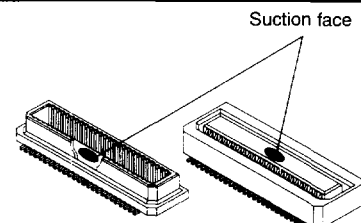
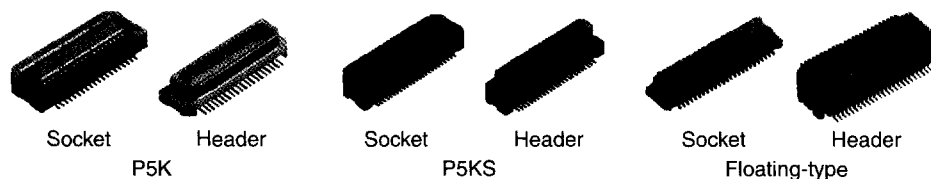


# NAIS

## NARROW-PITCH CONNECTORS FOR PC BOARDS

## NARROW PITCH (0.5mm) CONNECTORS P5 SERIES — P5K, P5KS —



### FEATURES

#### 1. Low profile of 3mm

#### 2. Unique bellows-type contacts

Our unique bellows-type contacts resist mating stress and offer high contact reliability.

#### 3. Automatic mounting

- 1) Suction area for suction-type automatic placement machines is employed.
- 2) Embossed tape packaging is standard.
- 3) Terminal construction which is virtually resistant to solder bridging.

### APPLICATIONS

Small portable equipment, personal computers, word processors, video equipment, radio communication equipment, cellular telephone, PHS, etc.

### SPECIFICATIONS

#### 1. Characteristics

Item	Specifications		Conditions																
	3mm, 3.5mm type	4mm, 4.5mm, 5mm, 5.5mm, 6mm, 6.5mm type																	
Electrical characteristics	Rated current	0.5A/terminal (Max. 10A)	0.5A/terminal (Max. 16A)																
	Rated voltage	AC, DC 60V																	
	Breakdown voltage	150V AC for 1 min.																	
	Insulation resistance	Min. 1000M $\Omega$																	
	Contact resistance	Max. 60m $\Omega$	Max. 80m $\Omega$	Detection current: 1mA Using 500V DC megger Measured with YHP4328A															
Mechanical characteristics	Composite insertion force	Max. 0.785N {80gf} $\times$ no. of contacts (initial)																	
	Composite removal force	Min. 0.0588N {6gf} $\times$ no. of contacts																	
	Post holding force	Min. 0.981N {100gf}																	
Environmental characteristics	Ambient temperature	-55°C to +85°C																	
	Soldering heat resistance	Max. peak temperature of 245°C																	
		300°C within 5 sec./350°C within 3 sec.																	
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100M $\Omega$ , contact resistance max. 60m $\Omega$	5 cycles, insulation resistance min. 100M $\Omega$ , contact resistance max. 80m $\Omega$	<table border="1"> <thead> <tr> <th>Sequence</th> <th>Temperature (°C)</th> <th>Time (minutes)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-55<math>^{\circ}</math><sub>-3</sub></td> <td>30</td> </tr> <tr> <td>2</td> <td>25<math>^{\circ}</math><sub>-10</sub></td> <td>Max. 5</td> </tr> <tr> <td>3</td> <td>85<math>^{\circ}</math><sub>-3</sub></td> <td>30</td> </tr> <tr> <td>4</td> <td>25<math>^{\circ}</math><sub>-10</sub></td> <td>Max. 5</td> </tr> </tbody> </table>	Sequence	Temperature (°C)	Time (minutes)	1	-55 $^{\circ}$ <sub>-3</sub>	30	2	25 $^{\circ}$ <sub>-10</sub>	Max. 5	3	85 $^{\circ}$ <sub>-3</sub>	30	4	25 $^{\circ}$ <sub>-10</sub>	Max. 5
		Sequence	Temperature (°C)	Time (minutes)															
	1	-55 $^{\circ}$ <sub>-3</sub>	30																
	2	25 $^{\circ}$ <sub>-10</sub>	Max. 5																
3	85 $^{\circ}$ <sub>-3</sub>	30																	
4	25 $^{\circ}$ <sub>-10</sub>	Max. 5																	
Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100M $\Omega$ , contact resistance max. 60m $\Omega$	120 hours, insulation resistance min. 100M $\Omega$ , contact resistance max. 80m $\Omega$	Bath temperature 40 $\pm$ 2°C, humidity 90 to 95% R.H.																
Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100M $\Omega$ , contact resistance max. 60m $\Omega$	24 hours, insulation resistance min. 100M $\Omega$ , contact resistance max. 80m $\Omega$	Bath temperature 35 $\pm$ 2°C, saltwater concentration 5 $\pm$ 1%																
H <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. 60m $\Omega$	48 hours, contact resistance max. 80m $\Omega$	Bath 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																	
Unit weight	P5K 3mm 30 terminals Socket: 0.17g Header: 0.09g P5KS 4mm 30 terminals Socket: 0.18g Header: 0.16g																		

#### 2. Material and surface treatment

Part name	Stacking height 3mm, 3.5mm, 4mm, 4.5mm, 5mm, 5.5mm, 6mm, 6.5mm		Stacking height 7mm, 8mm, 9mm	
	Material	Surface treatment	Material	Surface treatment
Molded portion	Heat-resistant resin (UL94V-0)	—	Heat-resistant resin (UL94V-0)	—
Contact	Copper alloy	Contact portion: Au plating over Ni Terminal portion: Au plating over Ni	Copper alloy	Contact portion: Au plating over Ni Terminal portion: Socket: SnPb plating over Ni Header: Au plating over Ni

### PRODUCT TYPES

Product name	Stacking height	No. of contacts	Part No.	
			Socket	Header
P5K	3.0 mm	20	AXK520145J	AXK620345J
		22	AXK522145J	AXK622345J
		30	AXK530145J	AXK630345J
		40	AXK540145J	AXK640345J
		50	AXK550145J	AXK650345J
		60	AXK560145J	AXK660345J
		70	AXK570145J	AXK670345J
		80	AXK580145J	AXK680345J
		100	AXK500145J	AXK600345J

**PRODUCT TYPES**

Product name	Stacking height	No. of contacts	Part No.		
			Socket	Header	
P5K	3.5 mm	20	AXK520145J	AXK620245J	
		22	AXK522145J	AXK622245J	
		30	AXK530145J	AXK630245J	
		40	AXK540145J	AXK640245J	
		50	AXK550145J	AXK650245J	
		60	AXK560145J	AXK660245J	
			AXK570145J	AXK670245J	
		80	AXK580145J	AXK680245J	
		100	AXK500145J	AXK600245J	
		P5KS	4.0 mm	20	AXK5S20045*
30	AXK5S30045*			AXK6S30445*	
40	AXK5S40045*			AXK6S40445*	
50	AXK5S50045*			AXK6S50445*	
60	AXK5S60045*			AXK6S60445*	
80	AXK5S80045*			AXK6S80445*	
100	AXK5S00045*			AXK6S00445*	
120	AXK5SA2075*			AXK6SA2475*	
160	AXK5SA6075*			AXK6SA6475*	
4.5 mm	20			AXK5S20245*	AXK6S20445*
	30		AXK5S30245*	AXK6S30445*	
	40		AXK5S40245*	AXK6S40445*	
	50		AXK5S50245*	AXK6S50445*	
	60		AXK5S60245*	AXK6S60445*	
	80		AXK5S80245*	AXK6S80445*	
	100		AXK5S00245*	AXK6S00445*	
	120		AXK5SA2275*	AXK6SA2475*	
	160		AXK5SA6275*	AXK6SA6475*	
	5.0 mm		20	AXK5S20045*	AXK6S20545P
30			AXK5S30045*	AXK6S30545P	
40			AXK5S40045*	AXK6S40545P	
50			AXK5S50045*	AXK6S50545P	
60			AXK5S60045*	AXK6S60545P	
80			AXK5S80045*	AXK6S80545P	
100			AXK5S00045*	AXK6S00545P	
5.5 mm			20	AXK5S20245*	AXK6S20545P
			30	AXK5S30245*	AXK6S30545P
			40	AXK5S40245*	AXK6S40545P
	50		AXK5S50245*	AXK6S50545P	
	60		AXK5S60245*	AXK6S60545P	
	80		AXK5S80245*	AXK6S80545P	
	100		AXK5S00245*	AXK6S00545P	
	6.0 mm		20	AXK5S20045*	AXK6S20645P
			30	AXK5S30045*	AXK6S30645P
			40	AXK5S40045*	AXK6S40645P
50			AXK5S50045*	AXK6S50645P	
60			AXK5S60045*	AXK6S60645P	
80			AXK5S80045*	AXK6S80645P	
100			AXK5S00045*	AXK6S00645P	
6.5 mm			20	AXK5S20245*	AXK6S20645P
			30	AXK5S30245*	AXK6S30645P
			40	AXK5S40245*	AXK6S40645P
	50		AXK5S50245*	AXK6S50645P	
	60		AXK5S60245*	AXK6S60645P	
	80		AXK5S80245*	AXK6S80645P	
	100		AXK5S00245*	AXK6S00645P	
	7.0 mm		20	AXK5S20340P	AXK6S20445*
			30	AXK5S30340P	AXK6S30445*
			40	AXK5S40340P	AXK6S40445*
50			AXK5S50340P	AXK6S50445*	
60			AXK5S60340P	AXK6S60445*	
70			AXK5S70340P	AXK6S70445*	
80			AXK5S80340P	AXK6S80445*	
100			AXK5S00340P	AXK6S00445*	
8.0 mm			20	AXK5S20340P	AXK6S20545P
			30	AXK5S30340P	AXK6S30545P
	40		AXK5S40340P	AXK6S40545P	
	50		AXK5S50340P	AXK6S50545P	
	60		AXK5S60340P	AXK6S60545P	
	80		AXK5S80340P	AXK6S80545P	
	100		AXK5S00340P	AXK6S00545P	
	9.0 mm		20	AXK5S20340P	AXK6S20645P
			30	AXK5S30340P	AXK6S30645P
			40	AXK5S40340P	AXK6S40645P
50			AXK5S50340P	AXK6S50645P	
60			AXK5S60340P	AXK6S60645P	
100			AXK5S80340P	AXK6S80645P	

- Notes:
1. Please add the following suffix at \* marked positions.  
 P: Inner carton (1 reel) 1,000 pcs. (Outer carton: 2,000 pcs.)  
 J: Inner carton (1 reel) 1,500 pcs. (Outer carton: 3,000 pcs.)
  2. As for the part No. P is suffixed, only 1,000 pcs. reel is available.
  3. The standard type comes with no positioning bosses. Connectors with positioning bosses are available for on-demand production. For this type of connector, 8th digit of the part no. changes from 4 to 3. e.g. AXK5F10335P AXK520135

**DIMENSIONS**

mm General tolerance ±0.2

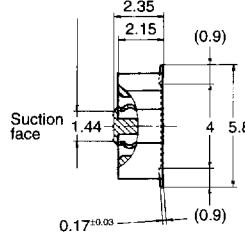
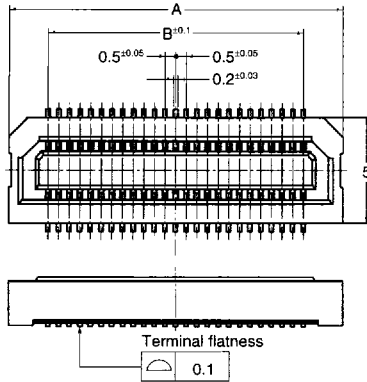
**P5K: Stacking height 3mm, 3.5mm type**

• Socket

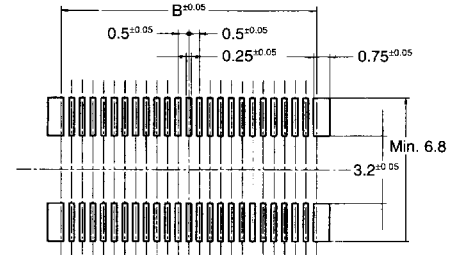


**Dimension table (mm)**

No. of contacts	A	B
20	8.20	4.50
22	8.70	5.00
30	10.70	7.00
40	13.20	9.50
50	15.70	12.00
60	18.20	14.50
70	20.70	17.00
80	23.20	19.50
100	28.20	24.50



**Recommended PC board pattern (top view)**

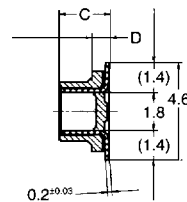
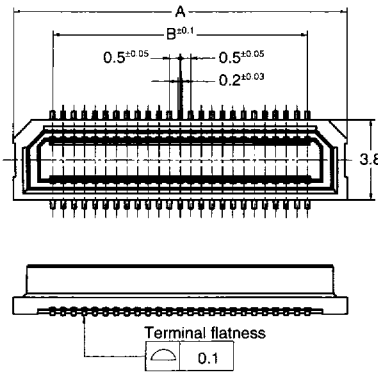


• Header



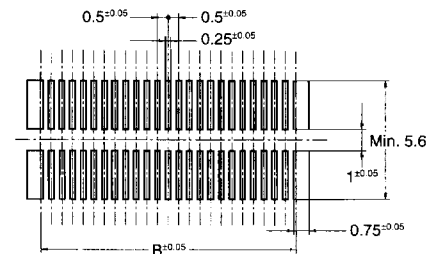
**Dimension table (mm)**

No. of contacts	A	B
20	8.20	4.50
22	8.70	5.00
30	10.70	7.00
40	13.20	9.50
50	15.70	12.00
60	18.20	14.50
70	20.70	17.00
80	23.20	19.50
100	28.20	24.50

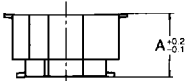


Stacking height	C	D
3.0 mm	2.4	0.85
3.5 mm	2.9	1.35

**Recommended PC board pattern (top view)**



• Socket and header are mated



Stacking height	A
3.0 mm	3.0
3.5 mm	3.5

Remark: P5KS series cannot be mated to this type.

**P5KS: Stacking height 4mm, 4.5mm, 5mm, 5.5mm, 6mm, 6.5mm, 7mm, 8mm, 9mm type**

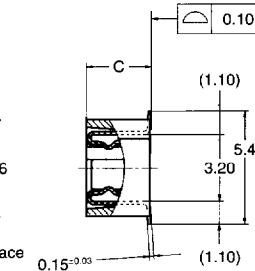
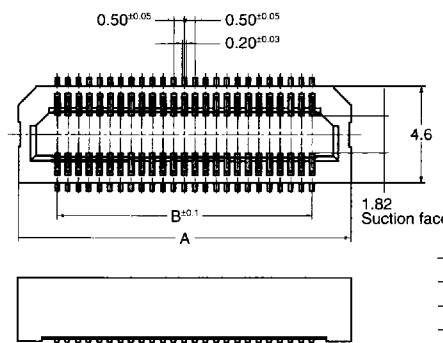
mm General tolerance ±0.2

• Socket



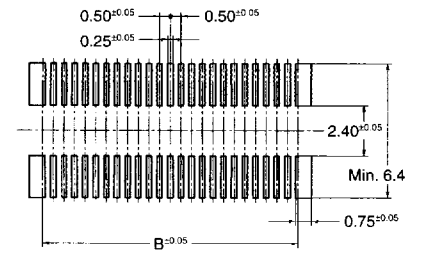
**Dimension table (mm)**

No. of contacts	A	B
20	8.20	4.50
30	10.70	7.00
40	13.20	9.50
50	15.70	12.00
60	18.20	14.50
70	20.70	17.00
80	23.20	19.50
100	28.20	24.50



Stacking height	C
4 mm, 5 mm, 6 mm	3.05
4.5 mm, 5.5 mm, 6.5 mm	3.55
7 mm, 8 mm, 9 mm	6.05

**Recommended PC board pattern (top view)**

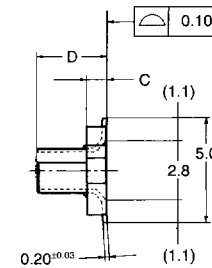
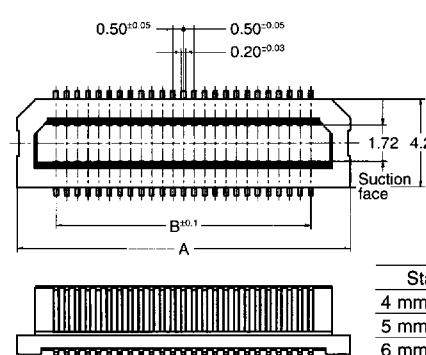


• Header



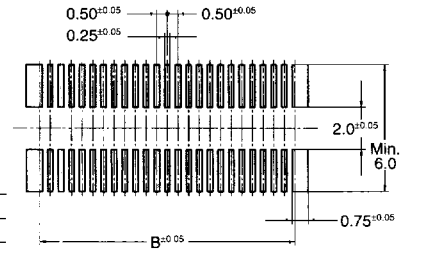
**Dimension table (mm)**

No. of contacts	A	B
20	8.20	4.50
30	10.70	7.00
40	13.20	9.50
50	15.70	12.00
60	18.20	14.50
70	20.70	17.00
80	23.20	19.50
100	28.20	24.50



Stacking height	C	D
4 mm, 4.5 mm, 7 mm	0.95	3.3
5 mm, 5.5 mm, 8 mm	1.95	4.3
6 mm, 6.5 mm, 9 mm	2.95	5.3

**Recommended PC board pattern (top view)**

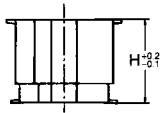


# AXK(5/6)

• Socket and header are mated

mm General tolerance  $\pm 0.2$

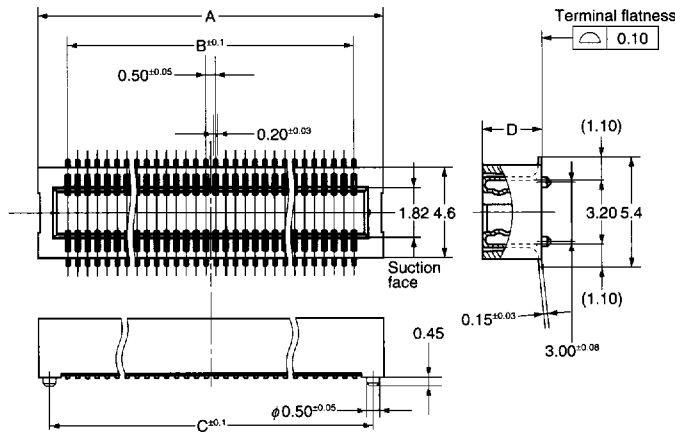
Remark:  
P5K and P5KF series  
cannot be mated to



Stacking height	H
4 mm	4.0
4.5 mm	4.5
5 mm	5.0
5.5 mm	5.5
6 mm	6.0
6.5 mm	6.5
7 mm	7.0
8 mm	8.0
9 mm	9.0

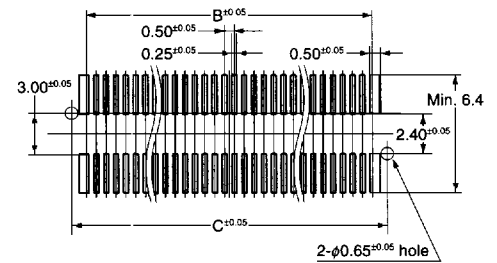
## P5KS: Stacking height 4mm, 4.5mm type

• Socket



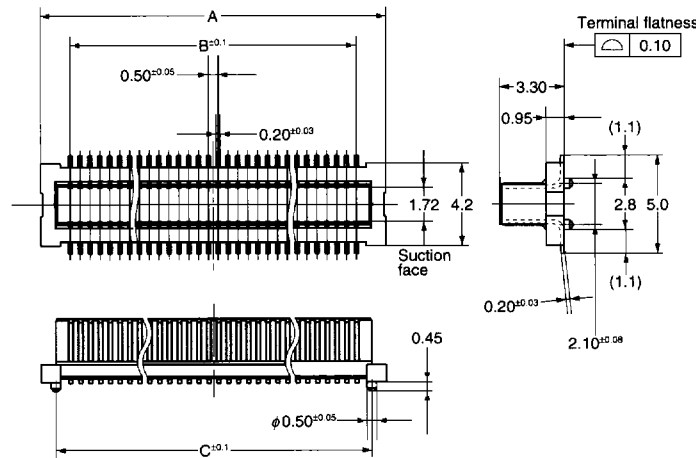
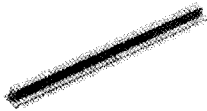
Stacking height	D
4 mm	3.05
4.5 mm	3.55

### Recommended PC board pattern (top view)

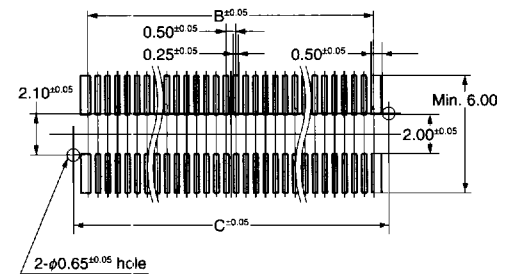


No. of contacts	A	B	C
120	32.50	29.50	32.00
160	42.50	39.50	42.00

• Header

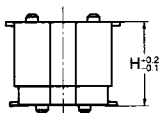


### Recommended PC board pattern (top view)



No. of contacts	A	B	C
120	32.50	29.50	31.00
160	42.50	39.50	41.00

• Socket and header are mated



Stacking height	H
4 mm	4.0
4.5 mm	4.5

**For Tape and Reel  
dimensions please see  
pages 35-38.**