

样品说明(SAMPLE DESCRIPTION)

| 样品用途 THE PURPOSE OF THE SAMPLE | 无样板 (NO-SAMPLE) | 工作样板 (WORK-SAMPLE) | 功能样板 (FUNCTION-SAMPLE) | 最终样板 (FINALLY-SAMPLE) |
|--------------------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|
| | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

此次送样后如客人测试 OK,还需继续的事项!

THE ITEMS NEED BE CONTINUED OF THESE SAMPLES CONFIRMED BY CLIENT

| EMI 整改/EMI MODIFICATION | 安规申请 /SAFETY APPLY | 修改 PCB 设计/ PCB MODIFICATION | 开模/MOULD | | | 试产 /TRIAL-PRODUCE |
|----------------------------|--------------------------|-----------------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|
| | | | PCB | DC CORD | CASE | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

送样材料偏差清单!

DIFFERENCE OF THE SAMPLE WITH BOM:

| 位置编号 POSITION NO. | 元件类型 PART TYPE | 本次送样实际使用 MATERIAL OF THIS SAMPLE | 未来量产应用 MASS-PRODUCTION MATERIAL | 备注 REMARK |
|-------------------------|-------------------|-------------------------------------|---------------------------------------|--------------|
| | | | | |
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与上次送样差异描述!

DIFFERENCE OF THE SAMPLE WITH BOM:

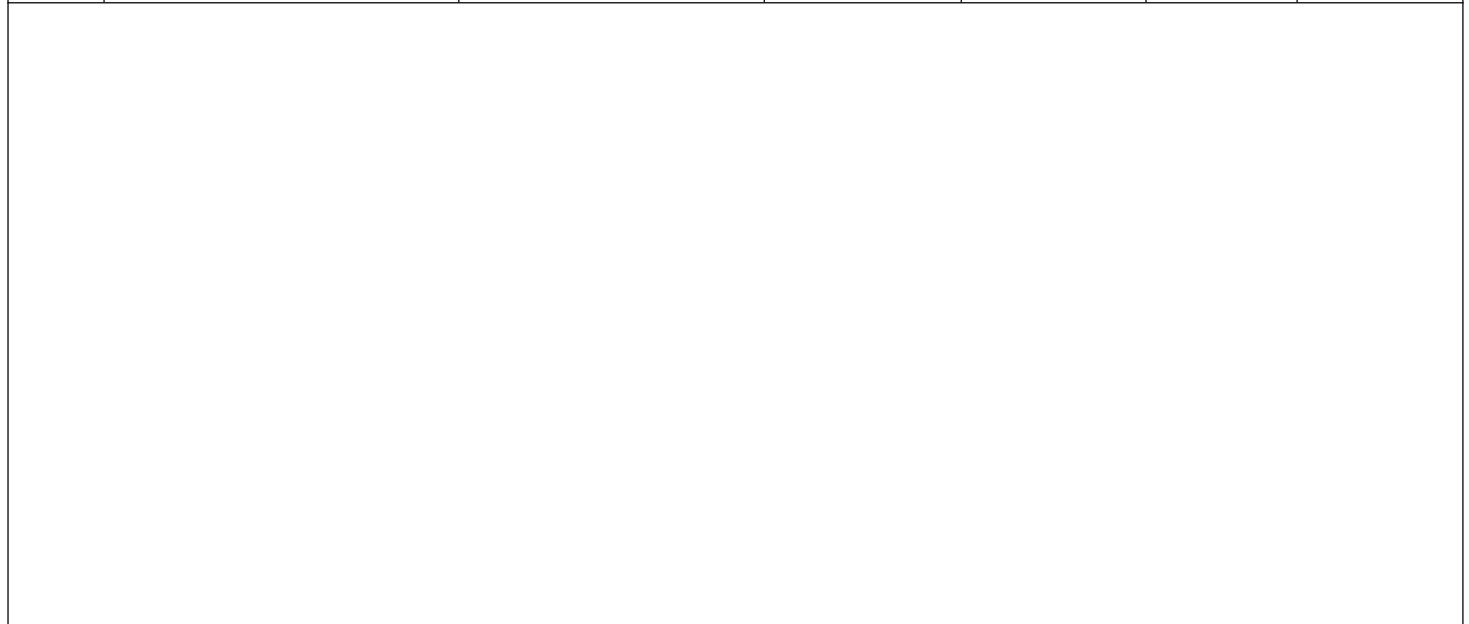
| 编号 NO. | 上次样品内容 ITEM OF LAST TIME | 本次样品改变内容 CHANGED ITEM OF THIS TIME | 改变原因 CHANGE REASON |
|-----------|-----------------------------|---------------------------------------|-----------------------|
| 1 | | | |
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Design Revision History

| REV | Description of Change | | Reason of Change | Changed Date | Revised By | Approved By |
|-----|---|--|------------------|--------------|------------|-------------|
| | Before | After | | | | |
| 0 | | | Initial Issue | 2019-10-05 | Anny | Eric |
| 1 | CUSTOMER P/N: 40XA024BGB1200200 | CUSTOMER P/N: 40XA024BM1200200 | Customer change | 2019-10-16 | SKY | Eric |
| | Nameplate:add the cULus and FCC | | | | | |
| | The certificate update to EN55032 | | | | | |
| | Carten to show part number:40XA024BGB1200200&RoHS | Carten to show part number:40XA024BM1200200&RoHS | | | | |
| | Change the list to show the approved standards | | | | | |
| | | | | | | |
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1. SCOPE

This document details the electrical, mechanical and environmental specifications of a switching power supply.

1.1 Description

- Wall Mount
 Desk-Top
 Open Frame
 Others

2. INPUT REQUIREMENTS

2.1 Input Voltage & Frequency

The range of input voltage is from 90Vac to 264Vac

| | Min | Normal | Max. |
|-----------------|-------|------------|--------|
| Input Voltage | 90Vac | 100-240Vac | 264Vac |
| Input Frequency | 47Hz | 50/60Hz | 63Hz |

2.2 Input current

The maximum input current is 500mA Max. at 100-240Vac .

2.3 Inrush Current

The inrush current will not exceed 50A at 100-240Vac input and Max load for a cold start at 25°C.

3. OUTPUT FEATURES

3.1 Output Parameters

| | Output Data | Spec. Limit | | | Test Condition |
|-------|------------------|----------------|----------------|-----------------|--|
| | | Min. Value | Typical | Max. Value | |
| 3.1.1 | 12.0Vdc | | | | |
| 3.1.2 | Output Voltage | 11.4Vdc | 12.0Vdc | 12.6Vdc | 0.01 ~2.0A Loading |
| 3.1.3 | Output Load | 0.01A | — | 2.0A | |
| 3.1.4 | Ripple and Noise | — | — | 200mVp-p | 20MHz Bandwidth 10uF Elec. Cap.0.1uF Cer. Cap. |
| 3.1.5 | Output Overshoot | — | — | 10% | MAX. load & 100-240Vac |

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3.2 Turn On Delay

During turn on and turn off, no output voltage shall exceed its nominal voltage by more than 10% and no output shall change its polarity with respect to its return line. All outputs shall reach their steady state values within 3 seconds of turn on.

3.3 Hold Up Time

10 ms minimum at 115Vac/60Hz input at maximum load, and 20 ms minimum at 230Vac/50Hz input at maximum load.

3.4 Output Transient Response

The power supply shall maintain output transient response time within 1500mV with a loading current change from 20% to 80% of maximum current and 0.5A/μs rise up /drop down test at end of output terminal.

4. PROTECTION REQUIREMENT

4.1 Over Voltage Protection

Over voltage protection shall be included in the adaptor circuit. A single component failure must not cause an over voltage.

4.2 Over Current Protection

The adaptor must have a current limiting function on the output voltage. in overload mode, the output must drop to a low voltage. The OCP 4.0A max.

4.3 Short Circuit Protection

The adaptor must withstand a continuous short circuit on the output without damage.

5. ENVIRONMENTAL CONDITIONS

5.1 Operating

The power supply shall be capable of operating normally in any mode without malfunction happens in the following environmental conditions.

5.1.1 Operating Temperature: 0°C ~ 40°C

Relative Humidity: 10% ~ 90%

Altitude: Sea level to 2,000 m.

5.1.2 Vibration: 1.0mm, 10-55Hz, 15 minutes per cycle for each axis (X, Y, Z).

5.1.3 Cooling: Natural convection cooling.

5.2 Non - Operating

The power supply shall be capable of withstanding the following environmental conditions extended periods of time, without sustaining electrical or mechanical damage and subsequent operational deficiencies.

5.2.1 Storage Temperature: -10°C ~ 60°C

5.2.2 Relative Humidity: 5% ~ 95%

5.2.3 Altitude: Sea level to 2,000 m.

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5.2.4 Vibration and Shock:

The power supply shall be designed to withstand normal transportation vibration per **MIL-STD-810D**, method 514 and procedures X, as it is mounted in the chassis assembly and packed for shipping.

6. RELIABILITY AND QUALITY CONTROL

6.1 MTBF

When the power supply is operating within the limits of this specification the MTBF shall be at least **50000** hours at 25°C (MIL-HDBK-217F).

6.2 Burn-In

The power supply shall withstand a minimum of **4** hours Burn-In test under full load at **35°C ~40°C** room temperature, after test, product shall operate normally.

6.3 Component De-rating

Semiconductor junction temperatures shall not exceed the manufacturer's maximum thermal rating.

7. MECHANICAL CHARACTERISTICS

7.1 Physical Dimensions

The detail dimension of the power supply is drawing on APPENDIX A.

7.2 Nameplate

The label of the power supply, please see APPENDIX B.

7.3 Drop test

Dropped freely from 1 m (for wall mount product) height onto the surface is consisted of hardwood 13 mm thick, mounted on two layers of plywood each 19-20 mm thick, all supported on concrete floor 1 time from 3 different surface, after test, it's no safety damage for product.

8. SAFETY

8.1 Safety Standard

The power supply shall be certified under the following international regulatory standards.

| Item | Country | Certified | Standard | Present |
|--------|-----------|-----------|--|---------|
| UL | USA | APPROVED | UL60950-1 2 nd /UL60065 | ✓ |
| CUL | Canada | APPROVED | CSA C22.2 NO.60950-1/UL60065 | ✓ |
| FCC | USA | APPROVED | PART 15 CLASS B | ✓ |
| VDE/GS | Europe | MEET | EN 60950-1 2 nd /EN60065 | ✓ |
| CE | Europe | APPROVED | EN 60950-1 2 nd /EN60065 | ✓ |
| BS/UK | Britain | | BS EN 60950-1 2 nd /EN60065 | |
| SAA | Australia | MEET | AS/NZS 60950-1/NZS60065 | ✓ |
| CCC | China | | GB4943 | |
| Ko | Korea | | K60950 | |
| PSE | Japan | MEET | J60950 (H27)/J60065 (H26) | ✓ |
| Others | | | | |

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8.2 Insulation Resistance

Input to output: 10 MΩ min. at 500 VDC.

8.3 Dielectric Strength (Hi-Pot)

Primary to Secondary DC4242V or AC3000V 10mA 1 minute for type test, 3 seconds for product.

8.4 Leakage Current

The leakage current shall be less than 0.25mA for Class II when the power supply is operated maximum input voltage and maximum frequency.

9. EMC STANDARDS

9.1 EMI Standards

The power supply shall meet the radiated and conducted emission requirements for

EN55032 CLASS B, FCC PART 15 CLASS B.

9.2 EMS Standards(EN55035)

The power supply shall meet the following EMS standards.

9.2.1 IEC61000-4-2 Electrostatic Discharge (ESD)

Static – discharge test by contract or air should be conducted with Static – discharge teeter, energy storage capacitance of 150pF, and discharge resistance of 330Ω.

8KV air discharge, 4KV contact discharge, Performance Criterion B.

9.2.2 IEC61000-4-3 Radiated Electromagnetic Fields(RS)

Radio- frequency Electromagnetic Field Susceptibility Test, RS, 80-1000MHz,3V/m, 80%AM(1KHz), Performance Criterion A.

9.2.3 IEC61000-4-4 Electrical Fast Transient / Burst (EFT)

Power Line to Line: 1KV

Performance Criterion B.

9.2.4 IEC61000-4-5 Lightning Surge Attachment

Lightning Surge voltage of differential and common modes shall be applied across AC input lines and across input and frame ground.

Power Line to Line (Common Mode): 1KV

Power Line & Neutral to Earth (Different Mode): 2KV

9.2.5 IEC61000-4-6 Conducted Radio Frequency Disturbances (CS)

Conducted Radio Frequency Disturbances Test, CS, 0.15-80 MHz, 3V/m, 80%AM, 1KHz, Performance Criterion A.

9.2.6 IEC61000-4-11 Voltage Dips/Short Interruption/Variations

Voltage Dips, 30% reduction- 10ms, Performance Criterion B, 60%


Reduction – 100ms, Performance Criterion C, Voltage Interruptions>95%

Reduction- 500ms, Performance Criterion C.

10. OTHER REQUIREMENTS

10.1 Hazardous Substances

The components and used materials shall be in compliance with

 EU Directive 2011/65/EU "RoHS 2"

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10.2 Energy Efficiency

The power supply shall meet the following EMS standards.

10.2.1 The No-Load power consumption shall be less than 0.1W at input 115/230 Vac.

10.2.2 The average active mode efficiency shall be higher than 86.20% at input 115/230 Vac.

10.2.3 International Efficiency Level VI

10.2.4 This power supply is therefore in compliance with the requirements of

California Energy Commission for external power supplies (CEC)

Energy Star requirements for external power supplies (EPS Version 3.0)

EU Code of Conduct Energy requirements of external power supplies

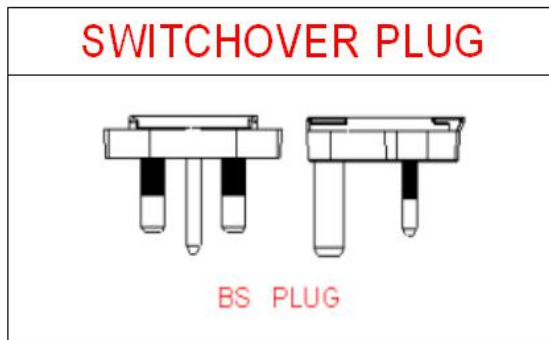
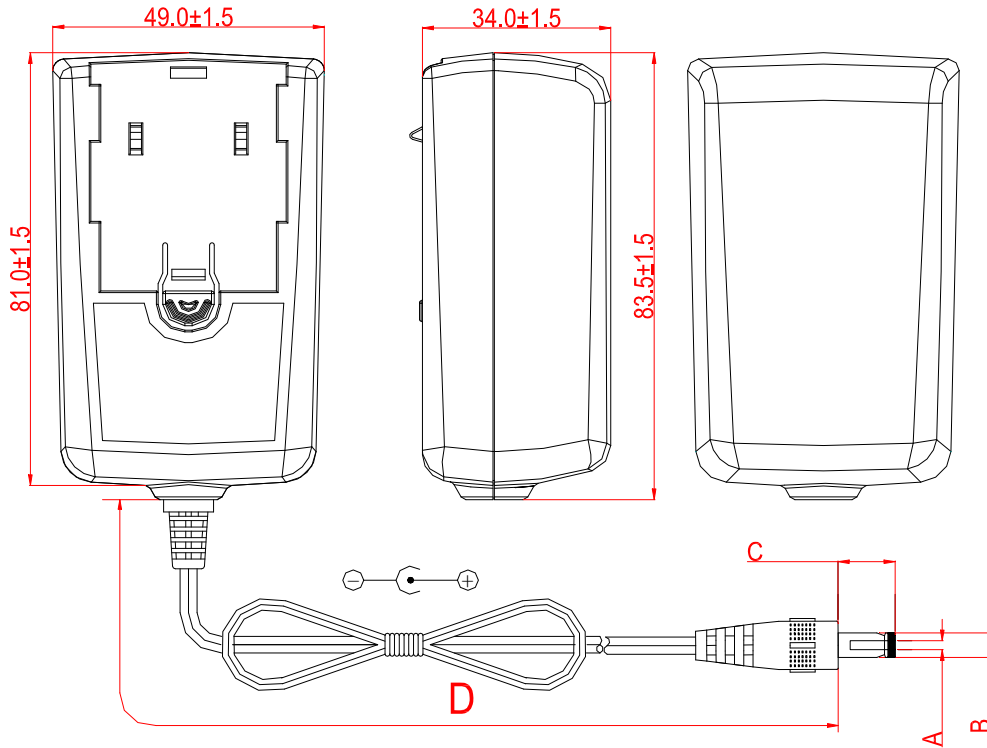
Australian and New Zed Energy Performance Requirements for external power supplies (MEPS)

China Energy Efficiency requirements for external power supplies (GB20943)

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APPENDIX A

External View



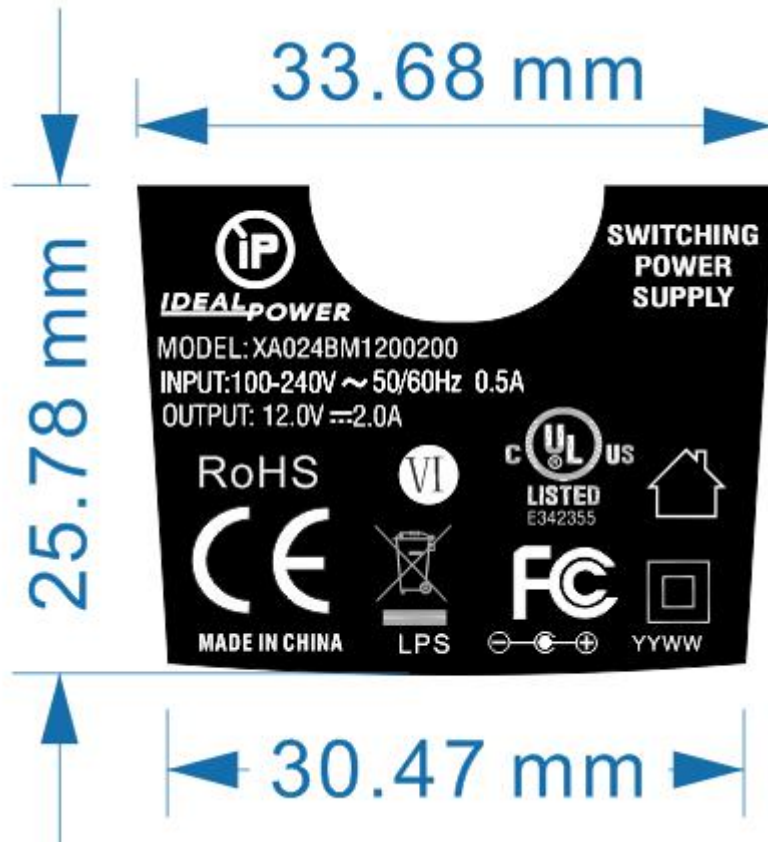
UNIT:mm

| | ΦA | ΦB | C | D |
|-----------|--|----------|------|------|
| DIMENSION | 2.1 | 5.5 | 12.0 | 1800 |
| TOLERANCE | +0.1/-0 | ±0.1 | ±0.5 | ±50 |
| REMARK | AWG20#/2C UL2468 BLACK "Tunning fork with groove" | | | |

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APPENDIX B

Nameplate



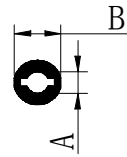
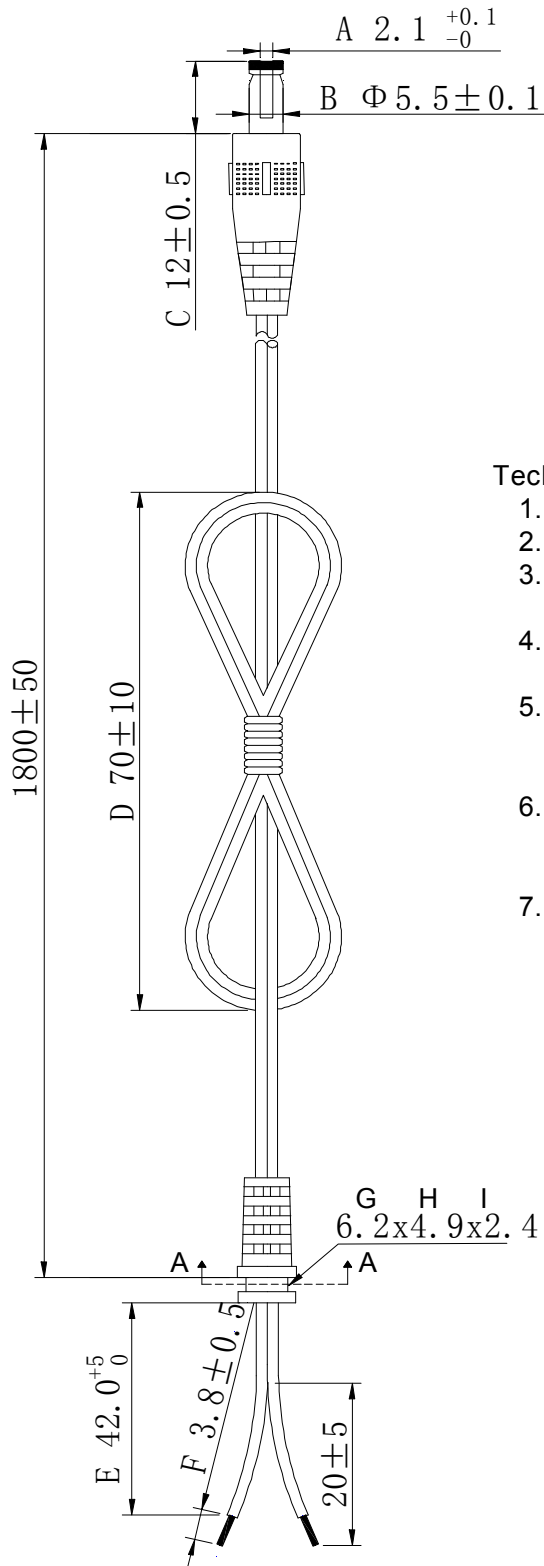
Unit: mm
Tolerance: +0/-0.2
Printed by Laser Printer

* Please Advise If Any Comments About The Name Plate Information
Otherwise, This Information Is Defaulted As Customer Approval,
And Will Be Applied To Production.

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APPENDIX C

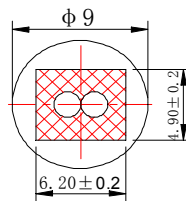
DC CORD



TUNNING FORK WITH GROOVE

Technical requirements:

1. Unit: mm
2. Unremarked Tolerance: ± 0.3 ;
3. 20AWGx2C, UL2468; one is black , the other is with white minus sign
4. Mode of connection: wire with white minus sign connect to inner tip
5. Plug bending test: load 200g weight, distance of hanging point and fulcrum: 30cm, angle: 60° 40 times/minute, min 2000 times
6. S/R bending test: load 20LB(9072g), continous 1minute and distance of hanging point and fulcrum is 30cm, displacement no more than 5mm
7. ROHS 2.0



SECTION A-A

Total length(L) : 1800 ± 50 (IQC checks)

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APPENDIX D

Packing Drawing

DIMENSION(UNIT IN cm):

| | L | W | H |
|-----------|------|------|------|
| WHITE BOX | 10 | 5 | 7.5 |
| CARDBOARD | 41.0 | 39.0 | \ |
| CARTON | 42.0 | 40.0 | 23.0 |

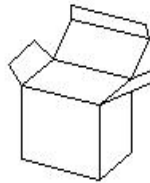
PACKING METHOD:

| | |
|-----------------------------|--|
| PAPERBOARD PLACEMENT METHOD | PUT A PAPERBOARD BETWEEN THE TOP AND BOTTOM,TOTAL 2PCS |
| PACKING METHOD | 20PCS/LAYER X4 LAYERS |
| QTY | 80PCS |
| N.W. | 12.0kg |
| G.W. | 13.5kg |

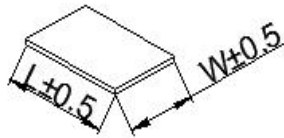
PRUDUCT/产品:



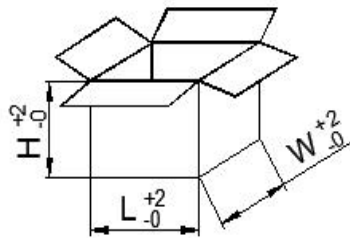
PRIMARY BOX/小白盒:



PAPERBOARD/平卡:



CARTON/纸箱:



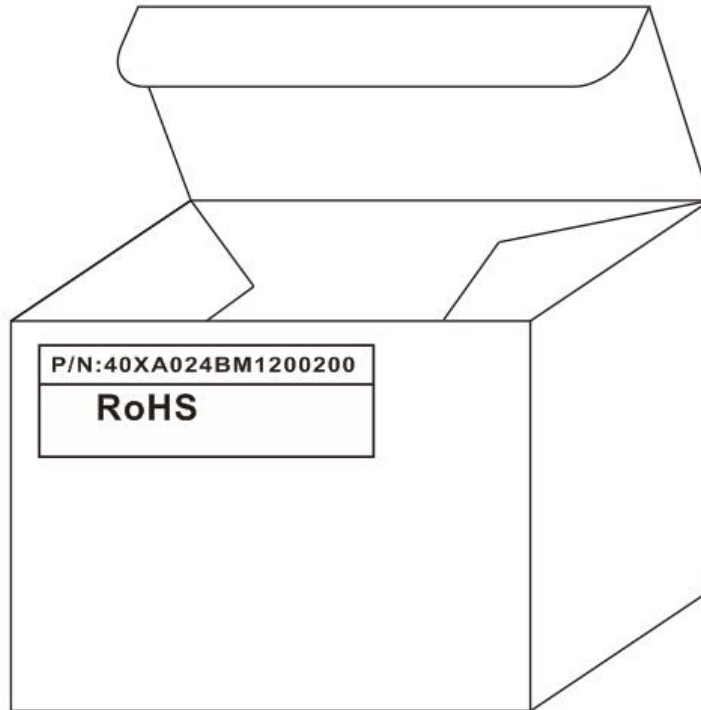
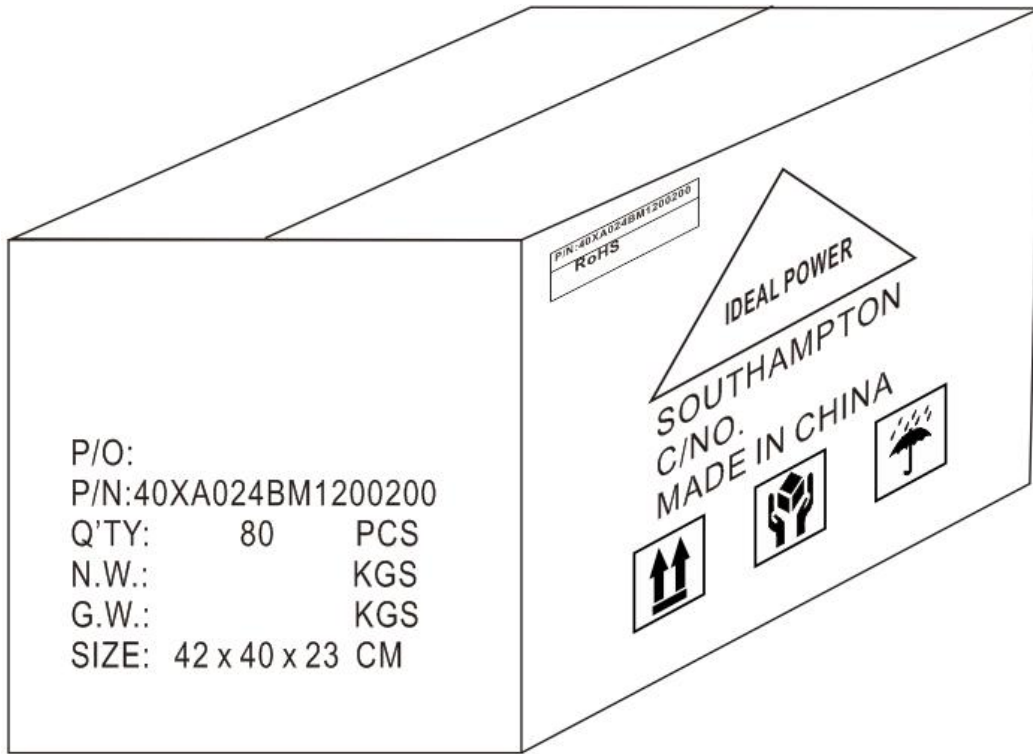
REMARK:

1. STORAGE CONDITION
TEMPERATURE: -10℃~+60℃
RELATIVE HUMIDITY: 30%~80%
2. STORAGE PERIOD: 6 MONTHES
3. ANLISTATIG: NO REQUIREMENT
4. PLEASE ADVISE IF ANY COMMENTS ABOUT THE PACKING INFORMATION.
OTHERWISE,THIS INFORMATION IS DEFAULTED AS CUSTOMER APPROVAL,
AND WILL BE APPLIED TO PRODUCTION.

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APPENDIX E

Description for marking on carton and white box



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