







冠德科技股份有限公司  
KUANTECH INCORPORATED COMPANY

**Switching power supply specification(class B)**

<b>KUANTECH P/N:</b>	<b>PRODUCT NO:</b>	<b>CUSTOMER P/N:</b>
<b>KSM-12W-050200VU</b>	<b>KS240361</b>	

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<b>TITLE:</b>		<b>REVISION:A</b>	<b>DRAWING NO.:</b>	
<b>PREPARED :</b> 余国娟	<b>CHECKED:</b> 冯小山 林英青	<b>APPROVED :</b> 贺洪明	<b>DATE:</b> 2024-05-16	<b>PAGE:</b> 3 OF 11



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**1 GENERAL**

1.1 Description

This specification defines the performance characteristics for a class II adapter, single-phase 10 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 IEC60601.
- 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 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	+5.0V
3.2	Minimum load current	0.01A
3.3	Rating load current	2.0A
3.4	Peak load current	/
3.5	Rating output power	10W
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>+5.0V</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	<u>78.7%</u> minimum 115V/60Hz and 230V/50Hz, output current from 100%, 75%, 50%, 25%
3.10	Turn on delay time	<u>3000 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>20ms</u> to rise to within regulation limits for all DC outputs.
3.12	Hold up time	<u>8 ms</u> minimum at nominal input 100V AC minimum voltage and full load.
3.13	Output over-shoot	Less than <u>7%</u> of nominal voltage value.
3.14	LED indication function	/
3.15	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.

**4 MECHANICAL**

4.1 Enclosure and Layout

Plastic case: UL94V-0  
 Weight: 7g (Max.)  
 Dimensions: 61.5\*28.5\*39.5mm  
 Colour: WHITE(WT-07)

4.2 Input and Output Configuration

Input pin: US Pin  
 Output connector: DC plug type: 5.5\*2.5\*10.5mm  
 Polarity: Center: "+"  
 Cable: 1.5M VW-1 80°C 300V 2468 2C 22AWG 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.  
CISPR-II / EN55011: Class B for radiated and conducted emissions.

5.2 Immunity

5.2.1 Electrostatic Discharge Immunity

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 61000-4-3

- Frequency Range: 80-1000MHz
- 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 61000-4-4

- Power line: 2kv
- Performance Criteria B

5.2.4 Surge Immunity

EN 61000-4-5

- 1.2/50 μs Open Circuit voltage
- 8/20 μs Short Circuit current
- Power line: 1kv
- Line to earth: 2kv

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

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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	/	ANSI/AAMI ES 60601-1

5.3.2 Additional Safety Requirements

- ⊙ Dielectric Withstand Voltage, Primary(input AC short)-to-Secondary(output DC short): 4000Vac, 5m 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 0.1mA.

**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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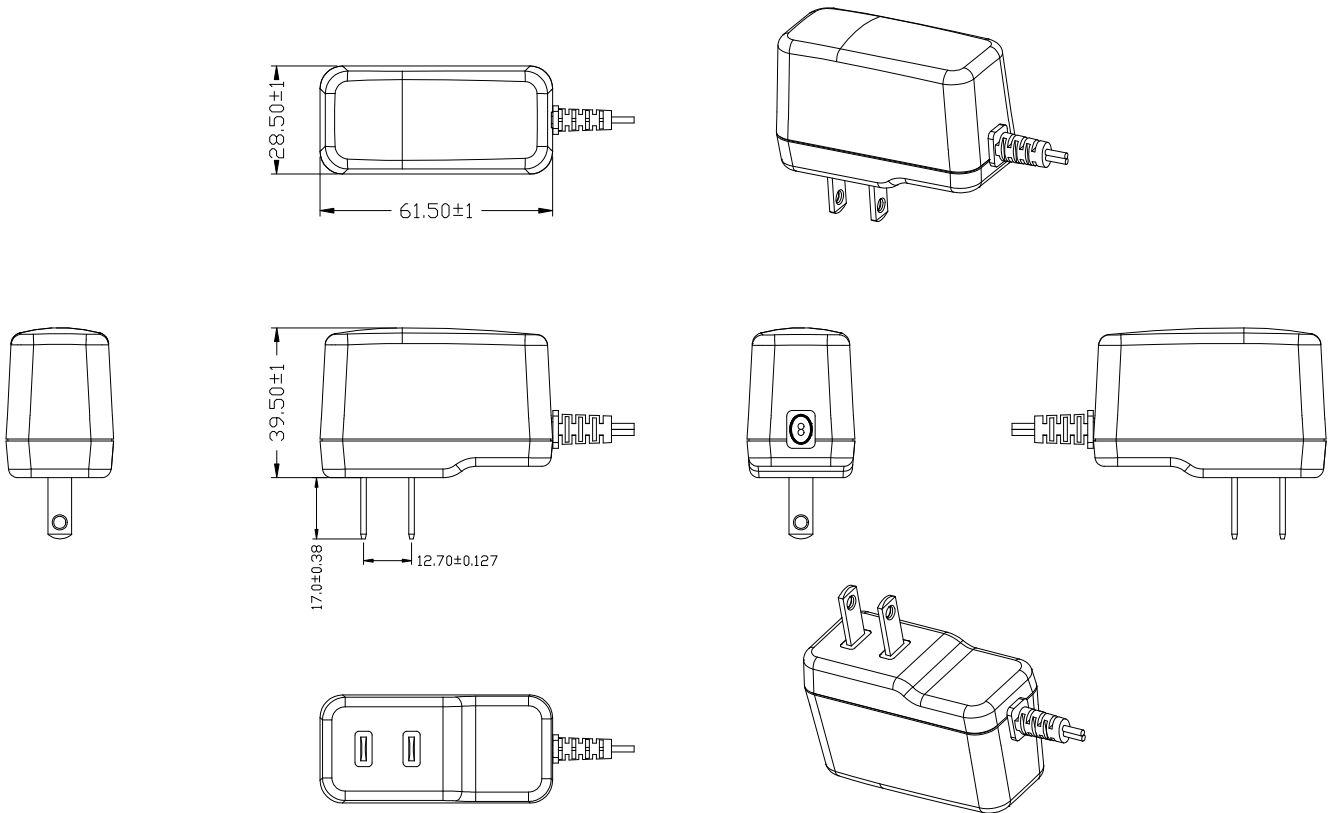


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7 APPEARANCE DRAWING: (Unit: mm)



- NOTE: 1. Case cover & chassis material:  
PC WHITE(WT-07) (NO KTEC)  
2. AC PIN MATERIAL: BRASS (NI PLATED)  
3. PAHS 6P NP REACH ROHS PROP65  
4. Satin finish  
5. Top Model: MSS014105; Bottom Model: MSS014127

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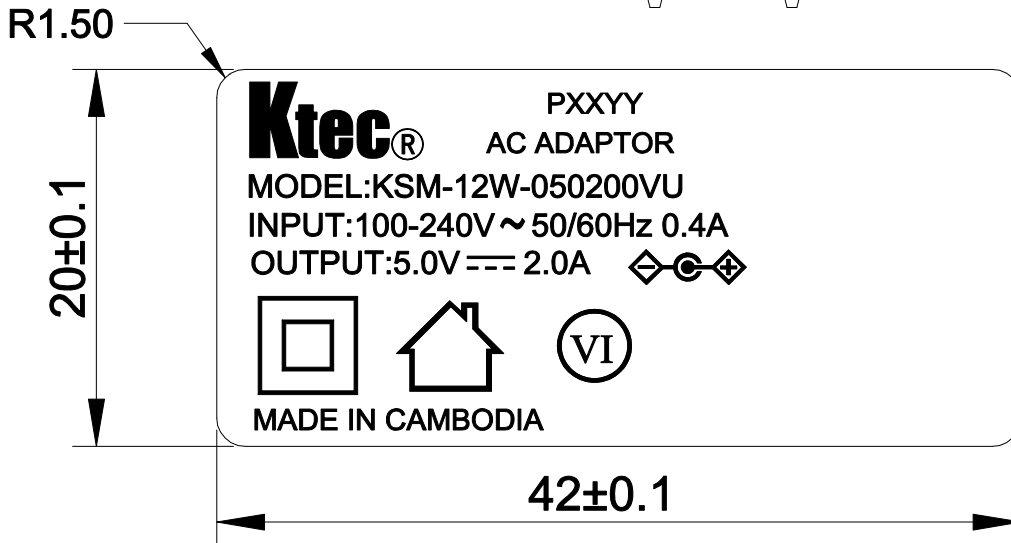
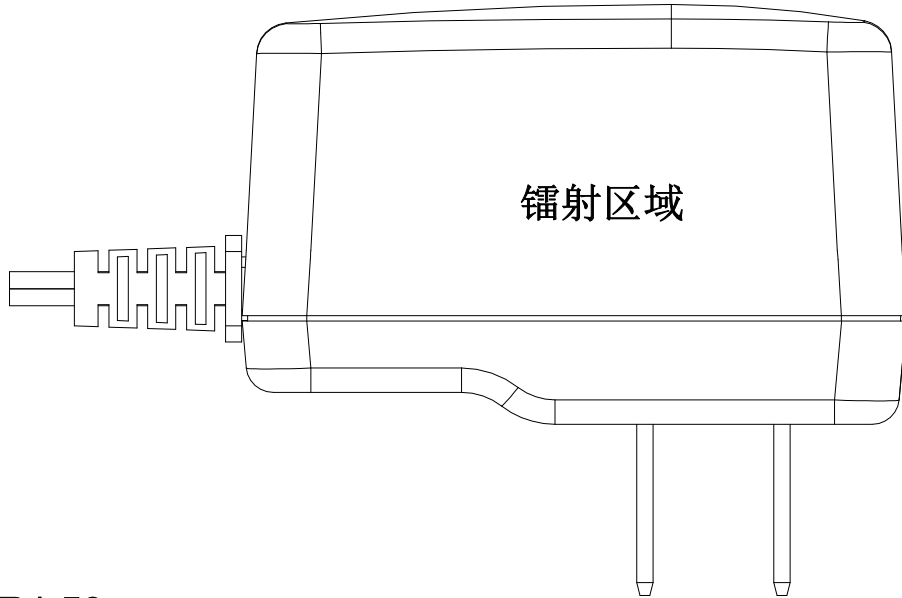


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8 NAME PLATE:



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

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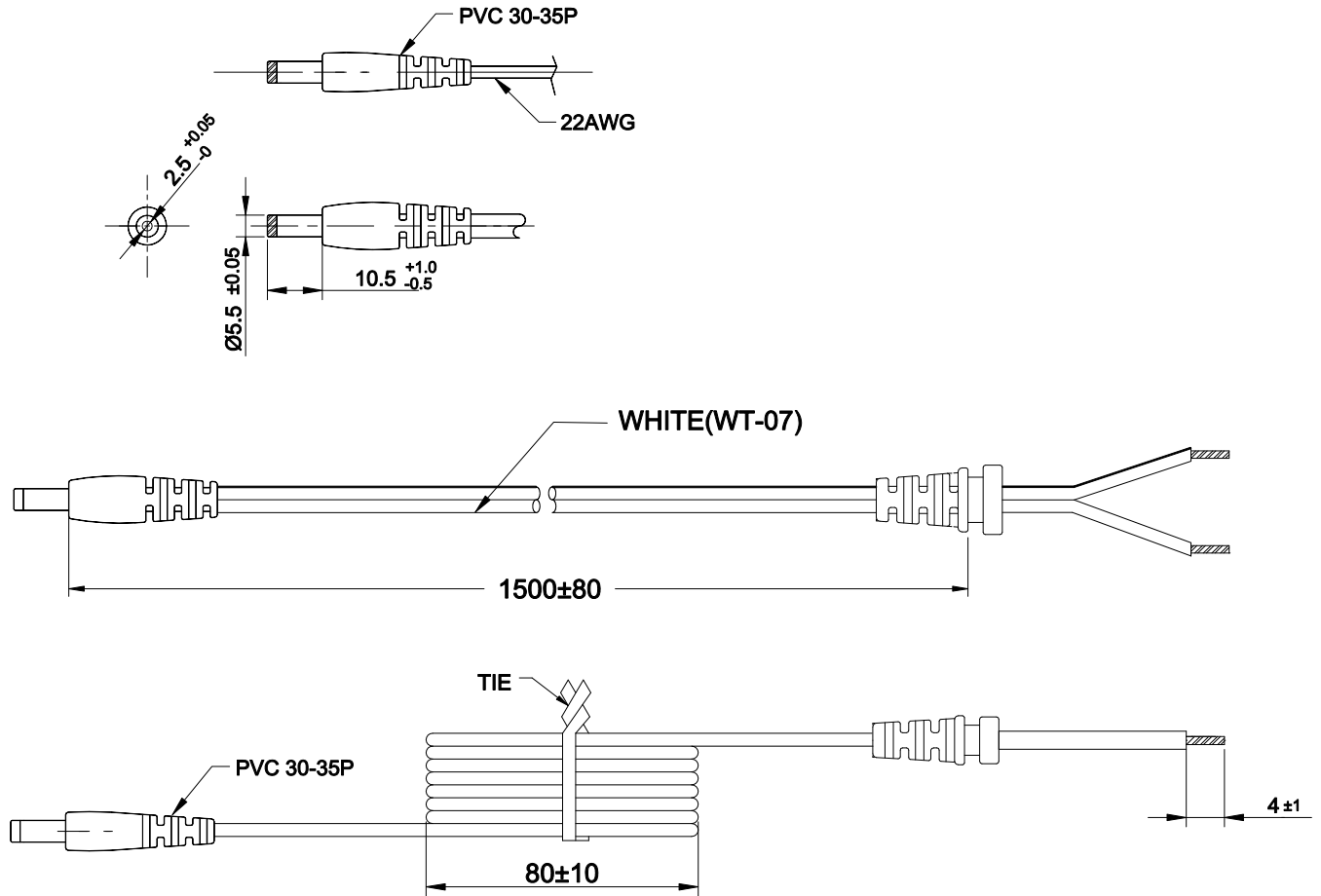
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9 DIMENSION OF OUTPUT PLUG & DC CORD (Unit: mm)



NOTE: (unit:mm)

- 1).WIRE TYPE:VW-1 2468 80°C 300V L=1500mm 2C 22AWG WHITE(WT-07)  
BLACK and WHITE----Positive WHITE----Negative
- 2).THE POLARITY:
- 3).PAHS 6P NP REACH ROHS PROP65
- 4).SR MOLD: 3.5-12W (ML00503)

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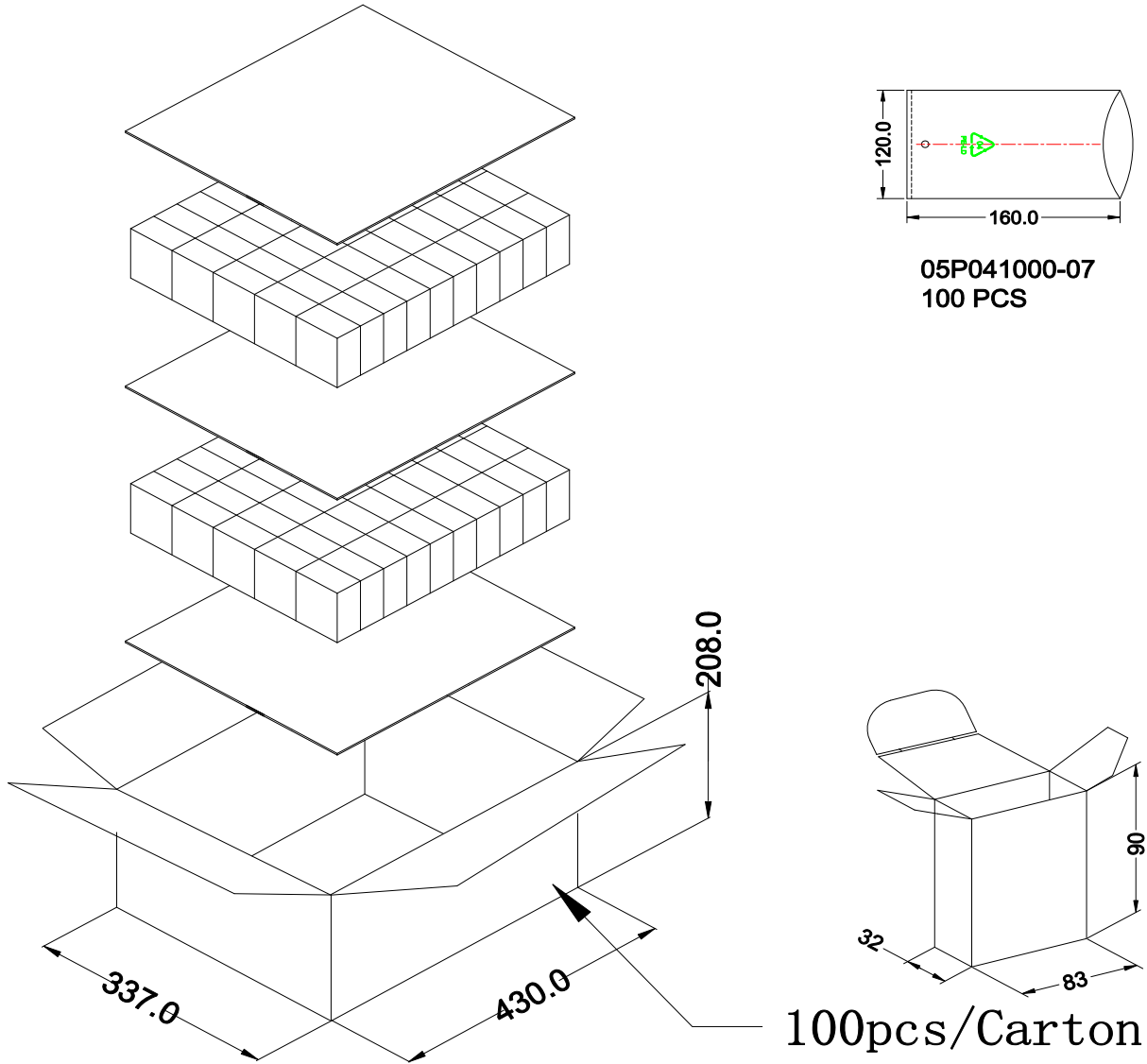
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10 PACKING (Unit: mm)

此包装为公司标准品包装，可能与样品包装不同，请确认！



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