

CUSTOMER

KTEC

SPECIFICATION FOR APPROVAL
AC/DC ADAPTOR

CUSTOMER SPEC: INPUT: 100-240V AC 50/60Hz OUTPUT: 12VDC 1.5A

CUSTOMER DWG./PART NO. _____

Ktec PART NO. KSA-18F-120150HU (PAHS+6P+NP+REACH+PROP65+ROHS)

SAMPLE NO: S99334

REV.: A ISSUE

DATE: 2024-05-21

PRODUCT NO: KS240393

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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KUANTECH INCORPORATED COMPANY

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Switching power supply specification(class B)

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KSA-18F-120150HU	KS240393	

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1 GENERAL

1.1 Description

This specification defines the performance characteristics for a class II adapter, single-phase 18 watts. Single output level power supply.

- Simple design philosophy.
- MTBF Power supplies and the associated components, modules and subassemblies shall at a minimum have a Mean Time Between Failures (MTBF) not less than 350,000 power on hours (based on a 100% duty cycle, rated input voltage) at 264VAC, 35° C and using the BELLCORE SR-332 method.
- DC output voltage must be Safe Extra Low Voltage (SELV) & Limited Power as defined by IEC6236-1.
- The maximum room ambient temperature (T_{mra}), as mentioned in clause B.1.6 and B.2.6 of IEC62368-1, for the external power supply is 40°C.
- 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	0.5A 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	1.5A
3.4	Peak load current	2.8A (10S 100-240Vac)
3.5	Rating output power	18W
3.6	Line regulation	The line regulation is less than <u>±5%</u> while measuring at rated load and +/-10% of input voltage changing.

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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	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.
3.9	Average efficiency	<u>85%</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 rated input AC voltage and full load
3.11	Rise time	The supply shall have a start-up rise time of less than <u>30 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	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 : 100 g (Max.)
 Dimensions: 45.0x45.0x30mm
 Colour : WHITE(WT-07)

4.2 Input and Output Configuration

Input pin: UL Pin
 Output connector : DC plug type: 5.5*2.5*11mm (Fork and Groove)
 Polarity: Center:"+"
 Cable: 1.5M VW-1 80°C 300V 2464 22AWG 3.5Q WHITE(WT-07)
(PAHS+6P+NP+REACH+PROP65+ROHS)

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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

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

5.1.2 Energy Performance Level Marking

All power supplies are required to comply with the California Energy Commission Appliance Efficiency Regulations (CEC-400-2009-013). Supplies are required to be Energy Star certified, level VI compliant.

5.2 Immunity

5.2.1 Electrostatic Discharge Immunity

EN 55024, 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 55024, 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 55024, EN 61000-4-4
- Power line: 1kV
- Signal line: 0.5kV
- Performance Criteria B

5.2.4 Surge Immunity

EN 55024, EN 61000-4-5
- 1.2/50 μs Open Circuit voltage
- 8/20 μs Short Circuit current
- Power line: 1 kV

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- Line to earth: 2 kV

Lightning surge voltage shall be applied in differential and common mode to AC input lines and cross primary AC input and secondary GND.

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	Certified	UL 62368-1
CUL	Canada	Certified	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: 20MΩ(MIN.) at 500VDC.
- ◎ Reinforced insulation system, Primary-to-Ground and Primary-to-Secondary.
- ◎ The leakage current shall not exceed 0.25mA.

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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: 5%~95% (Non Condensing)

6.3 Altitude

- ⊙ Operating: Sea Level to 10,000ft .
- ⊙ Non-Operating: Sea Level to 40,000ft.

6.4 Vibration

1.0mm, 10 –25Hz, 15 minutes per cycle for each axis (X, Y, Z)

6.5 Vibration and Shock

The power adapter shall be designed to withstand normal transportation vibration per MIL–STD -810D, method 514 and procedures X, as it is mounted in the chassis assembly and packed for shipping.

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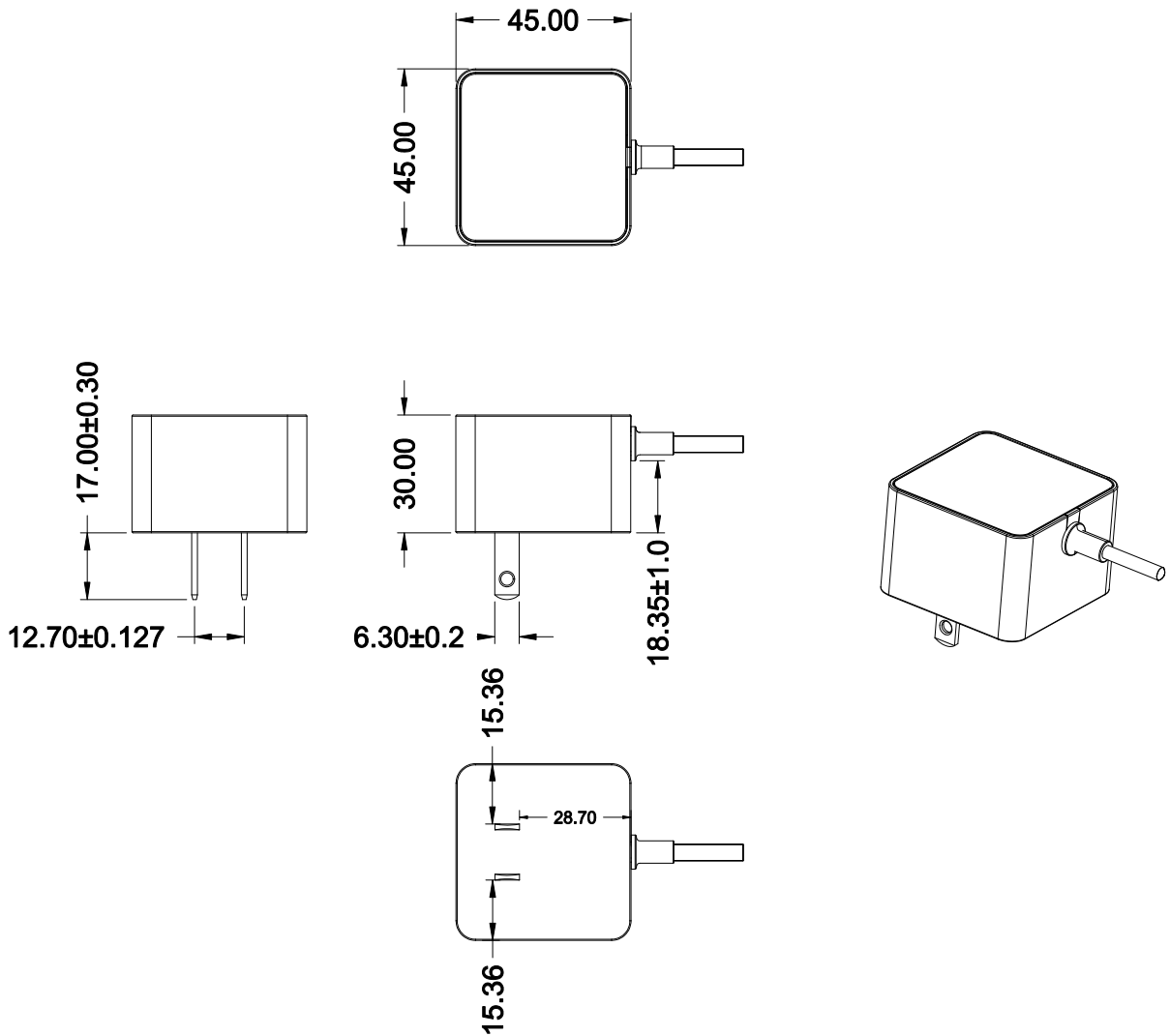
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7 APPEARANCE DRAWING: (Unit: mm)



- NOTE: 1. Case cover & chassis material:
PC WHITE(WT-07)
2. AC PIN MATERIAL: BRASS (NI PLATED)
3. PAHS+6P+NP+REACH+PROP65+ROHS
4. Satin finish

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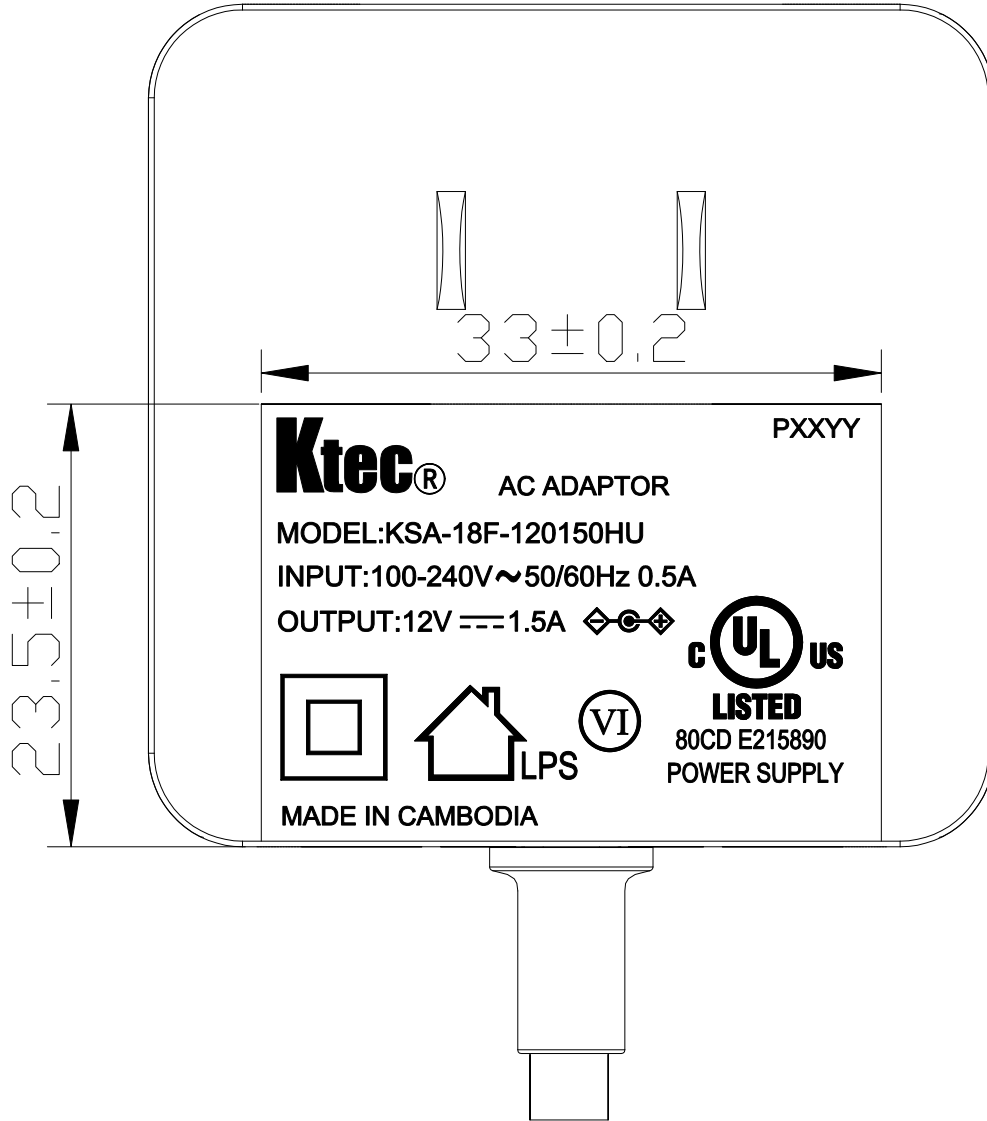


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8 NAME PLATE:



Note: Laser 镭射
DATE CODE (PXXYY: P=PAHS,6P,NP XX=WEEK, YY=YEAR)
按实际生产日期

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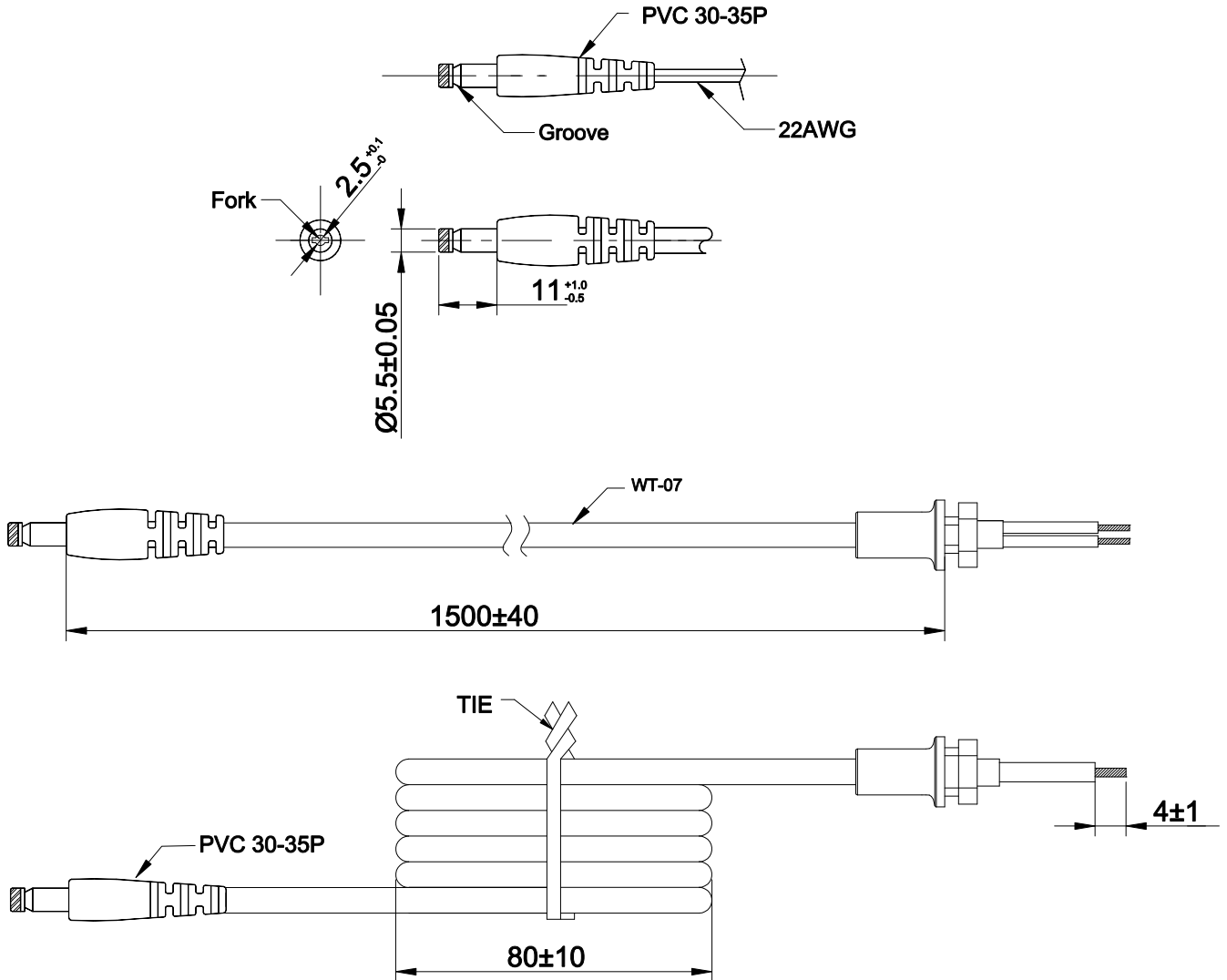
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9 DIMENSION OF OUTPUT PLUG & DC CORD (Unit: mm)



NOTE: (unit:mm)

- 1).WIRE TYPE:VW-1 2464 3.5Ø 80°C 300V L=1500mm 22AWG WT-07
- 2).THE POLARITY:
- 3).PAHS 6P NP REACH PROP65 ROHS
- 4).SR MODEL:ML00251

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10 PACKING (Unit: mm)

		1	2	3	4	5	6	7	8	9	10	11	12
REVISION													
ISSUE MARK	DESCRIPTION	DATE	REV	SIGNATURE									
A													

05P041000-07
100PCS

11T005100
3 PCS

11Q595080
2 PCS

11P005100
1 PCS

185.0mm

320.0mm

540.0mm

Carton: 100PCS

Select	Dim	A	B	C	M-A	M-B	M-C	USR	MODEL NO.	PART NO.	DWG. DATE	MATERIAL	PART NAME
0-5	0.05	0.05	0.10	0.03	0.05	0.10					2018. 07. 20		*
6-30	0.10	0.15	0.20	0.05	0.10	0.15						FINISH	SIZE SCALE UNIT REV.
30-150	0.15	0.20	0.30	0.10	0.15	0.20						M	Free mm 1.0
150-300	0.20	0.30	0.40	0.15	0.20	0.25							
300-450	0.25	0.40	0.50	0.20	0.25	0.30							
450-600	0.30	0.50	0.60	0.25	0.30	0.35							
DRAFT TOLERANCE		±0.2		±0.15		±0.1		CRITICAL DIMMARK					

	DESIGN 陈文宝	CHECKED	P/N	APPROVED	Ktec® KUANTECH COMPANY LIMITED
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