

Panasonic

ideas for life

**0.5 mm pitch
floating structure type
with high resistance
to twisting**

**NARROW PITCH (0.5mm) CONNECTORS
P5 SERIES - FLOATING TYPE -**



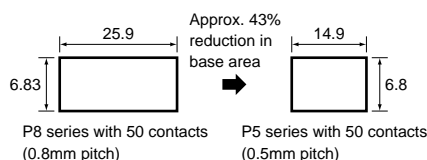
Socket

Header

Compliance with RoHS Directive

FEATURES

1. The 0.5mm pitch stacking connector with a built-in floating mechanism.
2. Further reduction of equipment size is now possible.



3. The original structure ensures higher reliability performance for both electrical and mechanical connections.

- Flux-creeping prevention structure (header)
 - Simple lock mechanism
4. **Automatic Mounting**
 5. **Porosity treatment applied for improved resistance against corrosion**

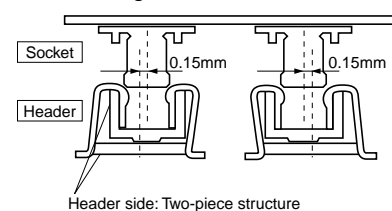
APPLICATIONS

Small mobile equipment, such as mobile phones, PHSs, and PDAs

What is a floating structure?

The header is a two-piece structure that can absorb any variation caused when a connector (header and socket) is integrated into a printed circuit board. (When two sets of connectors are used as shown below, a maximum deviation of 0.3mm can be absorbed.)

• Floating structure



ORDERING INFORMATION

| AXN | | | | | 5 | G |
|--|--|--|--|--|---|---|
| 5: Narrow Pitch Connector P5 Floating type (0.5 mm pitch) Socket | | | | | | |
| 6: Narrow Pitch Connector P5 Floating type (0.5 mm pitch) Header | | | | | | |
| Number of contacts (2 digits) | | | | | | |
| Mated direction / Mated height | | | | | | |
| <Socket> | | | | | | |
| 0: For SMD vertical mating, mated height 5.0 mm | | | | | | |
| <Header> | | | | | | |
| 5: For SMD vertical mating, mated height 5.0 mm | | | | | | |
| Functions | | | | | | |
| <Socket> | | | | | | |
| 4: Without soldering terminal, without positioning bosses | | | | | | |
| <Header> | | | | | | |
| 8: With floating function, without soldering terminal, without positioning bosses | | | | | | |
| Surface treatment (Contact portion / Terminal portion) | | | | | | |
| 5: Ni plating on base, Au plating on surface / Ni plating on base, Au plating on surface | | | | | | |
| Packing | | | | | | |
| G: 1,000 pieces embossed tape and plastic reel × 2 | | | | | | |

AXN(5/6)

PRODUCT TYPES

| Mated height | No. of contacts | Part No. | | Packing quantity | |
|--------------|-----------------|------------|------------|-----------------------|--------------|
| | | Socket | Header | Inner carton (1 reel) | Outer carton |
| 5.0 mm | 20 | AXN520045G | AXN620585G | 1,000 pcs. | 2,000 pcs. |
| | 30 | AXN530045G | AXN630585G | | |
| | 40 | AXN540045G | AXN640585G | | |
| | 50 | AXN550045G | AXN650585G | | |
| | 60 | AXN560045G | AXN660585G | | |
| | 80 | AXN580045G | AXN680585G | | |
| | 100 | AXN500045G | AXN600585G | | |

Note) Connectors are available in a standard embossed tape package (1,000 pcs/lot). Minimum ordering quantity is a single reel.

Samples for mounting confirmation: Available in units of 50 pieces. Please consult us. (See "Regarding sample orders to confirm proper mounting" on page 150.)

Samples: Small lot orders for the above models are possible.

SPECIFICATIONS

1. Characteristics

| Item | Specifications | Conditions | |
|--|--|--|---|
| Electrical characteristics | Rated current | 0.2A | |
| | Rated voltage | 60V AC/DC | |
| | Breakdown voltage | 150V AC for 1 min. | Detection current: 1mA |
| | Insulation resistance | Min. 100MΩ | Using 500V DC megger |
| | Contact resistance | Max. 80mΩ | Based on the contact resistance measurement method specified by JIS C 5402. |
| Mechanical characteristics | Composite insertion force | Max. 0.981N {100gf} × no. of contacts (initial) | |
| | Composite removal force | Min. 0.0785N {8gf} × no. of contacts | |
| | Contact holding force | Min. 2.94N {300gf}/2 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 |
| | Soldering heat resistance | Max. peak temperature of 245°C (on the surface of the PC board around the connector terminals) | Infrared reflow soldering |
| | | 300°C within 5 seconds | Soldering iron |
| | Thermal shock resistance (header and socket mated) | 5 cycles, insulation resistance min. 100MΩ, contact resistance max. 80mΩ | Sequence 1. -55 [±] °C, 30 minutes 2. ~, Max. 5 minutes 3. 85 [±] °C, 30 minutes 4. ~, Max. 5 minutes |
| | Humidity resistance (header and socket mated) | 120 hours, insulation resistance min. 100MΩ, contact resistance max. 80mΩ | 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. 80mΩ | Bath temperature 35±2°C, saltwater concentration 5±1% |
| | H ₂ S resistance (header and socket mated) | 48 hours, contact resistance max. 80mΩ | Bath temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H. |
| SO ₂ resistance (header and socket mated) | 48 hours, contact resistance max. 80mΩ | Bath temperature 40±2°C, gas concentration 10±3 ppm, humidity 90 to 95% R.H. | |
| Lifetime characteristics | Insertion and removal life | 20 times | Repeated insertion and removal speed of max. 200 times/hours |
| Unit weight | 30 contacts; Socket: 0.19g Header: 0.32g 50 contacts; Socket: 0.29g Header: 0.50g | | |

2. Material and surface treatment

| Part name | Material | Surface treatment |
|----------------|--------------------------------|--|
| Molded portion | Heat-resistant resin (UL94V-0) | — |
| Contact/post | Copper alloy | Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (Except for thick of terminal) |


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

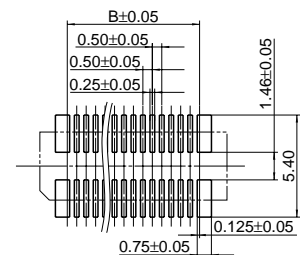
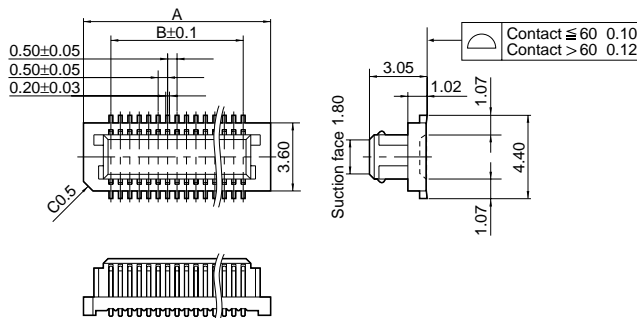
CAD Data

Recommended PC board pattern (TOP VIEW)



Dimension table (mm)

| No. of contacts | A | B |
|-----------------|-------|-------|
| 20 | 7.40 | 4.50 |
| 30 | 9.90 | 7.00 |
| 40 | 12.40 | 9.50 |
| 50 | 14.90 | 12.00 |
| 60 | 17.40 | 14.50 |
| 80 | 22.40 | 19.50 |
| 100 | 27.40 | 24.50 |



General tolerance: ±0.2

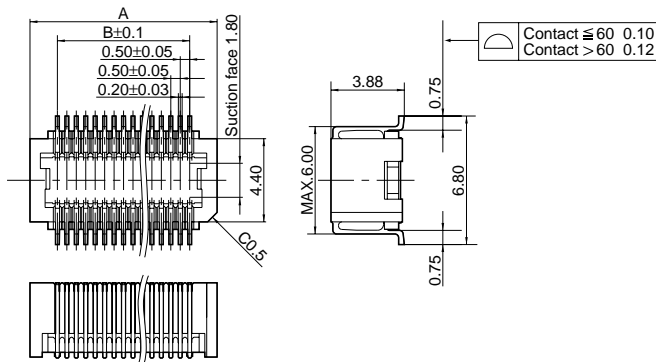
• Header

CAD Data

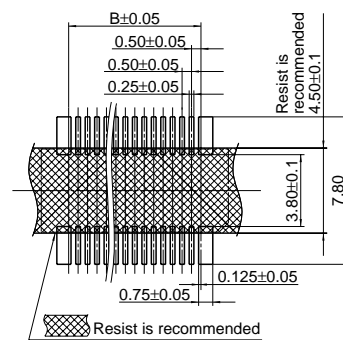


Dimension table (mm)

| No. of contacts | A | B |
|-----------------|-------|-------|
| 20 | 7.40 | 4.50 |
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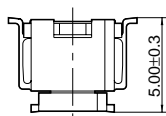


Recommended PC board pattern (TOP VIEW)



General tolerance: ±0.2

• Socket and Header are mated



EMBOSSED TAPE DIMENSIONS (unit: mm, Common for respective contact type, socket and header)

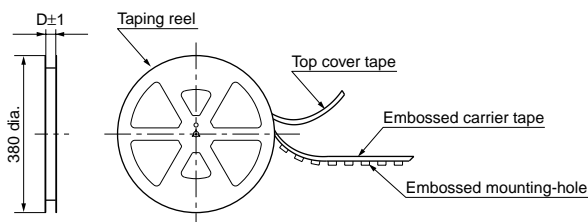
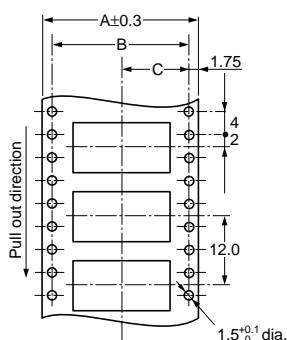
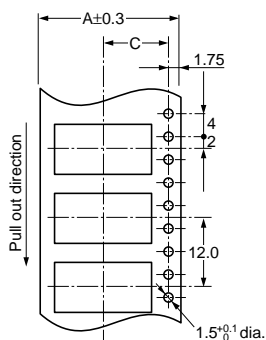
• Tape dimensions (Conforming to JIS C 0806-1990.

• Plastic reel dimensions (Conforming to EIAJ ET-7200B)

However, some tapes have mounting hole pitches that do not comply with the standard.)

Tape I

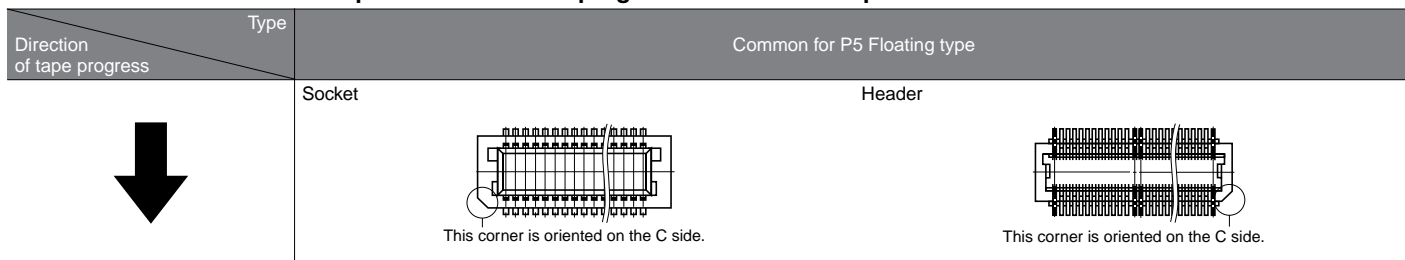
Tape II



Dimension table (mm)

| Mated height | No. of contacts | Type of taping | A | B | C | D | Quantity per reel |
|-------------------------------------|-----------------|----------------|------|------|------|------|-------------------|
| Socket and header are common: 5.0mm | 20 to 60 | Tape I | 24.0 | — | 11.5 | 25.4 | 1,000 |
| | 80 | Tape II | 32.0 | 28.4 | 14.2 | 33.4 | 1,000 |
| | 100 | Tape II | 44.0 | 40.4 | 20.2 | 45.4 | 1,000 |

Connector orientation with respect to direction of progress of embossed tape

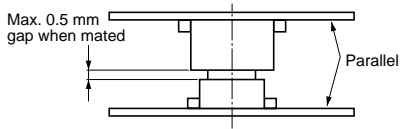


NOTES

1. Preventing vibration and shock

To prevent the PC board from drop-off faults and to protect soldered spots from direct stress, use vibration-proof pads across boards.

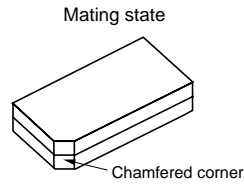
Fix the PC boards in place or install a stopper so that the gap between the connectors is less than 0.5 mm and that their mating is level.



2. Prevention of reverse mating

The socket and header are protected from reverse mating by a molded resin key. Excessive mating force may damage the key, so be sure to match chamfered corners when mating.

• Floating type

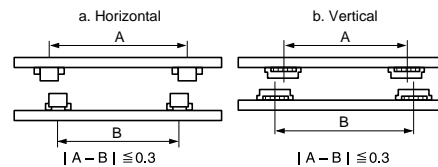


3. Static electricity

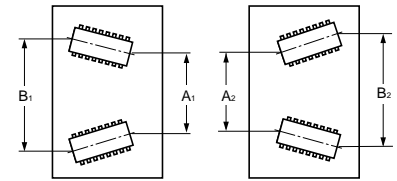
This type of socket has the terminals exposed from the connector walls, and therefore if they are touched with anything metal, a short circuit will occur. Also, if the terminals are touched by hand, the static electricity may damage the IC.

4. About floating-type connectors

(1) When two floating-type connectors are used on header, distance tolerance between connectors is 0.3mm max.



(2) If rotational error exists between two connectors, distance tolerance between the two connectors is as follows:



$$|A_1 - A_2| \leq 0.3$$

$$|B_1 - B_2| \leq 0.3$$

However, A1 is mated with A2, and B1 is mated with B2.

(3) Please consult us regarding allowable installation pitch tolerance between connectors when using two connectors that have differing number of terminals.

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