

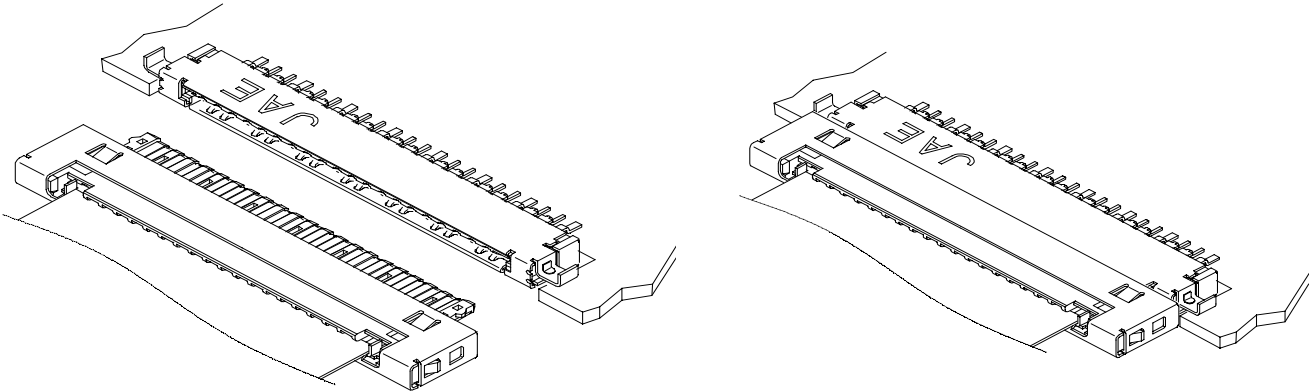


LCD interface connector compatible with high-speed differential transmission

CONNECTOR  
MB-0014-7

## FI-X Series

March 2001



Technologies for LCD displays have progressed from XGA and SXGA to UXGA. With this progress, transmission speed is also increasing. In addition, the demand for thinner LCDs is increasing along with the growth of the market for more compact notebook PCs. The FI-X Series is a slimline connector compatible with high-speed differential transmission to meet such demands.

### Features

- Compatible with high-speed differential transmission and high-level impedance matching (90 to 100Ω)
- Drastically improved grounding which is directly related to EMI characteristics.
- 1.5mm connector height and 1mm height above the PCB thanks to bottom type structure.
- 1mm contact pitch with impedance matching.
- Compatible with FPC and cable by common use of board header.  
Enables stable grounding to the PCB thanks to FPC relay used in other FI Series connectors.

### General Specifications

- |   |  |
|---|--|
| ■ No. of contacts: 14, 20, 30 (all signal)<br>D7 (only for differential transmission) | ■ Rated current: 1A per pin for both AC and DC   |
| ■ Applicable FPC: $t0.14^{\pm 0.03}$  | ■ Rated voltage: 200V per pin for both AC and DC |
| ■ Applicable cable: AWG #30 to #40  | ■ Insulation resistance: Greater than 100MΩ      |
| ■ Operating temperature: -40°C to +80°C   | ■ Withstand voltage: AC500Vr.m.s. for 1 minute   |
| ■ Contact resistance: Less than 40mΩ  | ■ Pitch: 1mm                                     |

Connector Combination
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**■ No. of contacts**

D7	differential 7pairs
14	all for signals 14 pos.
20	all for signals 20 pos.
30	all for signals 30 pos.

**■ Board**

Mounting form	Part Number
bottom type	FI-XB**S-HF10
bottom reverse type	FI-XB**SR-HF11
top type	FI-X**S-HF

**■ Cable**

Connection	Part Number	Applicable cable
FPC relay (reverse)	FI-X**M (R)	FPC t0.14 $\pm 0.03$
Crimp	FI-X**H	Discrete wire AWG #30 to 36
Fine coaxial cable	FI-X**C/FI-X**CH-7000	Fine coaxial cable AWG #40

Materials and Finishes
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**■ FI-XB\*\*S (R)-HF\*\*, FI-X\*\*S-HF (Board connector)**

Components	Materials and finishes
Contact	Copper alloy: Contact portion(connector mating part)/ Au plating over nickel, Terminal portion/ SnPb plating over nickel
Insulator	Thermal plasticity resin (UL94V-0)
Shell	Copper alloy/Sn plating

**■ FI-XC3-1-15000**

Components	Materials and Finishes
Contact	Copper alloy: Contact portion(connector mating part)/ Au plating over nickel Cable crimping portion/ Sn plating

**■ FI-X\*\*C (Fine coaxial cable side)**

Components	Materials and finishes
Contact	Copper alloy: Contact portion(connector mating part)/ Au plating over nickel Cable soldering portion/ SnPb plating over nickel
Insulator	Thermal plasticity resin
Shell, Ground Plate	Stainless steel

**■ FI-X\*\*M (R) (Cable connector, FPC relay type)**

Components	Materials and finishes
Contact	Copper alloy: Contact portion(connector mating part)/ Au plating over nickel, FPC contact portion/ SnPb plating over nickel
Insulator	Thermal plasticity resin
Shell	Copper alloy/Sn plating
Slider	Thermal plasticity resin

**■ FI-X\*\*H (Cable, Crimp housing)**

Components	Materials and Finishes
Housing	Thermal plasticity resin
Shell	Copper alloy/ Sn plating (D7: Au plating over nickel on ground)

Dimensions and Shape

Ordering Information

**FI-X B D7 S-HF 10**

Series name

B: Bottom mounting type

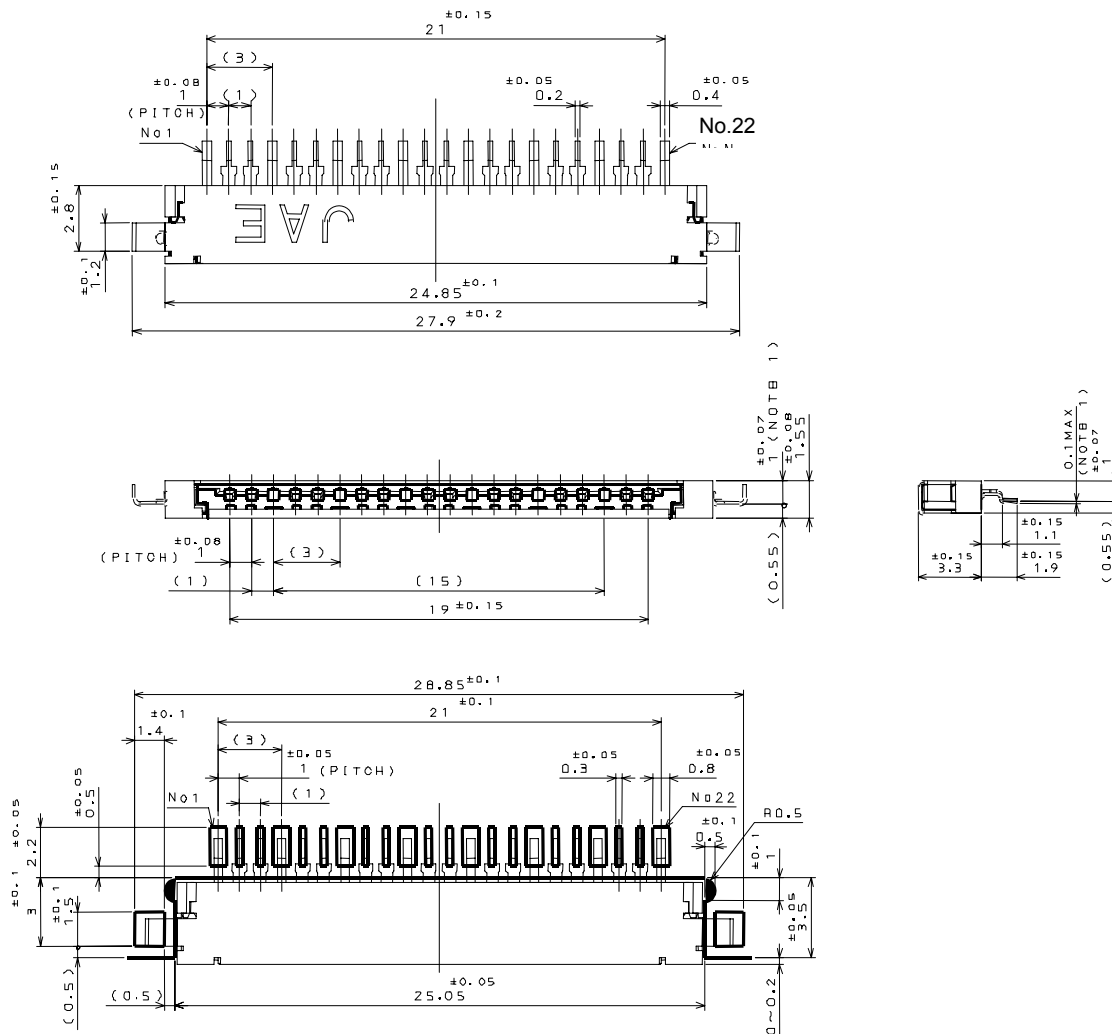
No. of contacts: D7 (Differential 7 pairs)

Mounting height 1mm (Board thickness t0.55)

Angled type

Socket connector

Part Number	FI-XBD7S-HF10
Drawing No.	SJ033459



**Applicable Board Dimensions (for reference)**

Unit : mm

Note1: An embossed tape reel contains 3000 pieces.

Please contact us for details of embossed tape specifications.

Note2: Contact with terminal numbers 1, 4, 7, 10, 13, 16, 19, 22 are only for ground.

Dimensions and Shape

**FI-X B \*\* S-HF 10**

Ordering Information

Series name

B: Bottom mounting type

No. of contacts: 14, 20, 30 (all for signals)

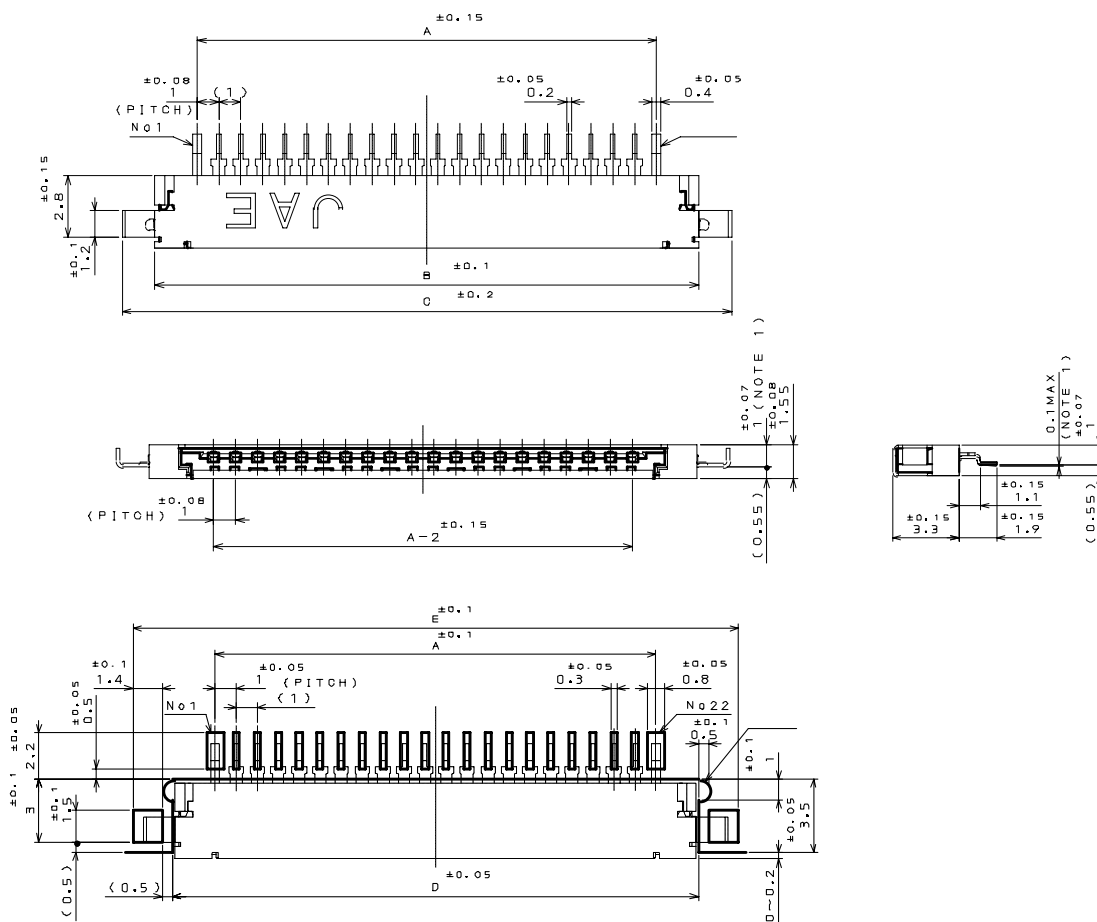
Mounting height 1mm (Board thickness t0.55)

Angled type

Socket connector

Part Number	FI-XB**S-HF10	
Drawing No.	SJ033461 (14,20 pos.)	SJ034696 (30 pos.)

Unit :mm



**Applicable Board Dimensions (for reference)**

**TABLE**

No. of CONTACTS, N	DIMENSION				
	A	B	C	D	E
14	15	18.85	21.9	19.05	22.85
20	21	24.85	27.9	25.05	28.85
30	31	34.85	37.9	35.05	38.85

Note1: An embossed tape reel contains 3000 pieces.

Please contact us for details of embossed tape specifications.

Note 2: Contact with terminal numbers 1, N+2 are only for ground.



Dimensions and Shape

Ordering Information

Series name **FI-X**

\*

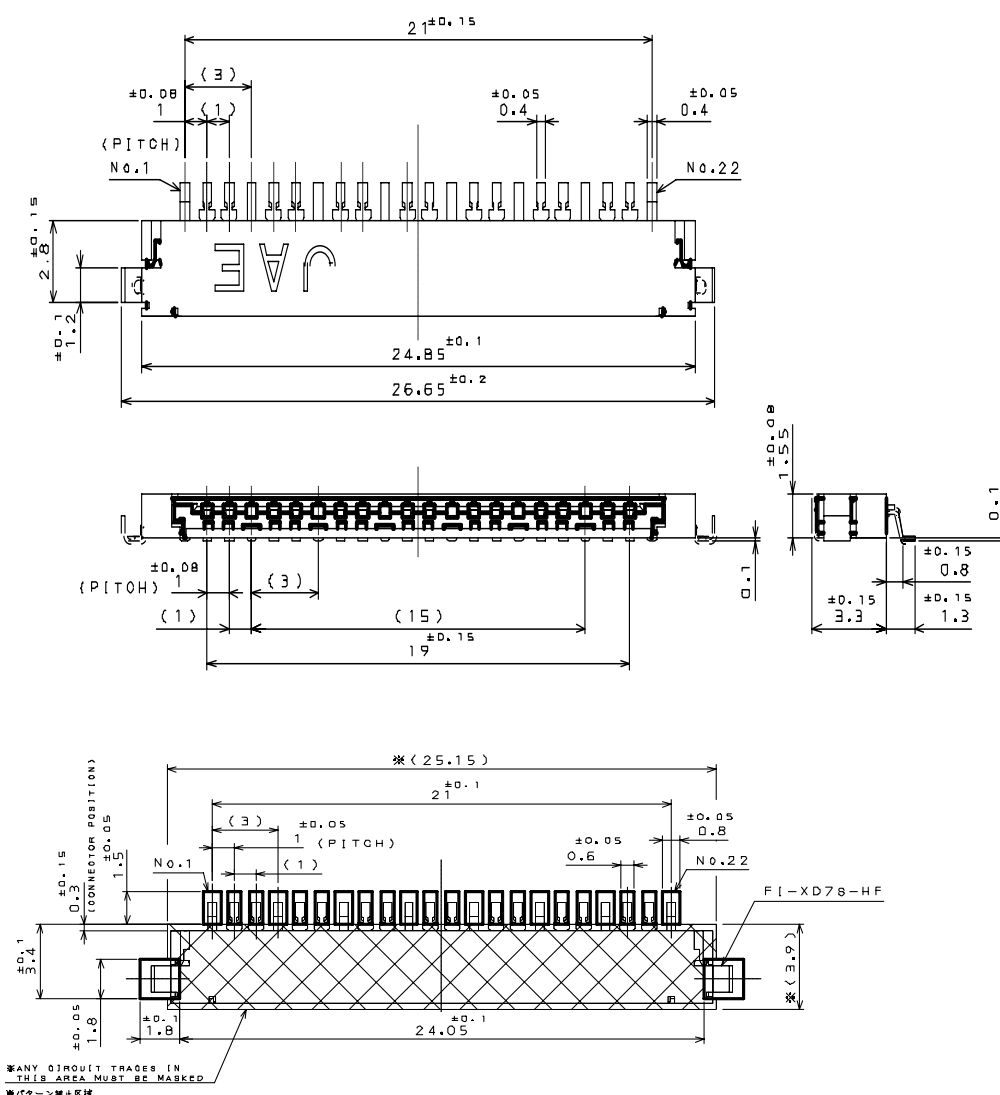
**S - HF**

Angled type

No. of contacts: D7 (Differential 7 pairs)

Socket connector

Part Number	FI-XD7S-HF
Drawing No.	SJ034506



**Applicable Board Dimensions (for reference)**

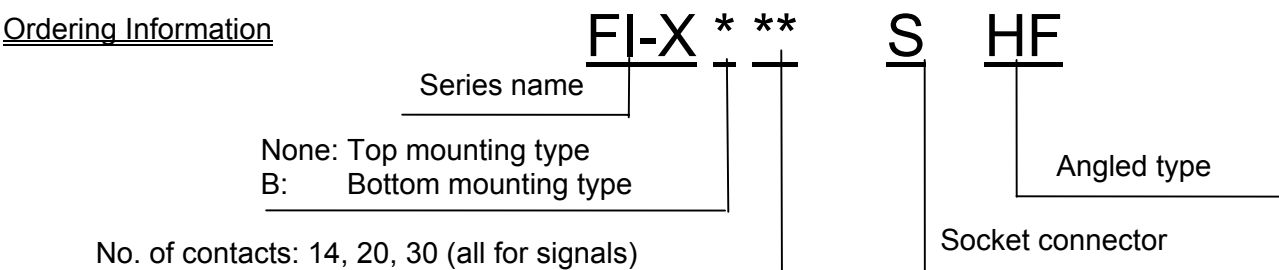
Unit: mm

Note1: An embossed tape reel contains 3000 pieces.

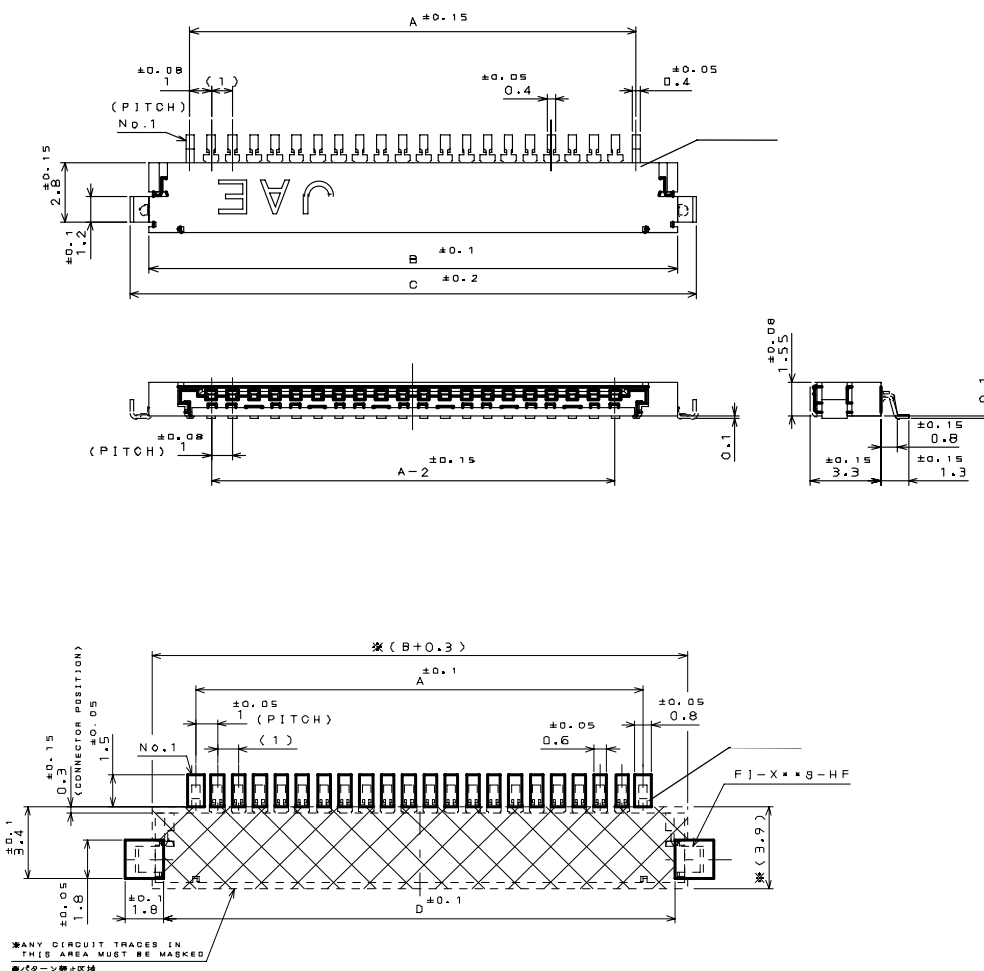
Please contact us for details of embossed tape specifications.

Note2: Contact with terminal numbers 1, 4, 7, 10, 13, 16, 19, 22 are only for ground.

Ordering Information



Part Number	FI-X**S-HF	
Drawing No.	SJ034508 (14,20 pos.)	SJ034697 (30 pos.)



**Applicable Board Dimensions (for reference)**

Note1: An embossed tape reel contains 3000 pieces.

Please contact us for details of embossed tape specifications.

Note2: Contact with terminal numbers 1, N+2 are only for ground.

Ordering Information

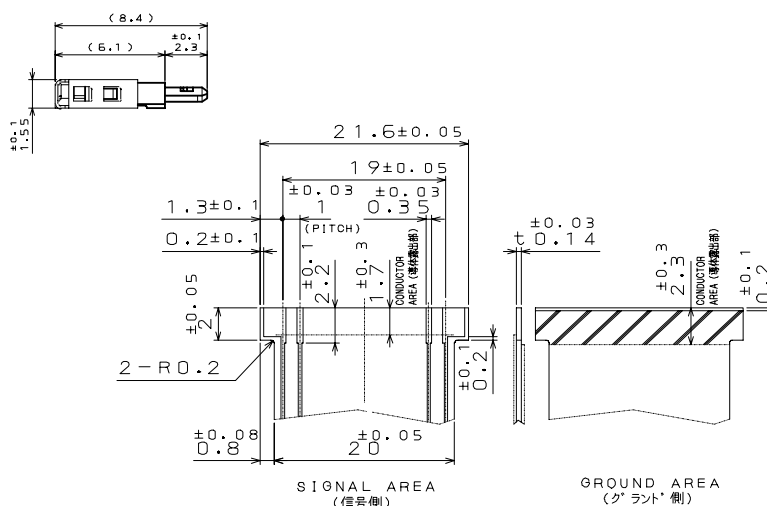
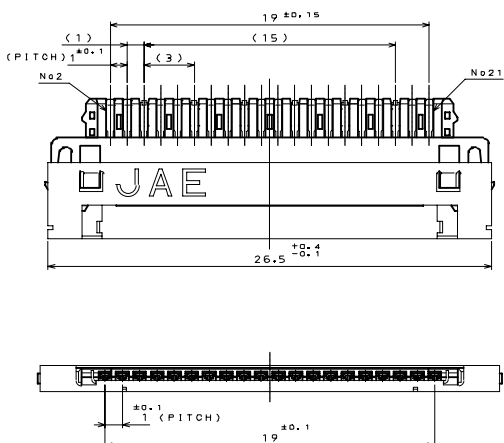
**FI-X \*\* M**

Series name

M: FPC relay type

No. of contacts: 14, 20, 30 (all for signals),  
D7 (Differential 7pairs)

Part Number	FI-XD7M
Drawing No.	SJ033463



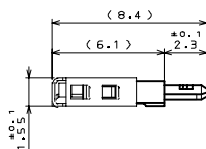
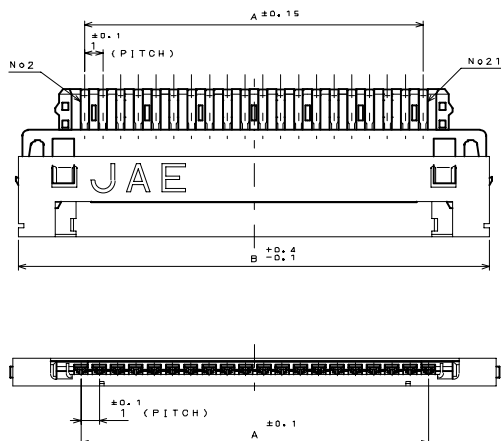
Note2: Contact with terminal numbers 4, 7, 10, 13, 16, 19 are only for ground terminals.

**Applicable FPC Dimensions**  
**(for reference)**

Part Number	FI-X**M	
Drawing No.	SJ033464(14,20 pos.)	SJ034703 (30 pos.)

TABLE 1

No. of CONTACTS(N)	DIMENSION	
	A	B
14	13	20.5
20	19	26.5
30	29	36.5



Unit: mm





Ordering Information

# FI-X \*\* CH-7000

Series name

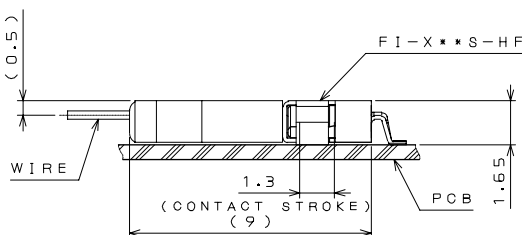
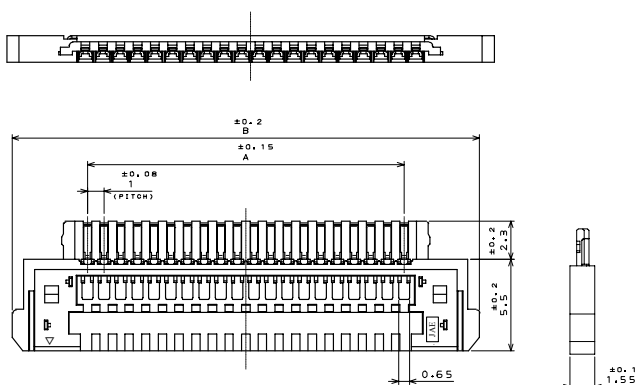
C: Connector Ass'y

No. of contacts: 20, 30

CH-7000: Slider shell (7000pcs/reel)

Part Number	FI-X**C	FI-X**CH-7000
Drawing No.	SJ034904 (20, 30 pos.)	SJ034905 (20, 30 pos.)

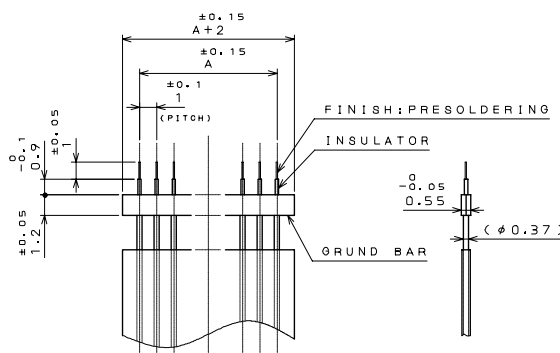
■ FI-X\*\*C Connector Ass'y



**Diagram of connector when mated**

**TABLE 1**

No. of CONTACTS(N)	DIMENSION	A	B
20		19	28.5
30		29	38.5

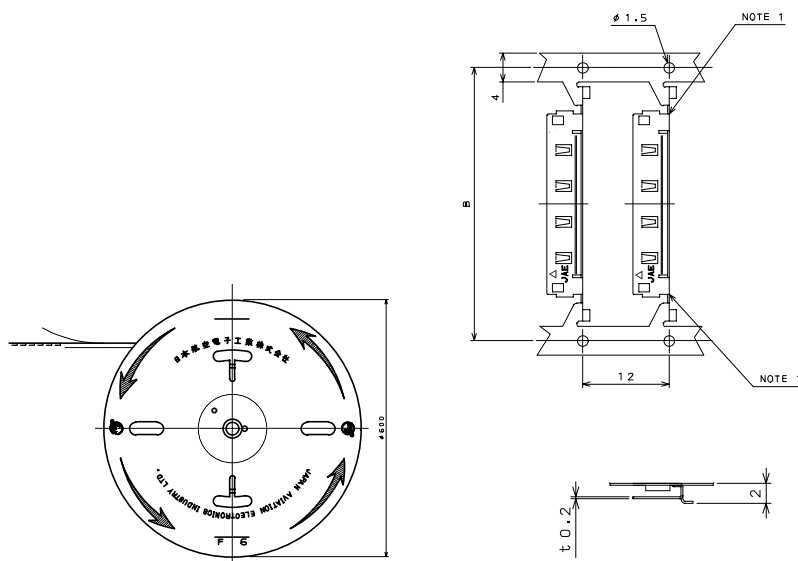


**Applicable fine coaxial cable (for reference)**

Note)  
Applicable wire and cautions regarding connection

Instruction manual	JABL-1597-6
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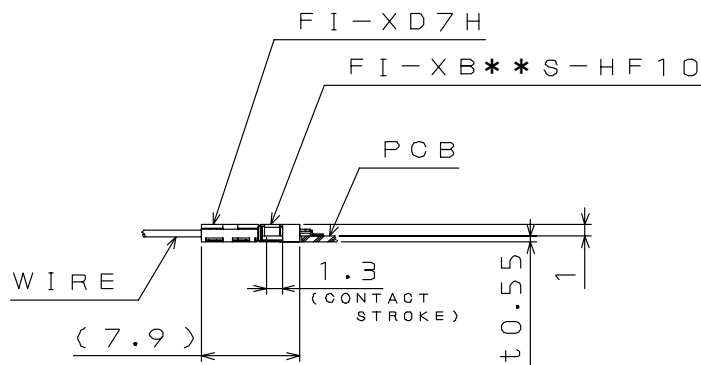
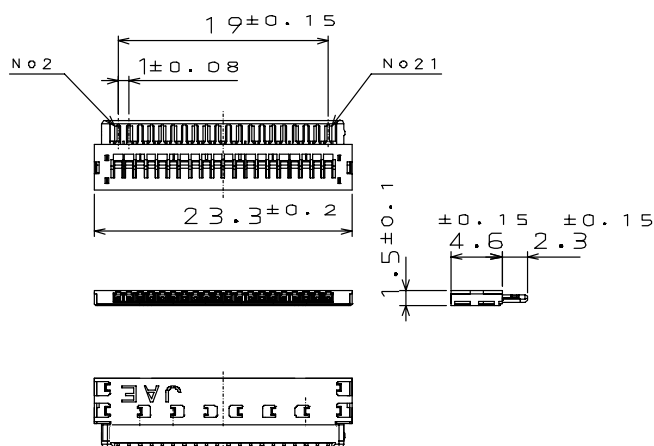
■ FI-X\*\*CH-7000 (Slider shell)



Ordering Information

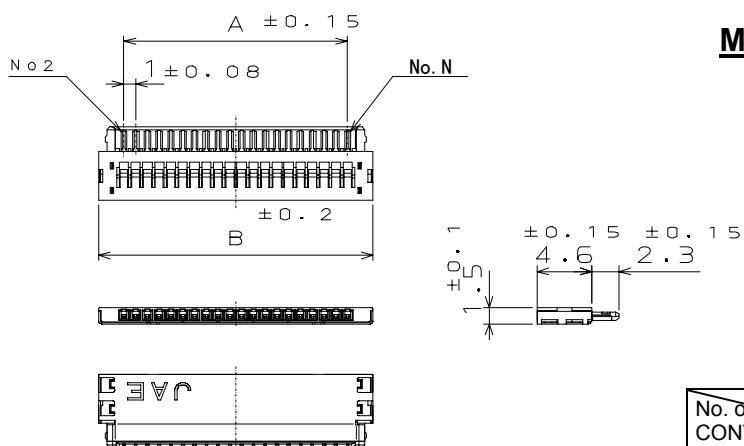
Series name **FI-X** **\*\*** **H**  
 H: Crimp housing  
 No. of pos. : 14,20,30 (all for signals)  
 D7 (Differential 7pairs)

Part Number	FI-XD7H
Drawing No.	SJ033912



Note1: Contact with terminal numbers 4, 7, 10, 13, 16, 19 are positions only for ground contacts.

Part Number	FI-X**H
Drawing No.	SJ033913 (14, 20, 30 pos.)



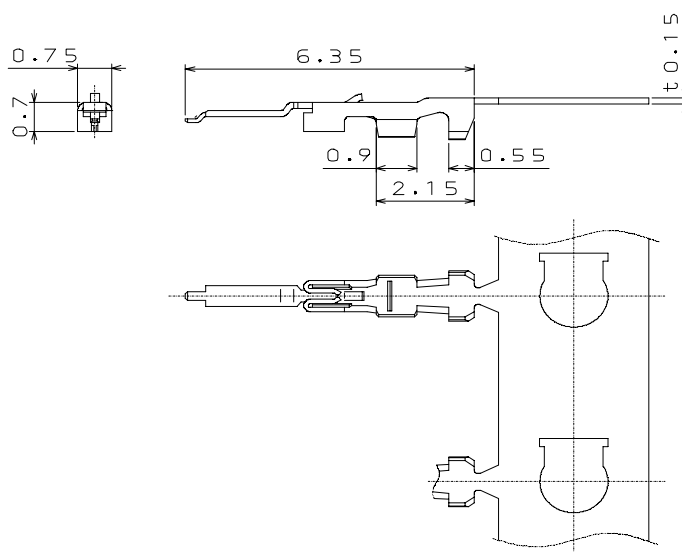
Mating Dimensions (for reference)

No. of CONTACTS(N)	DIMENSION	
	A	B
14	13	17.3
20	19	23.3
30	29	33.3

Ordering Information

<b>FI-X</b>	<b>C3- 1- 15000</b>
Series name	No. of pos. per reel: 15,000
	Plating;1; Au plating over nickel
	Applicable Wire: AWG #30 to 36

Part Number	FI-XC3-1-15000
Drawing No.	SJ033911



**Applicable Cable** AWG #30 to 36 insulation diameter  $\varnothing 0.45$  to  $\varnothing 0.75$ mm  
Compatible with discrete wire, twinax cable (twist pair cable with shield)

**Tooling**

Semi automatic : press CP210-1B or CP215-4  
applicator 350-FI-2B

Extraction tool : ET-FIX-1

Note) To upgrade the 350-FI-2 applicator for use with FI-X series contacts, all you have to do is to replace the parts of anvils and crimpers.

covered anvil:725-03249-030,

core wire anvil:725-03249-031

covered crimper : 725-03249-032,

core wire crimper : 725-03249-033

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**Notice:** Products shown in this leaflet are made for the applications listed below. However, if the above-mentioned products are to be used in aerospace devices, marine cable-connection devices, atomic power control systems, medical equipment for life-support systems, or any other specific application requiring extremely high reliability, please contact JAE for further information. Recommended applications: Computers, Office machines, Measuring devices, Telecommunication devices (Terminals, Mobile devices), AV devices, Household applications, FA devices, etc.