JST	J.S.T. Mfg. Co., Ltd.	Pag	je 1/8	
<b>T</b> (1) ( <b>D</b>		Issue No.	Rev.	
Litle of Document:	HANDLING MANUAL	CHM-1-2083	4	
Customor		Issue date:		
Customer.		June 12, 2003		
Title aubient:	ELT Connector (Embassed Toping Dreduct)	Revision date:		
The subject:	FET Connector (Embossed-Taping Product)	April 10, 2020		

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

# <u>CONTENTS</u>

		Page
1.	Model Number and Part Name	.2
	1-1 Model number	.2
	1-2 Part name	.2
2.	Storage	.3
	2-1 Connector storage	.3
	2-2 Storage of the crimped contacts	.3
3.	Applicable FPC	.4
4.	PC Board Pattern Layout	.5
5.	Handling Precautions	.6
6.	Handling of FPC After Mounting Connector on PC Board	.7
7.	Precautions for Soldering	.8
	7-1 Solder iron method	.8
	7-1 Reflow soldering method	.8
8.	Handling Precautions	.8

20200414J104858

				(2,0
JST	Title subject:	FLT Connector	No.	CHM-1-2083

#### Model Number and Part Name 1.

### 1-1 Model number

	Part name	Model No.
	Embassed taking product	(*1)FLT-SM2-(*2)-(*3)-TB (LF)(SN)(M)
ELT connector	Embossed-taping product	(* <sub>1</sub> )FLT-SM3-(* <sub>2</sub> )-(* <sub>3</sub> )-TB(HF)(M)
FLT CONNECTOR	Loose piece product	(*1)FLT-SM2-(*2)-(*3) (LF)(SN)(M)
		(* <sub>1</sub> )FLT-SM3-(* <sub>2</sub> )-(* <sub>3</sub> )(HF)(M)

Note<sub>1</sub>: Figures in " $(*_1)$ " denotes the circuit number. e.g.)

18FLT-SM2-TB (LF)(SN): 18-circuit FLT connector

(Embossed-taping/lead-free product)

(2/8

Note<sub>2</sub>: A letter in " $(*_2)$ " denotes the color and special symbol.

- A letter in " $(*_3)$ " denotes the plating specification. Note<sub>3</sub>:
- "(LF)(SN)(M)" denotes lead-free product and "(HF)(M)" denotes halogen-free product. Note<sub>4</sub>:
- FLT connector is supplied on embossed-tape (2500 pcs./reel). Note<sub>5</sub>:

1-2 Part name



Fig.-1: Each part name (connector)

				(3/8)
JST	Title subject:	FLT Connector	No.	CHM-1-2083

# 2. Storage

### 2-1 Connector storage

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.

#### 2-2 Storage of the crimped contacts

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.

				(4/0
JST	Title subject:	FLT Connector	No.	CHM-1-2083

3. Applicable FPC

Item		Rated value
	Lead:	Tin-plated (For tin-plated product)
		Gold-plated (For gold-plated product)
Applicable FPC	Lead pitch:	0.5 ±0.03 mm
	Lead width:	0.35 ±0.04 mm
	Mating part th	ickness: 0.3 ±0.05 mm

① The dimensions of FPC greatly affect the contacting reliability with the connector. Conform the dimensions of FPC 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 of the contact point due to warpage,

deformation, slant insertion, insufficient insertion and so on of FPC.

In order to reduce these risks, manage that the important dimensions such as conductor width, length, pitch, FPC total width, position misalignment between conductor and FPC width shall meet the given tolerances, considering the variations of those dimensions.

③ The above dimensions and structure are general condition. Confirm the applicability of the connector with the FPC used, before using.

FPC, which applicability is not confirmed, might not be able to guarantee the performance.

④ The blanking shall be conducted from the conductor side to the reinforcing plate side.

- S The material of the reinforcing plate should be polyimide.
- 6 Do not mate different kind of metal FPC from the connector.
- Adhesive should be thermosetting.



Fig.-2 Applicable lead (FPC)

				(5/8)
JST	Title subject:	FLT Connector	No.	CHM-1-2083

# 4. PC Board Pattern Layout

The following PC board pattern layout is recommended. Recommendable coating thickness for soldering:  $100 \sim 150 \ \mu m$ 



N=circuits

Fig.-3 PC board pattern layout

				(6/8)
JST	Title subject:	FLT Connector	No.	CHM-1-2083

# 5. Handling Precautions

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 15 degrees to each up-down or right-left direction.



				(7/0)
JST	Title subject:	FLT Connector	No.	CHM-1-2083

- 6. Handling of FPC after Mounting Connector on PC Board
  - Handle FPC not to apply a load to the connector by making an enough length. (Because the connector may break or cause electrical discontinuity.)
  - ② Need consideration for not moving and vibrating the contact area by fixing FPC when mounting the connector on something flexible including FPC.



※ Not enough length to handle FPC



 $\ensuremath{\overset{\scriptstyle\frown}{\times}}$  Applying a load to FPC



(7/0)

※ Enough length to handle FPC



\* Forming processing to FPC not to apply a load to the connector.

JST Title subject: FLT Connector No. CHM-1-2083					(0/0)
	JST	Title subject:	FLT Connector	No.	CHM-1-2083

## 7. Precautions for Soldering Operation

7-1 Solder 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.

(0/0)

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.

7-2 Reflow soldering method

We recommend reflow soldering at lower temperature than the o profile of reflow soldering described in item "Resistance to Soldering Heat" of the product specification.

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.

When bridge trouble appears in process of reflow soldering and repair is conducted by hand, strictly conduct item 7-1 "Solder iron method."

- 8. Handling Precautions
  - ① Be sure to keep the connector in the box, not leaving the connectors taken out of the carton box, because external factors may bring about the deformation, the discoloration, and adhesion of foreign matters.
  - ② Do not stain the connectors with household goods such as oils, detergent, seasoning and fruit juice to avoid electrical discontinuity or poor soldering. if stained, never use the stained connector.
  - ③ Never spray fuming insecticide such as earth red and varsan in the place where the connector is stored. Adhesion of such fuming insecticide may lead to electrical discontinuity or poor soldering. (These precautions are specifically written in the handling manual for insecticide.) Additionally, spraying even non-fuming insecticide directly to the connector may cause same defects. In case of using insecticide, give attention not to apply it to the connector by taking the connector outdoor or put it in the carton box and a cover such as plastic bags is put on the box.
  - ④ Do not disassemble the connector or insert inapplicable wire or other than wires, because electrical discontinuity may be caused.