

SPECIFICATION FOR APPROVAL
AC/DC ADAPTOR

CUSTOMER SPEC:INPUT: 100-240V AC 50/60Hz OUTPUT:12.0VDC 4.0A

CUSTOMER DWG./PART NO.: _____

KTEC PART NO.: KSA-50W-120400VU (PAHS 6P NP REACH ROHS NOP PRO65)

SAMPLE NO.: S99331 REV.: A ISSUE DATE: 2024-06-06

PRODUCT NO.: KS220390

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
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Switching power supply specification (class B)

KTEC P/N:

PRODUCT NO.:

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KSA-50W-120400VU

KS240390

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TITLE:

REVISION: A

DRAWING NO.:

PREPARED: 廖小艳

CHECKED: 潘兵兵 林英青

APPROVED: 贺洪明

DATE: 2024-06-06

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1 GENERAL

1.1 Description

- This specification defines the performance characteristics for a class II adapter, single-phase 48.0 watts. Single output level power supply.
- Simple design philosophy
- Reliability level of 100K hours MTBF @ 25°C and 40°C
- 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	1.5A 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

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	+12.0V
3.2	Minimum load current	0.0A
3.3	Rating load current	4.0A
3.4	Peak load current	/
3.5	Rating output power	48.0W
3.6	Line regulation	The line regulation is less than <u>±5%</u> while measuring at rated load and +/-10% of input voltage changing.
3.7	Load regulation	The load regulation for <u>+12.0V</u> is less than <u>+/-5%</u> , at measured output load from 10% to 100% rated load.

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3.8	Ripple and noise	200 mVp-p
		Add 0.1uF/50V ceramic capacitor and 10uF/50V aluminum electrolytic capacitor across the output terminal. Measured with 20MHz Bandwidth Oscilloscope.
3.9	Average efficiency	<u>87.77%</u> minimum
		115V/60Hz and 230V/50Hz, output current from 100%, 75%, 50%, 25%.
3.10	Turn on delay time	<u>4000 mS max.</u> at nominal input AC voltage and full load.
3.11	Rise time	The supply shall have a start-up rise time of less than <u>20 mS</u> to rise to within regulation limits for all DC outputs.
3.12	Hold up time	<u>8 mS</u> minimum at nominal input 100Vac minimum voltage and full load.
3.13	Output over-shoot	Less than <u>10%</u> of nominal voltage value.
3.14	LED indication function	/
3.15	Protection function	
	Over-voltage protection	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.

4 MECHANICAL

4.1 Enclosure and Layout

Plastic case: UL94V-0
 Weight: /g (Max.)
 Dimensions: 93.0*33.0*49.0mm
 Color: WHITE(WT-07)

4.2 Input and Output Configuration

Input pin: US Pin
 Output connector: DC plug type: 5.5*2.1*9.5mm (Fork and Groove)
 Polarity: Center “+”
 Cable: 1.5M VW-1 80°C 300V 1185 3.5Q 18AWG WHITE(WT-07)
(PAHS 6P NP REACH ROHS NOP PRO65)

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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: ±15kv
- Contact Discharge: ±8kv
- 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, 15kv air discharge, 8kv 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: ±1kv
- Line to earth: ±2kv
- + 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	Certified Status	Standard
UL	USA	Meet	UL 62368-1
CUL	Canada	Meet	CSA C22.2 NO.62368-1

5.3.2 Additional Safety Requirements

- ⊙ Dielectric Withstand Voltage, Primary(input AC short)-to-Secondary(output DC short): 3000Vac, 10mA, 1 minute.
- ⊙ Insulation Resistance, Input to output: 50MΩ(MIN.) at 500VDC.
- ⊙ Reinforced insulation system, Primary-to-Ground and Primary-to-Secondary.
- ⊙ The leakage current shall not exceed 0.25mA.

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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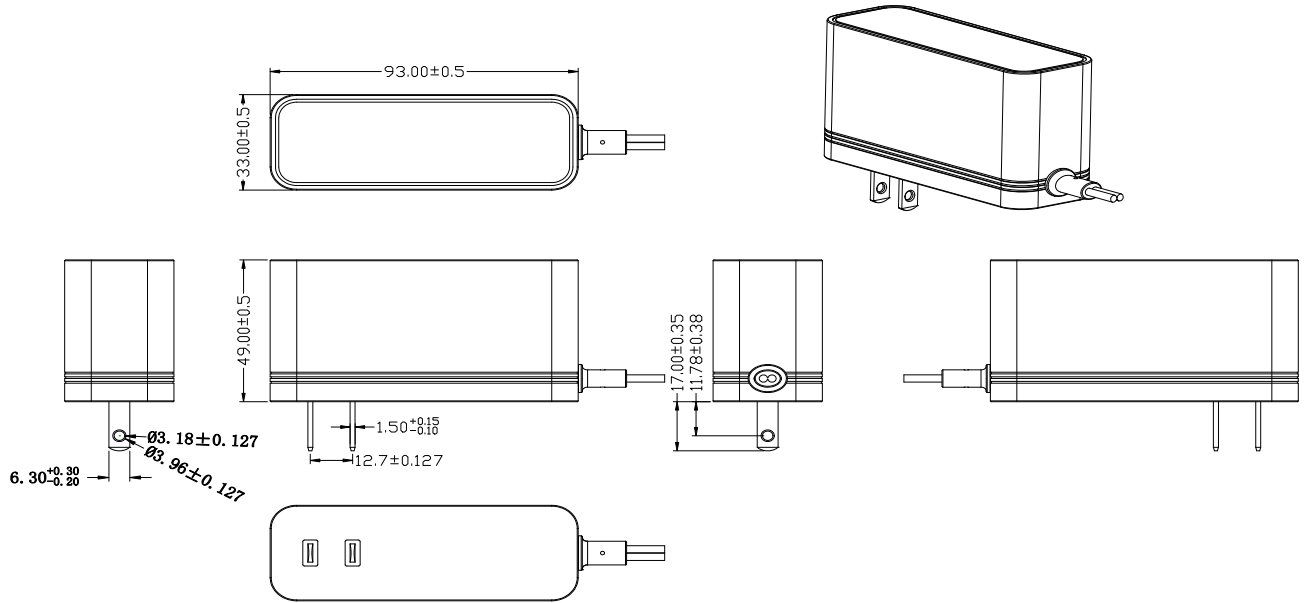


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7 APPEARANCE DRAWING: (Unit: mm)



- 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 NOP PRO65
4. Satin finish
5. Top mold: MSS020042; Bottom mold: MSS020043

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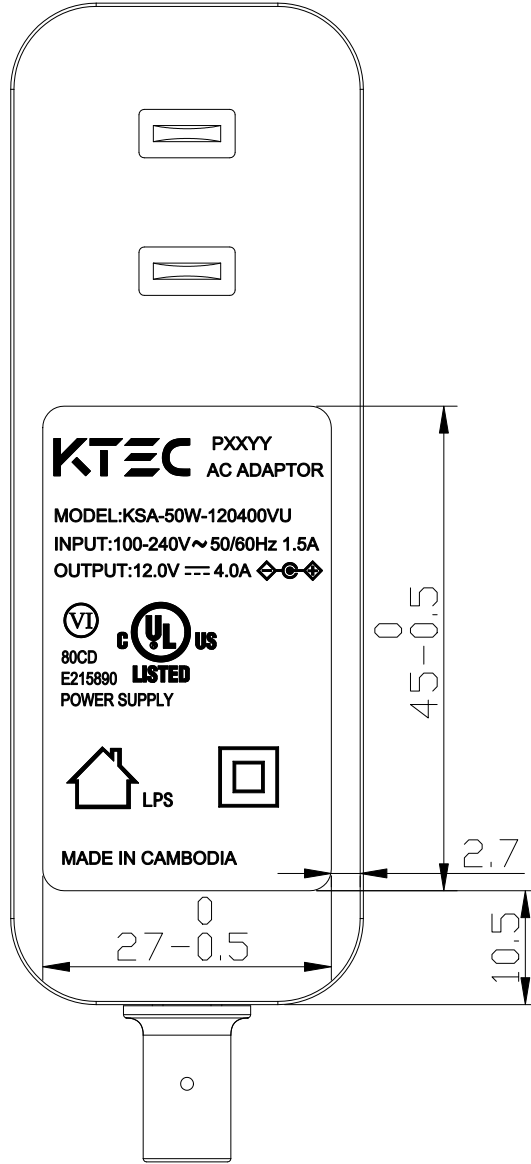


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8 NAME PLATE:



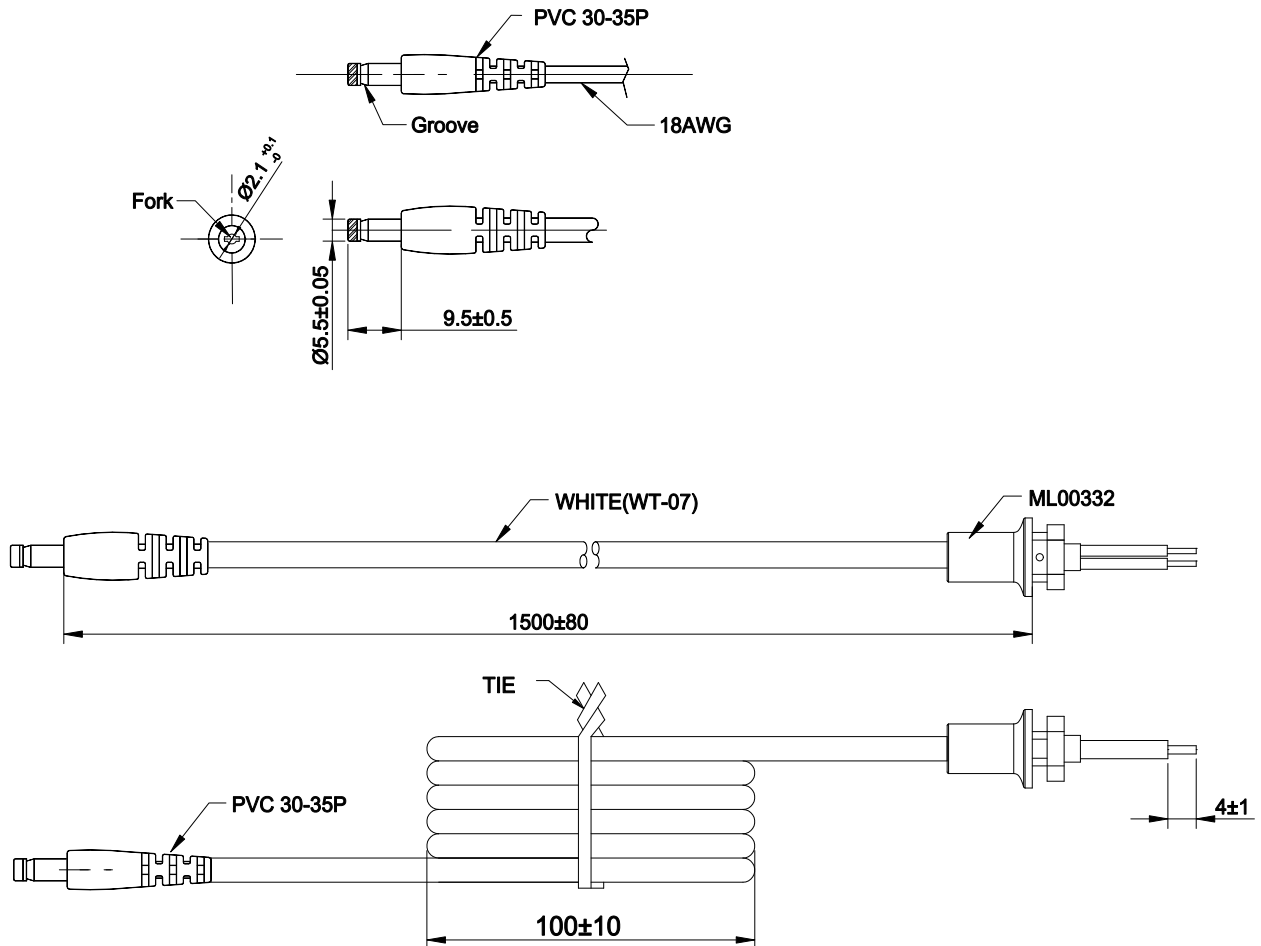
Note: Laser (鐳射)

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

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9 DIMENSION OF OUTPUT PLUG & DC CORD (Unit: mm)



NOTE: (unit:mm)

- 1). WIRE TYPE: VW-1 80°C 300V L=1500mm 1185 3.5Ø 18AWG WHITE(WT-07)
- 2). THE POLARITY:
- 3). PAHS 6P NP REACH RoHS NOP PRO65

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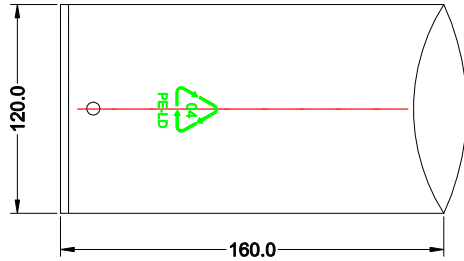


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10 PACKING (Unit: mm)

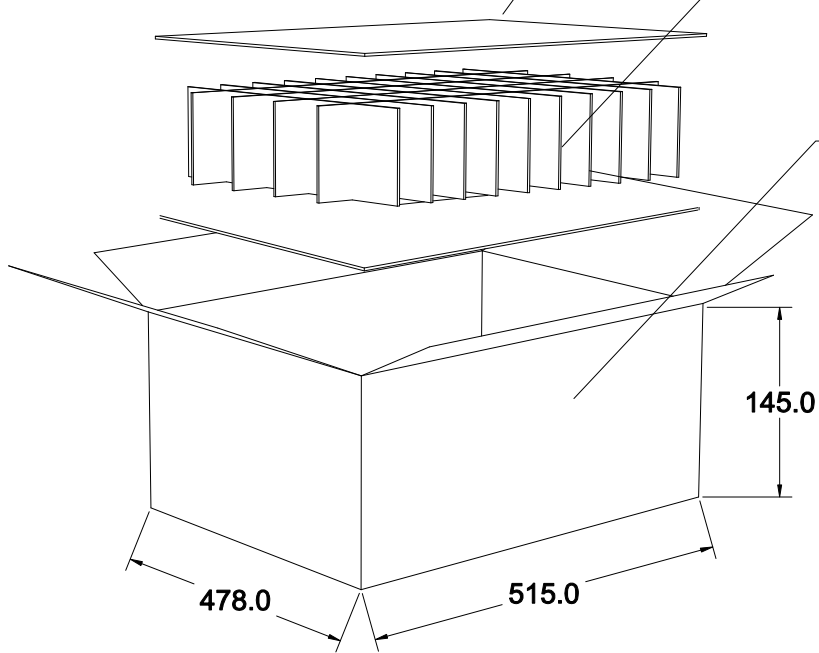


05P041000-07
60PCS

11T500462-01
2 PCS

11Q903912-01
1 SET

11P514714-01
1 PCS



每箱装60PCS

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