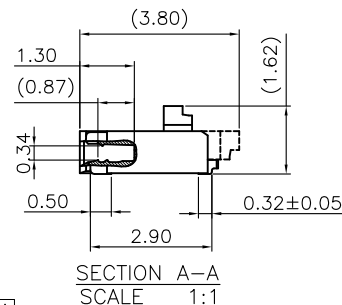
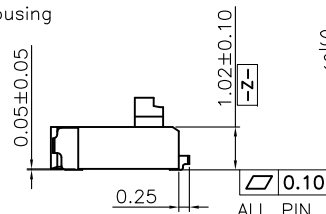
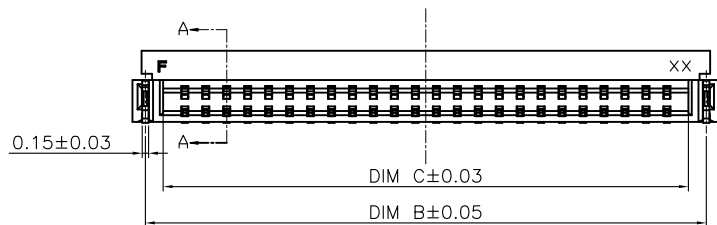
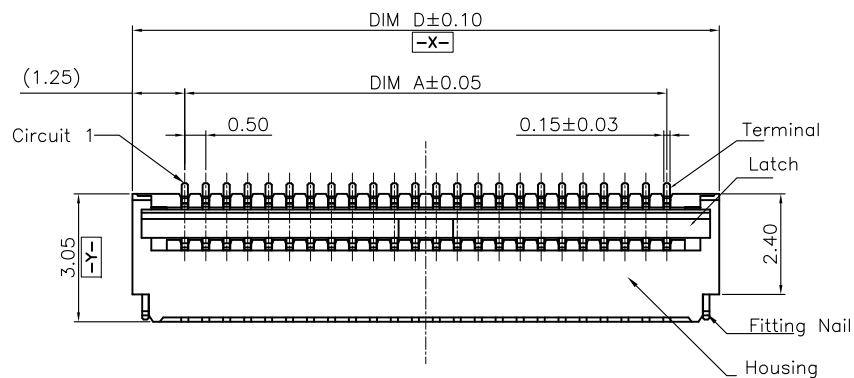
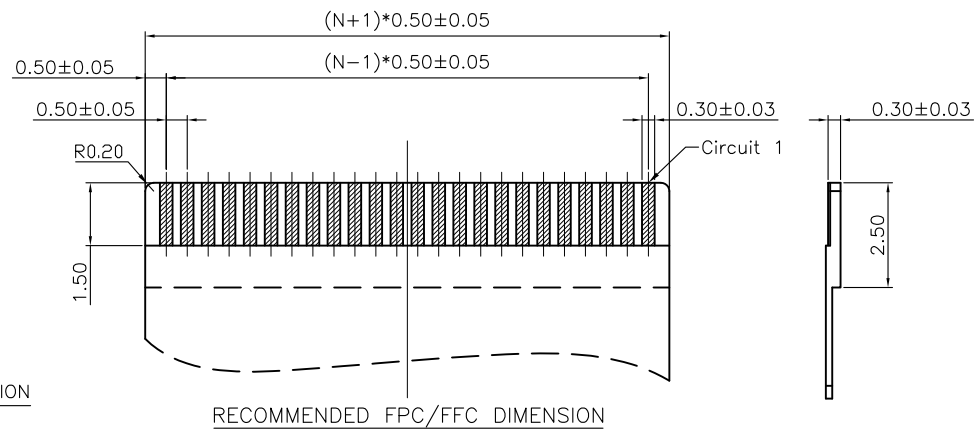
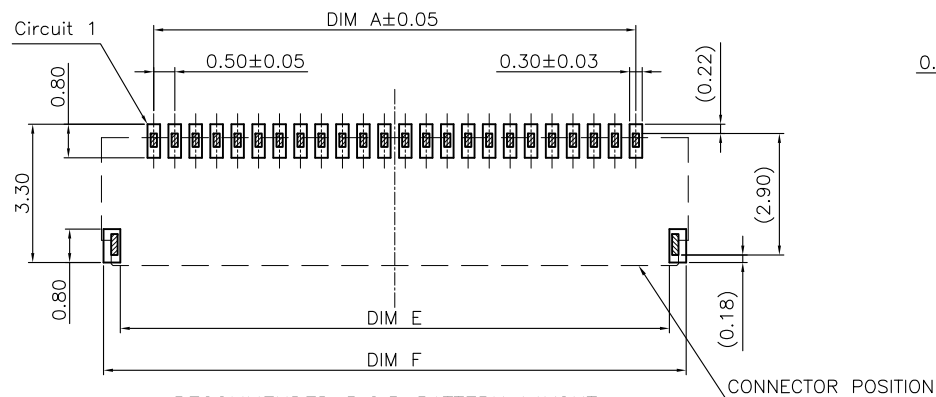


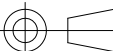
REV.	ECR/ECN No.	DESCRIPTION	DRAWN/DATE	CHECKED/DATE	APPROVED/DATE
A	/	NEW RELEASE	May 2020-01-14	Rain.han 2020-01-14	Leo.Liu 2020-01-14



- Note:
- Material:
 - Housing: LCP .UL94V-0; Color: natural.
 - Latch: PA9T .UL94V-0; Color: black.
 - Terminal: Phosphor bronze.
 - Fitting Nail: Phosphor bronze.
 - Finish:
 - Terminal:
1~2.5u" Nickel under plating over all
0.075u" Gold on contact and Gold Flash on Solder
 - Fitting Nail:
1~2.5u" Nickel under plating over all
2~3u" Matte tin over all
 - Product must comply HF RoHS specification.
 - PART NO. LEGEND:
HRS-F331-1A7H1-210**-E200
- NO. OF POSITIONS
2: Halogen free
7H: Regional gold plated 0.075um min.



SIZE	A	B	C	D	E	F	SIZE	A	B	C	D	E	F	SIZE	A	B	C	D	E	F
4	1.50	3.38	2.53	4.00	3.10	3.90	18	8.50	10.38	9.53	11.00	10.10	10.90	32	15.50	17.38	16.53	18.00	17.10	17.90
5	2.00	3.88	3.03	4.50	3.60	4.40	19	9.00	10.88	10.03	11.50	10.60	11.40	33	16.00	17.88	17.03	18.50	17.60	18.40
6	2.50	4.38	3.53	5.00	4.10	4.90	20	9.50	11.38	10.53	12.00	11.10	11.90	34	16.50	18.38	17.53	19.00	18.10	18.90
7	3.00	4.88	4.03	5.50	4.60	5.40	21	10.00	11.88	11.03	12.50	11.60	12.40	35	17.00	18.88	18.03	19.50	18.60	19.40
8	3.50	5.38	4.53	6.00	5.10	5.90	22	10.50	12.38	11.53	13.00	12.10	12.90	36	17.50	19.38	18.53	20.00	19.10	19.90
9	4.00	5.88	5.03	6.50	5.60	6.40	23	11.00	12.88	12.03	13.50	12.60	13.40	37	18.00	19.88	19.03	20.50	19.60	20.40
10	4.50	6.38	5.53	7.00	6.10	6.90	24	11.50	13.38	12.53	14.00	13.10	13.90	38	18.50	20.38	19.53	21.00	20.10	20.90
11	5.00	6.88	6.03	7.50	6.60	7.40	25	12.00	13.88	13.03	14.50	13.60	14.40	39	19.00	20.88	20.03	21.50	20.60	21.40
12	5.50	7.38	6.53	8.00	7.10	7.90	26	12.50	14.38	13.53	15.00	14.10	14.90	40	19.50	21.38	20.53	22.00	21.10	21.90
13	6.00	7.88	7.03	8.50	7.60	8.40	27	13.00	14.88	14.03	15.50	14.60	15.40	41	20.00	21.88	21.03	22.50	21.60	22.40
14	6.50	8.38	7.53	9.00	8.10	8.90	28	13.50	15.38	14.53	16.00	15.10	15.90	42	20.50	22.38	21.53	23.00	22.10	22.90
15	7.00	8.88	8.03	9.50	8.60	9.40	29	14.00	15.88	15.03	16.50	15.60	16.40	43	21.00	22.88	22.03	23.50	22.60	23.40
16	7.50	9.38	8.53	10.00	9.10	9.90	30	14.50	16.38	15.53	17.00	16.10	16.90	44	21.50	23.38	22.53	24.00	23.10	23.90
17	8.00	9.88	9.03	10.50	9.60	10.40	31	15.00	16.88	16.03	17.50	16.60	17.40	45	22.00	23.88	23.03	24.50	23.60	24.40

UNLESS OTHERWISE SPECIFIED TOLERANCES				ANGLE OF PROJECTION 		 Horus Int. Electronics. Co., LTD. HorusTech Electronics. Co., LTD.			
X.	±0.30	X. °	± 5'						
X.X	±0.25	X.X °	± 4'	DOC Customer Drw		TITLE: 0.5MM FFC/FPC DUAL CONTACT SIDE CONNECTOR WITHOUT LOCK(H=1.00)			
X.XX	±0.20	X.XX °	± 3'	DRAWN DATE	May 2020-01-14				
X.XXX	±0.15	X.XXX °	± 2'	DESIGN DATE	May 2020-01-14	SIZE	PART NUMBER:		REV.
LINEAR DIMS		ANGLES DIMS		CHECKED DATE	Rain.Han 2020-01-14	A4	HRS-F331-1A7H1-210**-E200		A
DWG NO.: A-S0572				APPROVED DATE	Leo.Liu 2020-01-14	SCALE	1:1	UNIT : mm	SHEET 1 OF 1
MATERIAL		SEE NOTES							
FINISHED		SEE NOTES							

1. 适用范围Scope:

此作业规范适用于: FPC PITCH0.5 前插后掀H1.0 SMT

This product specifications is applied for: FPC 0.50mm Pitch ,Easy-on Back side flip H1.0mm , 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	原材料供应商 material suppliers	材料名/T y p e 名 Materials	备注 NOTE
1	主体 (HOUSING)	住友 SUMITOMO CHEMICAL CO. LTD	LCP Liquid crystal polymer	/
2	掀盖 (ACTUATOR)	可乐丽 KURARAY CO., LTD	PA9T , Polyamide 9T	/
3	端子 (TERMINAL)	Copper alloy,T=0.15mm	CONTACT AREA:1~3um Ni/0.076um Au SOLDER TAIL:1~3um Ni/0.076um Au	/
4	固定片 (FIXED PLATE)	Copper alloy,T=0.15mm	Plating: SOLDER2.0~7.6 m Ni/2~3.75um Sn(matte TIN)	/

4. 标准状态:

4. 1额定电压Rating voltage: AC 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: -55℃~+85℃;

4. 3. 2储存温度范围storage temperature: -10℃~+50℃;

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:0~90%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	同一根端子测试, 电流: 10mA (DC), 电压: 20mV以下, 使用电线: 适配FFC标准线(EIA-364-23)。 Mate applicable FFC/FPC, It shall be measured by the dry electric circuit specified as follows; 10mA, 20mV Max.(EIA-364-23)	100mΩ Max.
2	绝缘阻抗 Insulation Resistance	相邻端子间 DC 500V, 1分钟。 Apply 500V AC for 1 minute between adjacent terminals	500MΩ Min.
3	耐电压 Dielectric withstanding voltage	相邻端子间AC 250V, 感应电流2mA, 1分钟。 Apply 250V AC for 1 minute between adjacent terminals	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。 When operating at rated voltage, current, temperature rise measuring terminals.	30℃ max

This product does not contain banned substances from the environment using RoHS 2.0

制 品 仕 样 书 Product specification		Part name	FPC 0.50mm Pitch ,Easy-on Back side flip H1.0mm SMT TYPE series		
Horus Int. Electronics. Co., LTD. Horustech Electronics. Co., LTD.		Part No.	HRS-F331-1A7H1-210**-E200	1/8	
Document No.: IS.EQC.164	Date: 2020/07/14	Rev.: B	Written by: May	Checked by: Rain.Han	Approved by: Leo.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, 以25±3mm/分匀速垂直拔出。 FFC / FPC (standard thickness 0.30mm) is inserted into FPC connector , Closed the actuator, pulled out vertically at a constant speed of 25±3mm/ min.	0.15N/Pin Min.
2	端子保持力 Terminal Retention Force	将端子25±3mm/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 a constant speed of 25±3mm/ min.	0.3N/Pin Min.
3	固定片保持力 Fixed plate Retention Force	将固定片25±3mm/分匀速垂直从胶芯槽内拔出 Apply axial pull the fixed plate out of Housing at a uniform speed of 25±3mm/min at verically	0.8N/Pin Min.
4	插拔耐久性 Durability	以下动作进行20次巡回: FPC插入、掀盖压入、掀盖掀起、FPC拔出. 以每分小于10次的速度。 Insert FPC/FFC, close and open actuator, Withdraw FFC/FPC to 20cycles,At a rate of less than 10 times per minute.	接触阻抗: 100mΩ Max. 外观无异常
5	耐振性 Vibration	端子以电流1mA D.C串联导通, 振幅1.5mm, 频率10-55-10Hz, X, Y, Z方向各2小时, 共6小时。(EIA-364-28 Condition I) The terminals are conducting in series with current 0.1A DC, amplitude 1.5mm, frequency 10-55-10hz, 2 hours each in X,Y and Z directions, A total of 6 hours.(EIA-364-28 Condition I)	外观无异常 接触阻抗: 100mΩ Max. 端子瞬断时间小于1us No abnormal appearance
6	机械冲击 Mechanical Shock	端子以电流1mA D.C串联导通, 加速度980m/s ² , X, Y, Z方向各6ms, 正弦波半波正, 各3回, 共18回。(EIA-364-27 Condition A) The terminals are conducting in series with current 1mA DC, Acceleration of 981m/s ² , 6 ms duration, sine halfwave, 3 cycles in each of the 3 axis.(EIA-364-27 Condition A)	Insulation Resistance: 100m Ω Max. Discontinuity max 1 μs all contacts in series

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制 品 仕 样 书 Product specification		Part name	FPC 0.50mm Pitch ,Easy-on Back side flip H1.0mm SMT TYPE series		
Horus Int. Electronics. Co., LTD. Horustech Electronics. Co., LTD.		Part No.	HRS-F331-1A7H1-210**-E200	2/8	
Document No.: IS.EQC.164	Date: 2020/07/14	Rev.: B	Written by: May	Checked by: Rain.Han	Approved by: Leo.Liu

5.4 环境性能 Environmental Performance

序号NO.	项 目Item	测试方法 Test conditions	规格要求 Specifications
1	耐热性 High-temperatur	将FFC/FPC插入FPC连接器后，在温度 $85 \pm 2^{\circ}\text{C}$ 中放置时间96H。 After FFC / FPC insertion, it is placed in the temperature of $85 \pm 2^{\circ}\text{C}$ for 96h.	外观无异常 No abnormal appearance 接触阻抗: 100mΩ Max. Insulation Resistance : 100mΩ Max.
2	耐寒性 Cold resistance	将FFC/FPC插入FPC连接器后，在温度 $-40 \pm 2^{\circ}\text{C}$ 中放置时间96H。 After FFC / FPC insertion, it is placed in the temperature of $-40 \pm 2^{\circ}\text{C}$ for 96h.	外观无异常 No abnormal appearance 接触阻抗: 100mΩ Max. Insulation Resistance : 100mΩ Max.
3	耐湿性 Humidity	将FFC/FPC插入FPC连接器后，温度 $40 \pm 2^{\circ}\text{C}$ ，相对湿度90~95%环境中放置时间96H（测试时间）。再置于室温下1~2小时。 After FFC / FPC insertion, the temperature is $40 \pm 2^{\circ}\text{C}$, and the relative humidity is 90-95% for 96h (test time). Keep it at room temperature for another 1-2 hours.	外观无异常 No abnormal appearance 接触阻抗: 100mΩ Max. Insulation Resistance : 100mΩ Max. 绝缘阻抗: 50MΩ Min. Insulation Resistance: 50MΩ Min. 耐电压：无击穿，无短路 Dielectric withstanding voltage : No breakdown
4	冷热冲击 Thermal shock	将FFC/FPC插入FPC连接器后， $-55 \pm 3^{\circ}\text{C}$ ； $85 \pm 2^{\circ}\text{C}$ 的温度下各放置30分钟，共进行5次循环。再置于室温下1~2小时 After inserting FFC / FPC into FPC connector, place it at $-55 \pm 3^{\circ}\text{C}$ ； $85 \pm 2^{\circ}\text{C}$ for 30 minutes respectively, and conduct 5 cycles in total. Keep it at room temperature for another 1-2 hours : Temperature:- 55°C > $+15^{\circ}\text{C}$ to 35°C > $+85^{\circ}\text{C}$ > $+15^{\circ}\text{C}$ to $+35^{\circ}\text{C}$ Time: 30 > 2 to 3 > 30 > 2 to 3 minutes 5 cycles	外观无异常 No abnormal appearance 接触阻抗: 100mΩ Max. Insulation Resistance : 100mΩ Max.
5	盐雾 Salt Spray	温度 $35 \pm 2^{\circ}\text{C}$ ，盐水比重 $5 \pm 1\%$ 喷雾试验中放置48H。 The temperature is 35 ± 2 degrees, and the salt water density is $5 \pm 1\%$. 48H is placed in the spray test.	外观无异常 No abnormal appearance 接触阻抗: 100mΩ Max. Insulation Resistance : 100mΩ Max.
6	二氧化硫（气体） SO ₂ Gas	将样品与适合之FPC/FFC连接，将其置放于 50 ± 5 ppm浓度二氧化硫气体中，测试温度 $40 \pm 2^{\circ}\text{C}$ ，测试时间24小时。 Mate applicable FPC/FFC and expose them to the following SO ₂ gas atmosphere. Temperature $40 \pm 2^{\circ}\text{C}$ Gas Density 50 ± 5 ppm Duration 24 hours	外观无异常 No abnormal appearance 接触阻抗: 100mΩ Max. Insulation Resistance : 100mΩ Max.
7	氨（气体） NH ₃ Gas	在曝露来自浓度28%阿摩尼亚之蒸发的气体NH ₃ 中放置24小时。 40 minutes exposure to NH ₃ gas evaporating from 28% Ammonia solution	外观无异常 No abnormal appearance 接触阻抗: 100mΩ Max. Insulation Resistance : 100mΩ Max.

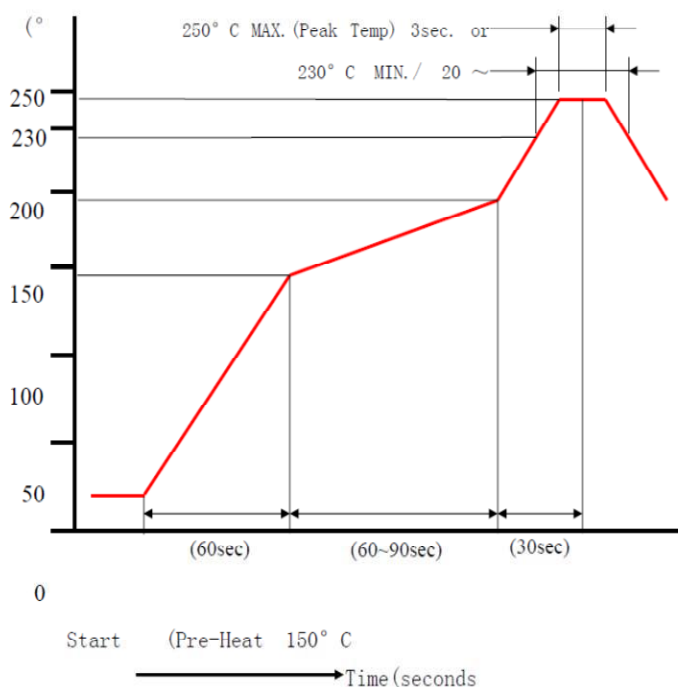
This product does not contain banned substances from the environment using RoHS 2.0

制 品 仕 样 书 Product specification		Part name	FPC 0.50mm Pitch ,Easy-on Back side flip H1.0mm SMT TYPE series		
Horus Int. Electronics. Co., LTD. HorusTech Electronics. Co., LTD.		Part No.	HRS-F331-1A7H1-210**-E200	3/8	
Document No.: IS.EQC.164	Date: 2020/07/14	Rev.: B	Written by: May	Checked by: Rain.Han	Approved by: Leo.Liu

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	沾锡温度 $245 \pm 5^{\circ}\text{C}$ (Sn: Lead Free) ; 时间 $3 \pm 0.5\text{s}$ Subject connector lead to solder at $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 3 ± 0.5 seconds	吃锡饱满, 在95%以上。 More than 95% of the solderable area shall be covered with solder.
2	焊锡耐热性 Resistance to Soldering heat	烙铁温度: $370 \sim 400^{\circ}\text{C}$ (Sn: Lead Free) ; 时间5秒最大 Iron temperature: $370 \sim 400^{\circ}\text{C}$ (Sn: Lead Free) time : 5seconds Max.	外观无异常 No abnormal appearance
3	Reflow耐热性 Resistance to Soldering heat	预备加热时间 Pre-heating time : 150°C 60~90s. 焊锡温度时间 Soldering Temperature Time : 250°C $30 \pm 1\text{s}$.	锡脚与固定片平整度 0.10mm Max. 外观无异常, Product-feet and the ground sheet flatness 0.10mm Max. No evidence of defect on surface.

Infrared Reflow Condition:



温度条件TEMPERATURE CONDITION GRAPH
(基板表面温度) (TEMPERATURE ON BOARD PATTERN SIDE)

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制 品 仕 样 书 Product specification		Part name	FPC 0.50mm Pitch ,Easy-on Back side flip H1.0mm SMT TYPE series		
Horus Int. Electronics. Co., LTD. HorusTech Electronics. Co., LTD.		Part No.	HRS-F331-1A7H1-210**-E200	4/8	
Document No.: IS.EQC.164	Date: 2020/07/14	Rev. : B	Written by: May	Checked by: Rain.Han	Approved by: Leo.Liu

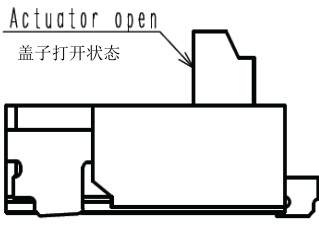
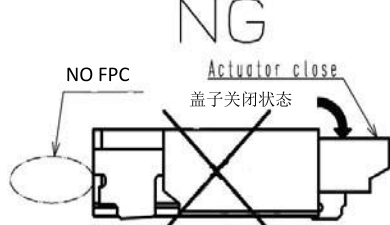
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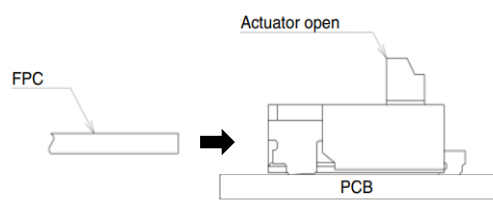
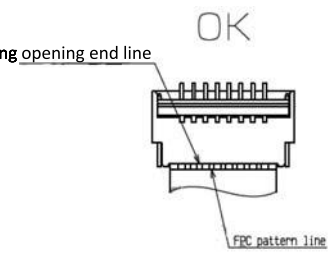
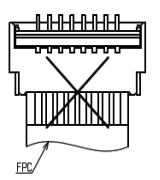
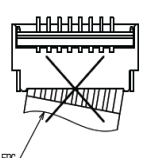
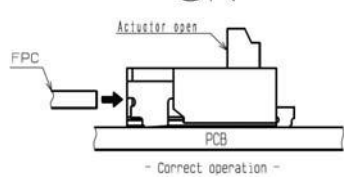
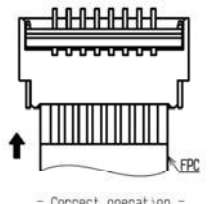
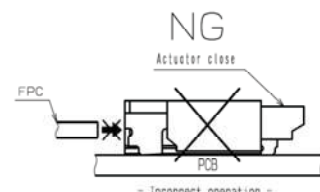
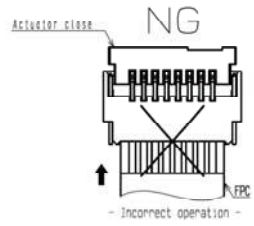
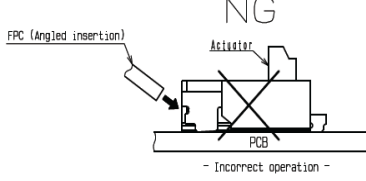
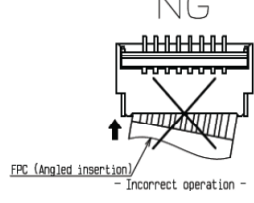
版本 ev.	改正日期 Modify date	改正内容Modifications	Written by	Checked by
A	2020.04.29	New	May	Rain.Han
B	2020.07.14	Updata The Terminal Retention Force added the operation and precautions	May	Rain.Han

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制 品 仕 样 书 Product specification		Part name	FPC 0.50mm Pitch ,Easy-on Back side flip H1.0mm SMT TYPE series		
Horus Int. Electronics. Co., LTD. Horustech Electronics. Co., LTD.		Part No.	HRS-F331-1A7H1-210**-E200	5/8	
Document No.: IS.EQC.164	Date: 2020/07/14	Rev.: B	Written by: May	Checked by: Rain.Han	Approved by: Leo.Liu

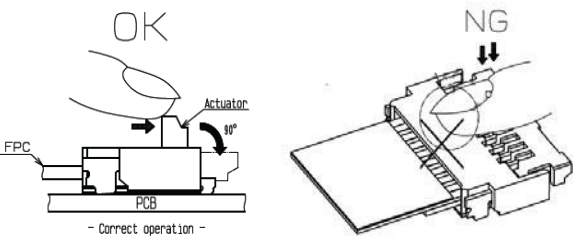
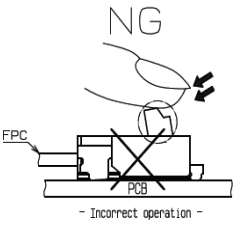
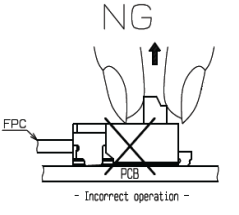
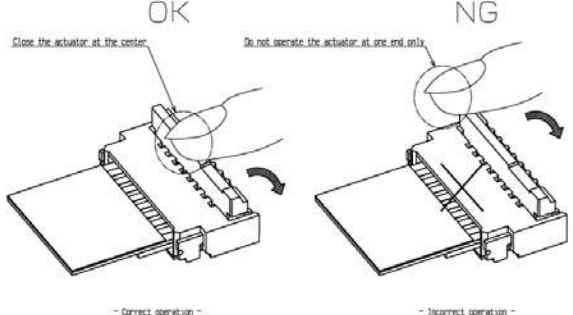
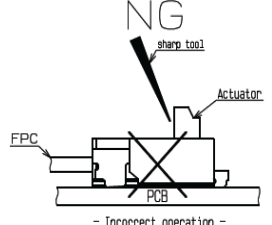
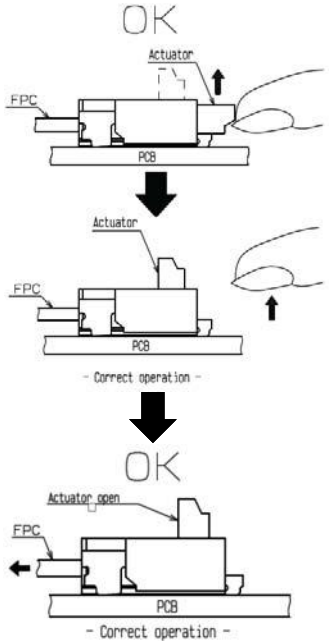
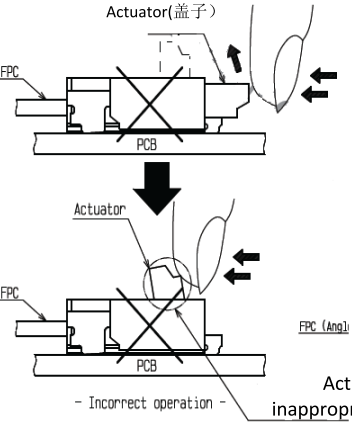
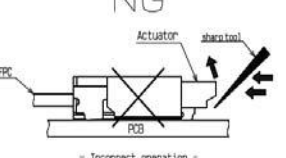
7. 操作说明和注意事项 Operating instructions and matters needing attention

操作方法	注意事项
一: 初始条件Initial condition ①在插入FFC/FPC之前, 执行器不需要操作, 因为连接器是在执行器打开的情况下交付的 Actuator does not have to be operated before inserting FFC/FPC as the connector is delivered with the actuator opened  - Open when delivered - NG 	

一: FFC/FPC插入方法/FFC/FPC Insertion	
①确保FFC与PCB表面平行, 然后完全插入连接器。 Be sure that the FPC is parallel to the surface of the PCB, then completely insert into the connector.  OK  - Correct operation - NG  - incorrect operation - (Insufficiently inserted) NG  - Incorrect operation - (Angle insertion)	①如掀盖是关闭的状态, 请不可试图插入FFC/FPC; 如果掀盖关闭, 插入期间如果FFC是扭曲的, 它可能导致接触变形和/或接触失败; 插入FFC/FPC时不可带倾斜角度。 Do not attempt to insert the FPC if actuator is closed. If the actuator is closed and if the FPC is twisted during insertion, it can cause contact deformation and / or contact failure ; Do not insert FFC/FPC with tilt Angle OK  - Correct operation - OK  - Correct operation - NG  - Incorrect operation - NG  - Incorrect operation - NG  - Incorrect operation - NG  - Incorrect operation -

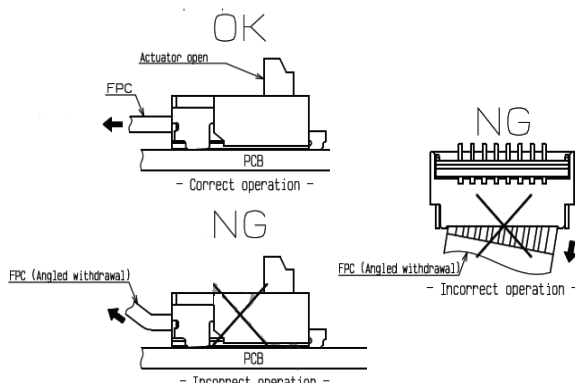
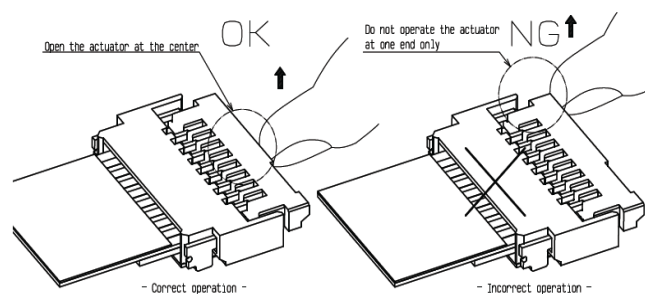
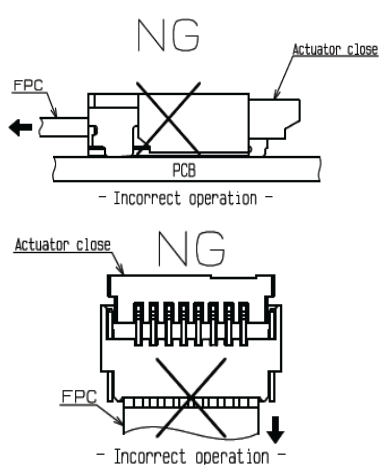
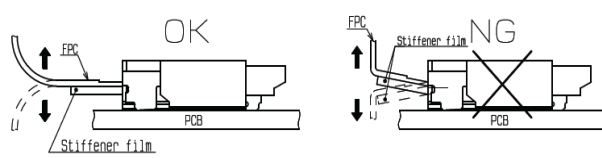
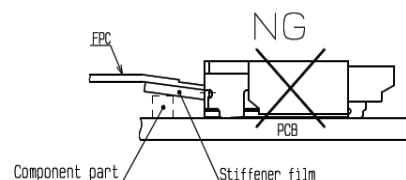
This product does not contain banned substances from the environment using RoHS 2.0

制 品 仕 样 书 Product specification		Part name	FPC 0.50mm Pitch ,Easy-on Back side flip H1.0mm SMT TYPE series		
Horus Int. Electronics. Co., LTD. HorusTech Electronics. Co., LTD.		Part No.	HRS-F331-1A7H1-210**-E200		6/8
Document No.: IS.EQC.164	Date: 2020/07/14	Rev.: B	Written by: May	Checked by: Rain.Han	Approved by: Leo.Liu

操作方法	注意事项
②在插入ffc/fpc后，施加载荷使盖子旋转90度；在操作过程中不要对外壳施加过多的力 Apply load to rotate the actuator by 90 degree after inserting the FFC/FPC; Do not apply excess force to the housing during the operation 	②不要将盖子旋转到反方向； Do not rotate the actuator to the counter direction ;  ③不要捏或挑选盖子来提升 Do not pinch or pick the actuator to lift 
③将盖子按压到和PCB板平行。按压时按压盖子的中间位置，不可只按盖子一端。 Please push until the actuator becomes parallel to the PCB. Do not operate the actuator at one end only 	④手动操作盖子，不使用锋利的钳子 operate the actuator by hand without using sharp toll such as tweezers 
二：FFC/FPC拔去方法 (FFC/FPC decutting)	
①慢慢地翻转盖子来释放解锁，解锁后再拔出FFC/FPC Slowly flip up the actuator to release the lock , then pull out FFC/FPC 	①盖子掀盖最大的角度是90度；打开盖子时不可超过90度或对盖子加过多的力。 the actuator is opened up to the movable limit .90 degree ; Do not open the actuator beyond the specified degree or apply excess force to the actuator  ②手动操作盖子，不使用锋利的钳子 operate the actuator by hand without using sharp tool such as Tweezers 

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制品仕様書 Product specification		Part name	FPC 0.50mm Pitch ,Easy-on Back side flip H1.0mm SMT TYPE series		
Horus Int. Electronics. Co., LTD. Horustech Electronics. Co., LTD.		Part No.	HRS-F331-1A7H1-210**-E200	7/8	
Document No.: IS.EQC.164	Date: 2020/07/14	Rev.: B	Written by: May	Checked by: Rain.Han	Approved by: Leo.Liu

操作方法		注意事项			
二：FFC/FPC拔去方法(FFC/FPC decutting)					
② 拔出时水平拔出，不可带倾斜角度 When pulling out, pull out horizontally and do not take tilt Angle 		③ 打开盖子时施加力在盖子的中间位置，不可掀盖子盖子一端。 To open the actuator operate at the center of the actuator To open the actuator do not operate the actuator at one end only 			
③ 未解锁不可直接拔出FFC/FPC FFC/FPC cannot be pulled out directly without being unlocked 					
三：连接后的FFC/FPC (FFC/FPC routing after connection)					
① 固定柔性线路板时，应避免拉动柔性线路板，并将线路松弛。在这方面，加强筋(补强板)与pcb平行。 wheng fixing fpc atter fpc cabling avoid pulling fpc and route the wire fpc with slack. in this regard the stiffener is parallel to the pcb 		① 不要将其他接触到fpc的部件安装在fpc补强板下面。 Do not mount other components touching to the fpc underneath the fpc stiffener 			
This product does not contain banned substances from the environment using RoHS 2.0					
制品仕様书 Product specification		Part name	FPC 0.50mm Pitch ,Easy-on Back side flip H1.0mm SMT TYPE series		
Horus Int. Electronics. Co., LTD. HorusTech Electronics. Co., LTD.		Part No.	HRS-F331-1A7H1-210**-E200	8/8	
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