

1. 适用范围Scope:

此作业规范适用于: FPC PITCH0.5 卧式锁扣掀盖式H2.5 SMT

This product specifications is applied for: FPC Pitch 0.50 Double contact CONN.ZIF R/A H=2.5 SMT TYPE

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 specification

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	原材料供应商 material suppliers	材料名/T y p e 名 Materials	防火等级 FLAME CLASS	UL编号 FILE NO.
1	主体 (HOUSING)	宝理 POLYPLASTICS CO., LTD	LCP Liquid crystal polymer	V-0	E106764
2	掀盖 (ACTUATOR)	可乐丽 KURARAY CO., LTD	PA9T Polyamide 9T	V-0	E90350

4. 标准状态:

4.1额定电压Rating voltage: AC/DC 50V

4.2额定电流Rating current:0.5A

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Kaifeng temperature range: +5℃~+35℃;

开封使用湿度Kaifeng Humidity: 60%RH MAX

4.3.4保存湿度范围Keep humidity range:

相对湿度Relative humidity:45~80%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NO.	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	初值initial: 100MΩ Min. 耐湿实验后after humidity test: 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 between adjacent terminals, sensitivity of current 2mA, 1 minutes	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

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This product does not contain SS-00259 and ROHS banned the use of environmental substances

制 品 仕 样 书 Product specification		Part name	FPC Pitch 0.50 Double contact CONN.ZIF R/A H=2.5 SMT TYPE (H=2.5掀盖式)		
Horus Int. Electronics. Co., LTD. Horustech Electronics. Co., LTD.		Part No.	HRS-F304-1A7*1-110**-E*00	1/8	
Document No. : IS.EQC.125	Date: 2023/08/31	Rev. : B	Written by: May.Wang	Checked by: Elven.Zhan	Approved by: Rain.Han

5.3机械性能Mechanical performance

序号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连接品后, 压合掀盖, 打开掀盖, 此动作重复3次后, 以25~100mm/分匀速垂直拔出。 FFC/FPC (standard thickness of 0.30 mm) after insert FPC connection is tasted, pressing lift cover, opens the cover, the action after repeated three times, vertical pull out at a constant speed to 25 to 100 mm/min.	40gf/pin Min.
2	FFC/FPC插拔力 (半锁扣状态)	将FFC/FPC以25~100mm/分匀速垂直插入拔出主体内。 The FFC/FPC and socket shall be mated and unmated at the speed of 25~100mm per minute and measured the force when the FFC/FPC begins to remove from the housing	初始值Initial 插入力Insertion force: 0.8~6.0N (81.6~612gf) 拔出力Extraction: 0.8N (81.6gf) Min.
3	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.	100gf/terminal Min.
4	固定片保持力 Anchor-Plate Retention Force	将固定片25~100mm/分匀速垂直从胶芯槽内拔出 Apply axial pull out force on the Anchor-Plate assembled in the housing at the speed rate of 25~100mm per minute.	100gf/terminal Min.
5	掀盖动用力 Cover opening and closing force	将FFC/FPC插入主体后, 测量关闭掀盖及打开掀盖所施加的作用力 The connector and FFC/FPC mated is measured opening and closing force of cover	掀开力opening force: 0.05~0.3N (5.1~30.6gf)/pin (initial) 合盖力closing force: 0.1~0.55N (10.2~56.1gf)/pin (initial)
6	插拔耐久性 Durability	以下动作进行20次巡回: FPC插入、掀盖压入、掀盖拔起、FPC拔出 The following action 20 Tour FPC insert ,Cover Under pressure, cover withdraw, FPC withdraw	接触阻抗Contact Resistance: 80mΩ Max 无异常No abnormal appearance
7	耐振性 Vibration	FFC/FPC嵌合状态下, 振动周波数10~500~10Hz, 扫引时间12分, 振幅1.5mm; X轴方向4小时, YZ方向各2小时, 共8小时。试验中有无瞬断, 实验后测试其接触阻抗有外观检查。 the connector and FFC/FPC mated is vibrated in the frequency range of 10~500~10Hz/12min and in the constant vibration amplitude 1.5mm or the acceleration of 98m/s ² . the amplitude or the acceleration above shall be chosen either one under which the connectors is loaded more slightly. And this motion is applied ofr period of 4hours in one of 3 mutually perpendicular directions(x-axis), and 2hours in other two of them(Y and z_axis). it shall be tested the discontinuity of the contact current during the test and measured the contact resistance and observed its appearance after the test.	接触阻抗80mΩ Max. Contact Resistance: 50mΩ Max. 瞬断1μs以内; Discontinuity: 1μs Max.
8	耐冲击性 Shock	FFC/FPC嵌合状态下, 使用治具固定于机台; 加速度980m/s ² , 冲击作用时间6ms, X, Y, Z方向6个面各10回; 试验中测试电流的不连续性, 实验后外观检查及测试其接触阻抗。 the connector and FFC/FPC mated are installed in the machine. they are applied pulses 10 times to each 6 faces of 3 mutually perpendicular directions(x, y, z); in conditions as specified; acceleration of 980m and shock pulese for a duration of 6ms. it shall be tested the dirscontinuity of the contact current during the test and measured the contact resistance and observed its appearance after the test	外观无异常 No abnormal appearance

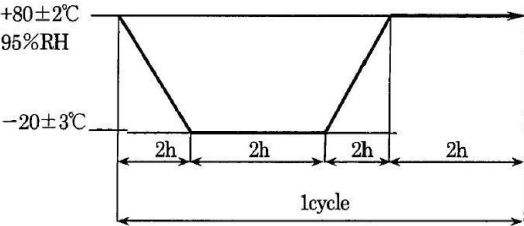
5.4 环境性能 Environmental Performance

1	耐热性 Heat Resistance	FFC/FPC插入, 拔出5次后嵌合状态下, 105±2℃高温槽中放置时间1000H后取出, 1~2小时常温放置后进行接触阻抗测试及外观检查。 The connector and FFC/FPC mated ar unmated at 5 times mated is exposed in the heat chamber 105±2℃ for 1000 hours. It shall be measured the contact resistance and observed its appearance after the	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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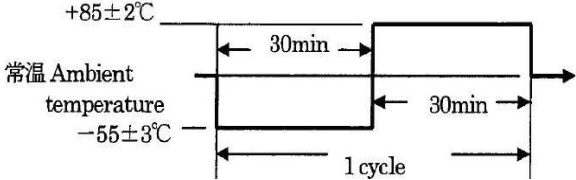
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2	高温高湿保存实验 humidity	FFC/FPC插入，拔出5次后嵌合状态下，在温度 $40\pm 2^{\circ}\text{C}$ ，相对湿度 $90\sim 95\% \text{RH}$ 恒温恒湿槽中放置1000H后取出，1~2小时常温放置后进行接触阻抗测试及外观检查。 The connector and FFC/FPC mated ar unmated at 5 times mated is exposed in the heat chamber $40\pm 2^{\circ}\text{C}$, $90\sim 95\% \text{RH}$ for 1000 hours. It shall be measured the contact resistance and observed its appearance after the test	接触阻抗Contact Resistance: 80m Ω Max. 绝缘阻抗Insulation Resistance: 100M Ω Min. 外观无异常No abnormal appearance
3	低温保存实验 Chilly resistance	FFC/FPC插入，拔出5次后嵌合状态下， $-40\pm 3^{\circ}\text{C}$ 低温槽中放置时间1000H后取出，1~2小时常温放置后进行接触阻抗测试及外观检查。 The connector and FFC/FPC mated ar unmated at 5 times mated is exposed in the chilly chamber $-40\pm 3^{\circ}\text{C}$ for 1000 hours. It shall be measured the contact resistance and observed its appearance after the test	接触阻抗Contact Resistance: 80m Ω Max. 绝缘阻抗Insulation Resistance: 100M Ω Min. 外观无异常No abnormal appearance
4	低温负荷实验 load of chilly	FFC/FPC插入，拔出5次后嵌合状态下，通电电流1mA， $-40\pm 2^{\circ}\text{C}$ 低温槽中放置96小时后取出测试其接触阻抗及外观检查。 The connector and FFC/FPC mated ar unmated at 5 times mated is exposed in the chilly chamber $-40\pm 2^{\circ}\text{C}$, 1mA for 96 hours. It shall be measured the contact resistance and observed its appearance after the test	综合接触阻抗Contact Resistance: 初始值2倍以下 twice of less from the initial specified value in total 外观无异常No abnormal appearance
5	H ₂ S gas test	FFC/FPC嵌合状态下，温度 $40\pm 2^{\circ}\text{C}$ ，相对湿度75%，浓度 $3\pm 1\text{ppm}$ 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 H ₂ S gas chamber $40\pm 2^{\circ}\text{C}$, 75%RH $3\pm 1\text{ppm}$ for 96 hour. It shall be measured the contact resistance and observed its appearance after the test	接触阻抗Contact Resistance: 80m Ω Max. 绝缘阻抗Insulation Resistance: 100M Ω Min. 外观无异常No abnormal appearance
6	SO ₂ gas test	FFC/FPC嵌合状态下，温度 $40\pm 2^{\circ}\text{C}$ ，相对湿度75%，浓度 $10\pm 3\text{ppm}$ 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 $40\pm 2^{\circ}\text{C}$, 75%RH $10\pm 3\text{ppm}$ for 96 hour. It shall be measured the contact resistance and observed its appearance after the test	接触阻抗Contact Resistance: 80m Ω Max. 绝缘阻抗Insulation Resistance: 100M Ω Min. 外观无异常No abnormal appearance
7	盐雾实验 Salt Spray test	FFC/FPC嵌合状态下，温度 $35\pm 2^{\circ}\text{C}$ ，浓度 $5\pm 1\%$ ，盐水喷雾环境中放48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 Salt Spray chamber $35\pm 2^{\circ}\text{C}$, $5\pm 1\%$ salt density for 48 hour. It shall be measured the contact resistance after the test	接触阻抗Contact Resistance: 80m Ω Max. 绝缘阻抗Insulation Resistance: 100M Ω Min. 外观无异常No abnormal appearance
8	温湿度循环试验 Humidity resistance	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 	接触阻抗Contact Resistance: 80m Ω Max. 绝缘阻抗Insulation Resistance: 100M Ω Min. 外观无异常No abnormal appearance

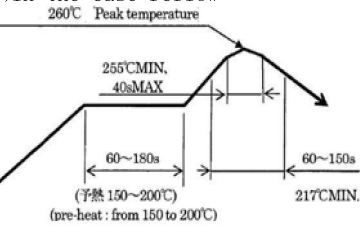
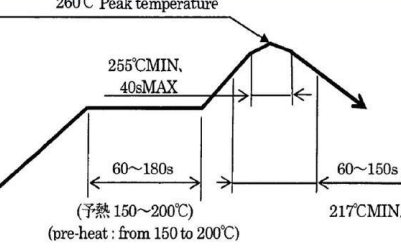
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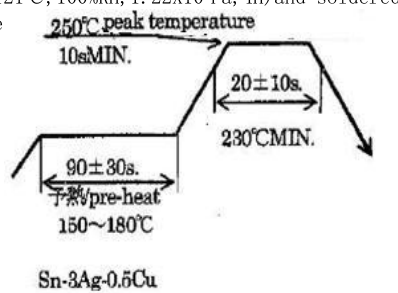
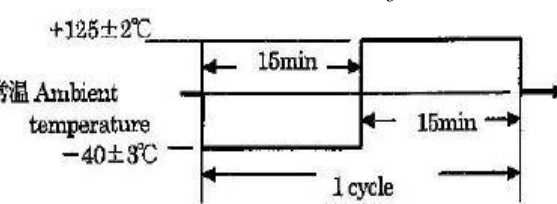
序号NO.	项目Item	测试方法 Test conditions	规格要求 Specifications
9	冷热冲击 Thermal shock test	<p>FFC/FPC插入，拔出5次后嵌合状态下，按以下温度条件完成100次循环实验，实验后测试其接触阻抗及外观检查。 he connector and FFC/FPC mated are unmated at 5 times is exposed 100 cycles in the following temperature conditions.It shall be measured the contact resistance and observed its appearance after</p>  <p>常温 Ambient temperature</p>	<p>接触阻抗Contact Resistance: 80mΩ Max. 绝缘阻抗Insulation Resistance: 100MΩ Min. 外观无异常No abnormal appearance</p>

5.4 其它性能Other Performance

1	沾锡性 Solderability	<p>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</p>	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 older heat test (standard condition)	<p>按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  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℃</p>	<p>1. 平整度0.10mm MAX 2. 吃锡饱满，在95%以上，外观无异常</p>
3	焊锡耐热性-2 solder heat test (standard condition)	<p>按下以条件进行焊锡耐热性实验（JEDECLEVEL1）the connector shall be tested resistance to soldering heat in the following conditions 吸水条件/water absorption .bading:125±5℃ 24h .water sbsorption:85℃ 85%RH 24H 条件(1): In case of reflow(3times)  The temperature shall be measured on the surface of the Product. 条件(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</p>	<p>1. 平整度0.10mm MAX 2. 吃锡饱满，在95%以上，外观无异常</p>

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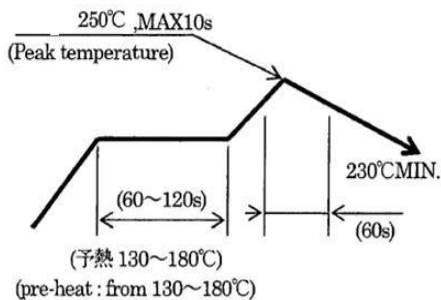
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序号NO.	项 目Item	测试方法 Test conditions	规格要求 Specifications
4	接着剂强度硬化温度 耐久性实验 Adhesives hardening temperature resistance	按以下条件进行接着剂强度硬化温度耐久性实验 The connector shall be a tested adhesive hardening temperature resistance test in the following conditions. 温度temperature:160℃ Max. 时间time:90s	实际使用无问题 Should not have any problems
5	焊接强度耐久性实验 solder joint endurance	<p>连接器进行PCT前处理后（105℃，相对湿度100%RH, 1.22X10⁵Pa, 4小时）根据以下条件： 过回流焊后，在连接器侧面以5~10mm/分速度加负重测试其剥离强度 After the connector shall be applied to PCT (121℃, 100%RH, 1.22X10⁵Pa, 4H) and soldered in the following re</p>  <p>连接器过Reflowr后焊接在P.C.B板上，进行500次插拔。按以下温度条件进行1次巡回后测试其剥离强度（在产品侧面以5~10mm/分速度加负重测试） the connector jointed to PCB upper condition is exposed 500 cycles in the following temperature conditions and measured the solder joint endurance.</p> 	<p>温度周期试验前后，剥离强度变化在50%以内 After application of temperature cycle, bending load should be 50% or less in initial strength.</p>

6. 包装 Packing

参见捆包图。See the drawing

7 推荐焊接温度Recommended temperature profile:



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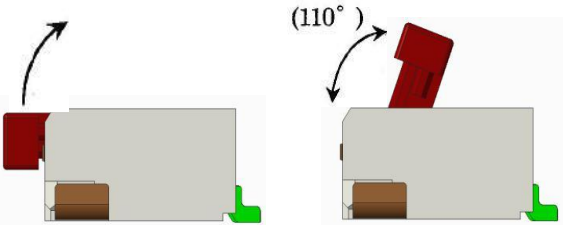
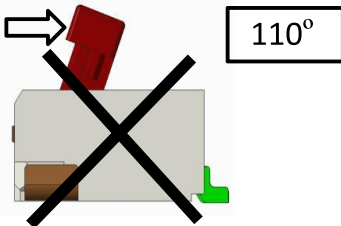
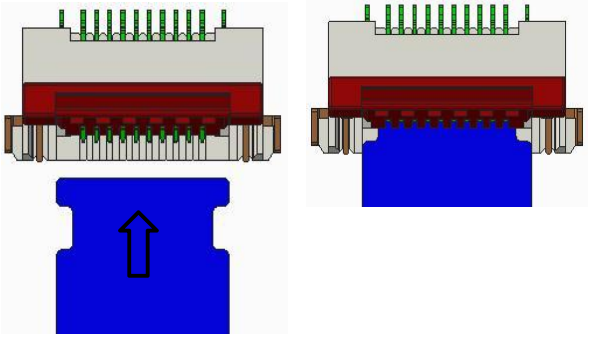
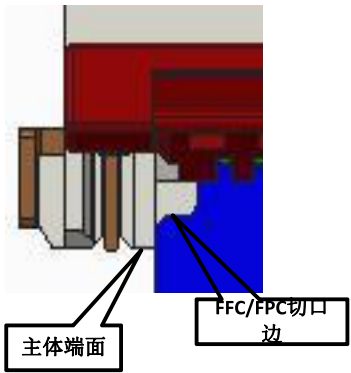
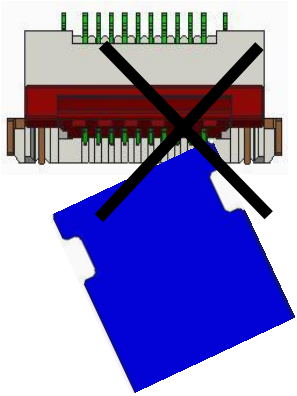
8. 修改内容 Change content

版本Rev.	改正日期 Modify date	改正内容Modifications	Written by	Checked by
A	2018. 01. 05	新版发行New	May. Wang	Rain. Han
B	2023. 08. 31	更新LOGO	May. Wang	Rain. Han

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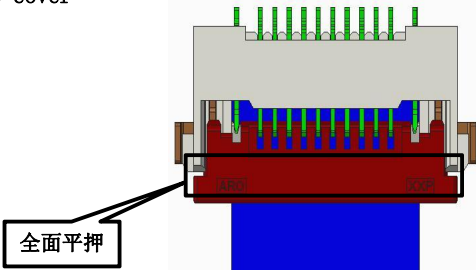
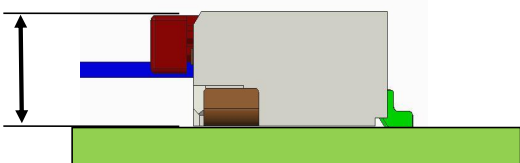
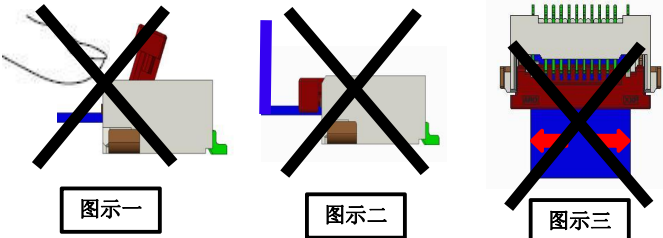
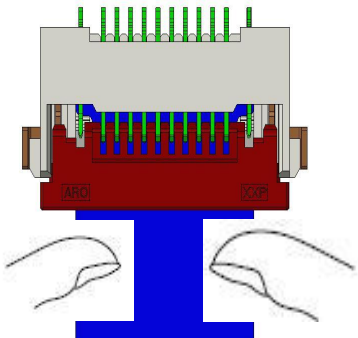
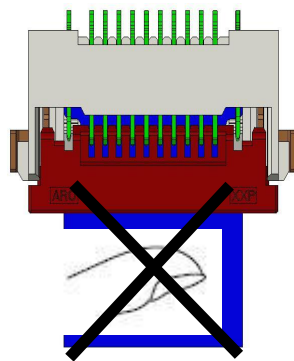
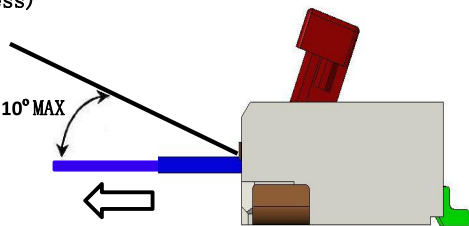
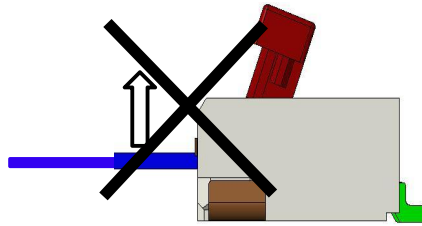
9. 操作说明和注意事项 Operating instructions and matters needing attention

操作方法	注意事项
一: FFC/FPC插入方法/FFC/FPC Insertion	
<p>① 请将掀盖向上打开（盖子回转操作） pull up the cover to open up.(the cover will rotate to operate)</p> 	<p>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 cover is structured not to open more than 110°, so please don't add a strong force backward. It can be deformed and damaged.</p> 
<p>② FFC/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.</p>  <p>插入量FFC/FPC切口边插入到主体端面内。 Please give the state entering it to me as a standard in the housing of cutting form of FFC/FPC</p> 	<p>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.</p> 

本制品不含SS-00259和ROHS禁止使用的环境物质

This product does not contain SS-00259 and ROHS banned the use of environmental substances

制 品 仕 样 书 Product specification		Part name	FPC Pitch 0.50 Double contact CONN. ZIF R/A H=2.5 SMT TYPE (H=2.5掀盖式)		
Horus Int. Electronics. Co., LTD. HorusTech Electronics. Co., LTD.		Part No.	HRS-F304-1A7*1-110**-E*00		7/8
Document No.：IS.EQC.125	Date: 2023/08/31	Rev.：B	Written by: May.Wang	Checked by: Elven.Zhan	Approved by: Rain.Han

操作方法	注意事项
<p>③压合盖子时请将其全面押合。 Please push all aspects of the cover when you shut the cover</p> 	<p>按押中间或两端会导致破损或接触不良 the operation only of both ends and the center causes damage and the loose connection. 请不要用手指按压FFC / FPC可能会导致脱落（图示一）。 （请距连接器左边缘20毫米或以上位置按压）。 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.</p>
<p>④将盖子按压到和PCB板平行。 please push until the cover becomes parallel to the PCB.</p> 	 <p>图示一 图示二 图示三</p>
二：FFC/FPC拔去方法 (FFC/FPC decutting)	
<p>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)</p> 	<p>单手操作会集中负重, 会损坏连接器。 The operation by one leads to the damage of the connecor.</p> 
<p>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)</p> 	<p>向上拔出FFC/FPC会损坏连接器 the connector leads to damage when pulling out for above</p> 

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