

CUSTOMER

ADVICE

SPECIFICATION FOR APPROVAL

AC/DC ADAPTOR

CUSTOMER SPEC: INPUT:100-240V AC 50/60Hz OUTPUT:5.0VDC 4000mA

CUSTOMER DWG./PART NO. _____

Ktec PART NO. KSAFE0500400W1EU(LEAD FREE)

SAMPLE NO: S27941 REV.: A ISSUE DATE: 2008-2-26

PRODUCT NO: KS012837

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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冠德科技(深圳)有限公司
KUANTECH(SHEN ZHEN) COMPANY LIMITED

Switching power supply specification(class B)

KUANTECH P/N:

CUSTOMER P/N:

KSAFE0500400W1EU

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1 GENERAL

1.1 Description

This specification defines the performance characteristics for a class II adapter., single-phase 20 watts. Single output level power supply.

- Simple design philosophy.
- Overload Latch-Off protection during either (a) specified power threshold requirements or (b) short circuit condition.
- Reliability level of 50K hours MTBF & 0.5% annual field failure rate @ 25° C.
- DC output voltage must be Safe Extra Low Voltage (SELV) & Limited Power as defined by IEC60950 3rd edition.

The maximum room ambient temperature (T_{mra}), as mentioned in clause 1.4.12 of IEC 60950 3rd edition, for the external power supply is 30 °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	0.6A max.
Maximum input power	30.77W
Input current (no loading)	≤35mA
Power consumption (no loading)	Max. 0.7W
Primary current protection	An adequate internal fuse on the AC input line is provide.
Configuration	<u>2</u> Conductor

2.2 AC Inrush Current

Peak inrush current shall be limited to 35 A for a cold start. Under both cold & warm start conditions, there shall be no immediate damage or long term impact on the reliability of the Supply. The conformance test for this requirement shall be performed at +12.5% of the rated input voltage. Voltage and current waveforms will be observed on an oscilloscope following closure of the external power switch. Switch closure will be repeated until the waveforms show closure coincident with a voltage peak. The current measured during this occurrence will be defined as the peak inrush current.

3 OUTPUT REQUIREMENTS

3.1	Nominal dc output voltage	+ 5.0 V
3.2	Minimum load current	0.0A
3.3	Rating load current	4.0A

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3.4	Peak load current	
3.5	Rating output power	20W
3.6	Line regulation	The line regulation is less than <u>±7%</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>+/-7%</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	100 mVp-p
		At 20 MHz, and output parallel with a 100nF ceramic capacitor and a 10μF electrolytic capacitor to ground temperature at 25 °C, and nominal AC input voltage
3.10	Switching efficiency	65% minimum
		At nominal input voltage and full load
3.11	Turn on delay time	2000 mS 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	
	Over-voltage protection	7.5V max.The output voltage shall be clamped by internal protection zener.
	Short-circuit protection	The adapter shall not damage and with auto recovery function by short the DC output to Ground.
	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-1**
 Weight : **196 g** (Max.)
 Dimensions: **93x47x34.2mm**
 Colour : **black(LEAD FREE)**

4.2 Input and Output Configuration

Input pin: **European PIN**
 Output connector : dc plug type: **5.5*2.1*11mm**
 Polarity: **center:"+"**

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Switching power supply specification(class B)

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Cable: **6FT VW-1 80°C 300V 18AWG 2468 2C BLACK+WHITE (LEAD FREE)**

5 REGULATORY COMPLIANCE

5.1 Safety Requirements and Certification

5.1.1 Regulatory Standard

The power supply shall complied the following international regulatory standards

for short	Country	Certified Status	Standard/标准
UL	USA/美国	Meet	UL 60950-1
CSA	Canada/加拿大	Meet	CSA C22.2 NO.950
TUV	Europe/欧洲	Meet	TUV/VDE-EN60950-1
CE	Europe/欧洲	Meet	Declared& CE Mark
PSE	Japan/日本	Meet	J60950(H14)/J55001(H14)
BSMI	Taiwan/台湾		CNS13438
CCC	CHINA	Meet	GB4943-2001
UK	Britain/英国	Meet	EN60950-1:2001

5.1.2 Additional Safety Requirements

- ⊙ Dielectric Withstand Voltage, Primary(input AC short)-to-Secondary(output DC short): **3000 Vac, 10m A, 1 minute.**
- ⊙ Insulation Resistance, Input to output: **10M Ω 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 +30 °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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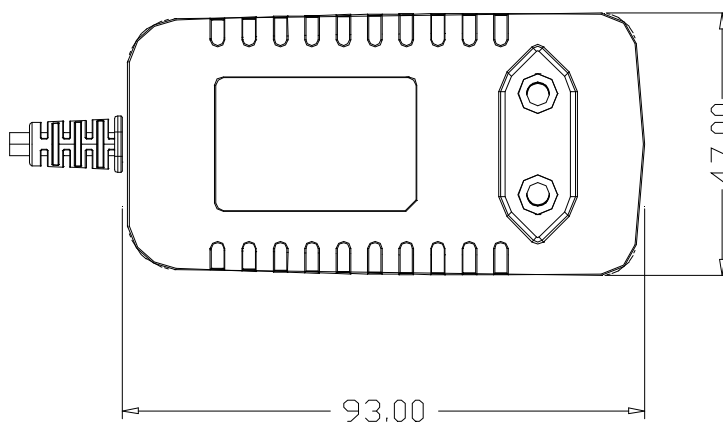
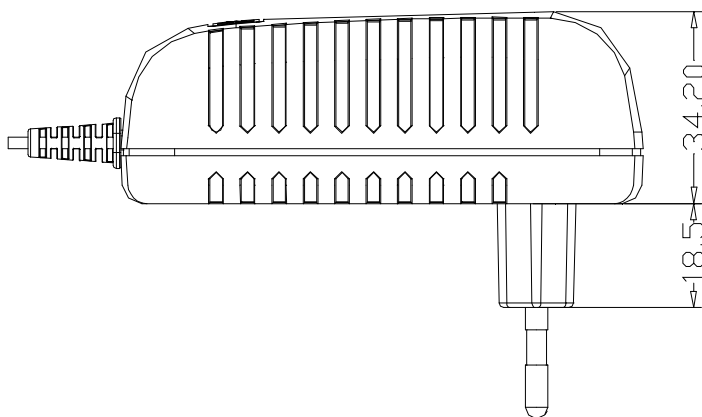
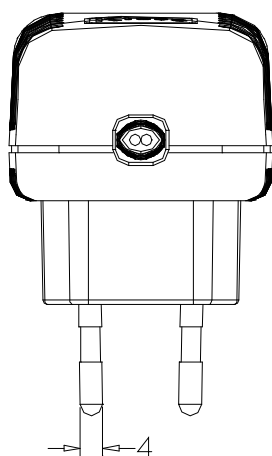
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7 APPEARANCE DRAWING: (Unit: mm)



- NOTE:1. Case cover & chassis material:
PPHOX (UL94V-1) BLACK(NO KTEC)
2. AC PIN MATERIAL:BRASS (NI PLATED)
3. LEAD FREE

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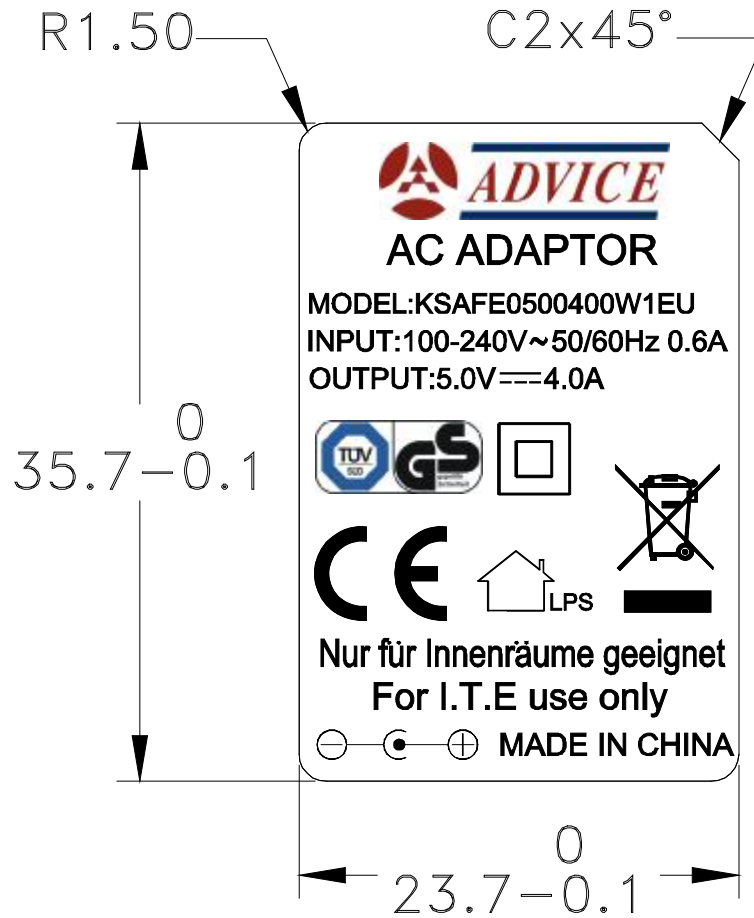
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8 NAME PLATE:



- Note: 1. MATERIAL: POLYESTER+PVC; COATING:0.25+-0.05mm
 2. White characters Black background
 3. LEAD FREE

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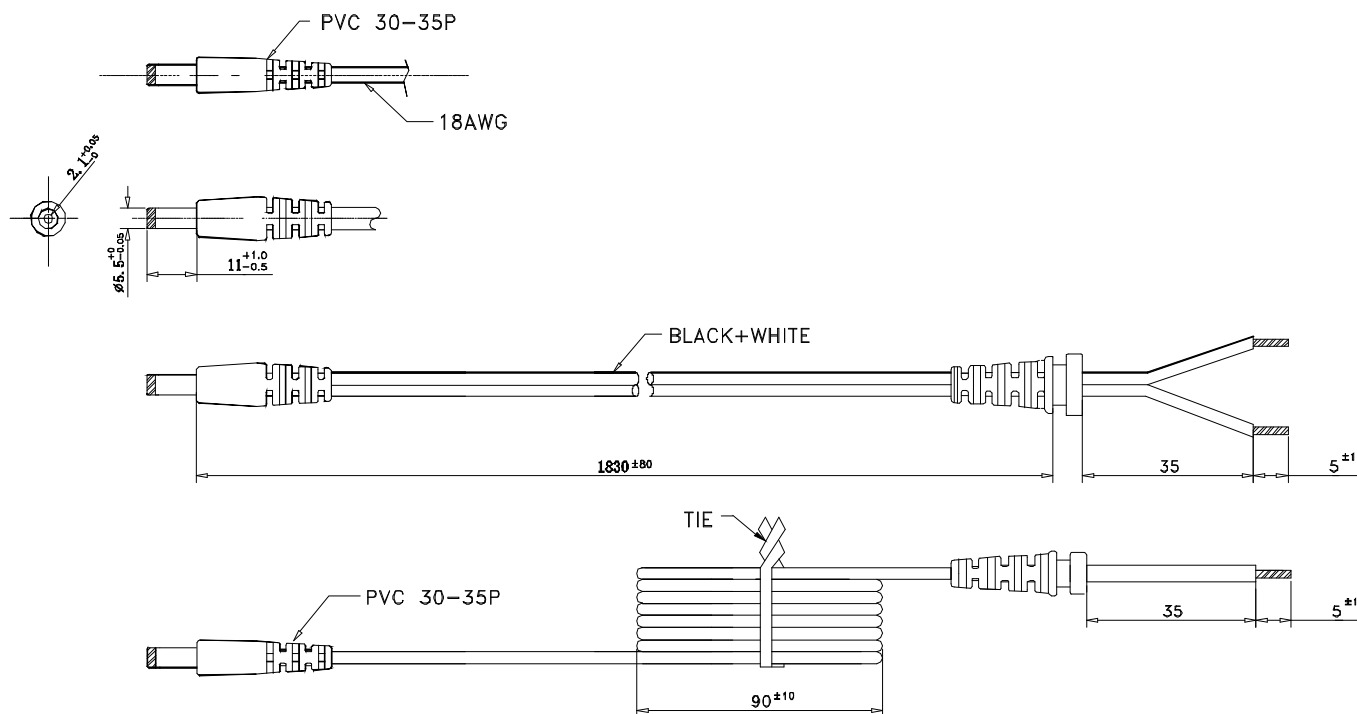
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9 DIMENSION OF OUTPUT PLUG & DC CORD (Unit: mm)



NOTE: (unit:mm)

- 1). WIRE TYPE: 2468 VW-1 80°C 300V L=6FT(1830mm) 2C 18AWG BLACK+WHITE
BLACK and WHITE---Positive BLACK---Negative
- 2). WIRE JACKET MATERIAL: PVC (94V-0)
- 3). THE POLARITY: \ominus \bullet \oplus

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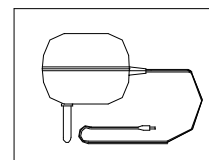
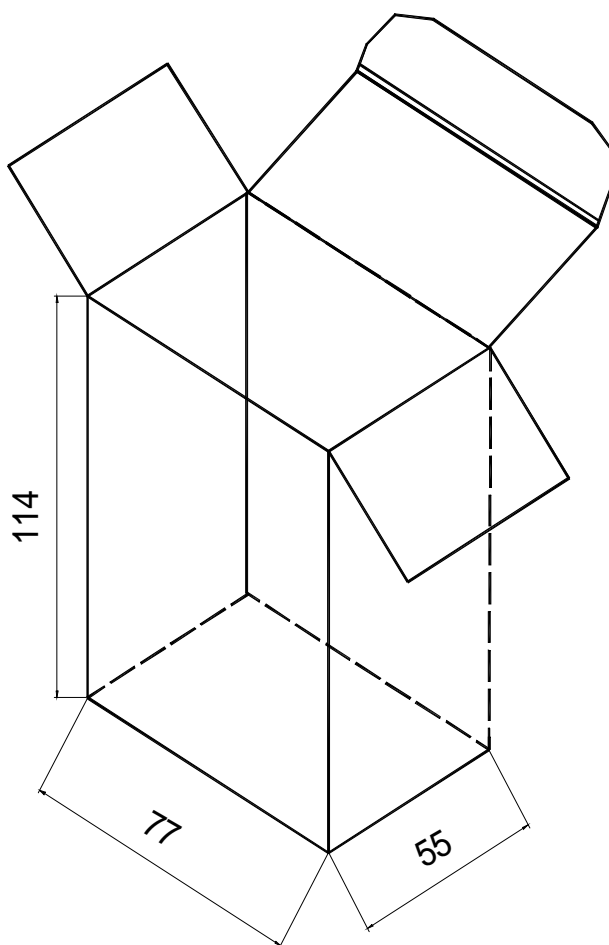
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10 BOX DRAWING: (Unit: mm)



Bag

**NOTE: WHITE BOX: 77*55*114mm
MATERIAL:400g(LEAD FREE)**

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RoHS Specification

1. Except for the specific applications of lead specifically listed in section figure 11, all materials, parts, components, and/or products and accessories may not contain RoHS restricted substances as a homogenous material greater than:
- (1) Lead (Pb): in quantity limit of 0.1% by weight or 1000 PPM.
 - (2) Mercury (Hg): in quantity limit of 0.1% by weight or 1000 PPM.
 - (3) Hexavalent Chromium (Cr⁶⁺): in quantity limit of 0.1% by weight or 1000 PPM.
 - (4) Poly Brominated Biphenyls (PBB): in quantity limit of 0.1% by weight or 1000 PPM.
 - (5) Poly Brominated Diphenyl Ethers (PBDE): in quantity limit of 0.1% by weight or 1000 PPM.
 - (6) Cadmium (Cd): in quantity limit of 0.01% by weight or 100 PPM.
11. The materials, parts, components, and/or products and accessories must meet the specification listed in section Figure 1, General Compliance as applicable except for the following application specific examples listed below. This is not intended to be a comprehensive list. For a comprehensive list, please see European Union's Directive 2002/95/EC, Restriction of Hazardous Substance: Annex of 4(1). "Applications of Lead, Mercury, and Cadmium, and Hexavalent Chromium which are exempt from the requirements".
- (a) *Leaded glass used in cathode ray tubes, electronic components, and fluorescent tubes.*
 - (b) Lead (Pb) in steel (0.35% or 3500 PPM), aluminum alloys (0.4% or 4000PPM), or copper alloys (including bronzes, brasses, 4.0% or 40,000 PPM).
 - (c) Lead (Pb) in high melting temperature type solders (e.g. tin-lead solder alloys containing more than 8.5% lead).
 - (d) Lead (Pb) in electronic ceramic parts (e.g. piezoelectric devices).

Approved By:



Checkde By:



Prepared By:





Product Service

CERTIFICATE

No. Z1A 06 12 48694 321

Holder of Certificate: **Kuantech (Shenzhen) Co., Ltd.**

6th Honghua Road, Gongming Town
Baoan District, Shenzhen
PEOPLE'S REPUBLIC OF CHINA

Factory(ies): 48694

Certification Mark:



Product: **Switch mode power supplies**

Model(s): KSAFExxxyyyyyW1EU, KSAFExxxyyyyyW1UV,
KSAFExxxyyyyyW1UV-1 (xxx=030-480, yyyy=0002-0410)
xxx indicates rated output voltage 3,0-48,0 V d.c.,
yyyy indicates rated output current 20-4100 mA.

Parameters:

Rated voltage:	100-240 V
Rated frequency:	50/60 Hz
Rated current:	0,6 A
Rated output voltage:	3,0-48,0 V d.c.
Rated output current:	0,02-4,1 A
Protection class:	II
Degree of protection:	IPX0
Remark:	See page 2-28 for details.

Tested according to: EN 60950-1/A11:2004

The product meets the requirements of the German Equipment and Product Safety Act. The Certification marks shown above can be affixed on the product. The certification marks must not be altered in any way. The use of the GS-Mark is permitted until the listed date, the use of the TÜV-Mark is unlimited, unless it is cancelled. See also notes overleaf.

Test report no.: 64210344905

GS-Mark valid until: 2011-12-11

Date, 2006-12-11

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Product Service

EC-Attestation of Conformity

No. N8 06 12 48694 322

Holder of Certificate: **Kuantech (Shenzhen) Co., Ltd.**

6th Honghua Road, Gongming Town
Baoan District, Shenzhen
PEOPLE'S REPUBLIC OF CHINA

Product: **Switch mode power supplies**

Model(s): **KSAFExxxxxxyW1EU, KSAFExxxxxxyW1UV,
KSAFExxxxxxyW1UV-1 (xxx=030-480, yyyy=0002-0410)
xxx indicates rated output voltage 3,0-48,0 V d.c.,
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Rated output current:	0,02-4,1 A
Protection class:	II
Degree of protection:	IPX0
Remark:	See page 2-28 for details.

Tested according to: EN 60950-1/A11:2004

This EC-Attestation of Conformity is issued on a voluntary basis according to the Low Voltage Directive 73/23/EEC relating to electrical equipment designed for use within certain voltage limits. It confirms that the listed equipment complies with the principal protection requirements of the directive. It refers only to the particular sample submitted for testing and certification. See also notes overleaf.

Test report no.: 64210344905



275141

Date, 2006-12-11

CE After preparation of the necessary technical documentation as well as the conformity declaration the required CE marking can be affixed on the product. Other relevant directives have to be observed.