杭州凡诺电子有限公司

FANNAL ELECTRONICS CO., LTD

Specifications for Module

Model NO: FN070MGRGUL023A

Customer NO:

Revision: rev1

☐ **Approved For Specifications Only**

■ **Approved For Specifications And Sample**

FANNAL			CUSTOMER
PREPARED	CHECKED	APPROVED	APPROVED

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1、Record of Revision

NO.	Content	Page	Date
1	Preliminary Specification was first issued		2021/02/04

2、Table of Content

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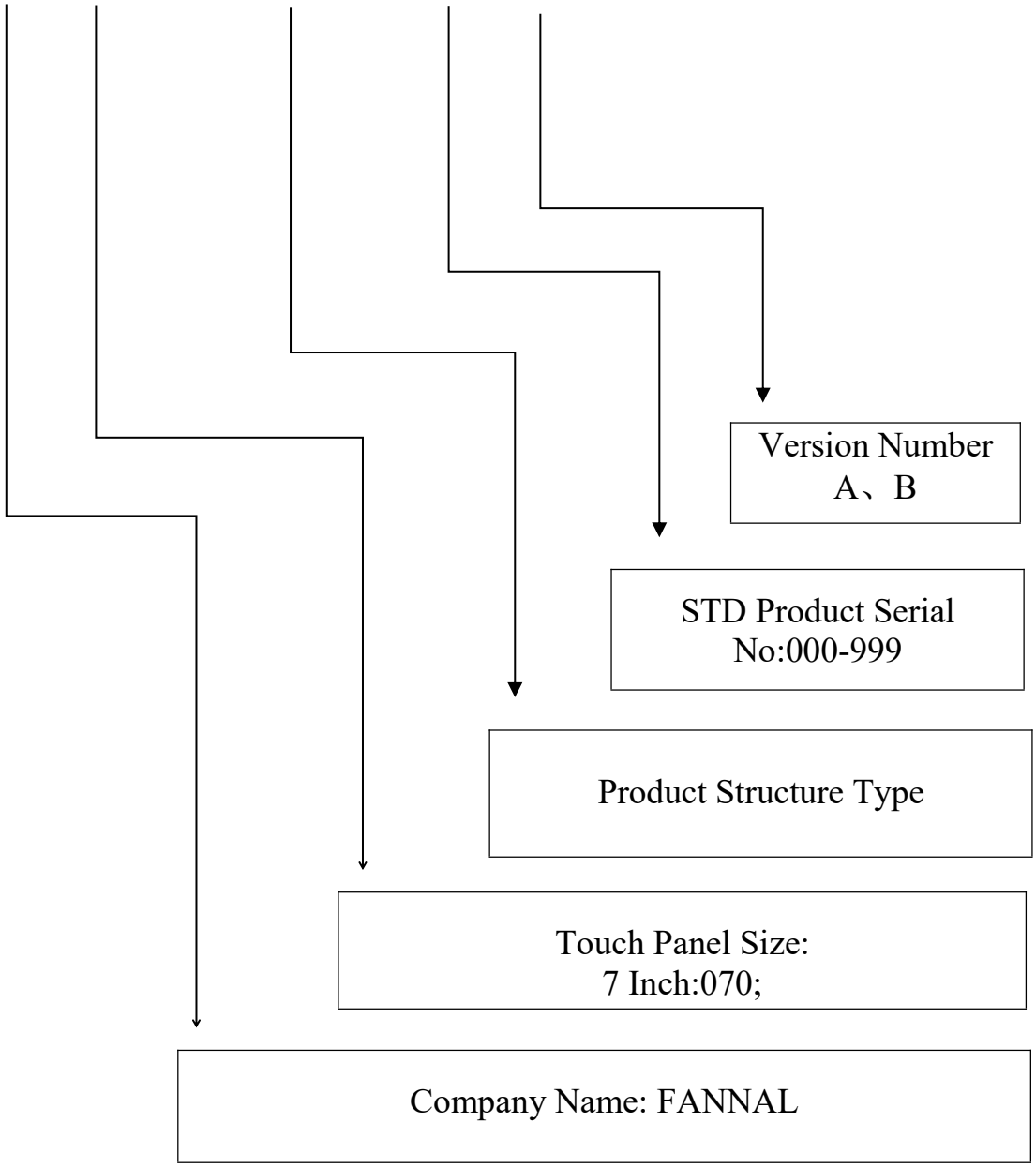
3、Module Numbering System

FN 070 MGRGUL 023 A



4、Application

This improved projected capacitive touch panel module is applied to industrial applications which required touch input.

Industrial control, medical devices and automation industries (transportation, military, smart home, and others)

5、Feature

NO.	Item	Specifications
1	Type	TP+LCM
2	Input Mode	Finger
3	TP Connector	COF-FPC

6、General Specifications

6.1 Touch Panel General Specifications

NO.	Item		Specifications	Unit
1	Touch Panel Size		7.0(Diagonal)	inch
2	Structure		G+G	
3	View Area		108.80(H)x65.60(V)	mm
4	Outline Dimension		155.01(H)x86.72(V)x3.75(D)	mm
5	Transparency		85% Min	
6	Surface Hardness		≥6H	
7	Driver IC		mxT640U	
8	Detect Points		10	
9	Interface		IIC	
10	Power supply		2.8-3.3	v
11	Operating Temperature		-20~70	℃
12	Storage Temperature		-30~80	℃
13	ESD	Air	±8	KV
		Contact	±4	KV
14	ROHS Compliance		OK	

6.2 TFT-LCD General Specifications

LCM MODEL：NJ070NA-23A			
NO	**Item**	**Specifications**	**Unit**
1	LCD Size	7.0(digital)	inch
2	Panel Type	a-Si TFT active matrix	-
3	Resolution	1024x3 (RGB) x 600	pixel
4	Display Mode	Normally white，Transmissive	-
5	Surface treatment	Hard Coating	--
6	Contrast Ratio	800(TYP)	-
7	Luminance（TFT W/O TP）	400(MIN),500(TYP)	cd/m2
8	Module Size	164.9(W) x100(H) x 4.8(D)	mm
9	Active Area	108.0(W) x 64.8(H)	mm
10	Pixel Pitch	0.1506(W) x 0.1432(H)	mm
11	Weight	140(Typ)	g
12	Interface	LVDS	-
13	Operating Temperature	-20~70	℃
14	Storage Temperature	-30~80	℃

7、 Pin Assignment

7.1 TP Pin Assignment

Pin No.	Symbol	I/O	Description
1	RST	I	External reset signal, active low
2	VDD	---	Power supply
3	GND	---	System ground
4	INT	O	Interrupt signal, active low, asserted to request Host start a new transcation
5	SDA	I/O	I2C data signal
6	SCL	I/O	I2C clock signal

CTP Test Program

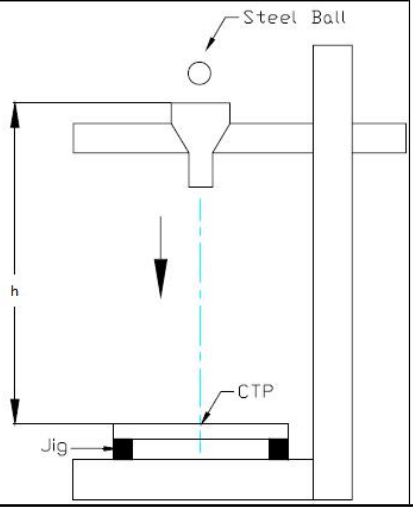
FW Name：	FN070MGRGUL023A_mxT640U_0xE5BB7F_20210204.xcfg
Check Sum：	0xE5BB7F

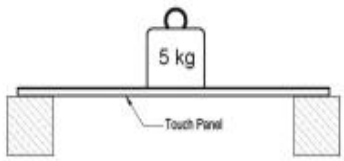
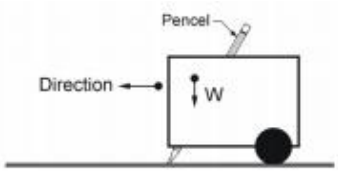
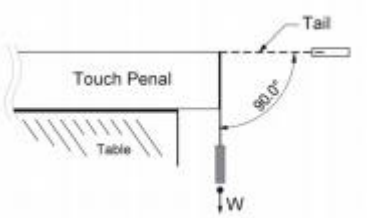
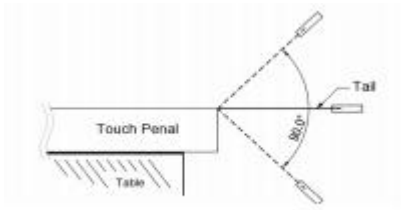
7.2 TFT-LCD Pin Assignment

PIN NO.	SYMBOL	I/O	FUNCTION DESCRIPTIONS
1	VCOM	P	Common Voltage
2	VDD	P	Power Voltage for digital circuit
3	VDD	P	Power Voltage for digital circuit
4	NC	---	No connection
5	Reset	I	Global reset pin
6	STBYB	I	Standby mode, Normally pulled high STBYB = “1”, normal operation STBYB = “0”, timing controller, source driver will turn off, all output are High-Z
7	GND	P	Ground
8	RXIN0-	I	- LVDS differential data input
9	RXIN0+	I	+ LVDS differential data input
10	GND	P	Ground
11	RXIN1-	I	- LVDS differential data input
12	RXIN1+	I	+ LVDS differential data input
13	GND	P	Ground
14	RXIN2-	I	- LVDS differential data input
15	RXIN2+	I	+ LVDS differential data input
16	GND	P	Ground
17	RXCLKIN-	I	- LVDS differential clock input
18	RXCLKIN+	I	+ LVDS differential clock input
19	GND	P	Ground
20	RXIN3-	I	- LVDS differential data input
21	RXIN3+	I	+ LVDS differential data input
22	GND	P	Ground
23	NC	---	No connection
24	NC	---	No connection
25	GND	P	Ground
26	NC	---	No connection
27	DIMO	I	Backlight CABC controller signal output
28	SELB	O	6bit/8bit mode select
29	AVDD	I	Power for Analog Circuit
30	GND	P	Ground

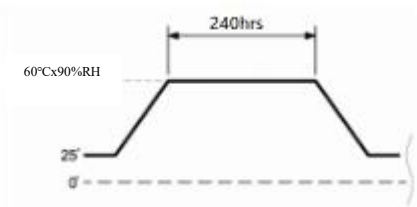
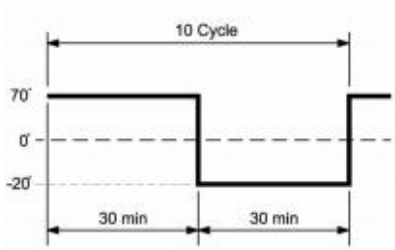
PIN NO.	SYMBOL	I/O	FUNCTION DESCRIPTIONS
31	LED-	P	LED Cathode
32	LED+	P	LED Cathode
33	L/R	I	Horizontal inversion
34	U/D	I	Vertical inversion
35	VGL	P	Gate OFF Voltage
36	CABCEN1	I	CABC H/W enable
37	CABCEN0	I	CABC H/W enable
38	VGH	P	Gate ON Voltage
39	LED+	P	LED Anode
40	LED+	P	LED Anode

8、 Mechanical Characteristic

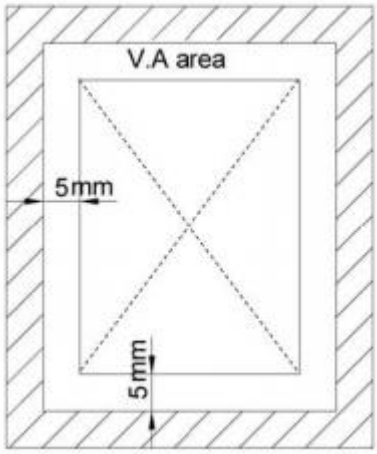
NO.	Item	Condition	Specifications
1	Operating Force	Finger≦10g	Satisfy- 1.Optical Characteristics 2.Electrical Characteristics Appearance- 1.Ignore test area 2.No mechanical damage
2	Impact	30.0ΦDIA.Steel Ball/500g/Height=20cm/1 time, Impact at center area 	

NO.	Item	Condition	Specifications
3	Static Load	5000g within 10cmΦ area for 30sec	Satisfy- 1. Optical Characteristics 2. Electrical Characteristics Appearance- 1. Ignore test area 2. No mechanical damage
			
4	Hardness	6H pencil,pressure 500g/45°	
			
5	Tail Peeling	500g/cm by vertical 90° for 30sec	
			
6	Tail Bending	90° 10times left & right	
			

9、Reliability Test

NO.	Item	Condition	Specifications
1	Constant Temperature/Humidity	60°C X 90%RH,240hrs and normalized for 24hrs 	Satisfy- 1、Electrical Characteristics
2	Heat Cycle	80°C/240hrs and normalized for 24hrs	
3	Cold Cycle	-30°C/240hrs and normalized for 24hrs	
4	Thermal Cycle	-20°C~70°C [30min/cycle]*10cycles and normalized for 24hrs 	

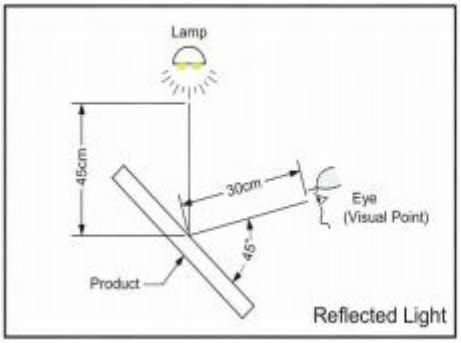
10、 Function test

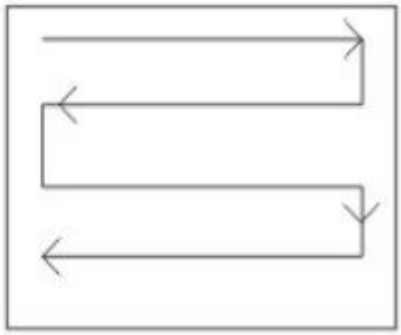
Function Test	Test Method: Use Φ8 copper stick to draw the square diagonal line. Test Area: 5mm inward view area. Disapproval Criteria: It is NG when we see the off-liner or jumping out spec shift.	

11、 Appearance Inspection

The inspection is to be performed with 20W(800-1000 LUX)fluorescent lamp lighting from the back or side.The panel is to be placed 35cm away from eyes.(Figure 13-1)

Remark: The dirty of Cover Lens surface can be clean that can be acceptable.





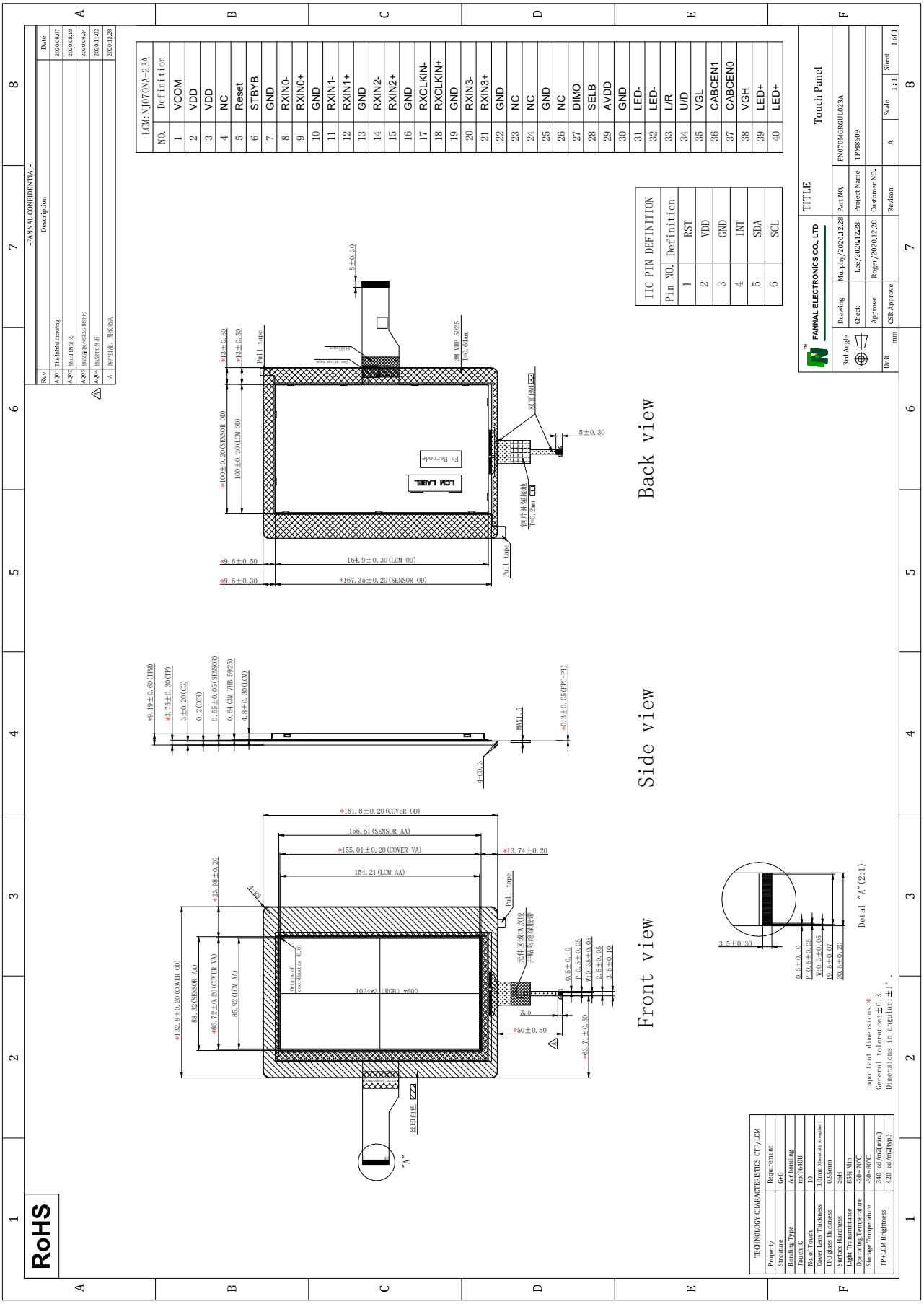
12、Appearance Specification

NO.	Item	Specifications	Judgment
1	Dot Contamination (Active area)	1)D ≤0.3mm, no intensive 2)0.3mm＜D≤0.5mm,DS≥10mm 3)D＞0.5mm	1)Disregarded 2)N≤ 5 3)NG
	Dot Contamination (Other area)	1)D ≤0.4mm, no intensive 2)0.4mm＜D≤0.6mm DS≥10mm 3)D＞0.6mm	1)Disregarded 2) N≤ 5 3)NG
2	Linear Contamination (Active area)	1)W≤0.05mm 2)0.05mm＜W≤0.08mm,L≤ 5mm,DS≥10mm 3)W＞0.08mm and L＞5mm	1)Disregarded 2)N≤ 5 3)NG
	Linear Contamination (Other area)	1)W≤0.05mm 2)0.05mm＜W≤0.1mm,L≤5mm,DS ≥10mm 3)W＞0.1mm and L＞5mm	1)Disregarded 2)N≤ 5 3)NG
3	Chipping on edge	X＜0.2mm , Y＜0.2mm , Z＜½T	N≤2
4	Ink pinhole	≤0.3mm	N≤4
5	Erasable stains	Less than 10% allowed	Clean
6	Crack	Not allow	NG
7	FPC/FFC/ Connector Broken	Not allow	NG
8	Solder Appearance	Can't see the abnormal color, shape, hurt, dirt (fused goods, etc.).	

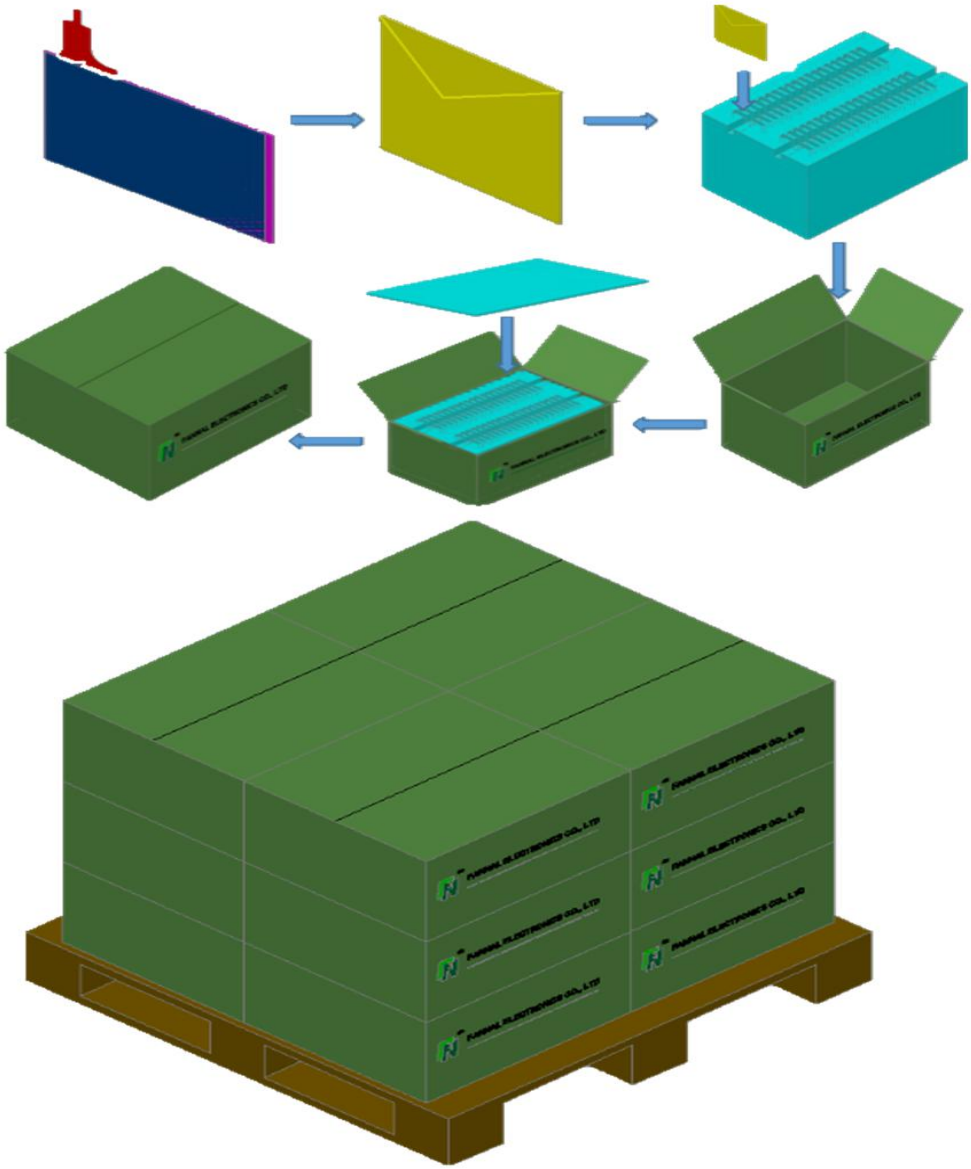
<Endorse>

1.D=Diameter / W=Width / L=Length
2.Tail: Slight bend mark is allowed on the tail; crack or tear is not allowed.
3.Particle Spots: Flaws found coating if transparent, please follow Particle Spots specification.
Can wipe dirty oversight

13、Mechanical Drawing



14、Packaging



The above is for reference only, specific to prevail in kind.

SIZE(Carton): 530*360*275mm