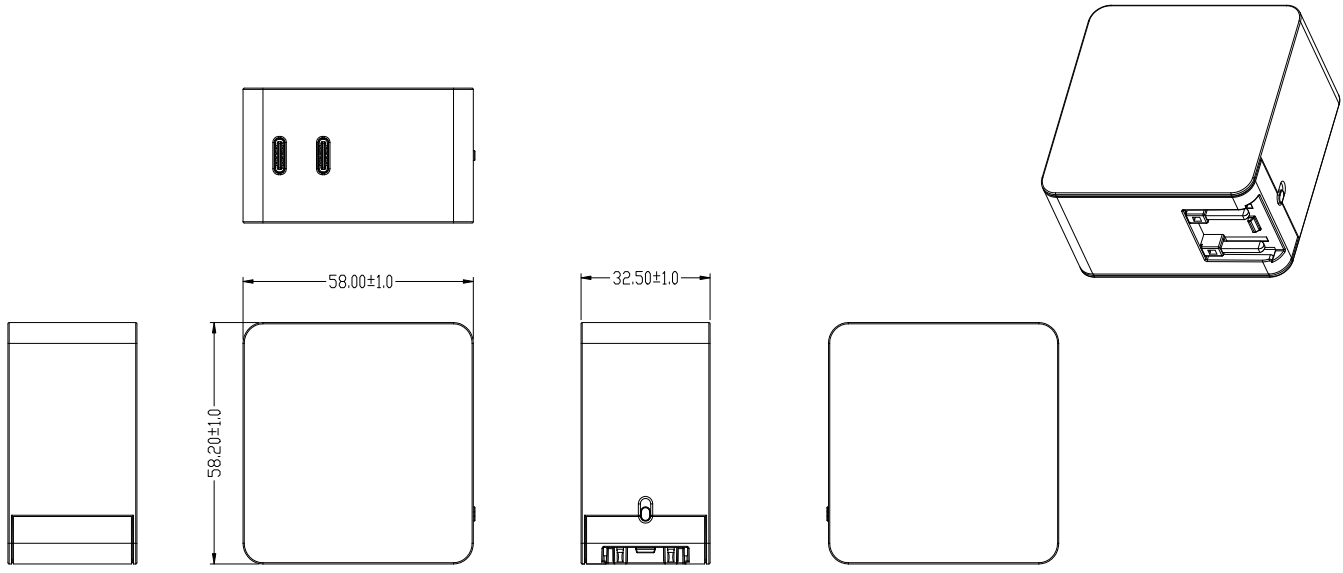
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KS240370

8 APPEARANCE DRAWING: (UNIT: MM)



UL PLUG

- 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. Satin Finish
 5. Top mold: MSS023026 Bottom mold: MSS023027

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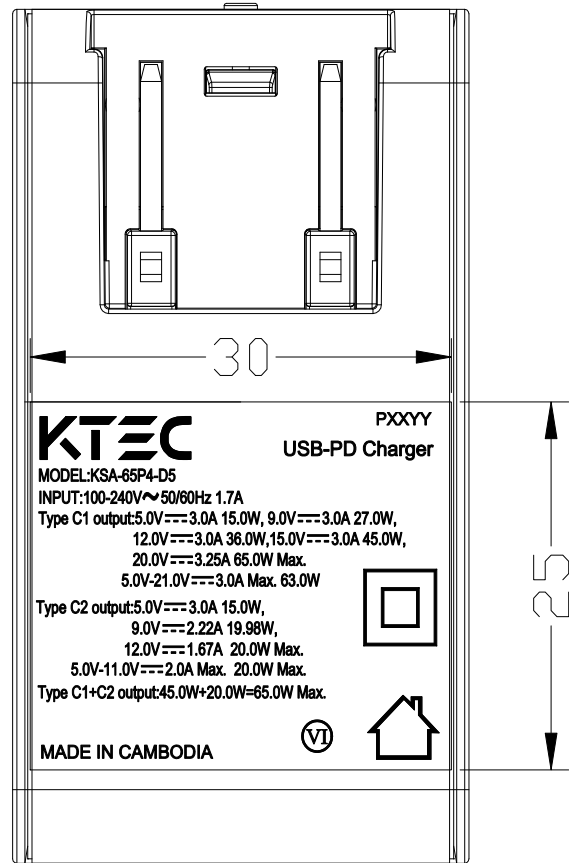
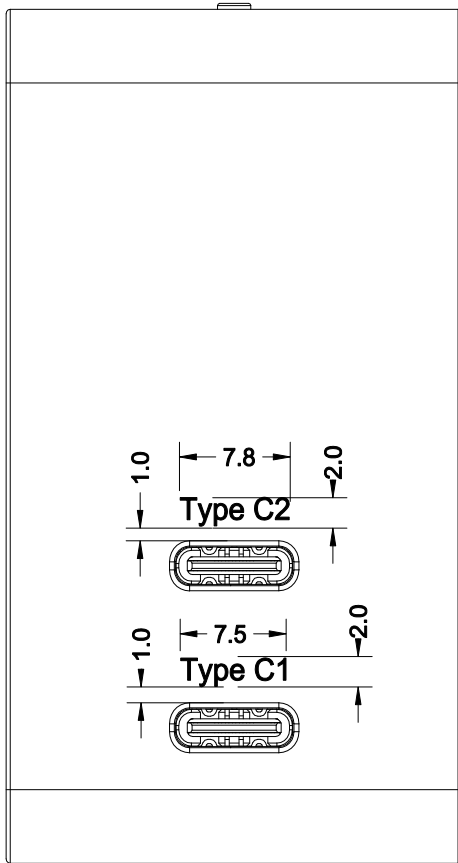


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9 NAME PLATE:



Note: Laser

PXXYY (P=PAHS,6P,NP XX=WEEK YY=Year) 按实际生产日期制作

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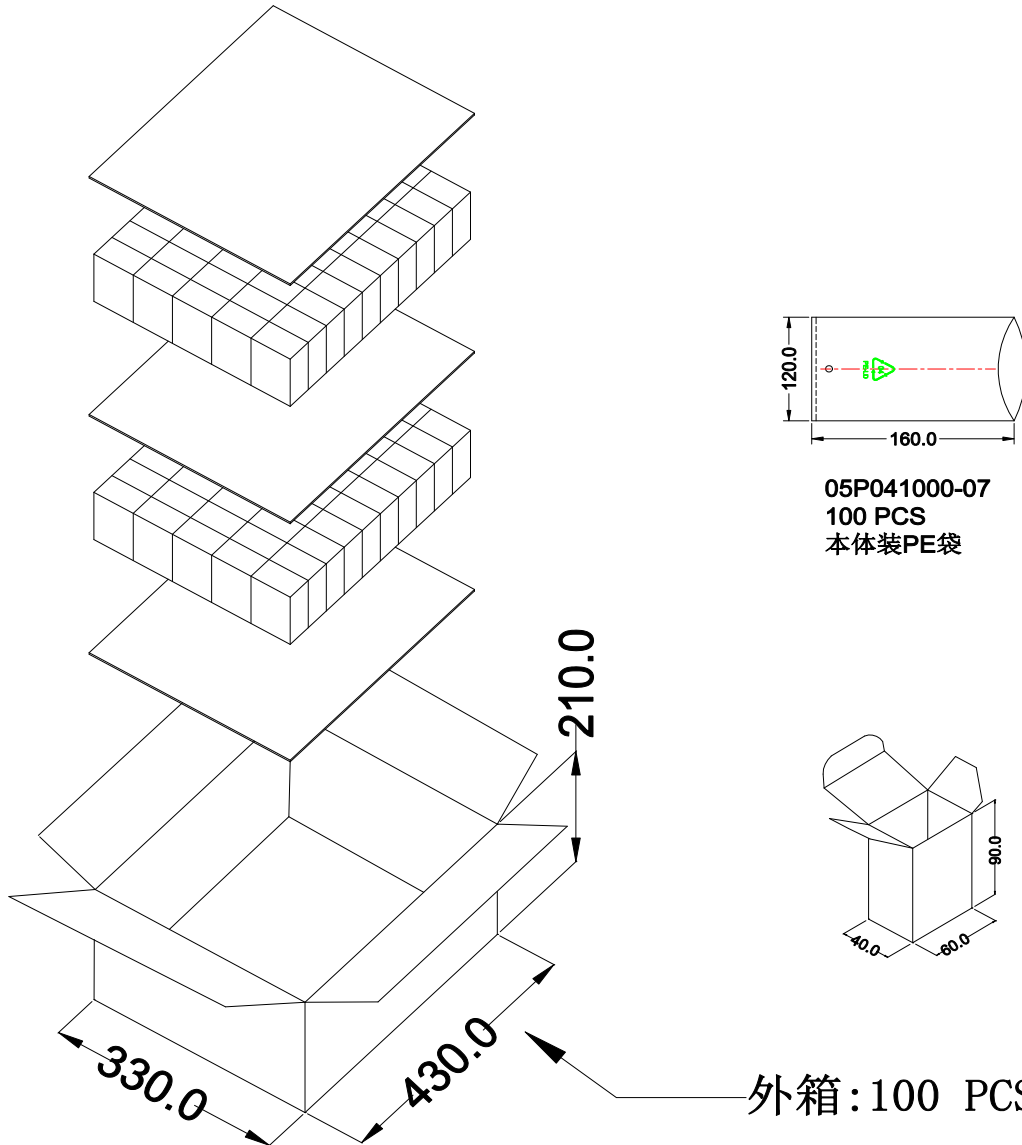
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10 PACKING (UNIT: MM)



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