

SPECIFICATION FOR APPROVAL
AC/DC ADAPTOR

CUSTOMER SPEC: INPUT: 100-240V AC 50/60Hz OUTPUT: 12VDC 1.0A

CUSTOMER DWG./PART NO. _____

KTEC PART NO. KSA-12W-120100VU (PAHS+6P+NP+REACH+RoHS+PROP65)

Warranty life: All E-Capacitor life must meet 1 year at 40°C ambient (100Vac/60Hz and 240Vac/50Hz, full load.)

SAMPLE NO: S99328 REV.: A ISSUE DATE: 2024-05-20

PRODUCT NO: KS240387 Common mode Version

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:

CUSTOMER P/N:

KSA-12W-120100VU

KS240387

Project Modify List

Item	Content	Rev.	Date	Prepared By	Checked By
1	First REV.	A	2024-05-20	Liaoxiaoyan	Chenqiu Jian
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TITLE:		REVISION: A		DRAWING NO.:	
PREPARED: 廖小艳	CHECKED: 陈秋健 明奇	APPROVED: 贺洪明	DATE: 2024-05-20	PAGE: 2 OF 11	



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1 GENERAL

1.1 Description

This specification defines the performance characteristics for a class II adapter., single-phase 12.0 watts. Single output level power supply.

- Simple design philosophy.
- Reliability level of 50K 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	0.4A max.
Power consumption (no-loading)	0.1W max.
Primary current protection	An adequate internal fuse on the AC input line is provide.
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	+12V
3.2	Minimum load current	0.01A
3.3	Rating load current	1.0A
3.4	Peak load current	/
3.5	Rating output power	12.0W
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>+12V</u> is less than <u>±5%</u> , at measured output load from 10% to 100% rated load .
3.8	Peak load regulation	The peak load regulation for <u>+12V</u> is less than <u>/</u> , at measured output load from 30% to 100% rated load.

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3.9	Ripple and noise	120 mVp-p
		Add 0.1uF/50V ceramic capacitor and 10uF/50V aluminum electrolytic capacitor across the output terminal. Measured with 20MHz Bandwidth Oscilloscope.
3.10	Average efficiency	82.96% minimum
		115V/60Hz and 230V/50Hz, output current from 100%, 75%, 50%, 25%.
3.11	Turn on delay time	3000 mS max at nominal input AC voltage and full load
3.12	Rise time	The supply shall have a start-up rise time of less than 20 mS to rise to within regulation limits for all DC outputs.
3.13	Hold up time	10 mS minimum at nominal input AC voltage and full load
3.14	Output over-shoot	Less than 7% of nominal voltage value
3.15	Temperature coefficient	Output voltage temperature coefficient ±0.05%/°C
3.16	LED indication function	/
3.17	Protection function	
	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. A power cycle shall be required to restore normal operation.

4 MECHANICAL

4.1 Enclosure and Layout

Plastic case: UL94V-0
 Weight : / (Max.)
 Dimensions: 61.5*28.5*39.5mm
 Color : White(WT-07)

4.2 Input and Output Configuration

Input pin: US Pin
 Output connector : DC plug type: 5.5*2.1*12.0mm (Fork and Groove)
 Polarity: Center"+"
 Cable: 1.5M VW-1 80°C 300V 1185 24AWG 3.0Q White (WT-07)
(PAHS+6P+NP+REACH+ROHS+PROP65)

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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.
GB9254, GB17625.1

5.2 Immunity

5.2.1 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.

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 1 kHz
- 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 complied 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): 3000 Vac, 5m A, 1 minute.
- ⊙ Insulation Resistance, Input to output: 10M Ω (MIN.) at 500 VDC.
- ⊙ 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 +80 °C

6.2 Humidity

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

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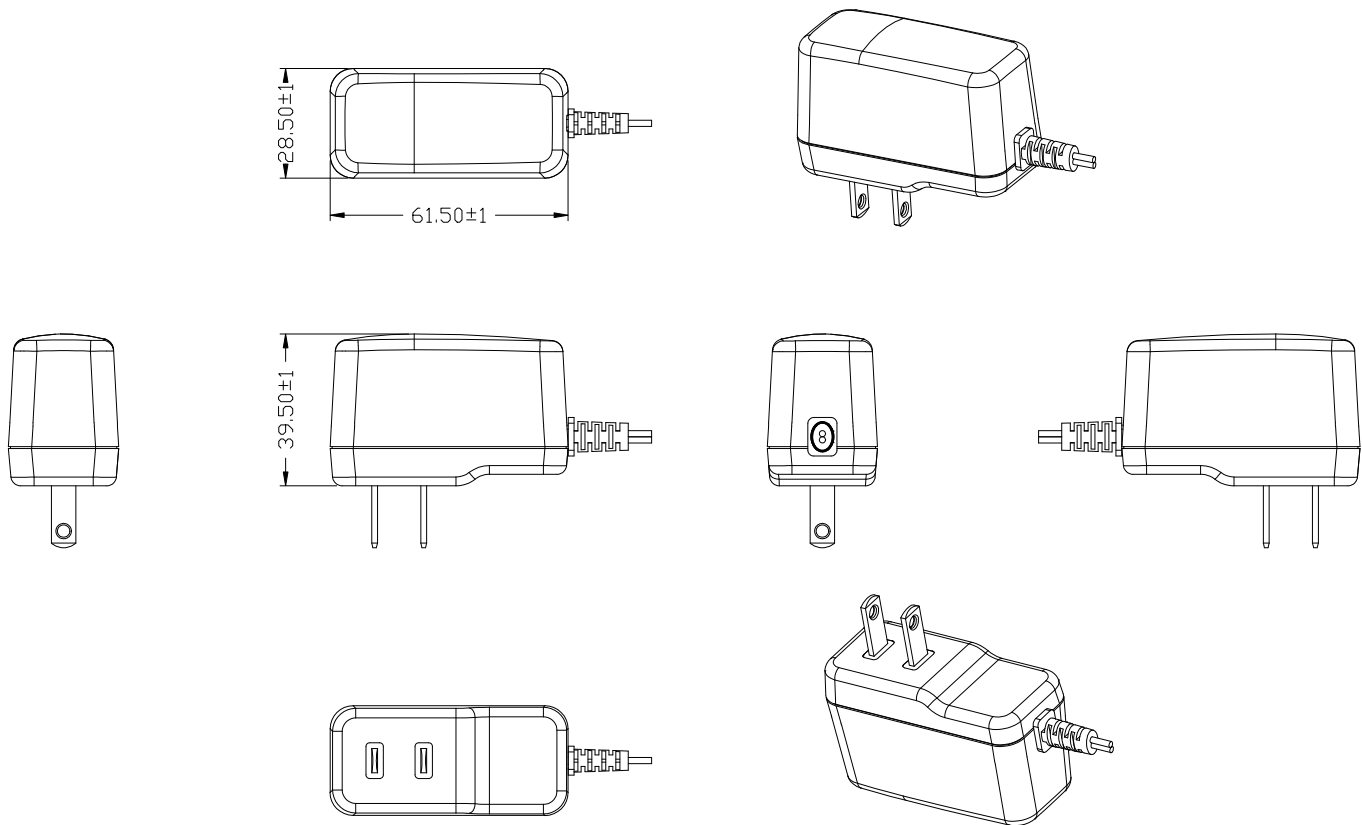


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7 APPEARANCE DRAWING: (Unit: mm)



- NOTE: 1. Case cover & chassis material:
PC WHITE(WT-07)
2. AC PIN MATERIAL: BRASS (NI PLATED)
3. PAHS+6P+NP+REACH+RoHS+PROP65
4. Satin Finish 雾面
5. Top mold: MSS014105; Bottom mold:MSS014127

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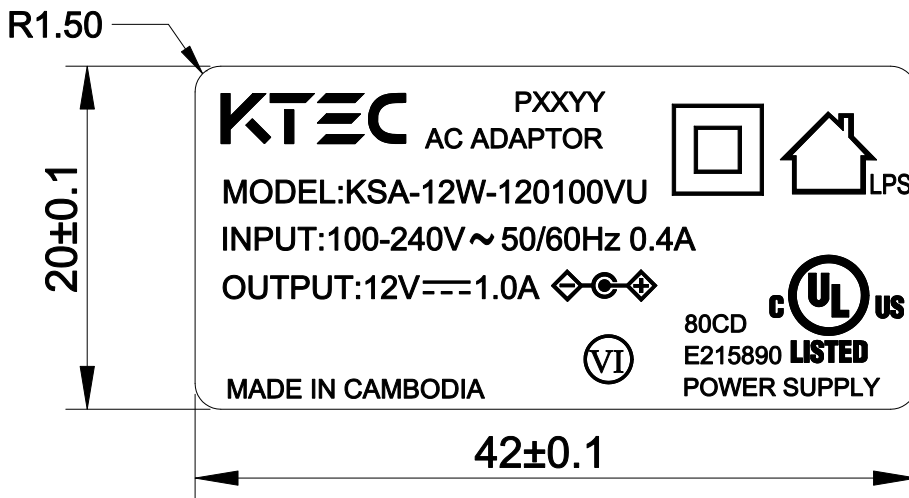
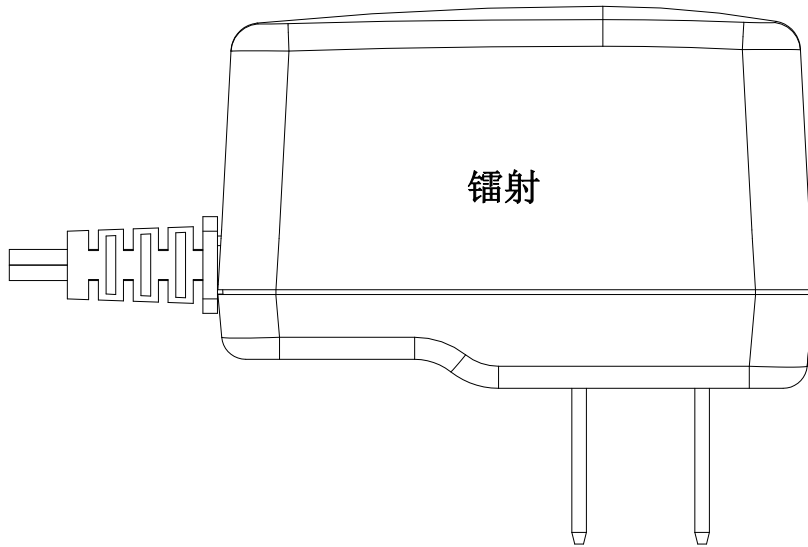


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8 NAME PLATE:

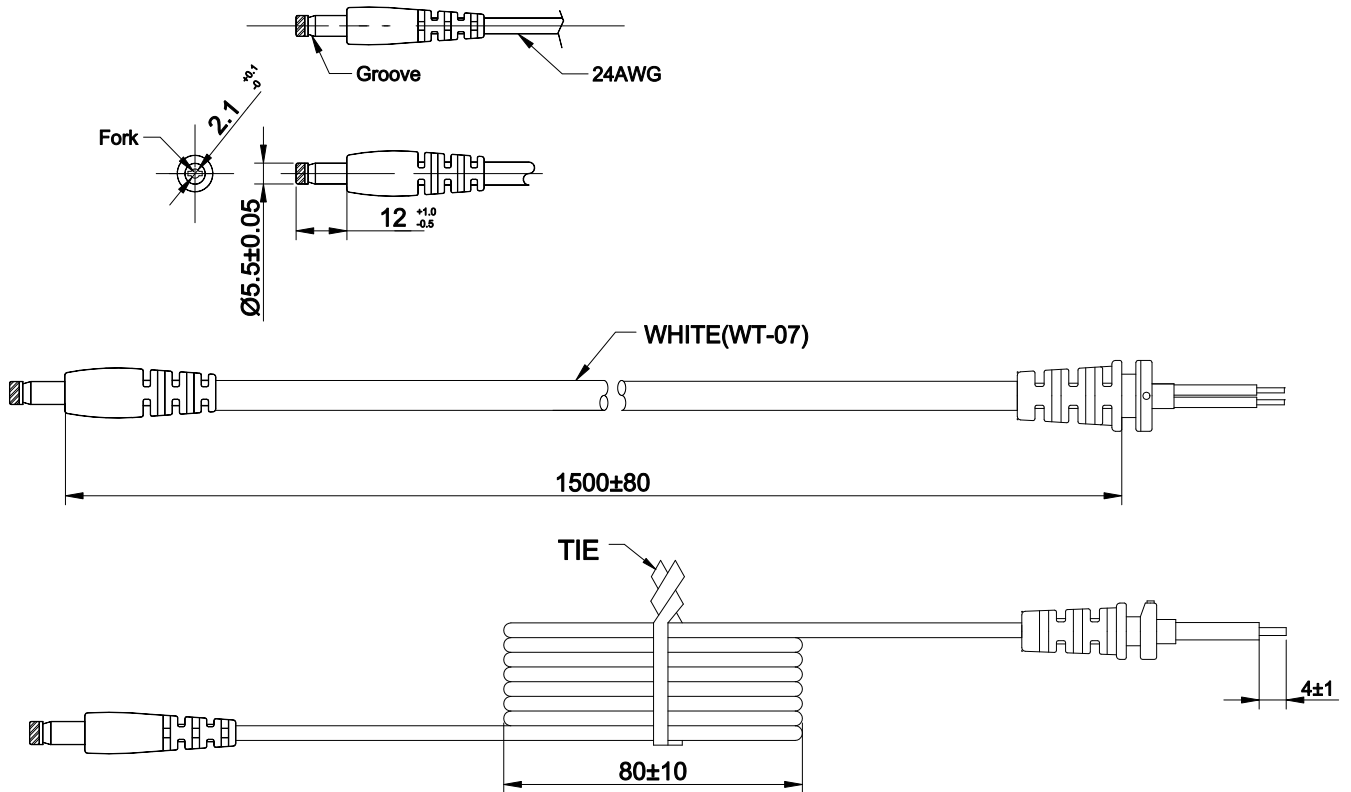


NOTE: 1.Date code(PXXYY: P=PAHS, 6P,NP XX=WEEK, YY=YEAR)
按实际生产日期制作
PAHS+6P+NP+REACH+RoHS

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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 24AWG 3.0Ø WHITE(WT-07)
- 2).THE POLARITY:
- 3).PAHS+6P+NP+REACH+ROHS+PROP65
- 4).SR MOLD: 3.5W-12W (ML00506)

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