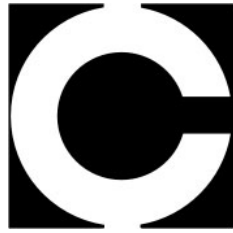


# CETUS INTERNATIONAL LTD.



## SPECIFICATION FOR APPROVAL

DESCRIPTION: The slimmest SWITCHING POWER SUPPLY (Laptop Charger)

CUSTOMER PART NO: \_\_\_\_\_

MODEL NO: HY-CB65W-A REV: 00

DESIGNED NO: HS10304 ROHS: N

DATE: 2010-08-12



ADDRESS : 7th floor, East Building, No.13, Dade Road, Nanhai, Foshan City, Guangdong Province, China

TEL: 86-757-81811611

FAX: 86-757-81811621

Http: [//www.cetus.com.cn](http://www.cetus.com.cn)

P. C: 528251

E mail: [sales@cetus.com.cn](mailto:sales@cetus.com.cn)


# SPECIFICATION FOR APPROVAL

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## HISTORY LIST

REV.	DATE	EXPLAIN	NOTE
00	2010-08-12	Issue	

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# SPECIFICATION FOR APPROVAL

## 1.0 General Scope


This document is for the description of CETUS ELECTRIC Switching power supply **HY-CB65W-A** and it covers all the related electrical, mechanical, environmental and safety aspects.(适用于 Sony、Acer、Asus、Compaq、Fujitsu、Philips、Samsung……Laptop).Manufacture Reserves the right to Alter or Amend the spec without prior notice.

## 2.0 INPUT REQUIREMENTS

- 2.1 Input Voltage Range : **100 (-10%) VAC to 240 (+10%) VAC**
- 2.2 Input Frequency Range : **47 Hz(min) ~ 63 Hz(max)**
- 2.3 Input In-rush Current : **20A Max** (Cold start@25°C,at AC input 100V)
- 2.4 Input Current : **0.8A Max**
- 2.5 Stand-By Power : **1.0W Max** (No-Load)

## 3.0 OUTPUT CHARACTERISTICS

- 3.1 Output Voltage:**15V,16V,18.5V,19V,19.5V,20V, (Adjustable)**
- 3.2 Output Voltage Regulation: **15V(14.25~15.75V),16V(15.2~16.8V),  
18.5V(17.57~19.42V),19V(18.05~19.95V),19.5V(18.52~20.47V),20V(19~21V)**
- 3.3 Output Current Range: **0 (Min)~ 3.0 A(Max)**
- 3.4 Output Ripple&Noise: **300mV Max** @ 20MHz Bandwidth Oscilloscope  
With 47uF/50V Electrolytic capacitor and 0.1uF/50V Ceramic capacitors are connected at output.
- 3.5 Rise up time: **2S** Max at 100Vac & Full Load.
- 3.6 Hold up time: **10mS** Min at 100Vac & Full load.
- 3.7 Line Regulation: **5 %** Maximum.
- 3.8 Efficiency: **≥ 80%** at **120 Vac** & Full Load.
- 3.9 Leakage Current: **0.5mA Max** at 240VAC input.

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## 3.10 Over Current Protection

- Specification

5.5A (the condition of 100Vac)

- The adaptor shall not be damaged by an over current from the output to return line.

## 4.0 DIELECTRIC STRENGTH (Hi-Pot) TEST

Finished product withstands AC 3.0KV, for 2 second, 10mA max Input to Output and Case.

## 5.0 INSULATION RESISTANCE TEST

500 VDC 50M OHMS Min for 1 minute between input and output.

## 6.0 PROTECTION

6.1 Input Protection: The switching power supply has a 3.15A/250V inner current fuse to protection itself.

### 6.2 Output Protection:

#### 6.2.1 Over-Load:

Increase load current gradually until the output is shorted or burst, Nor odor, smoke, fire, plastic deformation, and excessive heat happen.

#### 6.2.2. Short-Circuit:

The switching power supply will be auto recovered when short circuit faults remove.

## 7.0 ENVIRONMENTAL CONDITIONS

The Switching power supply can withstand the following environmental conditions:

7.1 Normal operating temperature: 0°C ~ 40°C

Relative Humidity: 20% ~ 80% RH

7.2 Storage Temperature: -10°C ~ +70°C

Relative Humidity: 10% ~ 90% RH



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## 8.0 SAFETY

The Switching power supply has approved by the following safety standards:

IEC60950-1, EN60950-1

## 9.0 EMI & EMC

The Switching power supply has approved by the following safety standards:

(a) EN55022(EN61000-3-2,EN61000-3-3)

(b) EN55024(IEC61000-4-2,IEC61000-4-3,IEC61000-4-4,  
IEC61000-4-6,IEC61000-4-8,IEC61000-4-11.)

## 10.0 RELIABILITY AND QUALITY CONTROL

### 10.1 Burn-in:

The burn-in test will be performed at least 2~4 hours at 25~40 centigrade degrees under 80% full load condition.

### 10.2 MTBF

When the operation is complying with this specification, the switching power supply's MTBF will be 20,000 hours at 25 centigrade degrees.

## 11.0 MECHANICAL CHARACTERISTICS

11.1 Dimension: 120.0mm(L) \* 62.5mm(W) \* 17.5mm(H) Weight : 384 gram

11.2 AC Inlet Universal: 2PIN GS Plug, 700mm, 2\*0.75mm<sup>2</sup>, 2Pin IEC320-C8 plug.

11.3 Case Material: NORYL (PC, PC+ABS, or equivalent), 94V-0, Color: Black


11.4 Output cord: UL, 2468, #18AWG, 1500mm, 带磁环.

11.5 DC Plug Type: A variety of standard plugs 12 Standard or others

11.6 DC Plug Polarity:

INSIDE (Positive)-----+)----- OUTSIDE (Negative)

11.7 Surface: Damaged, or rusted surface is not permitted

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## 11.8 Drop Test;

The switching power supply to be dropped from 1000mm height onto a concrete floor covered with 20mm vinyl tile one times from 3 different surface(X-Y-Z), after test, the switching power supply is not broken, disassembled, or damaged to access hazardous parts.

## 11.9 Vibration Test;

Frequency=10-55-10Hz, Amplitude 1.5mm, X-Y-Z direction, 30 minutes each direction, Under non-operating status, meet specification after test.

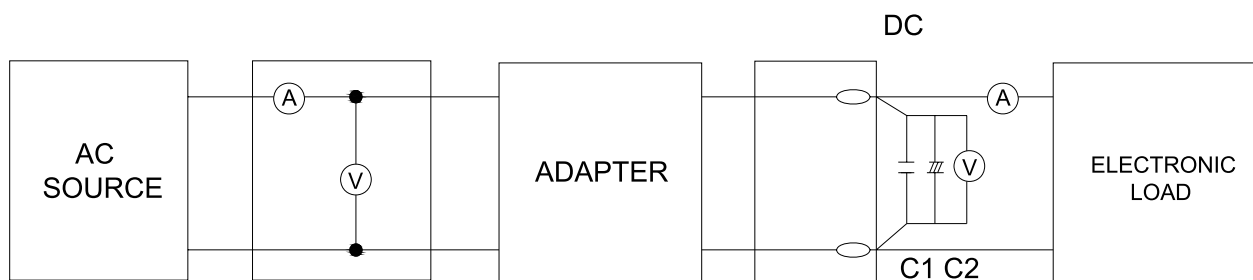
## 11.10 DC Cord Bend Test;

200gw, total 120 degree, 500 times, meet specification after test.

## 11.11 DC Cord Pull Test;


Force 10Kgw, 1 minute, meet specification after test.

## 12.0 TEST MEASURES



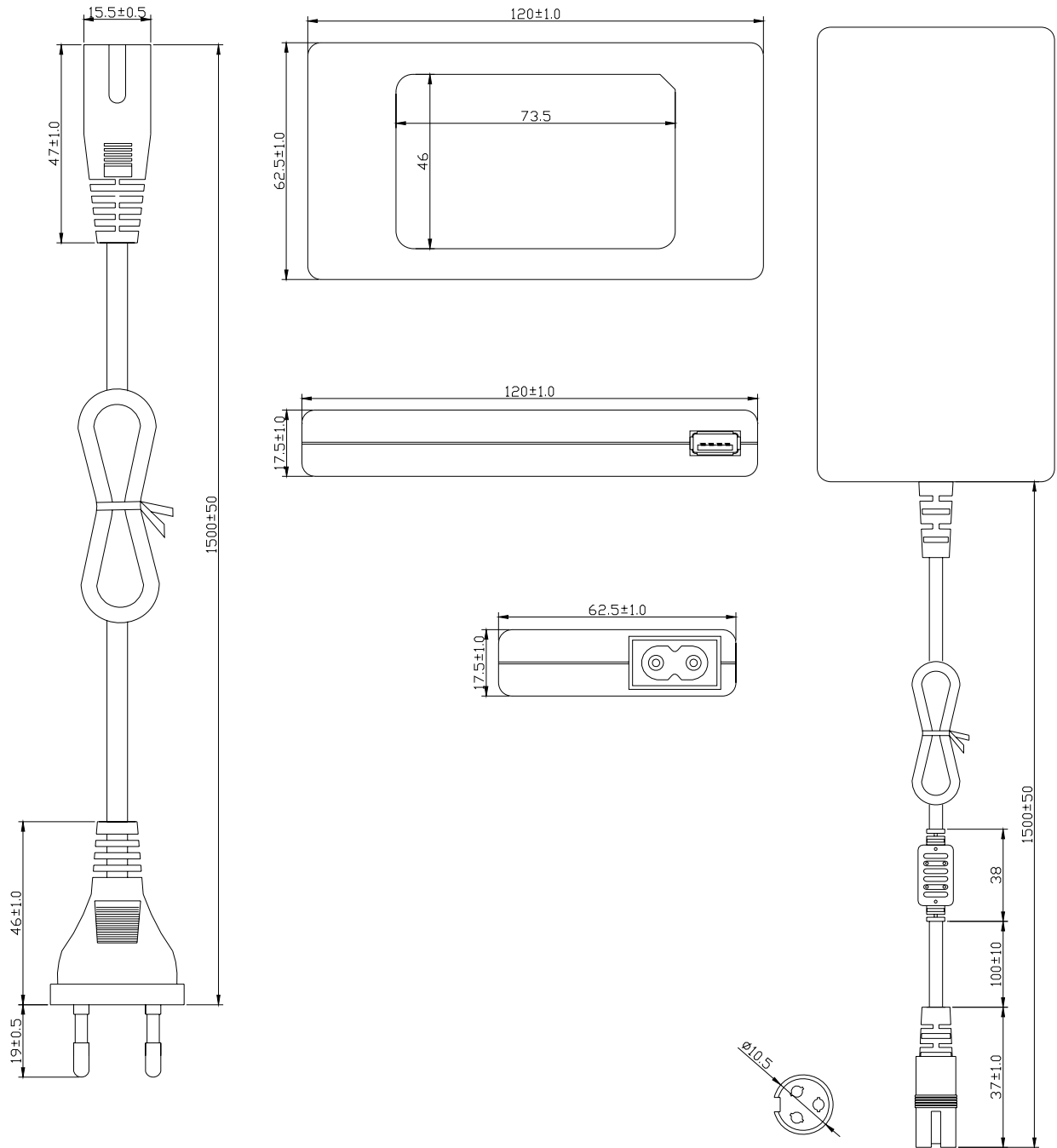
C1: 0.1uF/50V CERAMICS CAPACITOR

C2: 47uF/50V ALUMINUM ELECTROLYTIC CAPACITOR


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## 13.0 OUTLINE DIMENSIONS

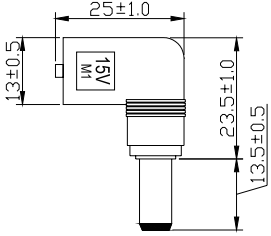
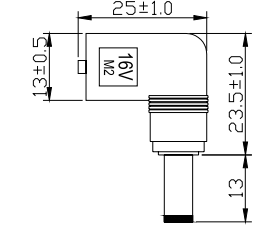
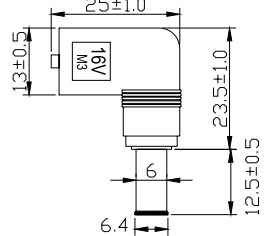
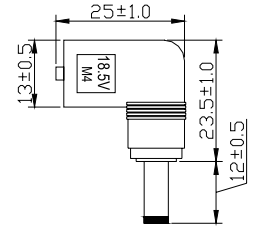
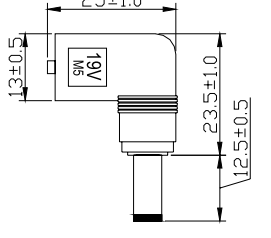
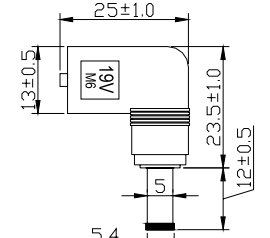
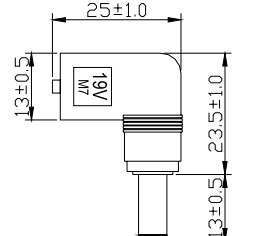
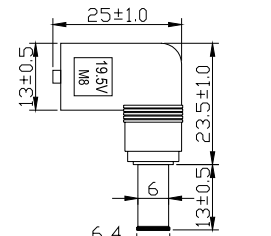
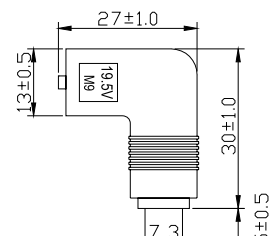
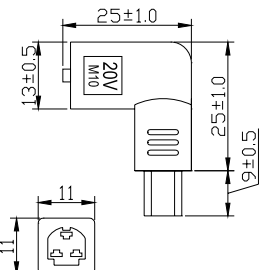
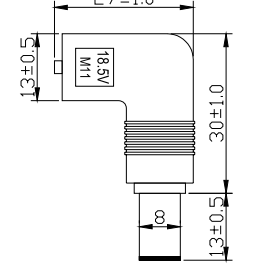
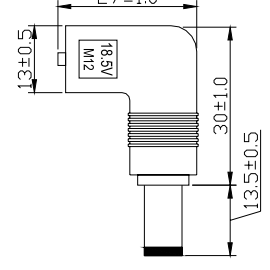


Unit:mm

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## 14.0 DC PLUG DIAGRAM

 <p style="text-align: center;">3.0*6.2*13.5mm</p>	 <p style="text-align: center;">2.5*5.5*13mm 黄嘴音叉</p>	 <p style="text-align: center;">6.4*12.5mm (whit pin)</p>
 <p style="text-align: center;">1.75*4.75*12mm 黄嘴音叉</p>	 <p style="text-align: center;">2.5*5.5*12.5mm 黄嘴音叉</p>	 <p style="text-align: center;">5.4*12mm (whit pin)</p>
 <p style="text-align: center;">2.1*5.5*13mm 黄嘴音叉</p>	 <p style="text-align: center;">6.4*13mm (whit pin)</p>	 <p style="text-align: center;">7.3*13.5mm (whit pin)</p>
 <p style="text-align: center;">8.0*13mm (whit pin)</p>	 <p style="text-align: center;">8.0*13mm (whit pin)</p>	 <p style="text-align: center;">7.3*13.5mm (whit pin)</p>



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Approved by:

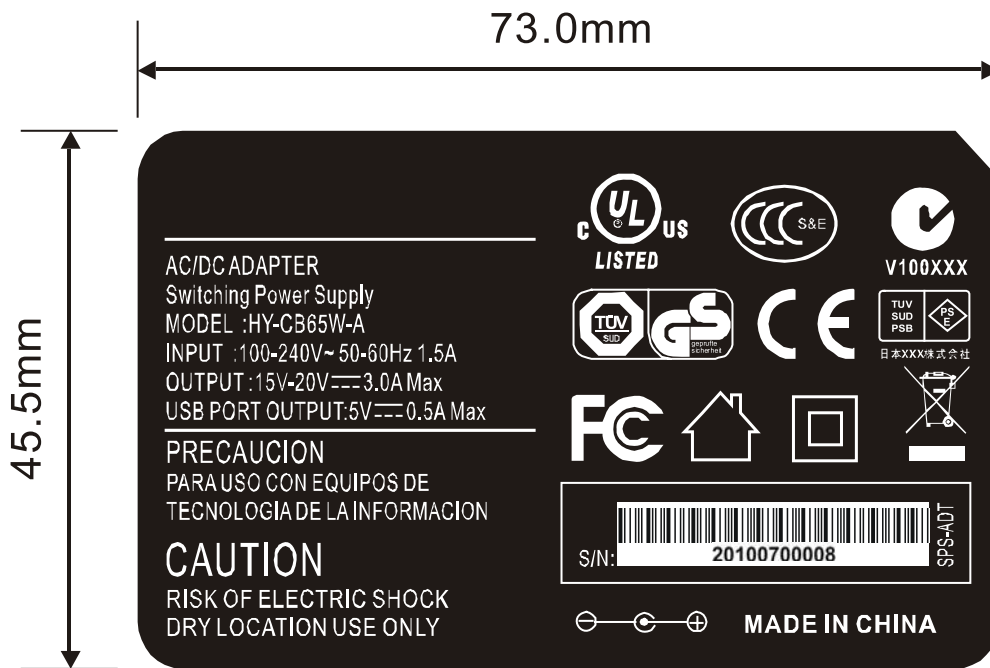
Checked by:

Prepared by:


Paul Chan

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## 15.0 LABEL DIAGRAM (铭牌尺寸)



Material: PVC  
 Background Color: Black  
 Text Color: White  
 Size: 45.5\*73.0mm


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## 16.0 TEST REPORT

15.0V      16.0V      18.5V      19.0V      19.5V      20.0V

Output voltage: 100V 50Hz						
Output voltage (No-Load)V	15.79	16.75	19.33	19.86	20.35	20.75
Output voltage (full -Load)V	15.25	16.26	18.64	18.80	19.50	19.91
Loading Current (mA)	702	740	840	855	876	892
Loading Power (W)	53.3	56.5	65.0	66.5	68.1	69.72
Efficiency (full load)%	85.5	86.0	86.0	84.4	85.6	85.5
Output voltage: 240V 50Hz						
Output voltage (No-Load)V	15.79	16.76	19.33	19.85	20.35	20.75
Output voltage (full -Load)V	15.28	16.27	18.64	18.75	19.50	19.89
Loading Current (mA)	327	343	389	398	406	410
Loading Power (W)	51.13	54.0	61.5	63.4	64.6	66.4
Efficiency (full load)%	89.3	90.0	90.2	88.5	90.5	89.8

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