



Title of Document: HANDLING MANUAL	Issue No. CHM-1-2740	Rev. 0
Customer: GENERAL	Issue date: February 15, 2021	
Title subject: FCH Connector	Revision date:	

This manual describes important and required points of handling about the FCH connector.
Be sure to read this manual thoroughly before using the FCH connector and strictly follow the instructions.

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Prepared by: <i>T.Horii</i>	Checked by: <i>T.Sawano</i>	Reviewed by: <i>M.Morita</i>	Approved by: <i>M.Naganawa</i>
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1. Model Number and Part Name

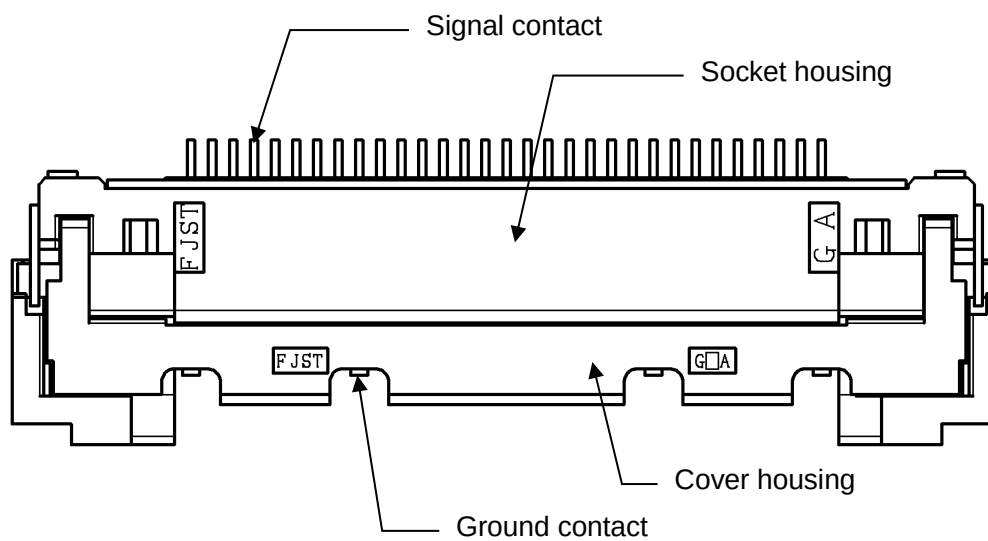
1-1 Model number

Product name		Model No.
FCH connector	Loose piece product	()FCH-RSM1-GA (LF)(SN)
	Embossed-taping product	()FCH-RSM1-GA-TB (LF)(SN)

Note₁: 2-digit figures in () denote the circuit number.

1-2 Part name

Each part name of the FCH connector is as below.



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2. Storage

2-1 Storing the connectors

Recommended storage condition: Temperature: 5 – 35 °C, Relative humidity 60 % or less
(Under packaging like the state of JST shipment)

Keep off direct sunlight, places exposing to such corrosive gas as industrial gas (generate from a stove and whatnot) and ammonia gas (generate from a toilet and whatnot) and dusty place.

Note that the resin molding part may break due to transportation and handling, such as processing and mating, under dry or low temperature condition.

After unpacking, return the products in the original package to store.

2-2 Storing the processed products

Not leaving the crimped contact to stand in a place exposed to high humidity and direct sunshine, and not placing them directly on the ground. Keep them in a clean storage room.

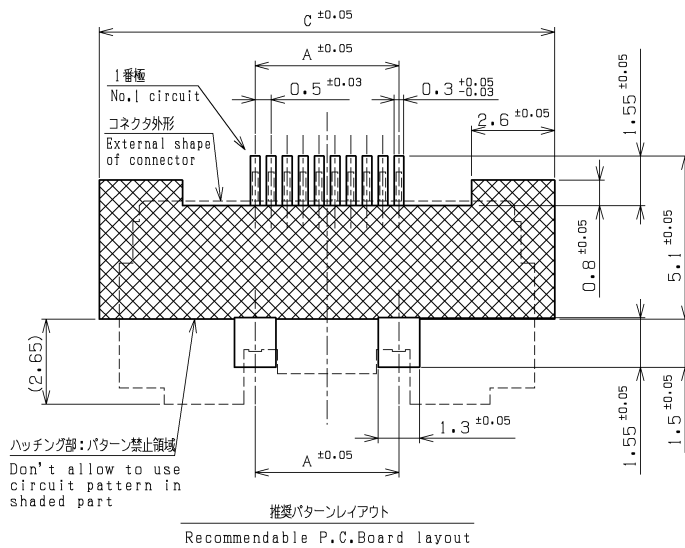
3. Applicable FFC

- ① The dimensions of FFC greatly affect the contacting reliability with the connector.
Conform the dimensions of FFC with those of applicable ones described in the drawing attached to the specification.
- ② Especially, narrow pitch connectors have a high possibility to come off the contact point due to warpage, deformation, slant insertion, insufficient insertion and so on of FFC.
In order to reduce these risks, manage that the important dimensions such as conductor width, length, pitch, FFC/FPC total width, position misalignment between conductor and FFC width shall meet the given tolerances, considering the variations of those dimensions.
- ③ The above dimension and composition are general condition.
Remember to make sure of the applicability of the connector with the FFC to be used before using.
If the applicability of FFC with the connector is not confirmed, it may be out of our guarantee.
- ④ The blanking shall be conducted from the conductor side to the reinforcing plate side.
- ⑤ Use FFC that has the same plating specification as the connector.
Do not mate the different metal type FFC with the connector.

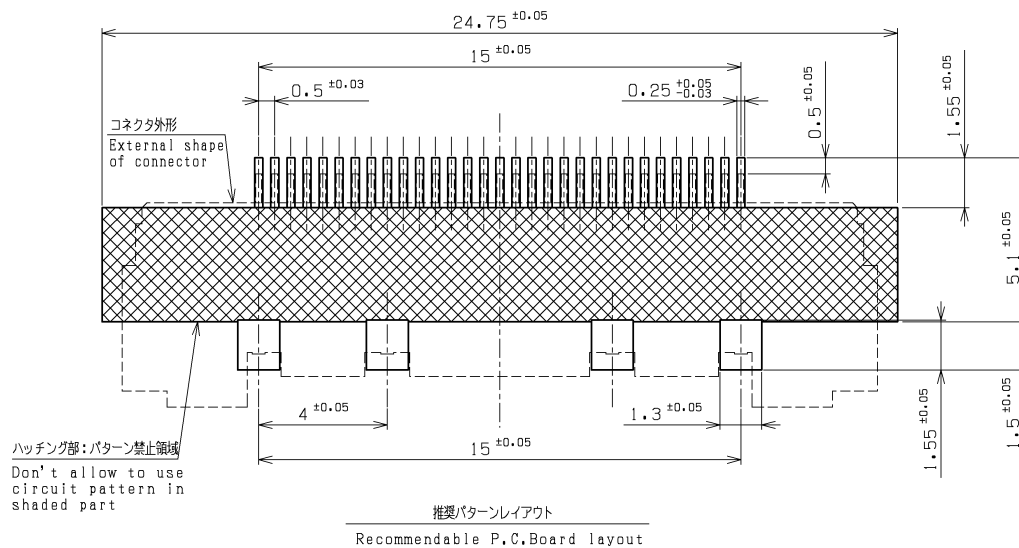
Item	Rated value
Applicable FFC (See the attached drawings: KRD-51555, 51556)	Lead: Gold-plated copper foil Lead pitch: 0.5 ± 0.05 mm Lead width: 0.32 ± 0.03 mm Mating part thickness: $0.33 + 0.03/-0.01$ mm

4. PC Board Pattern Layout

We recommend using the following PC board pattern layout.

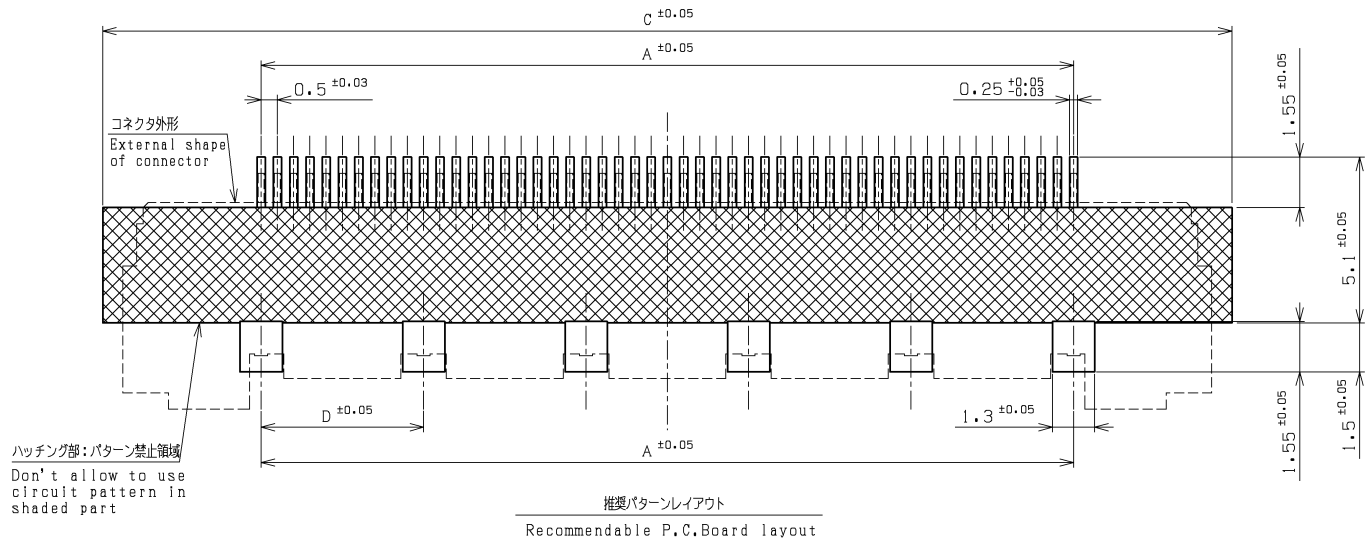
10, 15 and 20 circuits

Circuit No.	Dimension	
	A	C
10	4.5	14.25
15	7.0	16.75
20	9.5	19.25

31 circuits

41 and 51 circuits

Circuit No.	Dimension		
	A	C	D
41	20.0	29.75	4.0
51	25.0	34.75	5.0



5. Handling Method and Precautions

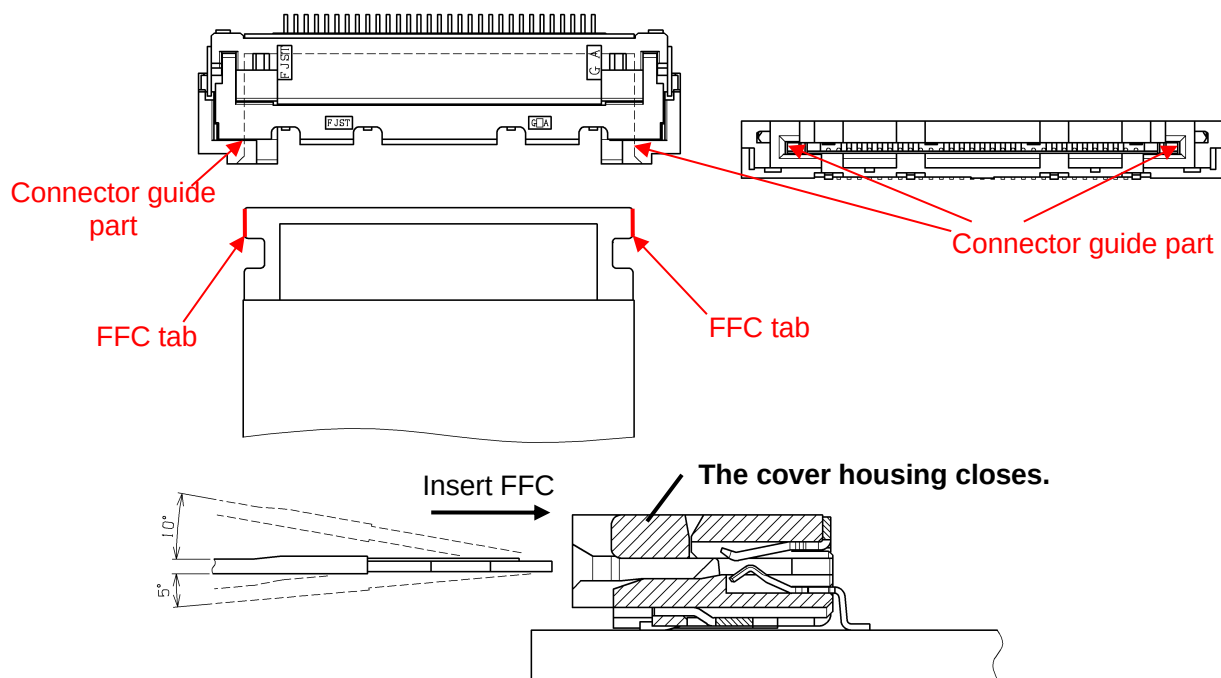
Insert and extract FFC in the connector, paying attention to the following points.

5-1 Inserting FFC

Turn the conductor part of FFC down and support the reinforcing plate of FFC. At that state, insert FFC in the connector until stopping, having FFC tab go along the connector guide part. The cover housing should be closed during inserting FFC.

Point:

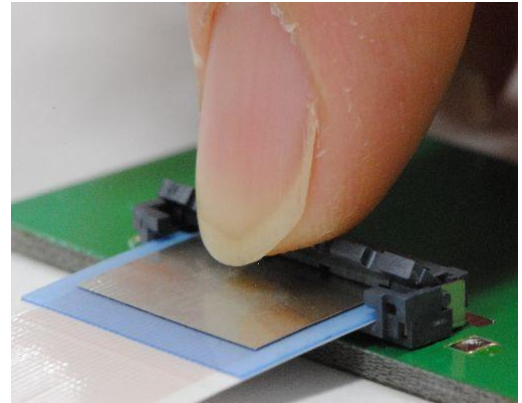
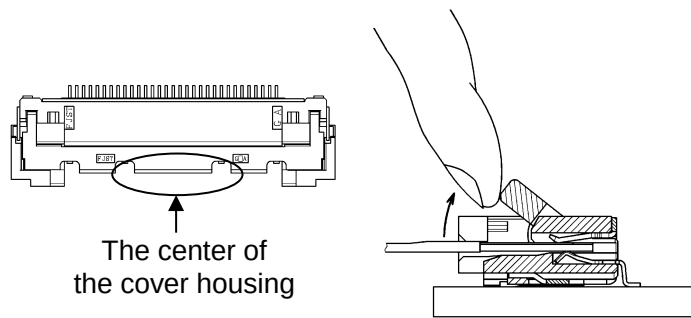
If FFC is bent in pre-inserting, wire disconnection and breakage of FFC or deformation of the contact contacting area may be caused. Insert FFC in the connector as straightly as possible.



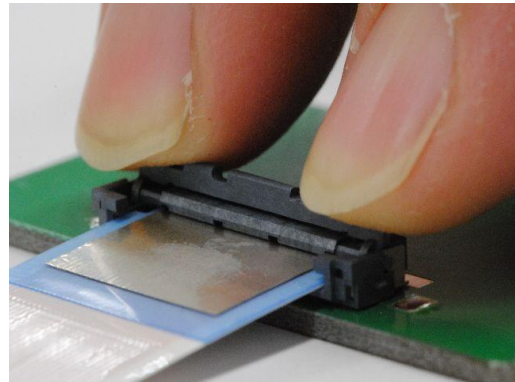
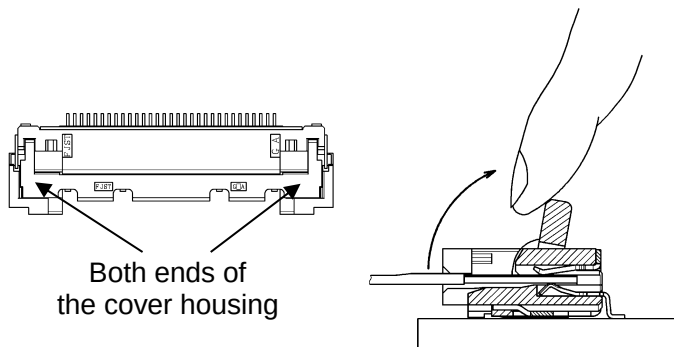
5-2 Extracting FFC

5-2-1 Opening the connector cover housing

Procedure 1: Putting your finger on the center of the cover housing, open the cover housing slowly in the direction shown by the arrow up to a part of the way.



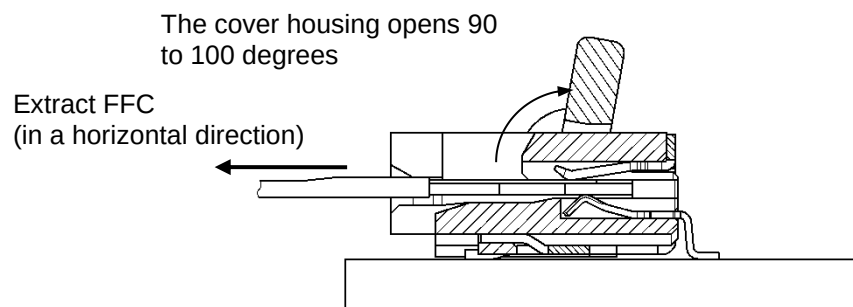
Procedure 2: After the cover housing opens some degrees, put your finger on the both ends of the cover housing as shown below and open it fully (90 to 100 degrees).



Point: The cover housing stops moving when it opens 90 to 100 degrees. If a large load applies to the cover housing to open it further, the breakage and the deformation of the cover housing may be caused.

5-2-2 Extracting FFC

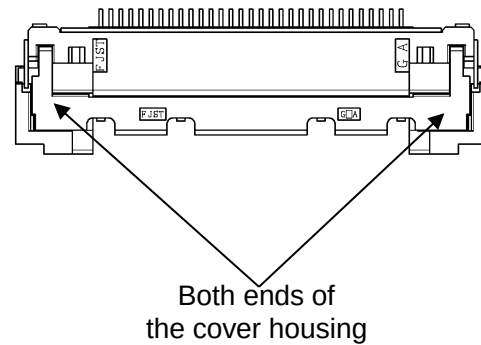
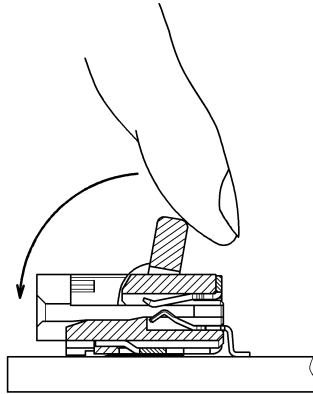
Extract FFC in a straight from the connector with opening the cover housing 90 to 100 degrees.



Point: Do not extract FFC without opening the cover housing fully, because FFC or the connector may break.

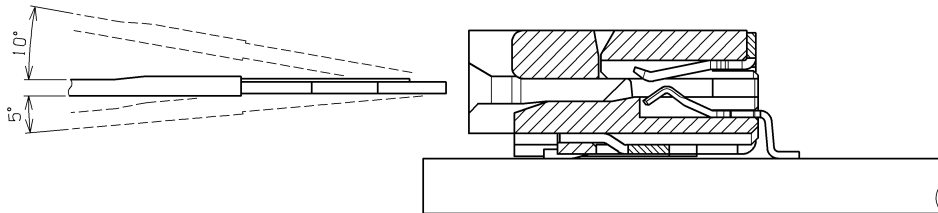
5-2-3 Closing the cover housing

Pushing the both ends of the cover housing in the direction shown by the arrow by your finger, close the cover housing.



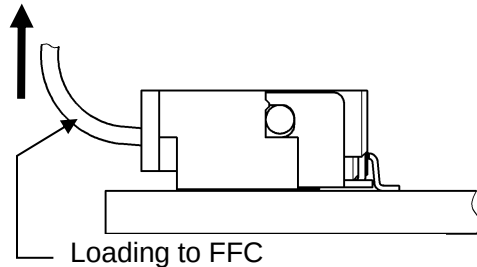
5-3 Inserting and extracting FFC

Do inserting and extracting operation of FFC along with the same axis as the connector.
If the operation along with the same axis is difficult, operate it as soon as possible at the angle within 10 degrees upward and 5 degrees downward.

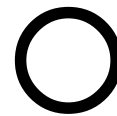
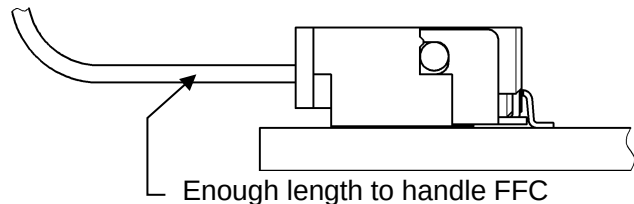


6. Handling of FFC after Mounting on PC Board

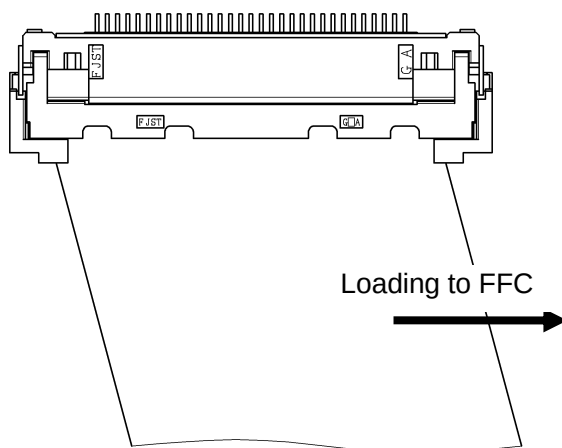
When the inserted FFC in the mounted connector on PC boards is handled, provide an enough FFC length not to apply any loads to the FCH connector. (Because such a problem as damages on FFC, connector breakage and electrical discontinuity, may be caused.)



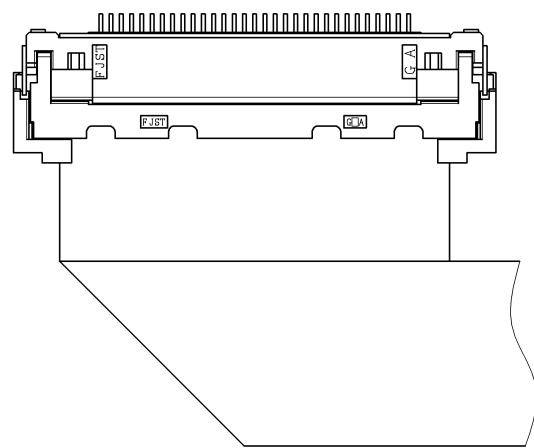
* FFC length is not enough to handle.



* FFC has enough length to handle.
Therefore, an upward load does not apply to the connector.



*A load applies to FFC.



* Forming processing is applied to FFC
not to apply any loads to the connector.

When a load is likely to apply to the joint between the connector and FFC by the movement of the movable part, such as the rotation part of an apparatus, poor contact may be caused at the contact area due to fretting corrosion. So, we ask for taking such a countermeasure as fixing FFC around the contact area.

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7. Soldering Operation

Pay attention to the following points when mounting the connector on PC boards.

7-1 Reflow soldering method

We recommend reflow soldering at the lower temperature than the temperature profile for reflow soldering described in item "Resistance to Soldering Heat" of the product specification. As the recommended reflow temperature varies depending on soldering material, such as solder paste, solder the connector according to the conditions of the material that you use.

Depending on the soldering condition, solder or flux wicking may be caused. Before soldering, make sure that soldering has no problem under your condition.

When bridge trouble appears in process of reflow soldering and repair is conducted by hand, strictly conduct item 7-2 "Solder iron method."

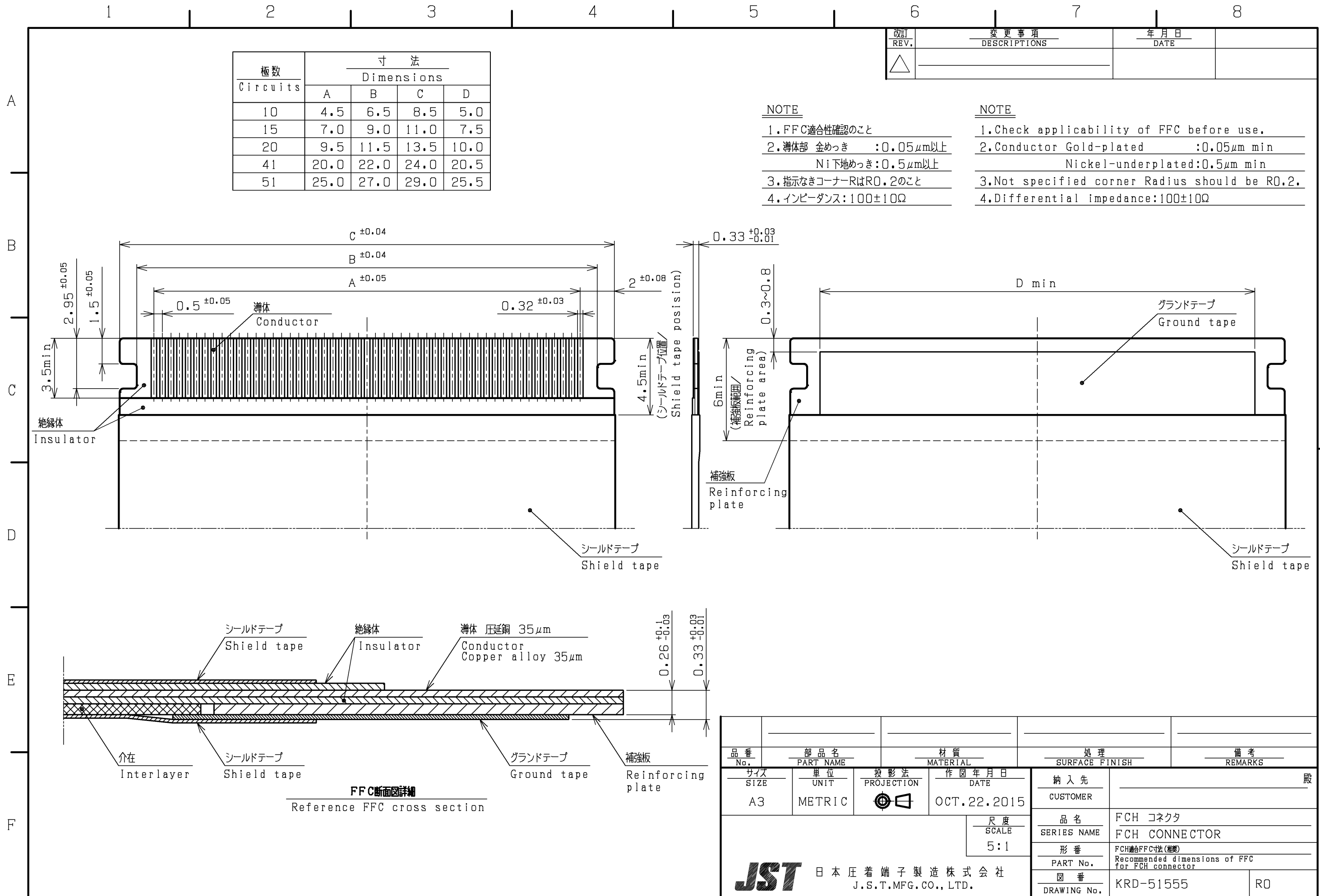
We recommend using 150μm-thick metal mask with the same size of the blanking part as the PC board land area.

7-2 Solder iron method

Solder the connector inserted in a PC board by using a soldering iron of 350°C quickly within 3 seconds. When soldering, do not press the soldering iron's tip on the connector contact lead part nor apply abnormal force such as lateral load. If such an abnormal load applied, dismount and change the connector, and conduct soldering again. Do not reuse the dismounted connector.

8. Others

- ① Each connector components are very delicate.
When operating the cover housing and inserting FFC, read the said precautions and handle with care.
- ② Once unpacked, ensure the connector is stored in the box until ready for use, because deformation, discoloration, and adhesion of foreign substances may appear due to external factors when leaving it expose to air.
- ③ Do not contaminate the connector with foreign substances, such as seasoning, fruit juice and detergents, because electrical discontinuity and poor soldering may be caused.
If contaminated, scrap the connector.
- ④ Never spray fumy insecticide (such as earth red and varsan) in the place where the connector is stored. Such spray adhered to the contact may cause electrical discontinuity and poor soldering. (These precautions are written in the handling manual for insecticide.)
Also, regarding insecticide other than fuming type one, do not spray it directly on the connector, since the same defect may appear.
When using insecticide, take precautions by taking the connector out of the room or putting them into a carton box and putting such a cover as plastic bag over the box.
- ⑤ Do not disassemble the connector or insert other than applicable lead, because electrical discontinuity may be caused.



A
B
C
D
E
F

1 2 3 4 5 6 7 8

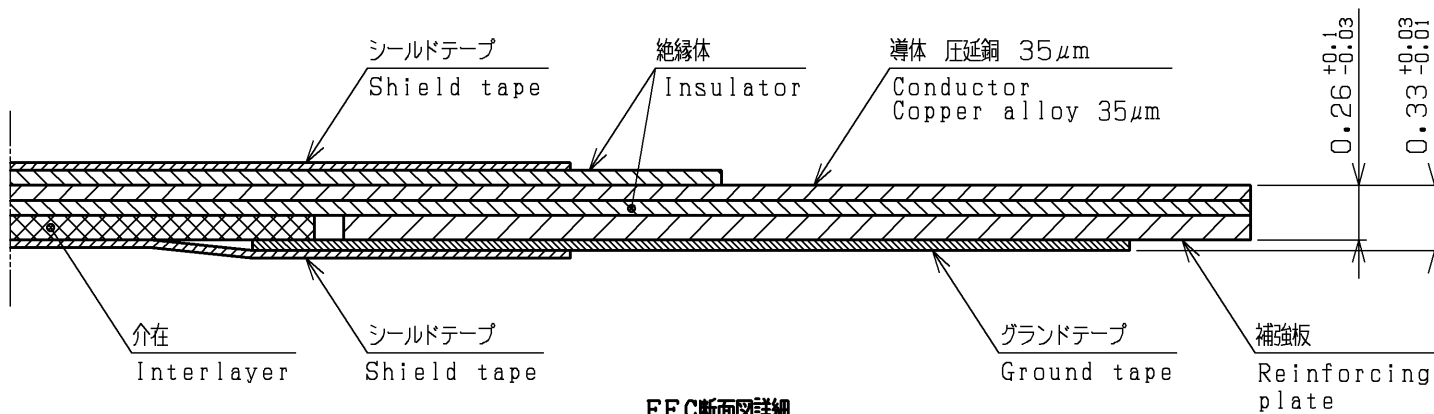
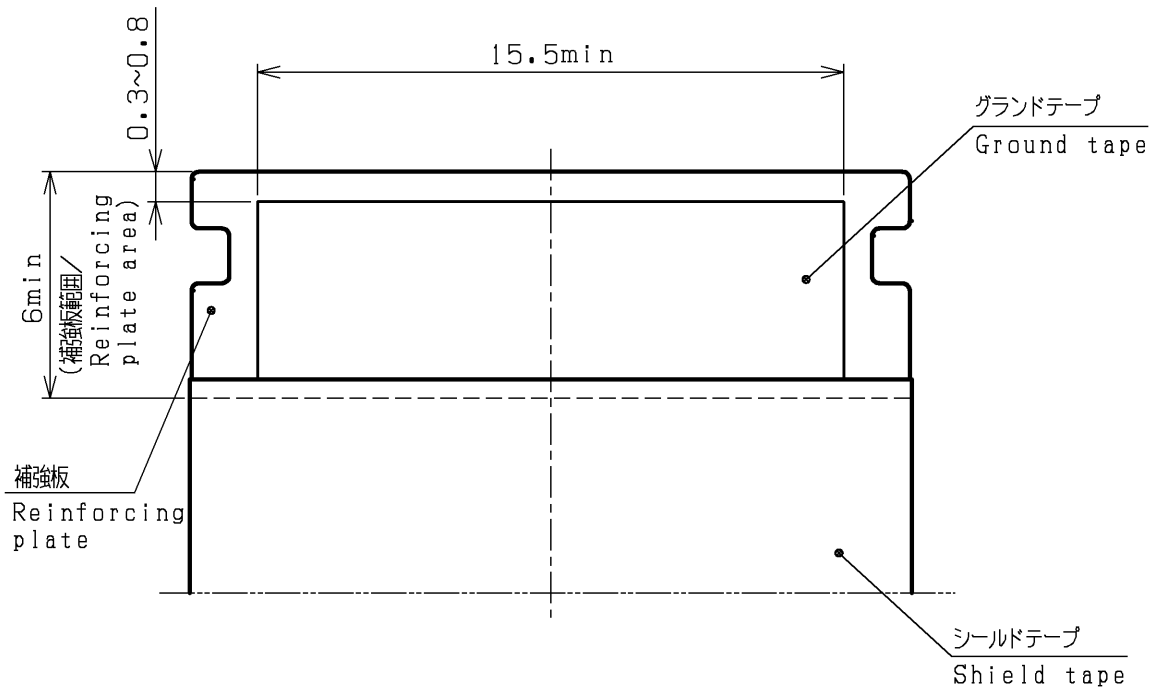
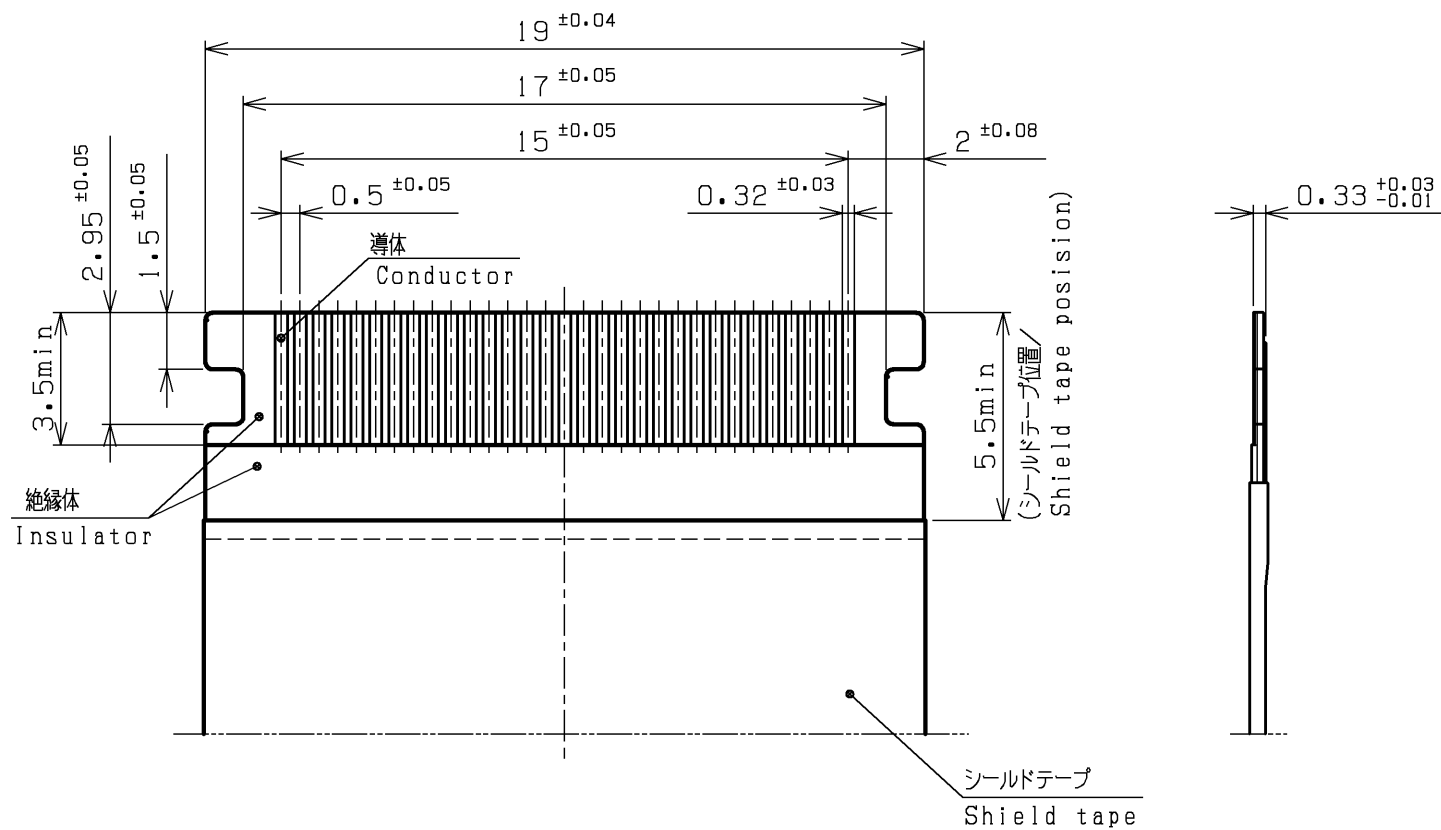
改訂 REV.	変更事項 DESCRIPTIONS	年月日 DATE	
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NOTE

1. FFC適合性確認のこと
2. 導体部 金めっき :0.05μm以上
Ni下地めっき:0.5μm以上
3. 指示なきコーナーRはR0.2のこと
4. インピーダンス:100Ω±10%

NOTE

1. Check applicability of FFC before use.
2. Conductor Gold-plated :0.05μm min
Nickel-underplated:0.5μm min
3. Not specified corner Radius should be R0.2.
4. Differential impedance:100Ω±10%



FFC断面図詳細
Reference FFC cross section

品番 No.	部品名 PART NAME	材質 MATERIAL	処理 SURFACE FINISH	備考 REMARKS
サイズ SIZE	単位 UNIT	投影法 PROJECTION	作図年月日 DATE	納入先 CUSTOMER
A3	METRIC		OCT.22.2015	
JST 日本圧着端子製造株式会社 J.S.T.MFG.CO.,LTD.				品名 SERIES NAME
				FCH コネクタ FCH CONNECTOR
				形番 PART No.
				FCH適合FFC寸法(推奨) 31種 Recommended dimensions of FFC for FCH connector 31-circuit
				図番 DRAWING No.
				KRD-51556
				RO

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