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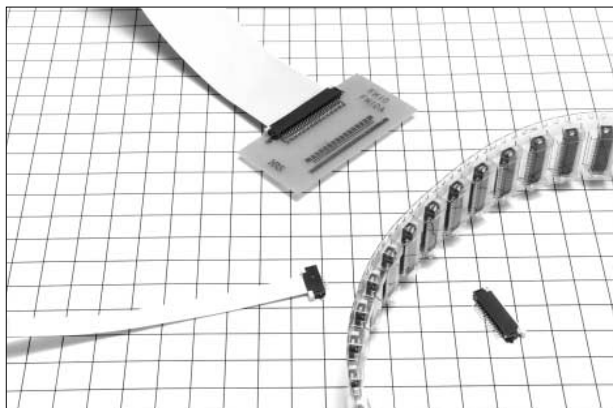
[FH10A-8S-1SHB](#)

For any questions, you can email us directly:

[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)

# 1mm Pitch FPC/FFC Connector

## FH10A Series



### ■Features

#### 1. ZIF Mechanism

ZIF mechanism allows a stable contact to slightly insert FPC and FFC connectors and push movable members, so that mounting serviceability can be secured.

#### 2. 1mm Pitch Connector Suitable to SMT

This connector is installed in the board with high density, and automatic mountable SMT type, while the contact pitch is 1mm.

#### 3. Products Packaged in Embossed Tapes

Products packaged in embossed tapes are available, correspondent to automatic mounting.

### ■Applications

HDD, facsimiles, printers, VTR, crystal liquid modules, etc.

### ■Product Specifications

|        |                                              |                                                                                                                       |                                                                                                                   |
|--------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Rating | Rated Current: 0.5A<br>Rated Voltage: 50V AC | Operating Temperature Range:-55~+85°C (Note 1)<br>Operating Humidity Range:Relative humidity, 90% max.<br>(Not dewed) | Storage Temperature Range:-10~+60°C (Note 2)<br>Storage Humidity Range:Relative humidity, 90% max.<br>(Not dewed) |
|--------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|

|                |                          |
|----------------|--------------------------|
| Applicable FPC | t=0.3±0.5 Solder plating |
|----------------|--------------------------|

| Item                                   | Specification                                                                                                      | Condition                                                                                                        |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| 1. Insulation Resistance               | 500MΩ min                                                                                                          | Measured at 100V DC                                                                                              |
| 2. Withstand voltage                   | Neither short or breakdown should occur                                                                            | 500V AC for 1 minute                                                                                             |
| 3. Contact Resistance                  | 25mΩ max.<br>* FPC conductor resistance included                                                                   | Measured at 100A                                                                                                 |
| 4. Mechanical operation                | Contact resistance : 25mΩ max.<br>No part should be broken, cracked or loosened                                    | 30 cycles                                                                                                        |
| 5. Vibration                           | Electrical discontinuity, 1μs min.<br>No part should be broken, cracked or loosened                                | Frequency: 10~55Hz and full amplitude 1.52mm in 3 directions for 2 hours, respectively                           |
| 6. Shock                               | Electrical discontinuity, 1μs min.<br>No part should be broken, cracked or loosened                                | Acceleration: 490m/S <sup>2</sup> , duration: 11ms, sine half-wave in 3 directions for 3 times, respectively     |
| 7. Moisture Resistance in Steady State | Contact resistance: 25mΩ max.<br>Insulation resistance: 50MΩ min.<br>No part should be broken, cracked or loosened | Exposed to temperature 40°C and humidity 90~95% for 96 hours                                                     |
| 8. Temperature Cycle                   | Contact resistance: 25mΩ max.<br>Insulation resistance: 50MΩ min.<br>No part should be broken, cracked or loosened | Temperature: -40°C→+15~35→+85→+15~+35°C<br>Time: 30→5~30 max.→ 5 minutes<br>5 cycles under conditions as follows |
| 9. Resistance to Soldering heat        | Neither appearance should be deformed nor contact remarkably loosened.                                             | Reflow: According to recommended temperature profile<br>Automatic soldering: 350±5 for 3 seconds                 |

Note 1. Temperature rise included when energized

Note 2. This storage indicates a long-term storage state for the unused product before board mounted. The operating temperature and humidity ranges are applied to the non-energized state after the connector has been installed in the board.

Note 3. The above standards represent this series. The individual formal agreement should be based on the "Specification"

## Material

| Part      | Material        | Finish         | Remarks |
|-----------|-----------------|----------------|---------|
| Insulator | PBT             | Natural        | UL94V-0 |
| Contact   | Phosphor bronze | Solder plating | —       |

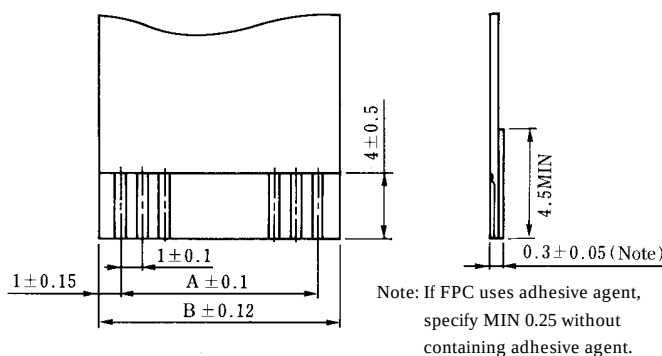
## Ordering Information

Please determine the specific product. If needed, please select and order the product from the product No. as listed on catalog page D12 and D13.

**FH 10A - 10 S - 1 SH B (02)**  
**q w e r t y u i**

|                                      |                                                                                         |
|--------------------------------------|-----------------------------------------------------------------------------------------|
| <b>q</b> Series Name : FH            | <b>y</b> Contact Style : SH : SMT type                                                  |
| <b>w</b> Series No. : 10A            | <b>u</b> Positioning boss : No symbol : Without boss<br>B : With boss                   |
| <b>e</b> Number of Contacts: 6 to 30 | <b>i</b> Package style : No symbol---Tube : packaging<br>(02)---Embossed tape packaging |
| <b>r</b> Contact alignment: Single   |                                                                                         |
| <b>t</b> Contacts Pitch : 1mm        |                                                                                         |

## FPC · FFC Dimensions



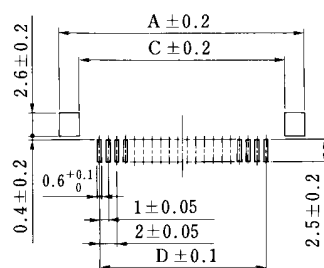
Unit : mm

| Size               | A  | B  |
|--------------------|----|----|
| Number of Contacts |    |    |
| 6                  | 5  | 7  |
| 7                  | 6  | 8  |
| 8                  | 7  | 9  |
| 9                  | 8  | 10 |
| 10                 | 9  | 11 |
| 11                 | 10 | 12 |
| 12                 | 11 | 13 |
| 13                 | 12 | 14 |
| 14                 | 13 | 15 |
| 15                 | 14 | 16 |
| 16                 | 15 | 17 |
| 17                 | 16 | 18 |
| 18                 | 17 | 19 |

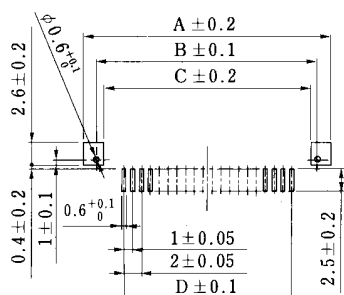
| Size               | A  | B  |
|--------------------|----|----|
| Number of Contacts |    |    |
| 19                 | 18 | 20 |
| 20                 | 19 | 21 |
| 21                 | 20 | 22 |
| 22                 | 21 | 23 |
| 23                 | 22 | 24 |
| 24                 | 23 | 25 |
| 25                 | 24 | 26 |
| 26                 | 25 | 27 |
| 27                 | 26 | 28 |
| 28                 | 27 | 29 |
| 29                 | 28 | 30 |
| 30                 | 29 | 31 |

## PCB Footprints

### Without boss



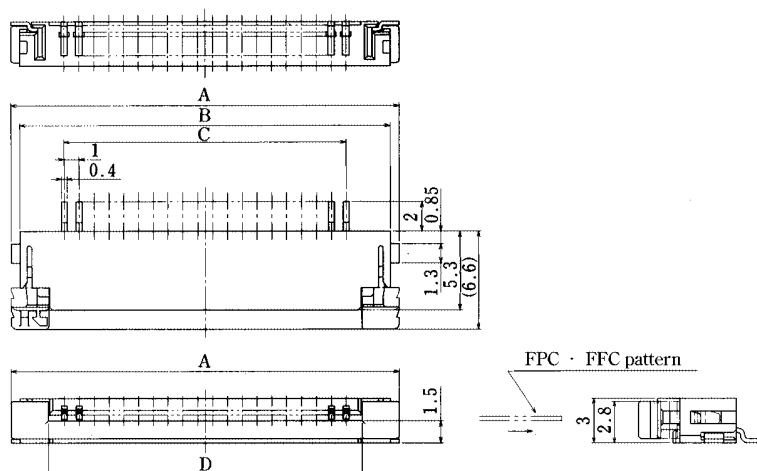
### With Boss



Unit : mm

| Size               | A  | B    | C    | D  |
|--------------------|----|------|------|----|
| Number of Contacts |    |      |      |    |
| 6                  | 14 | 10.9 | 9.4  | 5  |
| 7                  | 15 | 11.9 | 10.4 | 6  |
| 8                  | 16 | 12.9 | 11.4 | 7  |
| 9                  | 17 | 13.9 | 12.4 | 8  |
| 10                 | 18 | 14.9 | 13.4 | 9  |
| 11                 | 19 | 15.9 | 14.4 | 10 |
| 12                 | 20 | 16.9 | 15.4 | 11 |
| 13                 | 21 | 17.9 | 16.4 | 12 |
| 14                 | 22 | 18.9 | 17.4 | 13 |
| 15                 | 23 | 19.9 | 18.4 | 14 |
| 16                 | 24 | 20.9 | 19.4 | 15 |
| 17                 | 25 | 21.9 | 20.4 | 16 |
| 18                 | 26 | 22.9 | 21.4 | 17 |
| 19                 | 27 | 23.9 | 22.4 | 18 |
| 20                 | 28 | 24.9 | 23.4 | 19 |
| 21                 | 29 | 25.9 | 24.4 | 20 |
| 22                 | 30 | 26.9 | 25.4 | 21 |
| 23                 | 31 | 27.9 | 26.4 | 22 |
| 24                 | 32 | 28.9 | 27.4 | 23 |
| 25                 | 33 | 29.9 | 28.4 | 24 |
| 26                 | 34 | 30.9 | 29.4 | 25 |
| 27                 | 35 | 31.9 | 30.4 | 26 |
| 28                 | 36 | 32.9 | 31.4 | 27 |
| 29                 | 37 | 33.9 | 32.4 | 28 |
| 30                 | 38 | 34.9 | 33.4 | 29 |

## ■Without Boss Type



Unit:mm

| Product No.   | HRS No.      | Number of Contacts | A    | B  | C  | D     | Tube packed Quantity (pcs.) |
|---------------|--------------|--------------------|------|----|----|-------|-----------------------------|
| FH10A- 6S-1SH | CL586-0495-2 | 6                  | 12.2 | 11 | 5  | 7.15  | 39                          |
| FH10A- 7S-1SH | CL586-0496-5 | 7                  | 13.2 | 12 | 6  | 8.15  | 36                          |
| FH10A- 8S-1SH | CL586-0497-8 | 8                  | 14.2 | 13 | 7  | 9.15  | 33                          |
| FH10A- 9S-1SH | CL586-0498-0 | 9                  | 15.2 | 14 | 8  | 10.15 | 31                          |
| FH10A-10S-1SH | CL586-0499-3 | 10                 | 16.2 | 15 | 9  | 11.15 | 29                          |
| FH10A-11S-1SH | CL586-0500-0 | 11                 | 17.2 | 16 | 10 | 12.15 | 27                          |
| FH10A-12S-1SH | CL586-0501-3 | 12                 | 18.2 | 17 | 11 | 13.15 | 26                          |
| FH10A-13S-1SH | CL586-0502-6 | 13                 | 19.2 | 18 | 12 | 14.15 | 25                          |
| FH10A-14S-1SH | CL586-0503-9 | 14                 | 20.2 | 19 | 13 | 15.15 | 23                          |
| FH10A-15S-1SH | CL586-0504-1 | 15                 | 21.2 | 20 | 14 | 16.15 | 22                          |
| FH10A-16S-1SH | CL586-0505-4 | 16                 | 22.2 | 21 | 15 | 17.15 | 21                          |
| FH10A-17S-1SH | CL586-0506-7 | 17                 | 23.2 | 22 | 16 | 18.15 | 20                          |
| FH10A-18S-1SH | CL586-0507-0 | 18                 | 24.2 | 23 | 17 | 19.15 | 19                          |
| FH10A-19S-1SH | CL586-0508-2 | 19                 | 25.2 | 24 | 18 | 20.15 | 19                          |
| FH10A-20S-1SH | CL586-0509-5 | 20                 | 26.2 | 25 | 19 | 21.15 | 18                          |
| FH10A-21S-1SH | CL586-0510-4 | 21                 | 27.2 | 26 | 20 | 22.15 | 17                          |
| FH10A-22S-1SH | CL586-0511-7 | 22                 | 28.2 | 27 | 21 | 23.15 | 17                          |
| FH10A-23S-1SH | CL586-0512-0 | 23                 | 29.2 | 28 | 22 | 24.15 | 16                          |
| FH10A-24S-1SH | CL586-0513-2 | 24                 | 30.2 | 29 | 23 | 25.15 | 15                          |
| FH10A-25S-1SH | CL586-0514-5 | 25                 | 31.2 | 30 | 24 | 26.15 | 15                          |
| FH10A-26S-1SH | CL586-0515-8 | 26                 | 32.2 | 31 | 25 | 27.15 | 14                          |
| FH10A-27S-1SH | CL586-0516-0 | 27                 | 33.2 | 32 | 26 | 28.15 | 14                          |
| FH10A-28S-1SH | CL586-0517-3 | 28                 | 34.2 | 33 | 27 | 29.15 | 14                          |
| FH10A-29S-1SH | CL586-0518-6 | 29                 | 35.2 | 34 | 28 | 30.15 | 13                          |
| FH10A-30S-1SH | CL586-0519-9 | 30                 | 36.2 | 35 | 29 | 31.15 | 13                          |

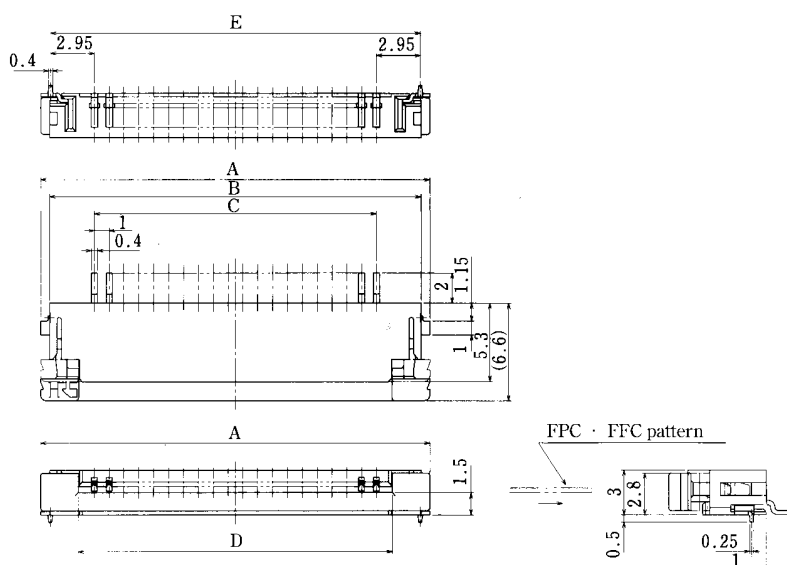
Note 1. Please order the products, thus multiplying the tube packaging quantity by an integer.

Note 2. The emboss package specification is also provided. If needed, please contact Hirose Sales Department.

(Number of contacts: 8, 10, 11, 12, 14, 15, 16, 18, 19, 20, 22, 24, 25, 30 and others will be sequentially specified.)

In addition, the emboss package contains 1,000 pcs./reel.

## ■With Boss Type



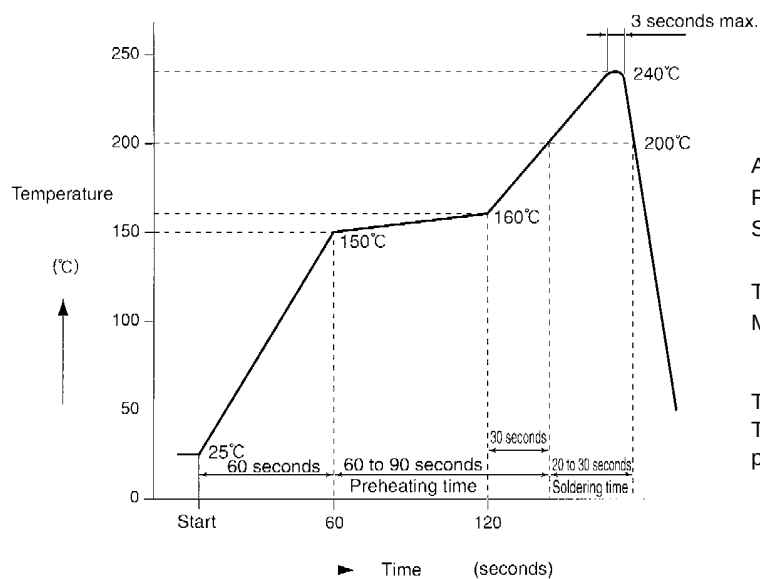
Unit: mm

| Product No.    | HRS No.      | Number of Contacts | A    | B  | C  | D     | E    | Tube packed Quantity (pcs.) |
|----------------|--------------|--------------------|------|----|----|-------|------|-----------------------------|
| FH10A- 6S-1SHB | CL586-0470-1 | 6                  | 12.2 | 11 | 5  | 7.15  | 10.9 | 39                          |
| FH10A- 7S-1SHB | CL586-0471-4 | 7                  | 13.2 | 12 | 6  | 8.15  | 11.9 | 36                          |
| FH10A- 8S-1SHB | CL586-0472-7 | 8                  | 14.2 | 13 | 7  | 9.15  | 12.9 | 33                          |
| FH10A- 9S-1SHB | CL586-0473-0 | 9                  | 15.2 | 14 | 8  | 10.15 | 13.9 | 31                          |
| FH10A-10S-1SHB | CL586-0474-2 | 10                 | 16.2 | 15 | 9  | 11.15 | 14.9 | 29                          |
| FH10A-11S-1SHB | CL586-0475-5 | 11                 | 17.2 | 16 | 10 | 12.15 | 15.9 | 27                          |
| FH10A-12S-1SHB | CL586-0476-8 | 12                 | 18.2 | 17 | 11 | 13.15 | 16.9 | 26                          |
| FH10A-13S-1SHB | CL586-0477-0 | 13                 | 19.2 | 18 | 12 | 14.15 | 17.9 | 25                          |
| FH10A-14S-1SHB | CL586-0478-3 | 14                 | 20.2 | 19 | 13 | 15.15 | 18.9 | 23                          |
| FH10A-15S-1SHB | CL586-0479-6 | 15                 | 21.2 | 20 | 14 | 16.15 | 19.9 | 22                          |
| FH10A-16S-1SHB | CL586-0480-5 | 16                 | 22.2 | 21 | 15 | 17.15 | 20.9 | 21                          |
| FH10A-17S-1SHB | CL586-0481-8 | 17                 | 23.2 | 22 | 16 | 18.15 | 21.9 | 20                          |
| FH10A-18S-1SHB | CL586-0482-0 | 18                 | 24.2 | 23 | 17 | 19.15 | 22.9 | 19                          |
| FH10A-19S-1SHB | CL586-0483-3 | 19                 | 25.2 | 24 | 18 | 20.15 | 23.9 | 19                          |
| FH10A-20S-1SHB | CL586-0484-6 | 20                 | 26.2 | 25 | 19 | 21.15 | 24.9 | 18                          |
| FH10A-21S-1SHB | CL586-0485-9 | 21                 | 27.2 | 26 | 20 | 22.15 | 25.9 | 17                          |
| FH10A-22S-1SHB | CL586-0486-1 | 22                 | 28.2 | 27 | 21 | 23.15 | 26.9 | 17                          |
| FH10A-23S-1SHB | CL586-0487-4 | 23                 | 29.2 | 28 | 22 | 24.15 | 27.9 | 16                          |
| FH10A-24S-1SHB | CL586-0488-7 | 24                 | 30.2 | 29 | 23 | 25.15 | 28.9 | 15                          |
| FH10A-25S-1SHB | CL586-0489-0 | 25                 | 31.2 | 30 | 24 | 26.15 | 29.9 | 15                          |
| FH10A-26S-1SHB | CL586-0490-9 | 26                 | 32.2 | 31 | 25 | 27.15 | 30.9 | 14                          |
| FH10A-27S-1SHB | CL586-0491-1 | 27                 | 33.2 | 32 | 26 | 28.15 | 31.9 | 14                          |
| FH10A-28S-1SHB | CL586-0492-4 | 28                 | 34.2 | 33 | 27 | 29.15 | 32.9 | 14                          |
| FH10A-29S-1SHB | CL586-0493-7 | 29                 | 35.2 | 34 | 28 | 30.15 | 33.9 | 13                          |
| FH10A-30S-1SHB | CL586-0494-0 | 30                 | 36.2 | 35 | 29 | 31.15 | 34.9 | 13                          |

Note: Please order the products, thus multiplying the tube packaging quantity by an integer.

(ex.: in case of 6 contacts, 39 contacts, 78 contacts, 117 contacts....)

## ◆ Recommended Temperature Profile



### Applicable condition

Reflow method : IR reflow

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

Test board : Glass epoxy · 40×80×1.6mm

Metal mask thickness : 0.15mm

This temperature profile is a recommendation.

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