SOLEPiN 东莞市硕品电子有限公司
Dongguan SOLEPIN Electronics Co.,Ltd.

承 认 书

CUSTOMER APPROVAL SHEET

客户名稱:

產品品名: **FPC 0.5mm PCITH H2.1 SMT FRONT OPEN TYPE CONNECTOR**

客户品號:

廠商品號: **65A6-FXXXS1021R01**

承認日期: **2021.04.27**

是否首次承認: ■是 ○否 ○結構變更重新承認 ○材質變更重新承認 ○電鍍變更重新承認

承認章：_____

（Approved Signature）

承認結果		
□ PASS	□CONDITIONAL	□ REJECT
備註		

客户		
採購	品保	研發
廠商		
業務	品保	研發
Lily	H.B.CHEN	吴良云

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邮箱 (E-mail)：sales@solepin.com 网站 (Web): www.solepin.com

客户图

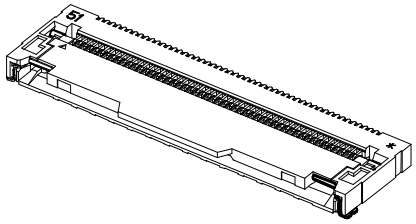
1. FINISH:
   - 1.1 HOUSING: LCP NATURE,UL94V-0.
   - 1.2 COVER: THERMO-PLASTIC BLACK.
   - 1.3 TERMINAL: PHOSPHOR COPPER.
   - 1.4 CONTACT: COPPER ALLOY.
2. ELECTRICAL:
   - 2.1 CURRENT RATING: 0.5A, 50V AC/DC.
   - 2.2 DIELECTRIC WITHSTANDING VOLTAGE: 500V AC/MINUTE.
   - 2.3 CONTACT RESISTANCE: 30mΩ MAX.
   - 2.4 INSULATION RESISTANCE: 100MΩ MIN AT 500V DC
   - 2.5 OPERATING TEMPERATURE RANGE: -40°C TO +85°C.

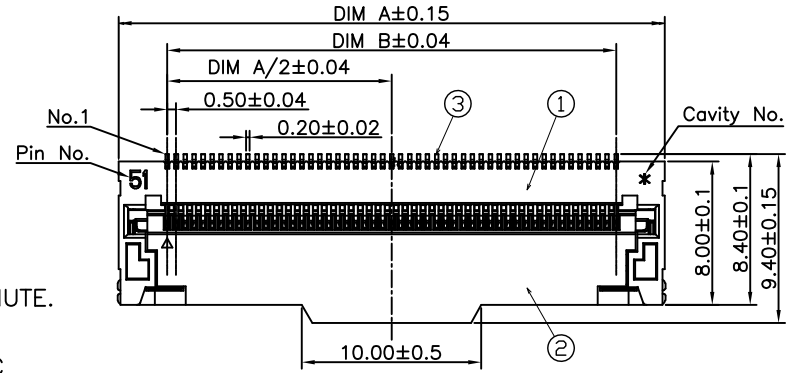
65A6-F XXX S1 021 R 01

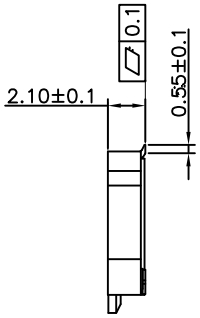
Pin数码	端子电镀:	塑胶高度:	包装方式:
060=60PIN	S1=1u" Gold/Tin	021=2.10mm	R=载带包装
068=68PIN			
080=80PIN			

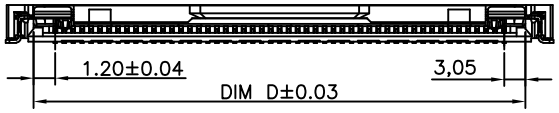
TABLE1:

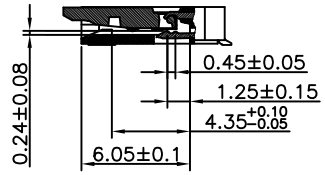
No. OF PIN	DMI A	DIM B	DIM C	DIM D
050	29.9	24.5	29.9	23.9
051	30.4	25.0	30.4	24.4
060	34.9	29.5	34.9	31.9
068	38.9	33.5	38.9	35.9
080	44.9	39.5	44.9	41.9
096	52.9	47.5	52.9	49.9

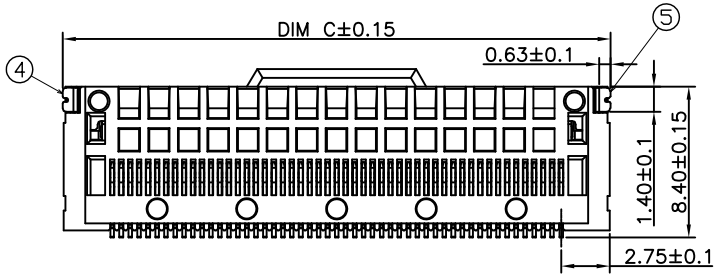


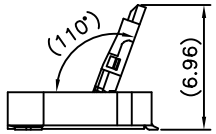


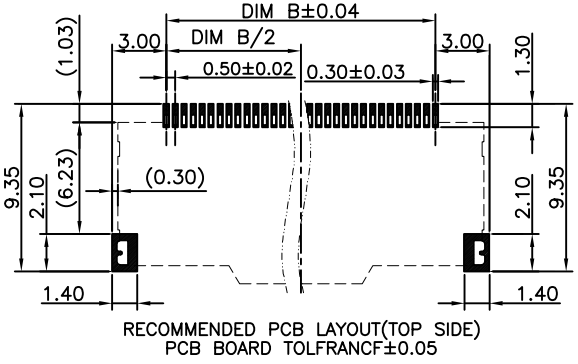












RECOMMENDED PCB LAYOUT(TOP SIDE)
PCB BOARD TOLFRANCF±0.05

ITEN	COMPONENT	Q'TY	MATERIAL	FINISH
1	HOUSING	1	THERMOPLASTIC	UL 94-V0 COLOR:WHITE
2	COVER	1	THERMOPLASTIC	UL 94-V0 COLOR:WHITE
3	TERMINAL	*	COPPER ALLOY	Au:1u"MIN Sn:80~160u" Ni:50u~100u"
4	GROUND LUG LEFT	1	COPPER ALLOY	Sn:80~160u" Ni:50u~100u"
5	RIGHT GROUND LUG	1	COPPER ALLOY	Sn:80~160u" Ni:50u~100u"

REV	DATE	MODIFICATION DESCRIPTION	CHANGE	APPROVE
A0		NEW		

OPERATION				
X.X	±0.40	DRAW	WLY	2020.07.24
X.XX	±0.25	DESIGN	Jensen	2020.07.24
X.XXX	±0.15	CHECK	Jack	2020.07.24
Angle	±3°	APPROVE	Andy	2020.07.24
DIM.	TOL	UNIT	mm	SCALE 1:1

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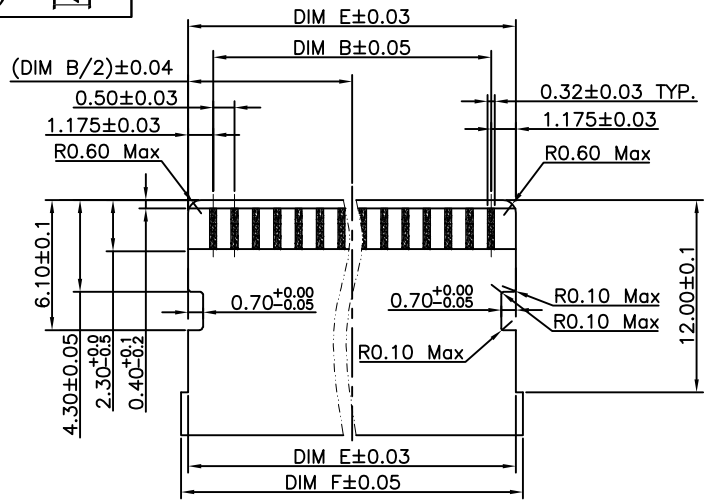
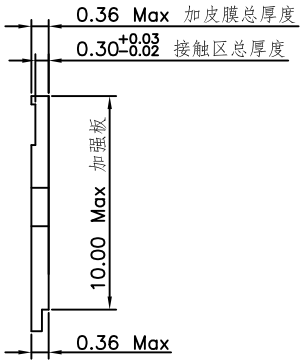
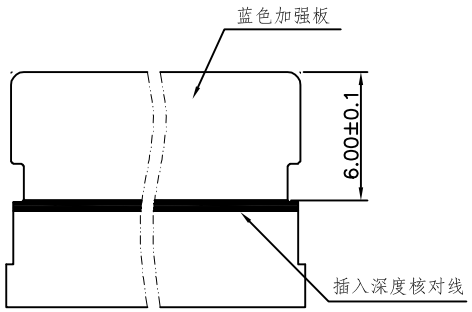
Professional connector manufacturer DONGGUAN SOLEPIN ELECTRONICS CO., LTD.

SIZE	A4	PART NO.	65A6-FXXXS1021R01
SHEET	1/2	TITLE:	FPC 0.5mm PCITH H2.1 SMT FRONT OPEN TYPE CONNECTOR
PROJ.		DRAW NO.	SP-444

客户图

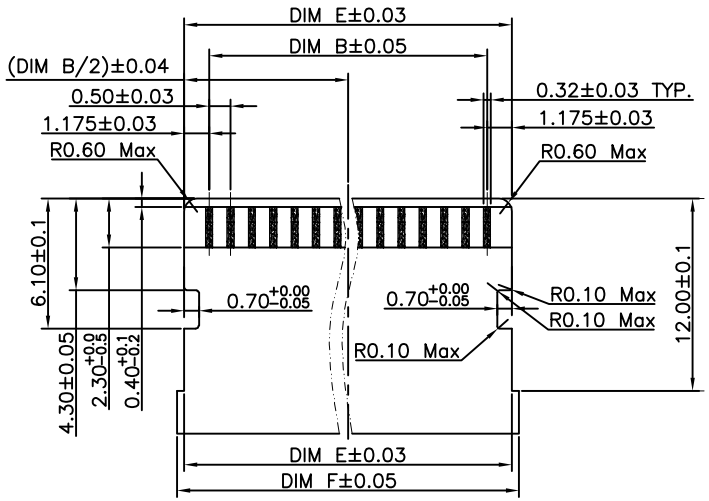


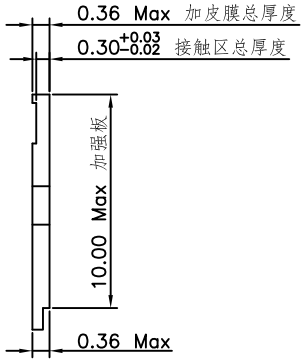


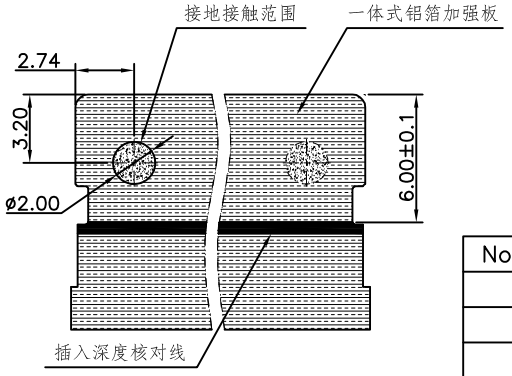


APPLICABLE FPC RECOMMENDED DIMENSION

蓝白裸线（不接地）







APPLICABLE FPC RECOMMENDED DIMENSION

一体式铝箔加强板排线（接地）

No. OF PIN	DIM B	DIM E	DIM F
050	24.5	26.85	27.5
051	25.0	27.35	28.0
060	29.5	31.85	32.5
068	33.5	35.85	36.5
080	39.5	41.85	42.5
096	47.5	49.85	50.5

REV	DATE	MODIFICATION DESCRIPTION	CHANGE	APPROVE
A0		NEW		

OPERATION				
X.X	±0.40	DRAW	WLY	2020.07.24
X.XX	±0.25	DESIGN	Jensen	2020.07.24
X.XXX	±0.15	CHECK	Jack	2020.07.24
Angle	±3°	APPROVE	Andy	2020.07.24
DIM.	TOL	UNIT	mm	SCALE 1:1

SOLEPiN 东莞市硕品电子有限公司

Professional connector manufacturer DONGGUAN SOLEPIN ELECTRONICS CO., LTD.

SIZE	A4	PART NO.	65A6-FXXXS1021R01
SHEET	2/2	TITLE:	FPC 0.5mm PCITH H2.1 SMT FRONT OPEN TYPE CONNECTOR
PROJ.		DRAW NO.	SP-444

SOLEPiN 东莞市硕品电子有限公司
Professional connector manufacturer DONGGUAN SOLEPIN ELECTRONICS CO., LTD.

PRODUCT SPECIFICATION（产品规格）

Contents （目录）

1.Scope（适用范围）

1.This specification covers the requirements for product performance of 0.50mm pitch FPC connector(本规范涵盖了0.50mm间距FPC连接器的产品性能要求)

2.Construction、Dimensions 、Material & Plating:（结构，尺寸，材料和电镀）

2-1:Construction & Dimensions(结构和尺寸):See the attached drawings（见附图）

2-2:Material & Plating（材料和电镀）:See table below（请参阅下表）

Item(项目)	Material（材质）	Plated（电镀）/Color(颜色)
Housing Material	LCP	Natural
Cover Material	1CP	Black
Terminal Material	Phosphor Bronze C5210R-EH	Au:1u″Min;Sn:80u″~160u″; Ni:50u″~100u″.
Ground Lug Left Material	Phosphor Bronze C5191-EH	Sn:80u″~160u″; Ni:50u″~100u″.
Right Ground Lug Material	Phosphor Bronze C5191-EH	Sn:80u″~160u″; Ni:50u″~100u″.

3.Ratings(等级)

Item	Standard Data
Ambient Temperature Range	-40°C ~ +85°C*
Rated Voltage (max.)	50V AC ,DC
Rated Current (max.)	0.5A AC,DC
Film (Thickness of Film(FFC/FPC))	0.30mm+0.03/-0.02
PCB (Applicable P.C.B)	1.0mm Min

APPROVED	Jesse 2020.02.25
CHECKED	Fish 2020.02.25
WRITTEN	Sara 2020.02.25

REV.	DESCRIPTION	DATE
A1	–	–
A0	NEW RELEASE	2020.02.25

4. PERFORMANCE（性能）

4-1.ELECTRICAL PERFORMANCE

Test Description		Procedure	Requirement
4-1-1	Contact Resistance （接触电阻）	Subject mated contacts assembled in housing to closed circuit of 1mA max. at open circuit voltage of 20mV max. According ELA364-23(MIL-STD 1344A-3002)	30mΩ max.
4-1-2	Insulation Resistance （绝缘电阻）	Measure by applying test potential between the adjacent contacts,and between the contacts and ground in the mated connector. According ELA 364-23(MIL-STD 1344A-3003),Condition b.(500V DC 1 min±5sec).	100MΩ min.
4-1-3	Dielectric Strength （耐电压）	Apply AC 500V between the two adjacent contacts.Electrification time:1 min±5sec	1) No flash over and no physical damage shall be observed. 2)current Leakage < 5mA.

4-2.MECHANICAL PERFORMANCE

Test Description		Procedure	Requirement	
4-2-1	Terminal / Housing Retention Force （端子保持力）	Apply axial pull out force on the terminal in the housing at the speed rate of 25±3mm per minute EIA-364-29 B	0.10 kgf/Pin Min	
4-2-2	peg / Housing Retention Force （接地片保持	Apply axial pull out force on the terminal in the housing at the speed rate of 25±3mm per minute EIA-364-29 B	0.15 kgf Min	
4-2-3	Actuator open force （掀盖打开力）	Actuator open test shall be done with film inserted.(speed 25mm±3mm per minute)	Actuator open force	Pin.No*0.01kgf min
			Tset method	Cabie assembly
4-2-4	Actuator close force （掀盖关闭力）	Actuator close test shall be done with film inserted.(speed 25mm±3mm per minute)	Actuator close force	Pin .No*0.02 kgf max(9-60P) Pin .No*0.03Kg Max(68-96P)
			Tset method	Cabie assembly
4-2-5	Film withdrawal force(Horizontal direction) （FFC线保持力）	Measured forces to withdraw wafer assembly from the housing assembly which has same circuits. (speed 25mm±3mm per minute)	Pin.No*0.083kgf min.	
4-2-6	Durability （耐用性）	Operation Speed：25.4mm/min. Durability Cycles：30 Cycles	contact resistance	30mΩ max.
4-2-7	Vibration （振动）	Current of 0.1A shall be applied during the testing. the vibration shall be along each axis for the period of two hours with the maximum amplitude of 1.52mm and frequency of 10 to 55 to 10Hz/min according to MIL-STD-202 METHOD 201.	Contact resistance:	30mΩ max.
			Appearance:	No damage, loose part no crack.
			Discontinue:	1μsec Max
4-2-8	Shock (Mechanical) 冲击 (机械)	Mate applicable FFC: Shock at 50g's, 3 strokes in each X,Y,Z axes	Contact resistance:	30mΩ max.
			Appearance:	No damage, loose part no crack.
			Discontinue:	1μsec Max

PRODUCT SPECIFICATION（产品规格）

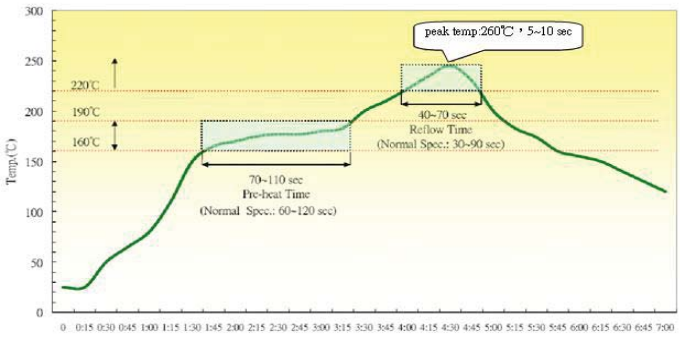
4. PERFORMANCE(性能)

4-3.ENVIRONMENTAL PERFORMANCE

<table>
<tr><th colspan="2">Test Description</th><th>Procedure</th><th colspan="2">Requirement</th></tr>
<tr><td rowspan="4">4-3-1</td><td rowspan="4">Moisture resistance
（恒温恒湿）</td><td rowspan="4">Mated connectors shall be left in the chamber of 40± 2°C temperature and 90~95% humidity for 96hrs.
After drying in ambient condition for 1 hours, measurement is done in accordance with MIL-STD-202,Method 103-B.</td><td>contact resistance</td><td>30mΩ max.</td></tr>
<tr><td>Appearance</td><td>No damage, loose part on crack.</td></tr>
<tr><td>Dielectric strength</td><td>No breakdown at 150V.</td></tr>
<tr><td>Insulation resistance</td><td>100MΩ min.</td></tr>
<tr><td rowspan="4">4-3-2</td><td rowspan="4">High temperature Resistance
（耐热性）</td><td rowspan="4">The test is conducted according to the conditions specified below.after the test, lte the specimens rest at ambient temperature for 1 hours.
-Temperature: 85°C ±2°C
-Duration:96hr</td><td>contact resistance</td><td>30mΩ max.</td></tr>
<tr><td>Appearance</td><td>No damage, loose part on crack.</td></tr>
<tr><td>Dielectric strength</td><td>No breakdown at 150V.</td></tr>
<tr><td>Insulation resistance</td><td>100MΩ min.</td></tr>
<tr><td rowspan="4">4-3-3</td><td rowspan="4">Temperature cycling
(冷热冲击)</td><td rowspan="4">Mated connector shall be exposed five cycles as table #1 The testing shall be in accordance with MIL-STD-202,Method 107-A Table #1.
<table>
<tr><td>STEP</td><td>1</td><td>2</td><td>3</td><td>4</td></tr>
<tr><td>TEM (° C)</td><td>−55±3</td><td>25^{+10}_{-0}</td><td>85±2</td><td>25^{+10}_{-5}</td></tr>
<tr><td>Exposed time(min)</td><td>30</td><td>5</td><td>30</td><td>5</td></tr>
</table></td><td>contact resistance</td><td>30mΩ max.</td></tr>
<tr><td>Appearance</td><td>No damage, loose part on crack.</td></tr>
<tr><td>Dielectric strength</td><td>No breakdown at 150V.</td></tr>
<tr><td>Insulation resistance</td><td>100MΩ min.</td></tr>
<tr><td rowspan="4">4-3-4</td><td rowspan="4">salt mist
（盐雾）</td><td rowspan="4">after testing with following condition, it measures specification of connectors which cleaning by stream water.
After the test, lte the specimens rest at ambient temperature for 1 hours.
-Salt water concentration:5±1%Weight ratio
-Temperature: 35±2° C
-Duration:Au: 48hr ±4hr (Gold-plated area)</td><td>contact resistance</td><td>30mΩ max.</td></tr>
<tr><td>Appearance Construction</td><td>No defect such as corrosion which impairs the function of connector</td></tr>
<tr><td>Dielectric strength</td><td>No breakdown at 150V.</td></tr>
<tr><td>Insulation resistance</td><td>50MΩ min.</td></tr>
<tr><td rowspan="4">4-3-5</td><td rowspan="4">Cold resistance
（耐寒性）</td><td rowspan="4">The test is conducted according to the conditions specified below.After the test, lte the specimens rest at ambient temperature for 1 hours.
-Temperature: -40°C±2°C
-Duration:96h</td><td>contact resistance</td><td>30mΩ max.</td></tr>
<tr><td>Appearance</td><td>No damage, loose part on crack.</td></tr>
<tr><td>Dielectric strength</td><td>No breakdown at 150V.</td></tr>
<tr><td>Insulation resistance</td><td>100MΩ min.</td></tr>
</table>

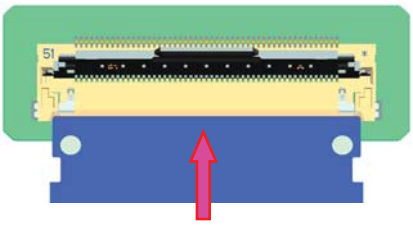
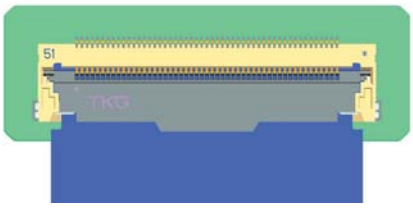
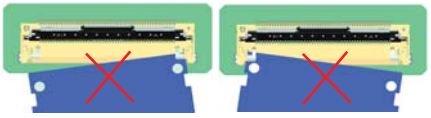
4. PERFORMANCE（性能）

4-3.ENVIRONMENTAL PERFORMANCE

Test Description		Procedure	Requirement
4-3-6	Solder ability（吃锡性）	In accordance with method EIA-364-26 Soldering time: 3±0.5sec Soldering temperature:245±5℃	1)The inspected area of each lead must have 95% solder coverage minimum. 2)After solder: No damage
4-3-7	solder heat resistance（焊锡耐热性）	Reflow condition.(Refer to reflow) 	1)No deformations and no damage should be observed. 2)After solder: No damage

5. CONNECTOR OPERATING INSTRUCTIONS & PRECAUTIONS

（连接器操作说明及注意事项）:

5-1	**Please open and close the actuator with the connector is mounted on the PCB, and the FFC inserted. The actuator might not come off from opening and shutting of he actuator in the state that FFC is not inserted and do not do,please.**		
5-2	**Do with the actuator opened completely, and insert in the interior of the insertion entrance surely horizontally when you insert FFC. Might it become short defective, and it cause the corner to transform the caught terminal into the terminal by the pitch gap when inserting it right and left and diagonally.**		
	Horizontally	**AFTER INSERT FFC(FPC)**	**Oblique insertion**
			

PRODUCT SPECIFICATION（产品规格）

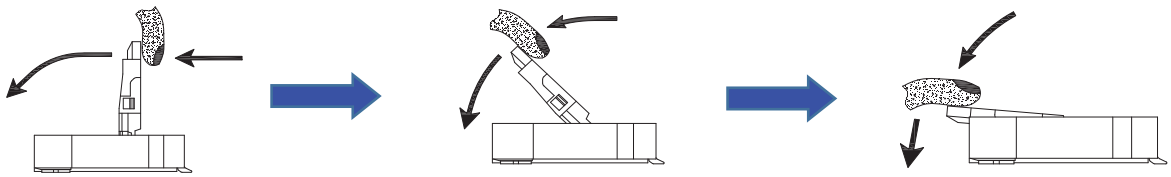
5. CONNECTOR OPERATING INSTRUCTIONS & PRECAUTIONS
（连接器操作说明及注意事项）：

5-3

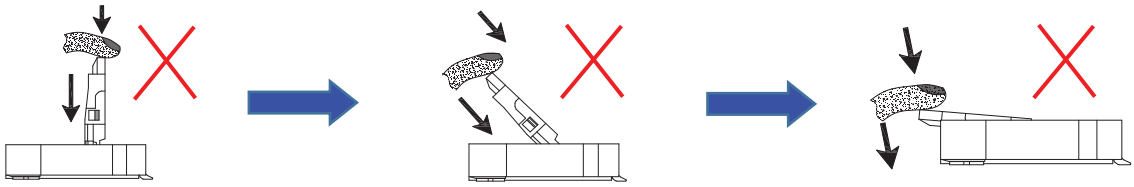
Please add force in the direction where the actuator is held and do by rotating it pushing in parallel to the PCB direction when becoming 90° or less as shown in the figure below until the angle of the actuator becomes 90° or less when you shut the actuator.

Please do not add the force to rotary axis of actuator in the direction that the actuator is off.

Proper operation

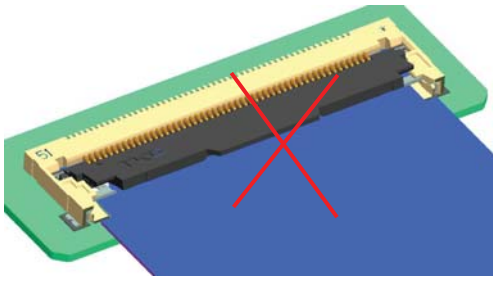
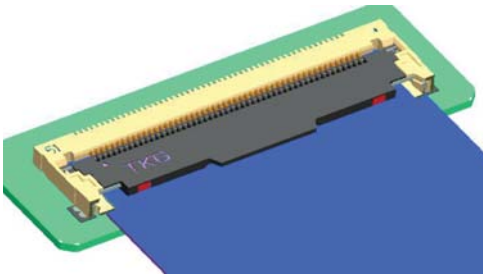


Wrong operation



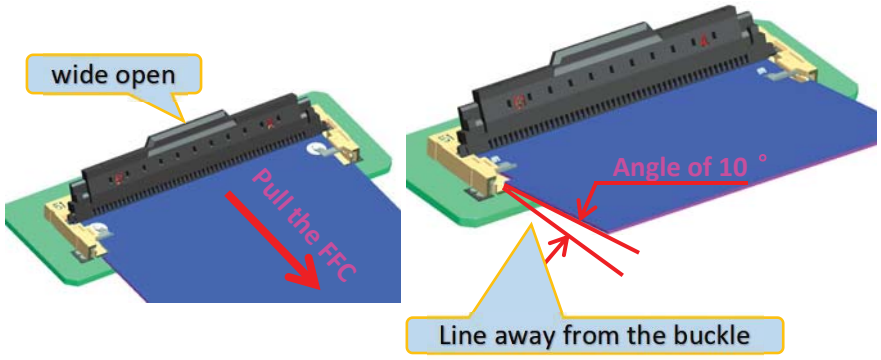
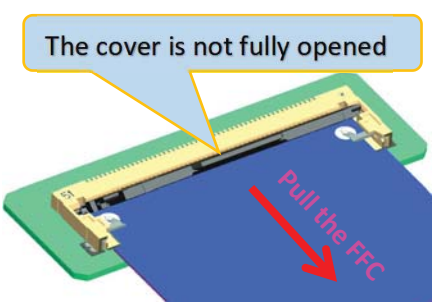
5-4

After the actuator is closed,please press down the surface of actuator with soft pressure inorder to lock as shown in the following figure.

Half lock	**Lock**
	

5-5

Please do when you pull out mating with actuator opened completely and do the operation that opens the actuator in the vicinity of the center part where the cutting lack exists in the actuator inserted. when you pull out after FFC.

OK	**NG**
	

5-6 Do not add the load to mating FFC with connector housing.