Title of Document:	HANDLING MANUAL	Issue No. CHM-1-2011	Rev. 8
Customer:	GENERAL	Issue date: November 7, 2002	
Title subject:	FLZX Connector (Embossed-Taping Product)	Revision date: February 6, 2023	

This manual describes important and required points of handling about the FLZX connector (embossed-taping product.)
Be sure to read this manual thoroughly before using the FLZX connector.

C O N T E N T S

Page

1. Model Number and Part Name 2
   1-1 Model number 2
   1-2 Part name 2
2. Storage 3
   2-1 Storing the connector 3
   2-2 Storing the processed products 3
3. Applicable FPC 3
4. PC Board Pattern Layout 4
5. Handling Precautions 4
   5-1 Insertion operation of FPC 4
      5-1-1 Opening the cover housing of the connector 4
      5-1-2 Inserting a FPC into the connector 5
      5-1-3 Closing the cover housing (Mating FPC with the FLZX connector) 5
   5-2 Releasing FPC 5
      5-2-1 Opening the cover housing of the connector 7
      5-2-2 Releasing a FPC 7
      5-2-3 Closing the cover housing of the connector 7
   5-3 Inserting and releasing a FPC 6
   5-4 Handling of a FPC after mounting the connector on PC boards 6
   5-5 Precautions for soldering operation 7
      5-5-1 Soldering iron method 7
      5-5-2 Reflow soldering method 7

1. Model Number and Part Name

1-1 Model number

Part name		Model No.
FLZX connector	Embossed-taping product	( )FLZX-RSM1-(∗1)-(∗2)-TB (LF)(SN)
	Loose piece product	( )FLZX-RSM1-(∗1)-(∗2) (LF)(SN)

Note$_1$: 2-digit figure in "( )" denotes the circuit number.
e.g.) 50FLZX-RSM1-A-TB: 50-circuit FLZX connector (embossed-taping product)

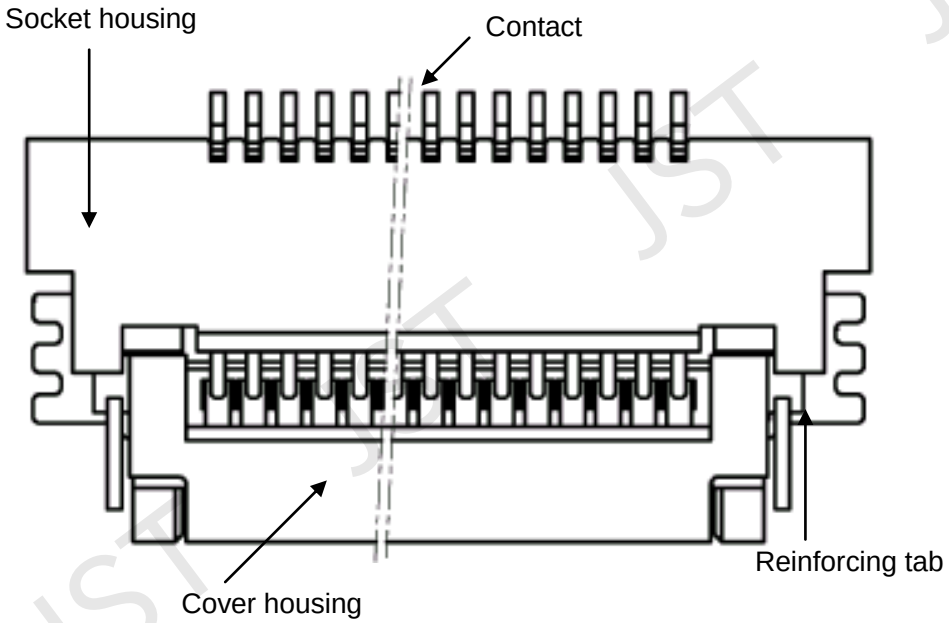
Note$_2$: Letters in "(∗1)" denote the configuration of the reinforcing tab.

Note$_3$: Letters in "(∗2)" denote the contact's plating specification.
Blank: Tin-plated
G: Gold-plated
GB: Selective gold-plated

Note$_4$: "(LF)(SN)" denotes lead-free products.

Note$_5$: FLZX connector is supplied on embossed-tape (2000 pcs./reel).

1-2 Part name



2. Storage

2-1 Storing the connector

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), dusty place and condensation.

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 processed products 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 FPC

① The dimensions of FPC/FFC greatly affect the contacting reliability with the connector.
Follow the dimensions of applicable FPC/FFC shown in the drawing.

② Especially, narrow pitch connectors like this connector have a high possibility to come off the contact point due to warpage, deformation, slant insertion, insufficient insertion and so on of FPC/FFC.
In order to reduce these risks, manage that the important dimensions such as conductor width, length, pitch, FPC/FFC total width, position misalignment between conductors and FPC/FFC width shall meet the given tolerances, considering the variations of those dimensions.

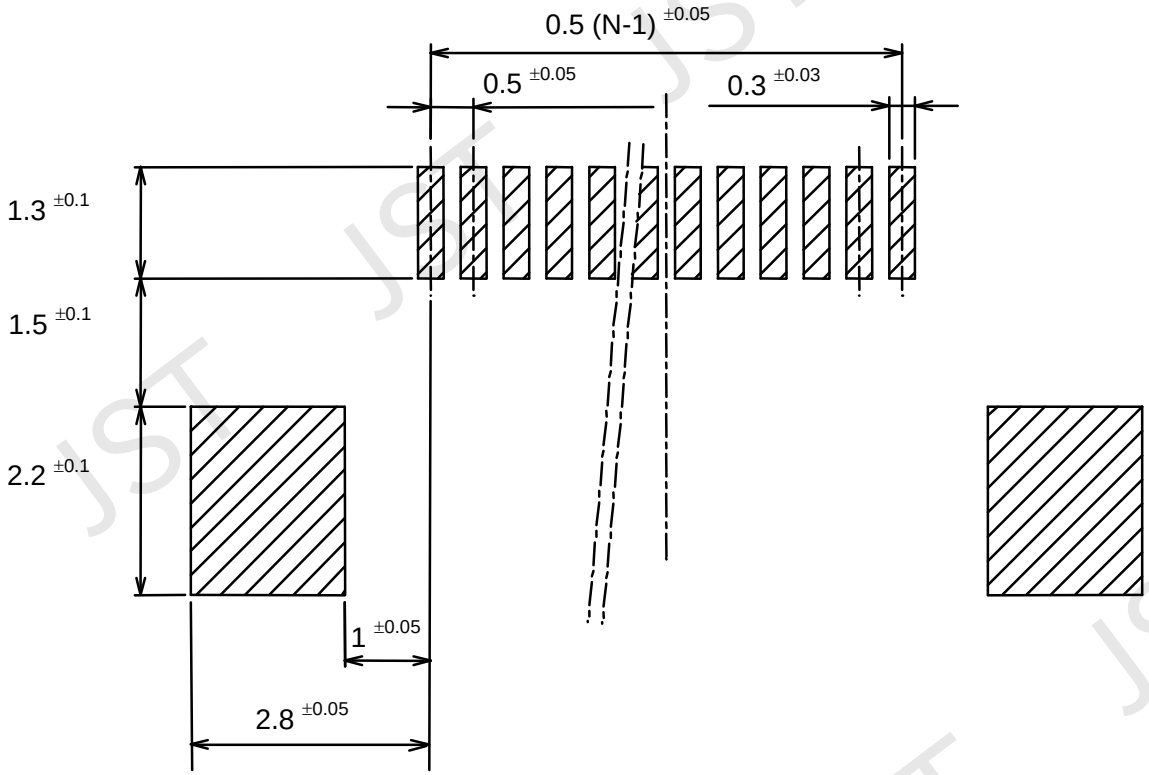
③ Remember to confirm the applicability of the connector with the FPC/FFC used, before using.
FPC, which applicability is not confirmed, might not be able to guarantee the performance.

④ The blanking of FPC/FFC shall be conducted from the conductor side toward the reinforcing plate side.
In case of using FPC, the material of the reinforcing plate should be polyimide and that of the adhesive should be thermosetting.

Item	Rated value
Applicable FPC/FFC Refer to drawing (No.: KRD-31621-2, KRD-28565-3)	Lead:Tin-plating/Gold-plating Lead pitch:0.5 mm Lead width:0.35 mm Mating part thickness:0.30 ±0.03 mm Material of reinforcing plate:Polyimide Adhesive:Thermosetting adhesive

4. PC Board Pattern Layout

We recommend the following PC board pattern layout.



PC board pattern layout

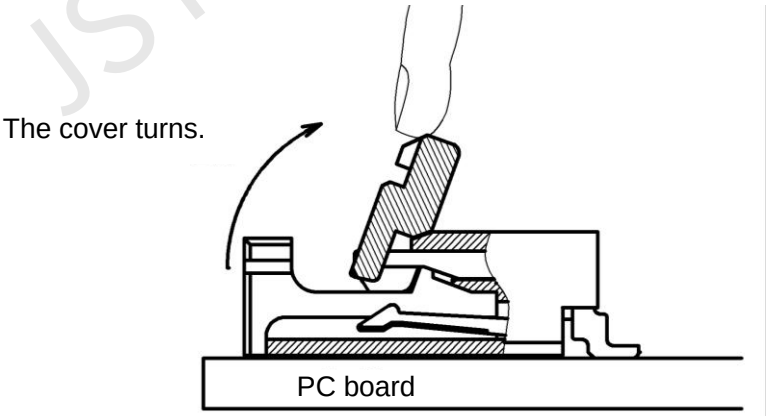
5. Handling Precautions

5-1 Insertion operation of FPC

5-1-1 Opening the connector's cover housing

Put your finger on the center part of the cover housing, and open it upward in the direction of the arrow.

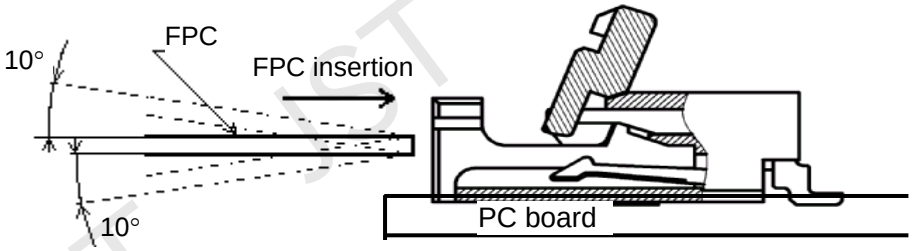
Note$_6$: The cover housing opens 110 degrees at the maximum.
Do not open the cover housing more than 110 degrees by force, because it may be broken.



5-1-2 Inserting a FPC into the connector

Turn the FPC lead part down, and while supporting the reinforcing board of the FPC by hand, insert the FPC into the backmost of the connector.

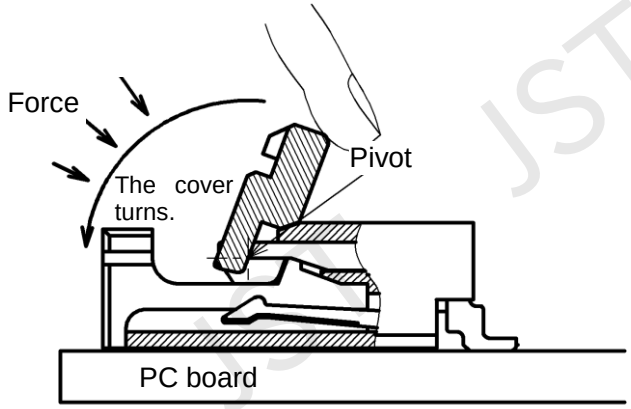
Note$_7$: If the FPC is inserted into connector while bending from the condition that the FPC is temporarily inserted, the FPC may be broken.
Insert the FPC in the connector as straightly as possible.



5-1-3 Closing the cover housing (Mating FPC with the FLZX connector)

Push both ends of the cover housing with your finger and close the cover housing, applying force to the pivot of the cover housing as shown in the figure below.

Note$_8$: We recommend putting your finger on the lock parts of the both sides to push them in closing the cover housing.



5-2 Releasing a FPC

5-2-1 Opening the cover housing of the connector

Operate it according to the same procedure as in item 5-1-1.

5-2-2 Releasing a FPC

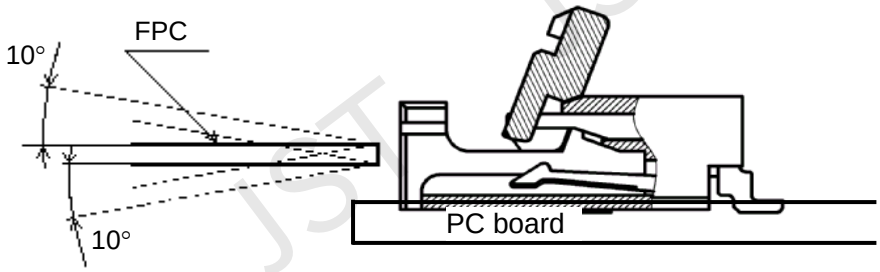
Release a FPC horizontally.

5-2-3 Closing the cover housing of the connector

Operate it according to the same procedure as in item 5-1-3.

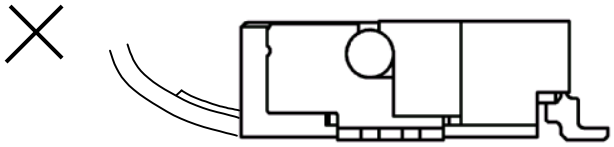
5-3 Inserting and releasing a FPC

Conduct the insertion and withdrawal operation of FPC with the connector on the same axis.
When the operation on the same axis is difficult, do it swiftly within 10 degrees to each up and down and right and left direction.

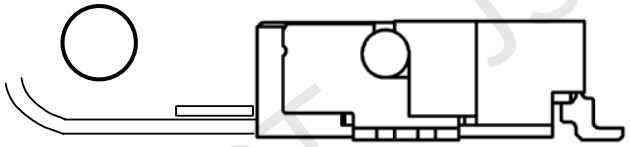


5-4 Handling of a FPC after mounting the connector on PC boards

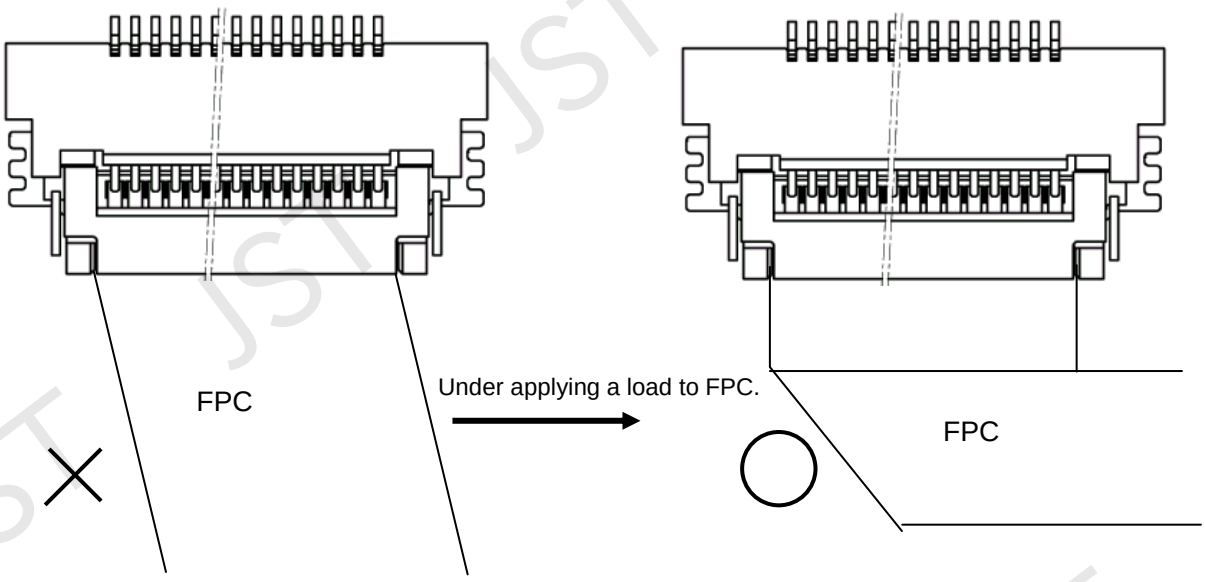
When the FPC is handled after the connector is mounted on a PC board and FPC is inserted, keep the FPC length enough not to apply a load to the FLZX connector.
(Because such a problem as damage on FPC, the breakage and electrical discontinuity of the connector may be caused.)



※ FPC length is not sufficient to handle.



※ FPC length is sufficient to handle;
an upward load is not applied to the connector.



※A load is applied to FPC.

※ Forming processing is conducted to FPC
to apply no load to the connector.

5-5 Precautions for soldering operation

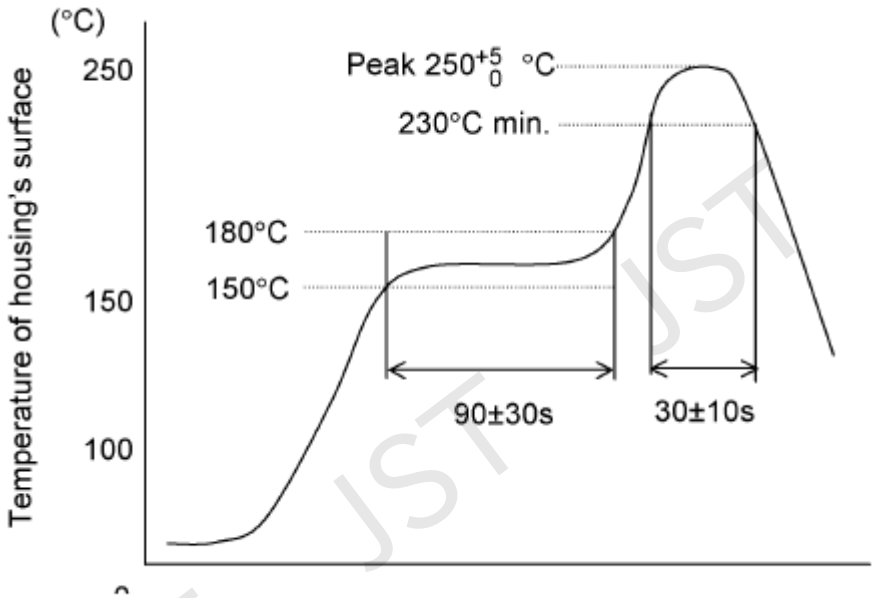
5-5-1 Soldering iron method

Solder the connector mounted on a PC board by a soldering iron of 350°C quickly within 3 seconds, and check the appearance visually.
We request you to observe the following notes.
When soldering, do not push the iron tip on the connector contact lead part nor apply an abnormal force such as lateral load. If done, dismount and replace the connector with the new one, and redo soldering.
Do not reuse the dismounted connector.

5-5-2 Reflow soldering method

We recommend reflow soldering at a lower temperature than the temperature profile shown below. As the recommended reflow temperature condition varies depending on the materials, such as solder paste, solder the connector according to the condition of the material.

We recommend using 0.10 to 0.12 mm-thick metal masks which area of the blanking part is 100% same as pattern size on PC boards.
In case that the metal mask thickness is more than 0.12 mm, adjust the amount (area) of soldering coat by making the opening area smaller than the PC board pad area.

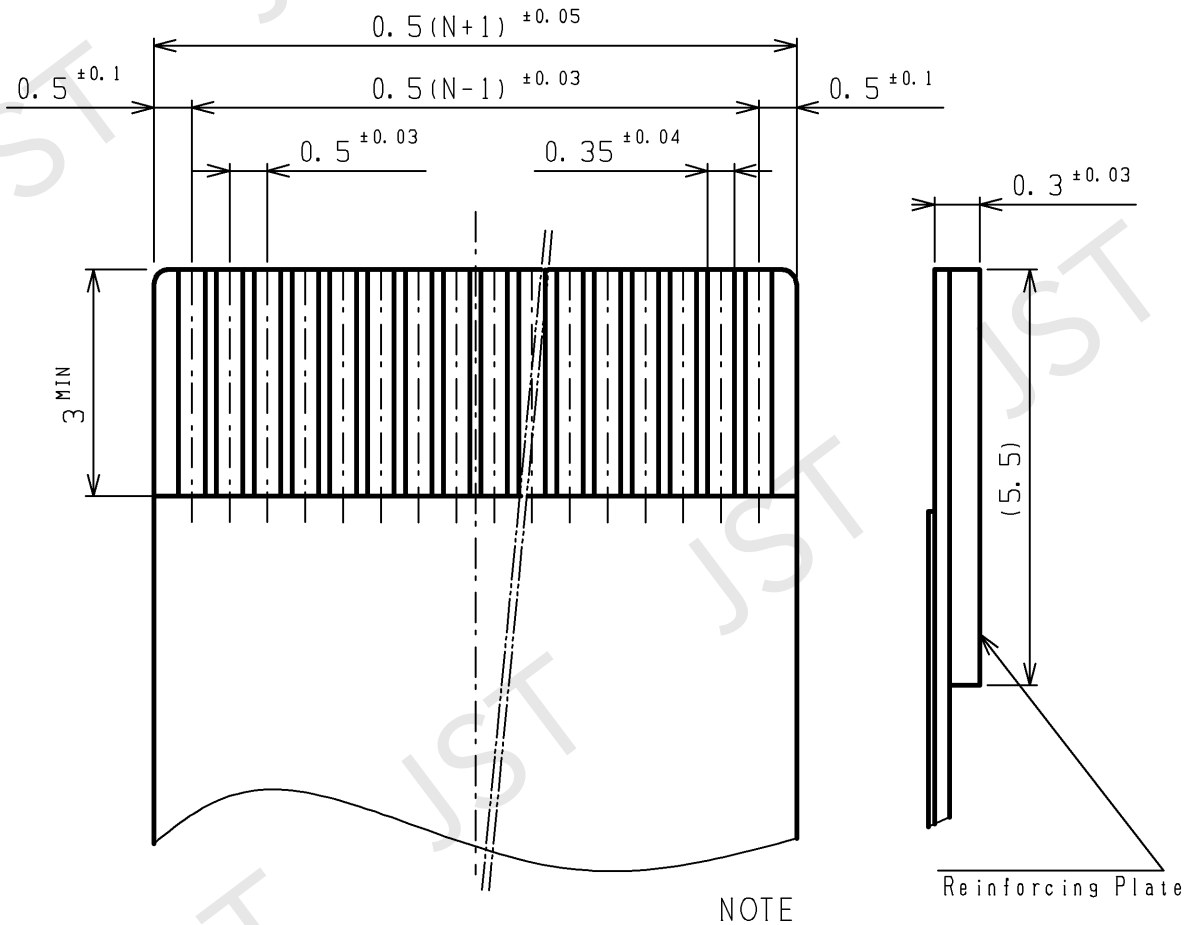


[Temperature profile for reflow soldering]

REV.	DESCRIPTION	DATE	0
1	Drawing format changed.	JAN. 10. 2023	

Applicable FPC Composition

1. Base:Polyimide(25μm)
2. Conductor rolled coppper:35μm
3. Cover lay:Polyimide(25μm)
4. Reinforcing Plate:Polyimide(175μm)
5. Adhesive area:Thermosetting adhesive(45μm)
6. Tin-Plated:(2~10μm)
7. The plating method is the thing of electrolysis plating.
8. Blanking shall be conducted in the direction from conductor side to reinforcing plate side.



NOTE

1) Confirm an applicability of FPC with connector.
2) N:Number of circuit.

No.	PART NAME	MATERIAL	SURFACE FINISH	REMARKS

SIZE	UNIT	SCALE	PROJECTION	DATE
A4	METRIC	10:1		JAN. 31. 2013

CUSTOMER

SERIES NAME	Applicable FPC for 0.5mm pitch FLZX connector
PART No.	
DRAWING No.	KRD-31621-2 R1

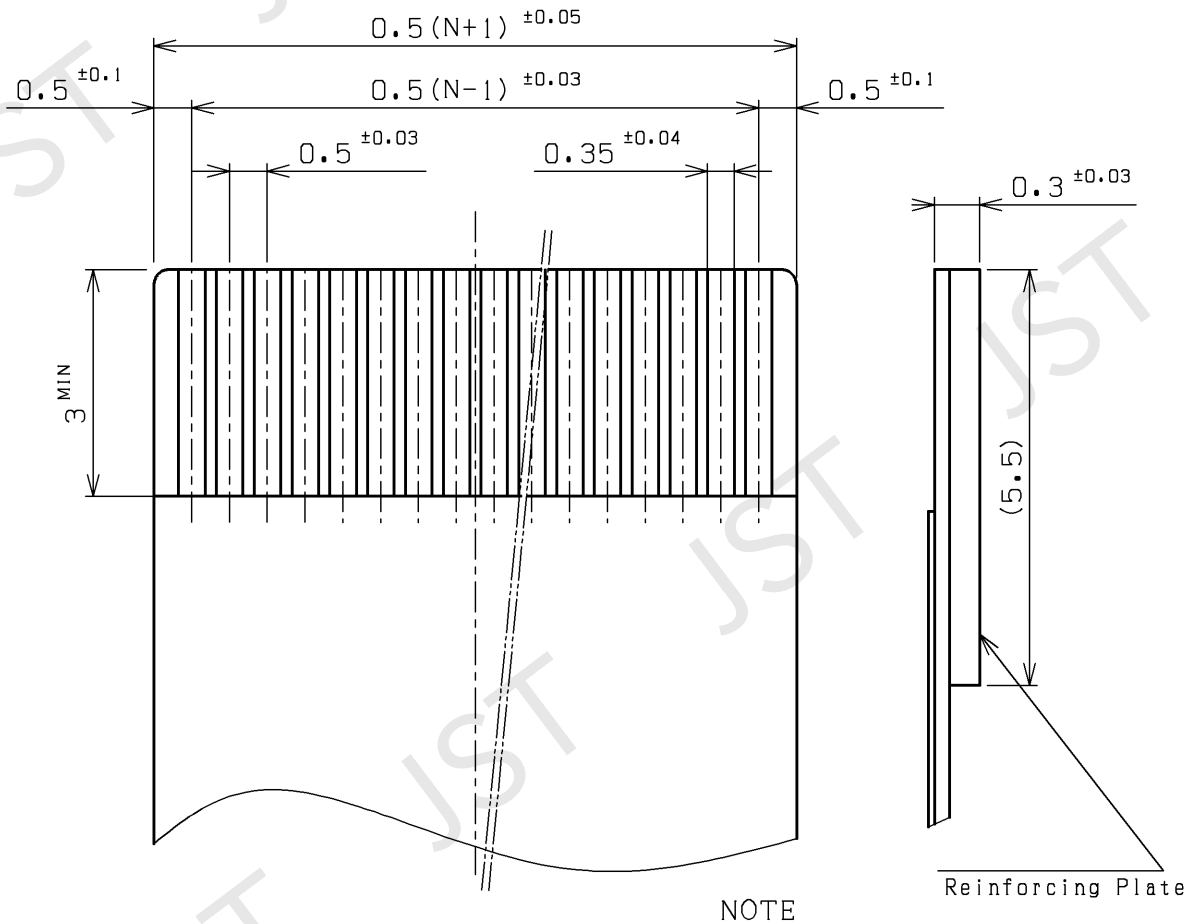
J. S. T. MFG. CO., LTD

EC4118-4
20230209J311264

REV.	DESCRIPTION	DATE	0
1	Drawing format changed.	FEB. 5.2020	

Applicable FPC Composition

1. Base:Polyimide(25μm)
2. Conductor rolled coppper:35μm
3. Cover lay:Polyimide(25μm)
4. Reinforcing Plate:Polyimide(175μm)
5. Adhesive area:Thermosetting adhesive(45μm)
6. Plating:Nickel under plated:(3~9μm)
   Gold plated:(0.03~0.09μm)
7. The plating method is the thing of electrolysis plating
8. Blanking shall be conducted in the direction from conductor side to reinforcing plate side.



NOTE

1) Confirm an applicability of FPC with connector.
2) N:Number of circuit.

No.	PART NAME	MATERIAL	SURFACE FINISH	REMARKS

SIZE	UNIT	SCALE	PROJECTION	DATE
A4	METRIC	10:1		JAN.15.2007

CUSTOMER

SERIES NAME	Applicable FPC for 0.5mm pitch FLZX connector
PART No.	
DRAWING No.	KRD-28565-3 R1

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