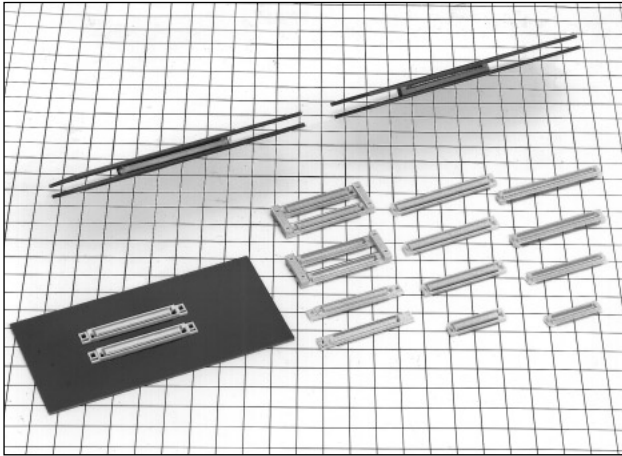


# 0.6mm Pitch Stacking Height 3mm to 16mm Connector

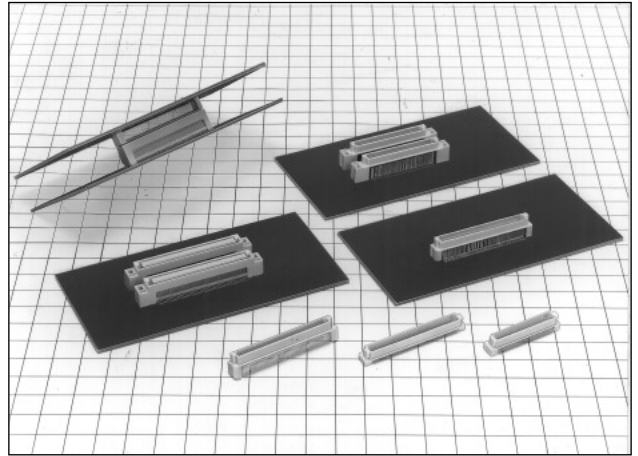
## FX8, FX8C Series

FX8 Series



Note that FX8 series and FX8C series are not mated with each other.

FX8C Series



### ■Features

#### 1. Stacking Height 3mm to 16mm available

The board to board stacking height can correspond to 3mm~16mm.

#### 2. SMT Coplanarity

The coplanarity of the SMT solder area lead is maintained at the high accuracy of less than 0.1mm.

#### 3. Mating Guide

The very small and guide rib is provided, and secures  $\pm 0.6\text{mm}$  self-alignment, considering the mating operativity into accounts.

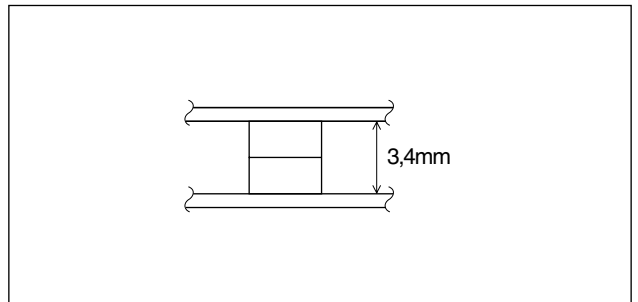
#### 4. Mis-insertion Prevention

The boss prevents mis-insertion in the board to cause due to the boss position and boss diameter.

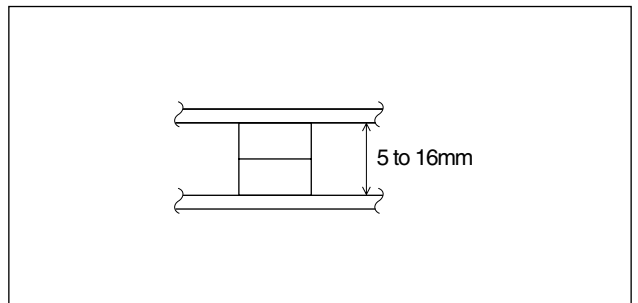
#### 5. Two-piece Connection Product

In order to enhance the mating reliability for the fine pitch connector using two-pieces, the two-pieces of connectors are combined by our unique method, and can secure the mount position accuracy. In such a new concept, the two-piece connected product is prepared at every number of contacts (The standard mating pitch for the two-piece interconnected product in two rows is 11mm.)

#### ●Stacking Height 3,4mm-FX8 Series



#### ●Stacking Height 5 to 16mm-FX8C Series



### ■Applications

Note pc, business equipments, which require miniaturization or light-weight

## FX8 Series

### Product Specifications

|        |                                               |                                                                                           |                                                                                       |
|--------|-----------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Rating | Current rating 0.4A<br>Voltage rating 100V AC | Operating Temperature Range -55°C to +85°C Note 1.<br>Operating Humidity Range 40% to 80% | Storage Temperature Range -10°C to +60°C Note 2.<br>Storage Humidity Range 40% to 70% |
|--------|-----------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|

| Item                             | Specification                                                            | Condition                                                                                                |
|----------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| 1. Insulation Resistance         | 1000M ohms min                                                           | 250V DC                                                                                                  |
| 2. Withstanding voltage          | No flashover or insulation breakdown.                                    | 300V AC/1 minute                                                                                         |
| 3. Contact Resistance            | 45m ohms max.                                                            | 100mA                                                                                                    |
| 4. Vibration                     | No electrical discontinuity of 1μs or more                               | Frequency: 10 to 55 Hz, single amplitude of 0.75 mm, 2 hours in each of the 3 directions.                |
| 5. Humidity (Steady state)       | Contact resistance: 55m ohms max.: Insulation resistance: 100M ohms min. | 96 hours at temperature of 40°C and humidity of 90% to 95%                                               |
| 6. Temperature Cycle             | Contact resistance: 55m ohms max.: Insulation resistance: 100M ohms min. | (-55°C: 30 minutes, 15 to 35°C: 2 to 3 minutes<br>85°C: 30 minutes, 15 to 35°C: 2 to 3 minutes) 5 cycles |
| 7. Durability (Mating/un-mating) | Contact resistance: 55m ohms max.                                        | 50 cycles                                                                                                |
| 8. Resistance to Soldering heat  | No deformation of components affecting performance.                      | Reflow: At the recommended temperature profile<br>Manual soldering: 300°C for 3 seconds                  |

Note 1: Includes temperature rise caused by current flow.

Note 2: The term "storage" refers to products stored for long period of time prior to mounting and use. Operating Temperature Range and Humidity range covers non conducting condition of installed connectors in storage, shipment or during transportation.

### Material

| Part               | Material        | Finish                    | Remarks                        |
|--------------------|-----------------|---------------------------|--------------------------------|
| Insulator          | PBS             | Light brown               | UL94V-0                        |
| Header Contact     | Phosphor bronze | Contact area<br>Lead area | Gold plated<br>Tin-lead plated |
| Receptacle Contact | Phosphor bronze | Contact area<br>Lead area | Gold plated                    |

Note : The black dots on the insulator will not affect performance.

### Ordering Information

#### Single Product

**FX8 - 120 P - SV 1 (22)**

① ② ③ ④ ⑤ ⑥

|                                               |                                                                                                    |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------|
| ① Series Name : FX8                           | ⑤ Product height variation None...Standard (Minimum low profile)                                   |
| ② Number of Contacts : 60, 80, 90, 120, 140   | 1 : +1mm                                                                                           |
| ③ Connector type P : Header<br>S : Receptacle | ⑥ Package Form                                                                                     |
| ④ Contact type SV : Board vertical type       | None : Tray package product<br>(21) : Tube packaging product<br>(22) : Emboss tape package product |

\*The embossed tape packaging product is prepared for all number of contacts, except for 140 contacts.

#### Two-pieces Connection Product

**FX8 - 120/120 P 11 - SV 1 J**

① ② ③ ④ ⑤ ⑥ ⑦

|                                                                                                   |                                                                             |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| ① Series Name : FX8                                                                               | ④ Connector to Connector Pitch                                              |
| ② Number of Contacts: 60×2, 80×2, 90×2,<br>100×2, 120×2, 140×2<br>Example: 120/120 = 240 contacts | ⑤ Contact type : SV...Board vertical type                                   |
| ③ Connector Type : P : Header<br>S : Receptacle                                                   | ⑥ Product height variation Blank:Standard (Minimum low profile)<br>1 : +1mm |
|                                                                                                   | ⑦ J: two-pieces connection product                                          |

\*The standard delivery packaging of the two-piece connection product is the tray packaging.

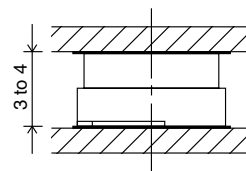
## ◆ Stacking Height Variation

### ● Single Product

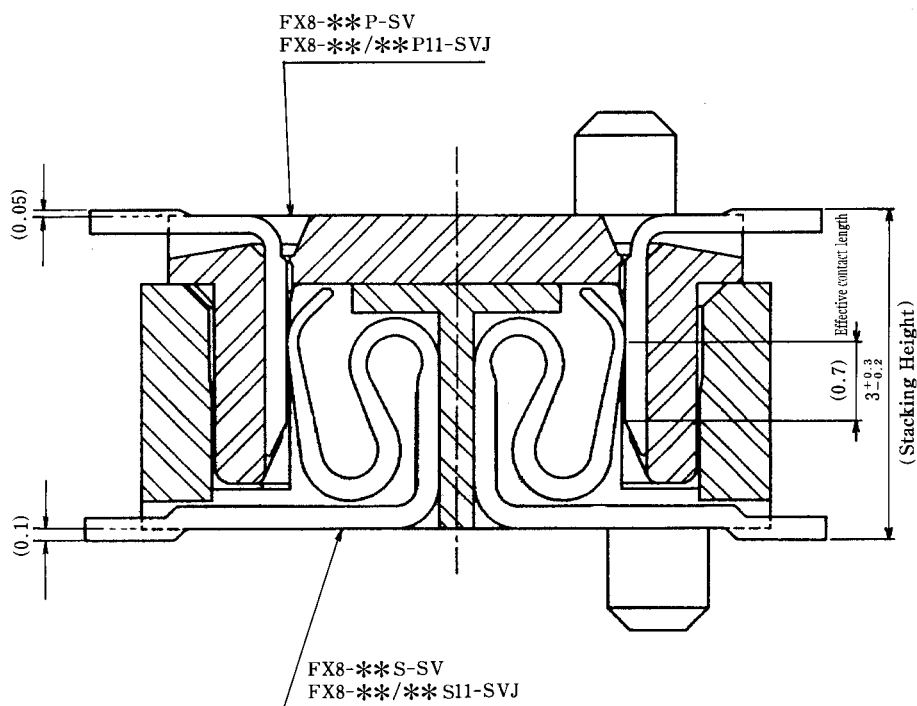
|             | FX8-**-P-SV | FX8-**-P-SV1 |
|-------------|-------------|--------------|
| FX8-**-S-SV | 3mm         | 4mm          |

### ● two-pieces Connection Product

|                  | FX8-**-**P11-SVJ | FX8-**-**P11-SV1J |
|------------------|------------------|-------------------|
| FX8-**-**S11-SVJ | 3mm              | 4mm               |

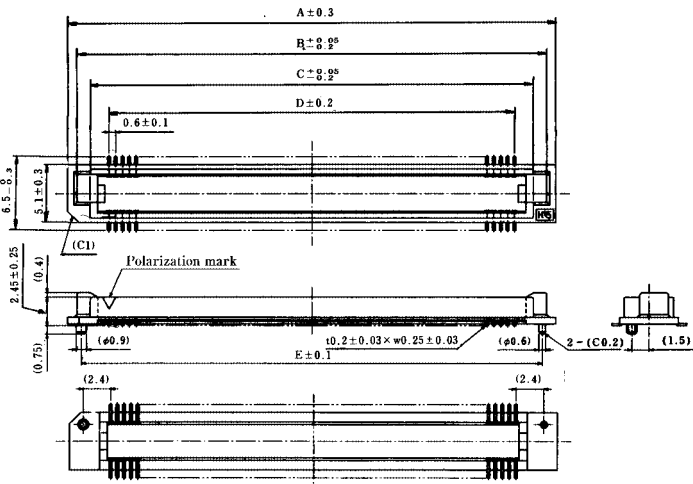
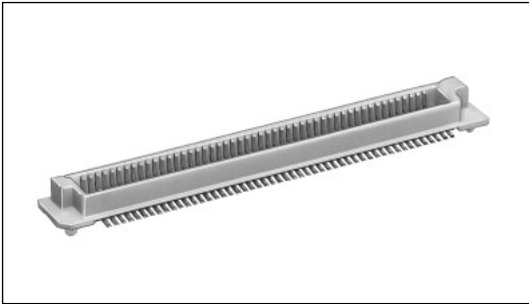


## ◆ Mating Sectional View



(The above illustration represents the stacking height 3mm type.)

# ■Header (Single Product) [FX8-\*\*\*P-SV]

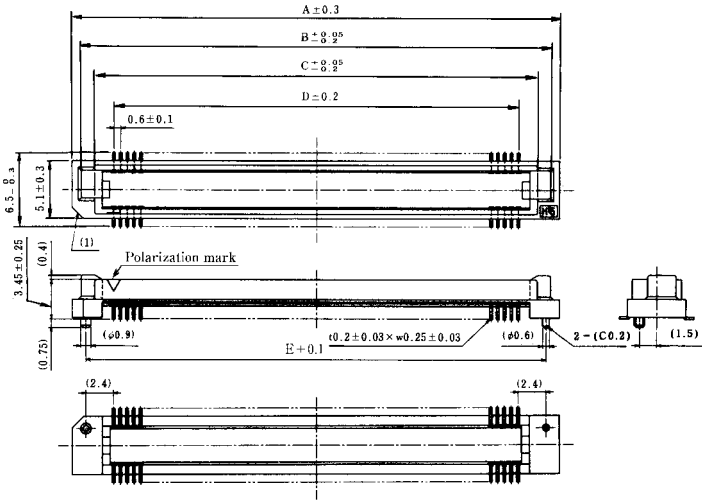
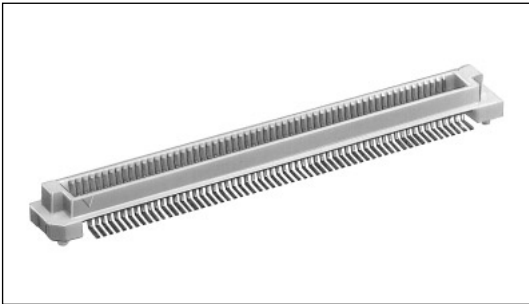


Unit: mm

| Part Number     | CL No.         | Number of Contacts | A     | B     | C     | D     | E     | Tube packaging Quantity (Pieces) |
|-----------------|----------------|--------------------|-------|-------|-------|-------|-------|----------------------------------|
| FX8- 60P-SV(**) | 578-0001-6-**- | 60                 | 24.60 | 23.00 | 20.70 | 17.40 | 22.20 | 21                               |
| FX8- 80P-SV(**) | 578-0003-1-**- | 80                 | 30.60 | 29.00 | 26.70 | 23.40 | 28.20 | 17                               |
| FX8- 90P-SV(**) | 578-0004-4-**- | 90                 | 33.60 | 32.00 | 29.70 | 26.40 | 31.20 | 15                               |
| FX8-100P-SV(**) | 578-0005-7-**- | 100                | 36.60 | 35.00 | 32.70 | 29.40 | 34.20 | 14                               |
| FX8-120P-SV(**) | 578-0006-0-**- | 120                | 42.60 | 41.00 | 38.70 | 35.40 | 40.20 | 12                               |
| FX8-140P-SV(**) | 578-0007-2-**- | 140                | 48.60 | 47.00 | 44.70 | 41.40 | 46.20 | 10                               |

\*\*None: Tray packaging product, 21: Tube packaging product, 22: Embossed tape packaging product  
 Note 1: To order the tube packaging product, determine a quantity for delivery,multiplying the tube packaging product by an integer.  
 Note 2: The embossed tape package product is prepared for all number of contacts, except for 140 contacts. In addition, the product will be procured by the reel unit at 1 reel = 1000 pieces. Please refer to the delivery form item on page A235 for details.

## [FX8-\*\*\*P-SV1]



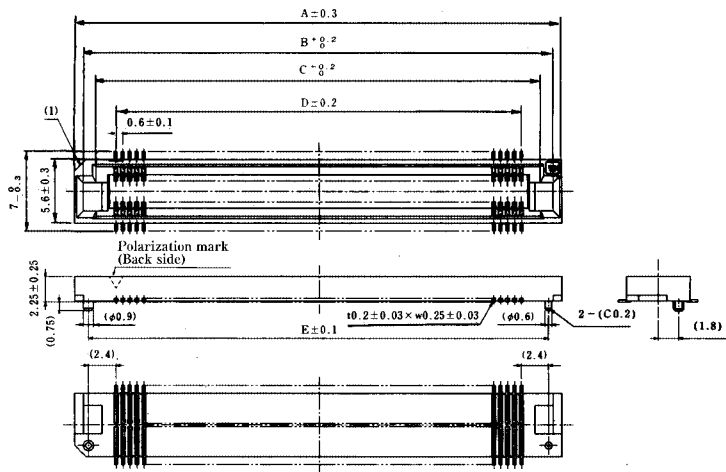
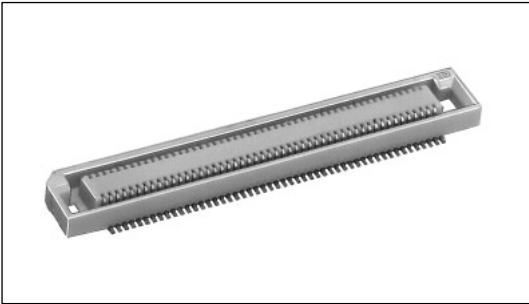
Unit: mm

| Part Number      | CL No.         | Number of Contacts | A     | B     | C     | D     | E     | Tube packaging Quantity (Pieces) |
|------------------|----------------|--------------------|-------|-------|-------|-------|-------|----------------------------------|
| FX8- 60P-SV1(**) | 578-0041-0-**- | 60                 | 24.60 | 23.00 | 20.70 | 17.40 | 22.20 | 21                               |
| FX8- 80P-SV1(**) | 578-0043-6-**- | 80                 | 30.60 | 29.00 | 26.70 | 23.40 | 28.20 | 17                               |
| FX8- 90P-SV1(**) | 578-0044-9-**- | 90                 | 33.60 | 32.00 | 29.70 | 26.40 | 31.20 | 15                               |
| FX8-100P-SV1(**) | 578-0045-1-**- | 100                | 36.60 | 35.00 | 32.70 | 29.40 | 34.20 | 14                               |
| FX8-120P-SV1(**) | 578-0046-4-**- | 120                | 42.60 | 41.00 | 38.70 | 35.40 | 40.20 | 12                               |
| FX8-140P-SV1(**) | 578-0047-7-**- | 140                | 48.60 | 47.00 | 44.70 | 41.40 | 46.20 | 10                               |

\*\*None: Tray packaging product, 21: Tube packaging product, 22: Embossed tape packaging product  
 Note 1: To order the tube packaging product, please determine a quantity for delivery,multiplying the tube package product by an integer.  
 Note 2: The embossed tape package product is prepared for the entire number of contacts, except for 140 contacts. In addition, the product will be sold by the reel unit when 1 reel = 1000 pieces. Please refer to the delivery form item on page A235 for details.

■Receptacle (Single Product)

[FX8-\*\*-S-SV]



Unit: mm

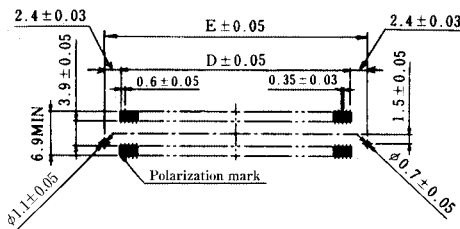
| Part Number     | CL No.         | Number of Contacts | A     | B     | C     | D     | E     | Tube packaging Quantity (Pieces) |
|-----------------|----------------|--------------------|-------|-------|-------|-------|-------|----------------------------------|
| FX8- 60S-SV(**) | 578-0201-5-**- | 60                 | 24.60 | 23.05 | 20.80 | 17.40 | 22.20 | 21                               |
| FX8- 80S-SV(**) | 578-0203-0-**- | 80                 | 30.60 | 29.05 | 26.80 | 23.40 | 28.20 | 17                               |
| FX8- 90S-SV(**) | 578-0204-3-**- | 90                 | 33.60 | 32.05 | 29.80 | 26.40 | 31.20 | 15                               |
| FX8-100S-SV(**) | 578-0205-6-**- | 100                | 36.60 | 35.05 | 32.80 | 29.40 | 34.20 | 14                               |
| FX8-120S-SV(**) | 578-0206-9-**- | 120                | 42.60 | 41.05 | 38.80 | 35.40 | 40.20 | 12                               |
| FX8-140S-SV(**) | 578-0207-1-**- | 140                | 48.60 | 47.05 | 44.80 | 41.40 | 46.20 | 10                               |

\*\*None: Tray packaging product, 21: Tube packaging product, 22: Embossed tape packageing product  
Note 1: To order the tube packaging product, determine a quantity for delivery,multiplying the tube packaging product by an integer.  
Note 2: 0The embossed tape package product is prepared for the entire number of contacts, except for 140 contacts. In addition, the product will be sold per reel when 1 reel = 1000 pieces. Please refer to the delivery form item on page A235 for details.

◆PCB mounting pattern

Header

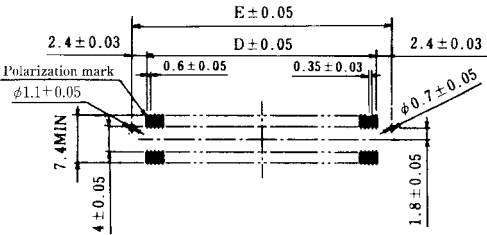
[FX8-\*\*-P-SV]  
[FX8-\*\*-P-SV1]



· Recommended metal mask thickness : t = 0.15mm

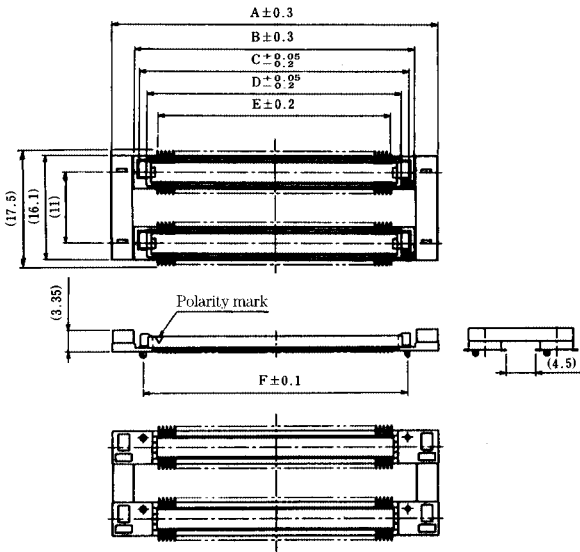
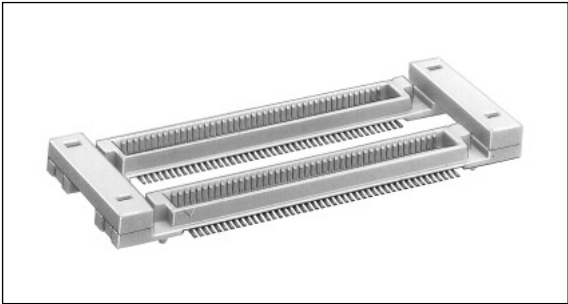
Receptacle

[FX8-\*\*-S-SV]



· Recommended metal mask thickness : t = 0.15mm  
· If the inside (the connector mounting lower side) of the SMT land isn't treated with the insulation tape and so on, the area is specified as a pattern prohibited area.

■Header (Two-piece Connection Product)  
 [FX8-\*\*/\*\*P11-SVJ]

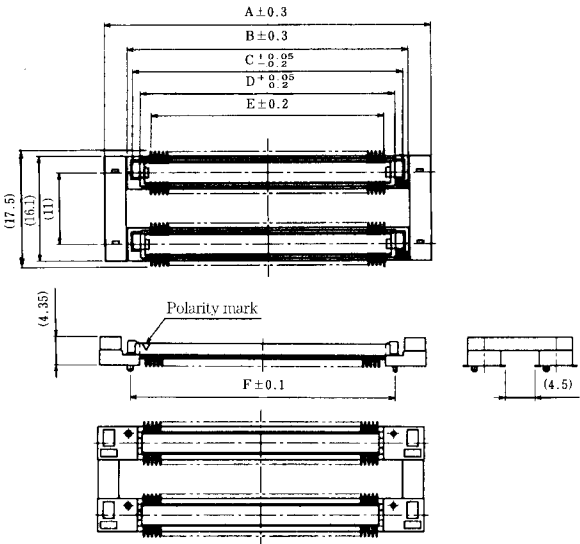
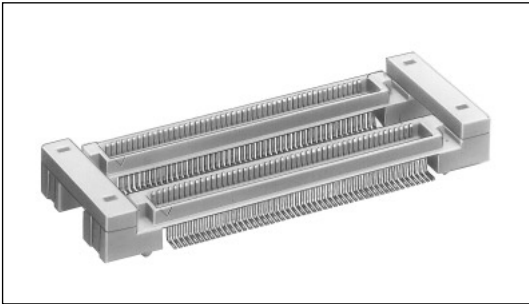


Unit: mm

| Part Number        | CL No.     | Number of Contacts | A     | B     | C     | D     | E     | F     |
|--------------------|------------|--------------------|-------|-------|-------|-------|-------|-------|
| FX8- 60/ 60P11-SVJ | 578-0101-0 | 60×2               | 31.70 | 24.70 | 23.00 | 20.70 | 17.40 | 22.20 |
| FX8- 80/ 80P11-SVJ | 578-0103-6 | 80×2               | 37.70 | 30.70 | 29.00 | 26.70 | 23.40 | 28.20 |
| FX8- 90/ 90P11-SVJ | 578-0104-9 | 90×2               | 40.70 | 33.70 | 32.00 | 29.70 | 26.40 | 31.20 |
| FX8-100/100P11-SVJ | 578-0105-1 | 100×2              | 43.70 | 36.70 | 35.00 | 32.70 | 29.40 | 34.20 |
| FX8-120/120P11-SVJ | 578-0106-4 | 120×2              | 49.70 | 42.70 | 41.00 | 38.70 | 35.40 | 40.20 |
| FX8-140/140P11-SVJ | 578-0107-7 | 140×2              | 55.70 | 48.70 | 47.00 | 44.70 | 41.40 | 46.20 |

Note : The two-piece connection product is packaged by tray.

[FX8-\*\*/\*\*P11-SVJ1J]



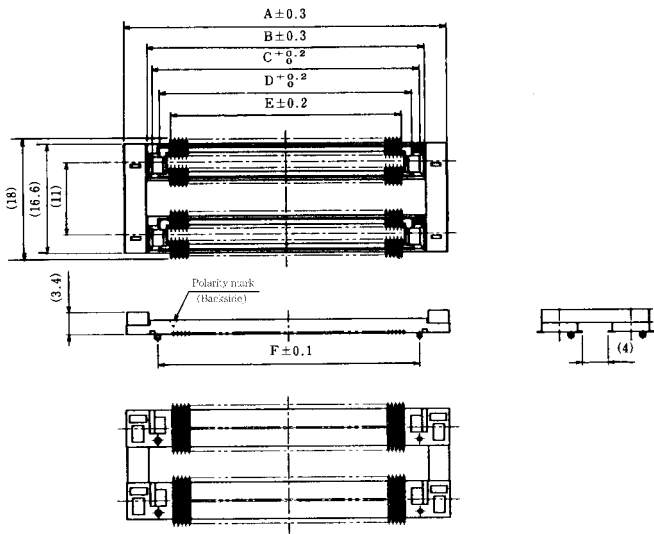
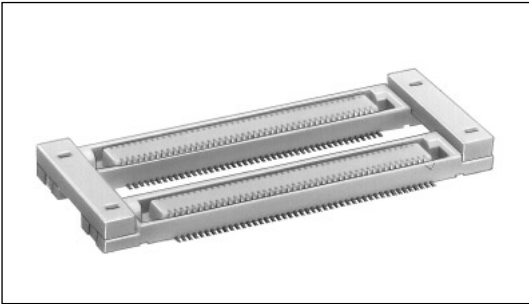
Unit: mm

| Part Number         | CL No.     | Number of Contacts | A     | B     | C     | D     | E     | F     |
|---------------------|------------|--------------------|-------|-------|-------|-------|-------|-------|
| FX8- 60/ 60P11-SV1J | 578-0141-5 | 60×2               | 31.70 | 24.70 | 23.00 | 20.70 | 17.40 | 22.20 |
| FX8- 80/ 80P11-SV1J | 578-0143-0 | 80×2               | 37.70 | 30.70 | 29.00 | 26.70 | 23.40 | 28.20 |
| FX8- 90/ 90P11-SV1J | 578-0144-3 | 90×2               | 40.70 | 33.70 | 32.00 | 29.70 | 26.40 | 31.20 |
| FX8-100/100P11-SV1J | 578-0145-6 | 100×2              | 43.70 | 36.70 | 35.00 | 32.70 | 29.40 | 34.20 |
| FX8-120/120P11-SV1J | 578-0146-9 | 120×2              | 49.70 | 42.70 | 41.00 | 38.70 | 35.40 | 40.20 |
| FX8-140/140P11-SV1J | 578-0147-1 | 140×2              | 55.70 | 48.70 | 47.00 | 44.70 | 41.40 | 46.20 |

Note : The two-piece product is packaged by tray.

# Receptacle (two-piece Connection Product)

[FX8-\*\*-\*\*P11-SVJ]



Unit: mm

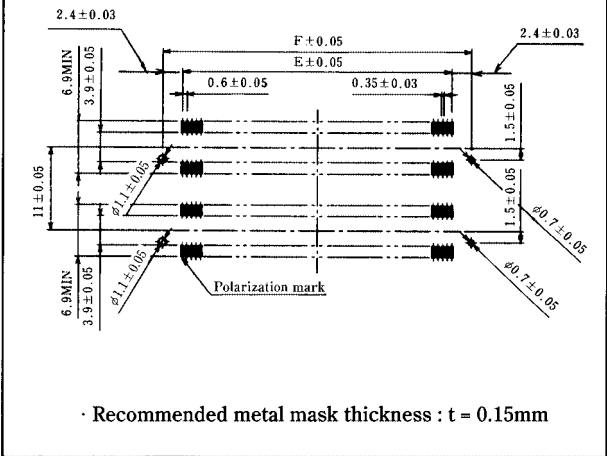
| Part Number        | CL No.     | Number of Contacts | A     | B     | C     | D     | E     | F     |
|--------------------|------------|--------------------|-------|-------|-------|-------|-------|-------|
| FX8- 60/ 60S11-SVJ | 578-0301-0 | 60×2               | 31.70 | 24.60 | 23.05 | 20.80 | 17.40 | 22.20 |
| FX8- 80/ 80S11-SVJ | 578-0303-5 | 80×2               | 37.70 | 30.60 | 29.05 | 26.80 | 23.40 | 28.20 |
| FX8- 90/ 90S11-SVJ | 578-0304-8 | 90×2               | 40.70 | 33.60 | 32.05 | 29.80 | 26.40 | 31.20 |
| FX8-100/100S11-SVJ | 578-0305-0 | 100×2              | 43.70 | 36.60 | 35.05 | 32.80 | 29.40 | 34.20 |
| FX8-120/120S11-SVJ | 578-0306-3 | 120×2              | 49.70 | 42.60 | 41.05 | 38.80 | 35.40 | 40.20 |
| FX8-140/140S11-SVJ | 578-0307-6 | 140×2              | 55.70 | 48.60 | 47.05 | 44.80 | 41.40 | 46.20 |

Note 1: The two-piece connection product is packaged by tray.

## PCB mounting pattern

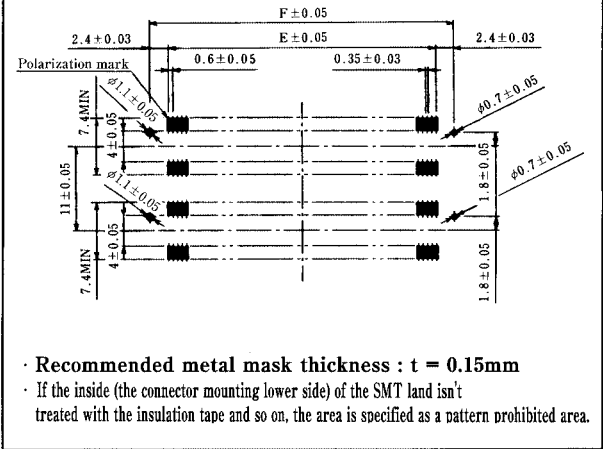
### Header

[FX8-\*\*-\*\*P11-SVJ]  
[FX8-\*\*-\*\*P11-SV1J]



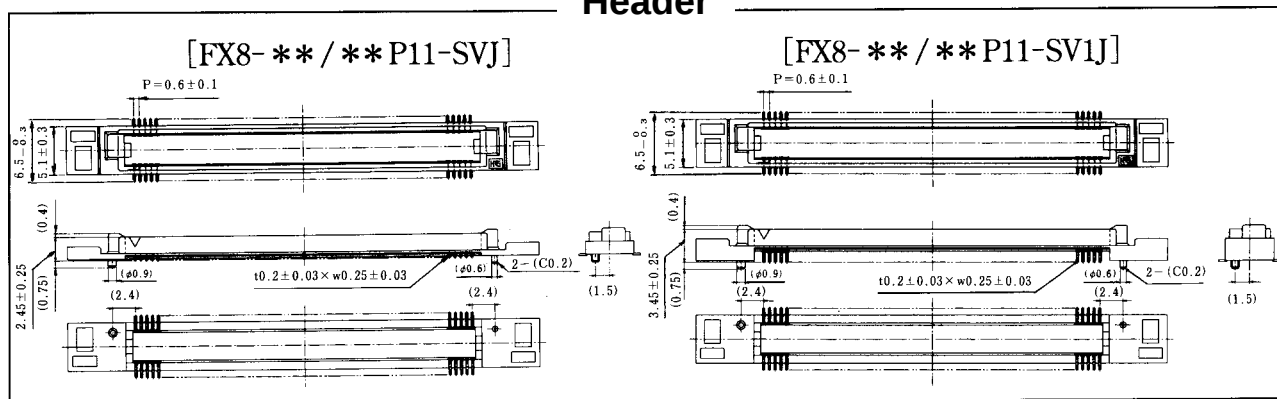
### Receptacle

[FX8-\*\*-\*\*S11-SVJ]

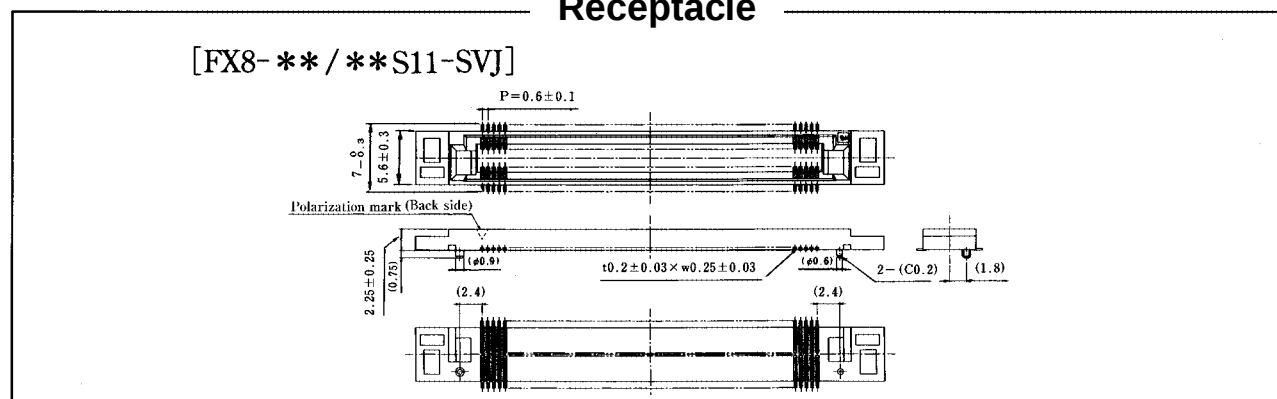


# ◆ Detailed Figure After Joint Removal (two-piece Connection Product)

## Header



## Receptacle



## ◆Connector Precautions for use

### 1. Tolerance Clearance on Mating Side

The effective contact length of the product is set to 0.7mm. Please use the product so as to set the clearance to less than 0.2mm between the header and the receptacle in the mating process.

### 2. Fixation between Mounting Boards

The very low profile and compact product, so never fix the connector between boards by mating force only

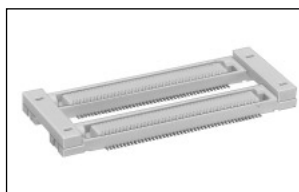
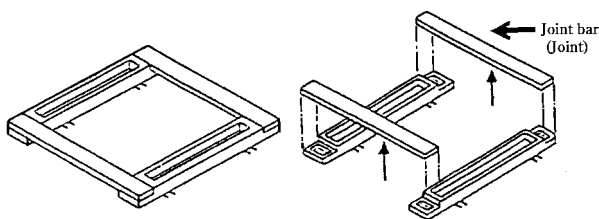
### 3. Stacking Height Tolerance for Mating

|           |                                                           |
|-----------|-----------------------------------------------------------|
| Stack 3mm | 3 $\begin{smallmatrix} +0.3 \\ -0.2 \end{smallmatrix}$ mm |
| Stack 4mm | 4 $\begin{smallmatrix} +0.3 \\ -0.2 \end{smallmatrix}$ mm |

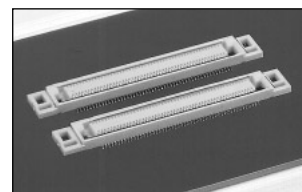
Note: Please Note that the above stacking tolerance doesn't include the solder paste thickness.

### 4. Handling two-piece connection Product

Both joint bars of the two-piece connection product are fixed by the joint members, but the mating cannot be implemented in that state. Before mating, remove the joint bars as if pull it up. (Don't remove the joint members, before mounting on the board.)

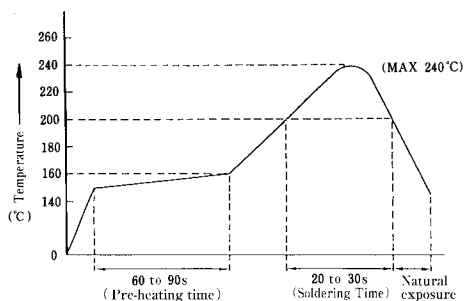


Before removing joint bar



After removing joint bar

### 5. Mounting Temperature Profile (Reference)



Applicable Conditions

Reflow system :IR reflow

Solder :Paste type 63 Sn/37 Pb  
(Flux content 11 wt%)

Test board :Glass epoxy 161mm x 100mm x 1.6 mm

Metal mask thickness :0.15 mm

Recommended temperature profile.

The temperature may be slightly changed according to the solder paste type and amount.

## ◆Packaging Type

| Packaging Type          | Number of contacts   | 60 contacts                                                 | 80 contacts | 90contacts | 100 contacts | 120 contacts | 140 contacts |
|-------------------------|----------------------|-------------------------------------------------------------|-------------|------------|--------------|--------------|--------------|
| Tube packaging          | Product Pieces       | 21 pieces                                                   | 17 pieces   | 15 pieces  | 14 pieces    | 12pieces     | 10pieces     |
|                         | Unit Packaged Sales  | Deliver multiplying product pieces (60 contacts: 21, 42...) |             |            |              |              |              |
|                         | Tube Total Length    | 550mm±2mm                                                   |             |            |              |              |              |
| Embossed Tape Packaging | Tape Width           | 44mm                                                        | 44mm        | 44mm       | 56mm         | 56mm         | 72mm         |
|                         | Product Pitch        | 12mm                                                        |             |            |              |              |              |
|                         | Emboss Reel Diameter | Refer to the table on catalog page A236.                    |             |            |              |              |              |
|                         | Product Pieces       | 1000 pieces per reel                                        |             |            |              |              |              |
|                         | Unit Packaged Sales  | Per reel                                                    |             |            |              |              |              |

\*The above packaging describes about the single product only.

In addition, the packaging of the two-piece connection product is packaged by tray.

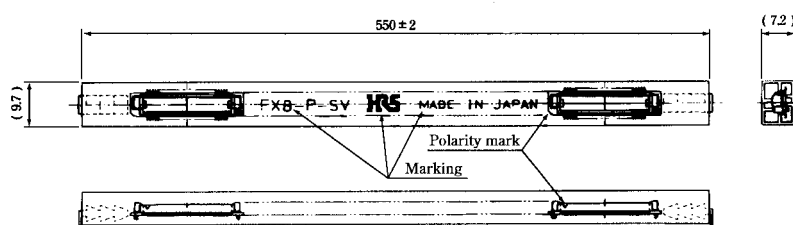
## ◆Packaging Specification

### [Tube packaging]

#### ●Header

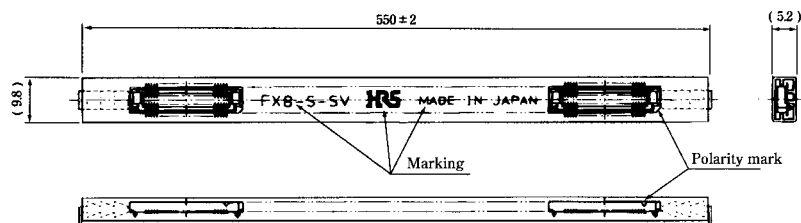
[FX8-\*\*\*P-SV (21)]

[FX8-\*\*\*P-SV1 (21)]



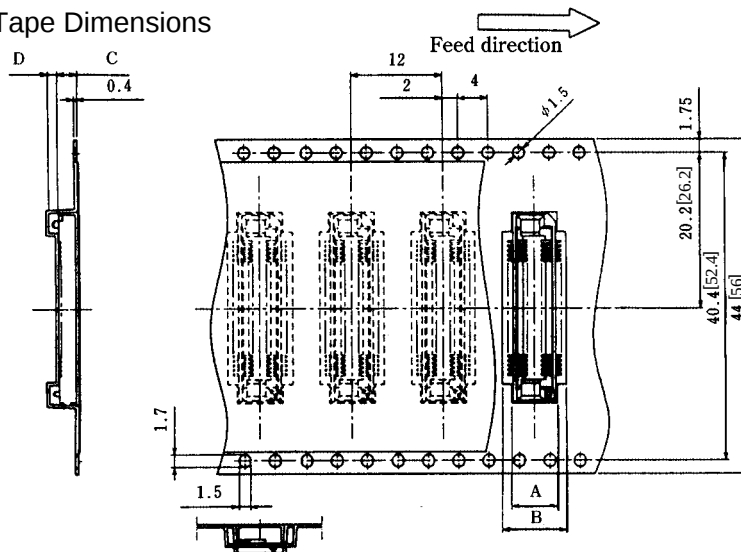
#### ●Receptacle

[FX8-\*\*\*S-SV (21)]



## [Embossed Tape Package]

### ●Embossed Carrier Tape Dimensions



\*The above pattern represents the receptacle connector case.

Unit: mm

| P/S        | Product No.       | A   | B   | C   | D  | E     |
|------------|-------------------|-----|-----|-----|----|-------|
| Header     | FX8-**-P-SV (22)  | 5.5 | 7.9 | 3.2 | 12 | φ 330 |
|            | FX8-**-P-SV1 (22) |     |     | 4.2 |    | φ 360 |
| Receptacle | FX8-**-S-SV (22)  | 6.0 | 8.4 | 2.6 |    | φ 330 |

\*\* : Number of Contacts

### ●Reel Dimensions (FREE)

