

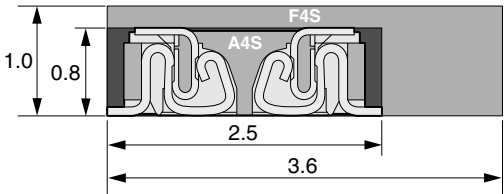
Compliance with RoHS Directive

FEATURES

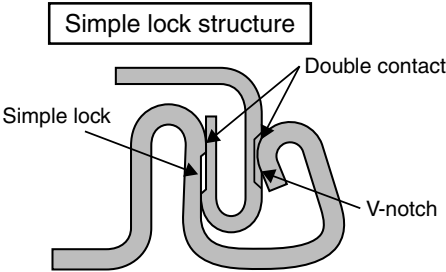
1. 2.5 mm wide ultra-slim two-piece connectors
- The ultra-compact and slim body contributes to further miniaturization and functionality enhancement of target equipment.
- <Compared with our existing model (F4S, 40 contacts, when mated)>
- Width: 30% down
- Footprint: 30% down
4. Mated heights of 0.8 and 1.0 mm are available for the same foot pattern.
5. Connectors for inspection available (See page 31 for details of the structure)

APPLICATIONS

Recommended for board-to-FPC connections of mobile equipment, such as cellular phones, smart phones, notebook PCs, and portable music players



2. “*TOUGH CONTACT ADVANCED*” structure adopted to ensure high resistance to various environments in spite of the ultra-slim and low profile body
3. The simple lock structure for good mating/unmating operation feel.



The connector gives the tactile feedback when inserted, allowing reliable mating.

ORDERING INFORMATION

AXE

1

2

4

5: Narrow Pitch Connector A4S (0.4 mm pitch) Socket

6: Narrow Pitch Connector A4S (0.4 mm pitch) Header

Number of contacts (2 digits)

Mated height

<Socket>

1: For mated height 0.8/1.0 mm

<Header>

1: For mated height 0.8 mm

2: For mated height 1.0 mm

Functions

2: Without positioning bosses

Surface treatment (Contact portion / Terminal portion)

<Socket>

4: Ni plating on base, Au plating on surface (for Ni barrier available)

<Header>

4: Ni plating on base, Au plating on surface

PRODUCT TYPES

| Mated height | Number of contacts | Part number |           | Packing               |               |
|--------------|--------------------|-------------|-----------|-----------------------|---------------|
|              |                    | Socket      | Header    | Inner carton (1-reel) | Outer carton  |
| 0.8mm        | 10                 | AXE510124   | AXE610124 | 5,000 pieces          | 10,000 pieces |
|              | 12                 | AXE512124   | AXE612124 |                       |               |
|              | 14                 | AXE514124   | AXE614124 |                       |               |
|              | 16                 | AXE516124   | AXE616124 |                       |               |
|              | 18                 | AXE518124   | AXE618124 |                       |               |
|              | 20                 | AXE520124   | AXE620124 |                       |               |
|              | 22                 | AXE522124   | AXE622124 |                       |               |
|              | 24                 | AXE524124   | AXE624124 |                       |               |
|              | 26                 | AXE526124   | AXE626124 |                       |               |
|              | 28                 | AXE528124   | AXE628124 |                       |               |
|              | 30                 | AXE530124   | AXE630124 |                       |               |
|              | 32                 | AXE532124   | AXE632124 |                       |               |
|              | 34                 | AXE534124   | AXE634124 |                       |               |
|              | 36                 | AXE536124   | AXE636124 |                       |               |
|              | 38                 | AXE538124   | AXE638124 |                       |               |
|              | 40                 | AXE540124   | AXE640124 |                       |               |
|              | 44                 | AXE544124   | AXE644124 |                       |               |
|              | 50                 | AXE550124   | AXE650124 |                       |               |
|              | 54                 | AXE554124   | AXE654124 |                       |               |
|              | 60                 | AXE560124   | AXE660124 |                       |               |
| 1.0mm        | 64                 | AXE564124   | AXE664124 |                       |               |
|              | 70                 | AXE570124   | AXE670124 |                       |               |
|              | 80                 | AXE580124   | AXE680124 |                       |               |
|              | 10                 | AXE510124   | AXE610224 |                       |               |
|              | 14                 | AXE514124   | AXE614224 |                       |               |
|              | 20                 | AXE520124   | AXE620224 |                       |               |
|              | 24                 | AXE524124   | AXE624224 |                       |               |
|              | 30                 | AXE530124   | AXE630224 |                       |               |
|              | 40                 | AXE540124   | AXE640224 |                       |               |
|              | 50                 | AXE550124   | AXE650224 |                       |               |
|              | 54                 | AXE554124   | AXE654224 |                       |               |
|              | 60                 | AXE560124   | AXE660224 |                       |               |
|              | 70                 | AXE570124   | AXE670224 |                       |               |
|              | 80                 | AXE580124   | AXE680224 |                       |               |

Notes: 1. Order unit:  
For mass production: in 1-inner carton (1-reel) units  
Samples for mounting check: in 50-connector units. Please contact our sales office.  
Samples: Small lot orders are possible. Please contact our sales office.

2. The above part numbers are for connectors without positioning bosses, which are standard. When ordering connectors with positioning bosses, please contact our sales office.

3. Please contact us for connectors having a number of contacts other than those listed above.

AXE5, 6

SPECIFICATIONS

■ Characteristics

| Item                          |   | Specifications  | Conditions  |
|-------------------------------|---|---|---|
| Electrical characteristics    | Rated current   | 0.3A/contact (Max. 5 A at total contacts)   |   |
|                               | Rated voltage   | 60V AC/DC   |   |
|                               | Breakdown voltage                                     | 150V AC for 1 min.  | No short-circuiting or damage at a detection current of 1 mA when the specified voltage is applied for one minute.  |
|                               | Insulation resistance                                 | Min. 1,000MΩ (initial)  | Using 250V DC megger (applied for 1 min.)   |
|                               | Contact resistance                                    | Max. 90mΩ   | Based on the contact resistance measurement method specified by JIS C 5402.   |
| Mechanical characteristics    | Composite insertion force                             | Max. 1.200N/contacts × contacts (initial)   |   |
|                               | Composite removal force                               | Min. 0.165N/contacts × contacts   |   |
|                               | Contact holding force (Socket contact)                | Min. 0.20N/contacts   | Measuring the maximum force. As the contact is axially pull out.  |
| Environmental characteristics | Ambient temperature                                   | −55°C to +85°C  | No freezing at low temperatures. No dew condensation.   |
|                               | Soldering heat resistance                             | Peak temperature: 260°C or less (on the surface of the PC board around the connector terminals) | Infrared reflow soldering   |
|                               |   | 300°C within 5 sec. 350°C within 3 sec.   | Soldering iron  |
|                               | Storage temperature                                   | −55°C to +85°C (product only)<br>−40°C to +50°C (emboss packing)                                | No freezing at low temperatures. No dew condensation.   |
|                               | Thermal shock resistance (header and socket mated)    | 5 cycles, insulation resistance min. 100MΩ, contact resistance max. 90mΩ                        | Sequence<br>1. −55 <sup>+0</sup> <sub>−3</sub> °C, 30 minutes<br>2. ~, Max. 5 minutes<br>3. 85 <sup>+3</sup> <sub>−0</sub> °C, 30 minutes<br>4. ~, Max. 5 minutes |
|                               | Humidity resistance (header and socket mated)         | 120 hours, insulation resistance min. 100MΩ, contact resistance max. 90mΩ                       | Bath temperature 40±2°C, humidity 90 to 95% R.H.  |
|                               | Saltwater spray resistance (header and socket mated)  | 24 hours, insulation resistance min. 100MΩ, contact resistance max. 90mΩ                        | Bath temperature 35±2°C, saltwater concentration 5±1%   |
|                               | H <sub>2</sub> S resistance (header and socket mated) | 48 hours, contact resistance max. 90mΩ  | Bath temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.   |
| Lifetime characteristics      | Insertion and removal life                            | 30 times  | Repeated insertion and removal speed of max. 200 times/ hours   |
| Unit weight                   |   | 20-contact type: Socket: 0.02 g Header: 0.01 g  |   |

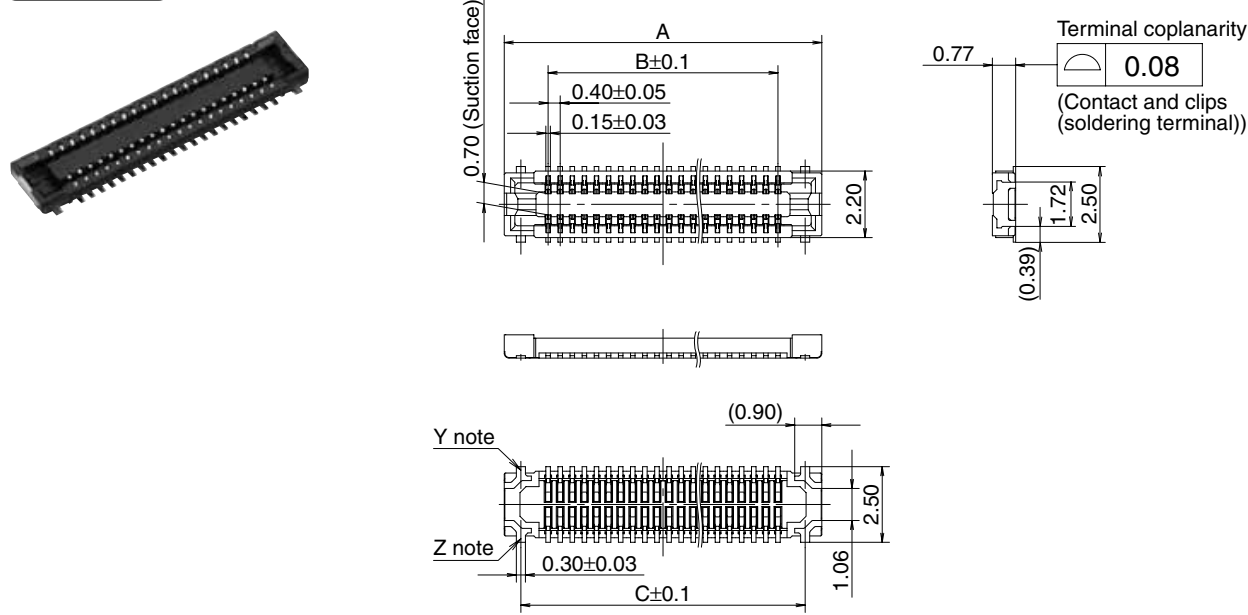
■ Material and surface treatment

| Part name        | Material            | Surface treatment  |
|------------------|---------------------|--|
| Molded portion   | LCP resin (UL94V-0) | —  |
| Contact and Post | Copper alloy        | Contact portion: Base: Ni plating Surface: Au plating<br>Terminal portion: Base: Ni plating Surface: Au plating (except the terminal tips)<br>The socket terminals close to the portion to be soldered have nickel barriers (exposed nickel portions).<br>Metal clips: Sockets: Base: Ni plating Surface: Pd+Au flash plating (except the terminal tips)<br>Headers: Base: Ni plating Surface: Au plating (except the terminal tips) |

**DIMENSIONS** (Unit: mm)      The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://panasonic-electric-works.net/ac>

■ Socket (Mated height: 0.8 mm/1.0 mm)

CAD Data



General tolerance: ±0.2

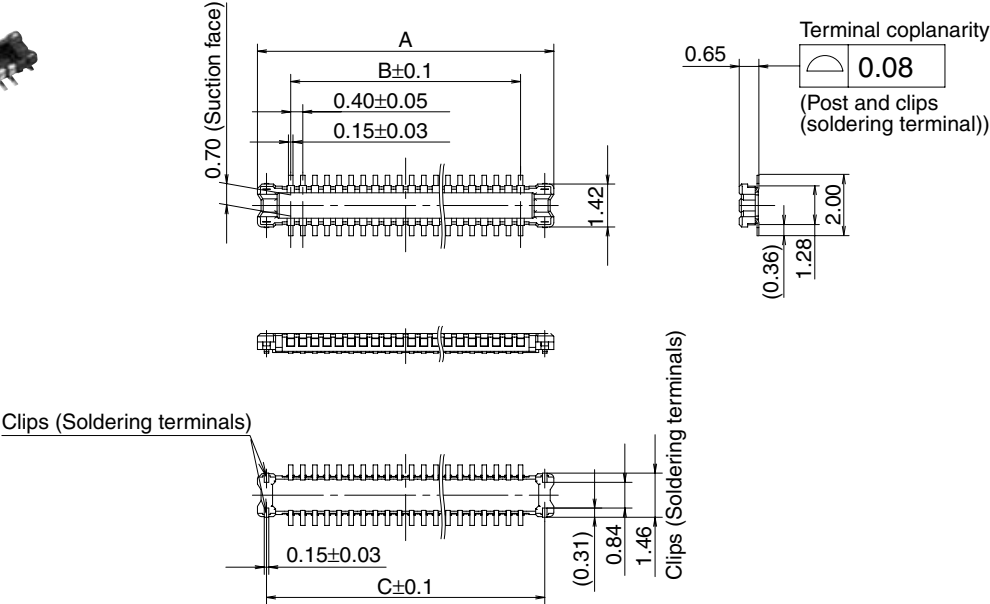
Note: Since the clip (soldering terminal) has a single-piece construction, sections Y and Z are electrically connected.

Dimension table (mm)

| Number of contacts/<br>dimension | A    | B    | C    |
|----------------------------------|------|------|------|
| 10                               | 4.5  | 1.6  | 3.4  |
| 12                               | 4.9  | 2.0  | 3.8  |
| 14                               | 5.3  | 2.4  | 4.2  |
| 16                               | 5.7  | 2.8  | 4.6  |
| 18                               | 6.1  | 3.2  | 5.0  |
| 20                               | 6.5  | 3.6  | 5.4  |
| 22                               | 6.9  | 4.0  | 5.8  |
| 24                               | 7.3  | 4.4  | 6.2  |
| 26                               | 7.7  | 4.8  | 6.6  |
| 28                               | 8.1  | 5.2  | 7.0  |
| 30                               | 8.5  | 5.6  | 7.4  |
| 32                               | 8.9  | 6.0  | 7.8  |
| 34                               | 9.3  | 6.4  | 8.2  |
| 36                               | 9.7  | 6.8  | 8.6  |
| 38                               | 10.1 | 7.2  | 9.0  |
| 40                               | 10.5 | 7.6  | 9.4  |
| 44                               | 11.3 | 8.4  | 10.2 |
| 50                               | 12.5 | 9.6  | 11.4 |
| 54                               | 13.3 | 10.4 | 12.2 |
| 60                               | 14.5 | 11.6 | 13.4 |
| 64                               | 15.3 | 12.4 | 14.2 |
| 70                               | 16.5 | 13.6 | 15.4 |
| 80                               | 18.5 | 15.6 | 17.4 |

■ Header (Mated height: 0.8 mm)

CAD Data



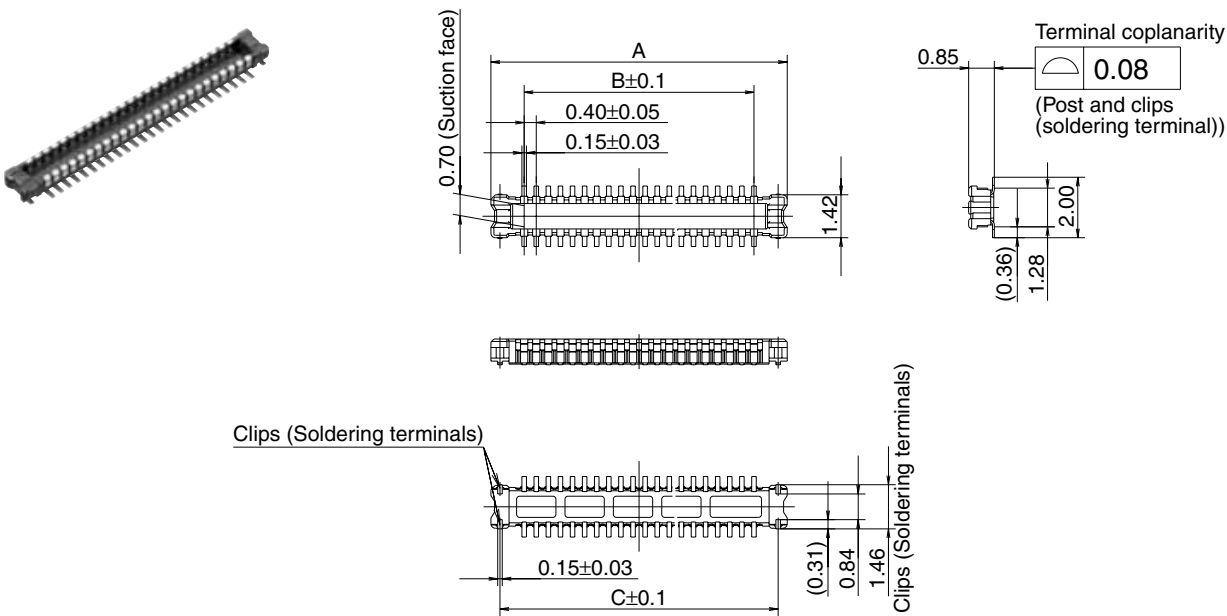
General tolerance: ±0.2

Dimension table (mm)

| Number of contacts/<br>dimension | A    | B    | C    |
|----------------------------------|------|------|------|
| 10                               | 3.8  | 1.6  | 3.2  |
| 12                               | 4.2  | 2.0  | 3.6  |
| 14                               | 4.6  | 2.4  | 4.0  |
| 16                               | 5.0  | 2.8  | 4.4  |
| 18                               | 5.4  | 3.2  | 4.8  |
| 20                               | 5.8  | 3.6  | 5.2  |
| 22                               | 6.2  | 4.0  | 5.6  |
| 24                               | 6.6  | 4.4  | 6.0  |
| 26                               | 7.0  | 4.8  | 6.4  |
| 28                               | 7.4  | 5.2  | 6.8  |
| 30                               | 7.8  | 5.6  | 7.2  |
| 32                               | 8.2  | 6.0  | 7.6  |
| 34                               | 8.6  | 6.4  | 8.0  |
| 36                               | 9.0  | 6.8  | 8.4  |
| 38                               | 9.4  | 7.2  | 8.8  |
| 40                               | 9.8  | 7.6  | 9.2  |
| 44                               | 10.6 | 8.4  | 10.0 |
| 50                               | 11.8 | 9.6  | 11.2 |
| 54                               | 12.6 | 10.4 | 12.0 |
| 60                               | 13.8 | 11.6 | 13.2 |
| 64                               | 14.6 | 12.4 | 14.0 |
| 70                               | 15.8 | 13.6 | 15.2 |
| 80                               | 17.8 | 15.6 | 17.2 |

AXE5, 6

Header (Mated height: 1.0 mm)

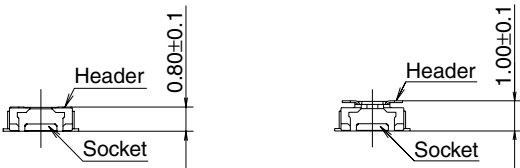


Dimension table (mm)

| Number of contacts/<br>dimension | A    | B    | C    |
|----------------------------------|------|------|------|
| 10                               | 3.8  | 1.6  | 3.2  |
| 14                               | 4.6  | 2.4  | 4.0  |
| 20                               | 5.8  | 3.6  | 5.2  |
| 24                               | 6.6  | 4.4  | 6.0  |
| 30                               | 7.8  | 5.6  | 7.2  |
| 40                               | 9.8  | 7.6  | 9.2  |
| 50                               | 11.8 | 9.6  | 11.2 |
| 54                               | 12.6 | 10.4 | 12.0 |
| 60                               | 13.8 | 11.6 | 13.2 |
| 70                               | 15.8 | 13.6 | 15.2 |
| 80                               | 17.8 | 15.6 | 17.2 |

General tolerance: ±0.2

Socket and Header are mated



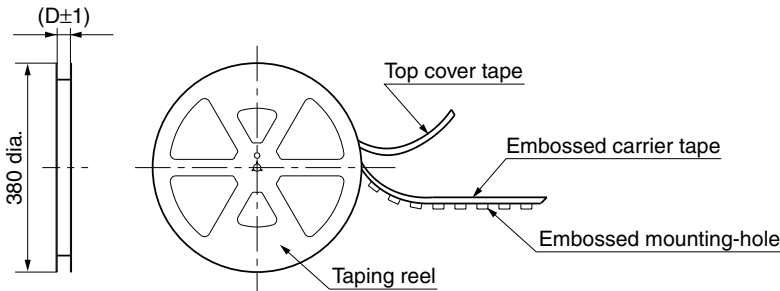
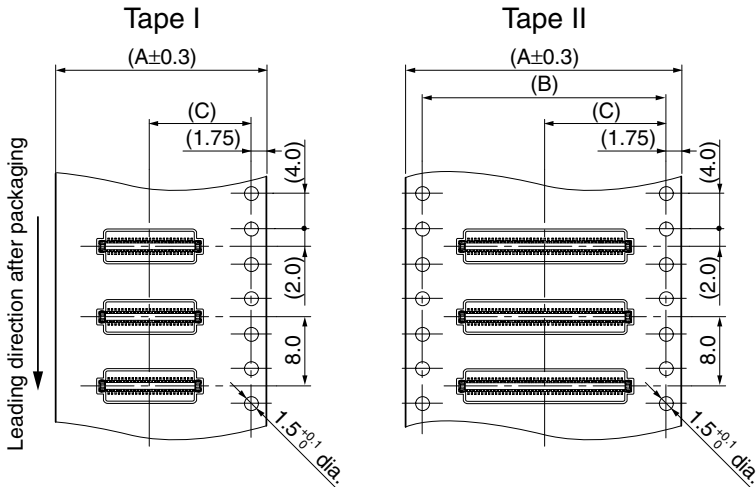
EMBOSSED TAPE DIMENSIONS (Unit: mm) (Common for respective contact types, sockets and headers)

Specifications for taping

(In accordance with JIS C 0806-1990. However, not applied to the mounting-hole pitch of some connectors.)

Specifications for the plastic reel

(In accordance with EIAJ ET-7200B.)



Dimension table (Unit: mm)

| Type/Mated height                               | Number of contacts | Type of taping | A    | B    | C    | D    | Quantity per reel |
|---|--------------------|----------------|------|------|------|------|-------------------|
| Common for sockets and headers<br>0.8 mm/1.0 mm | 24 or less         | Tape I         | 16.0 | —    | 7.5  | 17.4 | 5,000             |
|   | 26 to 70           | Tape I         | 24.0 | —    | 11.5 | 25.4 | 5,000             |
|   | 80                 | Tape II        | 32.0 | 28.4 | 14.2 | 33.4 | 5,000             |

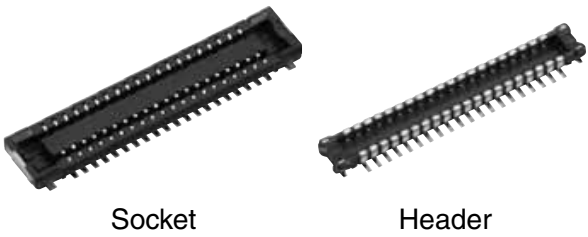
Connector orientation with respect to embossed tape feeding direction

| Direction of tape progress | Type   | Common for A4S |
|----------------------------|--------|----------------|
|                            | Socket |                |
|                            | Header |                |

Note: There is no indication on this product regarding top-bottom or left-right orientation.

CONNECTOR FOR INSPECTION  
USAGE APPLICATIONS WITH  
3,000 INSERTION AND  
REMOVAL TIMES

NARROW PITCH CONNECTORS  
ADVANCED SERIES A4S  
(0.4 mm PITCHES) FOR INSPECTION USAGE



Socket

Header

Compliance with RoHS Directive

FEATURES

- 1. 3,000 insertion and removals (when as recommended)
- 2. Same external dimensions and foot pattern as standard type.
- 3. Improved mating

Insertion and removal have become easier due to a reduction in the mating retention force required by the simple locking structure and also in the amount of force needed for insertion and removal. (We cannot warrant anything regarding mating retention.)

APPLICATIONS

Ideal for module unit inspection and equipment assembly inspection

TABLE OF PRODUT TYPES

☆: Available for sale

| Product name          | Number of contacts |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-----------------------|--------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| A4S<br>for inspection | 10                 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | 44 | 50 | 54 | 60 | 64 | 70 | 80 |  |
|                       | ☆                  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  | ☆  |  |

Notes: 1. Please inquire about numbers of contacts other than those given above.  
2. Please inquire with us regarding delivery times.  
3. Please keep the minimum unit for ordering no less than 50 pieces per lot.  
4. Please inquire for further information.

PRODUCT TYPES

| Specifications |                            | Part No.  | Specifications |                            | Part No.  |
|----------------|----------------------------|-----------|----------------|----------------------------|-----------|
| Socket         | Without positioning bosses | AXE5E**26 | Header         | Without positioning bosses | AXE6E**26 |

Note: When placing an order, substitute the “\*” (asterisk) in the above part number with the number of contacts for the required connector.

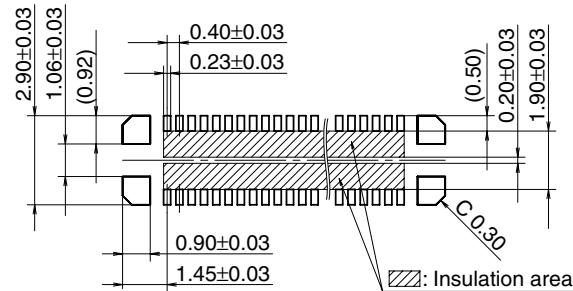
NOTES

■ If extra resistance to drop impact is required for ultra-low profile type connectors, we recommend using our F4 or F4S series.

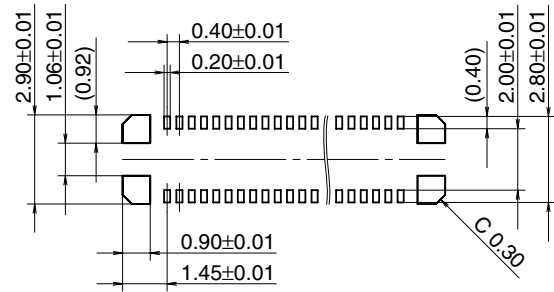
■ Recommended PC board and metal mask patterns

Appropriate control of solder amount is required to minimize solder bridges and other defects for connectors with 0.4-mm or 0.5-mm pitch terminals, which require high-density mounting. Refer to the right-hand drawing for recommended patterns.

- Socket (Mated height: 0.8mm/1.0mm)  
Recommended PC board pattern (TOP VIEW)



Recommended metal mask opening pattern  
Metal mask thickness: When 120μm  
(Terminal opening ratio: 70%)  
(Metal-part opening ratio: 100%)



- Header (Mated height: 0.8mm/1.0mm)  
Recommended PC board pattern (TOP VIEW)



Recommended metal mask opening pattern  
Metal mask thickness: When 120μm  
(Terminal opening ratio: 70%)  
(Metal-part opening ratio: 100%)



For other details, please verify with the product specification sheets.