

# Forustech

# 制品 仕样 书 PRODUCT SPECIFICATION

#### 1. 适用范围Scope:

此作业规范适用于: FPC Pitch0.40 卧式锁扣掀盖双力臂H2.6 SMT 系列

This product specifications is applied for: FPC 0.50mm Pitch With Lock, front side flip, double force arm H2.6mm , SMT TYPE series

与FPC/FFC连接方式 Connected to the FPC/FFC: ZIF

FPC/FFC适合厚度 FPC/FFC is suitable for thickness: 0.30±0.03mm

#### 2. 关联规格 Related specifications:

EIA-364: 电子连接器及接插件测试程序 Electronic connectors and connector test procedure

UL STD-94:关于塑材设备零配件及器材阻燃性测试规范 On the plastic material and equipment spare parts and equipment flame retardancy test:

### 3. 构造 尺寸 材料 Configurations dimensions and materials:

参见结构图 Reference the drawing。

序号No.	部 位 Position	原材料Materials	规格FINISH/COLOR SPECIFICATION	备注 NOTE
1	主体 (HOUSING)	LCP Liquid crystal polymer	BLACK,UL 94V_0	1
2	掀盖 (ACTUATOR)	LCP Liquid crystal polymer	BLACK,UL 94V_0	1
3	端子 ( TERMIANL)	PHOSPHOR BRONZE T=0.15mm	PHOSPHOR BRONZE,T=0.15mm CONTACT &SOLDER AREA:0.075um Min. Au	1
4	固定片 (FIXED PLATE)	BRASS,T=0.20mm	BRASS,T=0.20mm; Plating: SOLDER: TIN	1

#### 4. 标准状态:

- 4. 1额定电压Rating voltage: AC/DC 50V
- 4. 2额定电流Rating current:0.4A
- 4. 3温湿度范围Temperature and humidity range
- 4.3.1使用温度范围operation temperature: -40℃~+105℃;
- 4. 3. 2储存温度范围storage temperature: -40℃~+105℃;
- 4. 3. 3开封使用温度范围Temperature range for opening: +5℃~+35℃;

开封使用湿度The Humidity range for opening: 60%RH MAX

4. 3. 4保存湿度范围Keep humidity range:

相对湿度Relative humidity:0~85%RH.

### 5. 性能Performance

#### 5. 1构造Structure

序号NO.	项 目Item	测试方法 Test conditions	规格要求 Specifications
1	外观Appearance	目视 Visual	无损坏No physical damage

# 5. 2电气性能 Electrical Performance

序号N0.	项 目Item	测试方法 Test conditions	规格要求 Specifications
1	接触阻抗 Contact Resistance	适配FFC标准线, 开放电压: 20mV 以下,短路电流: 10mA 以下 Mate applicable FPC, measure by dry circuit, 20mV MAXIMUM, 10mA MAXIMUM	初始值initial:40mΩ Max. 各实验后after each test:80mΩ Max.
2	绝缘阻抗 Insulation Resistance	相邻端子间 DC 250V, 1分钟。 DC 250V between adjacent terminals, 1 minutes	100MΩ Min.
3	耐电压 Dielectric withstanding voltage	相邻端子间AC 250V, 感度电流2mA, 1分钟。 AC 250V shall be applied for one minute to between the next terminal and earth.	无击穿,无短路 No Breakdown.
4	温度上升 Temperature rise	端子在额定电压•电流下工作时测量端子上升的温度 The rising temperature measurement terminal terminal at rated current under.	30℃ max

制 品 仕 样 书 Product specification		Part name	'	FPC pitch 0.40mm With Lock,Front side flip,Double for beam H2.55mm SERIES	
Horus Int. Electronics. Co., LTD. Horustech Electronics. Co., LTD.		Part No.	HRS-F21L-1B7H1-E7B*** 1/7		1/7
Document No.: IS.EQC.197	Date: 2022/05/10	Rev.: B	Written by: Checked by: May.Wang SH.Chen		Approved by: Rain.Han



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号NO.	项 目Item	测试方法 Test conditions	规格要求 Specifications
1	FFC/FPC保持力 FFC/FPC Retention Force	FFC/FPC(标配厚度0.30mm)插入FPC连接器,以12.5mm/分匀速垂直拔出。参考EIA-364-13E 方法A After Mate applicable FFC/FPC (standard thickness of 0.30 mm), The FFC/FPC shall be pulled at a speed of 25mm per minute and measured the force when the FFC/FPC begins to remove from the husing.Refer to EIA- 364-13e method A	0.196N/Pin Min.
2	端子保持力 Terminal Retention Force	将端子25~100mm/分匀速垂直从胶芯槽内拔出 Apply axial pull out force on the terminal assembled in the housing at the speed rate of 25~100mm per minute.	0.2N or more
3	抓盖动用力 Actuator Force (Install FFC/FPC)	将FFC线插入主体,测量掀盖下压和拔起的作用力, 并做好测量数据的记录. Insert the FFC/FPC into the connector, measure the actuotor Under pressure and withdraw the force, then recording the measure data	掀盖压入力 Cover pressing force: 29.5N Max. 掀盖拔出力 Cover withdraw force: 6N Min
4	插拔耐久性 Durability	以下动作进行30次巡回: FPC插入、掀盖压入、掀盖拔起、FPC拔出 The following action 30 Tour FPC insert ,Cover Under pressure, cover withdraw, FPC withdraw	接触阻抗Contact Resistance: 80mΩ Max 无异常No abnormal appearance
5	耐冲击性 Shock	配合合适的FPC,按以下条件,X, Y, Z方向各6ms, 每6个面各10回,在测试过程中通过直流1mA,加速度980m/s²,Mate applicable FPC ,according to the following conditions, X, Z, Y direction of the 6ms, 10 times for each 6 faces,during the test process by DC 1mA. Peak value:980m/s² Duration:6 milliseconds	接触阻抗80mΩ Max. Contact Resistance: 80mΩ Max. 瞬断1μs以内; Discontinuity: 1μs Max. 外观无异常 No abnormal appearance
6	耐振性 Vibration	配合合适的FPC,按以下条件,X方向4小时,Y&Z方向各2小时,共8小时,在测试过程中通过直流1mA,振幅1.5mm, 频率10-500-10Hz/12分。 Mate applicable FPC, according to the following conditions, X direction of 4 hours, Z and Y direction of each 2 hours, a total of 8 hours passing DC 1mA during the test. Amplitude: 1.5mm P-P Frequency: 10-55-10 Hz Shall be traversed in 12 minute.	接触阻抗80mΩ Max. Contact Resistance: 80mΩ Max. 瞬断1 μ s以内; Discontinuity: 1μs Max. 外观无异常 No abnormal appearance

# 5.4 环境性能 Environmental Performance

0. 1 - 1-50	工作 CHALLOIMIGHTST I	CITOTMANICC	
1	耐热性 Heat resistance		接触阻抗80mΩ Max. Contact Resistance:80mΩ Max. 绝缘阻抗Insulation Resistance: 100 MΩ
2	耐寒性 Cold Resistance	温放置后进行测试.	Min. 外观无异常, 无击穿,无短路 No abnormal appearance No Breakdown.
3	耐湿性 Humidity	后取出,1 2小时常温放置后进行测试. Mate applicable FPC ,60±3℃, relative humidity 90~95% in the time of 96H after removal, 1~2 hours after room	接触阻抗80mΩ Max. 外观无异常, 无击穿, 无短路 No abnormal appearance No Breakdown.

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字号NO.	项 目Item	测试方法 Test conditions	规格要求 Specifications
4	H₂S gas test	FFC/FPC嵌合状态下,温度 $40\pm2^{\circ}$ C,相对湿度75%,浓度 $3\pm1pm$ 雾气环境中放置96小时后,测试其接触阻抗及外观检查. The connector and FFC/FPC mated is exposed in the SO $_2$ gas chamber $40\pm2^{\circ}$ C,75%RH $3\pm1ppm$ for 96 hour. It shall be measured the contact resistance and observed its appearance after the test	接触阻抗Contact Resistance: 80mΩ Max
5	SO <sub>2</sub> gas test	FFC/FPC嵌合状态下,温度40±2℃,相对湿度75%,浓度 10±3ppm 雾气环境中放置96小时后,测试其接触阻抗及外观检查. The connector and FFC/FPC mated is exposed in the SO₂ gas chamber 40±2℃,75%RH 10±3ppm for 96 hour. It shall be measured the contact resistance and observed its appearance after the test	接触阻抗Contact Resistance: 80mΩ Max.
6	冷热冲击 Thermal shock test	配合合适的FPC,-55±3℃; 85±2℃的温度下各放置30分钟,共进行10次循环, 1~2小时常温放置后进行测试. Mate applicable FPC,-55±3℃,85±2℃, 30 minutes, 10 cycles were performed. 1: -55℃ 30 minutes 2: +85℃ 30 minutes 1~2 hours after room temperature for testing	接触阻抗80mΩ Max. 外观无异常,无击穿,无短路 No abnormal appearance No Breakdow
7	湿热循环 Humidity- Temperature Cycling	FFC/FPC嵌合状态下,按以下温度条件完成10次循环试验。 he connector and FFC/FPC mated is exposed 10 cycles in the following temperature conditions.It shall be measured the contact resistance and observed its appearance after the test +80±2℃ 95%RH -20±3℃ 2h 2h 2h 2h	接触阻抗80mΩ Max. 外观无异常, 无击穿,无短路 No abnormal appearance No Breakdow
8	盐雾 Salt spray	配合合适的FPC,温度35±2℃; 盐水比重5±1%喷雾试验,试验后常温水洗干燥后进行测试。 A: 镀金 48h B: 镀锡24h C: 单pin端子 48h Mate applicable FPC, the temperature of 35±2℃, the proportion of salt water was 5±1% the test was carried out at room temperature after washing and drying. A: gold plating 48H B: tin 24h C: single pin terminal 48H	接触阻抗Contact Resistance: 80mΩ Max. 绝缘阻抗Insulation Resistance: 100MΩ Min. 外观无异常No abnormal appearance

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5.5 焊接性能 (Solder-ability requirement)

序号NO.	项 目Item	测试方法 Test conditions	规格要求 Specifications
1	沾锡测试 Surface Mount Solder- ability Test	端子焊脚和固定片前端0.3mm, 沾锡温度245±5℃(Sn: Lead Free): 时间3± 0.5S Terminal welding feet and fitting nail front 0.3mm, soldering temperature 245±5℃(Sn: Lead Free);time 3±0.5S	吃锡饱满,在95%以上 95% of immersed area must show no voids, pin holes
2	焊锡耐热性-1 solder heat test (standard condition)	接下以条件进行焊锡耐热性实验the connector shall be tested resistance to soldering heat in the following conditions (1)In the case reflow number of reflow: 2回/Twice  250℃(/Peak temperature),MAX10s  The temperature shall be measured on the surface of the Product.  (2)手工焊接/In case of manual soldering. 焊接温度/Solder iron: 350±5℃时间/time : 3.5±0.5s However,excessive pressure shall not be applied to the terminal	1.平整度0.10mm MAX, Coplanarity of solder 0.10max 2. 吃锡饱满,在95%以上,外观无异常 Continuous solder coating with a min. 95% coverage

#### NOTE:

所有实验必须在焊板后进行,不可直接对连接器进行操作。

All tests must be carried out after welding the PCB, Do not operate the connector directly

# 6.产品保质期Term of aguarantee:

从制造日期算起,有效存储期12个月The warranty period is 12 months from the date code。

# 7. 修改内容 Change content

版本Rev.	改正日期 Modify date	改正内容Modifications	Written by	Checked by
А	2021.12.10	NEW REVSION	May.Wang	SH.Chen
В	2022.05.10	Update the product's height	May.Wang	SH.Chen

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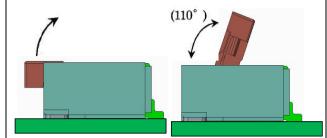


### 8. 操作说明和注意事项 Operating instructions and matters needing attention

### 一: FFC/FPC插入方法/FFC/FPC Insertion

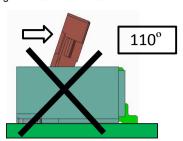
①请将掀盖向上打开(盖子旋转操作)

pull up the actuator to open up.(the actuator will rotate to operate )



因盖子的结构无法打开到110°以上,此时请不要再强行打开,否则会导致破损、变形。

The actuator is structured not to open more than 110°, so please don't add a strong force backward. It can be deformed and damaged.

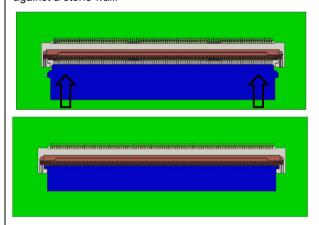


②FFC/FPC不能弯折,须垂直插入。

插入时按一定的角度插入直到碰到胶芯底面。

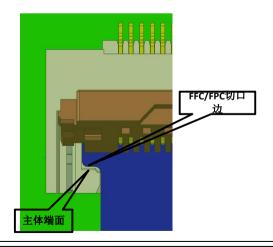
Please insert FPC/FFC straight.

Please push it until it has the sense that runs up against a stone wall.

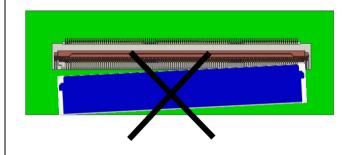


插入量FFC/FPC切口边插入到主体端面内。

Please giv the state entering it to me as a standard in the housing of cutting form of FFC/FPC



倾斜插入会导致半嵌合状态,接触点损坏造成接触不良。 the terminal transformation happen when FPC/FFC is digonally inserted,and ,the loose connection happens.



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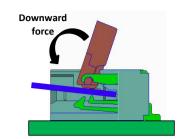


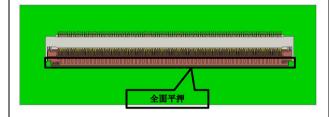
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## 操作方法

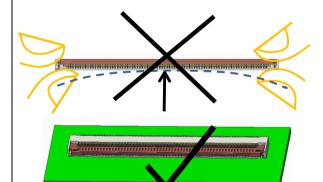
③旋转操作盖子并向下按压,将其全面押合。

Operate the actuator in a rotational manner and press it down; Please push all aspects of the cover when you shut the cover



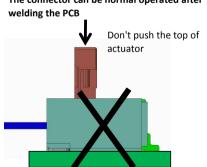


④未焊板前不可对连接器进弯折等操作,否则会损坏连接器 Don't bend the connector before welding the PCB, otherwise the connector will be damaged



焊板后可对连接器进行正常操作

The connector can be normal operated after



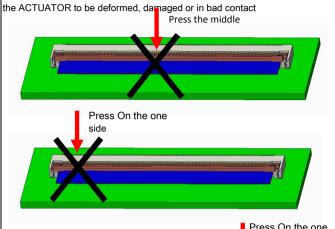
#### 注意事项

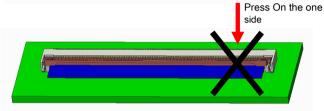
按押中间或两端会导致破损或接触不良, 见下图所示:

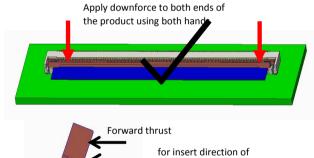
The operation only of both ends and the center causes damage and the loose connection.

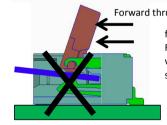
按押时不可向前推动盖子,会导致盖子变形,破损或接触不良(见下图所示)

Do not push the actuator forward when pressing the ACTUATOR, which will cause the ACTUATOR to be deformed, damaged or in had contact.

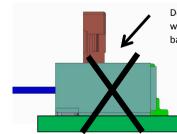








for insert direction of FPC,please do not close with additional force strongly pushing actuator



Don't close actuatuor with additional force base of actuator

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#### 操作方法

④将盖子按压到和PCB板平行。

please push until the actuator becomes parallel to the PCB.



#### 注意事项

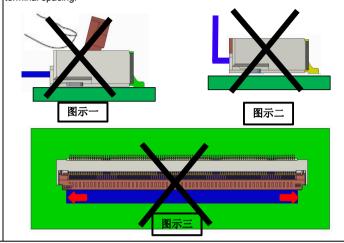
请不要用手指握住FFC/FPC, FFC/FPC可能会脱落。(图示一)。 (请抑制距离连接器边缘侧20mm或更大的位置)。

Please do not hold FFC/FPC by the finger, FFC/FPC might come off. (Please suppress a position left from the connector edge side ty 20mm or more than suppressing it.)

对FFC, 请在其上方不要施加拉力, 或在其端子间距方向施加撬动力(图示二)

在其左右方向不要施加拉扯力(图示三)。

On FFC, please do not apply a pull on the top of it, or force the direction of the terminal spacing.

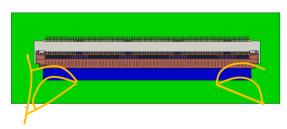


### 二: FFC/FPC拔去方法(FFC/FPC decunting)

①FFC/FPC插入时,请将盖子向上打开,打开盖子时请双手操作(尤其多PIN的情况)

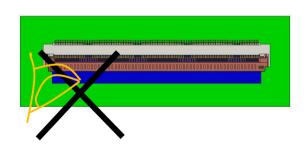
Please open similar and the cover for above when you insert FPC/FFC.

Please operate it by both hands when you operate the over.(Especially,for the multipole)



单手操作会集中负重,会损坏连接器。

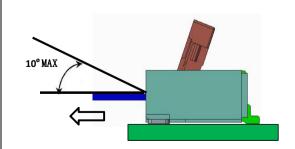
The opeeration by one leads to the damge of the connecor.



②请垂直拔出FFC/FPC(拔出时角度在10°以下)

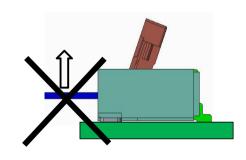
Please pull out FFC/FPC straight.

(Please give the pulling out angle to me as 10° or less)



向上拔出FFC/FPC会损坏连接器

The connector leads to damage when pulling out for above



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