

CUSTOMER

JAMES

SPECIFICATION FOR APPROVAL

AC/DC ADAPTOR

CUSTOMER SPEC:INPUT: 100-240V AC 50/60Hz OUTPUT: 5VDC 3000mA

CUSTOMER DWG./PART NO.

PART NO. KSAS0180500300VU(ROHS)

SAMPLE NO: S79570

REV.: A ISSUE

DATE: 2016-3-2

PRDUCT NO: KS051180

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/DESIGNED BY
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			Switching power supply specification(class B)		
KUANTECH P/N:		PRODUCT NO:	CUSTOMER P/N:		
KSAS0180500300VU		KS051180			

Project Modify List

Item	Content	Rev.	Date	Designed By	Checked By
1	First REV.	A	2016-3-2	CHENJIN	YAN JIYUAN
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TITLE:			REVISIONS: A	DRAWING NO.:		
DESIGN: 陈瑾	CHECK: 颜吉元	DIRECTOR: 朱明霜	APPROVE: 贺洪明	DATE: 2016-3-2	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 15watts. Single output level power supply.

- Simple design philosophy.
- Reliability level of 50K hours MTBF @ 25° C(rated input voltage, and using the BELLCORE SR-332 method).
- DC output voltage must be Safe Extra Low Voltage (SELV) & Limited Power as defined by IEC60950-1
- The maximum room ambient temperature (T_{mra}), as mentioned in clause 1.4.12 of IEC 60950-1, 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.
Maximum input power	19.4W
Input current (no loading)	≤20mA
Power consumption (no loading)	Max. 0.1W
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	+5.0V
3.2	Minimum load current	0.0A
3.3	Rating load current	3.0A
3.4	Peak load current	/
3.5	Rating output power	15W

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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.
3.8	Peak load regulation	The peak load regulation for <u>+5.0V</u> is less than <u>/</u> , at measured output load from 30% to 100% rated load.
3.9	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.
3.10	Switching efficiency	<u>81.39%</u> minimum in active mode
		115V/60Hz and 230V/50Hz, output current from 100%, 75%, 50%, 25%.
3.11	Turn on delay time	<u>3000 mS</u> At nominal input AC voltage and full load
3.12	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.
3.13	Hold up time	<u>10 mS</u> minimum At nominal input AC voltage and full load
3.14	Output over-shoot	Less than <u>10%</u> of nominal voltage value
3.15	Temperature coefficient	Output voltage temperature coefficient $\pm 0.05\%/^{\circ}\text{C}$
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.

4 MECHANICAL

4.1 Enclosure And Layout

Plastic case: UL94V-1
Weight : /g (Max.)
Dimensions: 85X33X44.5mm
Colour : BLACK

4.2 Input and Output Configuration

Input pin: US PIN
Output connector : dc plug type: 5.5*2.1*10mm(Fork and Groove)
Polarity: Center"+"
Cable: 1.5M VW-1 80°C 300V 2468 18AWG 2C BLACK+WHITE (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.

EN55022:2010, Class B for radiated and conducted emissions.

5.2 Immunity

5.2.1 Electrostatic Discharge Immunity

EN 55024:2010, 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 55024:2010, 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 55024:2010, EN 61000-4-4

- Power line: 1kV

- Signal line: 0.5kV

- Performance Criteria B

5.2.4 Surge Immunity

EN 55024:2010, EN 61000-4-5

- 1.2/50 usec Open Circuit voltage

- 8/20 usec Short Circuit current

- Power line: 1kV

- Line to Earth: 2kV

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 60950-1
CSA	Canada	Meet	CSA C22.2 NO.950

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

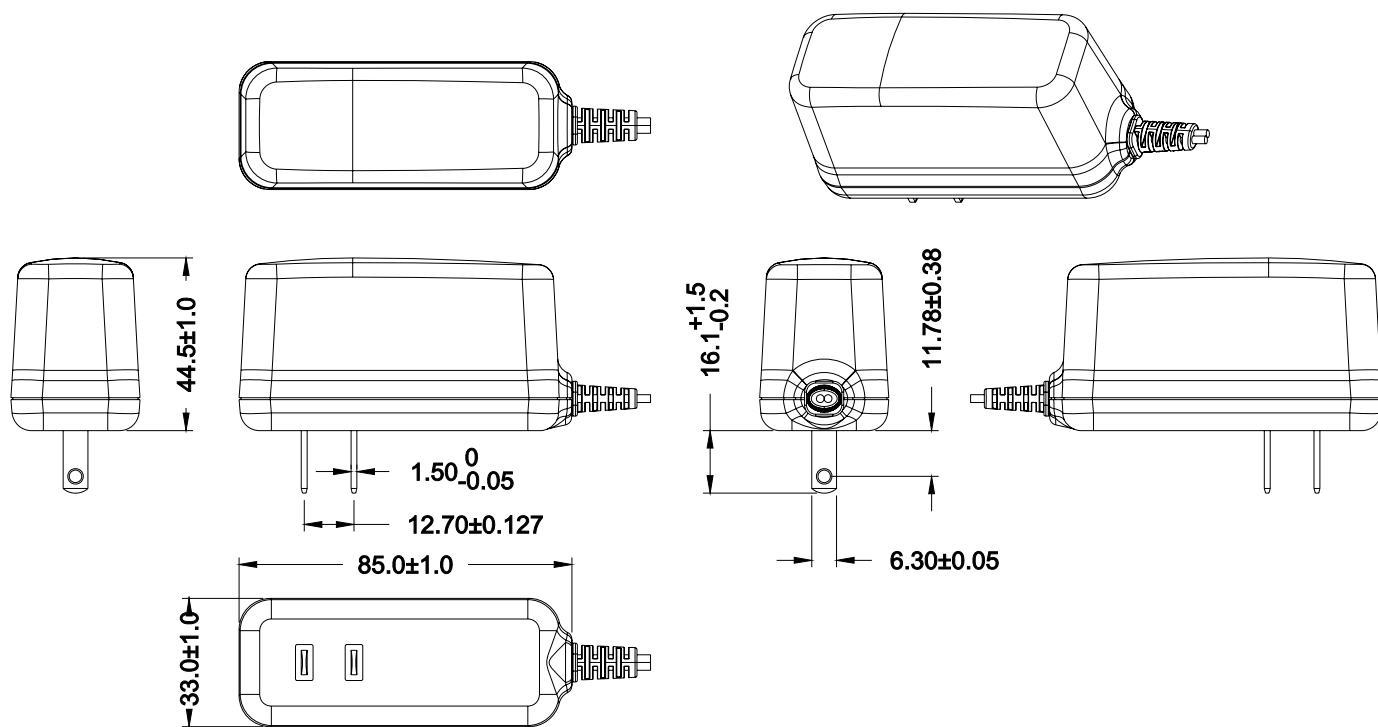
- ⊙ Operating: 10%~90% (Non Condensing)
- ⊙ Non-Operating: 10%~90% (Non Condensing)

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7 APPEARANCE DRAWING: (Unit: mm)



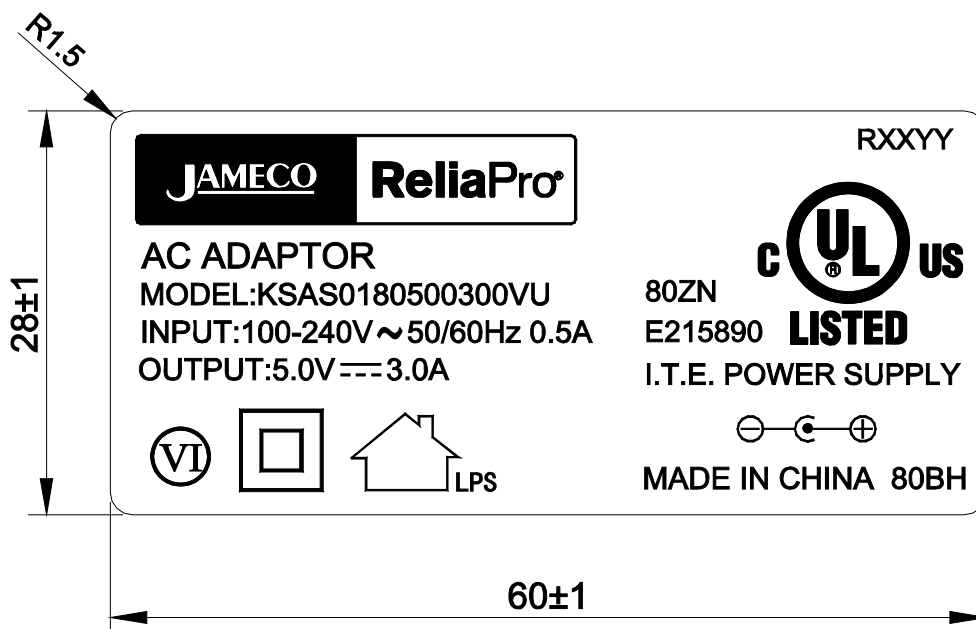
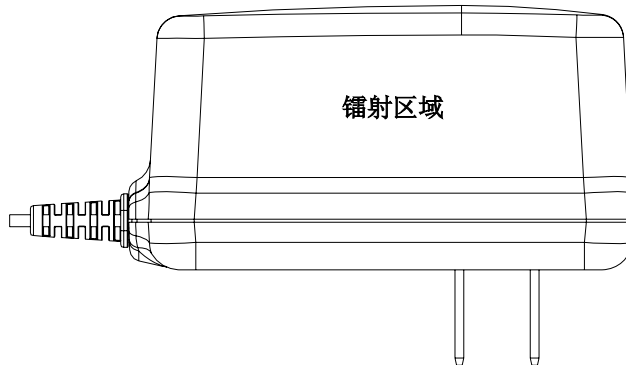
- NOTE: 1. Case cover & chassis material:
 SE-1/PC: BLACK (NO KTEC)
 2. AC PIN MATERIAL: BRASS (NI PLATED)
 3. ROHS

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8 NAME PLATE:



Note: 1. MATERIAL: POLYESTER+PVC; COATING: 0.25+/-0.05mm
White characters, Black background
ROHS

2. Laser 镭射

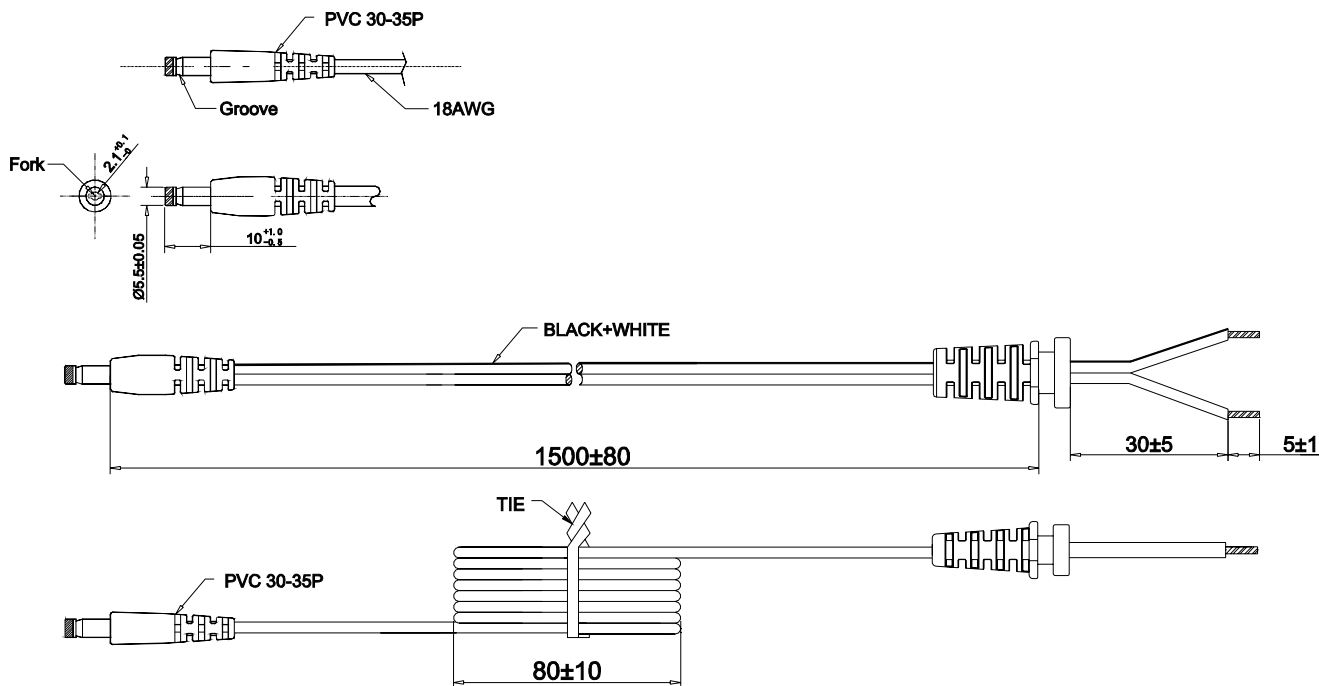
DATE CODE (RXXYY: R=ROHS, XX=WEEK, YY=YEAR)按实际生产日期

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



NOTE: (unit:mm)

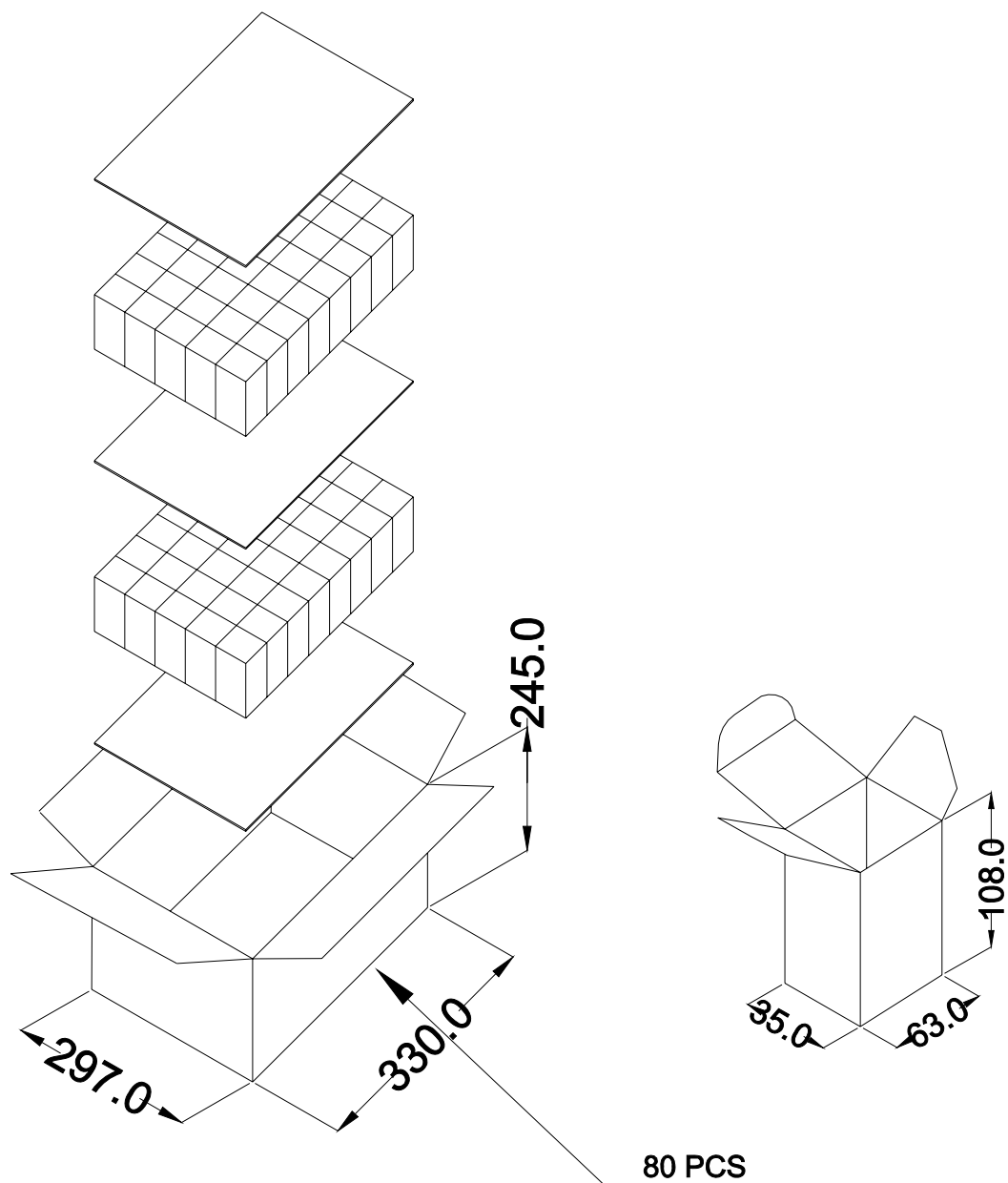
- 1).WIRE TYPE:VW-1 2468 80°C 300V L=1500mm 2C 18AWG BLACK+WHITE
BLACK and WHITE----Positive BLACK----Negative
- 2).THE POLARITY: ⊖ — ● — ⊕
- 3).ROHS

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10 PACKING (Unit: mm)



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NOTICE OF COMPLETION
AND
AUTHORIZATION TO APPLY THE UL MARK

06/10/2015

Kuantech Co Ltd
Ms. Linda Zhou
10th Fl
116 Bauguau Rd
Shindian District
New Taipei 231, Tw

Our Reference: File E215890, Vol. X2 Project Number 4786940198
Your Reference: LINDA ZHOU, 20MAY2015
Project Scope: USL/CNL INVESTIGATION FOR AC Adapter, Model KSAS018xxxxyyyzz series, Ref. E215890-A122.

Dear Ms. Linda Zhou:

Congratulations! UL's investigation of your product(s) has been completed under the above Reference Number and the product was determined to comply with the applicable requirements. This letter temporarily supplements the UL Follow-Up Services Procedure and serves as authorization to apply the UL Mark at authorized factories under UL's Follow-Up Service Program. To provide your manufacturer(s) with the intended authorization to use the UL Mark, you must send a copy of this notice to each manufacturing location currently authorized under File E215890, Vol. X2.

Records in the Follow-Up Services Procedure covering the product are now being prepared and will be sent in the near future. Until then, this letter authorizes application of the UL Mark for 90 days from the date indicated above.

Additional requirements related to your responsibilities as the Applicant can be found in the document "Applicant responsibilities related to Early Authorizations" that can be found at the following web-site:
<http://www.ul.com/EAResponsibilities>

Any information and documentation provided to you involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

We are excited you are now able to apply the UL Mark to your products and appreciate your business. Feel free to contact me or any of our Customer Service representatives if you have any questions.

Very truly yours,

Jack Huang
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Engineer Project Associate
Jack.Huang@ul.com

Reviewed by:

Bruce A. Mahrenholz
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CC: ,

NWTE781-8D7FD2