



Title of Document:	<b>HANDLING MANUAL</b>	Issue No. CHM-1-2025	Rev. 2
Customer:	GENERAL	Issue date: August 19, 2002	
Title subject:	FMN Connector A Type (SMT Type)	Revision date: October 24, 2019	

This manual describes important and required points of handling about FMN connector A type (SMT type).  
Be sure to read this manual thoroughly before using FMN connector A type.

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## 1. Part Name and Model Number

Part name		Lead arrangement		Model No.
FMN connector	Top entry type	In-line	Normal type	(* <sub>1</sub> )FMN-BM(* <sub>2</sub> )-A (LF)(SN)
			Reverse type	(* <sub>1</sub> )FMN-BM(* <sub>2</sub> )R-A (LF)(SN)
		Staggered	Normal type	(* <sub>1</sub> )FMN-BM(* <sub>2</sub> )TN-A (LF)(SN)
			Reverse type	(* <sub>1</sub> )FMN-BM(* <sub>2</sub> )TR-A (LF)(SN)
	Side entry type	In-line	With bosses	(* <sub>1</sub> )FMN-SM(* <sub>2</sub> )-A (LF)(SN)

Note 1: Number of circuits is indicated in (\*<sub>1</sub>).

Note 2: Plating specification of contact is indicated in “(\*<sub>2</sub>)”.

T: Tin plating

G: Gold plating

GB: Selective gold plating

Note 3: Ending identification marking “(LF)(SN)” stands for purified lead-free product.

Note 4: FMN connector is supplied on embossed-tape.

(1,000 pcs./reel for top entry type, 2,000 pcs./reel for side entry type).

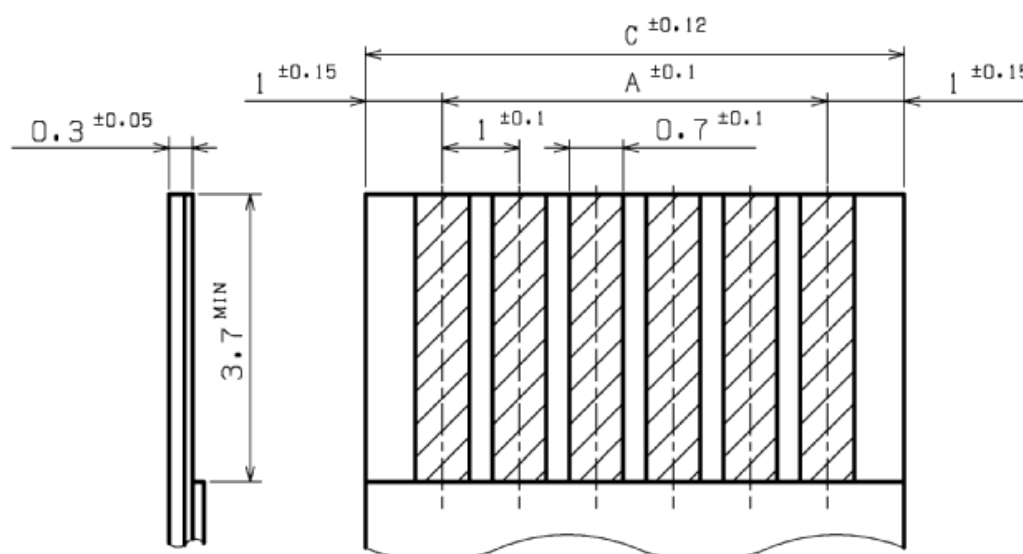
## 2. Applicable FFC

- ① Dimensions of FFC greatly affect to the contacting reliability with connector.  
Conform the dimensions of FFC with those of applicable ones described in drawing.
- ② Confirm the applicability of the connector with the FFC used, before use.  
FFC, which applicability is not confirmed, might not be able to guarantee the performance.

Item	
Applicable FFC	Conductor: Tin-plated copper wire or gold-plated copper wire Each dimension: As shown in below.

	Dimensions
A	(N-1) ±0.1
C	(N+1) ±0.12

N = Circuits



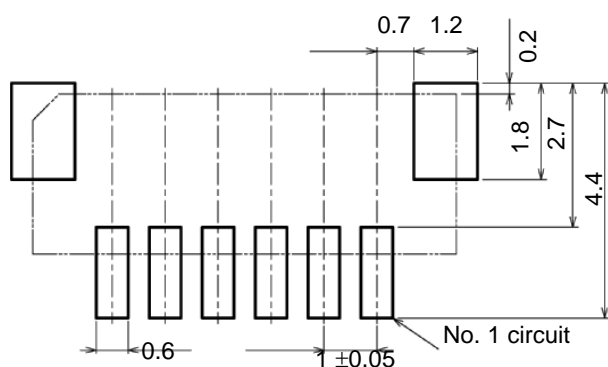
Recommended dimensions for applicable FFC

## 3. PC Board Pattern Layout

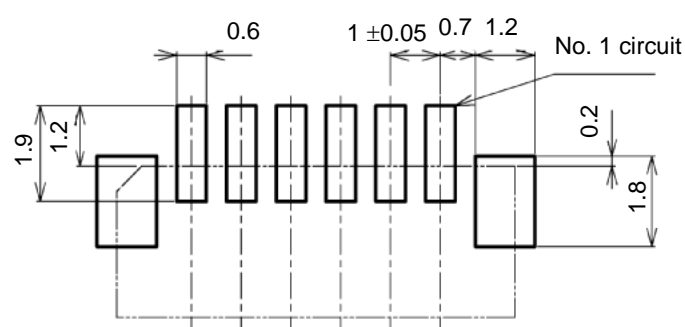
The following PC board pattern layout (viewed from component side) is recommended.

## ① Top entry type, In-line

• (\*<sub>1</sub>)FMN-BM(\*<sub>2</sub>)-A (LF)(SN)

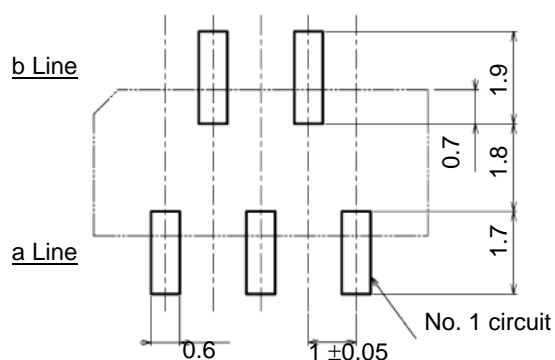


• (\*<sub>1</sub>)FMN-BM(\*<sub>2</sub>)R-A (LF)(SN)

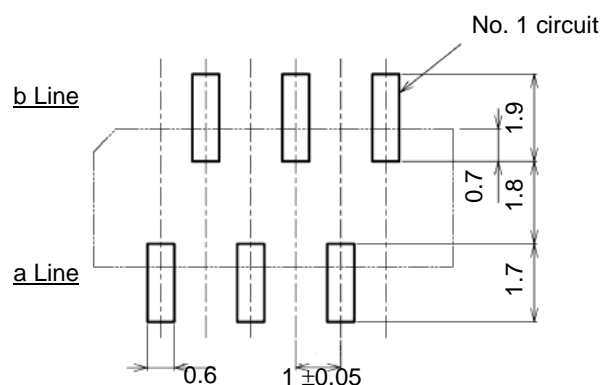


## ② Top entry type, Staggered

• (\*<sub>1</sub>)FMN-BM(\*<sub>2</sub>)TN-A (LF)(SN)

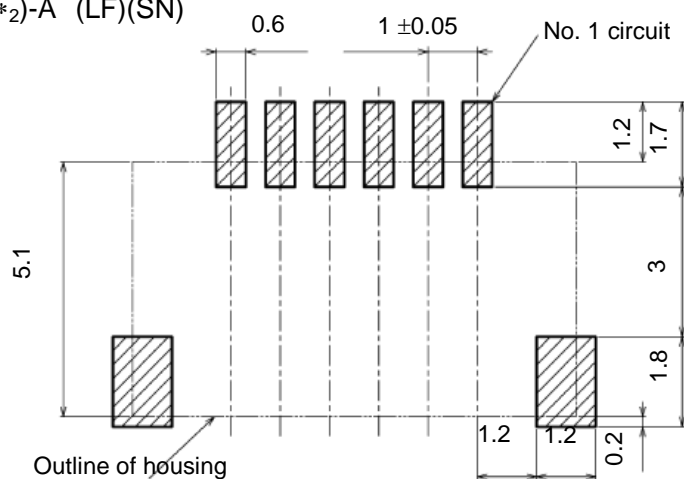


• (\*<sub>1</sub>)FMN-BM(\*<sub>2</sub>)TR-A (LF)(SN)



## ③ Side entry type, In-line

• (\*<sub>1</sub>)FMN-SM(\*<sub>2</sub>)-A (LF)(SN)



## 4. Handling Precautions

### 4-1 Mounting connector on PC board

Note the following points for mounting connector on PC board.

#### ① Soldering iron method

When soldering by soldering iron or modification are conducted, use iron with temperature of 350°C at the tip of soldering iron quickly within 3 seconds.

Do not apply external force to connector by pressing soldering iron tip on contact solder tail.

If done, dismount and change connector, and conduct soldering again.

Do not reuse dismounted connector.

#### ② Reflow soldering method

Reflow soldering by lower temperature profile than that of described in item "Resistance to Soldering Heat" of product specification is recommended, though recommended reflow temperature condition varies depending on solder paste to be used.

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

#### Note

Considering handling of this connector in mating operation, tenacious heat-resistant resin is used for this connector. But 'blister' may generate on the outer surface of the housing during the process of reflow soldering, depending on the condition of moisture absorption of the housing and the condition of reflow soldering.

This 'blister' does not cause the physical property change of PA resin. If the appearance is a concern, blister can be inhibited when predrying is carried out under the following conditions before use (reflow soldering).

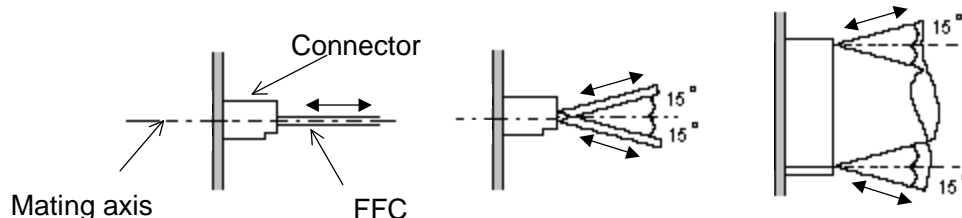
Dry conditions : 50 to 55°C, More than 20 hours(With embossed-reel)

※Product after such processing, Please use it as soon as possible.

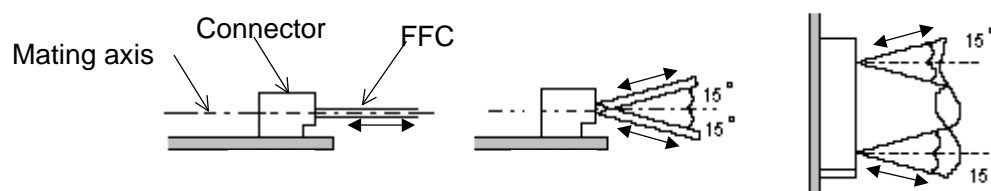
### 4-2 Inserting and releasing FFC

Inserting and releasing operations with FMN connector and FFC shall be conducted on the same axis. When the operation on same axis is difficult, conduct smooth operation within 15 degrees against to the mating axis as below.

e.g.: In the case of top entry type



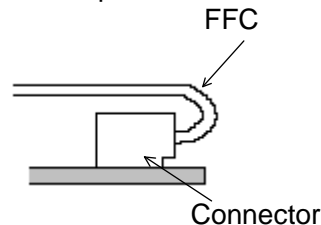
e.g.: In the case of side entry type



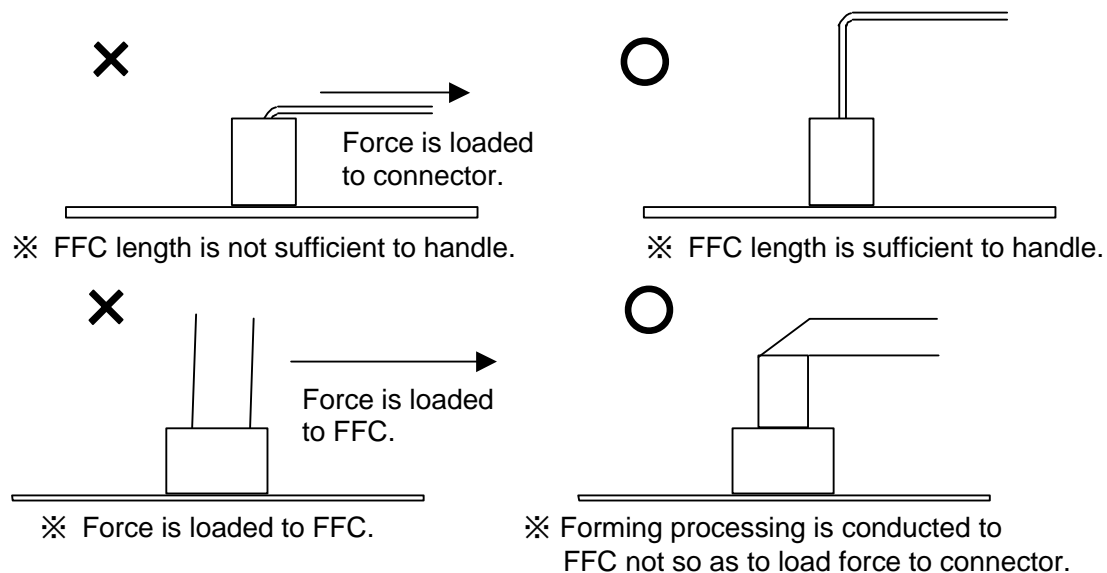
## 4-3 Handling of FFC after mounting on PC board

When inserted FFC is handled, following operation is required so that tension is not applied to FFC, or FFC does not move within a connector due to sliding.

- ① Do not handle FFC as below in order to prevent connector from lifting and breaking.

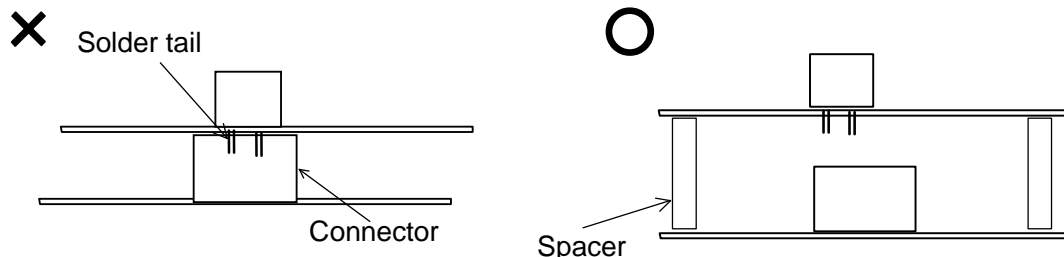


- ② When inserted FFC is handled, provide sufficient FFC length so that force is not loaded to connector, because such loading may cause damage and discontinuity of connector.



## 4-4 Handling precautions after mounting on PC board

- ① Do not hook a finger, etc. on connector mounted on PC board during transportation, because such handling may damage solder tail part.
- ② When PC boards are piled up after connector mounting (FFC not inserted), the tip of solder tail protruding from upper PC board may enter connector, and it may break connector contacting part.  
Do not stack PC board with connector mounted.  
If required, be sure to apply sufficient space between PC boards by using spacer, etc.



- ③ Never insert different type of pin into connector, because it may cause breakage of connector contacting part.

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## 5. Storage

Keep FMN connector (embossed-taping product) in the following ambience.

Storage temperature	5 ~ 35°C
Relative humidity	60% max.

## 6. Others

- ① Keep connector free from direct sunshine, corrosive gas and dust.
- ② Do not leave connector taken out of carton box, because deformation, discoloration and adhesion of foreign matter may appear due to external factor. Store them in a carton box.
- ③ As adhesion of foreign matter such as seasoning, fruit juice, detergent, etc. may cause defective continuity and defective soldering. Pay careful attention and if stained, never use stained connector.
- ④ Never spray fumy insecticide in the place where connector is stored. Such spray adhered to contact may cause defective continuity and defective soldering. (These precautions are specifically written to handling manual of such insecticide.)  
Besides, regarding insecticide other than fumy one, do not spray it directly on connector, because same defective may appear.  
When using an insecticide, take out connector from storage area to outside, or put connector into a carton box and apply protection cover, such as a vinyl bag.
- ⑤ Do not disassemble connector or mate other things except header, because such handling may cause defective continuity.