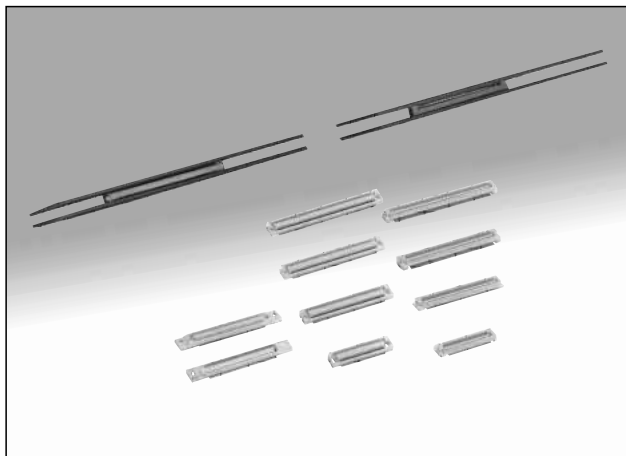


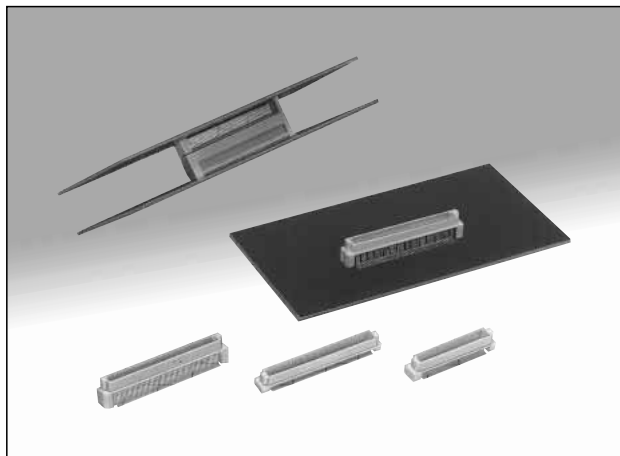
# 0.6mm Pitch Stacking Height 3mm to 16mm Connector

## FX8, FX8C Series

FX8 Series



FX8C Series



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

### ■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.

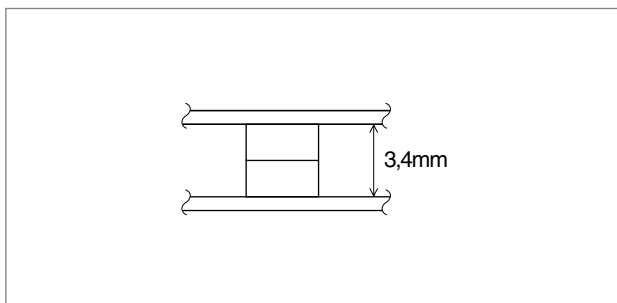
#### 3. Mating Guide

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

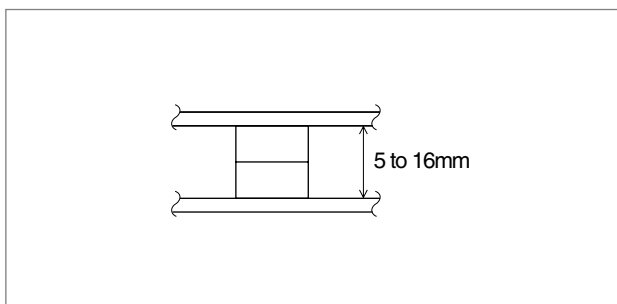
#### 4. Mis-insertion Prevention

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

#### ●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                                                      | Operating Temperature Range -55℃ to +85℃ Note 1.                                                     | Storage Temperature Range -10℃ to +60℃ Note 2. |
|----------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------|
|                                  | Voltage rating 100V AC                                                   | Operating Humidity Range 40% to 80%                                                                  | 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℃ and humidity of 90% to 95%                                            |                                                |
| 6. Temperature Cycle             | Contact resistance: 55m ohms max.: Insulation resistance: 100M ohms min. | (-55℃: 30 minutes, 15 to 35℃: 2 to 3 minutes<br>85℃: 30 minutes, 15 to 35℃: 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                                                       |                                                |
|                                  |                                                                          | Manual soldering: 360℃ for 5 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.  
Note 3: Information contained in this catalog represents general requirements for this Series. Contact us for the drawings and specifications for a specific part number shown.

Material

| Part               | Material        | Finish                    |                             | Remarks |
|--------------------|-----------------|---------------------------|-----------------------------|---------|
| Insulator          | PPS             | Light brown               |                             | UL94V-0 |
| Header Contact     | Phosphor bronze | Contact area<br>Lead area | Gold plated<br>Tin (Note 2) | _____   |
| Receptacle Contact | Phosphor bronze | Contact area<br>Lead area | Gold plated                 | _____   |

Note 1: Slight variations in color of the plastic compounds do not affect form ,fit or function of the connector.  
Note 2: FX8-\*P-SV is gold plated.

Ordering Information

Single Product

**FX8   -   120   P   -   SV   1   (92)**  
①                      ②                      ③                      ④                      ⑤                      ⑥

|                                                      |                                                                                                                                     |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| ① Series Name : FX8                                  | ⑤ Product height variationNone...Standard (Minimum low profile)<br>1 : +1mm                                                         |
| ② Number of Contacts :60, 80, 90, 120, 140           |                                                                                                                                     |
| ③ Connector type        P : Header<br>S : Receptacle | ⑥ Package Form<br>None,(71) : Tray package product<br>(21),(91) : Tube packaging product<br>(22),(92) : Emboss tape package product |
| ④ Contact type        SV : Board vertical type       |                                                                                                                                     |

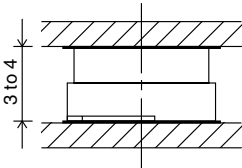
\*The embossed tape packaging product is prepared for all number of contacts, except for 140 contacts.

FX8, FX8C Series 0.6mm Pitch Stacking Height 3mm to 16mm Connector

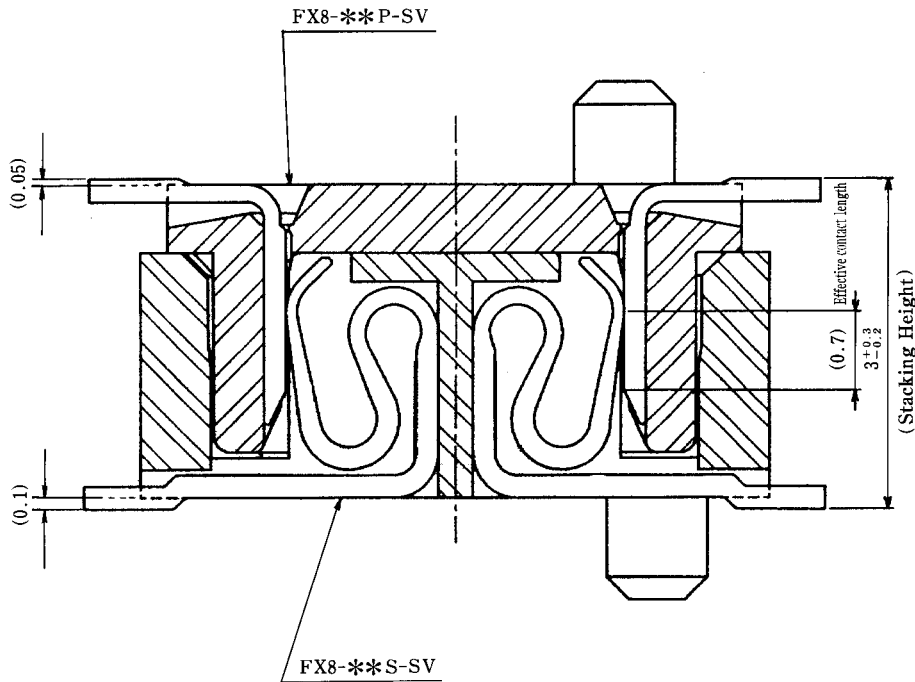
Stacking Height Variation

Single Product

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

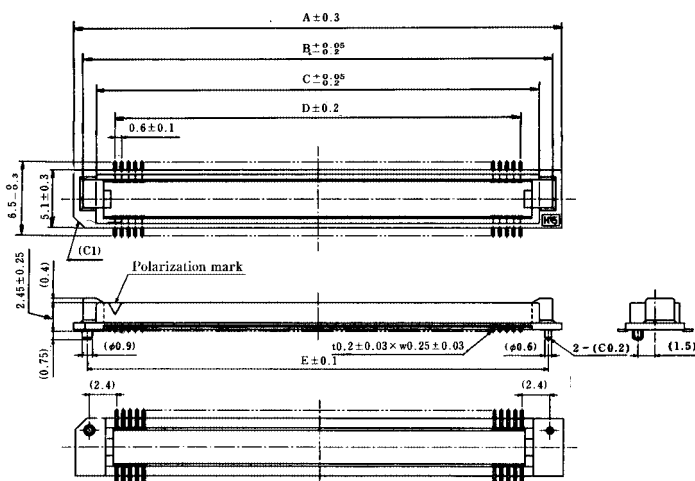
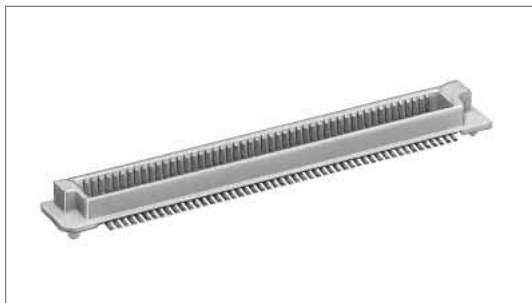


Mating Sectional View



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

## Header [FX8-\*\*-P-SV]



Unit: mm

| Part Number     | CL No.        | Number of Contacts | A     | B     | C     | D     | E     | Tube packaging Quantity (Pieces) | RoHS |
|-----------------|---------------|--------------------|-------|-------|-------|-------|-------|----------------------------------|------|
| FX8- 60P-SV(92) | 578-0001-6-92 | 60                 | 24.60 | 23.00 | 20.70 | 17.40 | 22.20 | 21                               | YES  |
| FX8- 80P-SV(92) | 578-0003-1-92 | 80                 | 30.60 | 29.00 | 26.70 | 23.40 | 28.20 | 17                               |      |
| FX8- 90P-SV(92) | 578-0004-4-92 | 90                 | 33.60 | 32.00 | 29.70 | 26.40 | 31.20 | 15                               |      |
| FX8-100P-SV(92) | 578-0005-7-92 | 100                | 36.60 | 35.00 | 32.70 | 29.40 | 34.20 | 14                               |      |
| FX8-120P-SV(92) | 578-0006-0-92 | 120                | 42.60 | 41.00 | 38.70 | 35.40 | 40.20 | 12                               |      |
| FX8-140P-SV(92) | 578-0007-2-92 | 140                | 48.60 | 47.00 | 44.70 | 41.40 | 46.20 | 10                               |      |

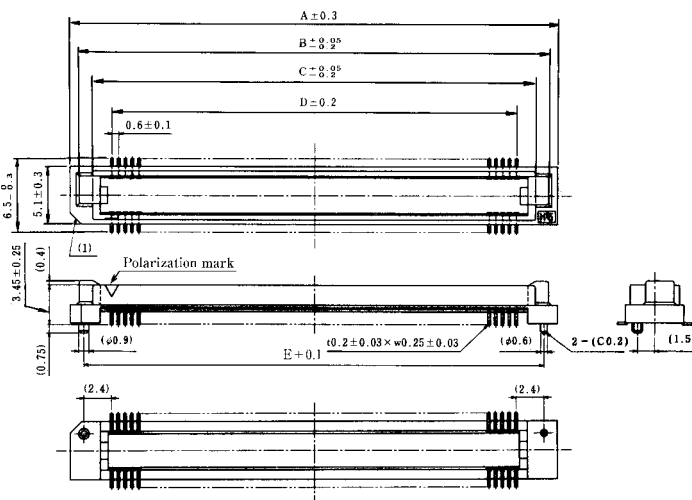
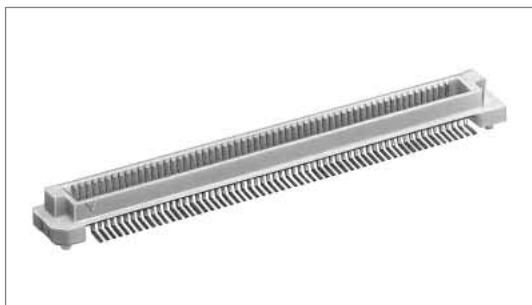
\*\* 71 : Tray packaging product, 91: Tube packaging product, 92: Embossed tape packaging product

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 A172 for details.

Note 3: Tray packaging product is not for board placement with automatic equipment.

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



Unit: mm

| Part Number      | CL No.        | Number of Contacts | A     | B     | C     | D     | E     | Tube packaging Quantity (Pieces) | RoHS |
|------------------|---------------|--------------------|-------|-------|-------|-------|-------|----------------------------------|------|
| FX8- 60P-SV1(92) | 578-0041-0-92 | 60                 | 24.60 | 23.00 | 20.70 | 17.40 | 22.20 | 21                               | YES  |
| FX8- 80P-SV1(92) | 578-0043-6-92 | 80                 | 30.60 | 29.00 | 26.70 | 23.40 | 28.20 | 17                               |      |
| FX8- 90P-SV1(92) | 578-0044-9-92 | 90                 | 33.60 | 32.00 | 29.70 | 26.40 | 31.20 | 15                               |      |
| FX8-100P-SV1(92) | 578-0045-1-92 | 100                | 36.60 | 35.00 | 32.70 | 29.40 | 34.20 | 14                               |      |
| FX8-120P-SV1(92) | 578-0046-4-92 | 120                | 42.60 | 41.00 | 38.70 | 35.40 | 40.20 | 12                               |      |
| FX8-140P-SV1(92) | 578-0047-7-92 | 140                | 48.60 | 47.00 | 44.70 | 41.40 | 46.20 | 10                               |      |

\*\* 71: Tray packaging product, 91: Tube packaging product, 92: 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.

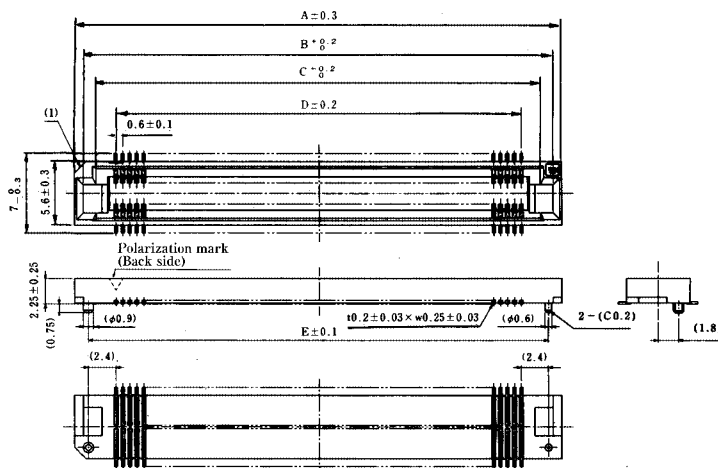
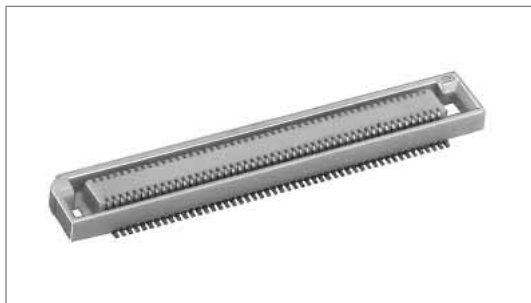
Note 2: The embossed tape package product is prepared for the entire number of contacts, except for 140 contacts. In addition, the product will be sold by the reel unit when 1 reel = 1000 pieces. Please refer to the delivery form item on page A172 for details.

Note 3: Tray packaging product is not for board placement with automatic equipment.

## FX8, FX8C Series 0.6mm Pitch Stacking Height 3mm to 16mm Connector

### ■Receptacle

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



Unit: mm

| Part Number     | CL No.          | Number of Contacts | A     | B     | C     | D     | E     | Tube packaging Quantity (Pieces) | RoHS |
|-----------------|-----------------|--------------------|-------|-------|-------|-------|-------|----------------------------------|------|
| FX8-060S-SV(22) | CL578-0201-5-22 | 60                 | 24.60 | 23.05 | 20.80 | 17.40 | 22.20 | 21                               | YES  |
| FX8-080S-SV(22) | CL578-0203-0-22 | 80                 | 30.60 | 29.05 | 26.80 | 23.40 | 28.20 | 17                               |      |
| FX8-090S-SV(22) | CL578-0204-3-22 | 90                 | 33.60 | 32.05 | 29.80 | 26.40 | 31.20 | 15                               |      |
| FX8-100S-SV(22) | CL578-0205-6-22 | 100                | 36.60 | 35.05 | 32.80 | 29.40 | 34.20 | 14                               |      |
| FX8-120S-SV(22) | CL578-0206-9-22 | 120                | 42.60 | 41.05 | 38.80 | 35.40 | 40.20 | 12                               |      |
| FX8-140S-SV(22) | CL578-0207-1-22 | 140                | 48.60 | 47.05 | 44.80 | 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 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 A172 for details.

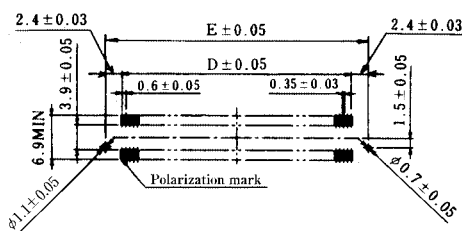
Note 3 : Tray packaging product is not for board placement with automatic equipment.

### ◆PCB mounting pattern

#### Header

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

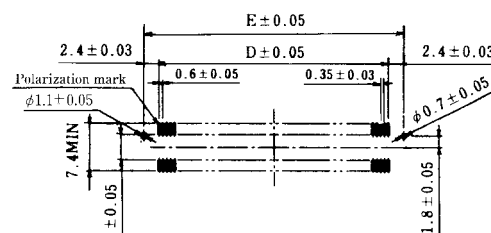
[FX8-\*\*-P-SV1]



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.

◆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

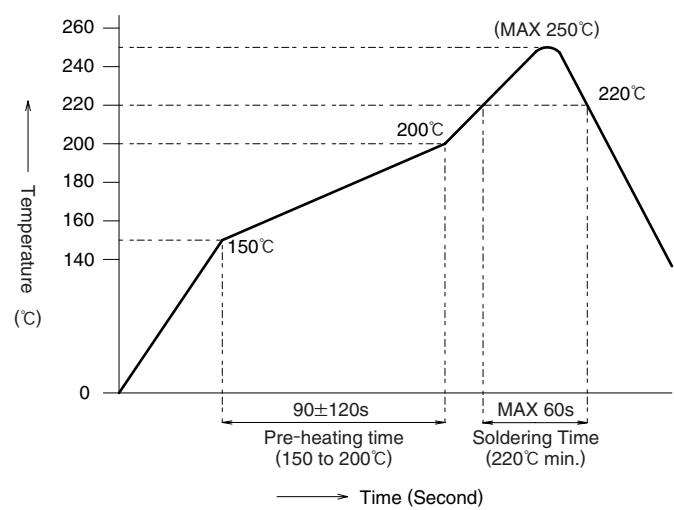
The very low profile and compact product, so never fix the connector between boards by mating force only

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. Mounting Temperature Profile (Reference)



HRS test conditions

Test boardGlass epoxy 161mm×100mm×1.6mm thick  
Solder method :Reflow  
Solder composition :Paste,  
96.5%Sn/3%Ag/0.5%Cu  
Metal mask : 0.15mm thick  
Reflow cycles : 2 cycles

The temperature profile is based on the above conditions.  
In individual applications the actual temperature may vary, depending on solder paste type, volume/thickness and board size/thickness. Consult your solder paste and equipment manufacturer for specific recommendations.

FX8, FX8C Series 0.6mm Pitch Stacking Height 3mm to 16mm Connector

◆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 A173.                    |             |            |              |              |              |
|                         | 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.

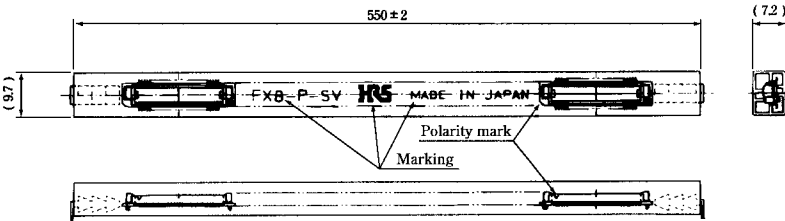
◆Packaging Specification

[Tube packaging]

●Header

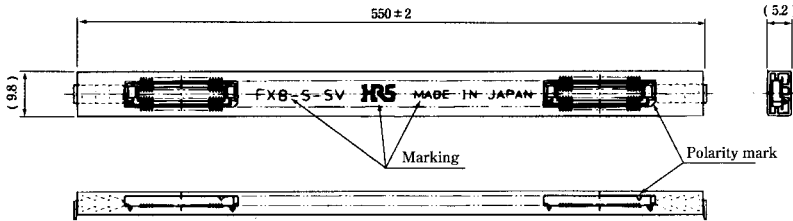
[FX8-\*\*\*P-SV (91)]

[FX8-\*\*\*P-SV1 (91)]



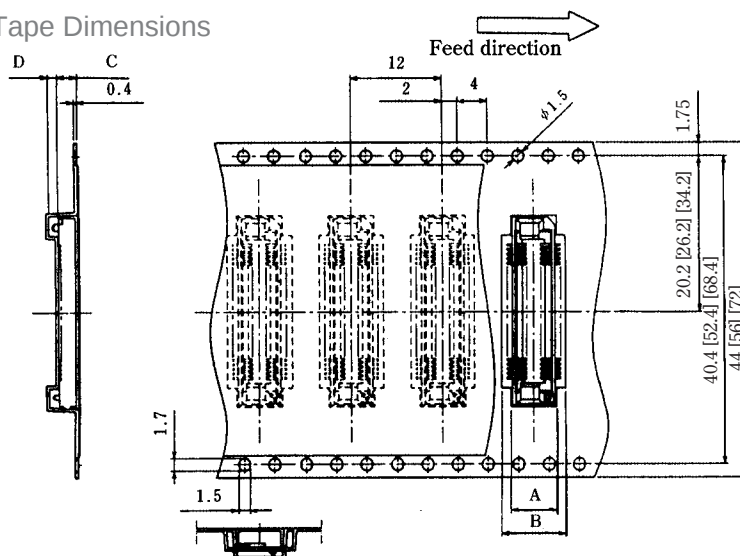
●Receptacle

[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 (92)  | 5.5 | 7.9 | 3.2 | 12 | φ 330 |
|            | FX8-**-P-SV1 (92) |     |     | 4.2 |    | φ 360 |
| Receptacle | FX8-**-S-SV (22)  | 6.0 | 8.4 | 2.6 |    | φ 330 |

\*\* : Number of Contacts

### ●Reel Dimensions (FREE)

