



Specification for Approval

Customer : Ituner Networks Corporation

Part Name : AC ADAPTER

Description : 12Volts / 16Amps

Model No. : ATS200T-P120 (LEVEL VI)

Customer P / N : PWR-ACDC-12V-16A-192W-part

Product P / N : ATS200TP120D12205

Issued Date : 19 – May – 2016

Version : A1

Issued Stamp :

Customer's Approval Signature

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Factory (China) : BOAYANG ELECTRONICS CO., LTD.

**Di Feng Gong Ye Qu 2 Hao, Xiasha Liuwu Village, Shipai Town, Dong Guan City,
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192W AC Adapter SPECIFICATION

Model No. : **ATS200T-P120 (LEVEL VI)**

Description : **12Volts / 16Amps**

Part No. : **ATS200TP120D12205**

Version : **A1**

Date : **19 – May – 2016**

Approved	Reviewed	Checked	Prepared	Sales
				



■ Approval Documents/Spec. Revised Records

■ Customer : Ituner Networks Corporation

■ Model No. : ATS200T-P120

■ Original Documents Content : Spec. 10 Pages, Attachment 3 Pages

Revised Records : No.	Date	Description (Before / After)	Page(s) Revised	Revised By (Adapter/Customer)	Version
1	May/19/2016	ISSUE	-	Mingan	A1



1. Feature :

- ◆ **Input** : Universal 100 ~ 240 Vac / 50 ~ 60 Hz Input, without any slide switch.
- ◆ **Output** : +12V / 0 ~ 16A
- ◆ **Case Dimension** : 183.2(L) * 81.0(W) * 42.3(H) mm
- ◆ **Efficiency** : Eff (av) $\geq$ 88%
- ◆ **Safety** : CB / cUL / UL / GS / PSE / BSMI
- ◆ **EMI** : CE / FCC Class B ; Conduction & Radiation Met.
- ◆ **Protection** : OVP (Over Voltage Protection) 、SCP (Short Circuit Protection) 、
OCP (Over Current Protection) 、OTP (Over Temperature Protection)
- ◆ High frequency design , less power consumption.
- ◆ Suitable for usage at Telecommunication, Computer, Industrial Controller, & OA System.
- ◆ Meet DoE / ErP (Stage 2) / NRCan / CEC / EPA

2. Input :

2.1 Voltage	Universal 100 ~ 240Vac, single phase
2.2 Frequency	50 ~ 60 Hz
2.3 Current	2.8A Max.
2.4 Inrush Current	100A Max. / 240Vac (Cold start at 25 °C , full load)
2.5 Efficiency	Eff (av) $\geq$ 88% (At 115 Vac & 230 Vac)
2.6 Power Consumption	Pi $\leq$ 0.21W (At 115 Vac & 230 Vac & At No load)
2.7 Power Factor (PF)	Pi $\geq$ 0.9 (At 115 Vac & 230 Vac, At Full load)

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

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 $\pm$ 5%
	Current	16A Max.
	Regulation	11.4Vmin. ~ 12.0Vtyp. ~ 12.6max.
	Ripple & Noise	150mVp-p Max.
	Total Power	192W Max.

Remark : For ripple & noise measurement, use a 20MHz bandwidth frequency oscilloscope, and add a 0.1 μ F multilayer Cap. and a Low ESR Electrolytic Cap. (47 μ F) at output connector terminals. (At nominal line voltage, full load)



4. Protection :

4.1 Over Voltage Protection (OVP)	Vout * 150% Max.
4.2 Over Current Protection(OCP)	Iout * 150% Max.
4.3 Short Circuit Protection (SCP)	Shut down
4.4 Over Temperature Protection (OTP)	Shut down

5. Safety 、EMI and EMC Requirement :

5.1 Safety Requirement

a. Safety : CB / cUL / UL / GS / PSE / BSMI

b. Dielectric Strength : Cut off current 10mA

(1)	Primary to Secondary	3000Vac for 1 Minute
(2)	Primary to Frame Ground	1500Vac for 1 Minute

c. Insulation Resistance :

(1)	Primary to Secondary	10 M ohm for 500Vdc
(2)	Primary to Frame Ground	10 M ohm for 500Vdc

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

5.3 Leakage Current : Less than 3.5mA

6. Operation and Environment Performance :

6.1 Temperature Range

Operating	+ 0°C ~ + 40°C
Storage	- 20 °C ~ + 80 °C

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. : 300,000Hrs.(Calculated Hours at 25°C , By Telcordia SR-332)

8. Mechanical :

8.1 Weight : 820g Typical

8.2 Cable Type : Black UL2464 16AWG * 4C
(Wire + Plug)

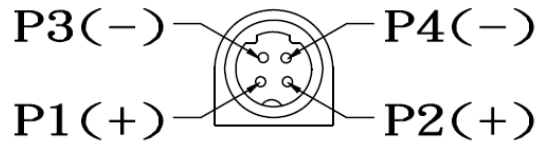
Plug : 4 Pin Din

8.3 Cable Length : 1200mm

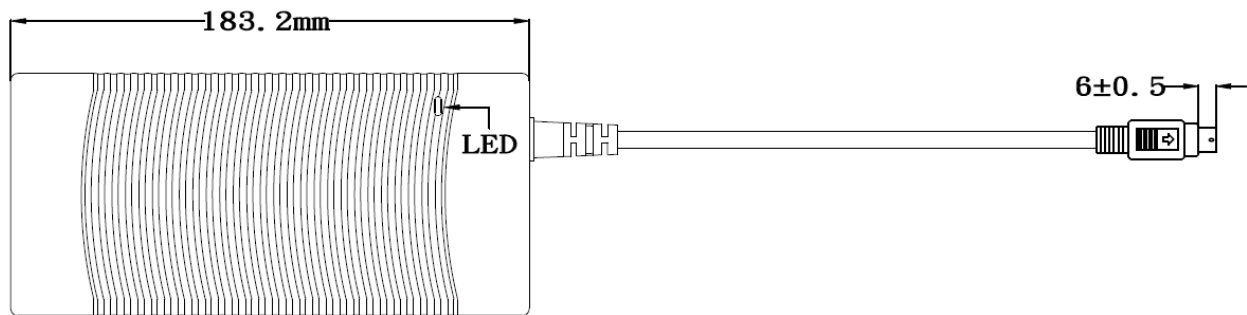
8.4 Case Dimension : 183.2mm(L)*81.0mm(W)*42.3mm(H)

8.5 Material Flammability : UL 94V-0

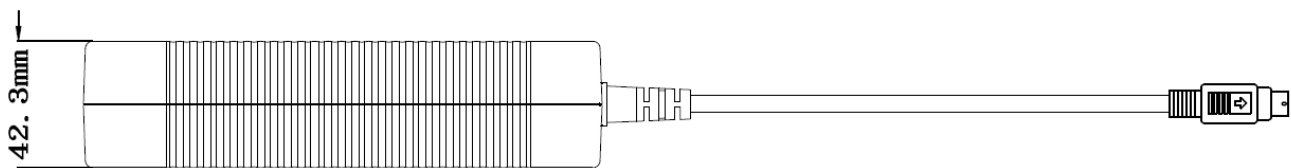
8.6 External Apperance : As drawing below (Scale → mm)



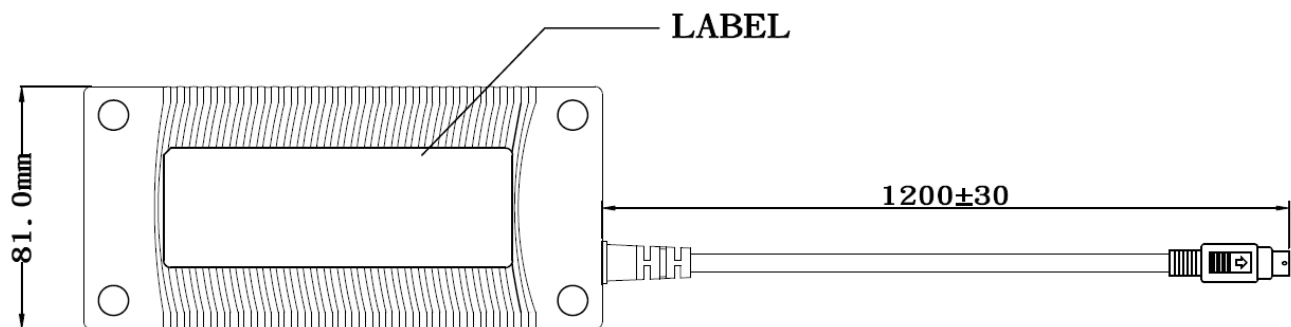
Output Cable Plug Pin Assignment



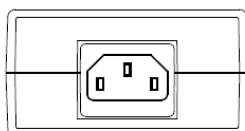
TOP-VIEW



SIDE-VIEW



BOTTOM-VIEW



FRONT-VIEW

8.7 Spec. Label Materials : Metalized Polyester Label (Silver Gloss)
 Color : Black Background with Silver Printing
 Label Dimension : 39mm(L)*119mm(W)+/-0.1mm

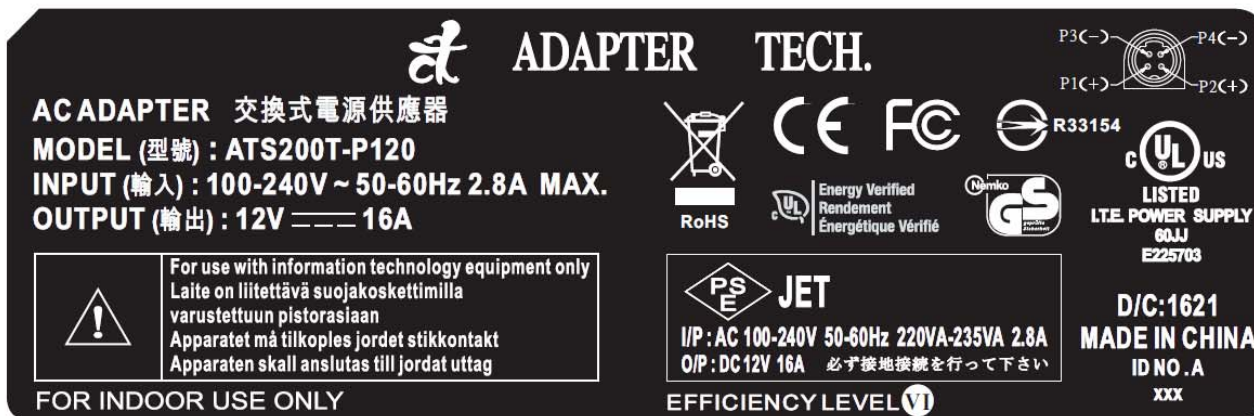
100%



"XXX"

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

160%



Label Part No. : 9443066860

A. Line Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90Vac / 50 % Load	11.4 V ~ 12.6 V	11.96V	11.98V	11.94V
115Vac / 50 % Load	11.4 V ~ 12.6 V	11.96V	11.98V	11.94V
132Vac / 50 % Load	11.4 V ~ 12.6 V	11.96V	11.98V	11.94V
180Vac / 50 % Load	11.4 V ~ 12.6 V	11.96V	11.98V	11.94V
230Vac / 50 % Load	11.4 V ~ 12.6 V	11.96V	11.98V	11.94V
264Vac / 50 % Load	11.4 V ~ 12.6 V	11.96V	11.98V	11.94V

B. Efficiency Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	88 % Min.	89.41%	89.23%	89.11%
230Vac	88 % Min.	90.31%	90.15%	89.94%

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

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	11.4 V ~ 12.6 V	12.21V	12.23V	12.18V
115Vac / 50 % Load	11.4 V ~ 12.6 V	11.96V	11.98V	11.94V
115Vac / 100 % Load	11.4 V ~ 12.6 V	11.70V	11.72V	11.68V
230Vac / 0 % Load	11.4 V ~ 12.6 V	12.21V	12.23V	12.18V
230Vac / 50 % Load	11.4 V ~ 12.6 V	11.96V	11.98V	11.94V
230Vac / 100 % Load	11.4 V ~ 12.6 V	11.70V	11.72V	11.68V

D. Ripple & Noise Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	150mVp-p Max.	131mV	133mV	122mV
230Vac / 100 % Load	150mVp-p Max.	124mV	126mV	117mV



E. Inrush Current

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
240Vac / 100 % Load	100A Max	78.2A	82.1A	81.6A

F. Over Voltage Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	Vout * 150% Max.	134%	131%	128%
230Vac	Vout * 150% Max.	133%	129%	127%

G. Over Current Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	Iout * 150% Max.	121%	119%	125%
230Vac	Iout * 150% Max.	122%	120%	124%

H. Short Circuit Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	Shut down	OK	OK	OK
230Vac	Shut down	OK	OK	OK

I. Input Power Consumption(No Load)

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
230Vac / 0 % Load	≤ 0.21 W	0.145W	0.149W	0.151W

J. Power Factor

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	≥ 0.9	0.990	0.992	0.989
230Vac / 100 % Load	≥ 0.9	0.967	0.970	0.968

Efficiency Test Report

- A. Model Number : ATS200T-P120 (12.0V/16A/192.0W)
- B. DC Power Cord : UL2464,16AWG,1.2M 4PIN DIN
- C. Average Efficiency :
LEVEL VI : 88%Min.
- D. NO Load Power Consumptic :
LEVEL VI : 0.21W max.
- E. Testing equipment :
1. AC Power Source : " ALLPOWER " APW-110N
2. Electronic Load : " PRODIGIT " 3311C
3. Power Meter : " YOKOGAWA " WT-210
4. Digital Meter : " FLUKE " 79III
- F. AC Input Voltage : 115Vac/60Hz

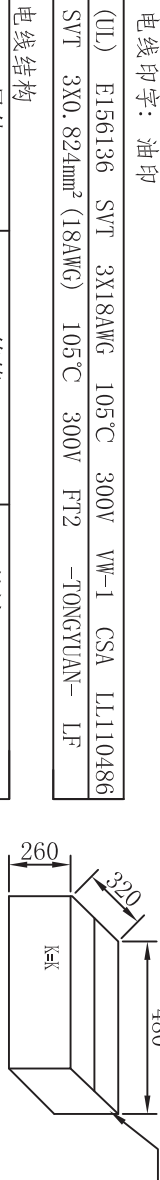
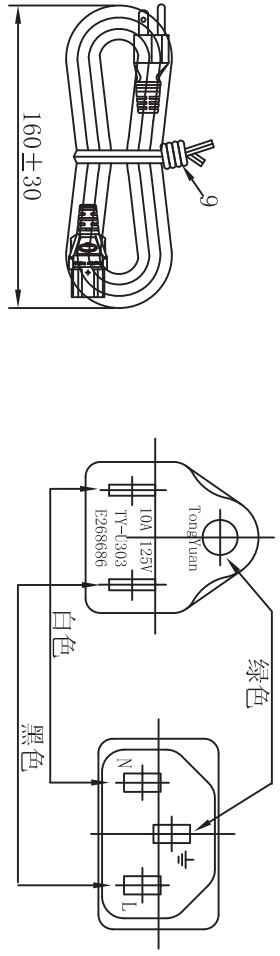
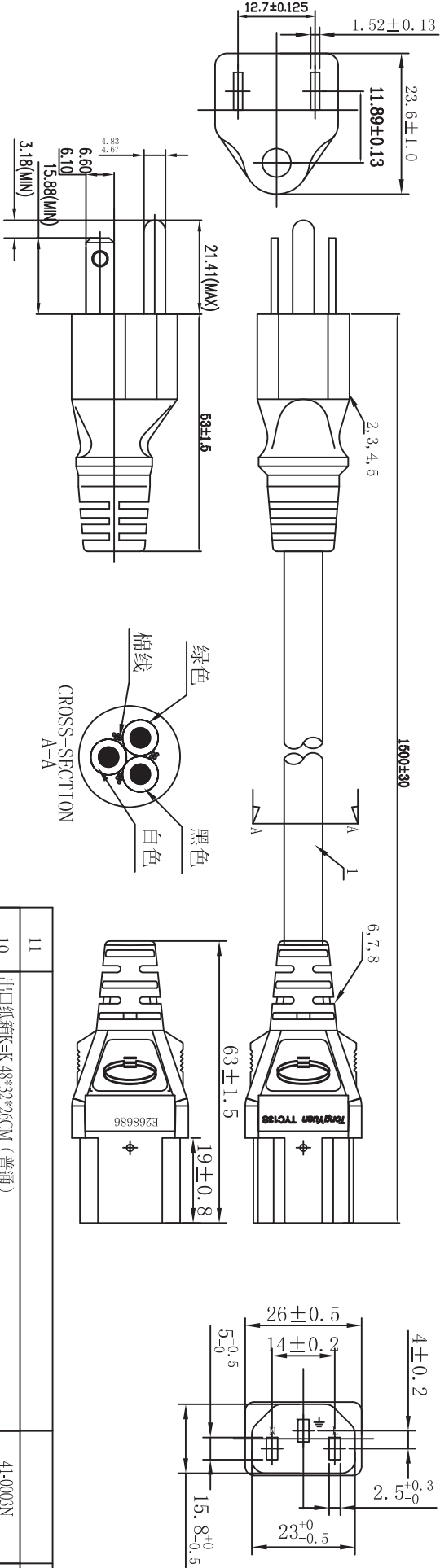
Load Conditions	100%* I ₀	75%* I ₀	50%* I ₀	25%* I ₀	0%* I ₀
Reported Quantity					
Rms Output Current(mA)	16000mA	12000mA	8000mA	4000mA	0mA
Rms Output Voltage(V)	11.70V	11.83V	11.96V	12.08V	12.21V
Active Output Power(W)	187.20W	141.96W	95.68W	48.32W	0.00W
Rms Input Voltage(V)	115V	115V	115V	115V	115V
Rms Input Current(A)	1.868A	1.399A	0.939A	0.486A	0.028A
Rms Input Power(W)	212.83W	158.94W	105.94W	53.66W	0.10W
Voltage T.H.D.(%)	-	-	-	-	-
True Power Factor	0.990	0.987	0.979	0.957	0.052
Power Consumed by UUT(W)	25.63W	16.98W	10.26W	5.34W	0.10W
Efficiency	87.96%	89.32%	90.32%	90.05%	*
Average Efficiency	89.41%				*

- G. AC Input Voltage : 230Vac/50Hz

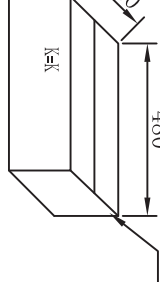
Load Conditions	100%* I ₀	75%* I ₀	50%* I ₀	25%* I ₀	0%* I ₀
Reported Quantity					
Rms Output Current(mA)	16000mA	12000mA	8000mA	4000mA	0mA
Rms Output Voltage(V)	11.70V	11.83V	11.96V	12.08V	12.21V
Active Output Power(W)	187.20W	141.96W	95.68W	48.32W	0.00W
Rms Input Voltage(V)	230V	230V	230V	230V	230V
Rms Input Current(A)	0.941A	0.714A	0.491A	0.269A	0.034A
Rms Input Power(W)	209.38W	157.18W	105.54W	53.17W	0.14W
Voltage T.H.D.(%)	-	-	-	-	-
True Power Factor	0.967	0.956	0.935	0.860	0.036
Power Consumed by UUT(W)	22.18W	15.22W	9.86W	4.85W	0.14W
Efficiency	89.41%	90.32%	90.66%	90.88%	*
Average Efficiency	90.31%				*

Tester : Mingan

版本	改变内容	制作人	日期
A0	初始发行	钱士明	2011/08/04
A/1	增加电流标签	杜华山	2013/01/12
A/2	去掉电流标签	彭刀	2013/12/09



导体		绝缘		外被	
导体	导体结构 (根数/MM)	绝缘 (MM)	标称直径 (MM)	绝缘 (MM)	标称直径 (MM)
0.824	41/0.16	0.38	2.15±0.1	0.76	6.4±0.15



11	出口纸箱K=K 48*32*26CM (普通)	41-0003N	0.0067PCS
10	PE扎带, 黑色, 6'	52-0006N	1PCS
9	普通插头PVC 75A 黑色	12-P700175-100N	0.018KG
8	C13连接器塑料内架	82-0018N	1PCS
7	C13连接器相套	92-0006N	3PCS
6	普通插头PVC 93A 黑色	12-P700193-184N	0.026KG
5	5-15插头塑料内架	81-0006N	1PCS
4	5-15P L/N 端子	91-0005N	2PCS
3	5-15P接地端子	91-0007N	1PCS
2	SVT 3X18AWG 105°C 黑色 油印	S16032-7008	1480MM
1	DESCRIPTION	ITEM NO	QTY

深圳通源实业有限公司
Shenzhen Tongyuan Electrical Wire & Cable Co., Ltd.

标题

客户名

客户产品代码

通源代码

单位

比例

美式三插带品字尾

东莞柏洋电子有限公司(阿达特)

R423AE15011

T0259-U303C1301

MM

/

公差

版本

页码

1/1

角度 ±1°

Third Angle

制作

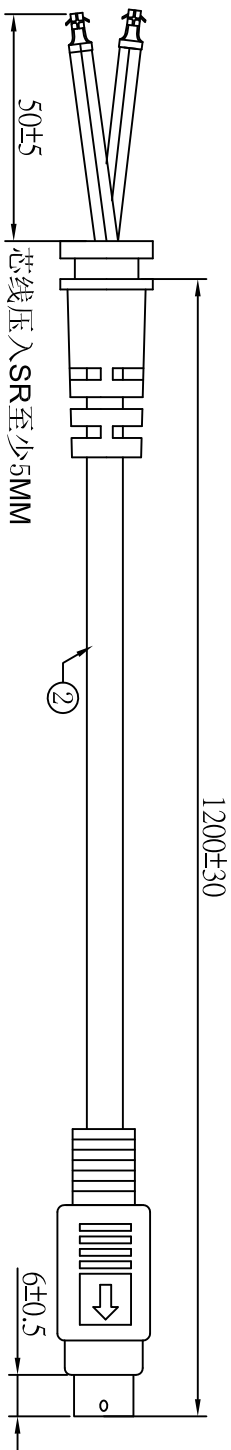
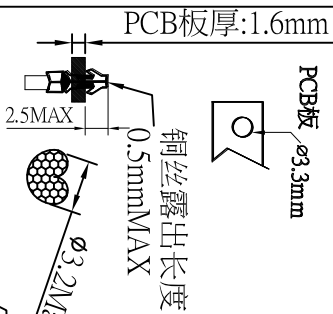
检查

日期

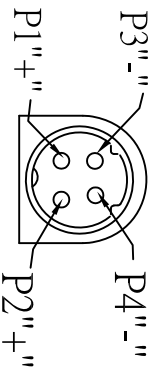
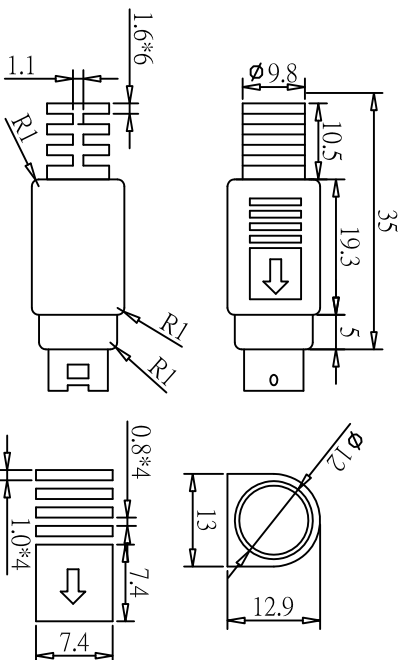
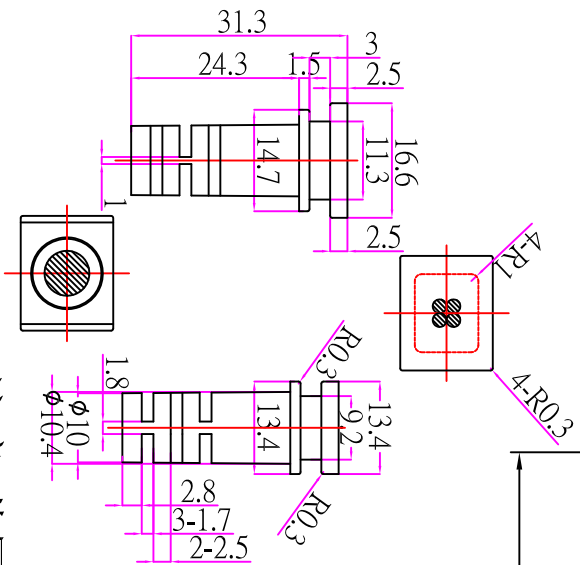
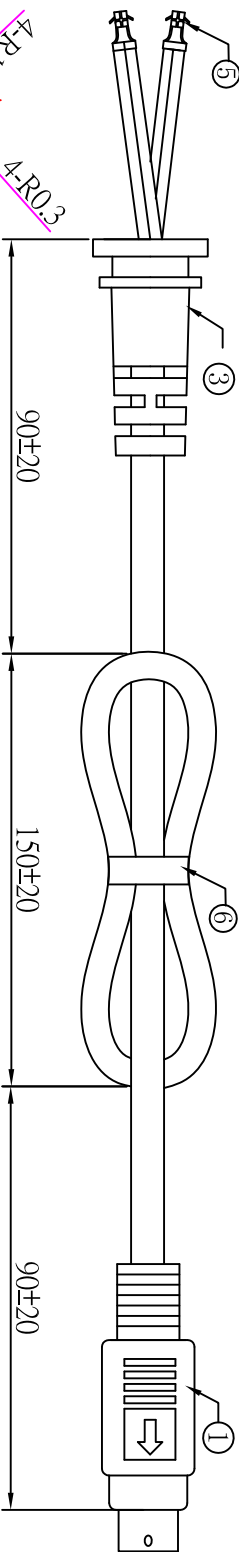
2013/01/12

核准

日期



注:红色与黄色,白色与黑色各并在一起打端子



正面圖

芯線	黃色	紅色	白色	黑色
PIN	P1	P2	P3	P4

注意:此圖面所需材料符合"ROHS"標準

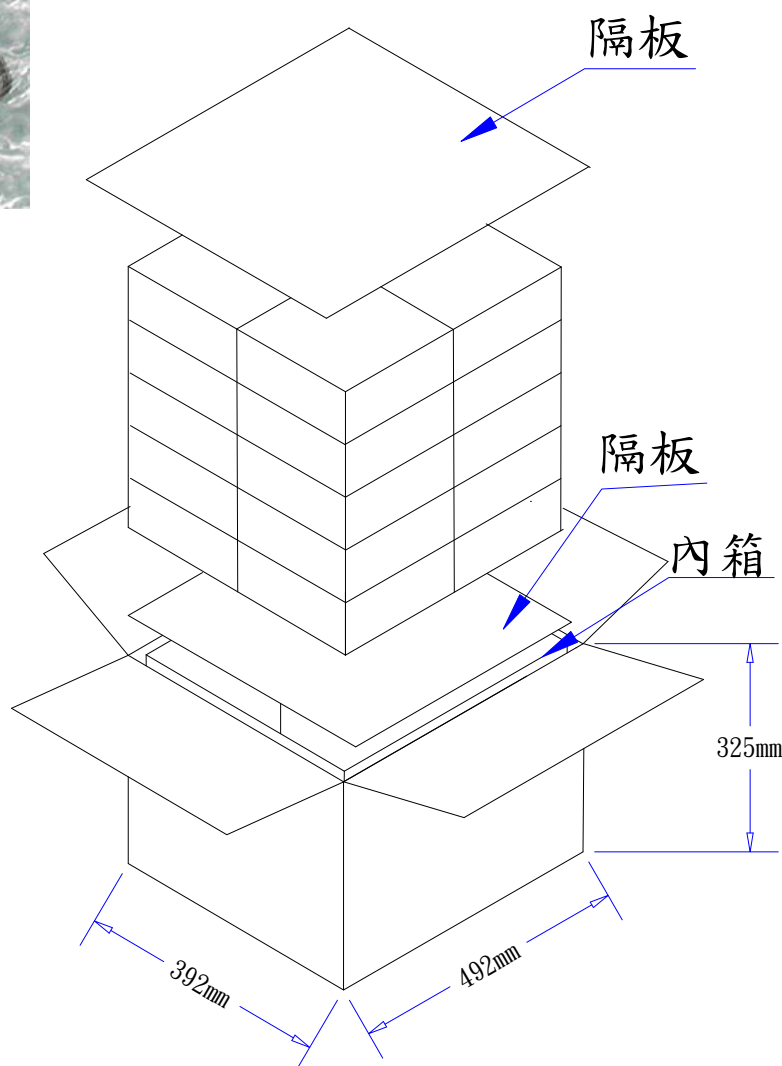
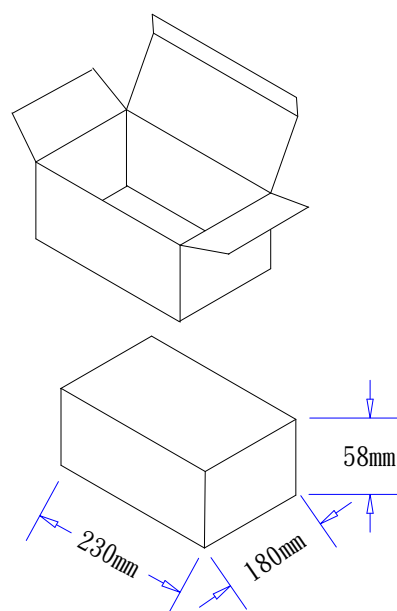
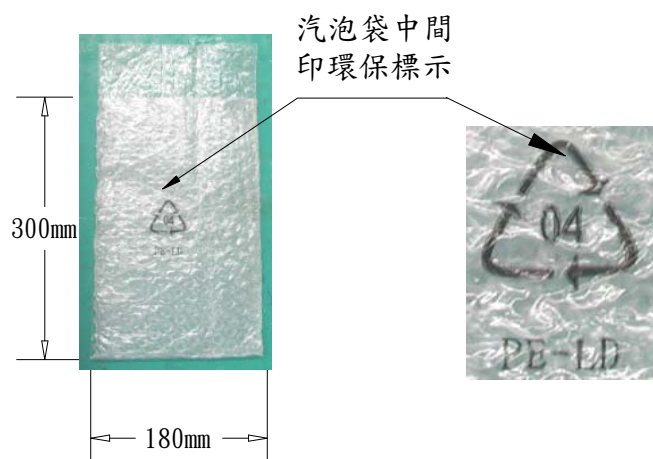
- ① 4PIN 粗針成型式,外模P-180號模(二次成型),大網尾,單箭頭,用料外PVC60P 黑色
- ② UL 2464 16AWG(0.16*65)*4C(紅,黑,白,黃)过粉线 BK亮 OD:6.5 裁線長度:1260+10/-0
- ③ SR-511 号模,用料PVC60P 黑色(YY-PVC-00009):吊重:1米20磅/60秒
- ④ PE无鐵芯紫帶 14CM(YY-ES-00001)
- ⑤ 3. 2机板端:P3200-T*2Pcs 进文提供
- ⑥ 單位:MM

一般公差表	
1.0mm以下	$\pm 0.1\text{mm}$
2.0mm以下	$\pm 0.15\text{mm}$
3.0mm以下	$\pm 0.2\text{mm}$
10.0mm以下	$\pm 0.5\text{mm}$

料號	R44R15120124		
客戶	阿達特	制圖	潘胜
頁數	01	審核	
		批准	

01	新出	2015/10/14	泰岳電子有限公司	
版次	變更內容	日期		
圖號	ADT-3638	日期	2015/10/15	

REVISIONS				
SHOW	REV	DESCRIPTION	DATE	APPROVED
	A	初版制作	14/06/12	
	B	白盒長度加長5MM, 外箱內箱隨白盒尺寸變更	14/10/24	



PIS200W0014 包裝(FOR 200W)-環保氣泡袋-白盒+AC CORD-20

- 9550026101 1. 隔板:464(L)*364(W)*6mm K=K 2/20
- 9520038401 2. 數量:2*2*5=20PCS
- 9520038501 3. 內箱:478(L)*378(W)*307(H)mm(無上下蓋)K=K 1/20
- 9510017201 4. 外箱:492(L)*392(W)*325(H)mm K=K 1/20
- 9540005101 5. 白盒:230(L)*180(W)*58(H)mm 350P+CE(即C9紙加裱350磅白板紙) 1/1
6. 環保雙面汽泡袋:300(L)*180(W)*47mm 無色透明, 中間位置須加印環保標示. 1/1
7. 白盒, 外箱標注為外徑尺寸.
8. 將成品放入氣泡袋中, LABEL朝向環保標示, 對折封好, LABEL朝上裝入白盒內, AC線放入白盒內側, 所有包裝方向必須統一.
9. 以上材料需符合RoHS標準.

阿達特科技股份有限公司

DRAWING NO. PIS200W0014		APPROVAL2		
UNIT	MODEL NO. 200W白盒+AC線	APPROVAL1		
mm	FILE NO. ADT-0260-1	ENGINEER		
SCALE	REV. B	SHEET 1/1	DRAWN BY 黎錦艷	2014/10/24