

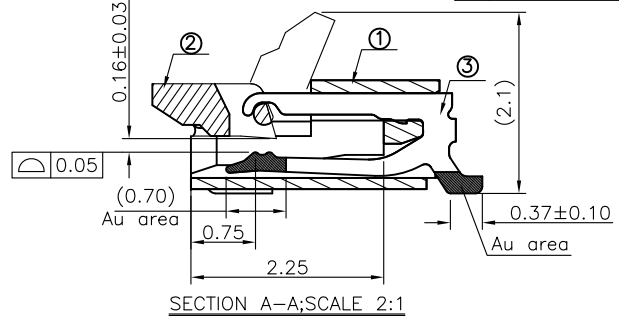
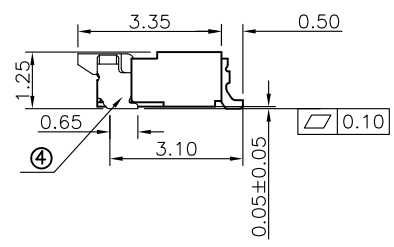
Halogen free

REV.	ECR/ECN No.	DESCRIPTION	DRAWN/DATE	CHECKED/DATE	APPROVED/DATE
A	/	New version	Kelley 2012-11-19	Rain 2012-11-19	Hongkui.liu 2012-11-19
B	/	Update the drawing	Kelley 2013-11-27	Rain 2013-11-27	Hongkui.liu 2013-11-27

NO.	COMPONENTS	MATERIALS	SPECIFICATION:FINISH/COLOR	QTY.
1	HOUSING	HIGHT-TEMP PLASTIC UL94V-0	NATURAL	1
2	ACTUATOR	HIGHT-TEMP PLASTIC UL94V-0	BLACK	1
3	CONTACT	COPPER ALLOY T=0.15mm	SURFACE PLATING:AU PLATING UNDER PLATING:1~3 μm Ni	N
4	ANCHOR-PLATE	COPPER ALLOY T=0.15mm	SURFACE PLATING:TIN PLATING OVER ALL UNDER PLATING:1~3 μm Ni	2

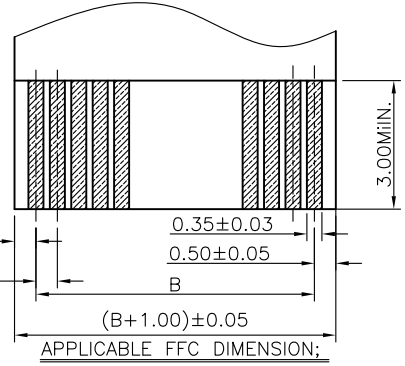
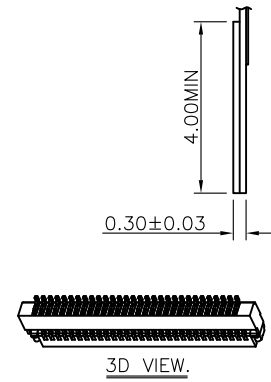
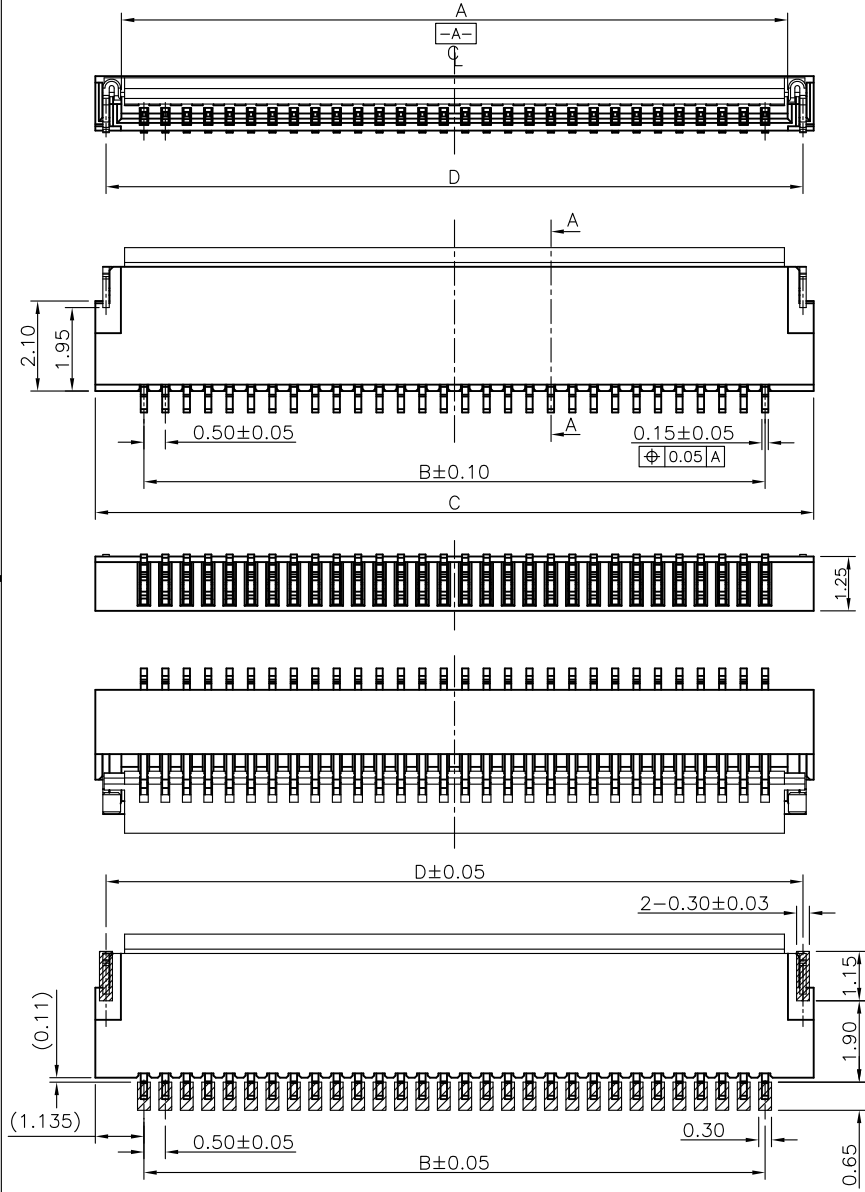
NOTE:
 1.ALL MATERIAL MUST BE COMPLY WITH
 GGP-001 OR RoHS.
 2.PART NO. LEGEND:
 HRS-F31E-1A7H1-210**

NO. OF POSITIONS
 7A:PHOSPHOR BRONZE
 MATTER TIN
 7H:PHOSPHOR BRONZE
 0.05um MIN Au(Au Area)
 1A:LCP NATURAL



DIMENSION LIST:

NO. OF Pos.	A	B	C	D
15	8.05	7.00	9.27	8.77
16	8.55	7.50	9.77	9.27
17	9.05	8.00	10.27	9.77
18	9.55	8.50	10.77	10.27
19	10.05	9.00	11.27	10.77
20	10.55	9.50	11.77	11.27
21	11.05	10.00	12.27	11.77
22	11.55	10.50	12.77	12.27
23	12.05	11.00	13.27	12.77
24	12.55	11.50	13.77	13.27
25	13.05	12.00	14.27	13.77
26	13.55	12.50	14.77	14.27
27	14.05	13.00	15.27	14.77
28	14.55	13.50	15.77	15.27
29	15.05	14.00	16.27	15.77
30	15.55	14.50	16.77	16.27



UNLESS OTHERWISE SPECIFIED TOLERANCES				ANGLE OF PROJECTION	
X.	±0.40	X. °	± 1'		
X.X	±0.30	X.X °	± 0.5'		
X.XX	±0.20	X.XX °	± 0.5'	Customer Drw	
X.XXX	±0.10	X.XXX °	± 1'		
LINEAR DIMS	ANGLES DIMS		DRAWN DATE Kelley 2013-11-27		
P/N: HRS-F31E-1A7H1-210**			DESIGN DATE Kelley 2013-11-27		
MATERIAL SEE NOTES			CHECKED DATE Rain 2013-11-27		
FINISHED SEE NOTES			APPROVED DATE Hongkui.liu 2013-11-27		

Horus Int. Electronics Co., LTD.
 Horustech Electronics Co., LTD.

TITLE: FPC PITCH0.50 H1.25 EASY-ON R/A SMT TYPE		SIZE: A4	DWG NO. A-S0062	REV. A
SCALE: 1:1	UNIT: mm	SHEET 1 OF 1		

RECOMMEND PCB LAYOUT SIZE;TOL ±0.05

1. 适用范围 Scope:

此作业规范适用于: 0.5/1.0Pitch FPC/FFC ZIF 卧式掀盖式高1.25mm SMT 系列

This product specifications is applied for: 0.5/1.0 FPC/FFC ZIF, Front side flip, H1.25 SMT 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 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/Type名 Materials	防火等级 FLAME CLASS	UL 编号 FILE NO.
1	主体 (HOUSING)	宝理/住友 POLYPLASTICS CO., LTD	LCP Liquid crystal polymer473i(自然色 Natural)	V-0	E106764
2	推杆 (ACTUATOR)	可乐丽 KURARAY CO., LTD	PA9T Polyamide 9T GP2450(黑色 Black)	V-0	

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℃~+85℃;

4.3.2 储存温度范围 storage temperature: -40℃~+85℃;

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: 相对湿度 45~80%RH; Keep humidity range: Relative humidity45~80%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	30mΩ Max.
2	绝缘阻抗 Insulation Resistance	相邻端子间 DC 500V, 1 分钟。 DC 500V between adjacent terminals, 1 minutes	500MΩ Min.
3	耐电压 Dielectric withstanding voltage	相邻端子间 AC 500V, 感度电流 2mA, 1 分钟。 AC 500V 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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制品仕様书 Product specification		Part name	0.5/1.0pitch FPC/FFC Conn.ZIF, Front side flip H1.25 SMT Series		
Horus Int. Electronics. Co., LTD. HorusTech Electronics. Co., LTD.		Part No.	HRS-F31E-1A7H1-210** HRS-F51E-1A7H1-210** HRS-F31T-1A7H1-210** HRS-F51T-1A7H1-210**	1/4	
Document No.: IS.EQC.042	Date:2016/01/30	Rev.: C	Written by: May	Checked by: Rain	Approved by: Hongkui.liu

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 连接器产品后, 以 25~100mm/分匀速垂直拔出, 第四次作为测量资料的记录. FFC/FPC(T=0.30) insert FPC connector products, pushed into the slider, Pull out vertically at 25~100mm/ min average speed, The fourth time is recorded as measurement data.	20gf/Terminal 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.	50gf/terminal Min.
3	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.	50gf/terminal Min.
4	插拔耐久性 Durability	以下动作进行 30 次巡回: FPC 插入、SLIDER 插入、SLIDER 拔出、FPC 拔出 The following action 30 Tour FPC insert, Slider insert, Slider withdraw, FPC withdraw	接触阻抗 Contact Resistance 50mΩ Max. 无变形 No deformation
5	掀盖拉断强度 Breaking strength of Actuator	对掀盖以 25~100mm/分匀速从中间施力, 测出破断力 Apply the force from the middle at a constant speed of 25~100mm/ min to the Actuator and measure the breaking force	80gf/min.
6	掀盖动作力 Actuating force	将 FFC 插入主体装好后, 以 25~100mm/分匀速将掀盖拉起, 测量其作用力 After mated FFC/FPC, lift the cover at a uniform speed of 25~100mm/ min and measure its force	100gf/min.

5.4 环境性能和其它 Environmental Performance and Others

序号 NO.	项目 Item	测试方法 Test conditions	规格要求 Specifications
1	耐振性 Vibration	配合合适的 FPC, 按以下条件, X、Y、Z 方向各 2 小时, 共 6 小时在测试过程中通过直流 1mA, 振幅 1.5mm, 频率 10~55~10Hz/分。 Mate applicable FPC, according to the following conditions, X, Z, Y direction of each 2 hours, a total of 6 hours passing DC 1mA during the test. Amplitude : 1.5mm P-P Frequency : 10~55~10 Hz Shall be traversed in 1 minute.	接触阻抗初始规格的 2 倍以下 The contact Resistance shall not exceed twice the initial value
2	耐冲击性 Shock	配合合适的 FPC, 按以下条件, X, Y, Z 方向各 11ms, 各 3 回, 共 18 回, 在测试过程中通过直流 1mA, 加速度 490m/s ² , Mate applicable FPC, according to the following conditions, X, Z, Y direction of the 11ms, the 3 times, a total of 18 times during the test process by DC 1mA. Test pulse : Half Sine Peak value : 490m/s ² {50G} Duration : 11 milliseconds	瞬断 1μs 以内; Discontinuity: 1μs Max. 外观无异常 No abnormal appearance
3	耐寒性 Cold Resistance	配合合适的 FPC, -40±3℃中放置时间 48H 后取出, 1~2 小时常温放置后进行测试。 Mate applicable FPC, after -40±3℃, the time of 48H was removed, and the test was conducted at room temperature for 1~2 hours.	1. 接触阻抗: 30mΩ Max. 2. 绝缘阻抗: 100 MΩ Min. 3. 耐电压: 无击穿, 短路 4. 外观: 无异常
4	耐热性 Heat Resistance	配合合适的 FPC, 85 ± 2℃中放置时间 96H 后取出, 1~2 小时常温放置后进行测试。 Mate applicable FPC, after 85±2℃, the time of 96H was removed, and the test was conducted at room temperature for 1~2 hours.	1. Contact Resistance: 30mΩ Max.
5	耐湿性 Humidity	配合合适的 FPC, 40±3℃、相对湿度 90~95%中放置时间 96H 后取出, 1~2 小时常温放置后进行测试。 Mate applicable FPC, 40±3℃, relative humidity 90~95% in the time of 96H after removal, 1~2 hours after room temperature for testing.	2. Insulation Resistance : 100 MΩ Min. 3. Dielectric withstanding voltage: No Breakdown. 4. No abnormal appearance

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Document No. : IS.EQC.042	Date: 2016/01/30	Rev. : C	Written by: May	Checked by: Rain	Approved by: Hongkui.liu

序号 NO.	项目 Item	测试方法 Test conditions	规格要求 Specifications												
6	盐雾试验 Salt Spray	配合合适的 FPC, 温度 $35\pm 2^{\circ}\text{C}$; 盐水比重 $5\pm 1\%$ 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 $35\pm 2^{\circ}\text{C}$, the proportion of salt water was $5\pm 1\%$ the test was carried out at room temperature after washing and drying. A: gold plating 48H B: tin 24h C: single pin terminal 48H	1. 接触阻抗: $30\text{m}\Omega$ Max. 2. 绝缘阻抗: $100\text{M}\Omega$ Min. 3. 耐电压: 无击穿, 短路 4. 外观: 无异常 1. Contact Resistance: $30\text{m}\Omega$ Max. 2. Insulation Resistance : $100\text{M}\Omega$ Min. 3. Dielectric withstanding voltage: No Breakdown. 4. No abnormal appearance												
7	冷热冲击 Thermal Shock	配合合适的 FPC, $-55\pm 3^{\circ}\text{C}$; $85\pm 2^{\circ}\text{C}$ 的温度下各放置 30 分钟, 共进行 5 次循环 Mate applicable FPC, $-55\pm 3^{\circ}\text{C}$, $85\pm 2^{\circ}\text{C}$, 30 minutes, 5 cycles were performed. 1: -55°C 30 minutes 2: $+85^{\circ}\text{C}$ 30 minutes													
8	蒸气老化 Steam aging	水蒸气温度 45°C , 时间 48 小时 Water vapor temperature 45°C , time of 48 hours													
9	沾锡性 Solderability	端子焊脚和固定片前端 0.3mm , 沾锡温度 $245\pm 5^{\circ}\text{C}$ (Sn: Lead Free); 时间 $3\pm 0.5\text{S}$ Terminal welding feet and fitting nail front 0.3mm , soldering temperature $245\pm 5^{\circ}\text{C}$ (Sn: Lead Free); time $3\pm 0.5\text{S}$	吃锡饱满, 在 95% 以上 95% of immersed area must show no voids, pin holes 外观无异常, No abnormal appearance 满足电气性能 Meet the electrical properties												
11	Reflow	预备加热时间 Pre-heating time: $170^{\circ}\text{C}\sim 190^{\circ}\text{C}$ 60~180s. 焊锡温度时间 Soldering Temperature Time: 260°C 10sMAX.	共面度 0.10mm Max. 外观无异常, Coplanar degree 0.10mm Max. No abnormal appearance.												
	耐氨水实验 Ammonia resistance test	28% 氨水, $25\pm 3^{\circ}\text{C}$, 40 分钟 28% Ammonia, $25\pm 3^{\circ}\text{C}$ and 40 minutes	接触阻抗: $100\text{m}\Omega$ Contact Resistance: $100\text{m}\Omega$ Max												
12	耐硫化性 (镀金品) Sulfidation resistance (Gold)	满足三种混合气体的试验的要求 Meet the requirements of the test of three kinds of mixed gas <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>H₂S</th> <th>NO₂</th> <th>SO₂</th> <th>Temperature</th> <th>Humidity</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>0.5ppm</td> <td>1.0ppm</td> <td>1.0ppm</td> <td>35°C</td> <td>70%RH</td> <td>72H</td> </tr> </tbody> </table>	H ₂ S	NO ₂	SO ₂	Temperature	Humidity	Time	0.5ppm	1.0ppm	1.0ppm	35°C	70%RH	72H	接触阻抗是初值的两倍以下 触点附近无明显腐蚀。 Contact resistance is two times the initial value Nearby contact no significant corrosion
H ₂ S	NO ₂	SO ₂	Temperature	Humidity	Time										
0.5ppm	1.0ppm	1.0ppm	35°C	70%RH	72H										
13	Whisker (Tin 镀锡品)	过 reflow 后插入 FPC, 放置 500H, 观察 WHISKER 的长度 Insert FPC after reflow, place 500H, observe the length of Whisker	100um max												
14	自然跌落 Nature fell	从 750mm 高度自然落下致光滑面板上 3 次 Drop from 750mm height to smooth panel 3 times	外观无损伤; 端子无变形, 无脱落。 No appearance damage; No deformation or shedding of terminal												

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Document No.: IS.EQC.042	Date: 2016/01/30	Rev.: C	Written by: May	Checked by: Rain	Approved by: Hongkui.liu

6. 包装 Packing

参见捆包图。See the drawing

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
A	2013/09/16	New	Enhai.he	Roy
B	2016/01/20	更新为中英对照及增加操作说明 Update for the Chinese and English and increase the operating instructions	May	Rain
C	2016/01/30	更新耐寒性温度为-40℃	May	Rain

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