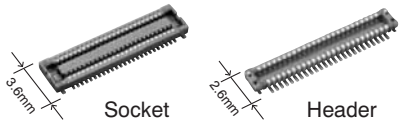
Products marked ⓘ are discontinued as of September 30, 2013

Panasonic
ideas for life

For board-to-FPC

Narrow pitch connectors (0.4mm pitch)

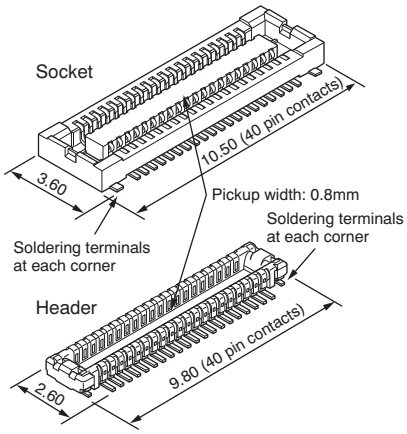
F4S Series



ⓘ Products to be discontinued.

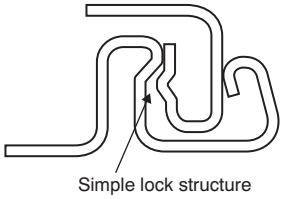
FEATURES

1. Space-saving (3.6 mm widthwise)
Smaller compared to F4 series (40 pin contacts):
Socket — 27% smaller,
Header — 38% smaller.



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

3. Simple lock structure provides tactile feedback to ensure excellent mating/unmating operation feel.



4. Gull-wing-shaped terminals to facilitate visual inspections.
5. Connectors for inspection available

APPLICATIONS

Mobile devices, such as cellular phones, digital still cameras and digital video cameras.

ORDERING INFORMATION

AXT □ □□ □ □ 4

5: Narrow Pitch Connector F4S (0.4 mm pitch) Socket
6: Narrow Pitch Connector F4S (0.4 mm pitch) Header

Number of pins (2 digits)

Mated height
<Socket>
1: For mated height 1.0 mm
2: For mated height 1.2 mm
<Header>
1: For mated height 1.0 mm
2: For mated height 1.2 mm

Functions
<Socket, Header>
2: Without positioning bosses

Surface treatment (Contact portion / Terminal portion)
<Socket>
4: Base: Ni plating Surface: Au plating (for Ni barrier available)
<Header>
4: Base: Ni plating Surface: Au plating

Note: Please note that models with a mated height of 1.0 mm (7th digit of part number is “1”) and 1.2 mm (7th digit of part number is “2”) are not compatible.

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PRODUCT TYPES TOUGH CONTACT

Mated height	Number of pins	Part number		Packing	
		Socket	Header	Inner carton	Outer carton
1.0mm	10	AXT510124	AXT610124	3,000 pieces	6,000 pieces
	12	AXT512124	AXT612124		
	14	AXT514124	AXT614124		
	16	AXT516124	AXT616124		
	ⓘ 18	AXT518124	AXT618124		
	20	AXT520124	AXT620124		
	22	AXT522124	AXT622124		
	24	AXT524124	AXT624124		
	26	AXT526124	AXT626124		
	28	AXT528124	AXT628124		
	30	AXT530124	AXT630124		
	32	AXT532124	AXT632124		
	34	AXT534124	AXT634124		
	36	AXT536124	AXT636124		
	ⓘ 38	AXT538124	AXT638124		
	40	AXT540124	AXT640124		
	42	AXT542124	AXT642124		
	44	AXT544124	AXT644124		
	ⓘ 46	AXT546124	AXT646124		
	48	AXT548124	AXT648124		
	50	AXT550124	AXT650124		
	54	AXT554124	AXT654124		
	60	AXT560124	AXT660124		
	64	AXT564124	AXT664124		
	70	AXT570124	AXT670124		
	80	AXT580124	AXT680124		
1.2mm	10	AXT510224	AXT610224		
	30	AXT530224	AXT630224		
	40	AXT540224	AXT640224		
	50	AXT550224	AXT650224		
	70	AXT570224	AXT670224		
	80	AXT580224	AXT680224		

Notes: 1. Order unit: For volume production: in 1-inner-box (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 pins other than those listed above.

SPECIFICATIONS

1. Characteristicss

Item		Specifications	Conditions
Electrical characteristics	Rated current	0.3A/pin contact (Max. 5 A at total pin 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. 0.981N/pin contacts × pin contacts (initial)	
	Composite removal force	Min. 0.165N/pin contacts × pin contacts	
	Contact holding force (Socket contact)	Min. 0.49N/pin 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) –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	Conformed to MIL-STD-202F, method 107G Order / Temperature (°C) / Time (minutes) 1 / -55^{0}_{-3} / 30 2 / ⟆ / Max. 5 3 / 85^{+3}_{0} / 30 4 / ⟆ / Max. 5 / -55^{0}_{-3} /
	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_2S 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	50 times	Repeated insertion and removal speed of max. 200 times/hours
Unit weight		20 pin contact type: Socket: 0.03 g Header: 0.01 g	

2. 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 Terminal portion: Base: Ni plating Surface: Au plating (except the terminal tips) The socket terminals close to the portion to be soldered have nickel barriers (exposed nickel portions). Soldering terminals: Sockets: Base: Ni plating Surface: Pd+Au flash plating (except the terminal tips) Headers: Base: Ni plating Surface: Au plating (except the terminal tips)

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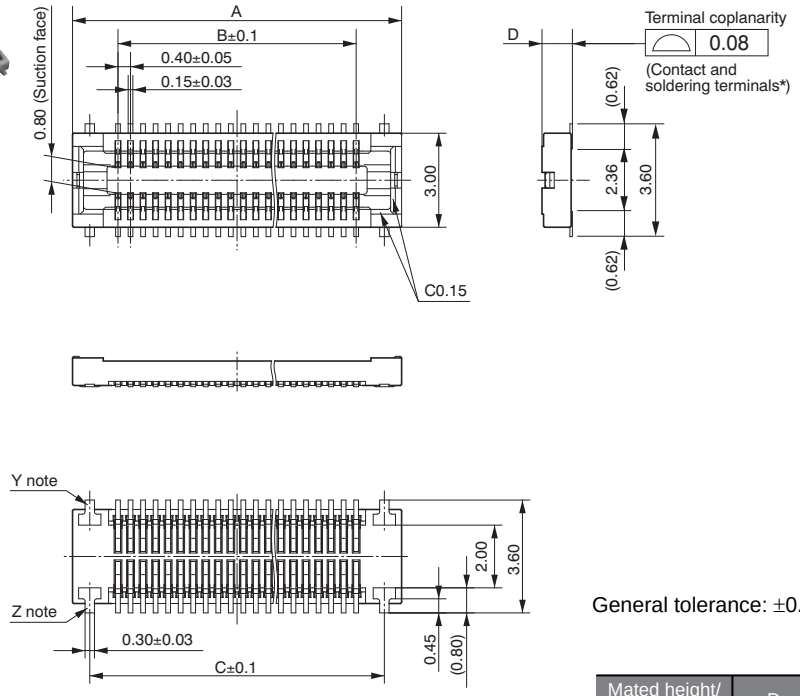
DIMENSIONS

Interested in CAD data? You can obtain CAD data for all products with a **CAD Data** mark from your local Panasonic Electric Works representative.

(Unit: mm)

Socket (Mated height: 1.0 mm and 1.2 mm)



General tolerance: ±0.2

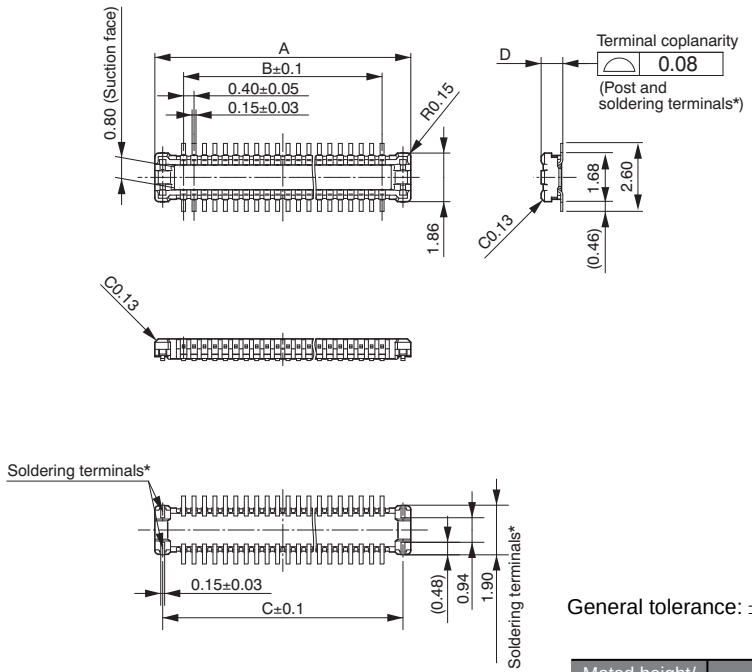
Mated height/ dimension	D
1.0mm	0.97
1.2mm	1.17

Note: Since the soldering terminals* has a single-piece construction, sections Y and Z are electrically connected.

Dimension table (mm)

Number of pins/ 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
42	10.9	8.0	9.8
44	11.3	8.4	10.2
46	11.7	8.8	10.6
48	12.1	9.2	11.0
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: 1.0 mm and 1.2 mm)



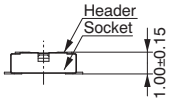
General tolerance: ±0.2

Mated height/ dimension	D
1.0mm	0.83
1.2mm	1.01

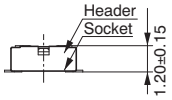
Dimension table (mm)

Number of pins/ 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
42	10.2	8.0	9.6
44	10.6	8.4	10.0
46	11.0	8.8	10.4
48	11.4	9.2	10.8
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

• Socket and Header are mated



Mated height: 1.0 mm



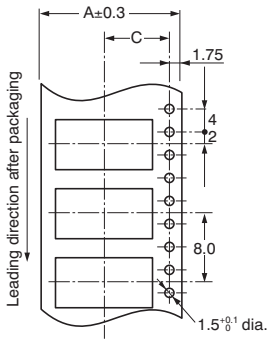
Mated height: 1.2 mm

EMBOSSED TAPE DIMENSIONS (Unit: mm) (Common to all sockets and headers)

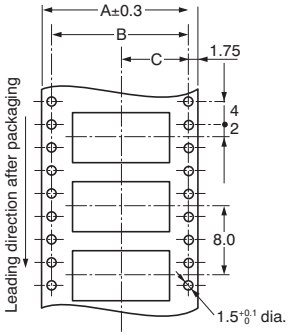
• Specifications for taping

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

Tape I

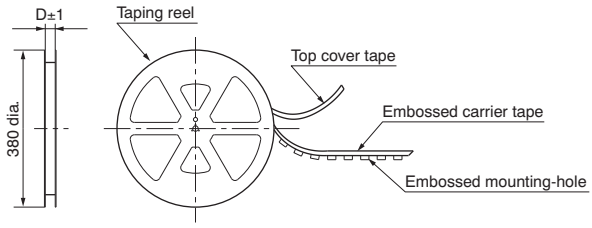


Tape II



• Specifications for the plastic reel

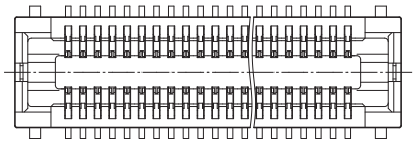
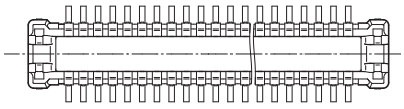
(In accordance with EIAJET-7200B.)



• Dimension table (Unit: mm)

Type/Mated height	Number of pins	Type of taping	A	B	C	D	Quantity per reel
Common for sockets and headers: 1.0mm, 1.2mm	24 or less	Tape I	16.0	—	7.5	17.4	3,000
	26 to 70	Tape I	24.0	—	11.5	25.4	3,000
	80	Tape II	32.0	28.4	14.2	33.4	3,000

• Connector orientation with respect to embossed tape feeding direction

Direction of tape progress \ Type	Common for F4S
	Socket  Header 

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

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Panasonic
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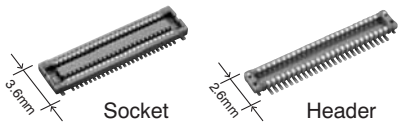
For board-to-FPC

Connectors for inspection usage (0.4mm pitch)

F4S Series



ⓘ Products to be discontinued.

FEATURES

1. 3,000 mating and unmating cycles
2. Same external dimensions and foot patterns as standard type.
3. Improved mating
Insertion and removal easy due to a reduction in mating retention force. This is made possible by a simple locking structure design.
Note: Mating retention force cannot be warranted.

APPLICATIONS

Ideal for module unit inspection and equipment assembly inspection

TABLE OF PRODUCT TYPES

☆: Available for sale

Product name	Number of pins																										
F4S for inspection	10	12	14	16	ⓘ 18	20	22	24	26	28	30	32	34	36	ⓘ 38	40	42	44	ⓘ 46	48	50	54	60	64	70	80
	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆

Notes: 1. Please inquire about numbers of pins other than those given above.
2. Please inquire with us regarding availability.
3. Please keep the minimum ordering quantities no less than 50 pieces per lot.
4. Please inquire if further information is needed.

PRODUCT TYPES

Specifications		Part No.	Specifications		Part No.
Socket	Without positioning bosses	AXT5E**26	Header	Without positioning bosses	AXT6E**26

Notes: 1. When placing an order, substitute the "*" (asterisk) in the above part number with the number of pins for the specific 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. For high resistance to drop impact the F4 series is recommended.

2. Recommended PC board and metal mask patterns

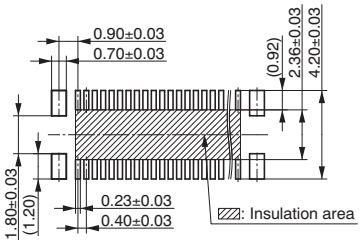
Connectors are mounted with high pitch density, intervals of 0.35 mm, 0.4 mm or 0.5 mm.

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

The figures to the right are recommended metal mask patterns. Please use them as a reference.

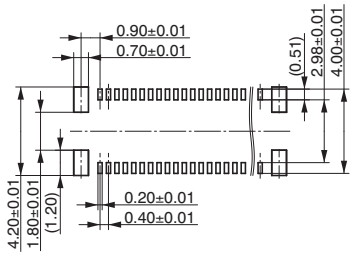
• Socket (Mated height: 1.0 mm)

Recommended PC board pattern (TOP VIEW)



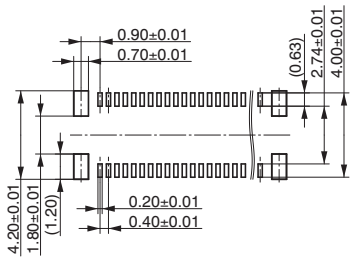
Recommended metal mask opening pattern

Metal mask thickness: When 150μm
(Terminal opening ratio: 48%)
(Metal-part opening ratio: 100%)



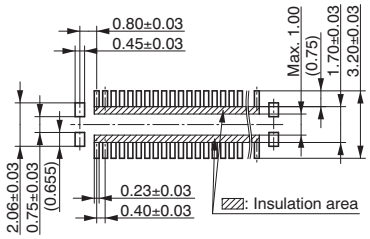
Recommended metal mask opening pattern

Metal mask thickness: When 120μm
(Terminal opening ratio: 60%)
(Metal-part opening ratio: 100%)



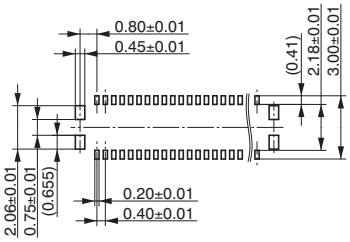
• Header (Mated height: 1.0 mm)

Recommended PC board pattern (TOP VIEW)



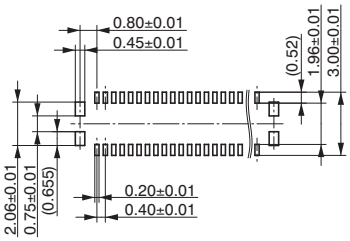
Recommended metal mask opening pattern

Metal mask thickness: When 150μm
(Terminal opening ratio: 48%)
(Metal-part opening ratio: 100%)



Recommended metal mask opening pattern

Metal mask thickness: When 120μm
(Terminal opening ratio: 60%)
(Metal-part opening ratio: 100%)



For Cautions for Use, see Connector Technical Information. For other details, please verify with the product specification sheets.