



ELECTRONICS

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SPECIFICATION FOR APPROVAL

APPROVED BY CUSTOMER

CUSTOMER: _____

MODULE FAMILY: I.T.E. POWER SUPPLY

PART NO : _____ REVISION : A

MODEL NO. : ST241A SAFETY : UL/c-UL

DESIGN NO. : _____ DATE : Feb.06,2009

Prepared by	Reviewed by	Approved by



Specification Index

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8	Certification approve sheet	Status
	UL/cUL Certificate.	OK
	FCC Certificate.	



REVISIONS

CUSTOMER		DESIGNED NO.	ST241A
CUSTOMER P/N		MODEL NO.	
REV.	REVISER	DATE	DESCRIPTION
A		090206	To creating new drawing SPEC

RoHS



ELECTRICAL REQUIREMENTS

DESIGNED NO.	ST241A	DATE	090206	REVISION	A
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ADAPTER

1. Electrical:

1-1. Input Characteristics:

1-1-1. Rated Voltage

It is normal for 100 Vac to 240 Vac input AC voltage

1-1-2. Input Voltage Range

The Adapter shall operate form 90 Vac to 264 Vac input AC voltage

1-1-3. Rated Frequency

It is normal for 50 Hz to 60 Hz and single phase.

1-1-4. Frequency Range

The Adapter shall operate with an input frequency form 47 Hz to 63 Hz .

1-1-5. Steady AC Current

Maximum steady state input current is less than 0.8 Arms. Measured at 100Vac Input voltage.

1-1-6. Inrush Current

AT FULL LOAD ,25 DEGREE C, COLD START

115VAC,60Hz INPUT	NO damage shall be occurred and the input fuse shall not be blown up
230VAC,50Hz INPUT	

1-1-7. Minimum Average Efficiency In Active

78.6 % min. measured at I/P:115Vac/60Hz& Active Loading:25%/50%/75%/100%

$$[0.09 \times \ln(24V \times 1A) + 0.5] * 100\% = \underline{78.6\%} \text{ (Criteria : Level IV)}$$

1-1-8. No load power (Stand-by consumption)

The no load power is less than 0.5 W at 115 Vac and 230 Vac (Criteria : Level IV)

1-2. Output Characteristics:

1-2-1. Rated Voltage

The rated output voltage is specified at 24 Vdc.

1-2-2. Voltage Range

The output voltage will be performed from 24 Vdc±5%.

1-2-3. Line Regulation

The output voltage is specified at $V_{out} \pm \underline{2} %.$

1-2-4. Load Regulation

The output voltage is specified at $V_{out} \pm \underline{5} %.$

1-2-5. Current

This Adapter can work form 0 A to 1 A (full load) and output voltage is in section 2 specified range.



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1-2-6.Rated Power

This Adapter capable to support 24 **Watts** continuously at all specified conditions.

1-2-7.Output Ripple and Noise

Ripple & noise \leq 240 **mVp-p**

Measured methods:

Performed by 20MHz bandwidth in oscilloscope. Applied 0.1uF ceramic capacitor and 10uF electrolytic capacitor across output connector terminal. Measured at the end of DC cable.

1-2-8.Turn On Delay Time (Power On Time)

3 S maximum. Tested @ 100 Vac and 240 Vac input and 24 W full load at output

1-2-9.Hold Up Time

8 mS Min at Max Load 100 Vac/60Hz (O/P Typic Voltage Drop Down 10%)

8 mS Min at Max Load 240 Vac/50Hz (O/P Typic Voltage Drop Down 10%)

1-2-10.Protection

a) Short Circuit protection

The Adapter is protected that a short happened between the output terminals and shall not result in a fire hazard, and will be normal operation automatically while the short is removed.

b) Over current protection

No safety hazard

c) Over voltage protection

No safety hazard

2. Environmental:

2-1.Temperature

2-1-1.Operating

The Adapter is capable to operate form 0 °C to40°C.

2-1-2.Non- Operating

The Adapter is capable to be stored form -10°C to 60°C.

2-2.Humidity

2-2-1.Operating

The Adapter is capable to operate form 10to 90% RH. (non condensing)

2-2-2.Non- Operating

The Adapter is capable to be stored form 5 to 95% RH. (non condensing)



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2-3. Dielectric Withstand Voltage (HI – POT)

The Adapter shall be applied 3000 Vac for 60 seconds or 4242 Vdc for 60 seconds between AC input terminals and output terminals. The cut off current is specified as 10 mA.

2-4. Insulation Resistance

Primary to secondary : > 10 M ohm. 500 VDC.

2-5. EMI Requirement

The adapter complies with : FCC Part 15 Class B EN55022 Class B VCCI Class B
 AS/NES 3548 Class B CNS13438 Class B ICES-003 Class B
 GB9254 Class B Other _____

2-6. EMS

ESD : ± 8 KV air discharge, ± 4 KV contact discharge

PLD (lightning surge EN61000-4-5):

- (1) Common Mode KV (12 ohm) . Class I (line to earth , neutral to earth , line to neutral)
- (2) Differential Mode KV . Class II (line to neutral)

2-7. Safety Conforming

Type	Standard	Meet	Approved	Type	Standard	Meet	Approved
<input checked="" type="checkbox"/> UL	UL60950-1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> CB	IEC60950-1	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> cUL	CSA 22.2 No.60950	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> SAA	AS/NZS: 60950-1	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> TUV-GS	EN60950-1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> CCC	GB4943	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> PSE	J60950-1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> CE	EN60950-1 EN60065	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> BSMI	CNS 13436, CNS13438	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> KETI	K 60950-1	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> TUV-GS	EN60065:2002+A1:2006	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> CB		<input type="checkbox"/>	<input type="checkbox"/>

3. Mechanical:

3-1. Dimension

Body: 97 mm (L) × 55 mm (W) × 32.3 mm (H) reference only (detail Refer page 9).

3-2. Output Cord

Plug: See page 9

3-3. Weight

Net Weight (Approx): 117 g.

3-4. AC Plug

UL Type.

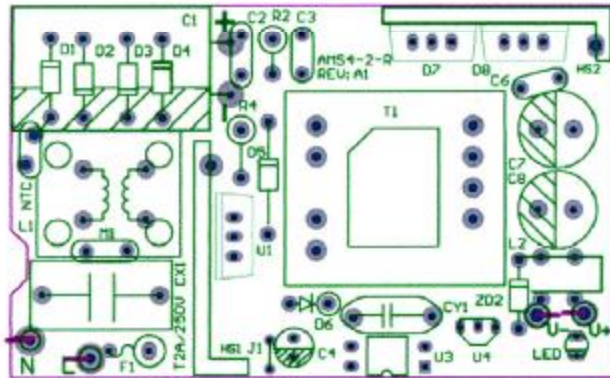


Prepared by	Reviewed by	Approved by

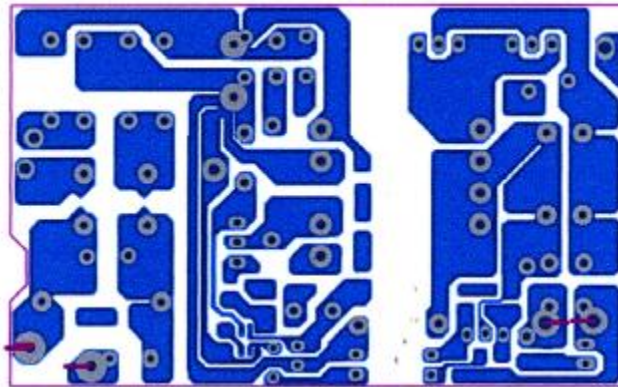
PCB VIEW

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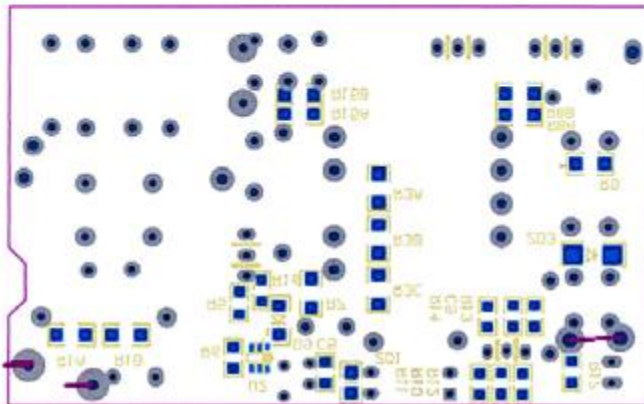
TOP LAYOUT



BOTTOM LAYOUT

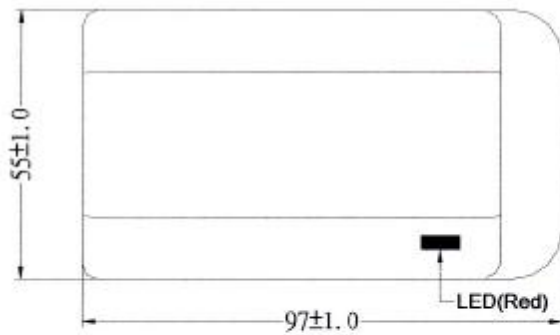
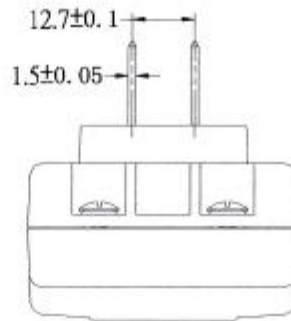
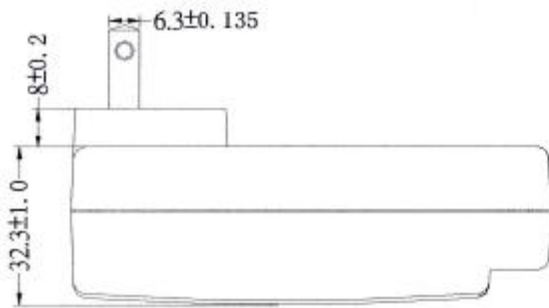
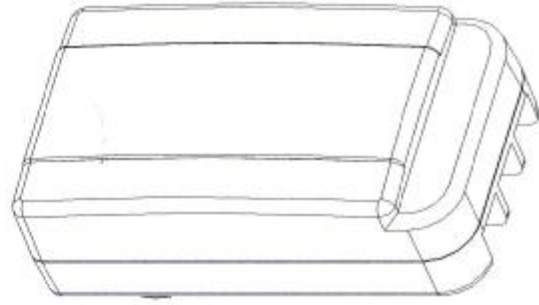
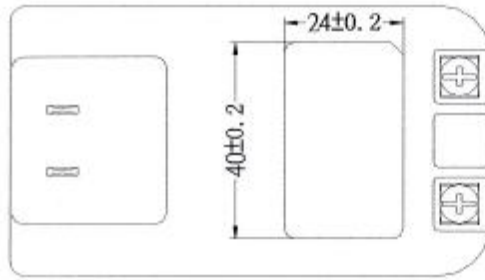


BOTTOM LAYOUT



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MECHANICAL REQUIREMENTS



RoHS

DESIGNED NO.		ST241A			
DRAWING NO.	----				
COLOR	Black				
MATERIAL	Noryl	To creating new drawing SPEC.	090206	A	
UNIT	mm	DESCRIPTION	DATE	REV.	REVISER
			Prepared by	Reviewed by	Approved by

NAMEPLATE

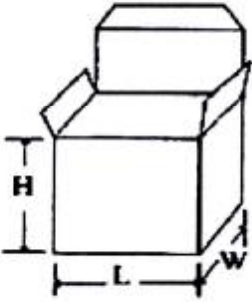
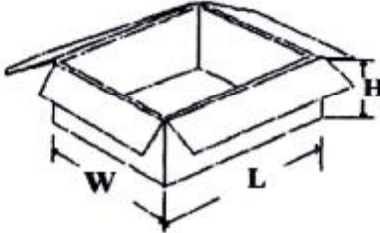




Note: "R" denotes comply with RoHS
 Background: Black
 Letters: Silvery





DESIGNED NO.		ST241A			
DRAWING NO.					
COLOR					
MATERIAL	0.16t PET	To creating new drawing SPEC.	090206	A	
UNIT	mm	DESCRIPTION	DATE	REV.	REVISER
			Prepared by	Reviewed by	Approved by

PACKING



INNER BOX 	LENGTH	98mm +/- 1.0mm
	WIDTH	56mm +/- 1.0mm
	HIGHNESS	59mm +/- 1.0mm
	MATERIAL	Art paper 450g MIN.
	COLOR	White
	PRINTING	N/A
	BOX NO.	
MASTER CARTON		
	LENGTH	35.1cm
	WIDTH	31cm
	HIGHNESS	32.5cm
	MATERIAL	5 layers wave cardboard
	PCS/CTN	90 pcs
SHIPING MARKING		
	Main marking	Side marking(Green)

DESIGNED NO.		ST241A			
DRAWING NO.	----				
COLOR	----				
MATERIAL	----	Creating new drawing SPEC.	090206	A	
UNIT	----	DESCRIPTION	DATE	REV.	REVISER
			Prepared by	Reviewed by	Approved by
					

ELECTRICAL TEST DATA

DESIGNED NO.						MODEL NO.	ST241A				
CUSTOMER P/N						DATE	090206				
ITEM	SPEC.	NO.									
		1	2	3	4	5	6	7	8	9	10
INPUT 100VAC 60Hz											
Stand by power	0.5W Max	0.28	0.26	0.26	0.27	0.27					
Input current (rms) Load <u>1000</u> mA	800mA Max.	485.5	494.8	494.5	494.8	491.4					
Output voltage Load <u>0</u> mA	24VDC +/- 5%	23.99	24.06	24.02	23.99	24.07					
Output voltage Load <u>1000</u> mA	24VDC +/- 5%	23.94	24.01	23.97	23.94	24.02					
Efficiency Load <u>1000</u> mA	78.6% Min	85.93	85.99	85.73	85.87	86.21					
Output Ripple and Noise Load <u>1000</u> mA	240 mV Max	96	99	106	10	96					
Short Test		OK	OK	OK	OK	OK					
INPUT 240VAC 50Hz											
Stand by power	0.5W Max	0.38	0.37	0.38	0.38	0.37					
Input current (rms) Load <u>1000</u> mA	800mA Max.	288.1	290.1	262.6	293.4	295.5					
Output voltage Load <u>0</u> mA	24VDC +/- 5%	23.99	24.06	24.2	23.99	24.07					
Output voltage Load <u>1000</u> mA	24VDC +/- 5%	23.94	24.01	23.97	23.94	24.02					
Efficiency Load <u>1000</u> mA	78.6% Min	86.48	86.21	86.44	86.61	86.39					
Output Ripple and Noise Load <u>1000</u> mA	240 mV Max	63	65	61	62	63					
Short comeback		OK	OK	OK	OK	OK					
HI-POT TEST	P - S: DC 4242V 10mA 60 Sec	PASS	PASS	PASS	PASS	PASS					
											
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California Energy Commission Test Report

DESIGNED NO.						MODEL NO.	ST241A				
CUSTOMER P/N						DATE	090206				
ITEM	SPEC.	NO.									
		1	2	3	4	5	6	7	8	9	10
INPUT 115VAC 60Hz											
Stand by power	0.5W Max	0.28	0.27	0.26	0.28	0.26					
Efficiency Load 25% <u>250</u> mA	---	81.35	81.91	81.44	81.34	81.72					
Efficiency Load 50% <u>500</u> mA	---	83.51	83.84	83.33	83.34	83.97					
Efficiency Load 75% <u>750</u> mA	---	84.17	84.37	84.07	84.12	84.53					
Efficiency Load 100% <u>1000</u> mA	---	86.36	86.42	86.22	86.30	86.52					
AVERAGE EFFICIENCY	78.6% Min	83.84	84.16	83.76	83.77	84.18					
INPUT 230VAC 50Hz											
Stand by power	0.5W Max	0.35	0.35	0.36	0.36	0.36					
Efficiency Load 25% <u>250</u> mA	---	79.59	80.38	80.03	79.19	80.05					
Efficiency Load 50% <u>500</u> mA	---	82.99	84.37	83.88	83.11	83.68					
Efficiency Load 75% <u>750</u> mA	---	84.56	85.01	84.79	84.44	84.85					
Efficiency Load 100% <u>1000</u> mA	---	86.73	86.96	86.65	86.64	87.02					
AVERAGE EFFICIENCY	78.6% Min	83.46	84.18	83.83	83.34	83.90					
											
						Prepared by	Reviewed by	Approved by			