

Panasonic
ideas for life

**FOR BOARD-TO-BOARD
AND BOARD-TO-FPC
CONNECTION**

**NARROW PITCH (0.4mm)
CONNECTORS P4S SERIES**

Narrow-pitch connectors

FPC connectors

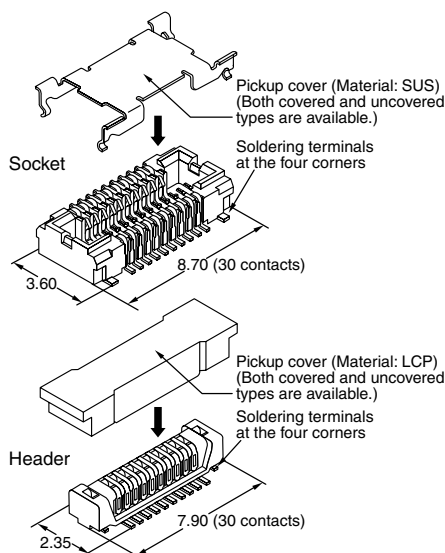
MIPTEC

Information



Compliance with RoHS Directive

This will contribute to weight and size savings in devices. (Comparison made with 30 contacts.)

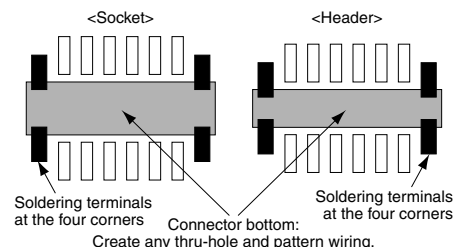


2. Strong resistance to adverse environments! Utilizes "TOUGH CONTACT" construction for high contact reliability.
(See Page 6 for details of the structure)

Note: If extra resistance to shock caused by dropping is required, we recommend using our previous P4 Series.

3. Greater flexibility in connector placement.
Pattern wiring to the connector bottom is possible because the undersurface of the

connector is constructed with a molded covering.

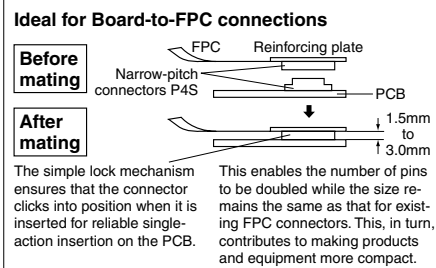


4. Automatic mounting inspection is facilitated by the gull-wing terminal shape which makes mounting verification easy.

5. Connectors for inspection available
Connectors are available that are ideal for inspection in module unit inspection and device assembly processes.

APPLICATIONS

Compact portable devices "Cellular phones, DVC, Digital cameras, etc"



FEATURES

1. Space saving

Compared to the currently sold P4 series with soldering terminal, 38% space is saved in the socket and 34% space saved in the header.

ORDERING INFORMATION

AXT **4**

3: Narrow Pitch Connector P4S (0.4 mm pitch) Socket
4: Narrow Pitch Connector P4S (0.4 mm pitch) Header

Number of contacts (2 digits)

Mated height

<Socket>

- 1: For mated height 1.5 mm and 2.0 mm
- 2: For mated height 2.5 mm and 3.0 mm

<Header>

- 1: For mated height 1.5 mm and 2.5 mm
- 2: For mated height 2.0 mm
- 3: For mated height 3.0 mm

Functions

<Socket/Header>

- 2: Without pickup cover, without positioning bosses
- 6: With pickup cover, 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

AXT3, 4

PRODUCT TYPES

	Mated height	Number of contacts	Part number		Packing	
			Socket	Header	Inner carton	Outer carton
Narrow-pitch connectors	1.5mm	10	AXT310124	AXT410124	3,000 pieces	6,000 pieces
		16	AXT316124	AXT416124		
		20	AXT320124	AXT420124		
		22	AXT322124	AXT422124		
		24	AXT324124	AXT424124		
		26	AXT326124	AXT426124		
		28	AXT328124	AXT428124		
		30	AXT330124	AXT430124		
		32	AXT332124	AXT432124		
		34	AXT334124	AXT434124		
		36	AXT336124	AXT436124		
		38	AXT338124	AXT438124		
		40	AXT340124	AXT440124		
		44	AXT344124	AXT444124		
		46	AXT346124	AXT446124		
		50	AXT350124	AXT450124		
		54	AXT354124	AXT454124		
		56	AXT356124	AXT456124		
		60	AXT360124	AXT460124		
		FPC connectors	1.5mm	64		
70	AXT370124			AXT470124		
80	AXT380124			AXT480124		
90	AXT390124			AXT490124		
MIPTEC	1.5mm	100	AXT300124	AXT400124	3,000 pieces	6,000 pieces
		40	AXT340124	AXT440224		
		90	AXT390124	AXT490224		
		100	AXT300124	AXT400224		
Information	2.0mm	20	AXT320224	AXT420124	3,000 pieces	6,000 pieces
		30	AXT330224	AXT430124		
		56	AXT356224	AXT456124		
		60	AXT360224	AXT460124		
		80	AXT380224	AXT480124		
		100	AXT300224	AXT400124		
Information	2.5mm	20	AXT320224	AXT420324	3,000 pieces	6,000 pieces
		30	AXT330224	AXT430324		
		42	AXT342224	AXT442324		
		56	AXT356224	AXT456324		
		60	AXT360224	AXT460324		
		80	AXT380224	AXT480324		
		100	AXT300224	AXT400324		
Information	3.0mm	120	AXT3A2224	AXT4A2324	3,000 pieces	6,000 pieces

- Notes: 1. Regarding ordering units; During production: Please make orders in 1-reel units.
 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 are possible. Please consult us.
- If you require the pickup cover, change the eighth digit of the part number from "2" to "6" in your order. Note that the pickup cover is not available for some types depending on the number of contacts. Check the latest product specifications.
 - The above part numbers are for connectors without positioning bosses, which are standard. When ordering connectors with positioning bosses, please contact our sales office.
 - Connectors of different mated height and different number of contacts are available on-demand production only. Please contact us for more details.

SPECIFICATIONS

1. 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.	Rated voltage is applied for one minute and check for short circuit or damage with a detection current of 1mA.
	Insulation resistance	Min. 1,000M Ω (initial)	Using 250V DC megger (applied for 1 min.)
	Contact resistance	Max. 90m Ω	Based on the contact resistance measurement method specified by JIS C 5402.
Environmental characteristics	Ambient temperature	-55°C to +85°C	No freezing at low temperatures
	Soldering heat resistance	Max. peak temperature of 260°C (on the surface of the PC board around the connector terminals) 300°C within 5 sec. or 350°C within 3 sec.	Infrared reflow soldering Soldering iron
	Storage temperature	-55°C to +85°C (product only) -40°C to +50°C (emboss packing)	No freezing at low temperatures
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100M Ω , contact resistance max. 90m Ω	Sequence 1. -55 $\frac{3}{3}$ °C, 30 minutes 2. ~, Max. 5 minutes 3. 85 $\frac{3}{3}$ °C, 30 minutes 4. ~, Max. 5 minutes
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100M Ω , contact resistance max. 90m Ω	Temperature 40 \pm 2°C, humidity 90 to 95% R.H.
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100M Ω , contact resistance max. 90m Ω	Temperature 35 \pm 2°C, saltwater concentration 5 \pm 1%
	H ₂ S resistance (header and socket mated)	48 hours, contact resistance max. 90m Ω	Temperature 40 \pm 2°C, gas concentration 3 \pm 1 ppm, humidity 75 to 80% R.H.
Lifetime characteristics	Insertion and removal life	50 times	Repeated insertion and removal speed of max. 200 times/hours
Unit weight		Mated height 1.5mm, 20-contact type: Socket: 0.04 g Header: 0.02 g	

2. Material and surface treatment

Part name	Material	Surface treatment
Molded portion	LCP resin (UL94V-0)	—
Contact and 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 front edge of terminal) However, the area adjacent to the socket terminal is exposed to Ni on base. Soldering terminal portion; Socket: Ni plating on base, Pd + Au flash plating on surface (Expect for front edge of terminal) Header: Ni plating on base, Au plating on surface (Expect for front edge of terminal)

AXT3, 4

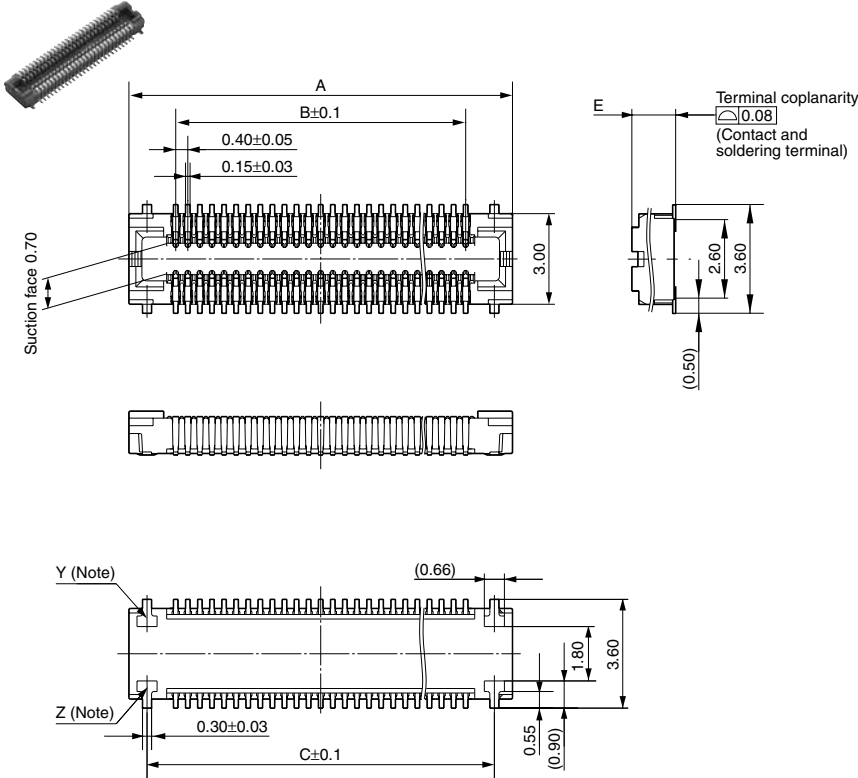
DIMENSIONS (Unit: mm)

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

1. Socket (Mated height: 1.5mm, 2.0mm, 2.5mm, 3.0mm)

- Without pickup cover

CAD Data



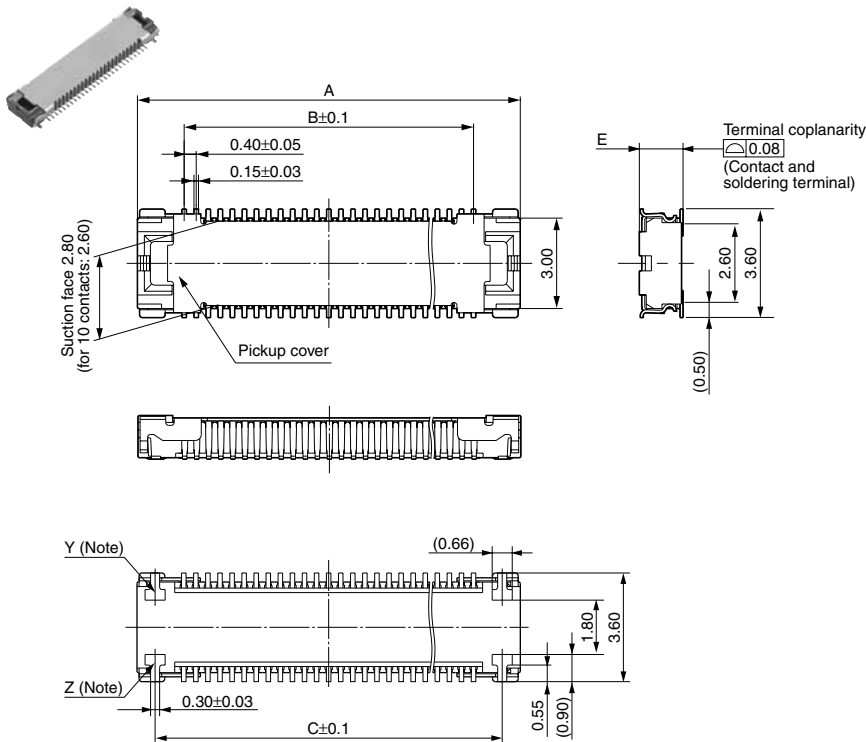
General tolerance: ± 0.2

Dimension table (mm)

Number of contacts/ dimension	A	B	C
10	4.7	1.6	3.5
16	5.9	2.8	4.7
20	6.7	3.6	5.5
22	7.1	4.0	5.9
24	7.5	4.4	6.3
26	7.9	4.8	6.7
28	8.3	5.2	7.1
30	8.7	5.6	7.5
32	9.1	6.0	7.9
34	9.5	6.4	8.3
36	9.9	6.8	8.7
38	10.3	7.2	9.1
40	10.7	7.6	9.5
42	11.1	8.0	9.9
44	11.5	8.4	10.3
46	11.9	8.8	10.7
50	12.7	9.6	11.5
54	13.5	10.4	12.3
56	13.9	10.8	12.7
60	14.7	11.6	13.5
64	15.5	12.4	14.3
70	16.7	13.6	15.5
80	18.7	15.6	17.5
90	20.7	17.6	19.5
100	22.7	19.6	21.5
120	26.7	23.6	25.5

Mated height/ dimension	E
1.5mm	1.45
2.0mm	1.45
2.5mm	2.45
3.0mm	2.45

- With pickup cover



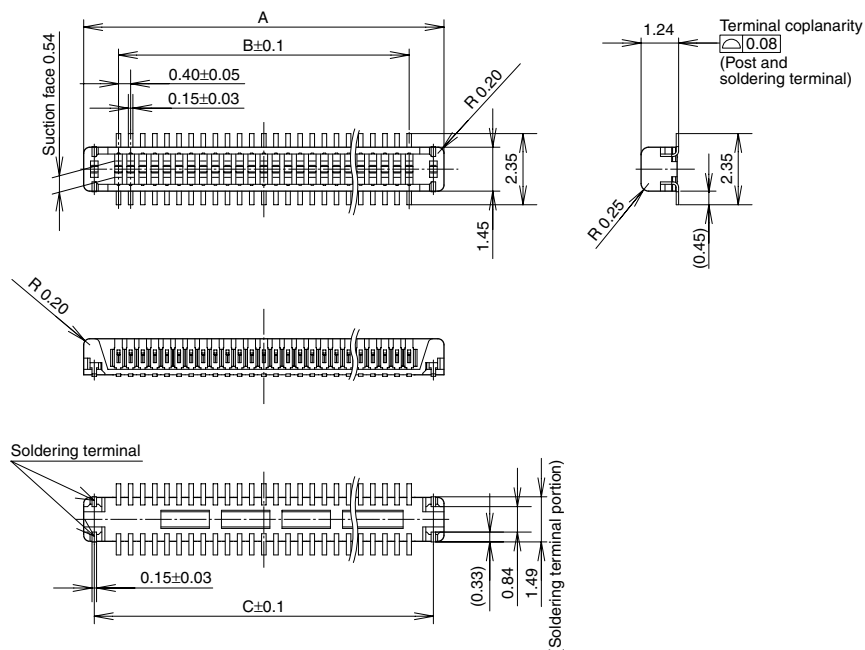
General tolerance: ± 0.2

Note: Since soldering terminals are built into the body, the Y and Z parts are connected electrically.

2. Header (Mated height: 1.5mm, 2.5mm)

- Without pickup cover

CAD Data

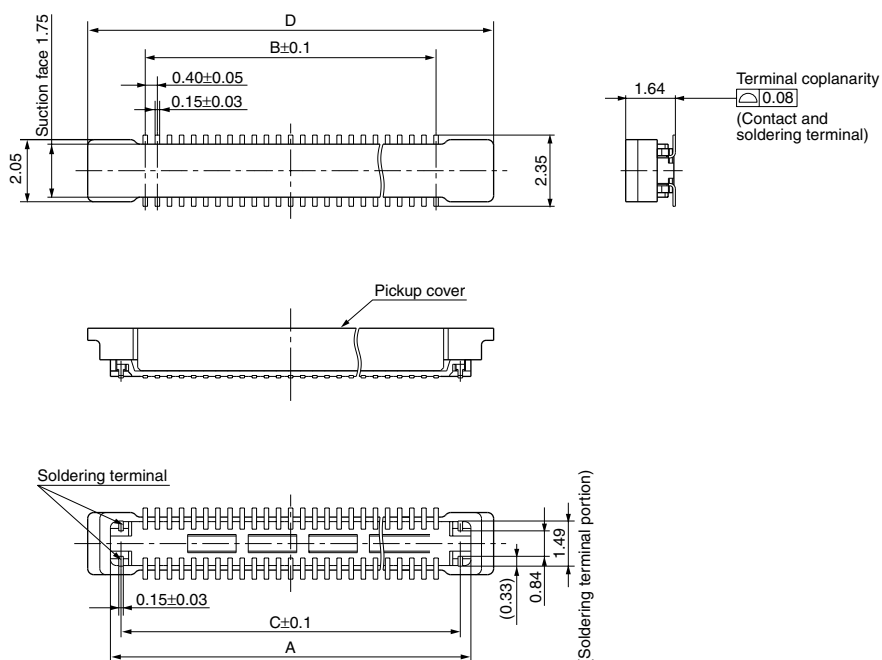


General tolerance: ±0.2

Dimension table (mm)

Number of contacts/ dimension	A	B	C	D
10	3.9	1.6	3.2	5.4
16	5.1	2.8	4.4	6.6
20	5.9	3.6	5.2	7.4
22	6.3	4.0	5.6	7.8
24	6.7	4.4	6.0	8.2
26	7.1	4.8	6.4	8.6
28	7.5	5.2	6.8	9.0
30	7.9	5.6	7.2	9.4
32	8.3	6.0	7.6	9.8
34	8.7	6.4	8.0	10.2
36	9.1	6.8	8.4	10.6
38	9.5	7.2	8.8	11.0
40	9.9	7.6	9.2	11.4
44	10.7	8.4	10.0	12.2
46	11.1	8.8	10.4	12.6
50	11.9	9.6	11.2	13.4
54	12.7	10.4	12.0	14.2
56	13.1	10.8	12.4	14.6
60	13.9	11.6	13.2	15.4
64	14.7	12.4	14.0	—
70	15.9	13.6	15.2	17.4
80	17.9	15.6	17.2	19.4
90	19.9	17.6	19.2	21.4
100	21.9	19.6	21.2	23.4

- With pickup cover



General tolerance: ±0.2

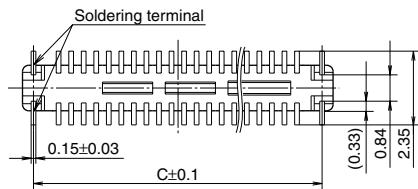
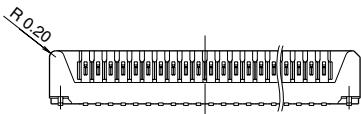
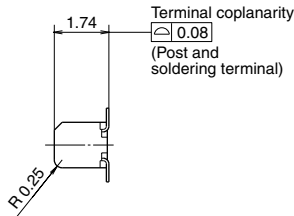
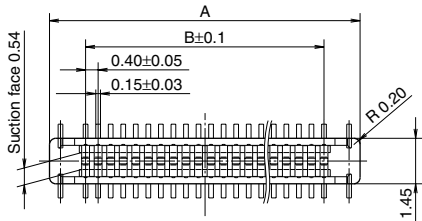
Note: The soldering terminal dimensions of headers with mating heights of 1.5mm/2.5mm and 2.0mm/3.0mm are different.

AXT3, 4

3. Header (Mated height: 2.0mm)

- Without pickup cover

CAD Data



Dimension table (mm)

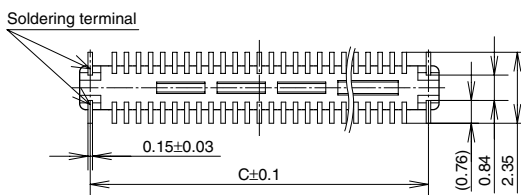
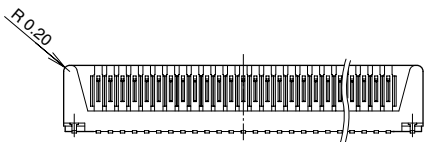
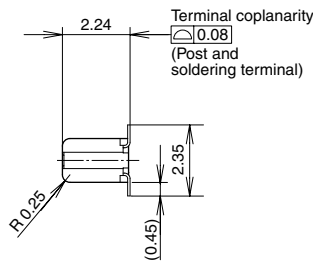
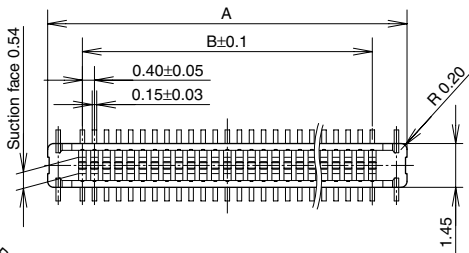
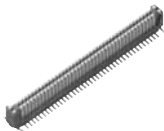
Number of contacts/ dimension	A	B	C	D
40	9.9	7.6	9.2	–
90	19.9	17.6	19.2	–
100	21.9	19.6	21.2	–

General tolerance: ±0.2

4. Header (Mated height: 3.0mm)

- Without pickup cover

CAD Data

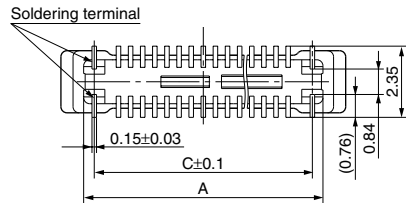
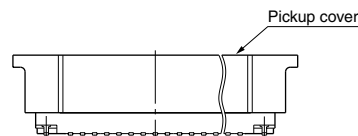
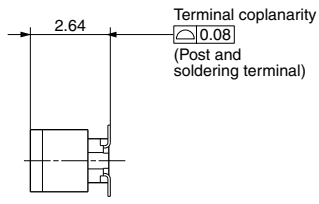
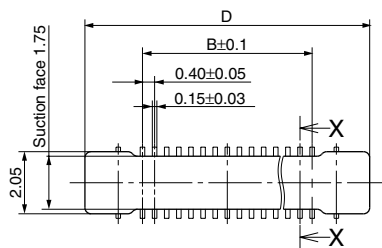


Dimension table (mm)

Number of contacts/ dimension	A	B	C	D
20	5.9	3.6	5.2	–
30	7.9	5.6	7.2	9.4
42	10.3	8.0	9.6	–
56	13.1	10.8	12.4	–
60	13.9	11.6	13.2	–
80	17.9	15.6	17.2	19.4
100	21.9	19.6	21.2	–
120	25.9	23.6	25.2	–

General tolerance: ±0.2

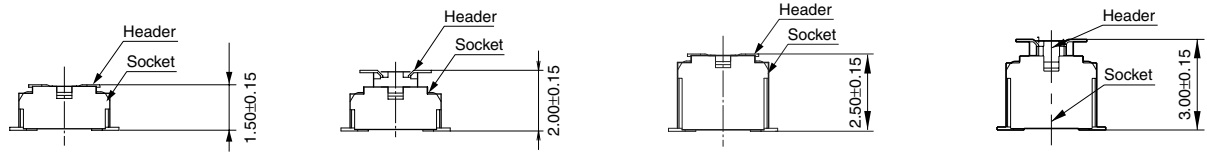
- With pickup cover



General tolerance: ±0.2

Note: The soldering terminal dimensions of headers with mating heights of 1.5mm/2.5mm and 2.0mm/3.0mm are different.

Socket and Header are mated



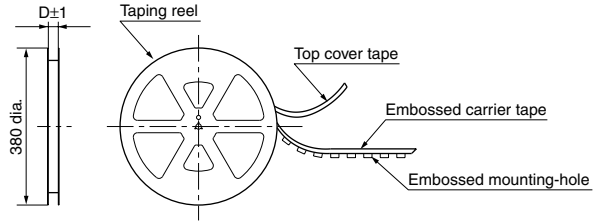
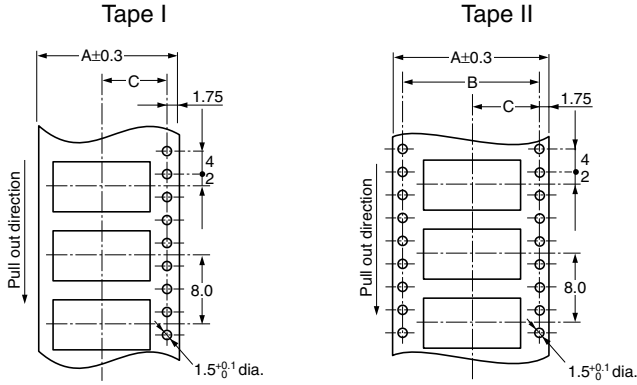
Narrow-pitch connectors
FPC connectors
MIPTEC
Information

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)

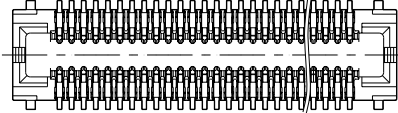
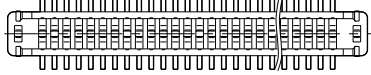
However, some tapes have mounting hole pitches that do not comply with the standard.)



Dimension table (mm)

Mated height	Number of contacts		Type of taping	A	B	C	D	Quantity per reel
	Socket (with/without pickup cover) Header (without pickup cover)	Header (with pickup cover)						
Common for socket and header: 1.5mm, 2.0mm, 2.5mm and 3.0mm	Max. 24	Max. 24	Tape I	16.0	—	7.5	17.5	3,000
	26 to 70	26 to 64	Tape I	24.0	—	11.5	25.5	3,000
	72 to 100	66 to 90	Tape II	32.0	28.4	14.2	33.5	3,000
	120	100	Tape II	44.0	40.4	20.2	45.5	3,000

Connector orientation with respect to direction of progress of embossed tape

Type	Common for P4S	
Direction of tape progress	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 CONNECTOR P4S
(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 PRODUCT TYPES

☆: Available for sale

Product name	Number of contacts																					
	10	16	20	22	24	26	28	30	32	34	36	38	40	44	50	54	56	60	70	80	90	100
P4S for inspection	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆

- Notes: 1. You can use with each mated height in common.
 2. The pickup surface shape of the inspection sockets is different from that of the standard sockets. (For details, refer to the product specification diagram.)
 3. Please inquire about numbers of contacts other than those given above.
 4. Please inquire with us regarding delivery times.
 5. Please keep the minimum unit for ordering no less than 50 pieces per lot.
 6. Please inquire for further information.

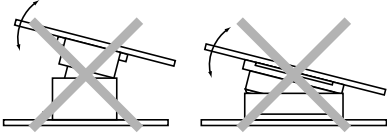
PRODUCT TYPES

Socket	Specifications		Part No.	Header	Specifications		Part No.
	With pickup cover	Without positioning bosses	AXT3E**66		With pickup cover	Without positioning bosses	AXT4E**66
	No pickup cover	Without positioning bosses	AXT3E**26		No pickup cover	Without positioning bosses	AXT4E**26

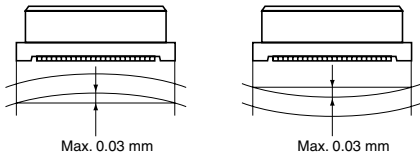
- Notes: 1. When placing an order, substitute the "*" (asterisk) in the above part number with the number of contacts for the required connector.
 2. The above part numbers are for connectors without positioning bosses, which are standard. When ordering connectors with positioning bosses, please contact our sales office.

NOTES

1. As shown below, excess force during insertion may result in damage to the connector or removal of the solder. Please be careful. Also, to prevent connector damage please confirm the correct position before mating connectors.



2. Keep the PC board warp no more than 0.03mm in relation to the overall length of the connector.



3. If extra resistance to shock caused by dropping is required, we recommend using our previous P4 Series.

4. PC Boards and Recommended Metal Mask Patterns

Connectors are mounted with high density, with a pitch interval of 0.4 to 0.5mm.

In order to reduce solder bridge and other issues make sure the proper levels of solder are used.

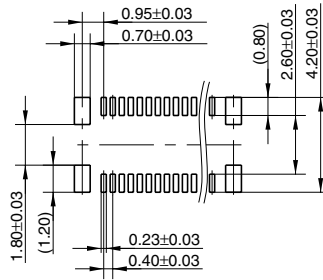
The figures to the right are recommended metal mask patterns.

Please use them as a reference.

Socket

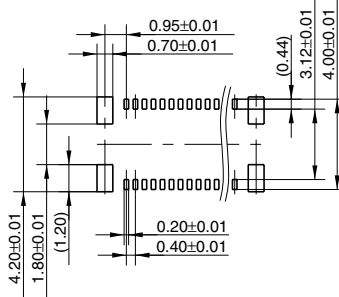
(Mated height: 1.5mm, 2.0mm, 2.5mm and 3.0mm)

Recommended PC board pattern (TOP VIEW)



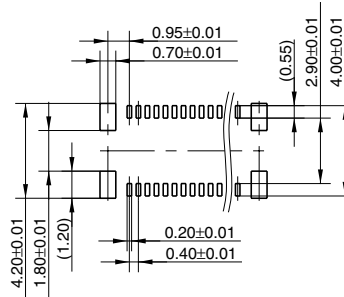
Recommended metal mask pattern

Metal mask thickness: Here, 150 μm
(Terminal portion opening area ratio: 48%)
(Metal portion opening area ratio: 100%)



Recommended metal mask pattern

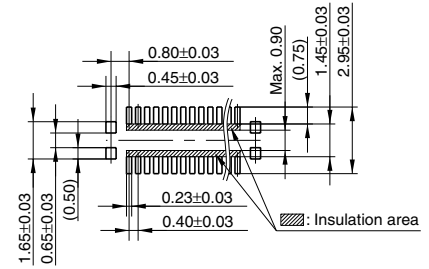
Metal mask thickness: Here, 120 μm
(Terminal portion opening area ratio: 60%)
(Metal portion opening area ratio: 100%)



Header

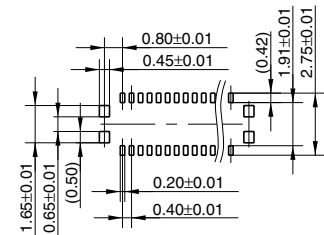
(Mated height: 1.5mm and 2.5mm)

Recommended PC board pattern (TOP VIEW)



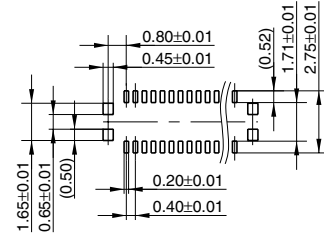
Recommended metal mask pattern

Metal mask thickness: Here, 150 μm
(Terminal portion opening area ratio: 49%)
(Metal portion opening area ratio: 100%)



Recommended metal mask pattern

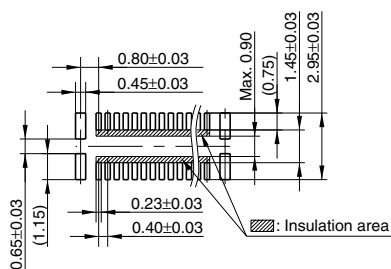
Metal mask thickness: Here, 120 μm
(Terminal portion opening area ratio: 60%)
(Metal portion opening area ratio: 100%)



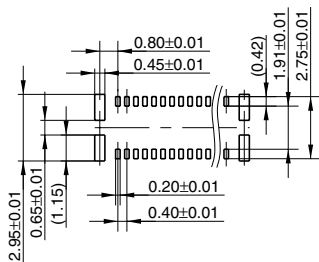
Header
 (Mated height: 2.0mm, 3.0mm)
 Recommended PC board pattern (TOP VIEW)

Regarding general notes, please refer to page 148.

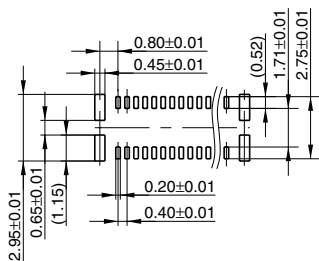
For other details, please verify with the product specification sheets.



Recommended metal mask pattern
 Metal mask thickness: Here, 150 μm
 (Terminal portion opening area ratio: 49%)
 (Metal portion opening area ratio: 100%)



Recommended metal mask pattern
 Metal mask thickness: Here, 120 μm
 (Terminal portion opening area ratio: 60%)
 (Metal portion opening area ratio: 100%)



Note: The recommended PC board pattern diagrams and metal mask pattern diagrams for headers with mating heights of 1.5 mm/2.5 mm and 2.0 mm/3.0 mm are different.