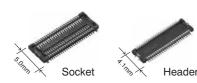
Panasonic ideas for life

For board-to-FPC

Narrow pitch connectors (0.4mm pitch)

F4 Series





1 Products to be discontinued.

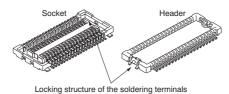
FEATURES

- 1. 0.9 mm mated height low profile two-piece type connectors
- 2. Strong resistance to adverse environments! Utilizes

TDUGH CONTRET construction for high contact reliability.

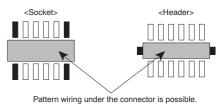
3. Improved mating strength between the socket and header

The simple locking structures provided for the soldering terminals and the contact points improve the mating strength and provide tactile feedback when locked.



4. Easy to design product circuits

An insulating wall prevents contact between the PC board enabling patterns and the soldering terminals.

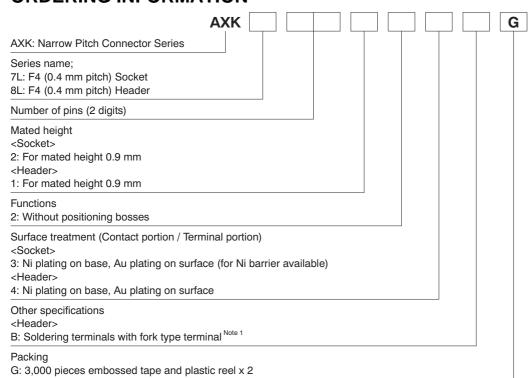


5. Connectors for inspection available

APPLICATIONS

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

ORDERING INFORMATION



Notes: 1. "B" in the 11th digit of the header part number signifies a fork type soldering terminals to lessen the constraint on amount of solder when mounting, and a construction that makes it difficult when mounting for excess solder to interfere with the socket.

Although compatible with the previous parts, these parts are not compatible with the recommended PC board pattern and recommended metal mask pattern.

ds 65309 en f4: 311012J

PRODUCT TYPES * TOUGH CONTRET

		Part n	umber	Pac	king
Mated height	Number of pins	Socket	Header	Inner carton (1 reel)	Outer carton
	10	AXK7L10223G	AXK8L10124BG		
	<u>1</u> 12	AXK7L12223G	AXK8L12124BG		
	<u>•</u> 14	AXK7L14223G	AXK8L14124BG		
	16	AXK7L16223G	AXK8L16124BG		
	20	AXK7L20223G	AXK8L20124BG		
	22	AXK7L22223G	AXK8L22124BG		
	24	AXK7L24223G	AXK8L24124BG		
	26 ! 28	AXK7L26223G	AXK8L26124BG		
		AXK7L28223G	AXK8L28124BG		
	30	AXK7L30223G	AXK8L30124BG		
	① 32 34	AXK7L32223G	AXK8L32124BG		
0.9 mm		AXK7L34223G	AXK8L34124BG	3,000 pieces	6,000 pieces (2 reels)
	① 36	AXK7L36223G	AXK8L36124BG		(2 10013)
	① 38	AXK7L38223G	AXK8L38124BG		
	40	AXK7L40223G	AXK8L40124BG		
	44	AXK7L44223G	AXK8L44124BG		
	<u>(1)</u> 48	AXK7L48223G	AXK8L48124BG		
	50	AXK7L50223G	AXK8L50124BG		
	54	AXK7L54223G	AXK8L54124BG		
	60	AXK7L60223G	AXK8L60124BG		
	<u>•</u> 66	AXK7L66223G	AXK8L66124BG		
	70	AXK7L70223G	AXK8L70124BG		
	80	AXK7L80223G	AXK8L80124BG		

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 contact us. Samples: Available. Please contact us.

3. Please contact us regarding different number of pins.

 $\frac{1}{2}$ ds_65309_en_f4: 311012J

^{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.

^{4. &}quot;B" in the 11th digit of the header part number signifies a fork type soldering terminals to lessen the constraint on amount of solder when mounting, and a construction that makes it difficult when mounting for excess solder to interfere with the socket. Although compatible with the previous parts, these parts are not compatible with the recommended PC board pattern and recommended metal mask pattern.

SPECIFICATIONS

1. Characteristics

	Item	Specifications	Conditions					
	Rated current	0.3A/pin contact (Max. 5 A at total pin contacts)	_					
	Rated voltage	60V AC/DC	_					
Electrical characteristics	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					
ondidonotion	Insulation resistance	Min. 1,000M Ω (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.					
	Composite insertion force	Max. 1.70N/pin contacts × pin contacts (initial)						
	Composite removal force	Min. 0.098N/pin contacts × pin contacts						
Mechanical characteristics	Contact holding force (Socket contact)	Min. 0.49N/pin contacts	Measuring the maximum force. As the contact is axially pull out.					
	Soldering terminal holding force (Header soldering terminal)	Min. 0.49N	Measuring the maximum force. As the soldering terminal is axially pull out.					
	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)	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					
			Conformed to MIL-STD-202F, method 107G					
Environmental characteristics	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100M Ω , contact resistance max. 90m Ω	Order Temperature (°C) Time (minutes) 1 −55.s.3 30 2 ∫ Max. 5 3 85*8 30 4 ∫ Max. 5 −55.s.3 Max. 5					
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100M Ω , contact resistance max. 90m Ω	Temperature 40±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±2°C, saltwater concentration 5±1%					
	H ₂ S resistance (header and socket mated)	48 hours, contact resistance max. $90m\Omega$	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 contacts; Socket: 0.03g Header: 0.01g	_					

2. Material and surface treatment

Part name	Material	Surface treatment
Molded portion	LCP 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 front edge of terminal) However, the area adjacent to the socket terminal is exposed to Ni on base. Soldering terminals: 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)

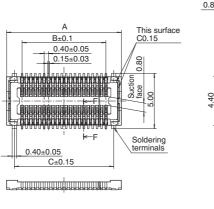
DIMENSIONS

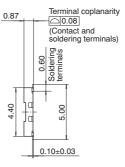
Interested in CAD data? You can obtain CAD data for all products with a CAD Data mark from your local Panasonic Electric Works representative.

(Unit: mm)

• Socket (Mated height 0.9 mm)







F-F cross section



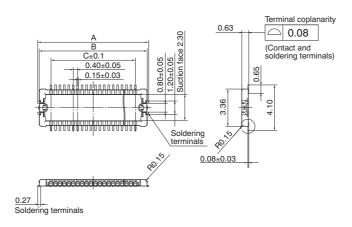
General tolerance: ±0.2

Dimension table (mm)

Number of pins/ Dimensions	А	В	С
10	4.4	1.6	3.0
12	4.8	2.0	3.4
14	5.2	2.4	3.8
16	5.6	2.8	4.2
20	6.4	3.6	5.0
22	6.8	4.0	5.4
24	7.2	4.4	5.8
26	7.6	4.8	6.2
28	8.0	5.2	6.6
30	8.4	5.6	7.0
32	8.8	6.0	7.4
34	9.2	6.4	7.8
36	9.6	6.8	8.2
38	10.0	7.2	8.6
40	10.4	7.6	9.0
44	11.2	8.4	9.8
48	12.0	9.2	10.6
50	12.4	9.6	11.0
54	13.2	10.4	11.8
60	14.4	11.6	13.0
66	15.6	12.8	14.2
70	16.4	13.6	15.0
80	18.4	15.6	17.0

• Header (Mated height: 0.9 mm)





General tolerance: ±0.2

Dimension table (mm)

Billionolori table (Illin)									
Number of pins/ Dimensions	А	В	С						
10	4.0	3.74	1.6						
12	4.4	4.14	2.0						
14	4.8	4.54	2.4						
16	5.2	4.94	2.8						
20	6.0	5.74	3.6						
22	6.4	6.14	4.0						
24	6.8	6.54	4.4						
26	7.2	6.94	4.8						
28	7.6	7.34	5.2						
30	8.0	7.74	5.6						
32	8.4	8.14	6.0						
34	8.8	8.54	6.4						
36	9.2	8.94	6.8						
38	9.6	9.34	7.2						
40	10.0	9.74	7.6						
44	10.8	10.54	8.4						
48	11.6	11.34	9.2						
50	12.0	11.74	9.6						
54	12.8	12.54	10.4						
60	14.0	13.74	11.6						
66	15.2	14.94	12.8						
70	16.0	15.74	13.6						
80	18.0	17.74	15.6						

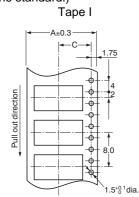
• Socket and header are mated

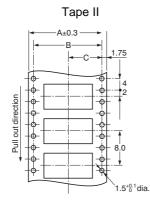


EMBOSSED TAPE DIMENSIONS (unit: mm) (Common for respective contact type, socket and header)

Tape dimensions (Conforming to JIS C 0806-1990. However, some tapes have mounting hole pitches that do not comply with the standard.)

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





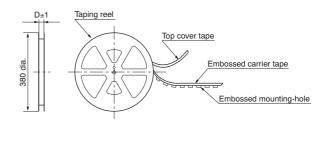
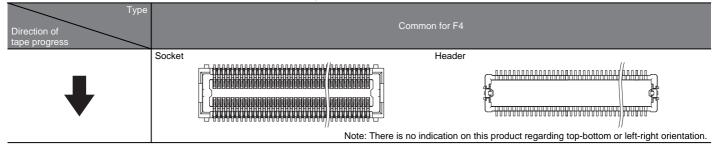


TABLE OF DIMENSIONS

Mated height	Number of pins	Type of taping	А	В	С	D	Quantity per reel
Common for	Max. 24	Tape I	16.0	_	7.5	17.4	3000
socket and header: 0.9mm	26 to 70	Tape I	24.0	_	11.5	25.4	3000
	80	Tape II	32.0	28.4	14.2	33.4	3000

Connector orientation with respect to direction of progress of embossed tape



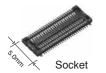


Connectors for

inspection usage (0.4mm pitch)

For board-to-FPC

F4 Series





Products are 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		① Number of pins																					
F4	10	12	14	16	20	22	24	26	28	30	32	34	36	38	40	44	48	50	54	60	66	70	80
for inspection	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆

- Notes: 1. Please inquire about number of pins other than those shown above.

 - 2. Please inquire with us regarding availability.3. Please keep the minimum order quantities no less than 50 pieces per lot.
 - 4. Please inquire if further information is needed.

PRODUCT TYPES

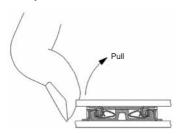
	Specifications	Part No.		Part No.	
Socket	Without positioning bosses	AXK7LE**26G	Header	Without positioning bosses	AXK8LE**26BG

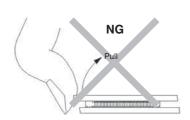
Notes: 1. When placing an order, substitute the "*" (asterisk) in the above part number with the number of pins for the specific connector.

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

NOTES

1. Removal by pulling up from an end causes the entire connector removal force to concentrate on both the soldering terminals and end terminals. Please lift and remove from it's side. This will also prevent cracking of the soldered parts.





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.

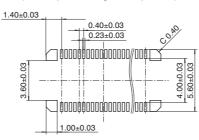
In order to reduce solder bridges and other issues make sure the proper levels of solder is used.

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

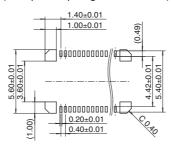
Note: if excess solder is used in the header retaining soldering terminals, this may cause incomplete socket mating.
Therefore, please follow the recommended conditions shown on the right.

Socket

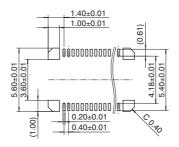
Recommended PC board pattern (Mount pad arrangement pattern)



Recommended metal mask pattern Metal mask thickness: Here, 150 μm (Terminal portion opening area ratio: 53%) (Metal portion opening area ratio: 100%)

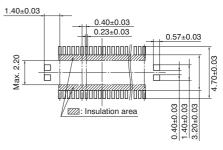


Recommended metal mask pattern Metal mask thickness: Here, 120 μm (Terminal portion opening area ratio: 66%) (Metal portion opening area ratio: 100%)

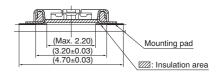


Header

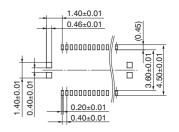
Recommended PC board pattern (Mount pad arrangement pattern)



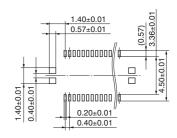
Relation between connector and mounting pad



Recommended metal mask pattern Metal mask thickness: Here, 150 μm (Terminal portion opening area ratio: 52%) (Metal portion opening area ratio: 80%)



Recommended metal mask pattern Metal mask thickness: Here, 120 μm (Terminal portion opening area ratio: 66%) (Metal portion opening area ratio: 100%)



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