

ENGINEERING CHANGE REQUEST

DATE: Jun-04-2018

CUSTOMER:	KYSAN	APPROVED SIGNATURES	
PART NAME:	SWITCHING ADAPTOR		
MODEL NO.:			
DESIGNED NO.:	MTR-18028		
TYPE		REV	A

ORIGINAL

REVISION

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Mitra Electronics Co.,Ltd	Drawn	Executed	Checked	Approved

Mitra Electronics Co.,Ltd	Approval sheet	AC INPUT : 100-240V
	Design No.:MTR-18028	DC OUTPUT:24V/1A

1.0 SCOPE

This document describe the electrical, mechanical , environment and RoHS correspondence to lead free compliance specification of MPBS UL-CUL type single output 24VDC 1A switching adaptor .

2.0 INPUT SPECIFICATION

2.1 Input Voltage and Frequency

The power supply shall meet all specification below when powered from following sources.

Voltage Range	Line Frequency	Min. Voltage	Max. Voltage
100-240VAC	47~63Hz	90VAC	264VAC

Table 2.1.1

2.2 Current

The maximum input current is 0.65A at 100Vac.

2.3 AC Inrush Current

The peak inrush current shall be limited to 30A at 120Vac input for a cold start at 25°C .

2.4 Stand By Power

The maximum input power is 0.3W MAX. at inupt 115VAC and no load condition.

3.0 OUTPUT SPECIFICATION

3.1 Output Voltage (Load regulation)

The power supply shall be statically regulated for load.

Load	Min.Load	Full.Load
Current	0mA	1.0A
Voltage	24VDC±5%	24VDC±5%

Table 3.1.1

3.2 Line regulation

The line regulation is less than 1%.

3.3 Ripple and Noise

output 1	Voltage	Max.peak to peak ripple&noise
Vo	24VDC	200mV

Table 3.1.3

Measuring is done by 20MHz bandwidth oscilloscope and terminated each output with a 10uF capacitor and a 0.1uF capacitor.

3.4 Efficiency

3.4.1 The average efficiency shall be 82.09% MIN,at 115/230VAC and 4conditions load.(25%.50%.75%.100%)
Meet level V.

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3.5 Hold up time

The hold up time shall be longer than 10ms at 120Vac input and rated load.

3.6 Temperature coefficient

±0.05%/°C typical on all output.

3.7 Turn on / off delay

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

3.8 Transient Response and Deviation

The power supply will meet all specifications and maintain output voltage regulation within 5% of nominal with up to a current change of 50% of maximum current in load for the output #1.

3.9 Indicator

The power supply is designed NO LED indicator to indicate the power output in its normal condition.

4.0 PROTECTION REQUIREMENT

4.1 Short circuit protection

No damage to the power supply shall be sustained when operating any output under any line condition, into a short circuit condition for an indefinite period of time. The power supply shall be self – recovering when fault condition remove.

4.2 Over current Protection

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

5.0 RELIABILITY

Calculated MTBF shall exceed 50,000 hours at maximum load and 25°C ambient in accordance with MIL-HDBK-217F.

6.0 ENVIRONMENTAL CONDITIIONS

6.1 Operating

The power supply shall be capable of operating continuously in any mode without performance deterioration in the following environmental conditions.

6.1.1 Ambient Temperature: 0°C ~ 40°C

6.2.2 Relative Humidity: 10% ~ 90%

6.1.3 Altitude : Sea level to-100 ~ 10,000 feet.

6.1.4 Vibration: 1.0mm, 10 –25Hz, 15 minutes per cycle for each axis (X, Y, Z)

6.2 Storage

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

6.2.1 Ambient Temperature: -20°C ~ 80°C

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6.2.2 Relative Humidity: 10% ~ 90%

6.2.3 Sea level to-100 ~ 10,000 feet

6.2.4 Vibration and Shock:

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

7.0 DIELECTRIC WITHSTAND SPECIFICATION

7.1 Hi-pot test

Shall withstand without breakdown 3000VAC 5mA 1Min between AC plug to DC plug and case. Under leakage current 5mAmax.

7.2 Insulation Resistance

500 VDC 10 Mega Ohms min. Between AC plug and DC plug and case.

8.0 INTERNATIONAL STANDARDS

The power supply has been designed to meet following safety standard

8.1 EMI standards

The power supply meets the radiated and conducted emission requirements for FCC part 15 CLASS B, EN55022 CLASS B,VCCI

8.2 EMS standards

The power supply meet below standard

ESD:Contact > 4KV,Air>8KV meet IEC 61000-4-2

EFT:1.0KV on input ac power ports.meet IEC61000-4-4

SURGE: Line to line:+/-1KV(peak),meet IEC61000-4-5

Line to earth(ground):+/-2KV(peak),meet IEC61000-4-5

8.3 Safety

The power supply has been designed to meet or certified under following standard

	Certified	Standard
UL-CUL	APPROVED	UL60950-1

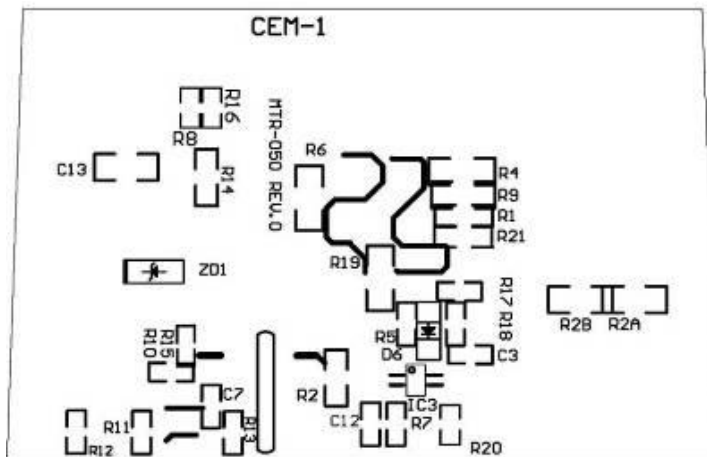
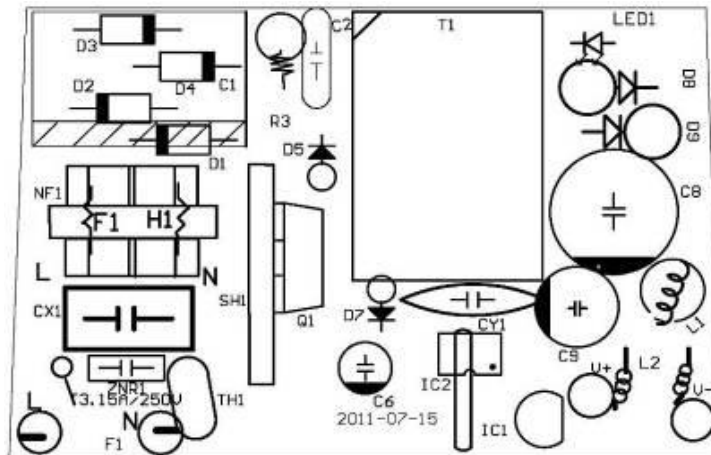
9.0 Product life Warranty

Mitra warrants this product against defects in materials and workmanship under normal use for a period of TWELVE (12) MONTHS, which accordance to date code of the product ("Warranty Period"). If a hardware defect arises and a valid claim is received within the Warranty Period, at its option, Mitra will either (1) repair the defect at no charge, using new or refurbished replacement parts, or (2) exchange the product with a product that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original product.

10.0 WEIGHT

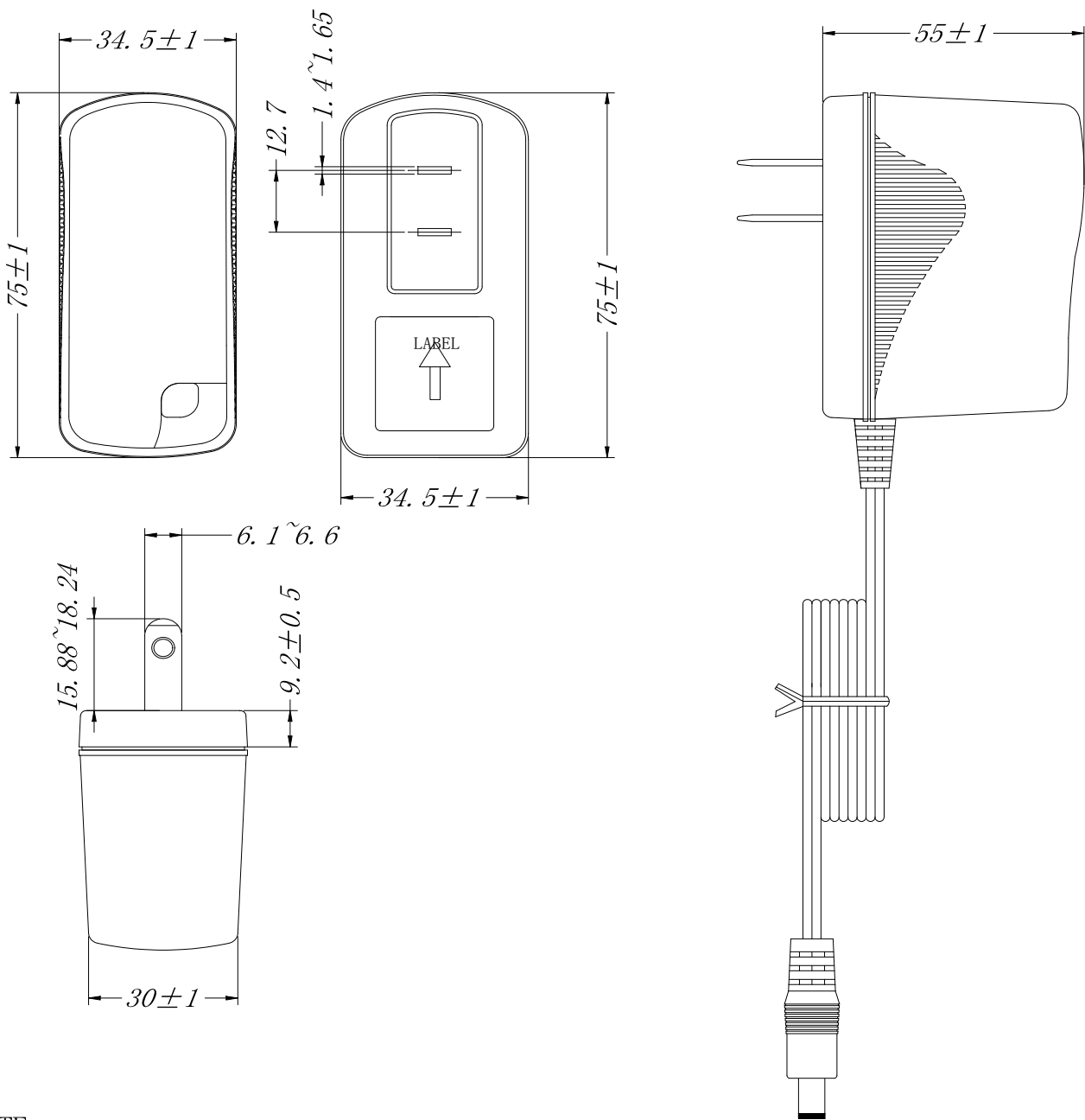
The unit weight is about 133g.

ATT:1 PCB板图



Material		Scale								
Name		Unit	mm							
Drawn No	MTR-18028			Rev	change date	Change No	Change content	Executed	Check	Approval
Mitra Electronics Co.,Ltd				Drawn by		Executed by		Check by		Approval by

ATT:2 外观图

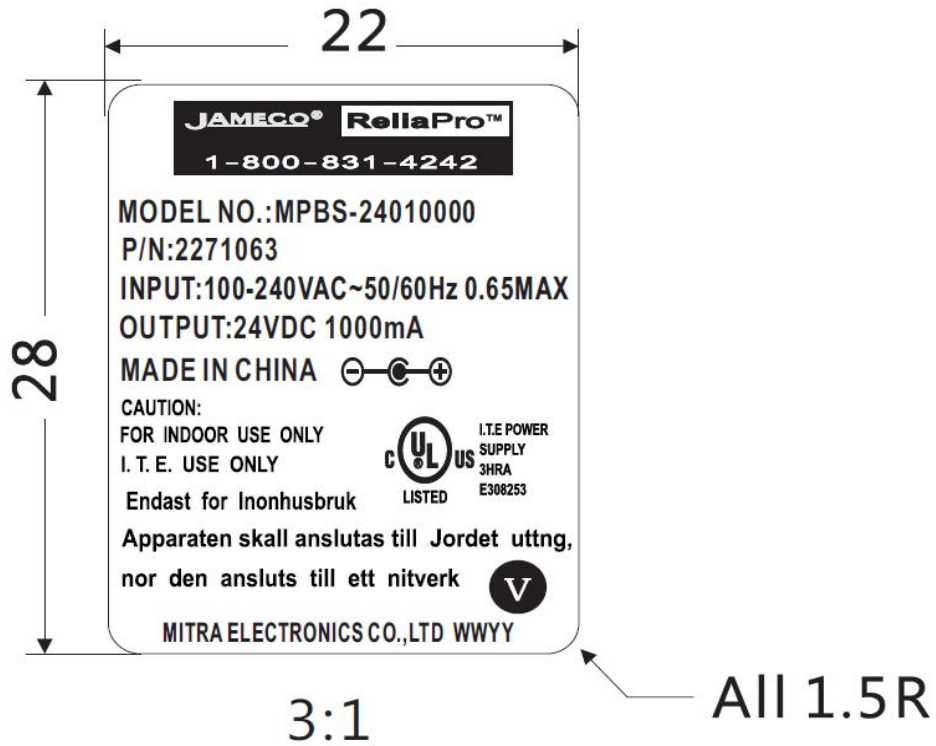


NOTE:

- 1.External color is black,Tolerance without dimension:±0.2mm.(外壳颜色: 黑, 未注明尺寸公差为±0.2mm.)
- 2.The size of the relevant standars and wire,please refer to the dc cord (线材规格请参阅线材详图)。

Material		Scale								
Name		Unit	mm							
Drawn No	MTR-18028			Rev	change date	Change No	Change content	Executed	Check	Approval
Mitra Electronics Co.,Ltd				Drawn by		Executed by		Check by		Approval by

ATT:3 铭板图



NOTE:

- 1.材质：80#合成纸+上光，黑底白字
- 2.单位：MM
- 3.公差：+/-0.2（圆角）；+0/-0.2（距离）
- 4.不含7P且含铅量小于20PPM
- 5.制造代码说明

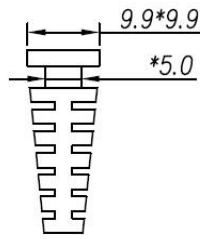
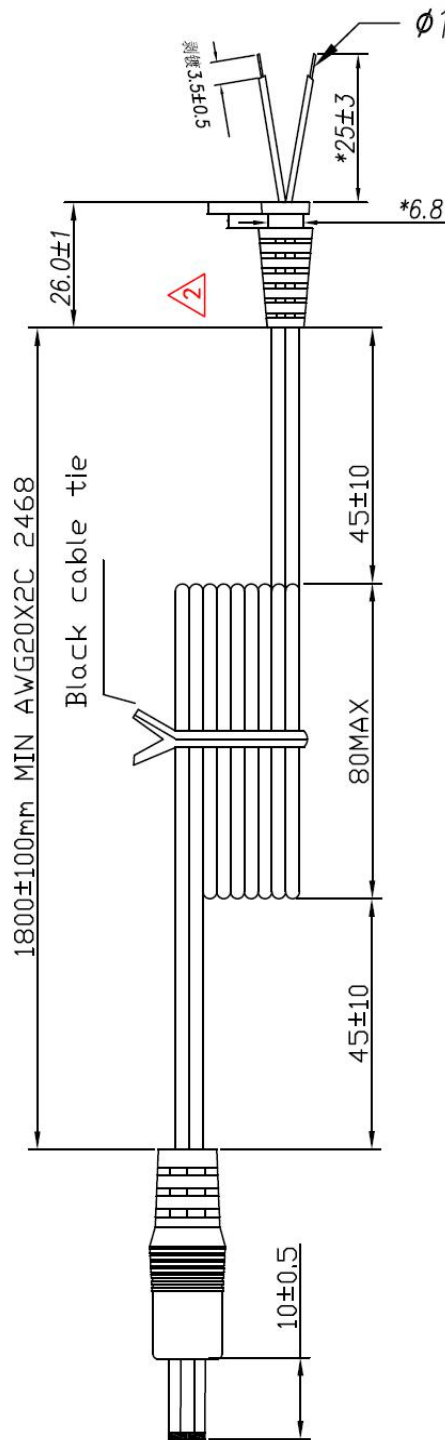
WW YY

年份最后两位数字:2013=13,etc

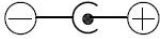
周期:from 01 to 52.

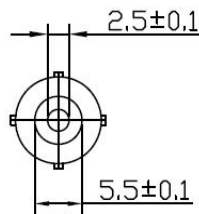
料号		比例	1:1					
品名	NAP	单位	mm					
图号	MNP-0607	版本	0	版本	变更日期	变更单号	变更内容	
Mitra Electronics Co.,Ltd						绘图	审核	核准



ATT:5 线材图



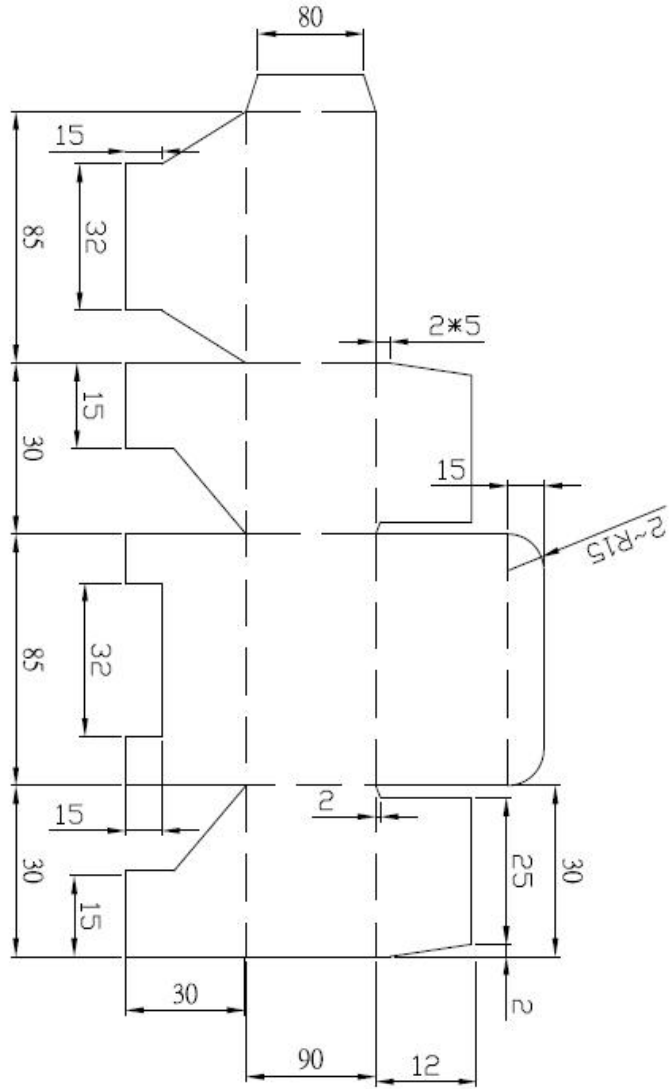
NOTE:

- 1.LEAD WIRE UL 20AWGX2C 2468 80°C ;
- 2.COLOR:BLACK SIDE "-" AND BLACK WITH WORDS "+";
- 3.POLARITY: 
- 4.S/R:20LBS,60SEC;
- 5.BENDING TEST:200g,35~40TIMES EACH MIN.120° DEGREE FOR 300TIMES.
- 6.CORD HARDNESS:WITH DUROMETER TYPE 70±10,
- 7.SR HARDNESS:65P.



Material		Scale						
Desinged NO	DC CORD	Unit	m/m					
Drawn NO	MTR-18028	REV	0	Rev	change date	change NO	change content	
Mitra Electronics Co.,Ltd						Drawn by	check by	Approval by

ATT: 6 小白盒



NOTE:

1. 材質: 小白盒, 350g
2. 外尺寸: 85*30*90
3. 實線表裁切線, 虛線表折痕壓線.
4. 圖中尺寸為參考尺寸, 以好合為準.
5. 公差: 0~50mm時取±1, 51~150時取±2, 151以上時取出±3.

料号		比例	1/1				
品名	白盒	单位	m/m				
图号	MB0-0151	版本	0	版本		变更日期	
						变更单号	
						变更内容	

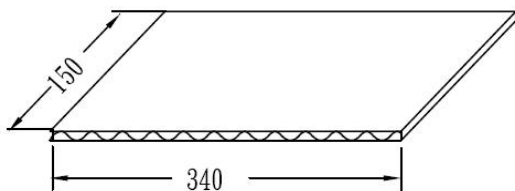
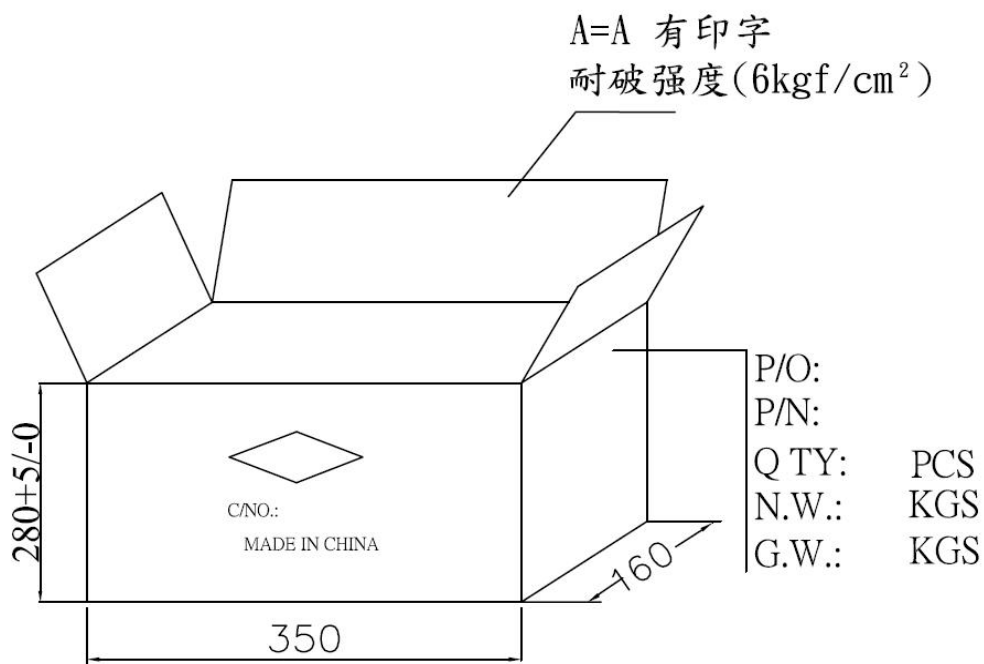
Mitra Electronics Co., Ltd

绘图

审核

核准

ATT: 7 外箱图



平卡:2PCS B3B三层瓦楞纸板+2/-0

NOTE:

- 1.每箱60pcs,每層4*5=20PCS ,共3層
- 2.无铅：符合RHoS要求。
- 3.標示尺寸為外部尺寸,未注明公差为±3mm
- 4.外箱，平卡必须能配套安装。

料号		比例						
品名	PK箱/平卡	单位	m/m					
图号	MPK-0287	版本	0		版本	变更日期	变更单号	变更内容
MITRA ELECTRONICS CO., LTD					绘图	审核	核准	