SPECIFICATION FOR REFERENCE

ITEM:_____

MODEL NO.: X30-T1670R360-060P0-Q

SAMPLE CODE: SCXXX-Q0/XXXX

SUPPLIER P/N:_____

CUSTOMER CODE NO: _____

CUSTOMER'S APPROVED

Please send one copy of this specification back after you signed approval for production pre-arrangement.

Approved By :_____

Date :_____

Drawing	Agreement				Approver
	Product Eng.	Mechanical	PM	Check	

ADD: MOSO Industrial Park, Nanshan District, Shenzhen, Guangdong 518108, P. R. China
TEL: 86-755-27657000 27657555 P.C.: 518108
FAX: 86-755-27657908
E-mail:moso@mosopower.com http://www.mosopower.com

** Table of Content **

1. Revision History

NO.	Date	Revision History	Rev.	Page
1	2023-12-29	Original Release	A1	

CHANGE ITEM

Before(Rev.)	After(Rev.)	Change Reason	Remark

2. Electrical Specification

2-1.General Spec

☐ SMPS Adaptor(Wall mount)/插墙式适配器 ☐ SMPS Adaptor(Desk-top)/桌面型适配器

☐ Open Frame/开放式结构 ■ SMPS Unit (metal Case)/带铁壳型

☐ Others/其他

此款电源符合 **ROHS2.0 2011/65/EU** 附录Ⅱ**(EU)2015/863** 要求。

2-2.Electrical Requirements

2-2-1. Input Voltage

2-2-1-1.Input Voltages

Normal voltage: 100 to 240VACrms

Voltage range: 90 to 305VACrms

2-2-1-2.Inrush Current(Cold Start)

Criteria: Cold start, at 264Vac, no damage

The rush current of the device conforms to the device specification value

I2T meets the bridge stack and fuse specifications.

2-2-1-3. Input Fuse

The input fuse shall not blow up.

2-2-1-4. Input Current

≤1.5A max at 100 to 240Vac input and full load.

2-2-1-5. Frequency

Normal Frequency : 50Hz - 60Hz

Frequency range : 47Hz - 63Hz

2-2-1-6. Efficiency

The average efficiency shall not be less than 88%

- According to ERP VI
- Both 115Vac(60Hz),230Vac(50Hz) input voltage condition.
- Average (25%+50%+75%+100%)/4
- The DC power supply shall be operated at 100% of nameplate
- current output for at least 30 minutes immediately prior to conducting

2-2-1-7. Primary Over Current Protection

An adequate internal fuse on the AC input line shall be provided.

2-2-1-8. Power Loss (Minimum Load Power Consumption)

CONDITION		RESULT(SPEC)
INPUT VOLTAGE	100-240VAC	0.21W MAX (INPUT POWER)
OUTPUT VOLTAGE	34.2V - 37.8V	115Vac/60Hz ,230Vac/50Hz

2-2-1-9. Input Configuration

3 Conductors (Live, Neutral) SMPS Unit (metal Case)

2-2-2. Output Requirements

2-2-2-1. Maximum Output Power:

2-2-2-2. Output Voltage and Current

OUTPUT VOLTAGE	MINIMUM VOLTAGE	MAXIMUM VOLTAGE	OUTPUT CURRENT	Peak Current	INPUT VOLTAGE
+36V	34.2V	37.8V	1.67 A	/	100Vac-240Vac

table 1

2-2-2-3. Output Load Regulation

The output voltage regulation shall meet above table 1, including the effects of line voltage variations, load current, ripple and noise, and the AC component of the load current. The effect of dynamic load changes is not included in this limit.

2-2-2-4. Ripple and Noise

A	B
34.2V - 37.8V	1080mVp-p

Column A : Output Voltage.

Column B: Switching Ripple and Noise

Measured methods:

1.Performed by 20M Hz bandwidth in oscilloscope.

2.Applied 0.1uF high frequency capacitor and 22uF electrolytic capacitor across the end of DC cable.

3.Measured at the end of DC cable.

4. tested at 90Vac(60Hz) to 305Vac(50Hz).

2-2-2-5. Line Regulation

Line Regulation：±2%

Line Regulation=ΔV/Vnor x 100%

ΔV:Vmax-Vnor or Vmin-Vnor

Note: Vmax:The maximum output voltage when the input voltage changes;

Vmin:The Minimum output voltage when the input voltage changes;

Vnor:Rated output voltage.

2-2-2-6. Hold Up Time

20mS min.@230VAC input and full load

2-2-2-7. Turn On Delay Time

5S max@ 100Vac to 240Vac input and output & full load(25℃)

2-2-2-8. Rise Time

30mS max@ 90Vac to 264Vac input and output Rated Load.

2-2-2-9. Overshoot

The output overshoot at turn-on shall not exceed +10% (V) of output Voltage at no load and full load connected.

2-2-2-10. Dynamic Load Response

Condition:load step from 20% to 80% to 20%,R/S: 0.10A/uS,

Frequency : 100Hz. Result:≤5% (Dynamic Voltage)

2-3.Protection Requirements

2-3-1. Over Current Protection

OCP: 3.34A＞I＞1.84A @input 100~240Vac 50/60 Hz

The output shall hiccup when the over current applied to the output rail, "and shall be self-recovery when the fault condition is removed."

2-3-2. Short Circuit Protection

The input power shall decrease when the output rail short, the power supply shall no damage, and shall be self-recovery when the fault condition is removed.

2-3-3. Over Voltage Protection

OVP: ≤60V.

Protected when the output is over voltage, and the power supply shall not be damaged. and shall be self-recovery when the fault condition is removed.

2-3-4. Over temperature protection

When the power supply is over temperature protected, the power supply will enter the setting working mode, and the output will be automatically restored after the abnormal removal. Tc≤90℃.

2-4. Safety and EMC Requirements

2-4-1. Earth Leakage Current.

3P Input：3.5mA Max (264V, 60Hz)

2-4-2. Earthing Resistance

Earthing Resistance：<0.1Ω at 12VDC/25A/1S.

2-4-3. Hi-Pot test

1).Hi-Pot test (Dielectric withstand voltage)-CLASS II □

: leakage(cutoff) current 10mA

: Safety Standard Condition:

Primary To Secondary : 3000Vac ,1 minute for type test

: Mass Production Condition:

Primary To Secondary : 3600Vac ,keeping 2 seconds for production

* Test methods:Input test voltage beginning from zero to 3600Vac in 0.5s.We move plug after discharge display 0V.

* Test point : Primary Live and Natural Short ↔ Secondary

2).Hi-Pot test (Dielectric withstand voltage)-CLASS I ■

: leakage(cutoff) current 10mA

: Safety Standard Condition:

Primary To GND : 1500Vac ,1 minute for type test

Primary To Secondary : 3000Vac ,1 minute for type test

: Mass Production Condition:

Primary To GND : 1800Vac ,keeping 2 seconds for production

Primary To Secondary : 3600Vac ,keeping 2 seconds for production

* Test methods:Input test voltage beginning from zero to 3600Vac in 0.5s.We move plug after discharge display 0V.

* Test point : Primary Live and Natural Short ↔ Ground

2-4-4. Insulation Resistance

Insulation resistance shall be more than 100 MΩ at 500Vdc between primary live, primary neutral and secondary.

2-4-5. RFI/EMI/EMC Standards

The adapter shall comply with a following EN55032 EN55035 standards when tested in an system configuration.

2-4-6. EMS Standards

2-4-5-1. EN61000-4-2(IEC61000-4-2:2001 IEC801-2):

Electrostatic Discharge ESD

Electrostatic Discharge: ±8KV(Air) ±6KV(Contact)

Judgement Level: ■A □B □C □D

Electrostatic Discharge: ±15KV(Air) ±8KV(Contact)

Judgement Level: □A ■B □C □D

2-4-5-2. EN61000-4-3(IEC61000-4-3:2002 IEC801-3):

Radiated Immunity RS Radiated Susceptibility: 3V/m, Class A

2-4-5-3. EN61000-4-4(IEC61000-4-4:1995+A1:2000+ A2:2001 IEC801-4):

EFT/AC Line noise. Transient Test: ±2KV(EFT) ±2KV(AC Line noise)

Judgement Level: ■A □B □C □D

2-4-5-4. EN61000-4-6(IEC61000-4-6:1996+A1:2000):

Conducted Radio Frequency

Injected Current Susceptibility: 3Vrms, Class A

2-4-5-5. EN61000-4-5 Lightning Surge:

The power supply must satisfy Table's Lightning Surge Spec.

Products	Test Voltage	Test Point & Test Mode	Output Load
Adapter	± 4KV	Line to Line : C-Mode	Rated Load
	± 6 KV	Line to Gnd : CR-Mode	

Measured methods:

a. Environment Requirements：temperature :15～35℃; humidity :10%～75%RH;

b.Surge voltage is applied to the phase: 0° 90° 180° 270°;

c.Surge voltage is applied: for each polarity voltage of each repeated 5 times, a phase done; 10 times,each applied voltage interval of 60 seconds.

Judgement Level: ■A □B □C □D

2-4-7. Safety Standards

The adapter shall be certified with the following safety standards:

Type	Country	Certified Status	Standard
CE	Europe	MEET	EN62368-1

2-4-8. EMI

Design phase:6dB margin(ClassB)　Mass production phase:3dB margin(ClassB) The adapter linear load test should comply with standard margin, and better suggest to test with end customer's devices for evaluation. Conducted/Radiated interference: (Power) with Vout grounded or not

2-5.Reliability Requirement

2-5-1. Mean Time Between Failures (MTBF)

Output Voltage	Min Voltage	Max Voltage	Current	MTBF	Load Condition
+36V	34.2V	37.8V	1.67A	⩾200000h	100%

*Standard：MIL-HDBK-217F；

*Environment temperature：25℃

*Input Voltage: 115/230Vac

2-5-2. E-cap Lifetime

The life estimation of aluminum capacitor must achieve 50,000 hours at Tc=70℃, 80% load Input voltage: 220Vac

Standard:　Life Time=Lr * $2^{(To-Tx)/10}$

Note: Capacitor Life time　ΔTo: Self Heat Coefficient　(85℃ =10, 105℃ = 5)

Lr : Capacitor Life Spec　　Ia : Measured Ripple Current

To: Capacitor Temp Spec　　Is : Ripple Current spec

Tx　: Capacitor case Temp　　Ff : Frequency Factor

ΔT : Capacitor Self Heat　　Tf : Temperature Factor

2-5-3. Random Vibration Test (non-operating)

10 to 300Hz sweep at a constant acceleration of 1.0G(Breadth: 3.5mm) for 1Hour for each of the perpendicular axes X, Y, Z.

2-5-4. waterproof level

Level：IP65

2-5-5. Hot Burn-In

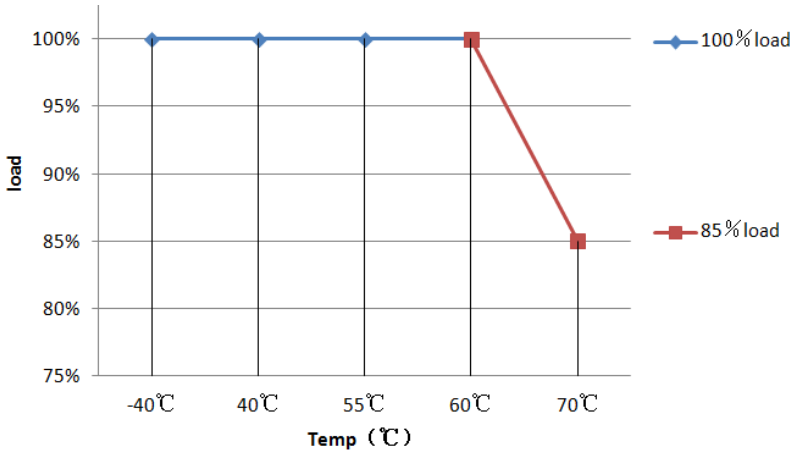
Condition		Result(Spec)
Input Voltage	220Vac	NO Defect, Normal Operating
Output Current	100% load	
Temperature	40℃ ± 5℃	
Test Time	2HR	

2-6.Environment Requirements

2-6-1. Operating Temperature

→ -40℃~ 60℃@100% load(90Vac,305Vac)；

→ 70℃@ 85% load(90Vac,305Vac)；



2-6-2. Operating Humidity

→ 10%~90% RH (Condensation : NOT REQUIRED)

2-6-3. Storage Temperature

→ -40℃~90℃

2-6-4. Storage Humidity

→ 10%~90% RH (Condensation : NOT REQUIRED)

2-6-5. Operation Altitude

→ 0 - 5000m

2-7.Mechanical Features

2-7-1. Physical Size(Unit:mm):

Length 140±1mm* width 68±1mm * height 37±1mm

2-7-2. AC Input Connector：

AC Plug 3 PIN

2-7-3. Output Plug :

DC Plug: /

2-7-4. LED Light: /

2-7-5. Weight : /

2-7-6. Case Color: /

3. Circuit Drawing

4. PCB Drawing

4-1.TOP SILK

4-2.BOTT SILK

5. Mechanical Specification

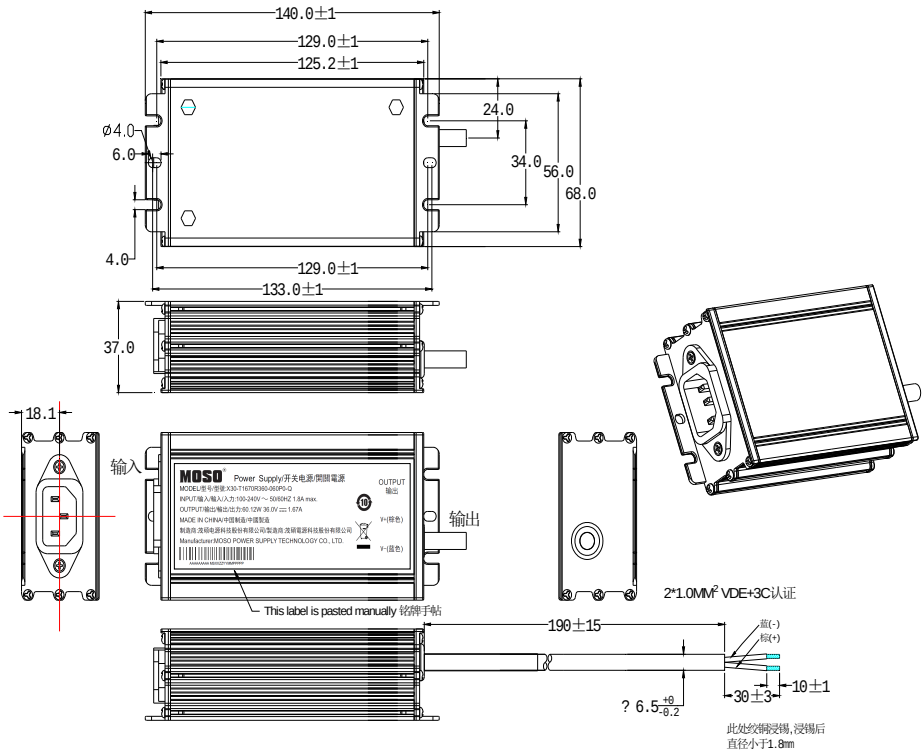
5-1.case drawing

5-2. Label Drawing

5-3. Barcode Drawing

5-4. Packing Drawing

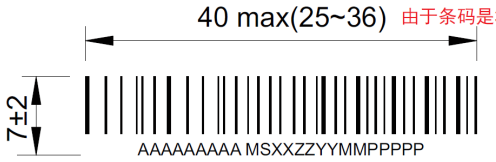
5-1. Case Drawing



5-2. Label Drawing

备注:
1、100# PET+光膜, 白底黑字;
2、垃圾桶标识尺寸高度不小于7mm;
3、符合RoHS,REACH及茂硕环保要求;
4、背胶耐温90℃,96h内不翘角, 不脱落, 不起泡;
5、酒精擦拭和清水各擦15秒, 用100克的砝码包棉布擦，字体清晰可见，无其他不良(如卷边、翘角等)

5-3. Barcode Drawing

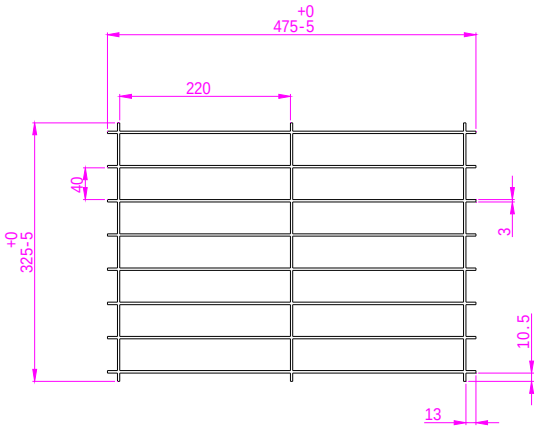


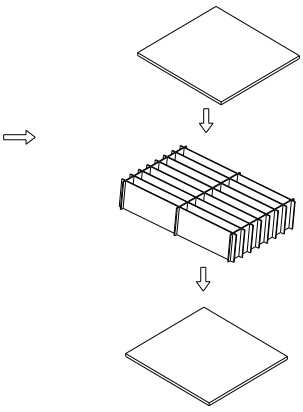
由于条码是36进制的流水号，字母越多条码长度越长，条码尺寸无法限定，保持在范围内即可

条码格式：Code 128

AAAAAAAAA MSXXZZYYMMPPPPP总共24位(客户料号与MS之间隔一个空格)
AAAAAAAAA--海康料号;业务提供(9位)扫描条码时不显示
第1~2位MS为供应商
第3~4位XX为产品内部代码，代表26个字母,海康料号与两个字母对应要唯一
,如:101701122对应AA、101700410对应AB...当字母为AZ后变为BA、BB...BZ、CA...以此类推,
直到两字母为ZZ.这两个字母的定义根据新的海康料号,由业务给出.
第5~6位ZZ为物料版本代码,由A1开始，A1,A2.....（以规格书封面版本为准）
第7~10位YYMM为生产年/月代码,YY为年份后两位,MM为月份，如2005
第11~15位PPPPP为流水码，采用数字（0~9）与字母（A~Z）总共36位表示，
（从00001~ZZZZZ,总共有60466176个流水号，36位进制计数）,
从00001开始计数到00009后变0000A、0000B~0000Z、00010~0001Z以此类推直到ZZZZZ;

5-4. Packing Drawing



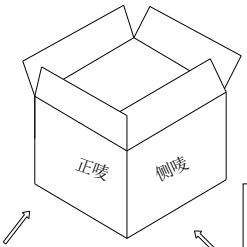


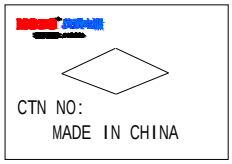
包装说明：

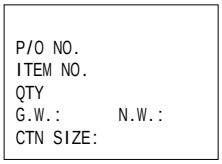
一、将产品每PCS放入刀卡槽中，每层装14PCS，
共装3层，每箱装42PCS
即： 14pcs/层*3层=42PCS/箱

二、包装材料使用说明为：
1、组合刀卡435*375用量：3PCS
2、平卡475*325用量:4PCS
3、纸箱490*340*335：1PCS

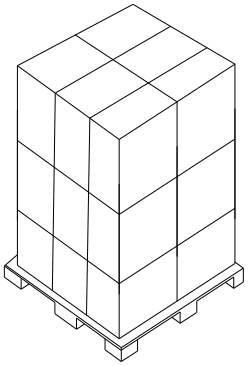
三、栈板堆放说明为：
1、栈板尺寸为：L1200*W1000*H135mm
2、每层放2行*3列=6箱
3、坚直堆放3层*6箱共18箱



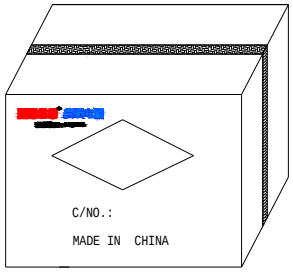




纸箱的外尺寸：490L*340W*335H



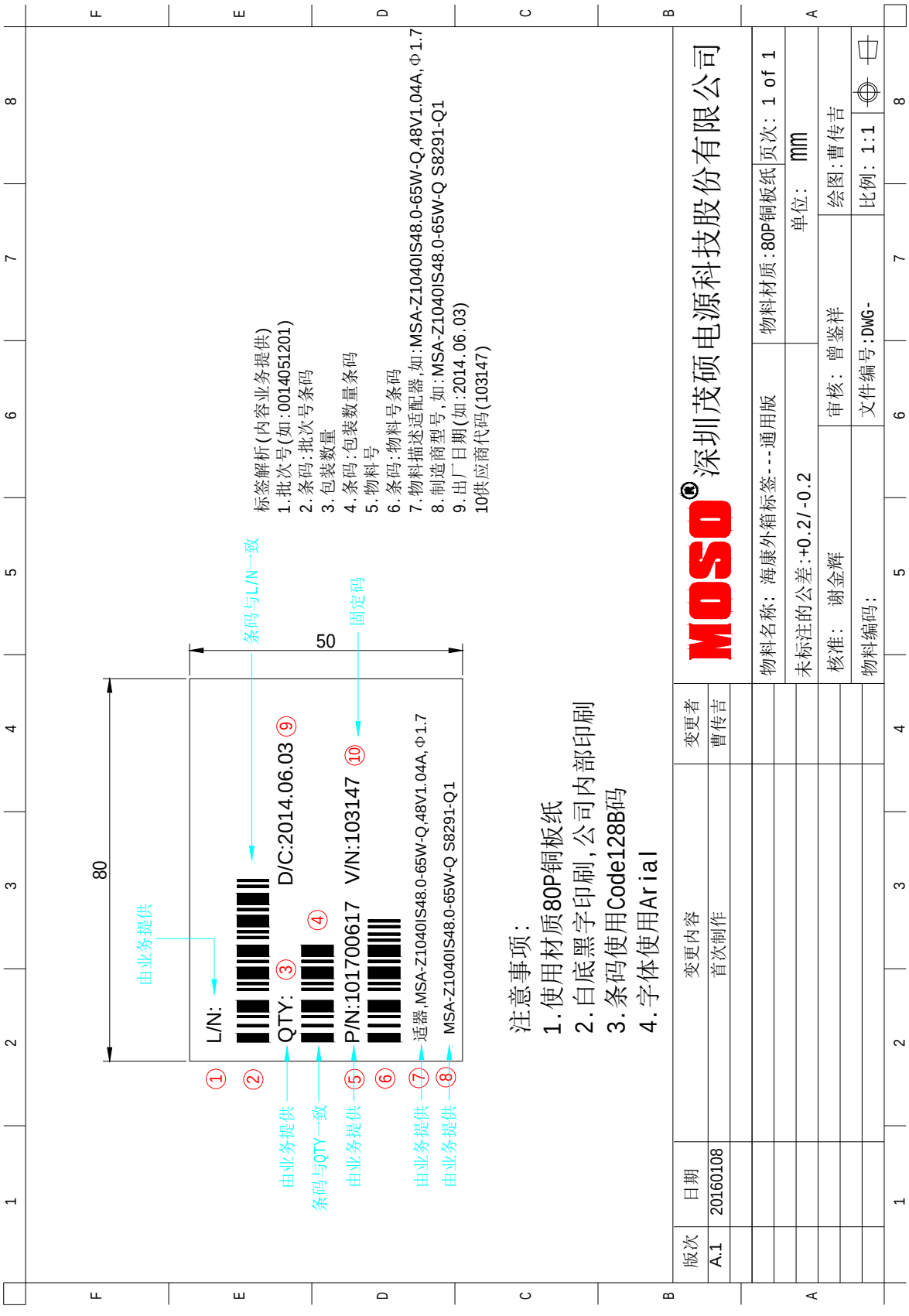
栈板堆放示意图



产品装入包装箱用胶袋封箱,位置参考图中所示.

The requirement of PE bag packing: ☐PE bag without sealing by adhesive tape.
☐PE bag with sealing by adhesive tape
☐Other requirement

Remark: If the customer has not chose the PE bag packing way,
we will use the PE bag without sealing by adhesive tape.


80
50
L/N:
QTY:
D/C:2014.06.03
P/N:101700617
V/N:103147
适器,MSA-Z1040IS48.0-65W-Q,48V1.04A,Φ1.7
MSA-Z1040IS48.0-65W-Q S8291-Q1
由业务提供
条码与L/N一致
由业务提供
条码与QTY一致
由业务提供
固定码
由业务提供
由业务提供
标签解析(内容业务提供)
1.批次号(如:0014051201)
2.条码:批次号条码
3.包装数量
4.条码:包装数量条码
5.物料号
6.条码:物料号条码
7.物料描述适配器,如:MSA-Z1040IS48.0-65W-Q,48V1.04A,Φ1.7
8.制造商型号,如:MSA-Z1040IS48.0-65W-Q S8291-Q1
9.出厂日期(如:2014.06.03)
10供应商代码(103147)
注意事项:
1.使用材质80P铜板纸
2.白底黑字印刷,公司内部印刷
3.条码使用Code128B码
4.字体使用Arial
MOSO® 深圳茂硕电源科技股份有限公司
物料名称: 海康外箱标签---通用版
物料材质:80P铜板纸
页次: 1 of 1
未标注的公差:+0.2/-0.2
单位: mm
核准: 谢金辉
审核: 曾鉴祥
绘图:曹传吉
物料编码:
文件编号:DWG-
比例: 1:1
版次 日期 变更内容 变更者
A.1 20160108 首次制作 曹传吉