PowerPax

Specification for Approval

Customer	:	
Part Name	:	**AC ADAPTER**
Description	:	**12Volts / 5Amps**
Model No.	:	**ATS065-L120B (Level V)**
Customer P / N	:	**SW4487W**
Product P / N	:	**ATS065L120B415201**
Issued Date	:	**18-Jan.-2013**
Version	:	**A1**

Issued Stamp :

Customer's Approval Signature

60.0W

Switching Power Adapter

SPECIFICATION

Model No.	:	**ATS065-L120B (Level V)**
Description	:	**12Volts / 5Amps**
Part No.	:	**ATS065L120B415201**
Version	:	**A1**
Date	:	**18-Jan.-2013**

Approved	Checked	Prepared	Sales
	徐東昇 2013.01.18 確認OK	徐東昇 2013.01.18 確認OK	

■ Approval Documents/Spec. Revised Records

- Customer :
- Model No. : ATS065-L120B
- Original Documents Content : Spec. 10 Pages, Attachment 3 Pages

Revised Records : No.	Date (mm/dd/yyyy)	Description (Before / After)	Page(s) Revised	Revised By (Adapter/Customer)	Remark
1	Jan./18/2013	ISSUE	-	Sun	A1

1. Feature：

- ♦ **Input** ： **Universal 100 ~ 240 Vac / 50 ~ 60 Hz Input, without any slide switch.**
- ♦ **Output** ： **+12V / 0~5A**
- ♦ **Case Dimension** ： **138 (L) *56 (W) * 37 (H) mm**
- ♦ **Efficiency** ： **Eff (av) ≧ 87% Min**
- ♦ **Safety** ： **CB**
- ♦ **EMI** ： **CE Class B ； Conduction & Radiation Met.**
- ♦ **Protection** ： **OVP (Over Voltage Protection)、SCP (Short Circuit Protection)、OCP (Over Current Protection)**
- ♦ **High frequency design，less power consumption.**
- ♦ **Suitable for usage at Telecommunication, Computer, Industrial Controller, & OA System.**
- ♦ **Meet NRcan**

2. Input：

2.1 Voltage	**Universal 100~240Vac, single phase**
2.2 Frequency	**50 ~ 60 Hz**
2.3 Current	**1.4A Max.**
2.4 Inrush Current	**80A Max. / 240Vac (Cold start at 25 °C，full load)**
2.5 Efficiency	**Eff (av) ≧ 87% Min (At 115 Vac & 230 Vac)**
2.6 Power Consumption	**Pi ≦ 0. 5 W (At 230Vac & No load)**

$$※Eff_{(av)} = \frac{E_1 + E_2 + E_3 + E_4}{4}$$

E1=efficiency with 25% rated load ; E2= efficiency with 50% rated load

E3=efficiency with 75% rated load ; E4= efficiency with 100% rated load

3. Output：

3.1 DC Output	**Voltage**	**+12.00V ± 3%**
	Current	**5A Max.**
	Regulation	**11.64Vmin. ~ 12.00Vtyp. ~ 12.36Vmax.**
	Ripple & Noise	**120mV Max.**
	Total Power	**60W Max.**

Remark：For ripple & noise measurement, use a 20MHz bandwidth frequency oscilloscope, and add a 0.1μF multilayer Cap. and a Low ESR Electrolytic Cap. (10 μF) at output connector terminals. (At nominal line voltage, full load)

4. Protection :

4.1 Over Voltage Protection (OVP)	(V out *150%)max
4.2 Short Circuit Protection (SCP)	Automatic recovery after short-circuit fault being removed
4.3 Over Current Protection(OCP)	(I out *180%)max

Remark ： When Short Circuit Protection or Over Current Protection is activated,the power supply will shutdown automatically. Once the abnormal condition resulting in the failure being removed, the power supply will restart accordingly. When Over Voltage Protection is activated, the power supply will shutdown latch .

5. Safety、EMI and EMC Requirement：

5.1 Safety Requirement

a. Safety ： CB

b. Dielectric Strength ： Cut off current 10mA

Primary to Secondary	3000Vac for 1 Minute

c. Insulation Resistance ：

Primary to Secondary	10 M ohm for 500Vdc

5.2 EMI Requirement ： CE Class B ； Conduction & Radiation Met.

5.3 Leakage Current ： Less than 0.25mA

6. Operation and Environment Performance：

6.1 Temperature Range

Operating	+ 0ºC ~ + 40ºC
Storage	- 20 ºC ~ + 80ºC

6.2 Humidity Range(Non-condensing)

Operating	20% ~ 80% RH
Storage	10% ~ 90% RH

6.3 Cooling：By natural air.

7. M.T.B.F.： 50,000 Hrs.(At 25ºC，By MIL-HDBK-217F)

8.Mechanical :

8.1 Weight : 370 g Typical

8.2 DC Cable Type : White UL2468 AWG16

(Wire + Plug)

Plug : ø5.5*ø2.1*12mm

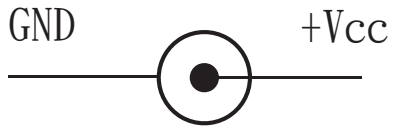
(Tuning Fork&Cannelure)

AC Cable Type:UK (2C) & White

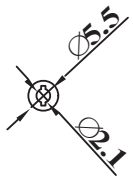
8.3 Cable Length : DC:1500mm & AC:1500mm

8.4 Case Dimension : 138mm(L)*56mm(W)*37mm(H) & White

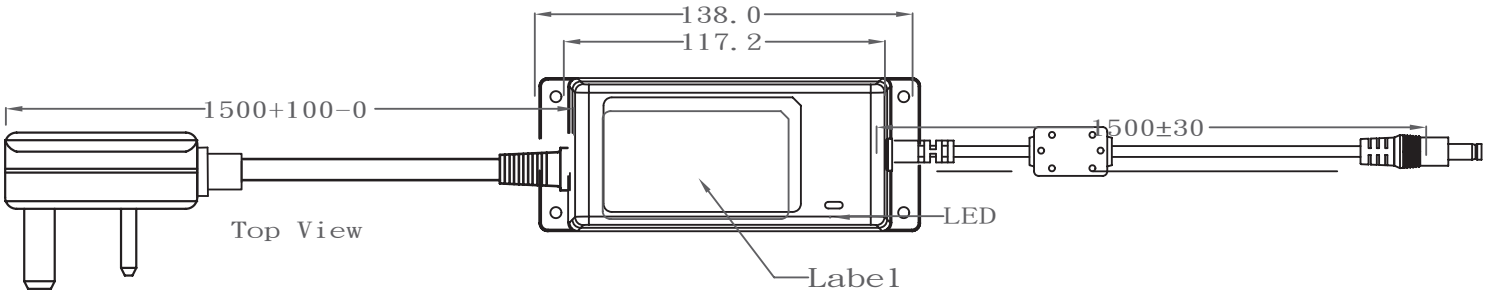
8.5 Material Flammability : UL 94V-0

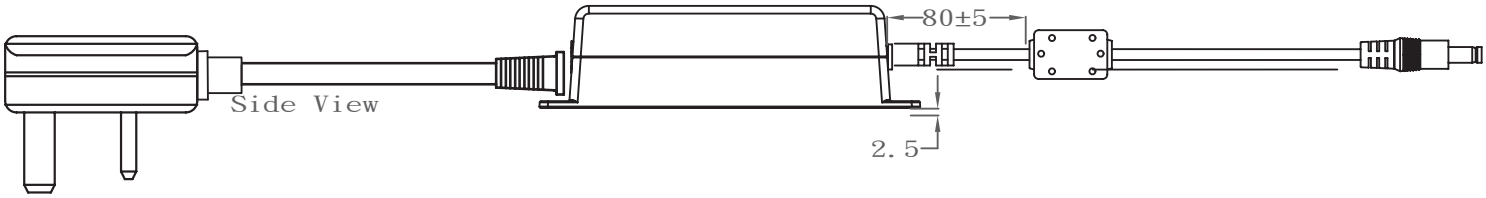


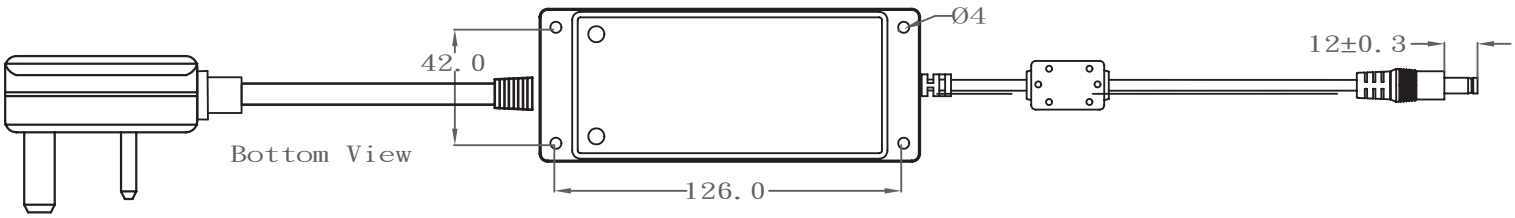
Output Cable Plug Pin Assignment

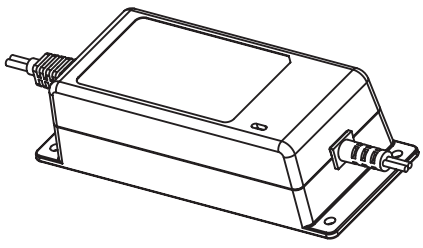


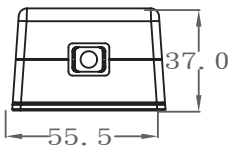
8.6 External Apperance : As drawing below (Scale → mm)





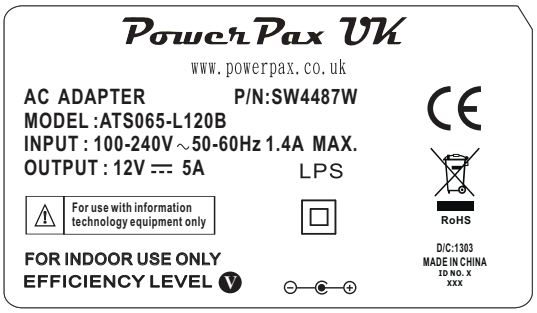






8.7 Spec. Label Materials : Metalized Polyester Label (Silver Gloss)
Color : Silver Background with Black Printing
Label Dimension : 70mm(L)*40mm(W)+/-0.1mm
Label Thickness : 75#

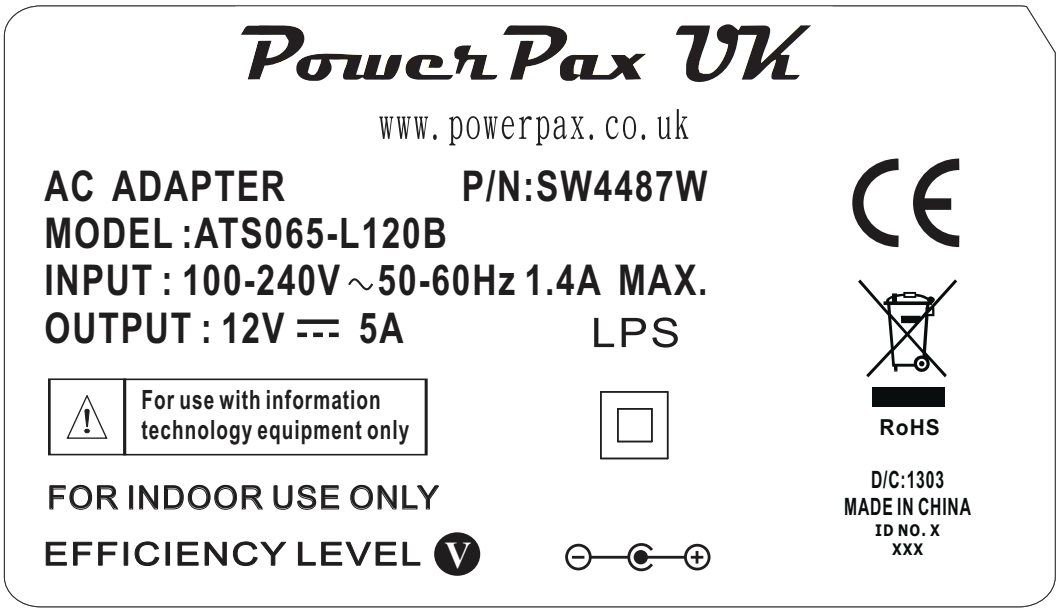
100%



"XXX"
Label supplier's code.
It is accurate that the number of words depends on the real finished product.

ID NO."X"
Manufacturer's code.
It is accurate that the number of words depends on the real finished product.

200%



Label Part No.:9443038000 REV.A

8.8 Spec. Label Materials : Art paper(With Gloss)
Color : White Background with Black Printing
Label Dimension : 85mm(L)*15mm(W)+/-0.1mm
Label Thickness : 0.1mm

100%

P/N:SW4487W

200%

P/N:SW4487W

Label Part No.:9443037990
REV.A

A. Line Regulation Test

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90Vac / 50 % Load	11.64 V ~ 12.36 V	12.070 V	12.050 V	12.020 V
115Vac / 50 % Load	11.64 V ~ 12.36 V	12.070 V	12.050 V	12.040 V
132Vac / 50 % Load	11.64 V ~ 12.36 V	12.070 V	12.050 V	12.030 V
180Vac / 50 % Load	11.64 V ~ 12.36 V	12.070 V	12.050 V	12.040 V
230Vac / 50 % Load	11.64 V ~ 12.36 V	12.070 V	12.050 V	12.030 V
264Vac / 50 % Load	11.64 V ~ 12.36 V	12.070 V	12.050 V	12.040 V

B. Efficiency Test

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100% Load	87 % Min.	87.27 %	87.23 %	87.25 %
230Vac / 100% Load	87 % Min.	87.17 %	87.14 %	87.10 %

$$Eff_{(av)} = \frac{E_1 + E_2 + E_3 + E_4}{4}$$

E1=efficiency with 25% rated load ; E2= efficiency with 50% rated load

E3=efficiency with 75% rated load ; E4= efficiency with 100% rated load

C. Load Regulation Test

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 0 % Load	11.64 V ~ 12.36 V	12.230 V	12.250 V	12.270 V
115Vac / 50 % Load	11.64 V ~ 12.36 V	12.070 V	12.050 V	12.040 V
115Vac / 100 % Load	11.64 V ~ 12.36 V	11.900 V	11.930 V	11.920 V
230Vac / 0 % Load	11.64 V ~ 12.36 V	12.230 V	12.250 V	12.280 V
230Vac / 50 % Load	11.64 V ~ 12.36 V	12.070 V	12.050 V	12.030 V
230Vac / 100 % Load	11.64 V ~ 12.36 V	11.900 V	11.930 V	11.930 V

D. Ripple & Noise Test

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	120 mV Max.	72.0 mV	74.3 mV	73.3 mV
230Vac / 100 % Load	120 mV Max.	66.0 mV	69.8 mV	71.2 mV

E. Inrush Current

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
240Vac / 100 % Load	80 A Max	60.8 A	63.2 A	62.2 A

F. Over Current Protection

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	(I out *180%)max	122 %	120 %	123 %
230Vac / 100 % Load	(I out *180%)max	123 %	121 %	124 %

G. Short Circuit Protection

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	Auto Recovery	OK	OK	OK
230Vac / 100 % Load	Auto Recovery	OK	OK	OK

H. Input Power Consumption(No Load)

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
230Vac / 0 % Load	≦ 0.5 W	0.24 W	0.27 W	0.26 W

Efficiency Test Report

A. Model Number : ATS065-L120B(12.0V /5.0A/60.0W)

B. DC Power Cord : 16AWG UL2468 1.5M

C. Average Efficiency :

Energy Star V 87 % Min.

Erp (Stage 2) 87 % Min.

MEPS V 87 % Min.

D. NO Load Power Consumption :

Energy Star V 0.5W max.

Erp (Stage 2) 0.5W max.

MEPS V 0.5W max.

E. Testing Dequipment :

1. AC Power Source : " ALL POWER " APW-110N

2. Electronic Load : " PRODIGIT " 3311C

3. Power Meter : " YOKOGAWA " WT210

4. Digital Meter : " FLUKE " 79III

F. AC Input Voltage : 115Vac/60Hz

Load Conditions / Reported Quantity	100%* I_0	75%* I_0	50%* I_0	25%* I_0	0%* I_0
Rms Output Current(mA)	5000mA	3750mA	2500mA	1250mA	0mA
Rms Output Voltage(V)	11.900V	12.000V	12.070V	12.150V	12.230V
Active Output Power(W)	59.50W	45.00W	30.18W	15.19W	0.00W
Rms Input Voltage(V)	115V	115V	115V	115V	115V
Rms Input Current(A)	1.190A	0.943A	0.677A	0.367A	0.015A
Rms Input Power(W)	69.33W	51.76W	34.27W	17.21W	0.15W
Voltage T.H.D.(%)	0.57	0.50	0.42	0.27	0.10
True Power Factor	0.518	0.477	0.440	0.407	0.082
Power Consumed by UUT(W)	9.83W	6.76W	4.10W	2.02W	0.14W
Efficiency	85.82%	86.94%	88.05%	88.25%	*
Average Efficiency	87.27%				*

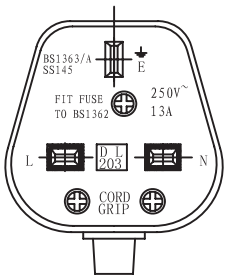
G. AC Input Voltage : 230Vac/50Hz

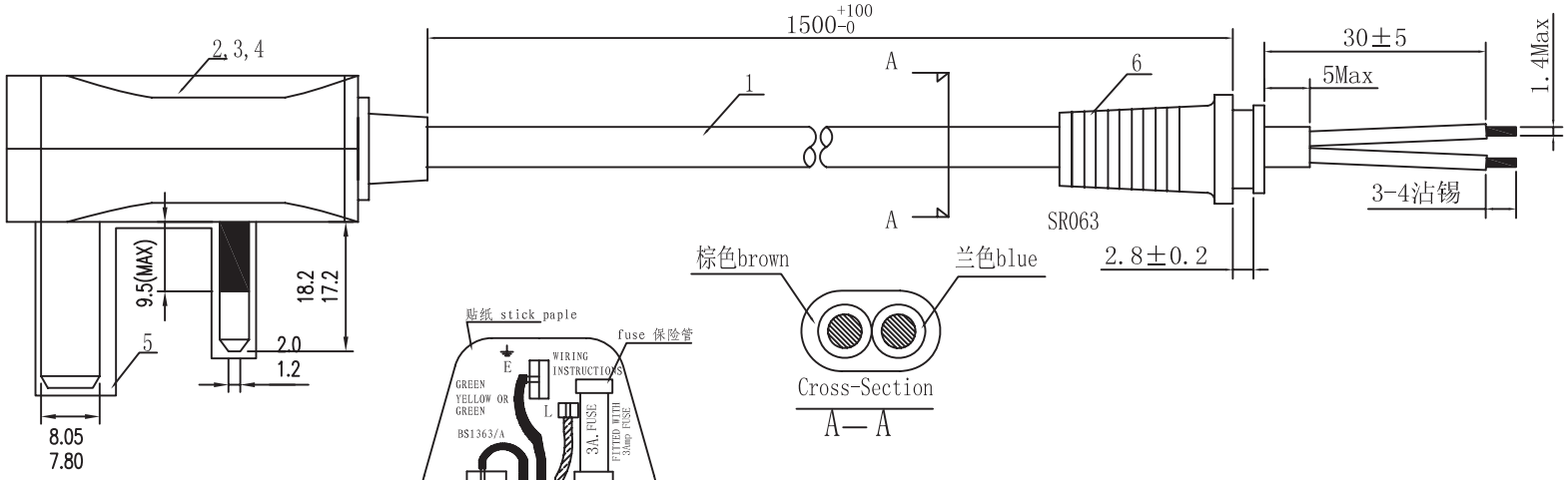
Load Conditions / Reported Quantity	100%* I_0	75%* I_0	50%* I_0	25%* I_0	0%* I_0
Rms Output Current(mA)	5000mA	3750mA	2500mA	1250mA	0mA
Rms Output Voltage(V)	11.900V	12.000V	12.070V	12.150V	12.230V
Active Output Power(W)	59.50W	45.00W	30.18W	15.19W	0.00W
Rms Input Voltage(V)	230V	230V	230V	230V	230V
Rms Input Current(A)	0.696A	0.533A	0.369A	0.205A	0.024A
Rms Input Power(W)	68.82W	51.59W	33.95W	17.64W	0.24W
Voltage T.H.D.(%)	0.56	0.45	0.35	0.24	0.11
True Power Factor	0.430	0.421	0.401	0.375	0.043
Power Consumed by UUT(W)	9.32W	6.59W	3.78W	2.45W	0.24W
Efficiency	86.46%	87.23%	88.88%	86.10%	*
Average Efficiency	87.17%				*

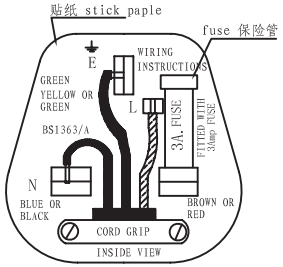
Tester : SUN

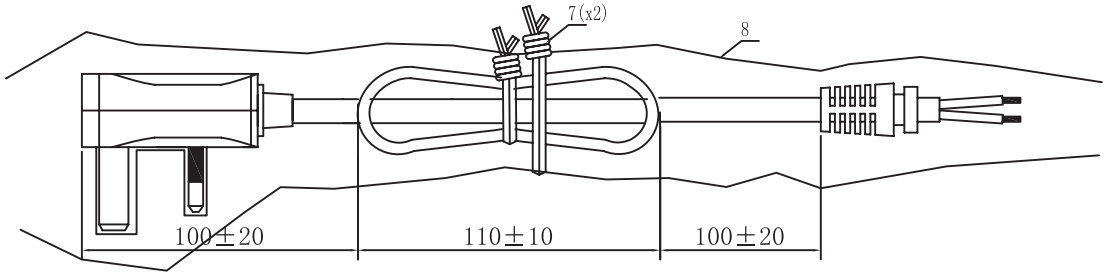
颜色：白色224

版本	改变内容	制作人	日期
A/0	初始发行	龙方贵	201211/21









S/N	DESCRIPTION	ITEM NO	QTY
9	标准纸箱K=K 48*32*26CM（普通）	41-0003N	0.005PCS
8	两头开口 透明PE袋	---	1PCS
7	PE扎带,白色，6"	52-0009N	2PCS
6	SR063 PVC,白色2361 75A	12-P236175-1XXN	0.008KG
5	英式组装头端子保护套	81-0015N	1PCS
4	英式组装头线扣白色(扁线短尾）	81-XXXXN	1PCS
3	金晖鲨鱼齿端子U280041	99-0001N	2PCS
2	英式组装头3A 白色	93-XXXXN	1PCS
1	H03VVH2-F 2X0.75 白色2361 仅VDE 油印 新印字	S11002-2XXX	1580MM

Cable MARKING电线印字:油印

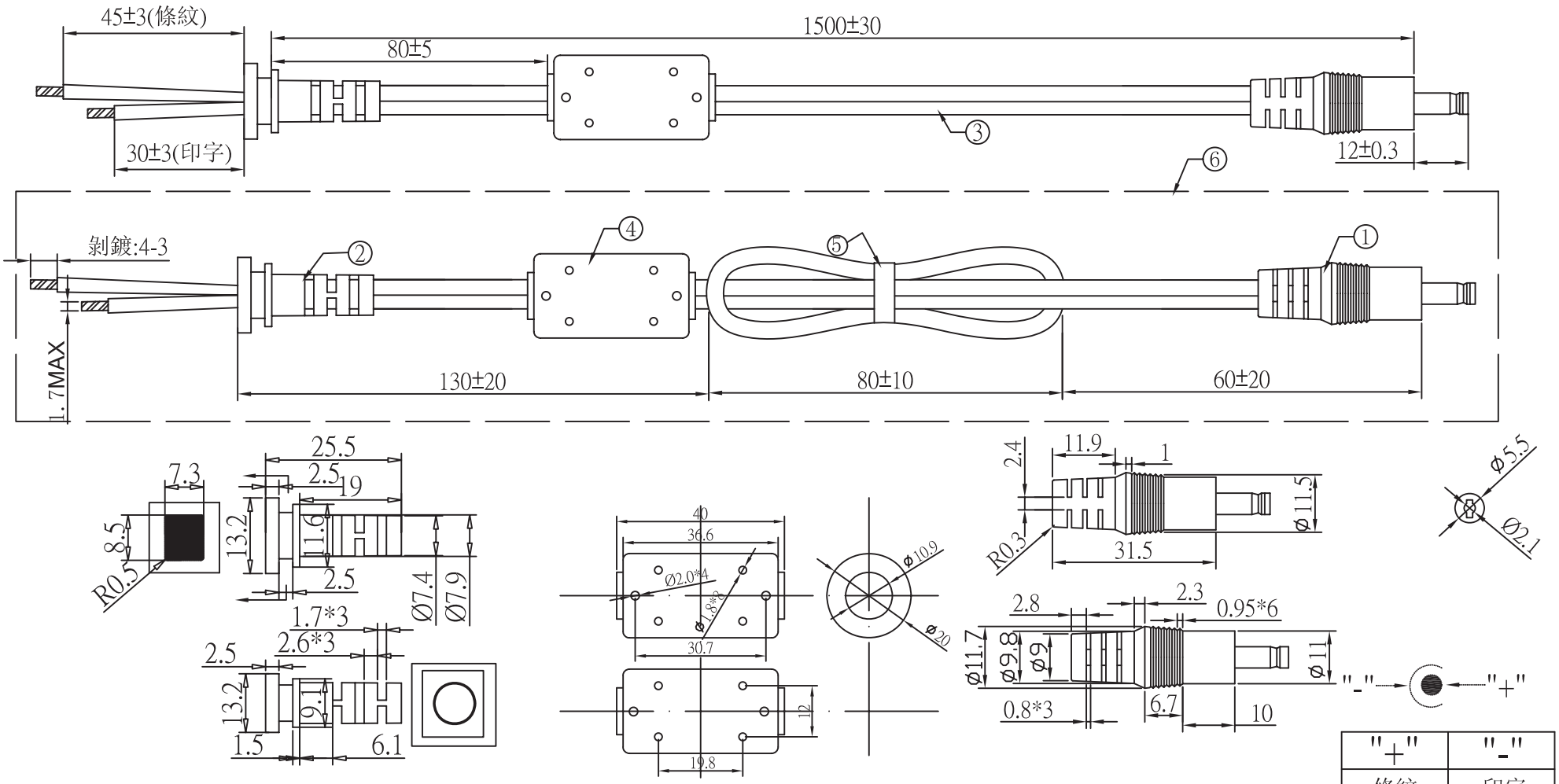
H03VVH2-F 2X0.75mm2 ◁VDE▷ KEMA-KEUR CEBEC +S +S + S ◁ÕVE▷
Ⓓ Ⓢ Ⓝ Ⓕ IEMMEQU SABS 60227-5 NF-USE 1321FC TONGYUAN LF

Cable Construction电线结构

conductor 导体		PVC insulation 绝缘		PVC jacket 外被	
导体标称截面积（MM）	导体结购（根数/MM）	绝缘标称厚度（MM）	标称直径（MM）	绝缘标称厚度（MM）	标称直径（MM）
0.75	42/0.144	0.50	2.18±0.1	0.60	3.5±0.1x5.5±0.15

深圳通源实业有限公司 Shenzhen Tongyuan Electrical Wire & Cable Co., Ltd.				FAX	0755-28015039
				Tel	0755-28026115
标题	英式组装头3A连线卡尾上锡	公差		版本	A/0
客户名	东莞柏洋电子有限公司	x.xx ±0.3 x.x ±0.5 x ±1		页码	4 /4
客户产品代码	R429AJ15012			规格书	---
通源代码	T0259-UK301SRZS03	角度 ±1°		Third Angle	

单位	MM	制作	Huashan Du	检查	——	核准	
比例	/	日期	2013/01/14	日期	---	日期	



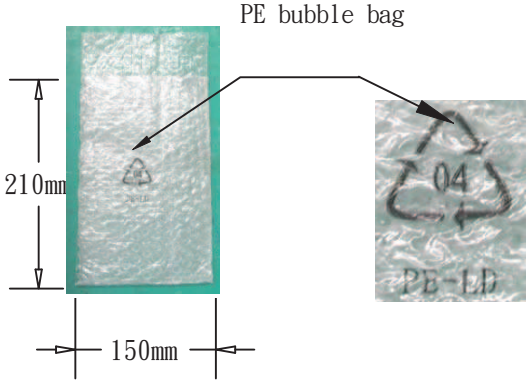
"+"	"-"
條紋	印字

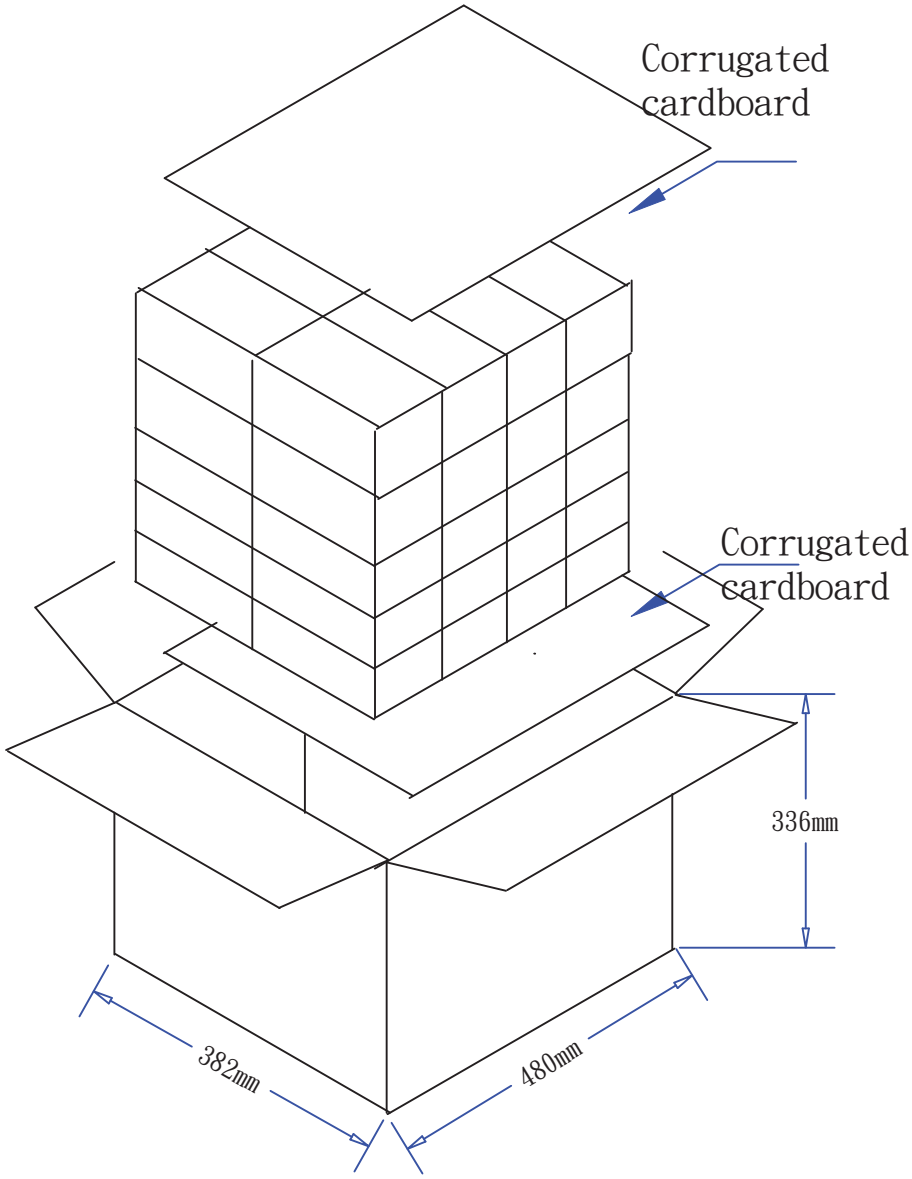
注意:此圖面所需材料符合"ROHS"標準

① 5.5*2.1*25音叉車溝黑色半邊(YY-PD-00027),外模P-184號模(二次成型),
用料外PVC60P白色(AC-121)(224白)
② SR-348(B)號模,用料PVC60P白色(AC-121)(224白),吊重:1米/20磅/60秒
③ UL 2468 16AWG(0.16*65)*2C 白色(AC-121) (224白) OD:2.5*5.0 裁線長度:1560+10-0
④ 鐵芯規格:14.2*28.5*6.35(YY-CR-00009),外模SR-118號模用料PVC60P白色(AC-121)(224白)
⑤ PE有鐵芯紮帶10CM白色*2PCS
⑥ PE袋;长300MM宽65MM两端开口,宽开口带有环保标示
⑦ 单位:MM

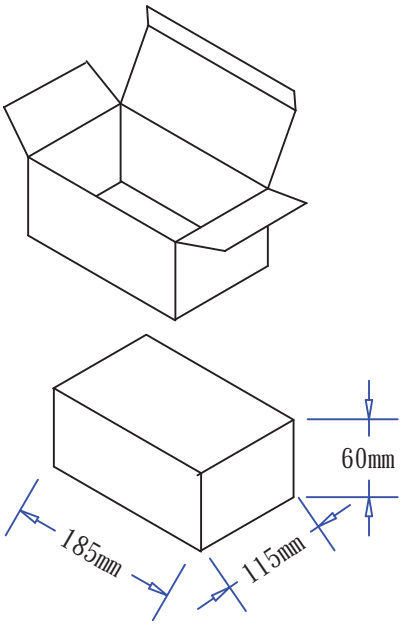
料號	R44M171501A		
客戶	阿達特	制圖	吴远松
版次	01	審核	
頁數	01	批準	
泰岳电子有限公司			
圖號	ADT-2653	日期	2013/01/16

Printing ROHS in
the middle of the
PE bubble bag





White box



PIS40W00001

1. Corrugated cardboard:465*370*6mm B=B 2/40
2. Q'ty:8*5=40PCS
3. Master carton:L*W*H=480*382*336mm K=K 1/40
4. White box:L*W*H=185*115*60mm 350P+CE
5. PE bubble bag :210*150*47mm:No color/Clear bag
6. When finished product into the PE bubble bag .affies it by a clear tap,
7. carton,box marks with dimension and ROHS compliance

DRAWING NO.			APPROVAL2	
UNIT mm	MODEL NO. 36-65w掛壁室白盒		APPROVAL1	
	FILE ADT-0081		ENGINER	
SCALE	REV. B	SHEET 1/1	DRAWN BY	