

### ■ Features

1. 0.5mm pitch
2. Stacking (Height : 8 - 30mm)/vertical
3. Contacts available : 20/40/60/80/100/120 for signal + 4 for power source
4. Floating movable amount : X direction :  $\pm 0.6\text{mm}$  ; Y direction:  $\pm 0.6\text{mm}$   
A floating movement above the connector pitch is possible. (Fig.1)
5. High-speed transmission (8+ Gbps)
6. Hybrid power design (3A/pin $\times$ 4 lines)  
The guide posts on both sides of the connector are equipped with 4 lines of power contacts in addition to the signal contact. (Fig.2)
7. Current capacity : Signal contact 0.5A/pin, power contact 3A/pin
8. Available for automatic mounting (absorption tape is attached as standard equipment)
9. Excellent mating performance due to the large guide post.

### ■ Signal integrity

- **ICR (Insertion-loss-to-Crosstalk-Ratio)**  
The ICR containing cross-talk from 5 adjacent differential pairs provides adequate margin in comparison with the criteria based on the specification of IEEE802.3ap.
- **Differential impedance**  
Differential impedance is  $100\pm 10\Omega$  at the rise time of 87.5ps (20 to 80%).

Floating ability : XY-axis $\pm 0.6\text{mm}$

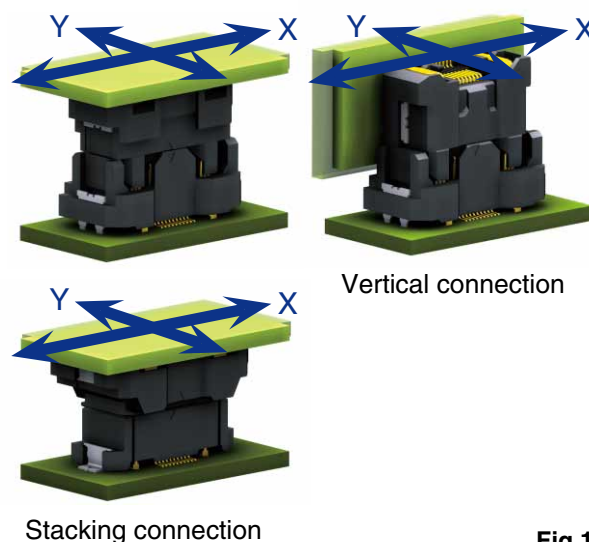


Fig.1

Hybrid Power/Signal contacts

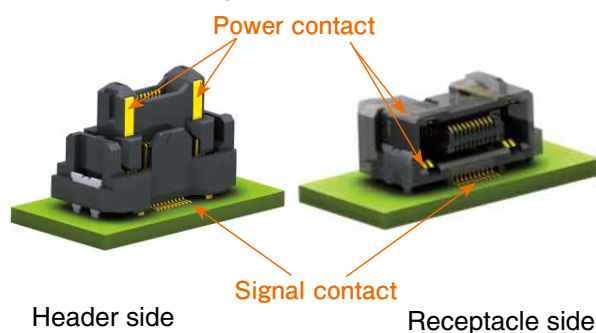


Fig.2

## Product Specifications

|         |  |   |
|---------|--|---|
| Ratings | Rated current : Signal part 0.5A<br>Power part 3.0A      | Operating temperature range : -55 to 105°C (Note 1)<br>Storage temperature range : -10 to 60°C (Note 2) |
|         | Rated voltage : Signal part AC 50V<br>Power part AC 200V | Operating/storage humidity range : 90% or less relative humidity (No dew condensation is allowed)       |

| Items                    | Specifications   | Conditions   |
|--------------------------|--|--|
| 1. Contact resistance    | Signal part 70mΩ or less<br>Power part 20mΩ or less  | Measured at 100mA  |
| 2. Insulation resistance | Signal part 100MΩ or more<br>Power part 1,000MΩ or more  | Signal part Measured at DC<br>Signal Measured at DC 100V<br>Power Measured at DC 250V  |
| 3. Withstanding Voltage  | No flashover or breakdown.   | Signal contacts Energized at AC 150V for 1 minute<br>Power contacts Energized at AC 600V for 1 minute                        |
| 4. Mating durability     | Contact resistance of the signal part 80mΩ or less<br>Power part 30mΩ or less.   | 100 times insertion/withdrawal   |
| 5. Vibration proof       | No electric outage of 1μ or greater.   | Frequency 10 - 55Hz, half amplitude 0.75mm, 10 cycles in each of the 3-axis directions each for 5 minutes per cycle          |
| 6. Shock resistance      | No electric outage of 1μ or greater.   | Acceleration of 490m/s <sup>2</sup> ; duration 11ms, sine half-wave, 3 cycles in each of the 3 axes each in both directions. |
| 7. Moisture resistance   | Contact resistance of the signal part 80mΩ or less<br>Power part 30mΩ or less<br>Insulation resistance at the signal part 100MΩ or more<br>Power part 1,000MΩ or more. | Left to stand for 96 hours at the temperature of 40°C and the humidity of 90 to 95%  |
| 8. Temperature cycle     | Contact resistance of the signal part 80mΩ or less<br>Power part 30mΩ or less<br>Insulation resistance at the signal part 100MΩ or more<br>Power part 1,000MΩ or more. | Temperature -55 → 85°C<br>5 cycles for a series of time periods : 30 minutes → 30 minutes                                    |

Note 1 : Includes temperature rise caused by current flow.

Note 2 : The term "storage" refers to the long-term storage condition of unused products before mounting on PCB.

## Materials / Finish

| Part                        | Materials  |                 | Finish   | UL standard |
|-----------------------------|------------|-----------------|--|-------------|
| Insulator (FX23)            | Header     | Polyamide resin | Black color  | UL94V-0     |
|                             | Receptacle | LCP resin       |  |             |
| Insulator (FX23L)           | Header     | Polyamide resin | Black color  | UL94V-0     |
|                             | Receptacle |                 |  |             |
| Contact                     | Header     | Copper alloy    | Contacted part : gold plating<br>Signal contact-mounting part : gold plating<br>Power contact-mounting part : pure tin plating | —           |
|                             | Receptacle |                 |  |             |
| Reinforcement metal fitting | Brass      |                 | Pure tin plated  | —           |

## Product Number Structure

Refer to the chart below when determining the product specifications from the product number.  
Please select from the product numbers listed in this catalog when placing orders.

### ●Straight header

**FX23 - 120 P - 0.5 SV 15**  
 ①      ②   ③      ④   ⑤   ⑥

### ●Straight receptacle

**FX23 - 120 S - 0.5 SV 10**  
 ①      ②   ③      ④   ⑤   ⑥

### ●Right angle receptacle

**FX23 - 120 S - 0.5 SH**  
 ①      ②   ③      ④   ⑤

|                       |   |
|-----------------------|---|
| ① Series name         | : FX23  |
| ② Number of contacts  |   |
| ③ Connector type      | P : Header type<br>S : Receptacle type  |
| ④ Contact pitch       | : 0.5mm   |
| ⑤ Product type        | SV : Vertical<br>SH : Right angle type  |
| ⑥ Product height type | Mating height [mm] =<br>Numerical value on the<br>header side + Numerical<br>value on the receptacle side |

### ●Straight header

**FX23L - 120 P - 0.5 SV 8**  
 ①      ②   ③      ④   ⑤   ⑥

### ●Straight receptacle

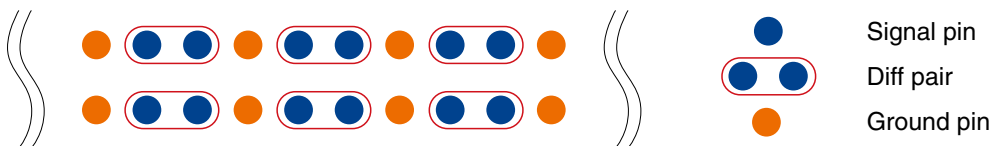
**FX23L - 120 S - 0.5 SV 10**  
 ①      ②   ③      ④   ⑤   ⑥

|                       |   |
|-----------------------|---|
| ① Series name         | : FX23L   |
| ② Number of contacts  |   |
| ③ Connector type      | P : Header type<br>S : Receptacle type                        |
| ④ Contact pitch       | : 0.5mm   |
| ⑤ Product type        | SV : Vertical   |
| ⑥ Product height type | Mating height [mm] =<br>Numerical value on the<br>header side |

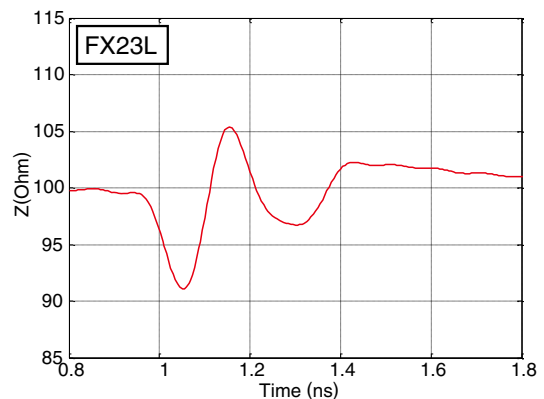
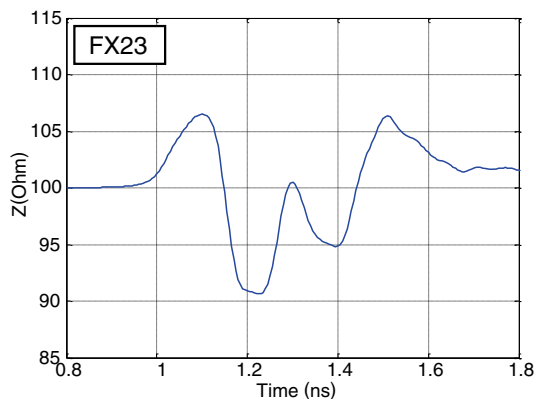
## High-speed transmission property (FX23 : h=15mm, FX23L : h=12mm)

### ●Pin assignment

The following pin arrangement is recommended to match the 100Ω differential impedance and to contain cross-talk.

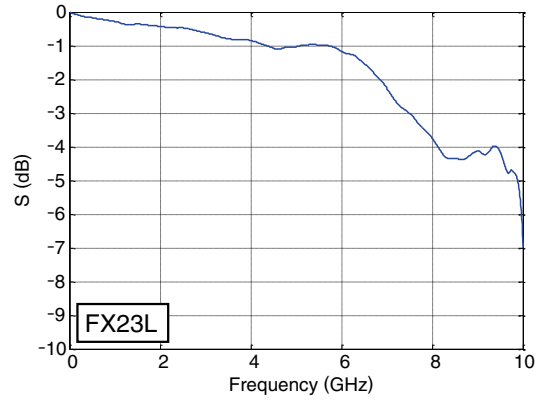
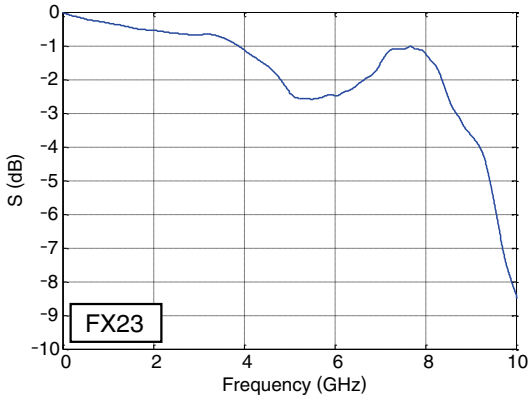


### ●Differential impedance 80ps rise time (20 to 80%)

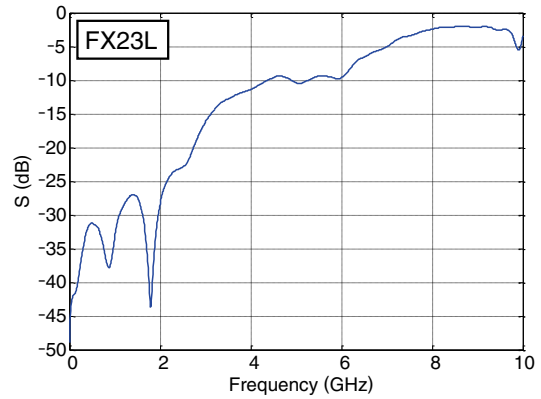
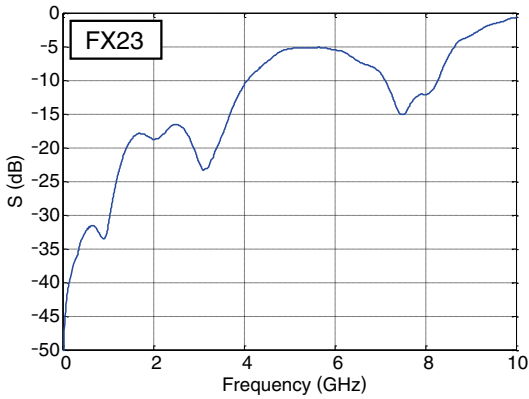


Meets the criterion of 100±10Ω at the rise time of 80ps (20 to 80%).

● Insertion loss

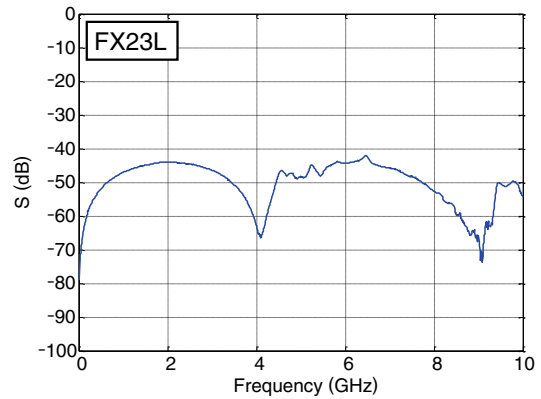
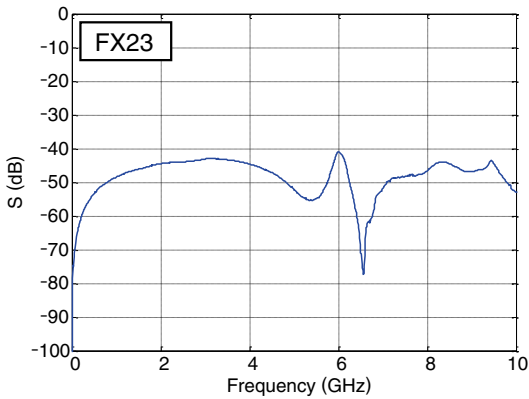


● Return loss

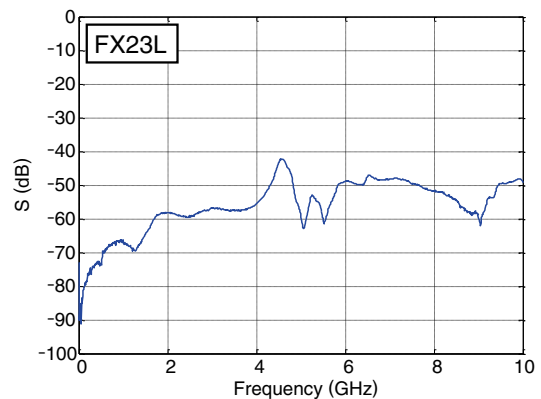
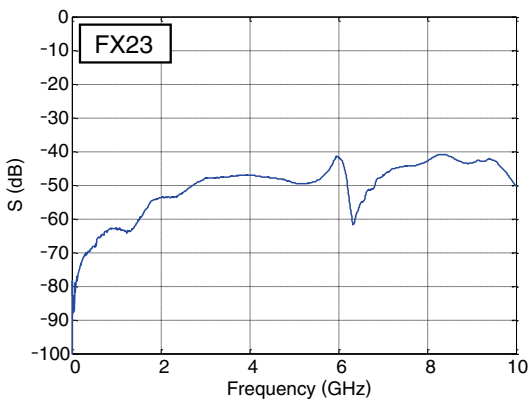


Passes insertion loss, return loss up to 5GHz.

● Near end cross-talk (NEXT)

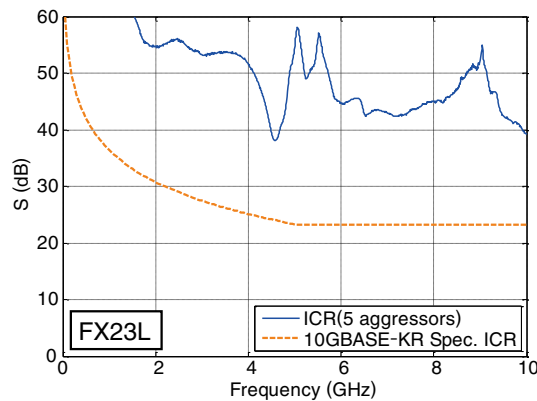
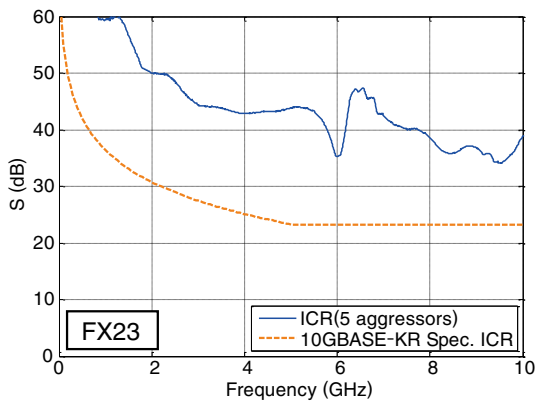
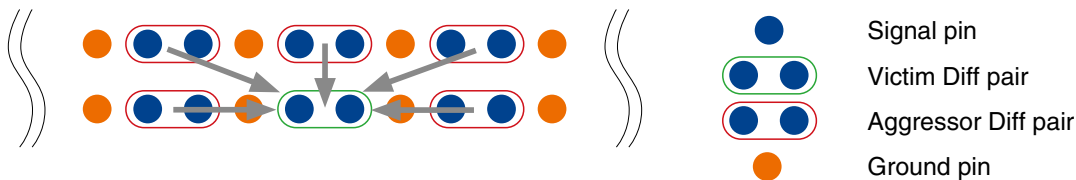


● Far end cross-talk (FEXT)



Low cross-talk up to 10GHz.

● Insertion loss/cross-talk ratio (ICR) for FEXT

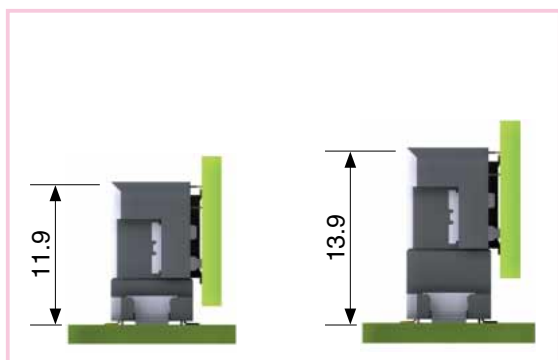


Insertion loss/cross-talk ratio (ICR) for FEXT using 5 sets of Aggressors has an adequate margin according to the specification of IEEE802.3ap.

■ List of connection variations (vertical connection)

Right angle receptacle

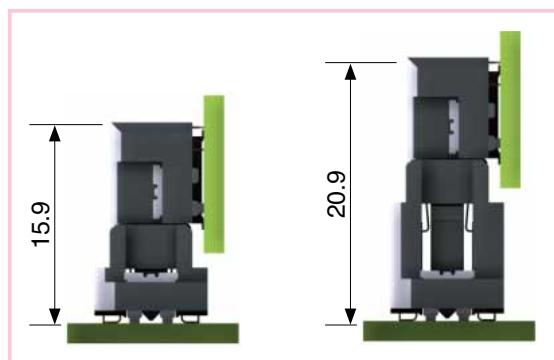
FX23-\*\*-S-0.5SH



Rigid combination

FX23L-\*\*-P-0.5SV10

FX23L-\*\*-P-0.5SV12



Floating combination

FX23-\*\*-P-0.5SV15

FX23-\*\*-P-0.5SV20

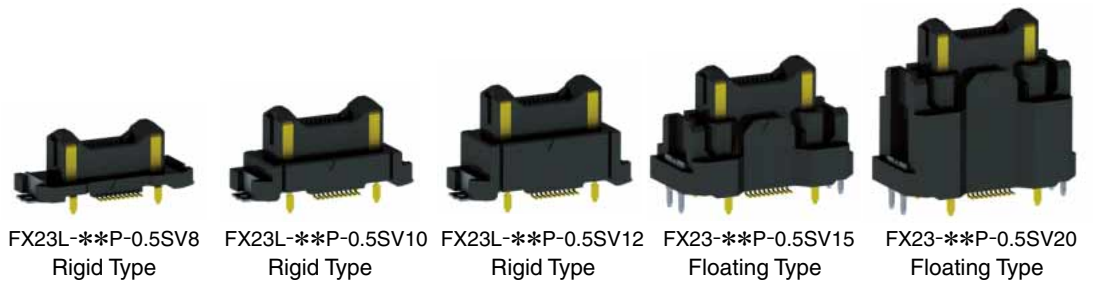
Vertical header

\*\*⇒Number of contacts : 20, 40, 60, 80, 100, 120

Note : FX23L-\*\*-P-0.5SV8 and FX23-\*\*-S-0.5SH can not engage since the metal hold down interferes each other.

## List of connection variations (Parallel connection)

### ● Height variation



**FX23L series**  
**Standard Type**  
 Floating range :  
 XY direction  $\pm 0.6\text{mm}$

8mm    10mm    12mm

**FX23×FX23L series**  
**Double Floating Type**  
 Floating range :  
 XY direction  $\pm 1.2\text{mm}$

14mm    19mm



**FX23×FX23L series**  
**Rigid Type**  
 ⚠ No floating ability

9mm    11mm    13mm    19mm    21mm    23mm

**FX23 series**  
**Standard Type**  
 Floating range :  
 XY direction  $\pm 0.6\text{mm}$

15mm    20mm    25mm    30mm

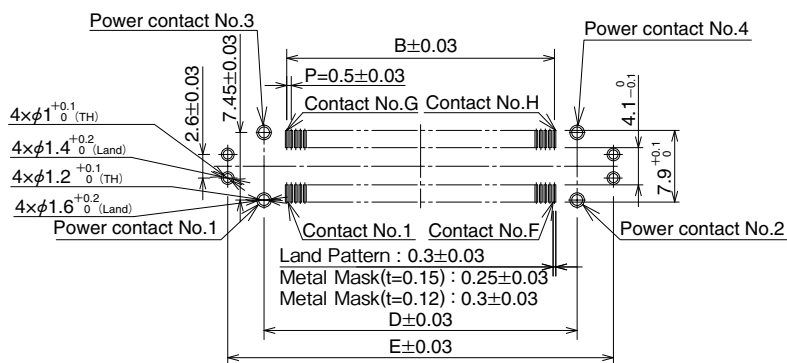
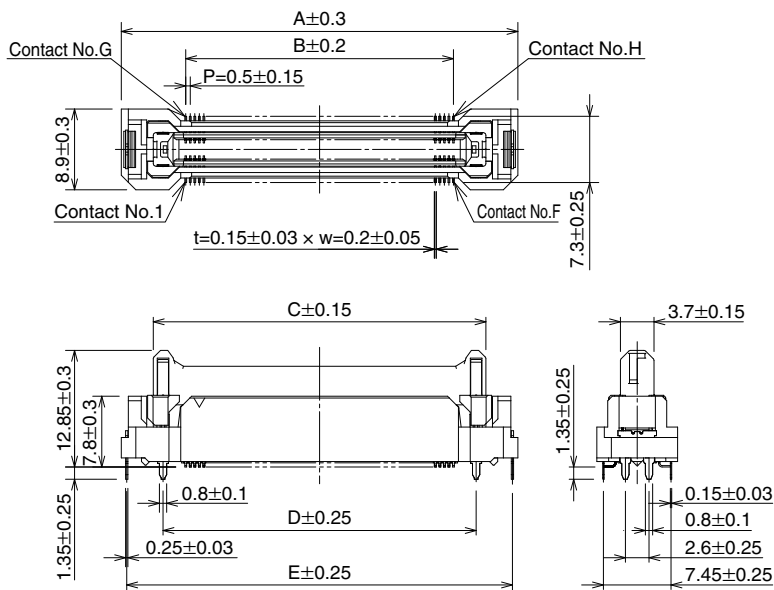


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## Product dimensions FX23 series

### Vertical header

[FX23-\*\*P-0.5SV15]

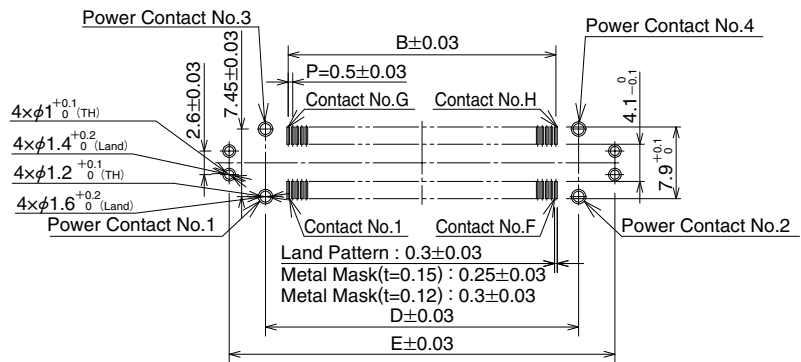
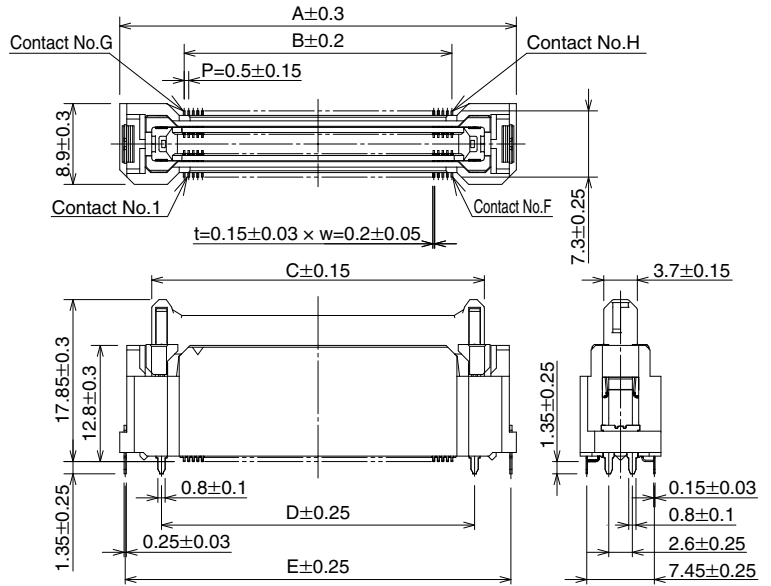


Unit : mm

| Part No.          | HRS No.       | No. of contacts | A    | B    | C     | D    | E    | F  | G  | H   |
|-------------------|---------------|-----------------|------|------|-------|------|------|----|----|-----|
| FX23-20P-0.5SV15  | 573-3001-0 00 | 20              | 18.7 | 4.5  | 11.65 | 9.5  | 17.5 | 10 | 11 | 20  |
| FX23-40P-0.5SV15  | 573-3002-3 00 | 40              | 23.7 | 9.5  | 16.65 | 14.5 | 22.5 | 20 | 21 | 40  |
| FX23-60P-0.5SV15  | 573-3003-6 00 | 60              | 28.7 | 14.5 | 21.65 | 19.5 | 27.5 | 30 | 31 | 60  |
| FX23-80P-0.5SV15  | 573-3004-9 00 | 80              | 33.7 | 19.5 | 26.65 | 24.5 | 32.5 | 40 | 41 | 80  |
| FX23-100P-0.5SV15 | 573-3005-1 00 | 100             | 38.7 | 24.5 | 31.65 | 29.5 | 37.5 | 50 | 51 | 100 |
| FX23-120P-0.5SV15 | 573-3006-4 00 | 120             | 43.7 | 29.5 | 36.65 | 34.5 | 42.5 | 60 | 61 | 120 |



[FX23-\*\*P-0.5SV20]



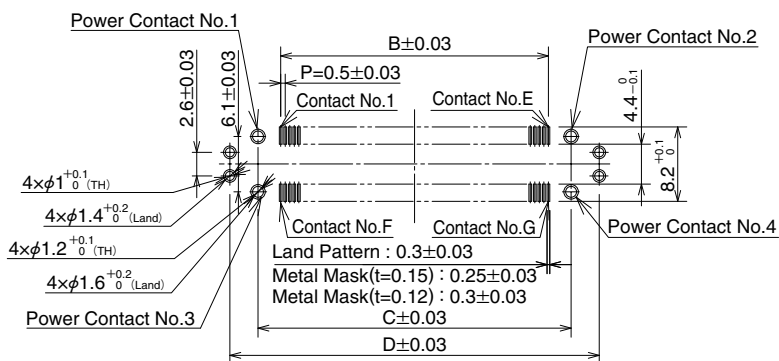
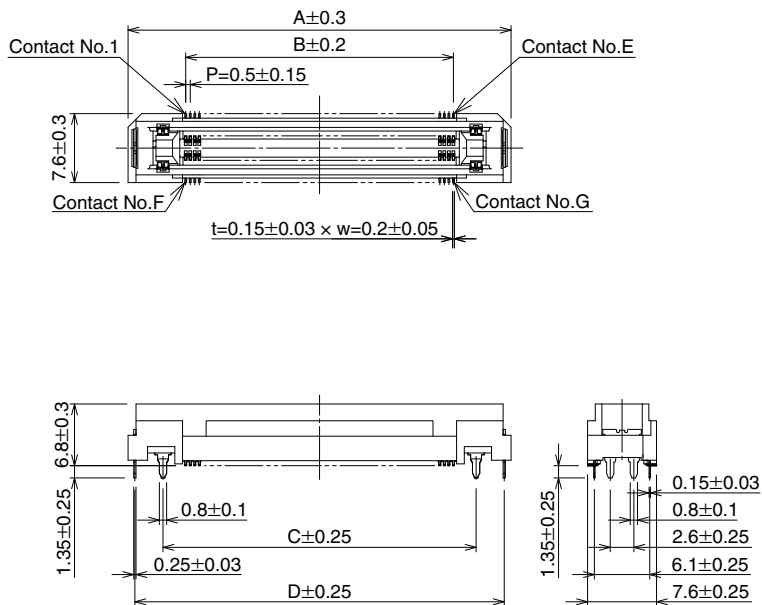
Unit : mm

| Part No.          | HRS No.       | No. of contacts | A    | B    | C     | D    | E    | F  | G  | H   |
|-------------------|---------------|-----------------|------|------|-------|------|------|----|----|-----|
| FX23-20P-0.5SV20  | 573-3101-5 00 | 20              | 18.7 | 4.5  | 11.65 | 9.5  | 17.5 | 10 | 11 | 20  |
| FX23-40P-0.5SV20  | 573-3102-8 00 | 40              | 23.7 | 9.5  | 16.65 | 14.5 | 22.5 | 20 | 21 | 40  |
| FX23-60P-0.5SV20  | 573-3103-0 00 | 60              | 28.7 | 14.5 | 21.65 | 19.5 | 27.5 | 30 | 31 | 60  |
| FX23-80P-0.5SV20  | 573-3104-3 00 | 80              | 33.7 | 19.5 | 26.65 | 24.5 | 32.5 | 40 | 41 | 80  |
| FX23-100P-0.5SV20 | 573-3105-6 00 | 100             | 38.7 | 24.5 | 31.65 | 29.5 | 37.5 | 50 | 51 | 100 |
| FX23-120P-0.5SV20 | 573-3106-9 00 | 120             | 43.7 | 29.5 | 36.65 | 34.5 | 42.5 | 60 | 61 | 120 |



●Vertical receptacle

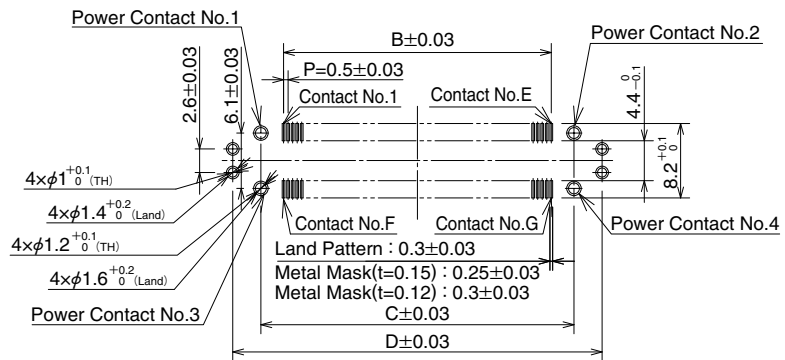
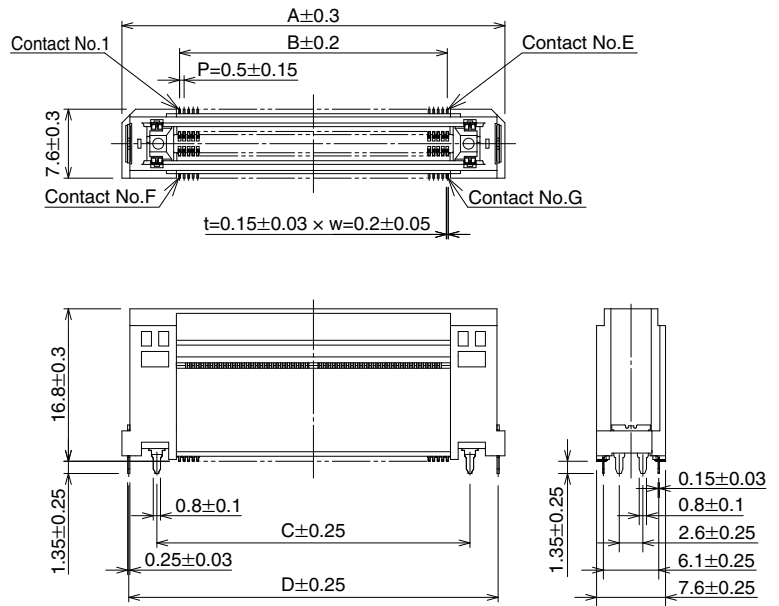
[FX23-\*\*S-0.5SV]



Unit : mm

| Part No.        | HRS No.       | No. of contacts | A    | B    | C    | D    | E  | F  | G   |
|-----------------|---------------|-----------------|------|------|------|------|----|----|-----|
| FX23-20S-0.5SV  | 573-3201-0 00 | 20              | 17.2 | 4.5  | 9.5  | 15.7 | 10 | 11 | 20  |
| FX23-40S-0.5SV  | 573-3202-2 00 | 40              | 22.2 | 9.5  | 14.5 | 20.7 | 20 | 21 | 40  |
| FX23-60S-0.5SV  | 573-3203-5 00 | 60              | 27.2 | 14.5 | 19.5 | 25.7 | 30 | 31 | 60  |
| FX23-80S-0.5SV  | 573-3204-8 00 | 80              | 32.2 | 19.5 | 24.5 | 30.7 | 40 | 41 | 80  |
| FX23-100S-0.5SV | 573-3205-0 00 | 100             | 37.2 | 24.5 | 29.5 | 35.7 | 50 | 51 | 100 |
| FX23-120S-0.5SV | 573-3206-3 00 | 120             | 42.2 | 29.5 | 34.5 | 40.7 | 60 | 61 | 120 |

[FX23-\*\*S-0.5SV10]

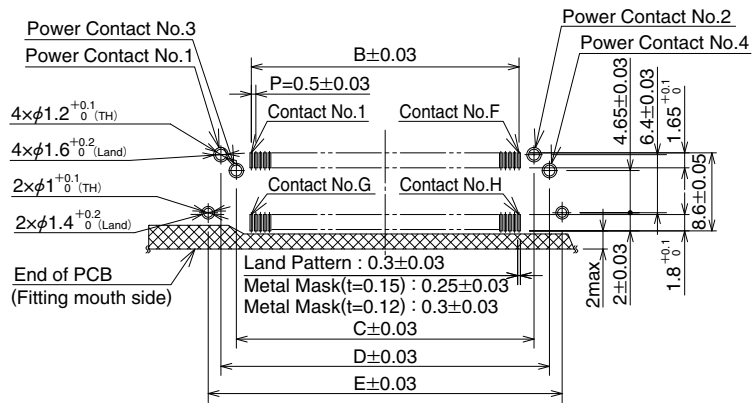
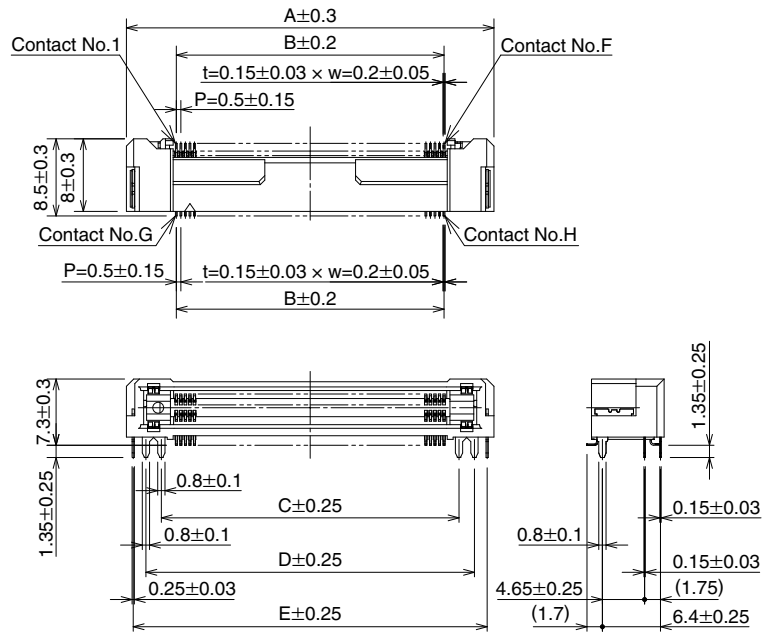


Unit : mm

| Part No.          | HRS No.       | No. of contacts | A    | B    | C    | D    | E  | F  | G   |
|-------------------|---------------|-----------------|------|------|------|------|----|----|-----|
| FX23-20S-0.5SV10  | 573-3301-4 00 | 20              | 17.2 | 4.5  | 9.5  | 15.7 | 10 | 11 | 20  |
| FX23-40S-0.5SV10  | 573-3302-7 00 | 40              | 22.2 | 9.5  | 14.5 | 20.7 | 20 | 21 | 40  |
| FX23-60S-0.5SV10  | 573-3303-0 00 | 60              | 27.2 | 14.5 | 19.5 | 25.7 | 30 | 31 | 60  |
| FX23-80S-0.5SV10  | 573-3304-2 00 | 80              | 32.2 | 19.5 | 24.5 | 30.7 | 40 | 41 | 80  |
| FX23-100S-0.5SV10 | 573-3305-5 00 | 100             | 37.2 | 24.5 | 29.5 | 35.7 | 50 | 51 | 100 |
| FX23-120S-0.5SV10 | 573-3306-8 00 | 120             | 42.2 | 29.5 | 34.5 | 40.7 | 60 | 61 | 120 |

● Right angle receptacle

[FX23-\*\*S-0.5SH]



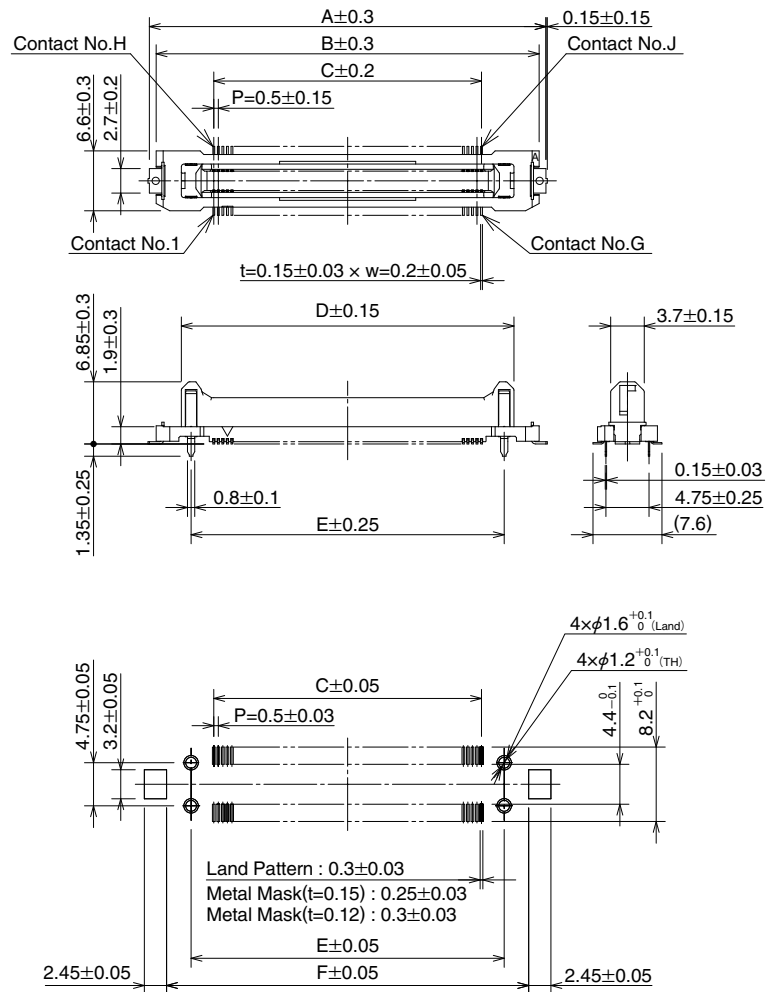
Unit : mm

| Part No.        | HRS No.       | No. of contacts | A    | B    | C    | D    | E  | F  | G  | H   |
|-----------------|---------------|-----------------|------|------|------|------|----|----|----|-----|
| FX23-20S-0.5SH  | 573-3401-9 00 | 20              | 15.5 | 4.5  | 7.8  | 11.2 | 14 | 10 | 11 | 20  |
| FX23-40S-0.5SH  | 573-3402-1 00 | 40              | 20.5 | 9.5  | 12.8 | 16.2 | 19 | 20 | 21 | 40  |
| FX23-60S-0.5SH  | 573-3403-4 00 | 60              | 25.5 | 14.5 | 17.8 | 21.2 | 24 | 30 | 31 | 60  |
| FX23-80S-0.5SH  | 573-3404-7 00 | 80              | 30.5 | 19.5 | 22.8 | 26.2 | 29 | 40 | 41 | 80  |
| FX23-100S-0.5SH | 573-3405-0 00 | 100             | 35.5 | 24.5 | 27.8 | 31.2 | 34 | 50 | 51 | 100 |
| FX23-120S-0.5SH | 573-3406-2 00 | 120             | 40.5 | 29.5 | 32.8 | 36.2 | 39 | 60 | 61 | 120 |

## Product dimensions FX23L series

### Vertical header

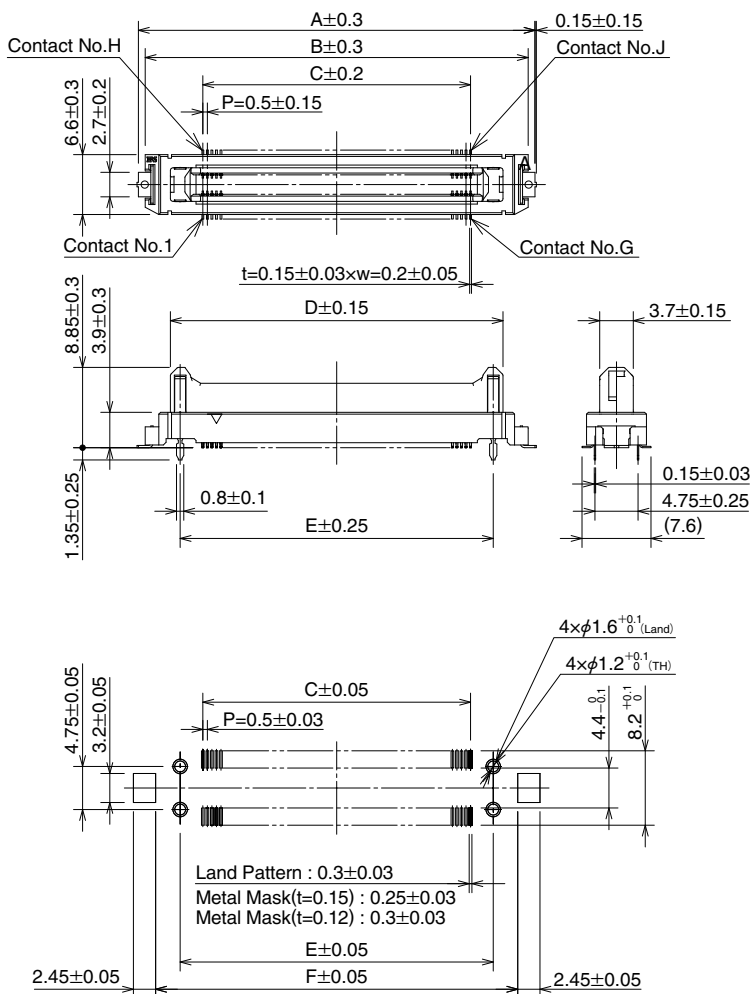
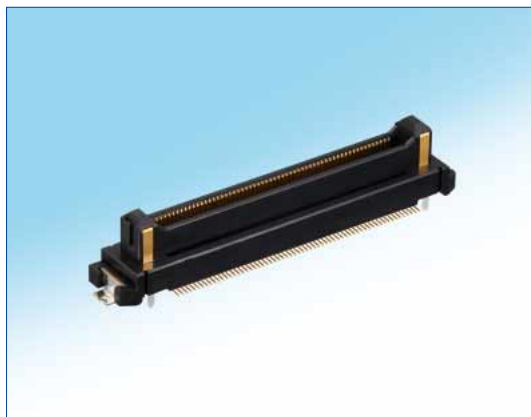
[FX23L-\*\*P-0.5SV8]



Unit : mm

| Part No.          | HRS No.       | No. of contacts | A    | B    | C    | D     | E    | F    | G  | H  | J   |
|-------------------|---------------|-----------------|------|------|------|-------|------|------|----|----|-----|
| FX23L-20P-0.5SV8  | 573-2001-5 00 | 20              | 18.7 | 17.2 | 4.5  | 11.65 | 9.5  | 14.9 | 10 | 11 | 20  |
| FX23L-40P-0.5SV8  | 573-2002-8 00 | 40              | 23.7 | 22.2 | 9.5  | 16.65 | 14.5 | 19.9 | 20 | 21 | 40  |
| FX23L-60P-0.5SV8  | 573-2003-0 00 | 60              | 28.7 | 27.2 | 14.5 | 21.65 | 19.5 | 24.9 | 30 | 31 | 60  |
| FX23L-80P-0.5SV8  | 573-2004-3 00 | 80              | 33.7 | 32.2 | 19.5 | 26.65 | 24.5 | 29.9 | 40 | 41 | 80  |
| FX23L-100P-0.5SV8 | 573-2005-6 00 | 100             | 38.7 | 37.2 | 24.5 | 31.65 | 29.5 | 34.9 | 50 | 51 | 100 |
| FX23L-120P-0.5SV8 | 573-2006-9 00 | 120             | 43.7 | 42.2 | 29.5 | 36.65 | 34.5 | 39.9 | 60 | 61 | 120 |

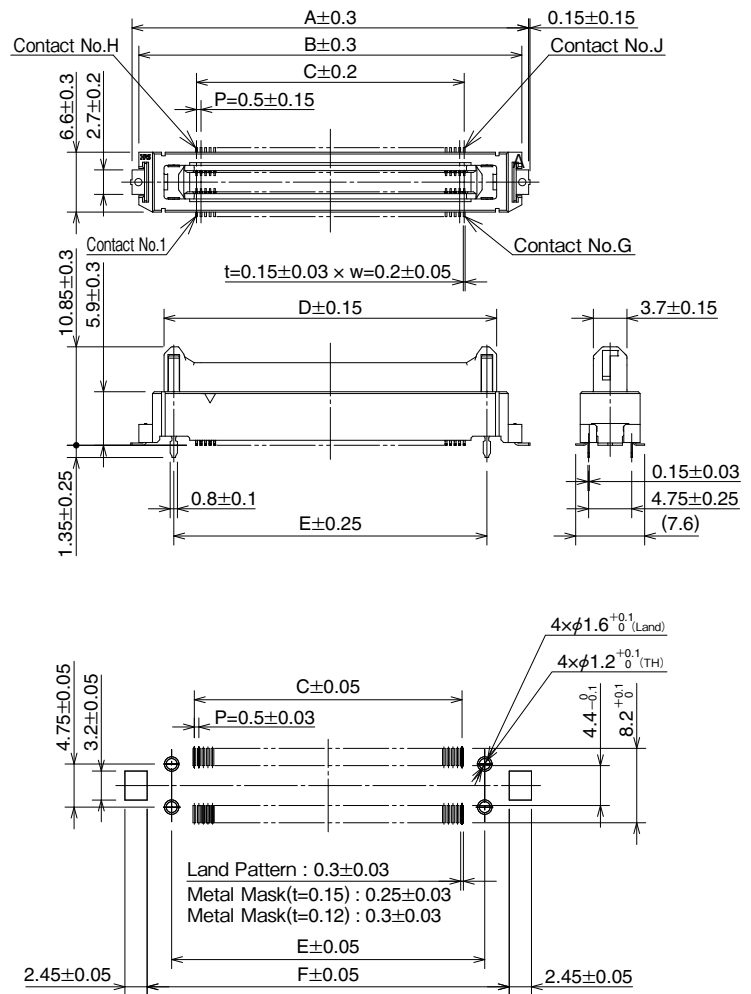
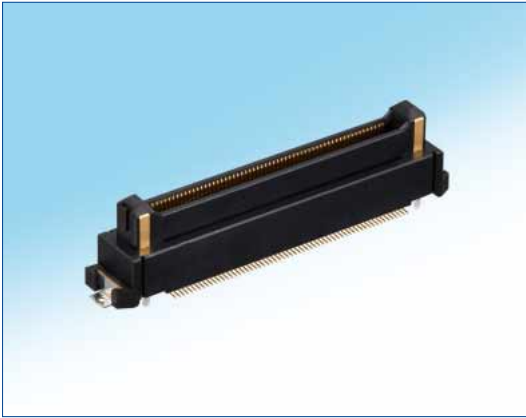
[FX23L-\*\*-P-0.5SV10]



Unit : mm

| Part No.           | HRS No.       | No. of contacts | A    | B    | C    | D     | E    | F    | G  | H  | J   |
|--------------------|---------------|-----------------|------|------|------|-------|------|------|----|----|-----|
| FX23L-20P-0.5SV10  | 573-2101-0 00 | 20              | 18.7 | 17.2 | 4.5  | 11.65 | 9.5  | 14.9 | 10 | 11 | 20  |
| FX23L-40P-0.5SV10  | 573-2102-2 00 | 40              | 23.7 | 22.2 | 9.5  | 16.65 | 14.5 | 19.9 | 20 | 21 | 40  |
| FX23L-60P-0.5SV10  | 573-2103-5 00 | 60              | 28.7 | 27.2 | 14.5 | 21.65 | 19.5 | 24.9 | 30 | 31 | 60  |
| FX23L-80P-0.5SV10  | 573-2104-8 00 | 80              | 33.7 | 32.2 | 19.5 | 26.65 | 24.5 | 29.9 | 40 | 41 | 80  |
| FX23L-100P-0.5SV10 | 573-2105-0 00 | 100             | 38.7 | 37.2 | 24.5 | 31.65 | 29.5 | 34.9 | 50 | 51 | 100 |
| FX23L-120P-0.5SV10 | 573-2106-3 00 | 120             | 43.7 | 42.2 | 29.5 | 36.65 | 34.5 | 39.9 | 60 | 61 | 120 |

[FX23L-\*\*-P-0.5SV12]

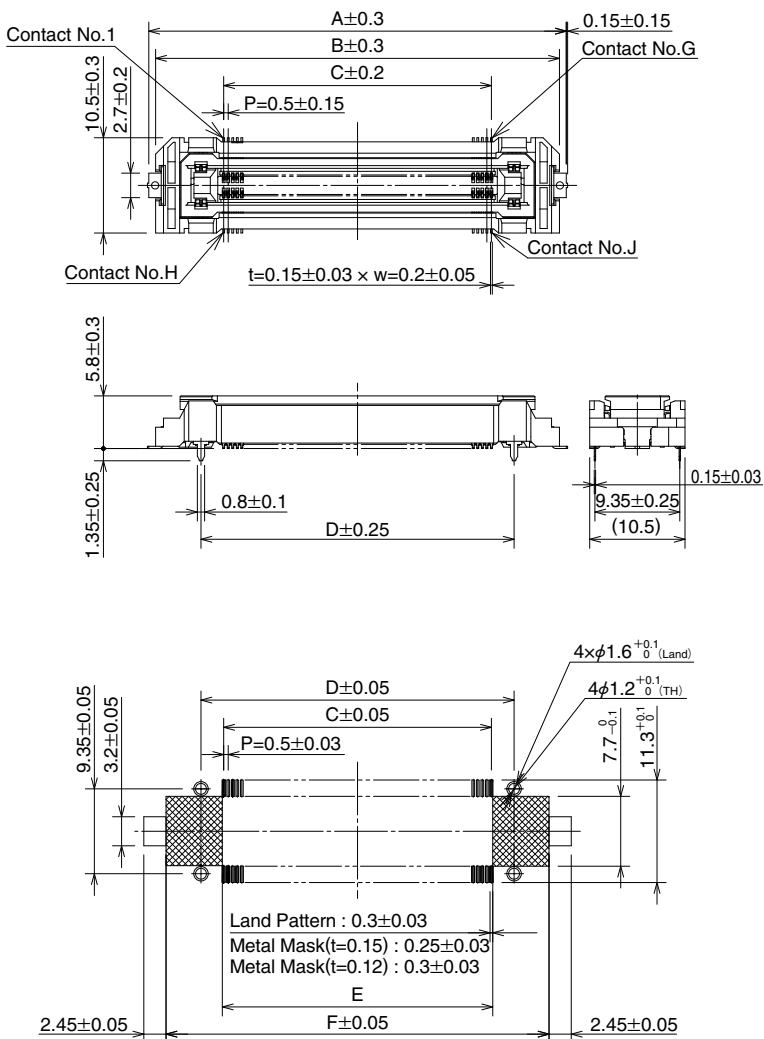
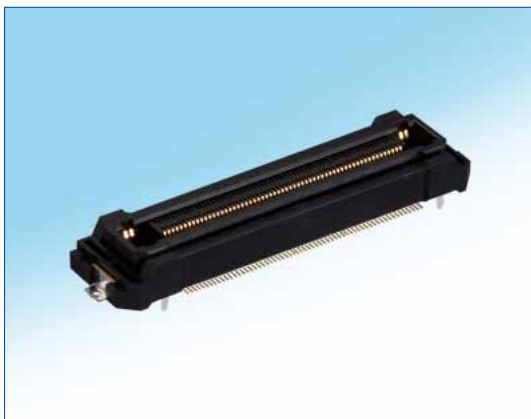


Unit : mm

| Part No.           | HRS No.       | No. of contacts | A    | B    | C    | D     | E    | F    | G  | H  | J   |
|--------------------|---------------|-----------------|------|------|------|-------|------|------|----|----|-----|
| FX23L-20P-0.5SV12  | 573-2201-4 00 | 20              | 18.7 | 17.2 | 4.5  | 11.65 | 9.5  | 14.9 | 10 | 11 | 20  |
| FX23L-40P-0.5SV12  | 573-2202-7 00 | 40              | 23.7 | 22.2 | 9.5  | 16.65 | 14.5 | 19.9 | 20 | 21 | 40  |
| FX23L-60P-0.5SV12  | 573-2203-0 00 | 60              | 28.7 | 27.2 | 14.5 | 21.65 | 19.5 | 24.9 | 30 | 31 | 60  |
| FX23L-80P-0.5SV12  | 573-2204-2 00 | 80              | 33.7 | 32.2 | 19.5 | 26.65 | 24.5 | 29.9 | 40 | 41 | 80  |
| FX23L-100P-0.5SV12 | 573-2205-5 00 | 100             | 38.7 | 37.2 | 24.5 | 31.65 | 29.5 | 34.9 | 50 | 51 | 100 |
| FX23L-120P-0.5SV12 | 573-2206-8 00 | 120             | 43.7 | 42.2 | 29.5 | 36.65 | 34.5 | 39.9 | 60 | 61 | 120 |

● Vertical receptacle

[FX23L-\*\*-S-0.5SV]



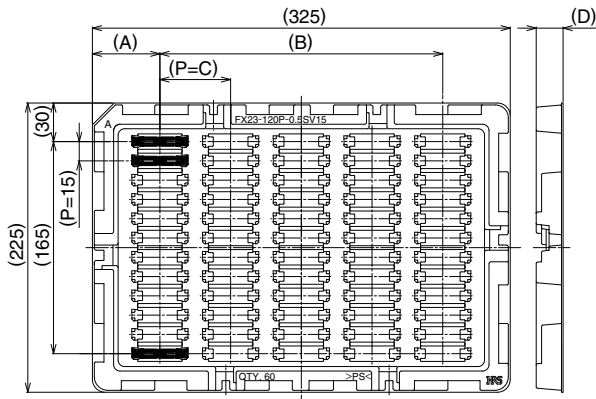
Unit : mm

| Part No.         | HRS No.       | No. of contacts | A  | B    | C    | D    | E    | F    | G  | H  | J   |
|------------------|---------------|-----------------|----|------|------|------|------|------|----|----|-----|
| FX23L-20S-0.5SV  | 573-2301-9 00 | 20              | 21 | 19.5 | 4.5  | 9.5  | 4.8  | 17.2 | 10 | 11 | 20  |
| FX23L-40S-0.5SV  | 573-2302-1 00 | 40              | 26 | 24.5 | 9.5  | 14.5 | 9.8  | 22.2 | 20 | 21 | 40  |
| FX23L-60S-0.5SV  | 573-2303-4 00 | 60              | 31 | 29.5 | 14.5 | 19.5 | 14.8 | 27.2 | 30 | 31 | 60  |
| FX23L-80S-0.5SV  | 573-2304-7 00 | 80              | 36 | 34.5 | 19.5 | 24.5 | 19.8 | 32.2 | 40 | 41 | 80  |
| FX23L-100S-0.5SV | 573-2305-0 00 | 100             | 41 | 39.5 | 24.5 | 29.5 | 24.8 | 37.2 | 50 | 51 | 100 |
| FX23L-120S-0.5SV | 573-2306-2 00 | 120             | 46 | 44.5 | 29.5 | 34.5 | 29.8 | 42.2 | 60 | 61 | 120 |



## ◆ Tray packaged diagram FX23 series

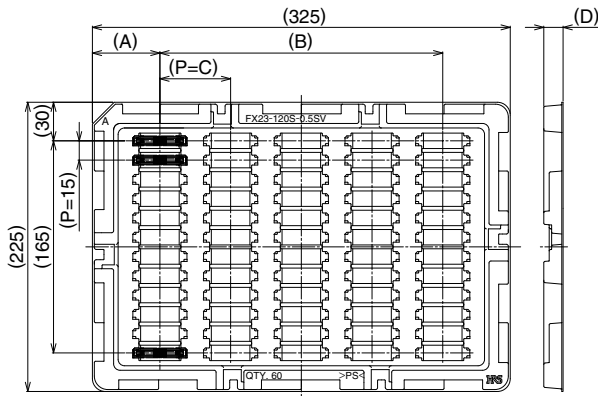
### ● Vertical header



Unit : mm

| Part No.          | Packaging | A    | B   | C    | D    |
|-------------------|-----------|------|-----|------|------|
| FX23-20P-0.5SV15  | 84        | 50   | 225 | 37.5 | 20.9 |
| FX23-20P-0.5SV20  |           |      |     |      | 25.9 |
| FX23-40P-0.5SV15  | 84        | 50   | 225 | 37.5 | 20.9 |
| FX23-40P-0.5SV20  |           |      |     |      | 25.9 |
| FX23-60P-0.5SV15  | 84        | 50   | 225 | 37.5 | 20.9 |
| FX23-60P-0.5SV20  |           |      |     |      | 25.9 |
| FX23-80P-0.5SV15  | 72        | 50   | 225 | 45   | 20.9 |
| FX23-80P-0.5SV20  |           | 47.5 | 230 | 46   | 25.9 |
| FX23-100P-0.5SV15 | 72        | 47.5 | 230 | 46   | 20.9 |
| FX23-100P-0.5SV20 |           |      |     |      | 25.9 |
| FX23-120P-0.5SV15 | 60        | 52.5 | 220 | 55   | 20.9 |
| FX23-120P-0.5SV20 |           |      |     |      | 25.9 |

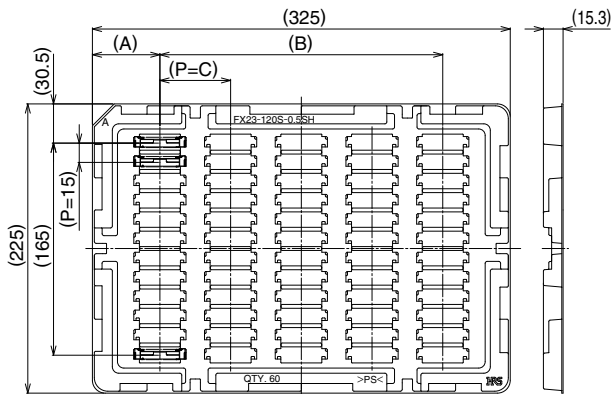
### ● Vertical receptacle



Unit : mm

| Part No.          | Packaging | A    | B   | C    | D    |
|-------------------|-----------|------|-----|------|------|
| FX23-20S-0.5SV    | 84        | 50   | 225 | 37.5 | 15   |
| FX23-20S-0.5SV10  |           |      |     |      | 25.2 |
| FX23-40S-0.5SV    | 84        | 50   | 225 | 37.5 | 15   |
| FX23-40S-0.5SV10  |           |      |     |      | 25.2 |
| FX23-60S-0.5SV    | 84        | 50   | 225 | 37.5 | 15   |
| FX23-60S-0.5SV10  |           |      |     |      | 25.2 |
| FX23-80S-0.5SV    | 72        | 47.5 | 230 | 46   | 15   |
| FX23-80S-0.5SV10  |           |      |     |      | 25.2 |
| FX23-100S-0.5SV   | 72        | 47.5 | 230 | 46   | 15   |
| FX23-100S-0.5SV10 |           |      |     |      | 25.2 |
| FX23-120S-0.5SV   | 60        | 52.5 | 220 | 55   | 15   |
| FX23-120S-0.5SV10 |           |      |     |      | 25.2 |

### ● Right angle receptacle



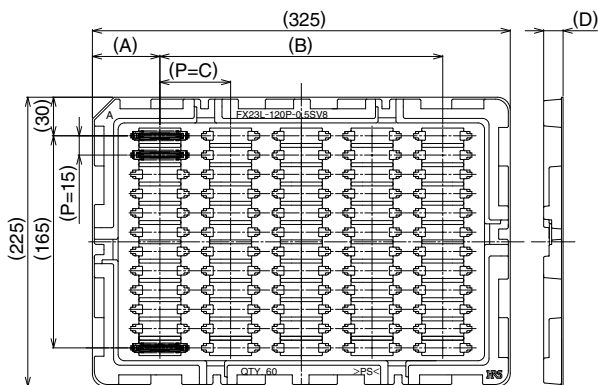
Unit : mm

| Part No.        | Packaging | A    | B   | C    |
|-----------------|-----------|------|-----|------|
| FX23-20S-0.5SH  | 84        | 50   | 225 | 37.5 |
| FX23-40S-0.5SH  | 84        | 50   | 225 | 37.5 |
| FX23-60S-0.5SH  | 84        | 50   | 225 | 37.5 |
| FX23-80S-0.5SH  | 72        | 50   | 225 | 45   |
| FX23-100S-0.5SH | 72        | 47.5 | 230 | 46   |
| FX23-120S-0.5SH | 60        | 52.5 | 220 | 55   |

## Tray packaged diagram FX23L series

### Vertical header

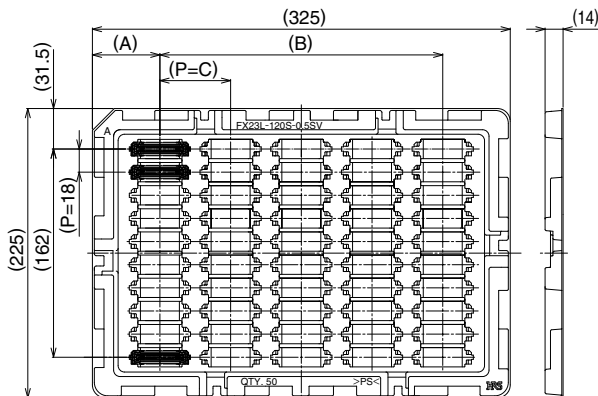
Unit : mm



| Part No.           | Packaging | A    | B   | C    | D    |
|--------------------|-----------|------|-----|------|------|
| FX23L-20P-0.5SV8   | 96        | 40   | 245 | 35   | 15.1 |
| FX23L-20P-0.5SV10  |           |      |     |      | 17.1 |
| FX23L-20P-0.5SV12  |           |      |     |      | 19.1 |
| FX23L-40P-0.5SV8   | 84        | 50   | 225 | 37.5 | 15.1 |
| FX23L-40P-0.5SV10  |           |      |     |      | 17.1 |
| FX23L-40P-0.5SV12  |           |      |     |      | 19.1 |
| FX23L-60P-0.5SV8   | 72        | 50   | 225 | 45   | 15.1 |
| FX23L-60P-0.5SV10  |           |      |     |      | 17.1 |
| FX23L-60P-0.5SV12  |           |      |     |      | 19.1 |
| FX23L-80P-0.5SV8   | 72        | 50   | 225 | 45   | 15.1 |
| FX23L-80P-0.5SV10  |           |      |     |      | 17.1 |
| FX23L-80P-0.5SV12  |           |      |     |      | 19.1 |
| FX23L-100P-0.5SV8  | 60        | 52.5 | 220 | 55   | 15.1 |
| FX23L-100P-0.5SV10 |           |      |     |      | 17.1 |
| FX23L-100P-0.5SV12 |           |      |     |      | 19.1 |
| FX23L-120P-0.5SV8  | 60        | 52.5 | 220 | 55   | 15.1 |
| FX23L-120P-0.5SV10 |           |      |     |      | 17.1 |
| FX23L-120P-0.5SV12 |           |      |     |      | 19.1 |

### Vertical receptacle

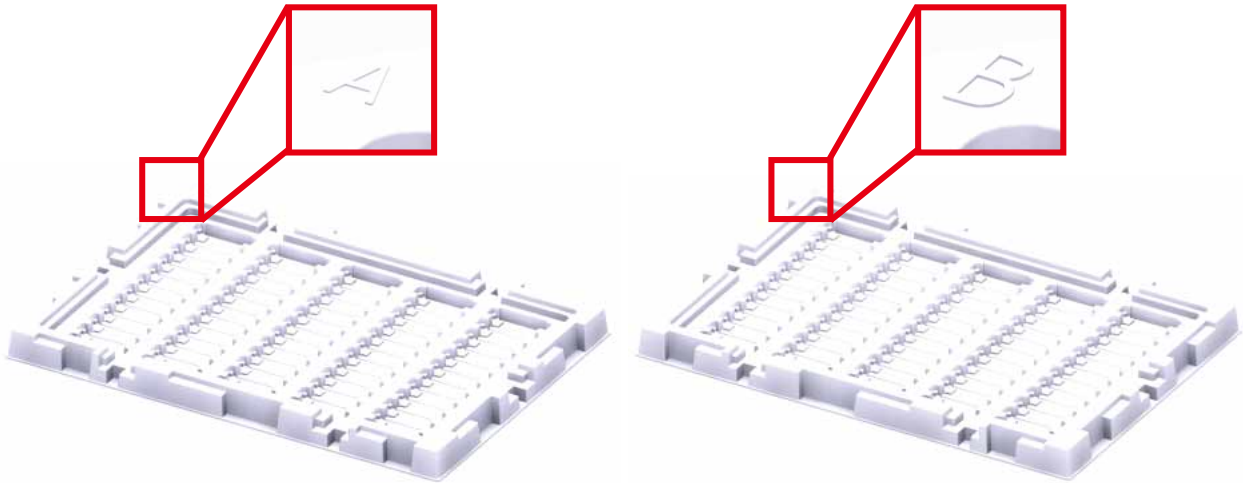
Unit : mm



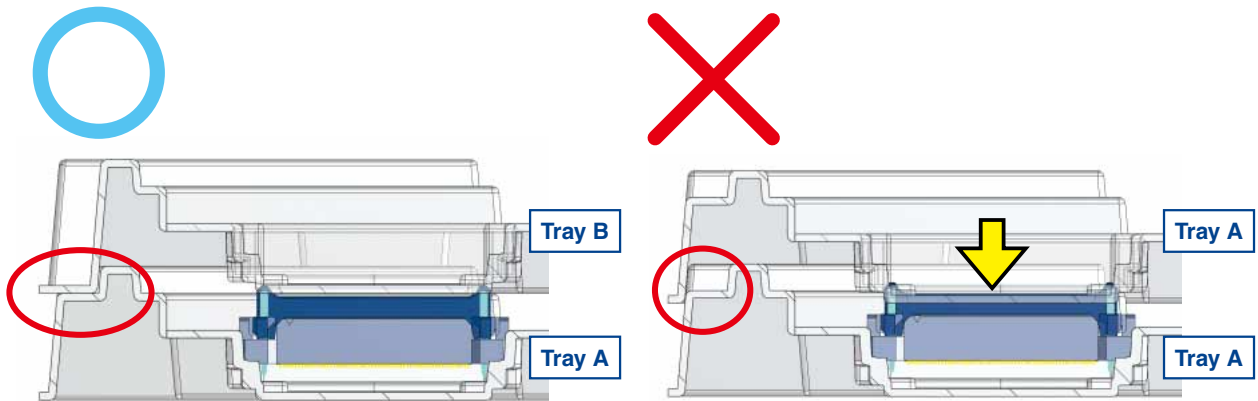
| Part No.         | Packaging | A    | B   | C  |
|------------------|-----------|------|-----|----|
| FX23L-20S-0.5SV  | 90        | 38.5 | 248 | 31 |
| FX23L-40S-0.5SV  | 80        | 40   | 245 | 35 |
| FX23L-60S-0.5SV  | 70        | 42.5 | 240 | 40 |
| FX23L-80S-0.5SV  | 60        | 47.5 | 230 | 46 |
| FX23L-100S-0.5SV | 50        | 52.5 | 220 | 55 |
| FX23L-120S-0.5SV | 50        | 52.5 | 220 | 55 |

## ◆ In Regards to Storing FX23 Series

There are two types of tray (A and B) for the FX23 series.  
 These have been designed to stack in alternating order (A-B-A-B...) for shipping and storage.



If tray A is stacked on top of another tray A, or if tray B is stacked on top of another tray B, the trays will put a load on the connectors, potentially causing connector breakage or deformation.

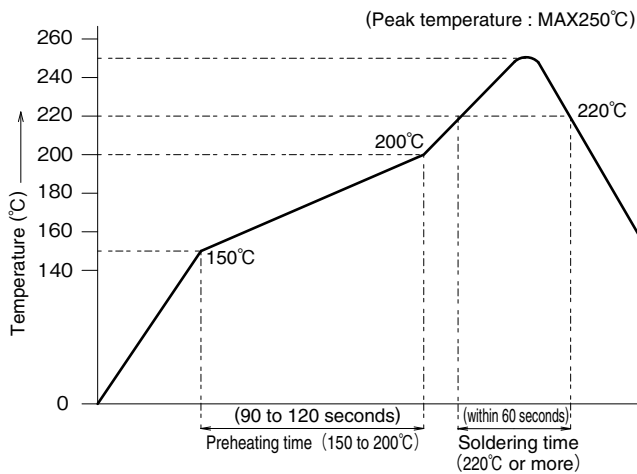


When stacked correctly, the outer structure of the trays will prevent any load from being placed on the connectors below.

When stacked incorrectly, the outer structure of the trays will not function, resulting in adding load to the connector.

When storing the FX23 series, please ensure that the trays are stacked in alternating order. Thank you.

## ◆ Recommended temperature profile



### <Applicable conditions>

Test PCB Dimension : 110×60×1.6mm  
 Material : Glass epoxy  
 Solder composition : Sn-3Ag-0.5Cu  
 Flux content : 11wt%  
 Metal mask thickness : 0.12mm, 0.15mm  
 Number of reflow times : 2 times max.

\*The temperature profile is a reference under the condition of the above settings : Temperature profile may change depending on the conditions such as solder paste types, manufacturers, PCB size, and other soldering materials, please fully check the mounting conditions before use.

## ◆ Cleaning conditions

### ● Cleaning with organic solvent

| Solvent                 | Cleaning at normal temperature | Heating cleaning |
|-------------------------|--------------------------------|------------------|
| IPA (Isopropyl alcohol) | ○                              | ○                |

### ● Cleaning with water

When water-type cleaning agents (terpene, alkaline saponification agents) are used, select cleaning agents based on the 'table of influence' on metals and resins issued by the cleaning agent manufacturer. Caution : Do not leave with any water content left.

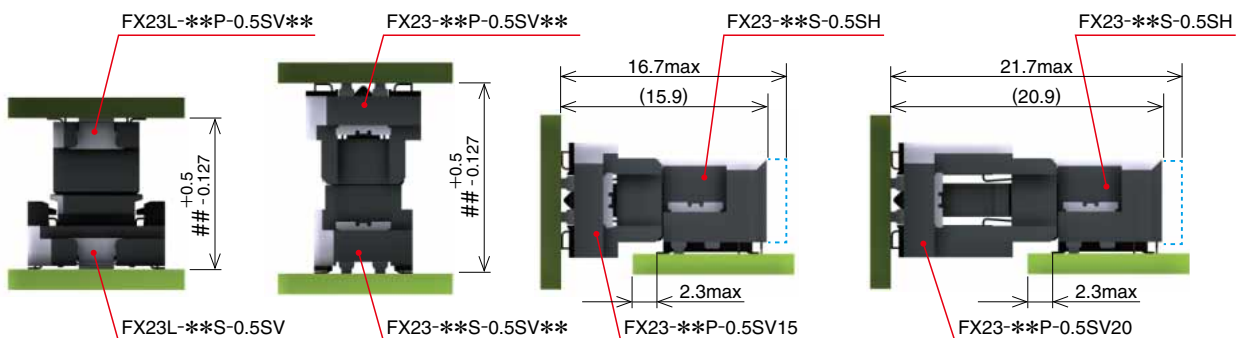
### ● Precautions in cleaning

When cleaning the parts with organic solvents and water-type agents, if flux or cleaning agents remain in the connector, it could cause the deterioration of electric performance. Please be sure to check if adequate cleaning has been carried out.

## ◆ Precautions in use

### ● About the specified dimension between PCBs

The dimension between PCBs shall be within the following range :



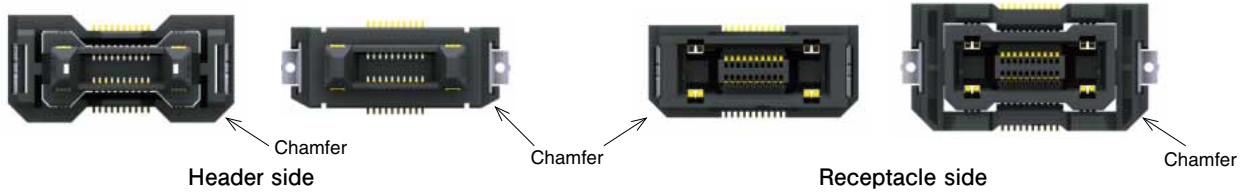
## : Stack height

● **Fixation among PCBs**

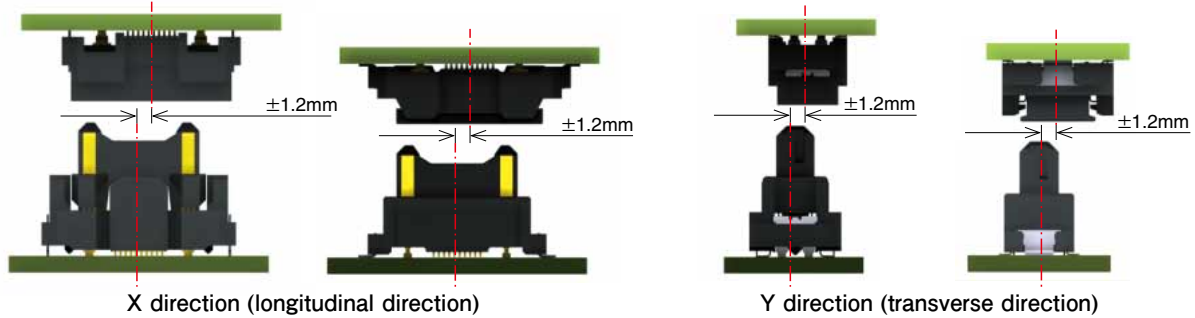
Please take measures to fix the PCB other than using connectors.

● **Cautions in mating operations**

• This connector is designed to prevent reverse insertion. The connector could be damaged if excessive force is exerted when mating. Avoid excessive force when mating. Mate only after confirming the following connector properties (chamfer of the external face) :



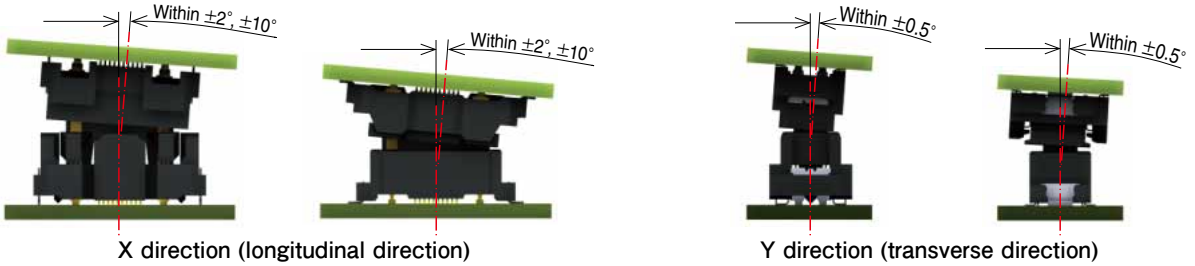
• The allowable misalignment is  $\pm 1.2\text{mm}$  in both the X and Y directions. After mating is started, proceed with the operation along a straight line without forcing the connector.



• When mating / un-mating, it is strongly recommended to insert or remove in a straight line. If not possible, the operation shall be carried out within the following angle. Moreover, during the mating operation, be sure to proceed without forcibly applying a load to the connector. Allow the connector to be placed straight when the mating operation is completed.

X direction (longitudinal direction)  $\Rightarrow$  for 20, 40, 60-pos. : within  $2^\circ$  ; for 80, 100, 120-pos. : within  $10^\circ$   
 Y direction (transverse direction)  $\Rightarrow$  within  $0.5^\circ$

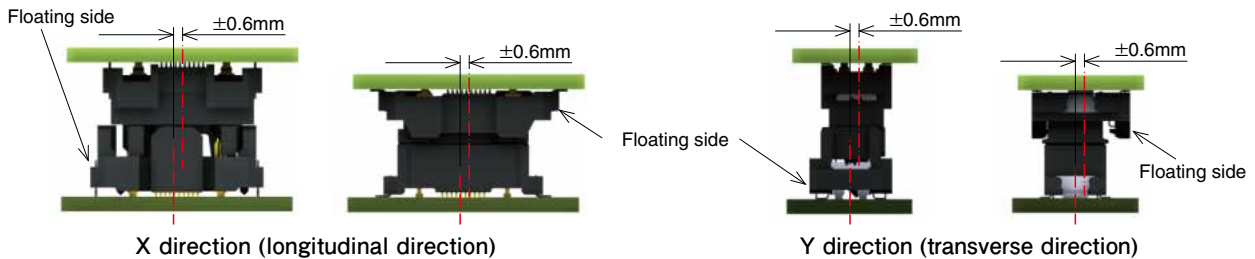
(However, this is not a recommended operation. Damage to the connector could occur.)



● **Permissible position deviation in the mated state (floating movable amount)**

This connector is designed to float when mated, the permissible PCB position deviation in the mated state is  $\pm 0.6\text{mm}$  in both the X and Y directions.

However, it is not applicable to absorbing when the position deviation amount is continually changing due to vibration etc. Be sure to secure PCBs after mating. Additionally, the number of repetitive floating operations shall be according to the number of connector insertion/withdrawal cycles.



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