

SPECIFICATION FOR APPROVAL
AC/DC ADAPTOR

CUSTOMER SPEC:INPUT: 100-240V AC 50/60Hz OUTPUT: 12VDC 2.0A

CUSTOMER DWG./PART NO. _____

KTEC PART NO. KSA-24W-120200HU(PAHS 6P NP REACH ROHS PRO65)

SAMPLE NO: S99329 REV.: A ISSUE DATE: 2024-05-16

PRODUCT NO: KS240388

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	准/APPROVED BY	制样/MADE BY
TAI	徐海鑫	贺洪明	冯连连

KTEC GLOBAL CO., LTD.
KTEC 冠德国际科技股份有限公司

深圳研发中心地址: 中国广东省深圳市光明新区马田街道办合水口社区第四工业区中鹏程大厦四楼
ADD: 4F Zhong PengCheng Building, No.4 Industrial Park, He shuikou Community, Matian street,
Guangming New Zone, Shenzhen City, guangdong province, China

台北总部地址: 235024 新北市中和区中板路 23 号 9 楼
ADD: 9F., No. 23, Zhongban Rd., Zhonghe Dist., New Taipei City 235024

柬埔寨制造据点: 柬埔寨茶胶省当谷县本布乡站波村(三号公路 66 公里处)
ADD: Phum Chormpul, Khum P'pel, Srok Tramkork, Takeo Province, Kingdom
of Cambodia(66KM,National Broad Road)

TEL:86-755-27160388 FAX:86-755-27160145
[Http://www.twktec.com](http://www.twktec.com)



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Switching power supply specification(class B)

KTEC P/N:	PRODUCT NO.:	CUSTOMER P/N:
KSA-24W-120200HU	KS240388	

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1 GENERAL

1.1 Description

This specification defines the performance characteristics for a class II adapter, single-phase 24.0 watts. Single output level power supply.

- Simple design philosophy.
- Reliability level of 50K hours MTBF @ 40°C degree (rated input voltage, and using the Telcordia SR-332 issue 3 method) full load.
- DC output voltage must be Safe Extra Low Voltage (SELV) & Limited Power as defined by IEC62368-1
- Cooling: natural convection.
- Adaptor warranty life: 1 year at 25°C (full loading)
- Warranty life: All E-Capacitor life must meet 2 years at 40°C ambient. (120Vac/60Hz and 230Vac/50Hz, full load)

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	0.6A 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	+ 12.0V
3.2	Minimum load current	0.0A
3.3	Rating load current	2.0A
3.4	Peak load current	/
3.5	Rating output power	24.0W
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	150 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	86.2% minimum 115V/60Hz and 230V/50Hz, output current from 100%, 75%, 50%, 25%.
3.10	Turn on delay time	4000 mS max at rated input AC voltage and full load
3.11	Rise time	The Supply shall have a start-up rise time of less than 50 mS to rise to within regulation limits for all DC outputs.
3.12	Hold up time	8 mS minimum at nominal input 100Vac minimum voltage and full load.
3.13	Output over-shoot	Less than 7% 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 power supply will be protection when output power at 110-200% of all rated DC output

4 MECHANICAL

4.1 Enclosure and Layout

Plastic case: UL94V-0
 Weight : /g (Max.)
 Dimensions: 88.5x43.3x32.75 mm
 Colour : 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 2464 22AWG 3.5Q WHITE(WT-07)
(PAHS 6P NP REACH ROHS 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.

GB9254, GB17625.1

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	Certified Status	Standard
UL	USA	Meet	UL 62368-1
CUL	Canada	Meet	CSA C22.2 NO.62368-1
NRcan	Canada	Meet	CAN/CSA C381.1-08
FCC	America	Meet	Class B Part 15

5.3.2 Additional Safety Requirements

- ⊙ Dielectric Withstand Voltage, Primary(input AC short)-to-Secondary(output DC short): 3000Vac, 5m A, 1 minute.
- ⊙ Insulation Resistance, Input to output: 20MΩ(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 +80 °C

6.2 Humidity

- ⊙ Operating: 5%~90% (Non Condensing)
- ⊙ Non-Operating: 5%~90% (Non Condensing)

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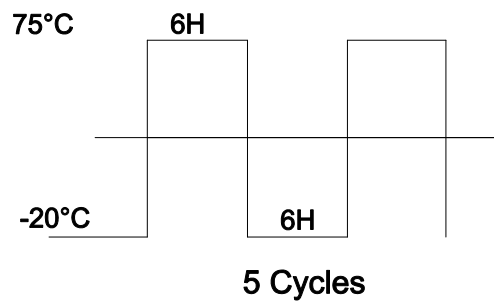
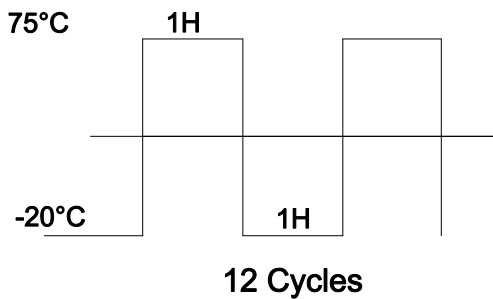
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6.3 Drop test

From 75cm onto concrete, 2 times (1/face). No surface crack, functions are normal, can be passed dielectric strength and insulation resistance test.

6.4 Thermal shock (Non-operating)

One cycle define: +75°C, 1 hour →(ramp rate 40°C/minute) →-20°C, 1 hour; Testing 12cycles; One cycle define: +75°C, 6 hour →(ramp rate 40°C/minute) →-20°C, 6 hour; Testing 5 cycles; Then place it on normal temperature and normal humidity for 1 hours. After do the testing, the appearance and electrical need pass.



6.5 DC Jack plug in/out

The plug and socket proceed insertion and withdrawal test: 20 cycles/min; application product can power on and operation with the test adapter after 6000 cycles insertion and withdrawal test

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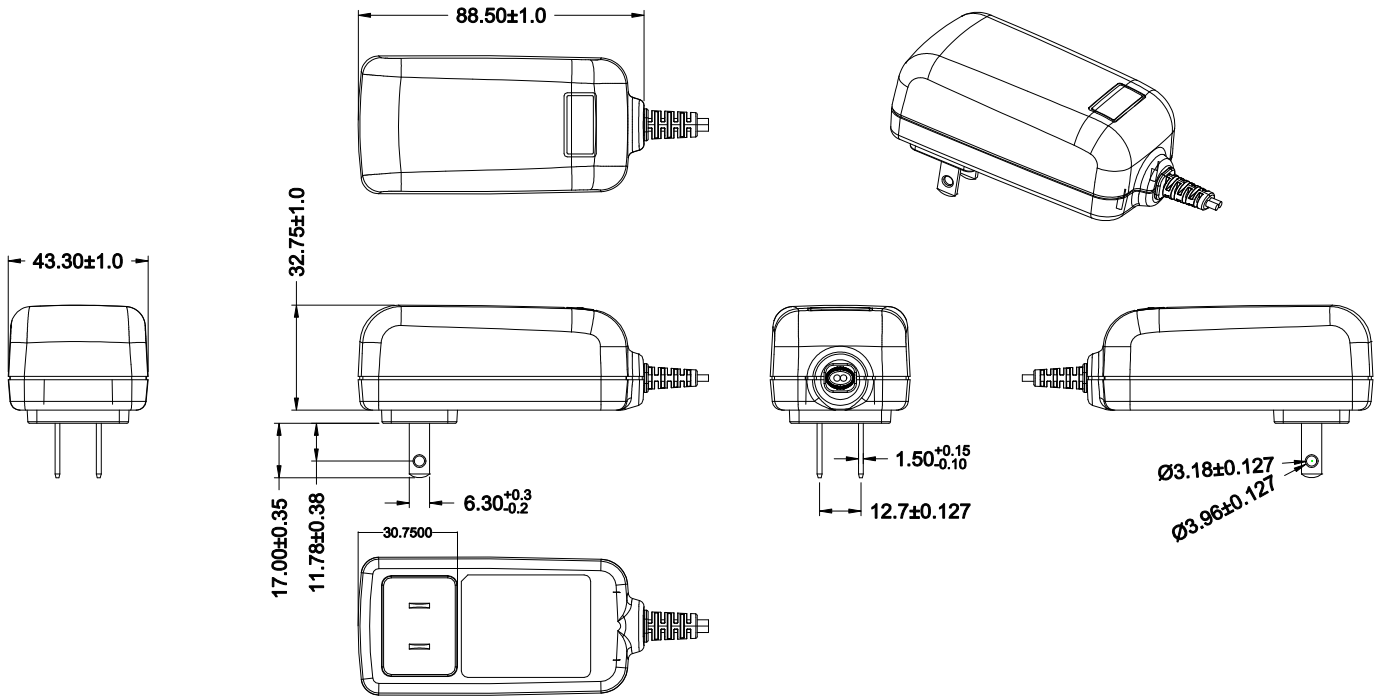


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7 APPEARANCE DRAWING: (Unit: mm)



- 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 PRO65
 4. Satin Finish 雾面
 5. Top mold: MSS012008; Bottom mold: MSS016050

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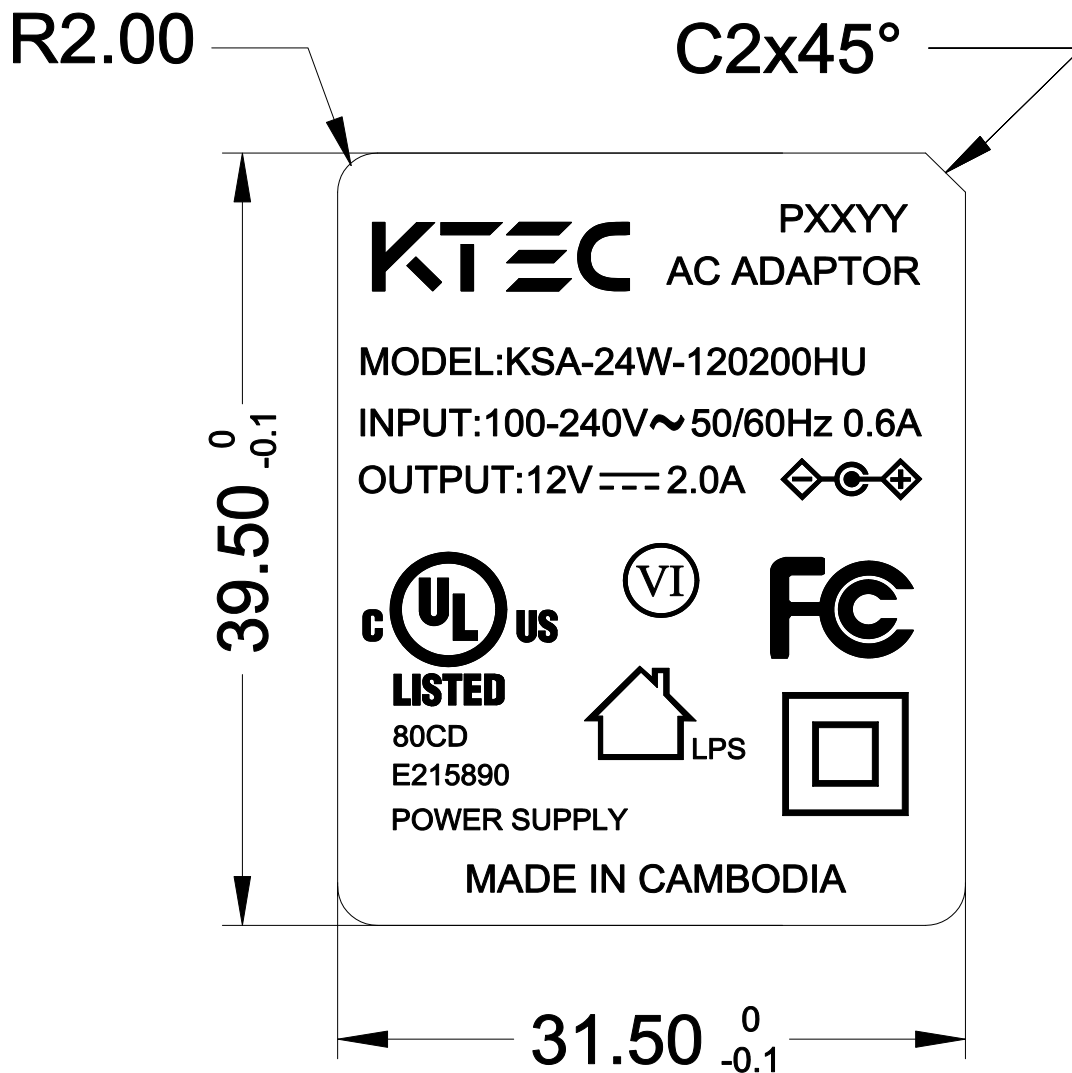


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8 NAME PLATE:



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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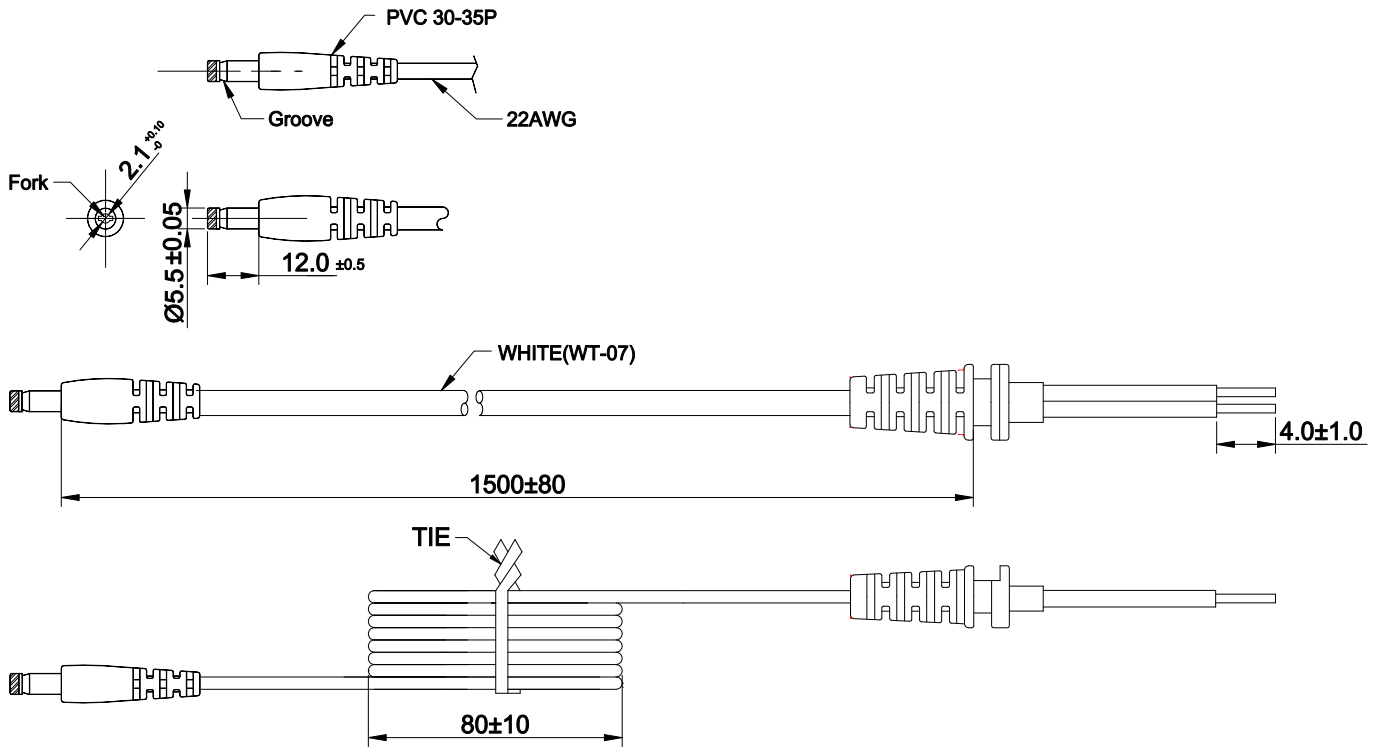


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9 DIMENSION OF OUTPUT PLUG & DC CORD (Unit: mm)



NOTE: (unit:mm)

- 1). WIRE TYPE: 2464 VW-1 80°C 300V L=1500mm Ø3.5 22AWG WHITE(WT-07)
- 2). THE POLARITY:
- 3). PAHS 6P NP REACH ROHS PRO65
- 4). SR MOLD: 15W-25W(ML00509)

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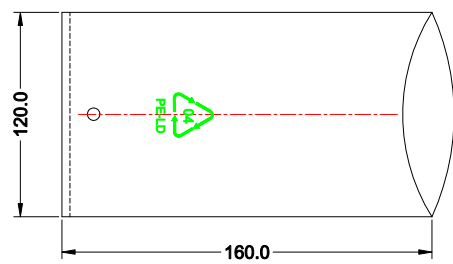
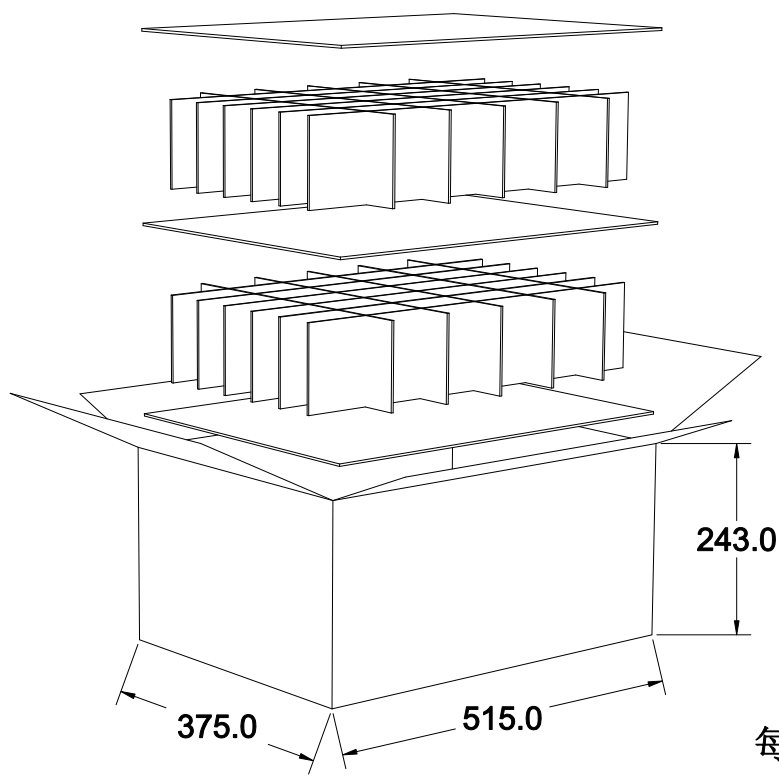


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10 PACKING (Unit: mm)



每箱装80PCS

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