

Panasonic
ideas for life

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

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

NEW



Socket

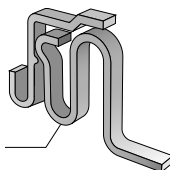


Header

2. Strong resistance to adverse environments! Utilizes "TOUGH CONTACT" construction for high contact reliability.

1) Contacts are highly resistant to shock caused by dropping and employ our original bellows contact construction.

Contacts are formed by bending a thin metal sheet, which provides the contact parts with adequate spring characteristics ensuring greater resistance to prying forces and drop impacts.



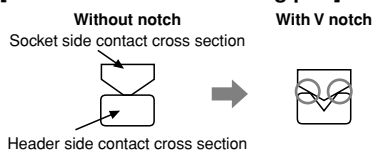
Note: If extra resistance to shock caused by dropping is required, we recommend using our previous P4 Series.

2) V notch construction used for excellent resistance against foreign matters.

What is V notch construction?

By using the edge for the contacting part and increasing contact pressure per unit area, the effectiveness in removing flux and contaminants is increased compared to its predecessor. This is also effective in preventing the trapping of contaminants.

[Cross section of contacting part]

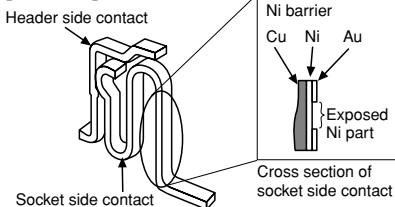


3) Use of Ni barrier construction is standard. Highly effective against solder creeping.

What is Ni barrier construction?

By providing an exposed nickel part on the gold (Au) plated contact, solder creeping is prevented despite the ultra low profile.

[Contact]

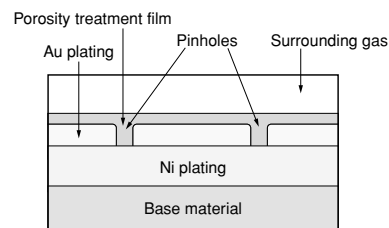


Note: Construction makes solder creeping difficult because header side is formed at the same time.

4) Porosity treatment applied for improved resistance against corrosion.

What is porosity treatment?

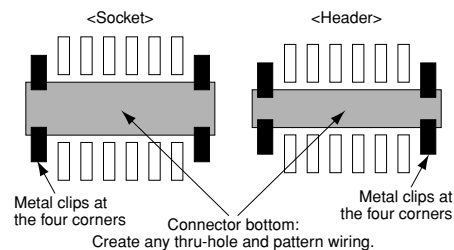
This treatment consists of coating the surface with a very thin film to seal pinholes in the gold plating. This porosity treatment technology ensures the same contact reliability for thin gold plating as that of thick gold plating.



- Improvement in insertion/removal durability
- Improvement in resistance to corrosion
- Improvement in contact reliability for digital signals

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.

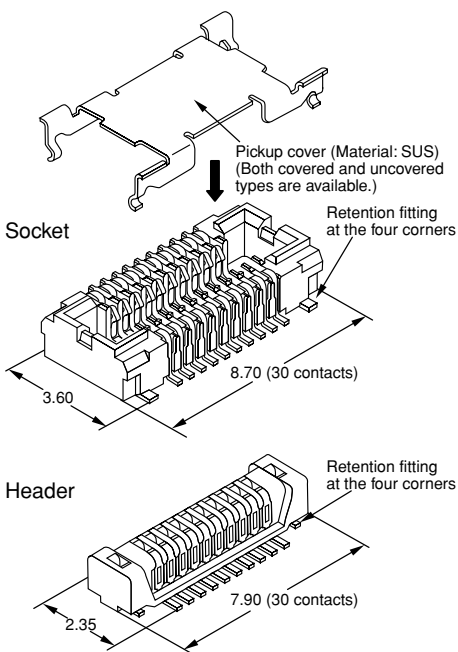
5. Compliance with RoHS' Directive
Environmentally friendly, the connectors' comply with Europe's RoHS' Directive. Cadmium, lead, mercury, hexavalent, chromium, PBB and PBDE are not used.

FEATURES

1. Space saving

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

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



AXT3, 4

APPLICATIONS

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

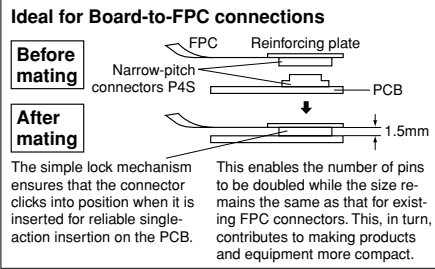
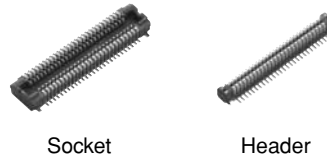


TABLE OF PRODUCT TYPES

P4S (0.4mm pitch): With retention fitting



☆: Available for sale

Mated height	Number of contacts	
	1.5mm	3.0mm
10	☆	
16	☆	
20	☆	
22	☆	
24	☆	
26	☆	
28	☆	
30	☆	☆
32	☆	
34	☆	
36	☆	
38	☆	
40	☆	
44	☆	
50	☆	
54	☆	
56	☆	
60	☆	
70	☆	
80	☆	☆
90	☆	
100	☆	

Note: The standard type comes without positioning bosses. Connectors with positioning boss are available for on-demand production.

ORDERING INFORMATION

AXT

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

2: For mated height 3.0 mm

<Header>

1: For mated height 1.5 mm

3: For mated height 3.0 mm

Functions

<Socket>

5: With pickup cover, with positioning bosses

6: With pickup cover, without positioning bosses

<Header>

1: No pickup cover, with positioning bosses

2: No pickup cover, without positioning bosses

Surface treatment (Contact portion / Terminal portion)

<Socket>

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

<Header>

4: Ni plating on base, Au plating on surface

PRODUCT TYPES 

Mated height	Number of contacts	Part number		Packing	
		Socket (Ni barrier product: Available)	Header	Inner carton	Outer carton
1.5mm	10	AXT310164	AXT410124	3,000 pieces	6,000 pieces
	16	AXT316164	AXT416124		
	20	AXT320164	AXT420124		
	22	AXT322164	AXT422124		
	24	AXT324164	AXT424124		
	26	AXT326164	AXT426124		
	28	AXT328164	AXT428124		
	30	AXT330164	AXT430124		
	32	AXT332164	AXT432124		
	34	AXT334164	AXT434124		
	36	AXT336164	AXT436124		
	38	AXT338164	AXT438124		
	40	AXT340164	AXT440124		
	44	AXT344164	AXT444124		
	50	AXT350164	AXT450124		
	54	AXT354164	AXT454124		
	56	AXT356164	AXT456124		
	60	AXT360164	AXT460124		
	70	AXT370164	AXT470124		
	3.0mm	80	AXT380164		
90		AXT390164	AXT490124		
100		AXT300164	AXT400124		
30		AXT330264	AXT430324		
	80	AXT380264	AXT480324		

- 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 13.)
 Samples: Small lot orders are possible. Please consult us.
 2. The standard type comes without positioning bosses. Connectors with positioning bosses are available on-demand production. For this type of connector, 8th digit of the part number changes from 6 to 5 and from 2 to 1.
 3. Sockets come standard with pickup covers and headers come standard without pickup covers. Please consult us if you require sockets without pickup covers and headers with pickup covers.
 4. Connectors of different mated height and different number of contacts are available on-demand production only. Please contact us for more details.

AXT3, 4

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. 1,000MΩ (initial)	Using 250V DC megger (applied for 1 min.)
	Contact resistance	Max. 90mΩ	Measured based on the HP4338B measurement method of 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	Infrared reflow soldering
		300°C within 5 sec. or 350°C within 3 sec.	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. 100MΩ, contact resistance max. 90mΩ	Sequence 1. -55 ⁺³ °C, 30 minutes 2. ~, Max. 5 minutes 3. 85 ⁺³ °C, 30 minutes 4. ~, Max. 5 minutes
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100MΩ, contact resistance max. 90mΩ	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	Temperature 35±2°C, saltwater concentration 5±1%
H ₂ S resistance (header and socket mated)	48 hours, contact resistance max. 90mΩ	Temperature 40±2°C, gas concentration 3±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

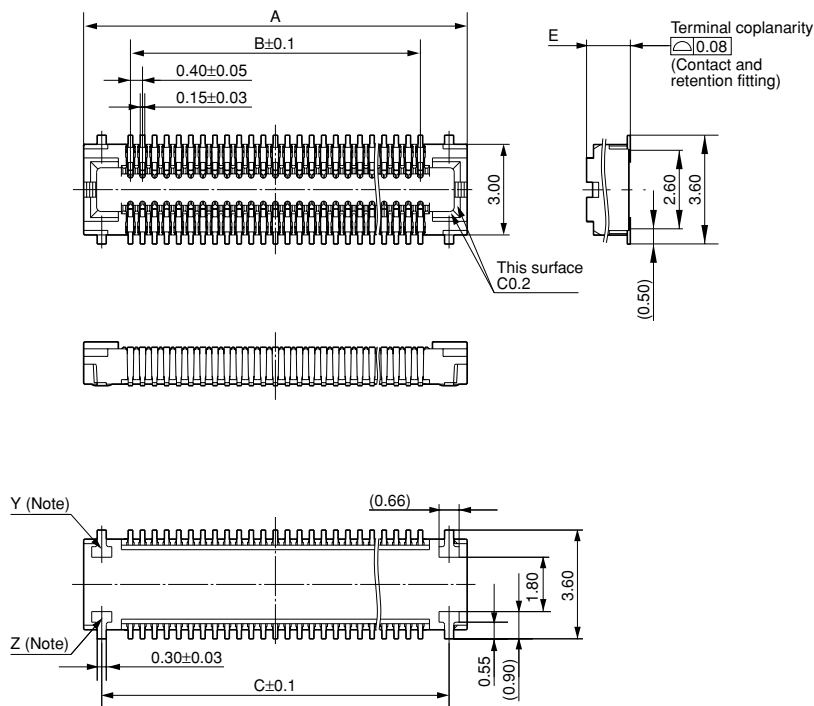
2. Material and surface treatment

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. Retention fitting 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)

DIMENSIONS (mm)

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

- Without pickup cover



General tolerance: ±0.2

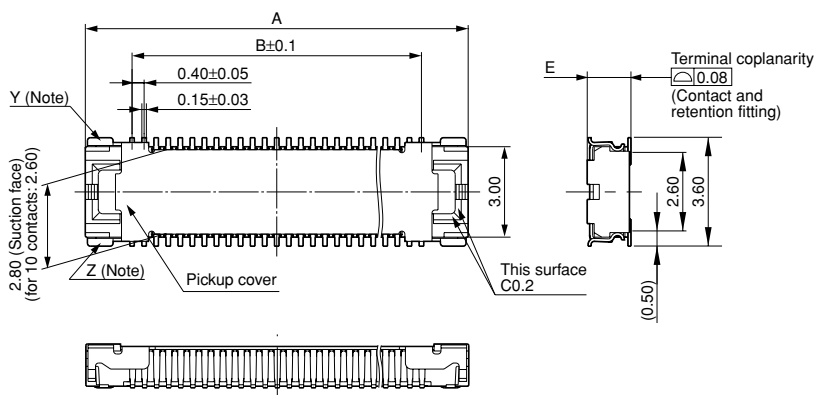
Note: Since retention fittings are built into the body, the Y and Z parts are connected electrically.

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
44	11.5	8.4	10.3
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
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

Mated height/ dimension	E
1.5mm	1.45
3.0mm	2.45

- With pickup cover



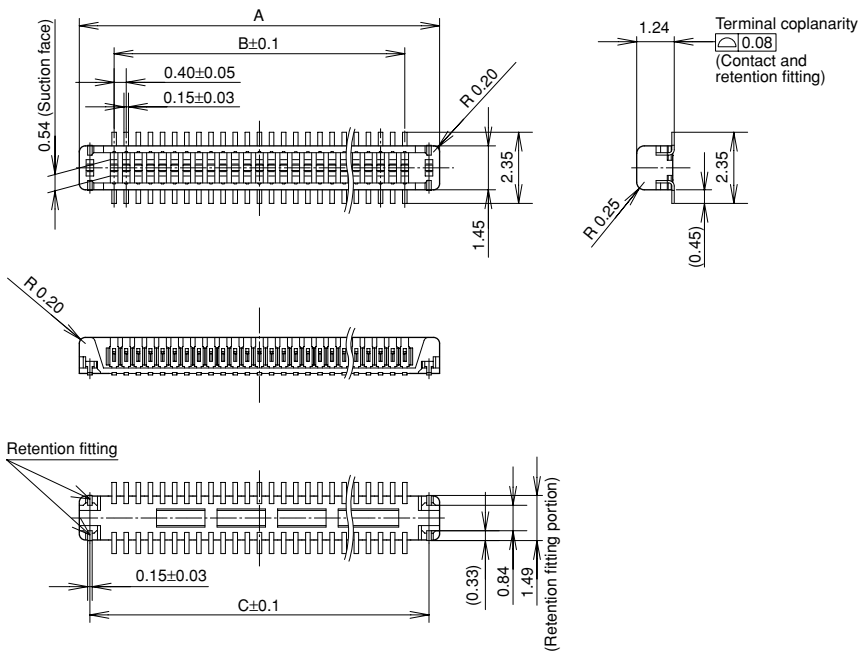
General tolerance: ±0.2

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

AXT3, 4

2. Header (Mated height: 1.5mm)

mm



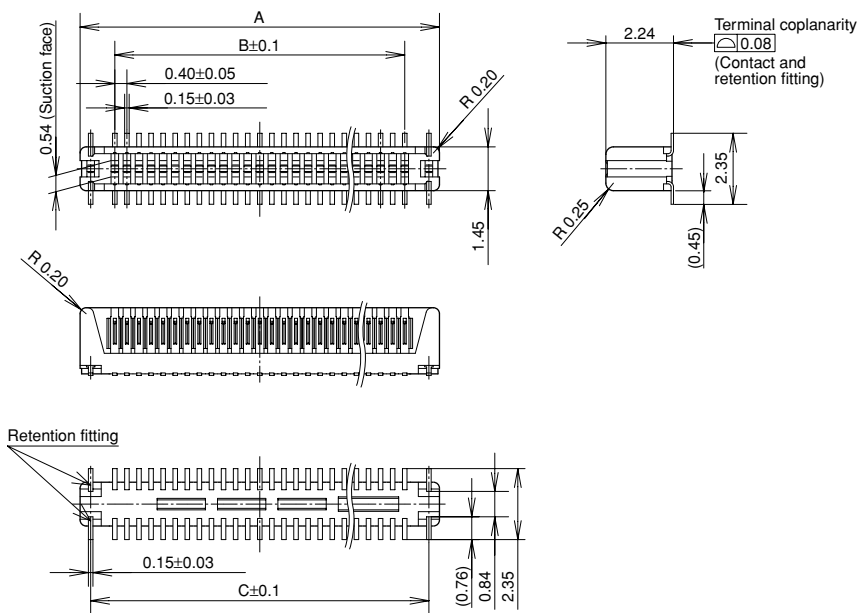
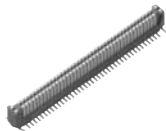
Dimension table (mm)

Number of contacts/ dimension	A	B	C
10	3.9	1.6	3.2
16	5.1	2.8	4.4
20	5.9	3.6	5.2
22	6.3	4.0	5.6
24	6.7	4.4	6.0
26	7.1	4.8	6.4
28	7.5	5.2	6.8
30	7.9	5.6	7.2
32	8.3	6.0	7.6
34	8.7	6.4	8.0
36	9.1	6.8	8.4
38	9.5	7.2	8.8
40	9.9	7.6	9.2
44	10.7	8.4	10.0
50	11.9	9.6	11.2
54	12.7	10.4	12.0
56	13.1	10.8	12.4
60	13.9	11.6	13.2
70	15.9	13.6	15.2
80	17.9	15.6	17.2
90	19.9	17.6	19.2
100	21.9	19.6	21.2

General tolerance: ±0.2

Note: The retention fitting dimensions of headers with mating heights of 1.5mm and 3.0mm are different.

3. Header (Mated height: 3.0mm)



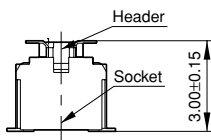
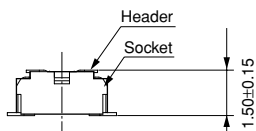
Dimension table (mm)

Number of contacts/ dimension	A	B	C
30	7.9	5.6	7.2
80	17.9	15.6	17.2

General tolerance: ±0.2

Note: The retention fitting dimensions of headers with mating heights of 1.5mm and 3.0mm are different.

Socket and Header are mated

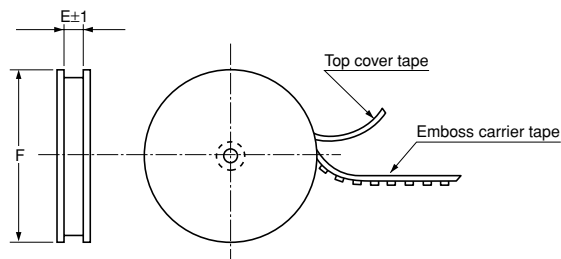
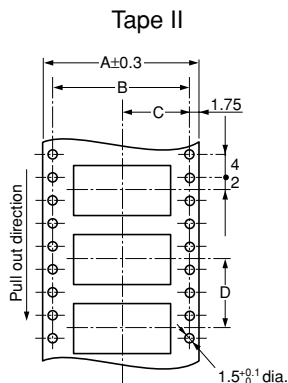
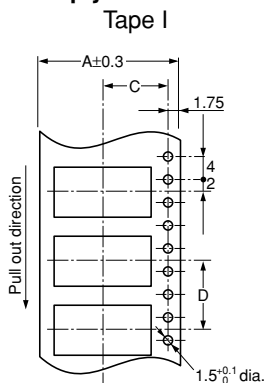


EMBOSED TAPE DIMENSIONS (unit:mm, Common for respective contact type, socket and header)

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

• 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	E	F	Quantity per reel
Common for socket and header: 1.5mm and 3.0mm	Max. 24	Tape I	16.0	—	7.5	8.0	17.5	φ380	3,000
	26 to 70	Tape I	24.0	—	11.5	8.0	25.5	φ380	3,000
	72 to 100	Tape II	32.0	28.4	14.2	8.0	33.5	φ380	3,000

Connector orientation with respect to direction of progress of embossed tape

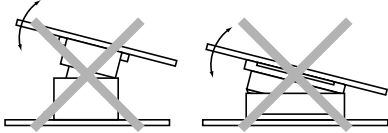
Direction of tape progress ↓	Type	Common for P4S	
	Socket	Header	

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

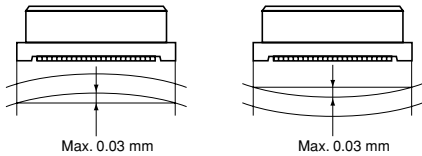
AXT3, 4

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.

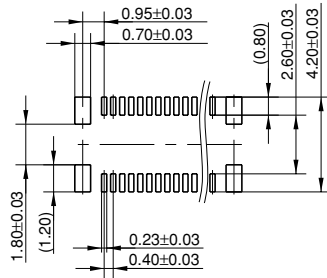
In order to reduce solder bridge and other issues make sure the proper levels of solder are used.

The figures to the right are recommended metal mask patterns.

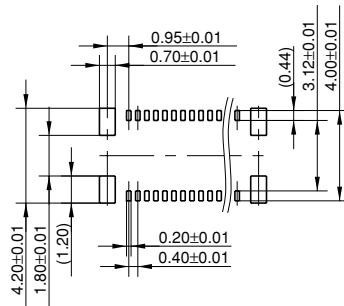
Please use them as a reference.

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

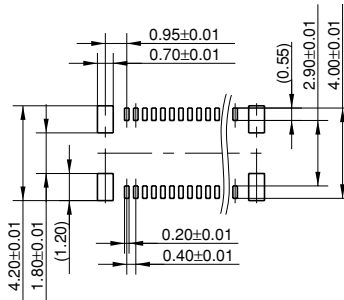
Socket
(Mated height: 1.5mm and 3.0mm)
Recommended PC board pattern (TOP VIEW)



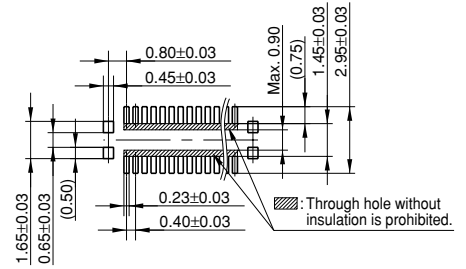
Recommended metal mask pattern
Metal mask thickness: Here, 150 μm
(Terminal portion opening area ratio: 48%)
(Metal portion opening area ratio: 100%)



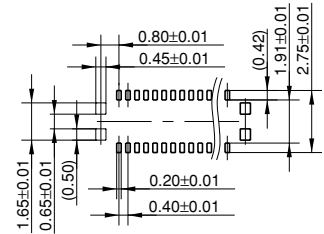
Recommended metal mask pattern
Metal mask thickness: Here, 120 μm
(Terminal portion opening area ratio: 60%)
(Metal portion opening area ratio: 100%)



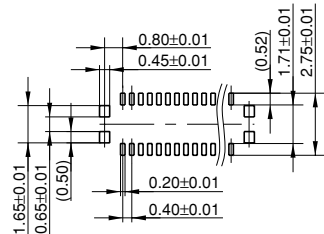
Header
(Mated height: 1.5mm)
Recommended PC board pattern (TOP VIEW)



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



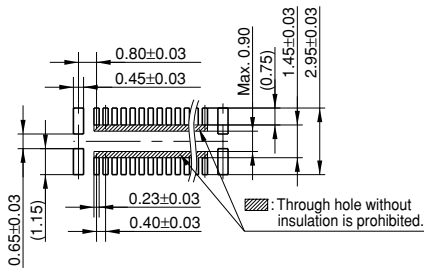
Recommended metal mask pattern
Metal mask thickness: Here, 120 μm
(Terminal portion opening area ratio: 60%)
(Metal portion opening area ratio: 100%)



Header

(Mated height: 3.0mm)

Recommended PC board pattern (TOP VIEW)



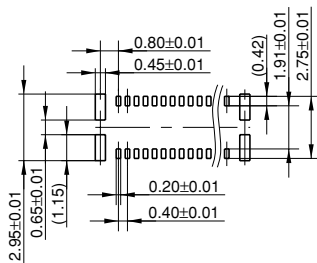
Regarding general notes, please refer to page 12.

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

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

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%)

