# **Panasonic**

Not Recommended for New Design: A4S Series (socket) Narrow-Pitch Board to FPC Connector

ACBD257 05/28/2014

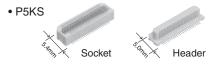
About this Notice:	Panasonic A4S Series, Socket Type, Narrow-Pitch Connectors are undergoing a part number change due to a change in contact material, thus the older models are not recommended for new designs. The new, updated part numbers can be found in the accompanying line extension, released 5/28/2014.
Details:	Contact material revised from Titanium Copper Alloy to Phosphor Bronze
Effective Date:	Immediately
Affected Parts and/or Replacements:	AXE5XX124
Datasheet(s):	See attached
Notes:	

# Narrow pitch connectors (0.5mm pitch)

# P5K, P5KS Series







Note: The external appearance and PC board pattern differs between the P5K and P5KS series.

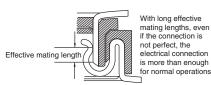
**RoHS** compliant

## **FEATURES**

1. The product lineup consists of 3.0 mm, 3.5 mm, 4.0 mm, 4.5 mm, 5.0 mm, 5.5 mm, 6.0 mm, 6.5 mm, 7.0 mm, 8.0 mm, and 9.0 mm mated heights.

Туре	Mated height	Notes
P5K	3 mm, 3.5 mm	The external
P5KS	4 mm, 4.5 mm, 5 mm, 5.5 mm, 6 mm, 6.5 mm, 7 mm, 8 mm, 9 mm	appearance and PC board pattern differs for the P5K and P5KS series.

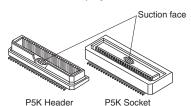
- 2. Strong resistance to adverse environments! Utilizes
- "TDUGH CONTRET" construction for high contact reliability.
- 3. Even with a low profile, the effective mating length has been extended to ensure that there for insertion.



Туре	Effective mating length
P5K	0.65 mm
P5KS	1.0 mm

### 4. Automatic mounting

1) Suction area for automatic mounting machines is employed.

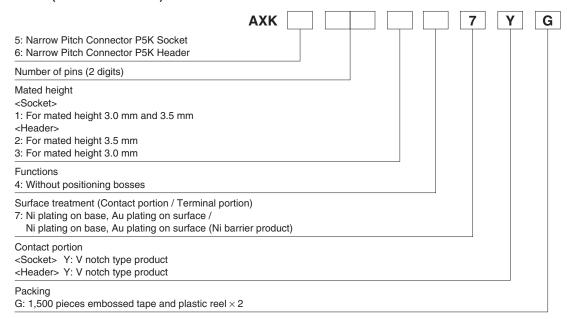


## **APPLICATIONS**

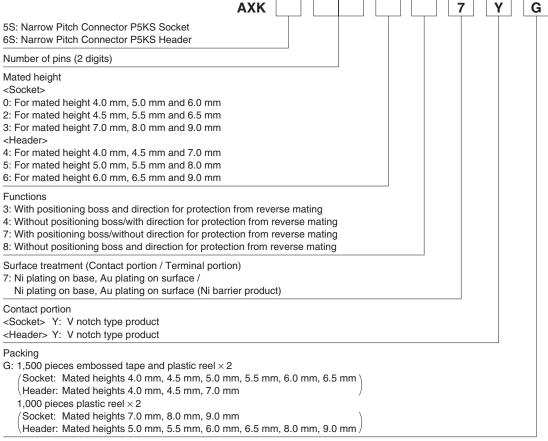
Digital devices, such as laptop, digital still cameras and digital video cameras

## ORDERING INFORMATION

1. P5K (3.0 mm and 3.5 mm)



#### 2. P5KS (4.0 mm, 4.5 mm, 5.0 mm, 5.5 mm, 6.0 mm, 6.5 mm, 7.0 mm, 8.0 mm and 9.0 mm)



Note: Models with mating directionality to prevent reverse insertion have less than 100 pin contacts. Models without mating directionality to prevent reverse insertion have over 100 pin contacts.

## **PRODUCT TYPES**

### 1. P5K

			Part No.		Pac	king				
Product	name height		Mated N			No. of pins	Socket	Header	Inner certan (1 real)	Outer carton
Hame	Height		TOUGH CONTRCT	TOUGH CONTRCT	Inner carton (1 reel)	Outer carton				
		20	AXK520147YG	AXK620347YG						
		22	AXK522147YG	AXK622347YG						
		30	AXK530147YG	AXK630347YG						
		40	AXK540147YG	AXK640347YG						
	3.0 mm	50	AXK550147YG	AXK650347YG						
	3.0 111111	60	AXK560147YG	AXK660347YG						
		70	AXK570147YG	AXK670347YG						
		80	AXK580147YG	AXK680347YG						
		100	AXK500147YG	AXK600347YG						
		120	AXK5A2147YG	AXK6A2347YG						
P5K		20	AXK520147YG	AXK620247YG	1,500 pieces	3,000 pieces				
		22	AXK522147YG	AXK622247YG						
		30	AXK530147YG	AXK630247YG						
		34	AXK534147YG	AXK634247YG						
		40	AXK540147YG	AXK640247YG						
	3.5 mm	50	AXK550147YG	AXK650247YG						
		60	AXK560147YG	AXK660247YG						
		70	AXK570147YG	AXK670247YG						
		80	AXK580147YG	AXK680247YG						
		100	AXK500147YG	AXK600247YG						
		120	AXK5A2147YG	AXK6A2247YG						

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 our sales office.

Samples: Small lot orders are possible.

2. The standard type comes without positioning bosses.

## AXK(5(S)/6(S))

Product	Mated			t No.	Pac	king
name	height	No. of pins	Socket	Header	Inner carton (1 reel)	Outer carton
			TOUGH CONTRCT	TDUGH CONTRCT		
		20	AXK5S20047YG	AXK6S20447YG		
		24	AXK5S24047YG	AXK6S24447YG		
		30	AXK5S30047YG	AXK6S30447YG		
		34 40	AXK5S34047YG	AXK6S34447YG		
		50	AXK5S40047YG AXK5S50047YG	AXK6S40447YG AXK6S50447YG		
	4.0 mm	60	AXK5S60047YG	AXK6S60447YG		
		70	AXK5S70047YG	AXK6S70447YG		
		80	AXK5S80047YG	AXK6S80447YG		
		100	AXK5S00047YG	AXK6S00447YG		
		120	AXK5SA2077YG	AXK6SA2477YG		
		160	AXK5SA6077YG	AXK6SA6477YG		
P5KS		20	AXK5S20247YG	AXK6S20447YG	1,500 pieces	3,000 pieces
		24	AXK5S24247YG	AXK6S24447YG		
		30	AXK5S30247YG	AXK6S30447YG		
		34	AXK5S34247YG	AXK6S34447YG		
		36	AXK5S36247YG	AXK6S36447YG		
		40	AXK5S40247YG	AXK6S40447YG		
	4.5 mm	50	AXK5S50247YG	AXK6S50447YG		
		60	AXK5S60247YG	AXK6S60447YG		
		70	AXK5S70247YG	AXK6S70447YG		
		80	AXK5S80247YG	AXK6S80447YG		
		100	AXK5S00247YG	AXK6S00447YG		
		120	AXK5SA2277YG	AXK6SA2477YG		
		160	AXK5SA6277YG	AXK6SA6477YG		
		20	AXK5S20047YG	AXK6S20547YG		
	5.0 mm	24	AXK5S24047YG	AXK6S24547YG		
		30 34	AXK5S30047YG AXK5S34047YG	AXK6S30547YG AXK6S34547YG		
		40	AXK5S40471G AXK5S40047YG	AXK6S40547YG		
		50	AXK5S50047YG	AXK6S50547YG		
		60	AXK5S60047YG	AXK6S60547YG		
		70	AXK5S70047YG	AXK6S70547YG		
		80	AXK5S80047YG	AXK6S80547YG		
		100	AXK5S00047YG	AXK6S00547YG		
		20	AXK5S20247YG	AXK6S20547YG		
		24	AXK5S24247YG	AXK6S24547YG		
		30	AXK5S30247YG	AXK6S30547YG		
		34	AXK5S34247YG	AXK6S34547YG		
	5.5 mm	40	AXK5S40247YG	AXK6S40547YG		
	3.3 11111	50	AXK5S50247YG	AXK6S50547YG		
		60	AXK5S60247YG	AXK6S60547YG		
		70	AXK5S70247YG	AXK6S70547YG	Socket: 1,500 pieces	Socket: 3,000 pieces
P5KS		80	AXK5S80247YG	AXK6S80547YG	Header: 1,000 pieces	Header: 2,000 pieces
		100	AXK5S00247YG	AXK6S00547YG		
		20	AXK5S20047YG	AXK6S20647YG		
		30	AXK5S30047YG	AXK6S30647YG		
		40	AXK5S40047YG	AXK6S40647YG		
	6.0 mm	50 60	AXK5S50047YG	AXK6S50647YG AXK6S60647YG		
		70	AXK5S60047YG AXK5S70047YG	AXK6S60647YG AXK6S70647YG		
		80	AXK5S70047YG AXK5S80047YG	AXK6S70647YG AXK6S80647YG	-	
		100	AXK5S00047YG	AXK6S00647YG		
		20	AXK5S000471G AXK5S20247YG	AXK6S20647YG		
		30	AXK5S30247YG	AXK6S30647YG		
		40	AXK5S40247YG	AXK6S40647YG		
		50	AXK5S50247YG	AXK6S50647YG		
	6.5 mm	60	AXK5S60247YG	AXK6S60647YG		
		70	AXK5S70247YG	AXK6S70647YG	1	
		80	AXK5S80247YG	AXK6S80647YG	1	
		100	AXK5S00247YG	AXK6S00647YG		
		130	AXK5SA3277YG	AXK6SA3677YG	1	

			Part No.		Pac	cking
Product name	Mated height	No. of pins	Socket	Header	Inner certan (1 reel)	Outer corten
	Height		TOUGH CONTACT	TOUGH CONTACT	Inner carton (1 reel)	Outer carton
		20	AXK5S20347YG	AXK6S20447YG		
		30	AXK5S30347YG	AXK6S30447YG		
		40	AXK5S40347YG	AXK6S40447YG		
	7.0 mm	50	AXK5S50347YG	AXK6S50447YG	Socket: 1,000 pieces	Socket: 2,000 pieces
	7.0 mm	60	AXK5S60347YG	AXK6S60447YG	Header: 1,500 pieces	Header: 3,000 pieces
		70	AXK5S70347YG	AXK6S70447YG	1	
		80	AXK5S80347YG	AXK6S80447YG		
		100	AXK5S00347YG	AXK6S00447YG		
		20	AXK5S20347YG	AXK6S20547YG		
	8.0 mm	30	AXK5S30347YG	AXK6S30547YG		
		40	AXK5S40347YG	AXK6S40547YG		
P5KS		50	AXK5S50347YG	AXK6S50547YG		
FUNO		60	AXK5S60347YG	AXK6S60547YG		
		70	AXK5S70347YG	AXK6S70547YG		
		80	AXK5S80347YG	AXK6S80547YG		
		100	AXK5S00347YG	AXK6S00547YG	1,000 pieces	2,000 pieces
		20	AXK5S20347YG	AXK6S20647YG	1,000 pieces	2,000 pieces
		30	AXK5S30347YG	AXK6S30647YG		
		40	AXK5S40347YG	AXK6S40647YG		
	9.0 mm	50	AXK5S50347YG	AXK6S50647YG		
	9.0 mm	60	AXK5S60347YG	AXK6S60647YG		
		70	AXK5S70347YG	AXK6S70647YG		
		80	AXK5S80347YG	AXK6S80647YG		
		100	AXK5S00347YG	AXK6S00647YG		

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 our sales office.
Samples: Small lot orders are possible.

2. The standard type comes without positioning bosses (However, mated heights of 4 mm or higher and 120 pins or more comes standard with bosses). Connectors with positioning bosses are available for on-demand production.

## **SPECIFICATIONS**

## 1. Characteristics

				Specifications					
	Item	3mm, 3.5mn	n type	4mm, 4.5mm, 5mm, 5.5mm, 6mm, 6.5mm type	7mm,	8mm, 9mm type		Conditions	
	Rated current	0.5A/terminal (N	Лах. 10A)		minal (Max. 1	6A)			
	Rated voltage			60V AC/DC					
Electrical	Breakdown voltage			150V AC for 1 min.				on current: 1m/	
characteristics	Insulation resistance			Min. 1000MΩ			Using 5	00V DC megg	er
	Contact resistance		Max.	60mΩ	l	Max. 80mΩ		on the contact the contact of the co	
	Composite insertion force			Max. $0.785N \times no.$ of pins	(initial)				
Mechanical characteristics	Composite removal force			Min. $0.0588N \times no.$ of p	ins				
	Contact holding force			Min. 0.98N/pin contac	ts			ing the maximus	
	Ambient temperature			−55°C to +85°C			No free:	zing at low tem	peratures
	Soldering heat	Max. peak temperature of 260°C (on the surface of the PC board around the connector terminals)					Infrared reflow soldering		
	resistance	300°C within 5 sec., 350°C within 3 sec.					Soldering iron		
Environmental characteristics							Conformed to MIL-STD-202F, method 107G  Order Temperature Time		
	Thermal shock resistance (header and socket mated)			stance min. 100M $\Omega$ , ince max. $60 \text{m}\Omega$	5 cycles,	insulation resistance min. 100M $\Omega$ , contact resistance max. 80m $\Omega$	1 2 3 4	(°C) -55_3	30 Max. 5 30 Max. 5
	Humidity resistance (header and socket mated)			stance min. $100 M \Omega$ , nce max. $60 m \Omega$	120 hours,	insulation resistance min. $100M\Omega$ , contact resistance max. $80m\Omega$	Bath temperature 40±2°C, humidity 90 to 95% R.H.		
	Saltwater spray resistance (header and socket mated)			stance min. $100 M \Omega$ , ince max. $60 m \Omega$	24 hours,	insulation resistance min. 100M $\Omega$ , contact resistance max. $80m\Omega$	Bath temperature 35±2°C, saltwarter concentration 5±1%		
	H <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. $60m\Omega$ 48 nours, contact resistance gas		Bath temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.					
Lifetime characteristics	Insertion and removal life	50 times						ed insertion an of max. 200 tim	
Unit weight		P5K 3mm 30 pin P5KS 4mm 30 p		Socket: 0.17g Header: 0. Socket: 0.18g Header: 0.	0				

## 2. Material and surface treatment

Part name	Mated height 3mm, 3.5mm, 4mm, 4.5mm, 5mm, 5.5mm, 6mm, 6.5mm, 7mm, 8mm, 9mm			
ran name	Material	Surface treatment		
Molded portion	Heat-resistant 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 thick of terminal) The section close to the soldering portion has a nickel barrier. (The nickel base is exposed.)		

**DIMENSIONS** (Unit: mm)

The CAD data of the products with a CAD Data mark can be downloaded from: http://industrial.panasonic.com/ac/e/

P5K: Mated height 3mm, 3.5mm type

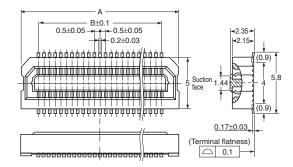
Socket

## CAD Data



#### Dimension table (mm)

No. of pins	А	В
20	8.20	4.50
22	8.70	5.00
30	10.70	7.00
34	11.70	8.00
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
120	33.20	29.50



General tolerance: ±0.2

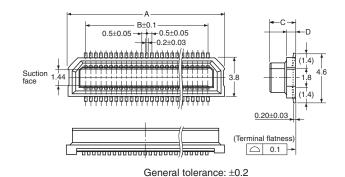
### • Header

### CAD Data



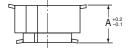
#### Dimension table (mm)

No. of pins	А	В
20	8.20	4.50
22	8.70	5.00
30	10.70	7.00
34	11.70	8.00
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
120	33.20	29.50



Mated height	С	D
3.0 mm	2.40	0.85
3.5 mm	2.90	1.35

## · Socket and header are mated



Mated height	
3.0 mm	3.00
3.5 mm	3.50

Note: P5KS series (mated heights 4.0mm, 4.5mm, 5.0mm, 5.5mm, 6.0mm, 6.5mm, 7.0mm, and 9.0mm) cannot be mated to this type.

## P5KS: Mated height 4.0mm, 4.5mm, 5.0mm, 5.5mm, 6.0mm, 6.5mm, 7.0mm, 8.0mm, 9.0mm type

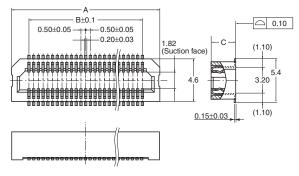
Socket

### CAD Data



### Dimension table (mm)

No. of pins	А	В
20	8.20	4.50
24	9.20	5.50
30	10.70	7.00
34	11.70	8.00
36	12.20	8.50
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



General tolerance: ±0.2

Mated height	С
4.0 mm, 5.0 mm, 6.0 mm	3.05
4.5 mm, 5.5 mm, 6.5 mm	3.55
7.0 mm, 8.0 mm, 9.0 mm	6.05

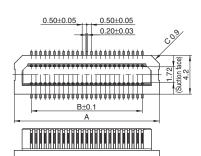
## • Header

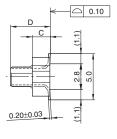
## CAD Data



### Dimension table (mm)

No. of pins	Α	
20	8.20	4.50
24	9.20	5.50
30	10.70	7.00
34	11.70	8.00
36	12.20	8.50
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





General tolerance: ±0.2

Mated height	С	D
4.0 mm, 4.5 mm, 7.0 mm	0.95	3.30
5.0 mm, 5.5 mm, 8.0 mm	1.95	4.30
6.0 mm, 6.5 mm, 9.0 mm	2.95	5.30

#### · Socket and header are mated



Note: P5K series (mated heights 3.0mm, 3.5mm) cannot be mated to this type.

Mated height	
4.0 mm	4.00
4.5 mm	4.50
5.0 mm	5.00
5.5 mm	5.50
6.0 mm	6.00
6.5 mm	6.50
7.0 mm	7.00
8.0 mm	8.00
9.0 mm	9.00

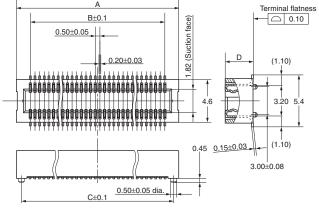
## P5KS: Mated height 4.0mm, 4.5mm for 120 pin contacts and 160 pin contacts types, 6.5mm for 130 pin contacts type

Socket





No. of pins	А	В	С
120	32.50	29.50	32.00
130	35.00	32.00	34.50
160	42.50	39.50	42.00



General	tolerance:	$\pm 0.2$	

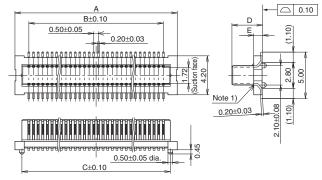
Mated height	D
4.0 mm	3.05
4.5 mm. 6.5 mm	3.55

### Header

#### CAD Data



No. of pins	А	В	С
120	32.50	29.50	31.00
130	35.00	32.00	33.50
160	42.50	39.50	41.00



General tolerance: ±0.2

Mated height	D	
4.0 mm, 4.5 mm	3.30	0.95
6.5 mm	5.30	2.95

## • Socket and header are mated

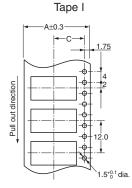


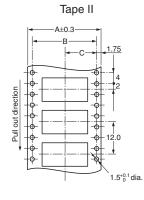
Mated height	Н
4.0 mm	4.00
4.5 mm	4.50
6.5 mm	6 50

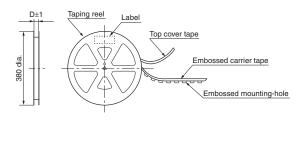
Notes: 1. Inquiry separately for diagrams of the embossed tape and cautions for use.
 2. Be sure to ask for proper specifications and drawings before actual use.

## 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)





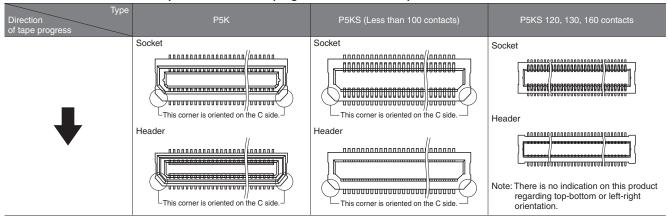


### Dimension table (mm)

Suffix: G (1 reel, 1,500 pieces or 1,000 pieces embossed tape and plastic reel package)

Туре	Mated height	No. of pins	Type of taping	А	В	С	D	Quantity per reel
		20 to 50	Tape I	24.00	_	11.50	25.40	
P5K	Socket and header are common	60 to 70	Tape II	32.00	28.40	14.20	33.40	1 500 200
FOR	3.0mm, 3.5mm	80 to 100	Tape II	44.00	40.40	20.20	45.40	1,500 pcs.
		120	Tape II	56.00	52.40	26.20	57.40	
	Header. 4.0mm, 4.5mm, 7.0mm	20 to 50	Tape I	24.00	_	11.50	25.40	1,500 pcs.
		60 to 70	Tape II	32.00	28.40	14.20	33.40	
		80 to 100	Tape II	44.00	40.40	20.20	45.40	1,500 pcs.
P5KS		120 to 160	Tape II	56.00	52.40	26.20	57.40	
PONO		20 to 50	Tape I	24.00	_	11.50	25.40	
		60 to 70	Tape II	32.00	28.40	14.20	33.40	1,000 pcs.
	6.5mm, 8.0mm, 9.0mm	80 to 100	Tape II	44.00	40.40	20.20	45.40	1,000 pcs.
		130	Tape II	56.00	52.40	26.20	57.40	

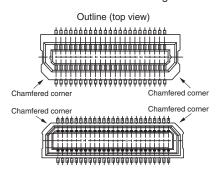
#### Connector orientation with respect to direction of progress of embossed tape

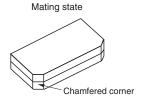


## **NOTES**

### 1. Prevention of reverse mating

Other than P5KS series 120, 130, 160 pin contacts type, the socket and header are protected from reverse mating by a molded resin key. Excessive mating force may damage the key, so be sure to match chamfered corners when mating.





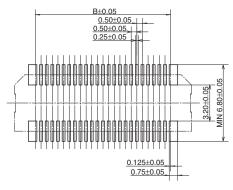
## 2. Recommended PC board and metal mask patterns

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

In order to reduce solder and flux rise, 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.

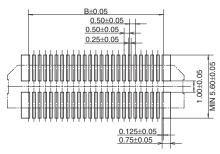
#### P5K Socket

## Recommended PC board pattern (TOP VIEW)

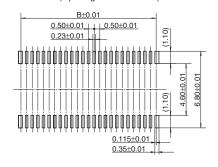


## P5K Header

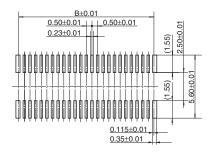
## Recommended PC board pattern (TOP VIEW)



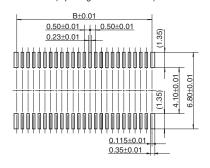
#### Recommended metal mask pattern Metal mask thickness: When 150 μm (Opening area ratio: 56%)



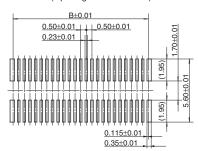
#### Recommended metal mask pattern Metal mask thickness: When 150 μm (Opening area ratio: 62%)



#### Recommended metal mask pattern Metal mask thickness: When 120 μm (Opening area ratio: 69%)



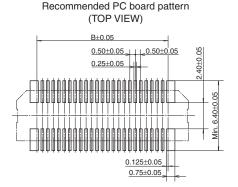
#### Recommended metal mask pattern Metal mask thickness: When 120 μm (Opening area ratio: 78%)



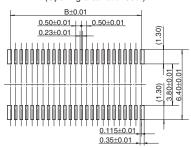
<sup>\*</sup> See the dimension table on page 93 for more information on the B dimension of the socket and header.

#### P5KS: Mated height 4.0mm, 4.5mm, 5.0mm, 5.5mm, 6.0mm, 6.5mm, 7.0mm, 8.0mm, 9.0mm type

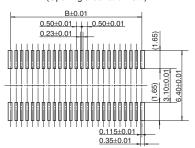
Socket



Recommended metal mask pattern Metal mask thickness: When 150 μm (Opening area ratio: 60%)



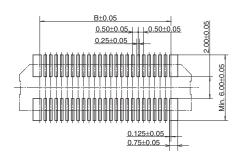
Recommended metal mask pattern Metal mask thickness: When 120 μm (Opening area ratio: 76%)



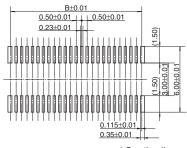
\* See the dimension table on page 94 for more information on the B dimension.

## Header

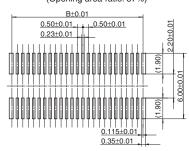
Recommended PC board pattern (TOP VIEW)



Recommended metal mask pattern Metal mask thickness: When 150 µm (Opening area ratio: 69%)



Recommended metal mask pattern Metal mask thickness: When 120 μm (Opening area ratio: 87%)

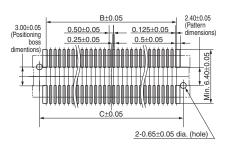


 $^{\star}$  See the dimension table on page 94 for more information on the B dimension.

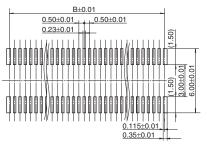
#### P5KS: Mated height 4.0mm, 4.5mm for 120 pin contacts and 160 pin contacts types, 6.5mm for 130 pin contacts type

Socket

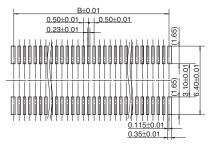
Recommended PC board pattern (TOP VIEW)



Recommended metal mask pattern Metal mask thickness: When 150 μm (Opening area ratio: 60%)



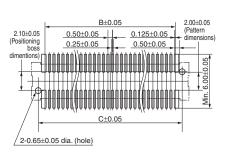
Recommended metal mask pattern Metal mask thickness: When 120 μm (Opening area ratio: 76%)



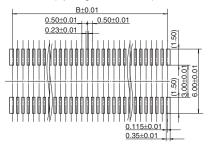
\* See the dimension table on page 95 for more information on the B and C dimensions.

### • Header

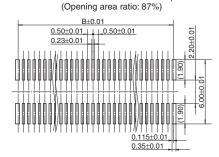
Recommended PC board pattern (TOP VIEW)



Recommended metal mask pattern Metal mask thickness: When 150 μm (Opening area ratio: 69%)



Recommended metal mask pattern Metal mask thickness: When 120 μm



\* See the dimension table on page 95 for more information on the B and C dimensions.

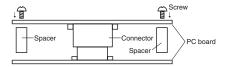
Please refer to the latest product specifications when designing your product.

## Regarding the design of devices and PC board patterns

- 1) When connecting several connectors together by stacking, make sure to maintain proper accuracy in the design of structure and mounting equipment so that the connectors are not subjected to twisting and torsional forces.
- 2) With mounting equipment, there may be up to a  $\pm 0.2$  to 0.3-mm error in positioning. Be sure to design PC boards and patterns while taking into consideration the performance and abilities of the required equipment.
- 3) Some connectors have tabs embossed on the body to aid in positioning. When using these connectors, make sure that the PC board is designed with positioning holes to match these tabs.
- 4) To ensure the required mechanical strength when soldering the connector terminals, make sure the PC board meets recommended PC board pattern design dimensions given.

5) For all connectors of the narrow pitch series, to prevent the PC board from coming off during vibrations or impacts, and to prevent loads from falling directly on the soldered portions, be sure to design some means to fix the PC board in place.

#### Example) Secure in place with screws



When connecting PC boards, take appropriate measures to prevent the connector from coming off.

- 6) Notes when using a FPC.
- (1) When the connector is soldered to an FPC board, during its insertion and removal procedures, forces may be applied to the terminals and cause the soldering to come off. It is recommended to use a reinforcement board on the

backside of the FPC board to which the connector is being connected. Please make the reinforcement board dimensions bigger than the outer limits of the recommended PC board pattern (should be approximately 1 mm greater than the outer limit).

Material should be glass epoxy or polyimide, and the thickness should be between 0.2 and 0.3 mm.

- (2) Collisions, impacts, or turning of FPC boards, may apply forces on the connector and cause it to come loose. Therefore, make to design retaining plates or screws that will fix the connector in place.
- 7) The narrow pitch connector series is designed to be compact and thin. Although ease of handling has been taken into account, take care when mating the connectors, as displacement or angled mating could damage or deform the connector.

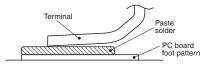
# Regarding the selection of the connector placement machine and the mounting procedures

- 1) Select the placement machine taking into consideration the connector height, required positioning accuracy, and packaging conditions.
- 2) Be aware that if the catching force of the placement machine is too great, it may deform the shape of the connector body or connector terminals.
- 3) Be aware that during mounting, external forces may be applied to the connector contact surfaces and terminals and cause deformations.
- 4) Depending on the size of the connector being used, self alignment may not be possible. In such cases, be sure to carefully position the terminal with the PC board pattern.
- 5) The positioning bosses give an approximate alignment for positioning on the PC board. For accurate positioning of the connector when mounting it to the PC board, we recommend using an automatic positioning machine.
- 6) Excessive mounter chucking force may deform the molded or metal part of the connector. Consult us in advance if chucking is to be applied.

## Regarding soldering

## 1. Reflow soldering

- 1) Measure the recommended profile temperature for reflow soldering by placing a sensor on the PC board near the connector surface or terminals. (The setting for the sensor will differ depending on the sensor used, so be sure to carefully read the instructions that comes with it.)
- 2) As for cream solder printing, screen printing is recommended.
- 3) To determine the relationship between the screen opening area and the PC-board foot pattern area, refer to the diagrams in the recommended patterns for PC boards and metal masks. Make sure to use the terminal tip as a reference position when setting. Avoid an excessive amount of solder from being applied, otherwise, interference by the solder will cause an imperfect contact.

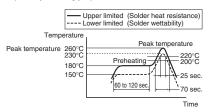


- Consult us when using a screenprinting thickness other than that recommended.
- 5) When mounting on both sides of the PC board and the connector is mounting on the underside, use adhesives or other means to ensure the connector is properly fixed to the PC board. (Double reflow soldering on the same side is possible.)
- 6) N₂ reflow, conducting reflow soldering in a nitrogen atmosphere, increases the solder flow too greatly, enabling wicking to occur. Make sure that the solder feed rate and temperature profile are appropriate.

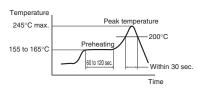
#### Soldering conditions

Please use the reflow temperature profile conditions recommended below for reflow soldering. Please contact us before using a temperature profile other than that described below (e.g. lead-free solder).

 Narrow pitch connectors (except P8 type)



Narrow pitch connector (P8)



For products other than the ones above, please refer to the latest product specifications.

- 7) The temperatures are measured at the surface of the PC board near the connector terminals. (The setting for the sensor will differ depending on the sensor used, so be sure to carefully read the instructions that comes with it.)
- 8) The temperature profiles given in this catalog are values measured when using the connector on a resin-based PC board. When performed reflow soldering on a metal board (iron, aluminum, etc.) or a metal table to mount on a FPC, make sure there is no deformation or discoloration of the connector beforehand and then begin mounting.
- 9) Consult us when using a screenprinting thickness other than that recommended.
- 10) Some solder and flux types may cause serious solder or flux creeping. Solder and flux characteristics should be taken into consideration when setting the reflow soldering conditions.

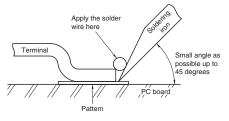
#### 2. Hand soldering

1) Set the soldering iron so that the tip temperature is less than that given in the table below.

Table A

Product name	Soldering iron temperature
SMD type connectors	300°C within 5 sec. 350°C within 3 sec.

- Do not allow flux to spread onto the connector leads or PC board. This may lead to flux rising up to the connector inside.
- 3) Touch the soldering iron to the foot pattern. After the foot pattern and connector terminal are heated, apply the solder wire so it melts at the end of the connector terminals.



- Be aware that soldering while applying a load on the connector terminals may cause improper operation of the connector.
- 5) Thoroughly clean the soldering iron.
- 6) Flux from the solder wire may get on the contact surfaces during soldering operations. After soldering, carefully check the contact surfaces and clean off any solder before use.
- 7) For soldering of prototype devices during product development, you can perform soldering at the necessary locations by heating with a hot-air gun by applying cream solder to the foot pattern beforehand. However, at this time, make sure that the air pressure does not move connectors by carefully holding them down with tweezers or other similar tool. Also, be careful not to go too close to the connectors and melt any of the molded components.
- 8) If an excessive amount of solder is applied during manual soldering, the solder may creep up near the contact points, or solder interference may cause imperfect contact.

## 3. Solder reworking

- 1) Finish reworking in one operation.
- For reworking of the solder bridge, use a soldering iron with a flat tip. To prevent flux from climbing up to the contact surfaces, do not add more flux.
- 3) Keep the soldering iron tip temperature below the temperature given in Table A.

## **Handling Single Components**

- 1) Make sure not to drop or allow parts to fall from work bench
- 2) Excessive force applied to the terminals could cause warping, come out, or weaken the adhesive strength of the solder. Handle with care.
- 3) Repeated bending of the terminals may cause terminals to break.
- 4) Do not insert or remove the connector when it is not soldered. Forcibly applied external pressure on the terminals can weaken the adherence of the terminals to the molded part or cause the terminals to lose their evenness.
- 5) Excessive prying-force applied to one end may cause product breakage and separation of the solder joints at the terminal.

Excessive force applied for insertion in a pivot action as shown may also cause product breakage.

Align the header and socket positions before connecting them.



## Cleaning flux from PC board

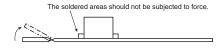
- To increase the cleanliness of the cleaning fluid and cleaning operations, prepare equipment for cleaning process beginning with boil cleaning, ultrasonic cleaning, and then vapor cleaning.
   Carefully oversee the cleanliness of
- cleaning, and then vapor cleaning.

  2) Carefully oversee the cleanliness of the cleaning fluids to make sure that the contact surfaces do not become dirty from the cleaning fluid itself.
- 3) Since some powerful cleaning solutions may dissolve molded components of the connector and wipe off or discolor printed letters, we recommend aqua pura electronic parts cleaners. Please consult us if you wish to use other types of cleaning fluids.
  4) Please note that the surfaces of molded parts may whiten when cleaned with alcohol.

## Handling the PC board

 Handling the PC board after mounting the connector

When cutting or bending the PC board after mounting the connector, be careful that the soldered sections are subjected to excessive force.



## Storage of connectors

1) To prevent problems from voids or air pockets due to heat of reflow soldering, avoid storing the connectors in areas of high humidity. When storing the connectors for more than six months, be sure to consider storage area where the humidity is properly controlled.

 Depending on the connector type, the color of the connector may vary from connector to connector depending on when it is produced. Some connectors may change color slightly if subjected to ultraviolet rays during storage. This is normal and will not affect the operation of the connector.

3) When storing the connectors with the PC boards assembled and components alreeady set, be careful not to stack them up so the connectors are subjected to excessive forces.

4) Avoid storing the connectors in locations with excessive dust. The dust may accumulate and cause improper connections at the contact surfaces.

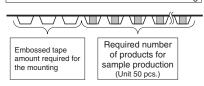
## **Other Notes**

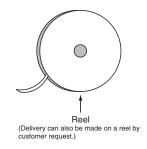
- 1) These products are made for the design of compact and lightweight devices and therefore the thickness of the molded components has been made very thin. Therefore, be careful during insertion and removal operations for excessive forces applied may damage the products.
- Dropping of the products or rough mishandling may bend or damage the terminals and possibly hinder proper reflow soldering.
- 3) Before soldering, try not to insert or remove the connector more than absolutely necessary.
- 4) When coating the PC board after soldering the connector to prevent the deterioration of insulation, perform the coating in such a way so that the coating does not get on the connector.
- 5) There may be variations in the colors of products from different production lots. This is normal.
- 6) The connectors are not meant to be used for switching.
- 7) Be sure not to allow external pressure to act on connectors when assembling PCBs or moving in block assemblies.

## Regarding sample orders to confirm proper mounting

When ordering samples to confirm proper mounting with the placement machine, connectors are delivered in 50-piece units in the condition given right. Consult a sale representative for ordering sample units.

Condition when delivered from manufacturing





Please refer to the latest product specifications when designing your product.

For board-to-board For board-to-FPC

# Narrow pitch connectors (0.4mm pitch)

## P4S Series





RoHS compliant

## **FEATURES**

1. Space-saving (3.6 mm widthwise)
Smaller compared to P4 series with
soldering terminals (30 pin contacts):

Socket — 38% smaller, Header — 34% smaller

Pickup cover (Material: SUS)
(Both covered and uncovered types are available.)

Socket

8.70 (30 pin contacts)

Pickup cover (Material: LCP)
(Both covered and uncovered types are available.)

Soldering terminals at each corner

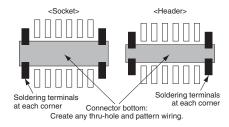
Pickup cover (Material: LCP)
(Both covered and uncovered types are available.)

Soldering terminals at each corner

2. Strong resistance to adverse environments! Utilizes "TDUGH CONTRET" construction for high contact reliability.

## 3. Greater flexibility in connector placement.

Pattern wiring to the connector bottom is made possible with a molded covering on the undersurface of the connector.



- 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
3: Narrow Pitch Connector P4S (0.4 mm pitch) Socket 4: Narrow Pitch Connector P4S (0.4 mm pitch) Header	
Number of pins (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 1.5 mm and 2.5 mm 3: For mated height 3.0 mm</header></socket>	
Functions <socket header=""> 2: Without pickup cover, without positioning bosses 6: With pickup cover, without positioning bosses</socket>	
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</header></socket>	

## PRODUCT TYPES \* TOUGH CONTACT

Material	Name to the first	Part	number	Packing			
Mated height	Number of pins	Socket	Header	Inner carton	Outer carton		
	10	AXT310124	AXT410124				
	16	AXT316124	AXT416124				
	20	AXT320124	AXT420124				
	22	AXT322124	AXT422124				
	24	AXT324124	AXT424124				
	26	AXT326124	AXT426124				
	30	AXT330124	AXT430124				
	32	AXT332124	AXT432124				
	34	AXT334124	AXT434124				
	36	AXT336124	AXT436124				
1.5mm	38	AXT338124	AXT438124	0.000 =:	0.000 =:		
mmc.i	40	AXT340124	AXT440124	3,000 pieces	6,000 pieces		
	44	AXT344124	AXT444124				
	46	AXT346124	AXT446124				
	50	AXT350124	AXT450124				
	54	AXT354124	AXT454124				
	60	AXT360124	AXT460124				
	64	AXT364124	AXT464124				
	70	AXT370124	AXT470124				
	80	AXT380124	AXT480124				
	90	AXT390124	AXT490124				
	100	AXT300124	AXT400124				
	40	AXT340124	AXT440224				
2.0mm	90	AXT390124	AXT490224	3,000 pieces	6,000 pieces		
	100	AXT300124	AXT400224				
	20	AXT320224	AXT420124				
	30	AXT330224	AXT430124				
2.5mm	40	AXT340224	AXT440124	3,000 pieces	6,000 pieces		
2.511111	60	AXT360224	AXT460124	3,000 pieces	6,000 pieces		
	80	AXT380224	AXT480124				
	100	AXT300224	AXT400124				
	20	AXT320224	AXT420324				
	30	AXT330224	AXT430324				
3.0mm	60	AXT360224	AXT460324	3,000 pieces	6,000 pieces		
	80	AXT380224	AXT480324				
	100	AXT300224	AXT400324				

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 our sales office.

Samples: Small lot orders are possible. Please consult us.

2. 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 pins. Check the latest product specifications.

3. The above part numbers are for connectors without positioning bosses, which are standard. When ordering connectors with positioning bosses, please contact our sales office.

## **SPECIFICATIONS**

## 1. Characteristics

	Item	Specifications	Conditions				
	Rated current	0.3A/pin contact (Max. 5 A at total pin contacts)	_				
Electrical	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.				
characteristics	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.				
	Composite insertion force	Max. 0.981N/pin contacts × pin contacts (initial)					
Mechanical	Composite removal force	Min. 0.0588N/pin contacts × pin contacts					
characteristics	Contact holding force (Socket contact)	Min. 0.981N/pin contacts	Measuring the maximum force. As the contact 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. 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				
Environmental characteristics	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100M $\Omega$ , contact resistance max. $90m\Omega$	Conformed to MIL-STD-202F, method 107G           Order         Temperature (°C)         Time (minutes)           1         −55-3         30           2         ∫         Max. 5           3         85*3         30           4         ∫         Max. 5           −55-3         Max. 5				
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100M $\Omega$ , contact resistance max. 90m $\Omega$	Temperature 40±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. 90m $\Omega$	Temperature 35±2°C, saltwater concentration 5±1%				
	H <sub>2</sub> 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		Mated height 1.5mm, 20 pin contact type: Socket: 0.04 g Header: 0.02 g					

## 2. Material and surface treatment

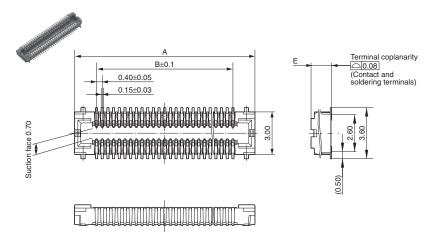
Part name	Material	Surface treatment
Molded portion	LCP resin (UL94V-0)	_
Contact and Post	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (Except for front edge of terminal) However, the area adjacent to the socket terminal is exposed to Ni on base. Soldering terminals 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)

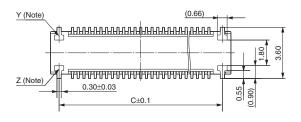
**DIMENSIONS** (Unit: mm)

The CAD data of the products with a CAD Data mark can be downloaded from: http://industrial.panasonic.com/ac/e/

- 1. Socket (Mated height: 1.5mm, 2.0mm, 2.5mm, 3.0mm)
- Without pickup cover

## CAD Data





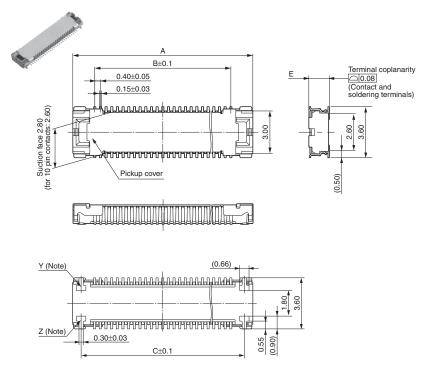
General tolerance: ±0.2

#### Dimension table (mm)

Number of pins/ dimension	А		С
10	4.70	1.60	3.50
16	5.90	2.80	4.70
20	6.70	3.60	5.50
22	7.10	4.00	5.90
24	7.50	4.40	6.30
26	7.90	4.80	6.70
30	8.70	5.60	7.50
32	9.10	6.00	7.90
34	9.50	6.40	8.30
36	9.90	6.80	8.70
38	10.30	7.20	9.10
40	10.70	7.60	9.50
44	11.50	8.40	10.30
46	11.90	8.80	10.70
50	12.70	9.60	11.50
54	13.50	10.40	12.30
60	14.70	11.60	13.50
64	15.50	12.40	14.30
70	16.70	13.60	15.50
80	18.70	15.60	17.50
90	20.70	17.60	19.50
100	22.70	19.60	21.50

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

#### · With pickup cover



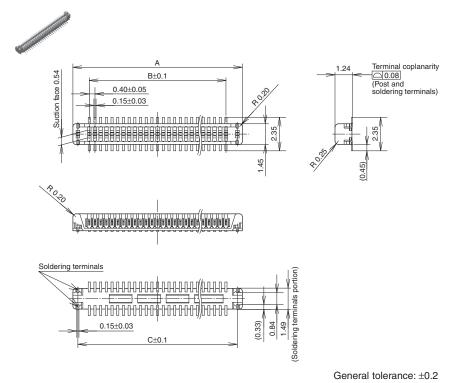
General tolerance: ±0.2

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

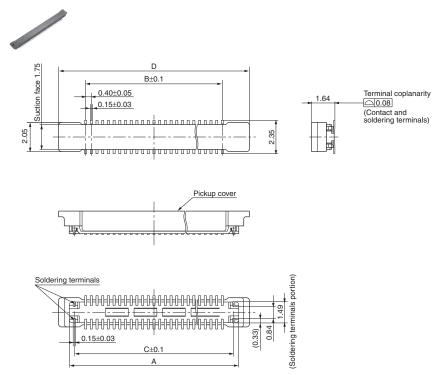
## CAD Data



Dimension table (mm)

Differsion table (IIIII)										
Number of pins/ dimension	А	В	С	D						
10	3.90	1.60	3.20	5.40						
16	5.10	2.80	4.40	6.60						
20	5.90	3.60	5.20	7.40						
22	6.30	4.00	5.60	7.80						
24	6.70	4.40	6.00	8.20						
26	7.10	4.80	6.40	8.60						
30	7.90	5.60	7.20	9.40						
32	8.30	6.00	7.60	9.80						
34	8.70	6.40	8.00	10.20						
36	9.10	6.80	8.40	10.60						
38	9.50	7.20	8.80	11.00						
40	9.90	7.60	9.20	11.40						
44	10.70	8.40	10.00	12.20						
46	11.10	8.80	10.40	12.60						
50	11.90	9.60	11.20	13.40						
54	12.70	10.40	12.00	14.20						
60	13.90	11.60	13.20	15.40						
64	14.70	12.40	14.00	_						
70	15.90	13.60	15.20	17.40						
80	17.90	15.60	17.20	19.40						
90	19.90	17.60	19.20	21.40						
100	21.90	19.60	21.20	23.40						

## • With pickup cover



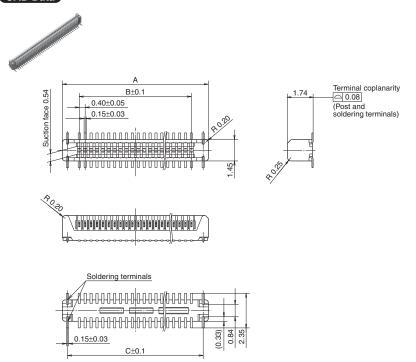
General tolerance: ±0.2

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

## 3. Header (Mated height: 2.0mm)

• Without pickup cover

## CAD Data

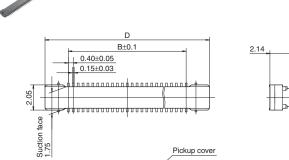


Dimension table (mm)

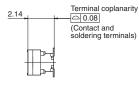
Number of pins/ dimension	А		С	D
40	9.90	7.60	9.20	11.40
90	19.90	17.60	19.20	21.40
100	21.90	19.60	21.20	_

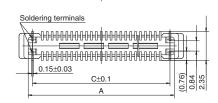
General tolerance: ±0.2

## • With pickup cover



Pickup cover





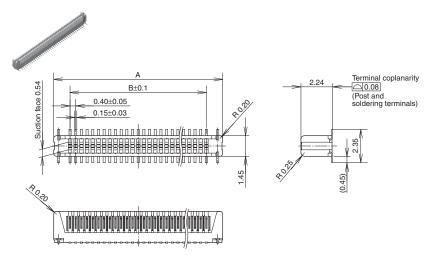
General tolerance: ±0.2

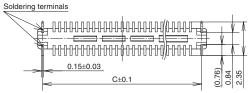
Note: The soldering terminals dimensions of headers with mated heights of 1.5mm/2.5mm and 2.0mm/3.0mm are different.

## 4. Header (Mated height: 3.0mm)

· Without pickup cover

## CAD Data



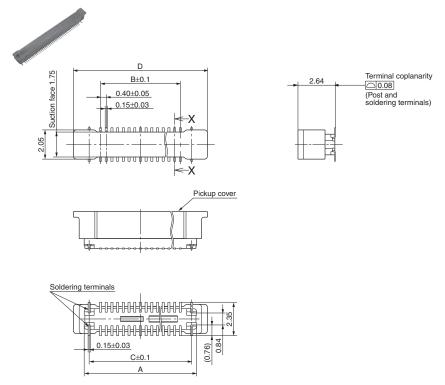


General tolerance: ±0.2

#### Dimension table (mm)

Number of pins/ dimension	А	В	С	D
20	5.90	3.60	5.20	_
30	7.90	5.60	7.20	9.40
60	13.90	11.60	13.20	_
80	17.90	15.60	17.20	19.40
100	21.90	19.60	21.20	-

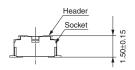
## • With pickup cover

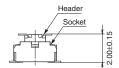


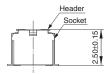
General tolerance: ±0.2

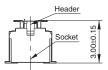
Note: The soldering terminals dimensions of headers with mated heights of 1.5mm/2.5mm and 2.0mm/3.0mm are different.

#### Socket and Header are mated



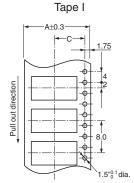


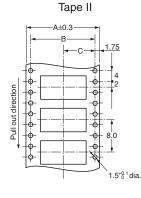


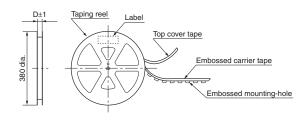


## EMBOSSED TAPE DIMENSIONS (unit: mm, Common for respective contact type, socket and header)

- 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)



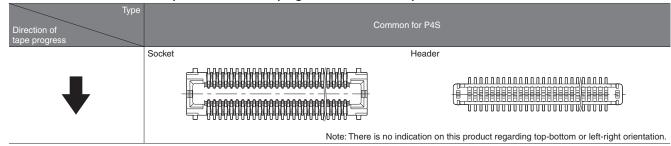




## Dimension table (mm)

	· (·····)								
	Numbe	r of pins							
Mated height	Socket (with/without pickup cover) Header (without pickup cover)	Header (with pickup cover)	Type of taping	А		С	D	Quantity per reel	
Common for	Max. 24	Max. 24	Tape I	16.00	_	7.50	17.50	3,000	
socket and header:	26 to 70	26 to 64	Tape I	24.00	_	11.50	25.50	3,000	
1.5mm, 2.0mm,	72 to 100	66 to 90	Tape II	32.00	28.40	14.20	33.50	3,000	
2.5mm and 3.0mm	_	100	Tape II	44.00	40.40	20.20	45.50	3,000	

## Connector orientation with respect to direction of progress of embossed tape



For board-to-board For board-to-FPC

# Connectors for inspection usage (0.4mm pitch)

## P4S Series



**RoHS** compliant

## **FEATURES**

- 1. 3,000 mating and unmating cycles
- 2. Same external dimensions and foot pattern 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																		
P4S	10	16	20	22	24	26	30	32	34	36	38	40	44	50	54	60	70	80	90	100
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 number of pins other than those shown above.
- 4. Please inquire with us regarding availability.
- 5. Please keep the minimum order quantities no less than 50 pieces per lot.
- 6. Please inquire if further information is needed.

## **PRODUCT TYPES**

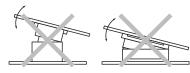
Specifications		Part No.	Specifications			Part No.	
Socket	With pickup cover	Without positioning bosses	AXT3E**66	Header	With pickup cover	Without positioning bosses	AXT4E**66
	No pickup cover	Without positioning bosses	AXT3E**26		No pickup cover	Without positioning bosses	AXT4E**26

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

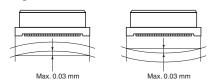
2. The above part numbers are for connectors without positioning bosses, which are standard. When ordering connectors with positioning bosses, please contact our sales office

## **NOTES**

1. As shown below, excess force during insertion may result in damage to the connector or removal of the solder. 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 P4 Series.

## 4. Recommended PC board and metal mask patterns

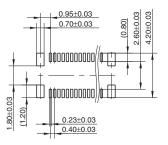
Connectors are mounted with high pitch density, intervals of 0.35 mm, 0.4 mm or 0.5 mm.

In order to reduce solder and flux rise, 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.

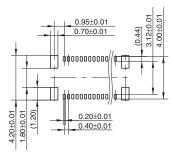
#### Socket

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

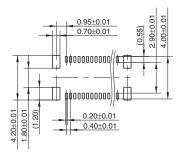
Recommended PC board pattern (TOP VIEW)



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



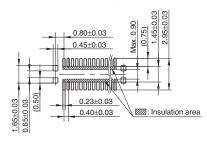
Recommended metal mask pattern Metal mask thickness: When 120 µm (Terminal portion opening area ratio: 60%) (Metal portion opening area ratio: 100%)



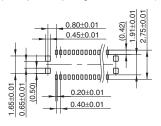
#### Header

(Mated height: 1.5mm and 2.5mm)

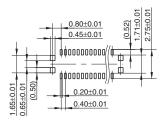
Recommended PC board pattern (TOP VIEW)



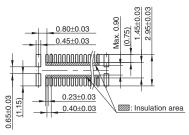
Recommended metal mask pattern Metal mask thickness: When 150 μm (Terminal portion opening area ratio: 49%) (Metal portion opening area ratio: 100%)



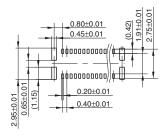
Recommended metal mask pattern Metal mask thickness: When 120 μm (Terminal portion opening area ratio: 60%) (Metal portion opening area ratio: 100%)



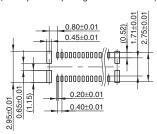
Header (Mated height: 2.0mm, 3.0mm) Recommended PC board pattern (TOP VIEW)



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



Recommended metal mask pattern Metal mask thickness: When 120  $\mu\text{m}$ (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 mated heights of 1.5 mm/ 2.5 mm and 2.0 mm/3.0 mm are different.

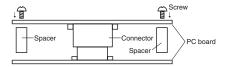
Please refer to the latest product specifications when designing your product.

## Regarding the design of devices and PC board patterns

- 1) When connecting several connectors together by stacking, make sure to maintain proper accuracy in the design of structure and mounting equipment so that the connectors are not subjected to twisting and torsional forces.
- 2) With mounting equipment, there may be up to a  $\pm 0.2$  to 0.3-mm error in positioning. Be sure to design PC boards and patterns while taking into consideration the performance and abilities of the required equipment.
- 3) Some connectors have tabs embossed on the body to aid in positioning. When using these connectors, make sure that the PC board is designed with positioning holes to match these tabs.
- 4) To ensure the required mechanical strength when soldering the connector terminals, make sure the PC board meets recommended PC board pattern design dimensions given.

5) For all connectors of the narrow pitch series, to prevent the PC board from coming off during vibrations or impacts, and to prevent loads from falling directly on the soldered portions, be sure to design some means to fix the PC board in place.

#### Example) Secure in place with screws



When connecting PC boards, take appropriate measures to prevent the connector from coming off.

- 6) Notes when using a FPC.
- (1) When the connector is soldered to an FPC board, during its insertion and removal procedures, forces may be applied to the terminals and cause the soldering to come off. It is recommended to use a reinforcement board on the

backside of the FPC board to which the connector is being connected. Please make the reinforcement board dimensions bigger than the outer limits of the recommended PC board pattern (should be approximately 1 mm greater than the outer limit).

Material should be glass epoxy or polyimide, and the thickness should be between 0.2 and 0.3 mm.

- (2) Collisions, impacts, or turning of FPC boards, may apply forces on the connector and cause it to come loose. Therefore, make to design retaining plates or screws that will fix the connector in place.
- 7) The narrow pitch connector series is designed to be compact and thin. Although ease of handling has been taken into account, take care when mating the connectors, as displacement or angled mating could damage or deform the connector.

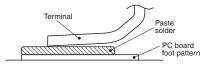
# Regarding the selection of the connector placement machine and the mounting procedures

- 1) Select the placement machine taking into consideration the connector height, required positioning accuracy, and packaging conditions.
- 2) Be aware that if the catching force of the placement machine is too great, it may deform the shape of the connector body or connector terminals.
- 3) Be aware that during mounting, external forces may be applied to the connector contact surfaces and terminals and cause deformations.
- 4) Depending on the size of the connector being used, self alignment may not be possible. In such cases, be sure to carefully position the terminal with the PC board pattern.
- 5) The positioning bosses give an approximate alignment for positioning on the PC board. For accurate positioning of the connector when mounting it to the PC board, we recommend using an automatic positioning machine.
- 6) Excessive mounter chucking force may deform the molded or metal part of the connector. Consult us in advance if chucking is to be applied.

## Regarding soldering

## 1. Reflow soldering

- 1) Measure the recommended profile temperature for reflow soldering by placing a sensor on the PC board near the connector surface or terminals. (The setting for the sensor will differ depending on the sensor used, so be sure to carefully read the instructions that comes with it.)
- 2) As for cream solder printing, screen printing is recommended.
- 3) To determine the relationship between the screen opening area and the PC-board foot pattern area, refer to the diagrams in the recommended patterns for PC boards and metal masks. Make sure to use the terminal tip as a reference position when setting. Avoid an excessive amount of solder from being applied, otherwise, interference by the solder will cause an imperfect contact.

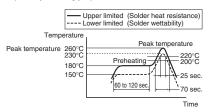


- Consult us when using a screenprinting thickness other than that recommended.
- 5) When mounting on both sides of the PC board and the connector is mounting on the underside, use adhesives or other means to ensure the connector is properly fixed to the PC board. (Double reflow soldering on the same side is possible.)
- 6) N₂ reflow, conducting reflow soldering in a nitrogen atmosphere, increases the solder flow too greatly, enabling wicking to occur. Make sure that the solder feed rate and temperature profile are appropriate.

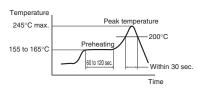
#### Soldering conditions

Please use the reflow temperature profile conditions recommended below for reflow soldering. Please contact us before using a temperature profile other than that described below (e.g. lead-free solder).

 Narrow pitch connectors (except P8 type)



Narrow pitch connector (P8)



For products other than the ones above, please refer to the latest product specifications.

- 7) The temperatures are measured at the surface of the PC board near the connector terminals. (The setting for the sensor will differ depending on the sensor used, so be sure to carefully read the instructions that comes with it.)
- 8) The temperature profiles given in this catalog are values measured when using the connector on a resin-based PC board. When performed reflow soldering on a metal board (iron, aluminum, etc.) or a metal table to mount on a FPC, make sure there is no deformation or discoloration of the connector beforehand and then begin mounting.
- 9) Consult us when using a screenprinting thickness other than that recommended.
- 10) Some solder and flux types may cause serious solder or flux creeping. Solder and flux characteristics should be taken into consideration when setting the reflow soldering conditions.

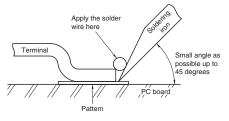
#### 2. Hand soldering

1) Set the soldering iron so that the tip temperature is less than that given in the table below.

Table A

Product name	Soldering iron temperature		
SMD type connectors	300°C within 5 sec. 350°C within 3 sec.		

- Do not allow flux to spread onto the connector leads or PC board. This may lead to flux rising up to the connector inside.
- 3) Touch the soldering iron to the foot pattern. After the foot pattern and connector terminal are heated, apply the solder wire so it melts at the end of the connector terminals.



- Be aware that soldering while applying a load on the connector terminals may cause improper operation of the connector.
- 5) Thoroughly clean the soldering iron.
- 6) Flux from the solder wire may get on the contact surfaces during soldering operations. After soldering, carefully check the contact surfaces and clean off any solder before use.
- 7) For soldering of prototype devices during product development, you can perform soldering at the necessary locations by heating with a hot-air gun by applying cream solder to the foot pattern beforehand. However, at this time, make sure that the air pressure does not move connectors by carefully holding them down with tweezers or other similar tool. Also, be careful not to go too close to the connectors and melt any of the molded components.
- 8) If an excessive amount of solder is applied during manual soldering, the solder may creep up near the contact points, or solder interference may cause imperfect contact.

## 3. Solder reworking

- 1) Finish reworking in one operation.
- For reworking of the solder bridge, use a soldering iron with a flat tip. To prevent flux from climbing up to the contact surfaces, do not add more flux.
- 3) Keep the soldering iron tip temperature below the temperature given in Table A.

## **Handling Single Components**

- 1) Make sure not to drop or allow parts to fall from work bench
- 2) Excessive force applied to the terminals could cause warping, come out, or weaken the adhesive strength of the solder. Handle with care.
- 3) Repeated bending of the terminals may cause terminals to break.
- 4) Do not insert or remove the connector when it is not soldered. Forcibly applied external pressure on the terminals can weaken the adherence of the terminals to the molded part or cause the terminals to lose their evenness.
- 5) Excessive prying-force applied to one end may cause product breakage and separation of the solder joints at the terminal.

Excessive force applied for insertion in a pivot action as shown may also cause product breakage.

Align the header and socket positions before connecting them.



## Cleaning flux from PC board

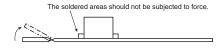
- To increase the cleanliness of the cleaning fluid and cleaning operations, prepare equipment for cleaning process beginning with boil cleaning, ultrasonic cleaning, and then vapor cleaning.
   Carefully oversee the cleanliness of
- cleaning, and then vapor cleaning.

  2) Carefully oversee the cleanliness of the cleaning fluids to make sure that the contact surfaces do not become dirty from the cleaning fluid itself.
- 3) Since some powerful cleaning solutions may dissolve molded components of the connector and wipe off or discolor printed letters, we recommend aqua pura electronic parts cleaners. Please consult us if you wish to use other types of cleaning fluids.
  4) Please note that the surfaces of molded parts may whiten when cleaned with alcohol.

## Handling the PC board

 Handling the PC board after mounting the connector

When cutting or bending the PC board after mounting the connector, be careful that the soldered sections are subjected to excessive force.



## Storage of connectors

1) To prevent problems from voids or air pockets due to heat of reflow soldering, avoid storing the connectors in areas of high humidity. When storing the connectors for more than six months, be sure to consider storage area where the humidity is properly controlled.

 Depending on the connector type, the color of the connector may vary from connector to connector depending on when it is produced. Some connectors may change color slightly if subjected to ultraviolet rays during storage. This is normal and will not affect the operation of the connector.

3) When storing the connectors with the PC boards assembled and components alreeady set, be careful not to stack them up so the connectors are subjected to excessive forces.

4) Avoid storing the connectors in locations with excessive dust. The dust may accumulate and cause improper connections at the contact surfaces.

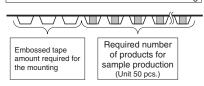
## **Other Notes**

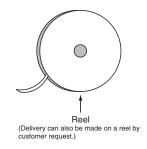
- 1) These products are made for the design of compact and lightweight devices and therefore the thickness of the molded components has been made very thin. Therefore, be careful during insertion and removal operations for excessive forces applied may damage the products.
- Dropping of the products or rough mishandling may bend or damage the terminals and possibly hinder proper reflow soldering.
- 3) Before soldering, try not to insert or remove the connector more than absolutely necessary.
- 4) When coating the PC board after soldering the connector to prevent the deterioration of insulation, perform the coating in such a way so that the coating does not get on the connector.
- 5) There may be variations in the colors of products from different production lots. This is normal.
- 6) The connectors are not meant to be used for switching.
- 7) Be sure not to allow external pressure to act on connectors when assembling PCBs or moving in block assemblies.

## Regarding sample orders to confirm proper mounting

When ordering samples to confirm proper mounting with the placement machine, connectors are delivered in 50-piece units in the condition given right. Consult a sale representative for ordering sample units.

Condition when delivered from manufacturing





Please refer to the latest product specifications when designing your product.

For board-to-board For board-to-FPC

## Narrow pitch connectors (0.4mm pitch)



Without soldering terminals



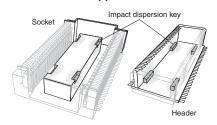
· With soldering terminals



RoHS compliant

## **FEATURES**

- 1. 0.4 mm pitch and mated heights of 1.5 mm, 2.0 mm, 2.5 mm, 3.0 mm and 3.5 mm.
- 2. Strong resistance to adverse environments! Utilizes
- "TDUGH CONTRET" construction for high contact reliability.
- 3. Constructed with impact dispersion keys inside the body to disperse shocks when dropped.



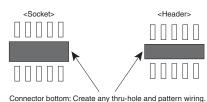
A high level of shock resistance is ensured by dispersing impact over the four locations where the socket indentations and header protrusions are mated together.

Note: The following number of pins are not supported due to suction surface factors.

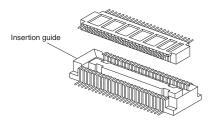
- Without soldering terminals: 18 pin contacts or less
  With soldering terminals: 22 pin contacts or less

### 4. Construction makes designing devices easier.

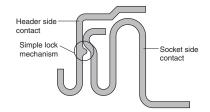
1) The lower connector bottom surface construction prevents contact and shorts between the PCB and metal terminals. This enables freedom in pattern wiring, helping to make PCB's smaller.



2) Guides are provided to take up any position shift and facilitate insertion.



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



### 5. Design facilitates efficient mounting.

Features a terminal flatness of 0.08 mm, construction resistant to creeping flux, and design that allows visual inspection of the soldered part.

6. Connectors for inspection available

#### APPLICATIONS

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

## **ORDERING INFORMATION**

AXK				G
7: Narrow Pitch Connector P4 (0.4 mm pitch) Socket 8: Narrow Pitch Connector P4 (0.4 mm pitch) Header				
Number of pins (2 digits)				
Mated height <socket> 1: For mated height 1.5 mm 2: For mated height 2.0 mm 3: For mated height 2.5 mm and 3.0 mm 4: For mated height 3.5 mm  <header> 1: For mated height 1.5 mm, 2.0 mm and 2.5 mm 2: For mated height 3.0 mm and 3.5 mm</header></socket>				
Functions 2: With soldering terminals, without positioning bosses 4: Without soldering terminals, without positioning bosses				
Surface treatment (Contact portion / Terminal portion) <socket> 7: Ni plating on base, Au plating on surface (for Ni barrier availabeleader&gt; 5: Ni plating on base, Au plating on surface</socket>	ole)			
Other specifications <header> W: V notch</header>				
Packing G: 3,000 pieces embossed tape and plastic reel × 2*				

Notes: 1. Only a socket of mated height 3.5 mm: 2,000 pieces embossed tape and plastic reel × 2.

2. Please note that the models with a soldering terminals (8th digit of part number is "2") and those without a soldering terminals (8th digit of part number is "4") are shaped differently and are not compatible.

## **PRODUCT TYPES**

## 1. Without soldering terminals \*\* TOUGH CONTRET

		Part r	Part number		Packing		
Mated height	Number of pins	Socket Header		Innor corton	Outer certen		
		TOUGH CONTRCT	TDUGH CONTRCT	Inner carton	Outer carton		
	14	AXK714147G	AXK814145WG				
	20	AXK720147G	AXK820145WG				
	22	AXK722147G	AXK822145WG				
	24	AXK724147G	AXK824145WG				
	26	AXK726147G	AXK826145WG				
	30	AXK730147G	AXK830145WG				
	34	AXK734147G	AXK834145WG				
1.5 mm	40	AXK740147G	AXK840145WG				
1.5 11111	44	AXK744147G	AXK844145WG				
	50	AXK750147G	AXK850145WG				
	54	AXK754147G	AXK854145WG				
	60	AXK760147G	AXK860145WG				
	64	AXK764147G	AXK864145WG				
	70	AXK770147G	AXK870145WG				
	80	AXK780147G	AXK880145WG				
	100	AXK700147G	AXK800145WG				
	14	AXK714247G	AXK814145WG				
	20	AXK720247G	AXK820145WG				
	24	AXK724247G	AXK824145WG				
	26	AXK726247G	AXK826145WG	3,000 pieces	6,000 pieces		
2.0 mm	30	AXK730247G	AXK830145WG				
2.0 111111	40	AXK740247G	AXK840145WG				
	50	AXK750247G	AXK850145WG				
	60	AXK760247G	AXK860145WG				
	70	AXK770247G	AXK870145WG				
	80	AXK780247G	AXK880145WG				
	14	AXK714347G	AXK814145WG				
	20	AXK720347G	AXK820145WG				
	24	AXK724347G	AXK824145WG				
	30	AXK730347G	AXK830145WG				
2.5 mm	40	AXK740347G	AXK840145WG				
	50	AXK750347G	AXK850145WG				
	60	AXK760347G	AXK860145WG				
	70	AXK770347G	AXK870145WG				
	80	AXK780347G	AXK880145WG				
	20	AXK720347G	AXK820245WG				
	24	AXK724347G	AXK824245WG				
	30	AXK730347G	AXK830245WG				
3.0 mm	40	AXK740347G	AXK840245WG				
	50	AXK750347G	AXK850245WG				
	60	AXK760347G	AXK860245WG				
	80	AXK780347G	AXK880245WG				
	20	AXK720447G	AXK820245WG				
3.5 mm	30	AXK730447G	AXK830245WG	Socket: 2,000 pieces Header: 3,000 pieces	Socket: 4,000 pieces Header: 6,000 pieces		
	40	AXK740447G	AXK840245WG	- rieader. 3,000 pieces	rieduer. 0,000 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 contact our sales office.

Samples: Small lot orders are possible.

<sup>2.</sup> The above part numbers are for connectors without positioning bosses, which are standard. When ordering connectors with positioning bosses, please contact our sales office.

## 2. With soldering terminals \* TDUGH CONTRCT

		Part number		Packing		
Mated height	Number of pins	Socket	Header	Inner certen	Outer carton	
		TOUGH CONTACT	TDUGH CONTRCT	Inner carton		
	10	AXK710127G	AXK810125WG			
1.5 mm	34	AXK734127G	AXK834125WG			
	40	AXK740127G	AXK840125WG			
2.0 mm	34	AXK734227G	AXK834125WG		6,000 pieces	
	12	AXK712327G	AXK812125WG			
0.5 mm	20	AXK720327G	AXK820125WG	3,000 pieces		
2.5 mm	32	AXK732327G	AXK832125WG			
	40	AXK740327G	AXK840125WG			
3.0 mm	20	AXK720327G	AXK820225WG			
	36	AXK736327G	AXK836225WG			
	60	AXK760327G	AXK860225WG			
	70	AXK770327G	AXK870225WG			
	80	AXK780327G	AXK880225WG			
3.5 mm	60	AXK760427G	AXK860225WG	0 1 1 0 000 1		
	70	AXK770427G	AXK870225WG	Socket: 2,000 pieces Header: 3,000 pieces	Socket: 4,000 piece Header: 6,000 piece	
	80	AXK780427G	AXK880225WG	1 loader. 0,000 pieces	ricauci. 0,000 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 contact our sales office.

Samples: Small lot orders are possible.

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.

## **SPECIFICATIONS**

## 1. Characteristics

	Item	Specifications		Cond	itions	
	Rated current	0.3A/pin contact (Max. 5 A at total pin contacts)				
Electrical	Rated voltage	60V AC/DC				
	Breakdown voltage	150V AC for 1 min.	Detection	on current: 1mA		
characteristics	Insulation resistance	Min. 1,000M $\Omega$ (initial)	Using 2	Using 250V DC megger (applied for 1 min.)		
	Contact resistance	Max. 70mΩ		Based on the contact resistance measurement methospecified by JIS C 5402.		
	Composite insertion force	Max. 0.981N/pin contacts × pin contacts (initial)				
Mechanical characteristics	Composite removal force	Min. 0.0588N/pin contacts × pin contacts (Mated height 1.5 mm without soldering terminals type) Min. 0.118N/pin contacts × pin contacts All the other types except the above (Mated height 1.5 mm without soldering terminals type)				
	Post holding force	Min. 0.981N/pin contacts		Measuring the maximum force. As the contact 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	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)			Conformed to MIL-STD-202F, method 107G		
				Temperature (°C)	Time (minutes)	
		5 cycles,	1	<b>-</b> 55 <sub>-3</sub> °	30	
		insulation resistance min. 100M $\Omega$ ,		\$	Max. 5	
Environmental characteristics		contact resistance max. $70m\Omega$	3	85 <sup>+3</sup>	30	
CHARACTERISTICS				_55_3°	Max. 5	
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. $100M\Omega$ , contact resistance max. $70m\Omega$	Bath temperature 40±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. 70m $\Omega$	Bath temperature 35±2°C, saltwater concentration 5±1%		%	
	H <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. 70mΩ	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		noval speed of max. 200	
Unit weight		Mated height 1.5mm, 20 pin contacts; Socket: 0.04g Header: 0.02g				

## 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 thick of terminal) However, upper terminal of Ni barrier production: Exposed over Ni The area adjacent to the terminal of the sockets on models with Ni barrier is exposed to Ni on base.		
Soldering terminals portion	Copper alloy	Ni plating on base, Sn plating on surface (Except for front terminal)		

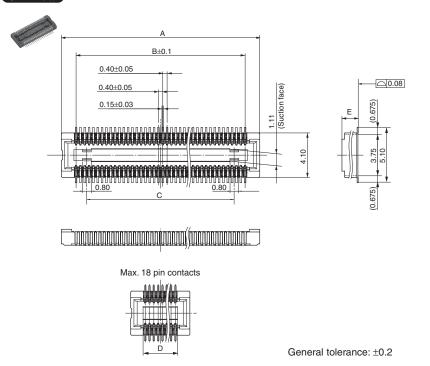
#### **DIMENSIONS** (Unit: mm)

The CAD data of the products with a CAD Data mark can be downloaded from: http://industrial.panasonic.com/ac/e/

1. Without Soldering Terminals

Socket (Mated height: 1.5 mm, 2.0 mm, 2.5 mm, 3.0 mm and 3.5 mm)

#### CAD Data



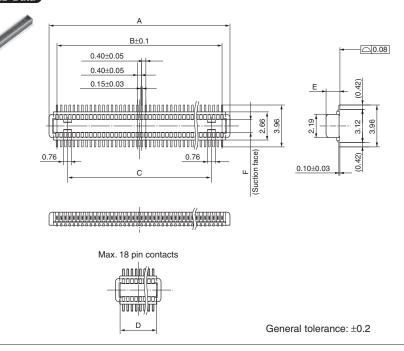
#### Dimension table (mm)

Number of pins/ dimension	А	В	С	D
14	5.10	2.40	_	2.80
20	6.30	3.60	1.60	_
22	6.70	4.00	2.00	_
24	7.10	4.40	2.40	_
26	7.50	4.80	2.80	_
30	8.30	5.60	3.60	_
34	9.10	6.40	4.40	_
40	10.30	7.60	5.60	_
44	11.10	8.40	6.40	_
50	12.30	9.60	7.60	_
54	13.10	10.40	8.40	_
60	14.30	11.60	9.60	_
64	15.10	12.40	10.40	
70	16.30	13.60	11.60	_
80	18.30	15.60	13.60	_
100	22.30	19.60	17.60	_

Mated height/dimension	Е
1.5mm	1.50
2.0mm	1.92
2.5mm, 3.0mm	2.42
3.5mm	2.92

Header (Mated height: 1.5 mm, 2.0 mm, 2.5 mm, 3.0 mm and 3.5 mm)

#### CAD Data

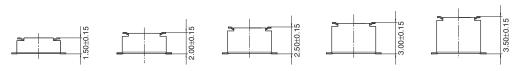


#### Dimension table (mm)

Number of pins/ dimension	А	В	С	D
14	3.90	2.40	_	3.04
20	5.10	3.60	1.60	_
22	5.50	4.00	2.00	_
24	5.90	4.40	2.40	_
26	6.30	4.80	2.80	_
30	7.10	5.60	3.60	_
34	7.90	6.40	4.40	_
40	9.10	7.60	5.60	_
44	9.90	8.40	6.40	_
50	11.10	9.60	7.60	_
54	11.90	10.40	8.40	_
60	13.10	11.60	9.60	_
64	13.90	12.40	10.40	_
70	15.10	13.60	11.60	_
80	17.10	15.60	13.60	_
100	21.10	19.60	17.60	_

Mated height/dimension	E	F
1.5mm, 2.0mm, 2.5mm	1.31	1.20
3.0mm, 3.5mm	2.26	1.26

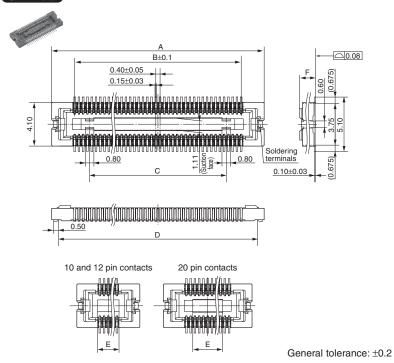
#### Socket and Header are mated



#### 2. With Soldering Terminals

Socket (Mated height: 1.5 mm, 2.0 mm, 2.5 mm, 3.0 mm and 3.5 mm)

#### CAD Data



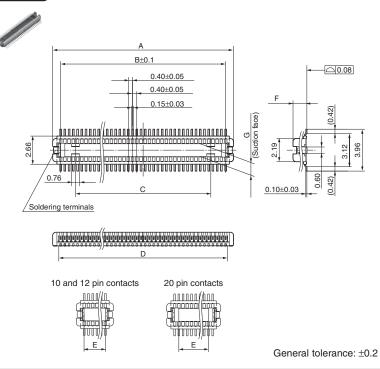
#### Dimension table (mm)

Number of pins/ dimension	А	В	С	D	Е
10	5.90	1.60	_	4.60	2.00
12	6.30	2.00		5.00	2.40
20	7.90	3.60	_	6.60	2.40
32	10.30	6.00	3.20	9.00	_
34	10.70	6.40	3.60	9.40	_
36	11.10	6.80	4.00	9.40	_
40	11.90	7.60	4.80	10.60	_
60	15.90	11.60	8.80	14.60	_
70	17.90	13.60	10.80	16.60	_
80	19.90	15.60	12.80	18.60	_

Mated height/dimension	F
1.5mm	1.50
2.0mm	1.92
2.5mm, 3.0mm	2.42
3.5mm	2.92

Header (Mated height: 1.5 mm, 2.0 mm, 2.5 mm, 3.0 mm and 3.5 mm)

#### CAD Data

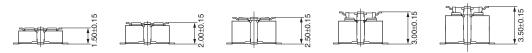


#### Dimension table (mm)

`	,				
Number of pins/ dimension	А	В	С	D	Е
10	3.10	1.60	_	1.94	1.64
12	3.50	2.00	_	2.34	2.04
20	5.10	3.60	_	3.94	2.80
32	7.50	6.00	3.20	6.34	_
34	7.90	6.40	3.60	6.74	_
36	8.30	6.80	4.00	7.14	_
40	9.10	7.60	4.80	7.94	_
60	13.10	11.60	8.80	11.94	_
70	15.10	13.60	10.80	13.94	_
80	17.10	15.60	12.80	15.94	_

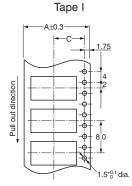
Mated height/dimension	F	G
1.5mm, 2.0mm, 2.5mm	1.31	1.20
3.0mm, 3.5mm	2.26	1.26

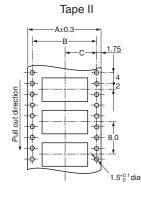
#### Socket and Header are mated.

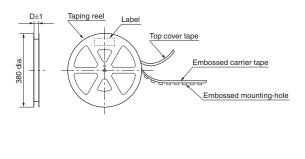


#### EMBOSSED TAPE DIMENSIONS (unit: mm, Common for respective contact type, socket and header)

- 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)







#### Dimension table (mm)

1. Without Soldering Terminals

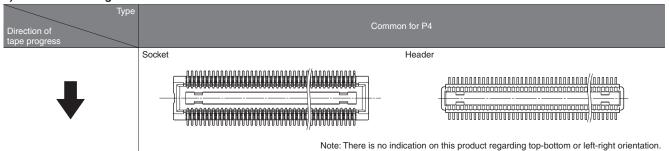
Mated height	Number of pins		Time of tening	^	В	_	<u></u>	Quantity per reel	
Mated Height	Socket	Header	Type of taping	A	A   B				
Common for socket and header:	Max. 18	Max. 18	Tape I	16.00	_	7.50	17.40	3,000	
1.5 mm, 2.0 mm, 2.5 mm and 3.0 mm	20 to 70	20 to 70	Tape I	24.00	_	11.50	25.40	3,000	
Header: 3.5 mm	80 to 100	80 to 100	Tape II	32.00	28.40	14.20	33.40	3,000	
Socket: 3.5 mm	20 to 40		Tape I	24.00	_	11.50	25.40	2,000	

#### 2. With Soldering Terminals

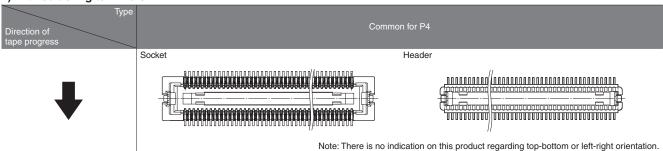
Mated height	Number of pins		Type of taping		В	_	<u></u>	Quantity per reel	
Mateu neignt	Socket	Header	Type of taping	A B C D 16.00 — 7.50 17.40		D	Quantity per reer		
Common for socket and header:	Max. 18	Max. 18	Tape I	16.00	_	7.50	17.40	3,000	
1.5 mm, 2.0 mm, 2.5 mm and 3.0 mm	20 to 60	20 to 70	Tape I	24.00	_	11.50	25.40	3,000	
Header: 3.5 mm	70 to 80	80	Tape II	32.00	28.40	14.20	33.40	3,000	
Socket: 3.5 mm	6	0	Tape I	24.00	_	11.50	25.40	2,000	
Socket. 3.3 mm	70 t	o 80	Tape II	32.00	28.40	14.20	33.40	2,000	

3. Connector orientation with respect to direction of progress of embossed tape

#### 1) Without soldering terminals



#### 2) With soldering terminals



For board-to-board For board-to-FPC

**Connectors for** inspection usage (0.4mm pitch)



RoHS compliant

#### **FEATURES**

- 1. 3,000 mating and unmating cycles
- 2. Same external dimensions and foot pattern 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									Numbe	r of pins								
Floductilaille		12	14	20	22	24	26	30	34	40	44	50	54	60	64	70	80	100
P4 for inspection without soldering terminals			☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆
P4 for inspection with soldering terminals	☆	☆		☆					☆	☆				☆			☆	

- Notes: 1. You can use with each mated height in common.

  - Please inquire about number of pins other than those shown above.
     Please inquire with us regarding availability.
     Please keep the minimum order quantities no less than 50 pieces per lot.
  - Please inquire if further information is needed.

#### **PRODUCT TYPES**

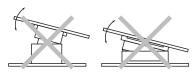
	Specifi	cations	Part No.	Specifications			Part No.
Socket	With soldering terminals	Without positioning bosses	AXK7E**26G	Header	With soldering terminals	Without positioning bosses	AXK8E**26WG
Socket	Without soldering terminals	Without positioning bosses	AXK7E**46G	neduei	Without soldering terminals	Without positioning bosses	AXK8E**46WG

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

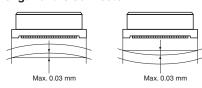
2. The above part numbers are for connectors without positioning bosses, which are standard. When ordering connectors with positioning bosses, please contact our local sales office.

#### **NOTES**

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



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



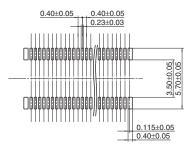
## 3. Recommended PC board and metal mask patterns

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

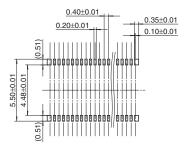
In order to reduce solder and flux rise, solder bridges and other issues make sure the proper levels of solder is used. The figures to the right are recommended metal mask patterns. Please use them as a reference.

## 1) Without soldering terminals Socket

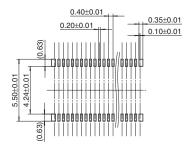
Recommended PC board pattern (TOP VIEW)



Recommended metal mask pattern Metal mask thickness: When 150 μm (Opening area ratio: 40%)

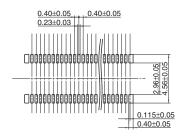


Recommended metal mask pattern Metal mask thickness: When 120 μm (Opening area ratio: 50%)

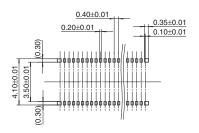


#### Header

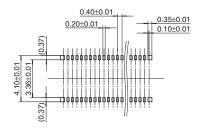
Recommended PC board pattern (TOP VIEW)



Recommended metal mask pattern Metal mask thickness: When 150 μm (Opening area ratio: 32%)

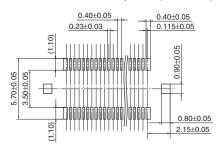


Recommended metal mask pattern Metal mask thickness: When 120 μm (Opening area ratio: 40%)

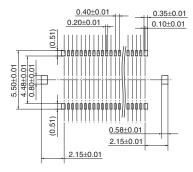


## 2) With soldering terminals Socket

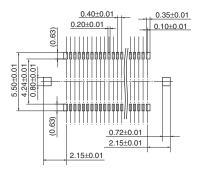
Recommended PC board pattern (TOP VIEW)



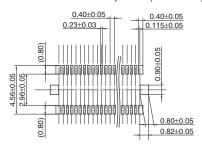
Recommended metal mask pattern Metal mask thickness: When 150 µm (Terminal portion opening area ratio: 40%) (Metal portion opening area ratio: 65%)



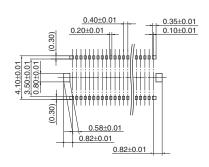
Recommended metal mask pattern Metal mask thickness: When 120 μm (Terminal portion opening area ratio: 50%) (Metal portion opening area ratio: 80%)



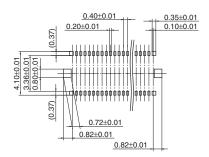
#### Header Recommended PC board pattern (TOP VIEW)



Recommended metal mask pattern Metal mask thickness: When 150 µm (Terminal portion opening area ratio: 32%) (Metal portion opening area ratio: 65%)



Recommended metal mask pattern Metal mask thickness: When 120 μm (Terminal portion opening area ratio: 40%) (Metal portion opening area ratio: 80%)



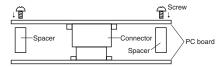
Please refer to the latest product specifications when designing your product.

#### Regarding the design of devices and PC board patterns

- 1) When connecting several connectors together by stacking, make sure to maintain proper accuracy in the design of structure and mounting equipment so that the connectors are not subjected to twisting and torsional forces.
- 2) With mounting equipment, there may be up to a  $\pm 0.2$  to 0.3-mm error in positioning. Be sure to design PC boards and patterns while taking into consideration the performance and abilities of the required equipment.
- 3) Some connectors have tabs embossed on the body to aid in positioning. When using these connectors, make sure that the PC board is designed with positioning holes to match these tabs.
- 4) To ensure the required mechanical strength when soldering the connector terminals, make sure the PC board meets recommended PC board pattern design dimensions given.

5) For all connectors of the narrow pitch series, to prevent the PC board from coming off during vibrations or impacts, and to prevent loads from falling directly on the soldered portions, be sure to design some means to fix the PC board in place.

#### Example) Secure in place with screws



When connecting PC boards, take appropriate measures to prevent the connector from coming off.

- 6) Notes when using a FPC.
- (1) When the connector is soldered to an FPC board, during its insertion and removal procedures, forces may be applied to the terminals and cause the soldering to come off. It is recommended to use a reinforcement board on the

backside of the FPC board to which the connector is being connected. Please make the reinforcement board dimensions bigger than the outer limits of the recommended PC board pattern (should be approximately 1 mm greater than the outer limit).

Material should be glass epoxy or polyimide, and the thickness should be between 0.2 and 0.3 mm.

- (2) Collisions, impacts, or turning of FPC boards, may apply forces on the connector and cause it to come loose. Therefore, make to design retaining plates or screws that will fix the connector in place.
- 7) The narrow pitch connector series is designed to be compact and thin. Although ease of handling has been taken into account, take care when mating the connectors, as displacement or angled mating could damage or deform the connector.

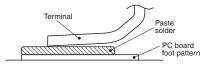
## Regarding the selection of the connector placement machine and the mounting procedures

- 1) Select the placement machine taking into consideration the connector height, required positioning accuracy, and packaging conditions.
- 2) Be aware that if the catching force of the placement machine is too great, it may deform the shape of the connector body or connector terminals.
- 3) Be aware that during mounting, external forces may be applied to the connector contact surfaces and terminals and cause deformations.
- 4) Depending on the size of the connector being used, self alignment may not be possible. In such cases, be sure to carefully position the terminal with the PC board pattern.
- 5) The positioning bosses give an approximate alignment for positioning on the PC board. For accurate positioning of the connector when mounting it to the PC board, we recommend using an automatic positioning machine.
- 6) Excessive mounter chucking force may deform the molded or metal part of the connector. Consult us in advance if chucking is to be applied.

#### Regarding soldering

#### 1. Reflow soldering

- 1) Measure the recommended profile temperature for reflow soldering by placing a sensor on the PC board near the connector surface or terminals. (The setting for the sensor will differ depending on the sensor used, so be sure to carefully read the instructions that comes with it.)
- 2) As for cream solder printing, screen printing is recommended.
- 3) To determine the relationship between the screen opening area and the PC-board foot pattern area, refer to the diagrams in the recommended patterns for PC boards and metal masks. Make sure to use the terminal tip as a reference position when setting. Avoid an excessive amount of solder from being applied, otherwise, interference by the solder will cause an imperfect contact.

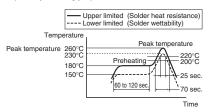


- Consult us when using a screenprinting thickness other than that recommended.
- 5) When mounting on both sides of the PC board and the connector is mounting on the underside, use adhesives or other means to ensure the connector is properly fixed to the PC board. (Double reflow soldering on the same side is possible.)
- 6) N₂ reflow, conducting reflow soldering in a nitrogen atmosphere, increases the solder flow too greatly, enabling wicking to occur. Make sure that the solder feed rate and temperature profile are appropriate.

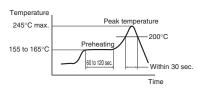
#### Soldering conditions

Please use the reflow temperature profile conditions recommended below for reflow soldering. Please contact us before using a temperature profile other than that described below (e.g. lead-free solder).

 Narrow pitch connectors (except P8 type)



Narrow pitch connector (P8)



For products other than the ones above, please refer to the latest product specifications.

- 7) The temperatures are measured at the surface of the PC board near the connector terminals. (The setting for the sensor will differ depending on the sensor used, so be sure to carefully read the instructions that comes with it.)
- 8) The temperature profiles given in this catalog are values measured when using the connector on a resin-based PC board. When performed reflow soldering on a metal board (iron, aluminum, etc.) or a metal table to mount on a FPC, make sure there is no deformation or discoloration of the connector beforehand and then begin mounting.
- 9) Consult us when using a screenprinting thickness other than that recommended.
- 10) Some solder and flux types may cause serious solder or flux creeping. Solder and flux characteristics should be taken into consideration when setting the reflow soldering conditions.

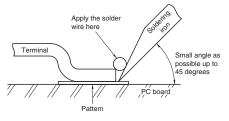
#### 2. Hand soldering

1) Set the soldering iron so that the tip temperature is less than that given in the table below.

Table A

Product name	Soldering iron temperature
SMD type connectors	300°C within 5 sec. 350°C within 3 sec.

- Do not allow flux to spread onto the connector leads or PC board. This may lead to flux rising up to the connector inside.
- 3) Touch the soldering iron to the foot pattern. After the foot pattern and connector terminal are heated, apply the solder wire so it melts at the end of the connector terminals.



- Be aware that soldering while applying a load on the connector terminals may cause improper operation of the connector.
- 5) Thoroughly clean the soldering iron.
- 6) Flux from the solder wire may get on the contact surfaces during soldering operations. After soldering, carefully check the contact surfaces and clean off any solder before use.
- 7) For soldering of prototype devices during product development, you can perform soldering at the necessary locations by heating with a hot-air gun by applying cream solder to the foot pattern beforehand. However, at this time, make sure that the air pressure does not move connectors by carefully holding them down with tweezers or other similar tool. Also, be careful not to go too close to the connectors and melt any of the molded components.
- 8) If an excessive amount of solder is applied during manual soldering, the solder may creep up near the contact points, or solder interference may cause imperfect contact.

#### 3. Solder reworking

- 1) Finish reworking in one operation.
- For reworking of the solder bridge, use a soldering iron with a flat tip. To prevent flux from climbing up to the contact surfaces, do not add more flux.
- 3) Keep the soldering iron tip temperature below the temperature given in Table A.

#### **Handling Single Components**

- 1) Make sure not to drop or allow parts to fall from work bench
- 2) Excessive force applied to the terminals could cause warping, come out, or weaken the adhesive strength of the solder. Handle with care.
- 3) Repeated bending of the terminals may cause terminals to break.
- 4) Do not insert or remove the connector when it is not soldered. Forcibly applied external pressure on the terminals can weaken the adherence of the terminals to the molded part or cause the terminals to lose their evenness.
- 5) Excessive prying-force applied to one end may cause product breakage and separation of the solder joints at the terminal.

Excessive force applied for insertion in a pivot action as shown may also cause product breakage.

Align the header and socket positions before connecting them.



#### Cleaning flux from PC board

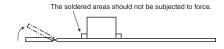
- To increase the cleanliness of the cleaning fluid and cleaning operations, prepare equipment for cleaning process beginning with boil cleaning, ultrasonic cleaning, and then vapor cleaning.
   Carefully oversee the cleanliness of
- cleaning, and then vapor cleaning.

  2) Carefully oversee the cleanliness of the cleaning fluids to make sure that the contact surfaces do not become dirty from the cleaning fluid itself.
- 3) Since some powerful cleaning solutions may dissolve molded components of the connector and wipe off or discolor printed letters, we recommend aqua pura electronic parts cleaners. Please consult us if you wish to use other types of cleaning fluids.
  4) Please note that the surfaces of molded parts may whiten when cleaned with alcohol.

#### Handling the PC board

 Handling the PC board after mounting the connector

When cutting or bending the PC board after mounting the connector, be careful that the soldered sections are subjected to excessive force.



#### Storage of connectors

- 1) To prevent problems from voids or air pockets due to heat of reflow soldering, avoid storing the connectors in areas of high humidity. When storing the connectors for more than six months, be sure to consider storage area where the humidity is properly controlled.
- 2) Depending on the connector type, the color of the connector may vary from connector to connector depending on when it is produced.

Some connectors may change color slightly if subjected to ultraviolet rays during storage. This is normal and will not affect the operation of the connector.

3) When storing the connectors with the PC boards assembled and components alreeady set, be careful not to stack them up so the connectors are subjected to excessive forces.

4) Avoid storing the connectors in locations with excessive dust. The dust may accumulate and cause improper connections at the contact surfaces.

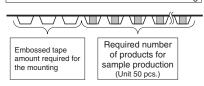
#### **Other Notes**

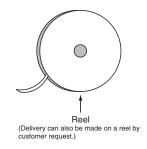
- 1) These products are made for the design of compact and lightweight devices and therefore the thickness of the molded components has been made very thin. Therefore, be careful during insertion and removal operations for excessive forces applied may damage the products.
- Dropping of the products or rough mishandling may bend or damage the terminals and possibly hinder proper reflow soldering.
- 3) Before soldering, try not to insert or remove the connector more than absolutely necessary.
- 4) When coating the PC board after soldering the connector to prevent the deterioration of insulation, perform the coating in such a way so that the coating does not get on the connector.
- 5) There may be variations in the colors of products from different production lots. This is normal.
- 6) The connectors are not meant to be used for switching.
- 7) Be sure not to allow external pressure to act on connectors when assembling PCBs or moving in block assemblies.

#### Regarding sample orders to confirm proper mounting

When ordering samples to confirm proper mounting with the placement machine, connectors are delivered in 50-piece units in the condition given right. Consult a sale representative for ordering sample units.

Condition when delivered from manufacturing



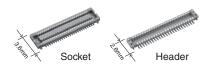


Please refer to the latest product specifications when designing your product.

## Narrow pitch connectors (0.4mm pitch)

## F4S Series



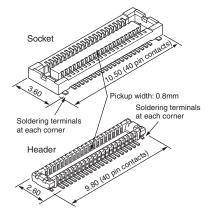


**RoHS** compliant

#### **FEATURES**

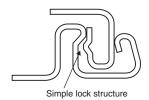
**1. Space-saving (3.6 mm widthwise)** Smaller compared to F4 series (40 pin contacts):

Socket — 27% smaller, Header — 38% smaller



2. Strong resistance to adverse environments! Utilizes "TDUSH CONTRET" construction for high contact reliability.

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

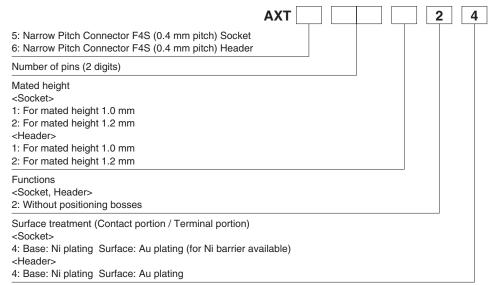


- 4. Gull-wing-shaped terminals to facilitate visual inspections.
- 5. Connectors for inspection available

#### **APPLICATIONS**

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

#### ORDERING INFORMATION



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.

## PRODUCT TYPES \*TOUGH CONTRET

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

Notes: 1. Order unit: For volume production: 1-inner-box (1-reel) units
Samples for mounting check: 50-connector units. Please contact our sales office.
Samples: Small lot orders are possible. Please contact our sales office.

#### **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.	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.				
	Composite insertion force	Max. 0.981N/pin contacts × pin contacts (initial)					
Mechanical	Composite removal force	Min. 0.165N/pin contacts × pin contacts					
characteristics	Contact holding force (Socket contact)	Min. 0.49N/pin contacts	Measuring the maximum force. As the contact is axially pull out.				
	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.				
			Conformed to MIL-STD-202F, method 107G				
			Order Temperature (°C) Time (minutes)				
	Thermal shock resistance (header and socket mated)	5 cycles,	1 -55-3 30				
Environmental		insulation resistance min. 100M $\Omega$ ,	2 Max. 5				
characteristics		contact resistance max. $90m\Omega$	3 85+3 30				
			4   S   Max. 5				
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100M $\Omega$ , contact resistance max. 90m $\Omega$	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 <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. $90m\Omega$	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

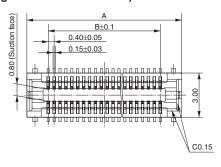
	arra carraco trot	
Part name	Material	Surface treatment
Molded portion	LCP resin (UL94V-0)	
Contact and Post	Copper alloy	Contact portion: Base: Ni plating Surface: Au plating Terminal portion: Base: Ni plating Surface: Au plating (except the terminal tips) The socket terminals close to the portion to 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)

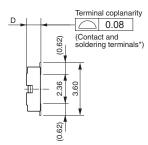
#### **DIMENSIONS** (Unit: mm)

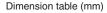
The CAD data of the products with a CAD Data mark can be downloaded from: http://industrial.panasonic.com/ac/e/

#### Socket (Mated height: 1.0 mm and 1.2 mm)



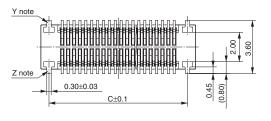






Number of pins/ dimension	А	В	С
10	4.50	1.60	3.40
12	4.90	2.00	3.80
14	5.30	2.40	4.20
16	5.70	2.80	4.60
20	6.50	3.60	5.40
22	6.90	4.00	5.80
24	7.30	4.40	6.20
26	7.70	4.80	6.60
28	8.10	5.20	7.00
30	8.50	5.60	7.40
32	8.90	6.00	7.80
34	9.30	6.40	8.20
36	9.70	6.80	8.60
40	10.50	7.60	9.40
42	10.90	8.00	9.80
44	11.30	8.40	10.20
48	12.10	9.20	11.00
50	12.50	9.60	11.40
54	13.30	10.40	12.20
60	14.50	11.60	13.40
64	15.30	12.40	14.20
70	16.50	13.60	15.40
80	18.50	15.60	17.40

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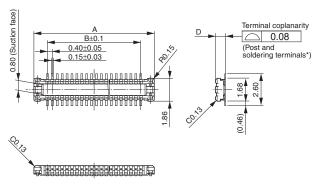
General tolerance: ±0.2

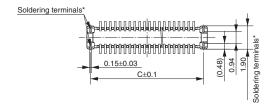
Mated height/ dimension	D
1.0mm	0.97
1.2mm	1.17

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

#### Header (Mated height: 1.0 mm and 1.2 mm)







Dimension table (mm)

Number of pins/ dimension	А		С
10	3.80	1.60	3.20
12	4.20	2.00	3.60
14	4.60	2.40	4.00
16	5.00	2.80	4.40
20	5.80	3.60	5.20
22	6.20	4.00	5.60
24	6.60	4.40	6.00
26	7.00	4.80	6.40
28	7.40	5.20	6.80
30	7.80	5.60	7.20
32	8.20	6.00	7.60
34	8.60	6.40	8.00
36	9.00	6.80	8.40
40	9.80	7.60	9.20
42	10.20	8.00	9.60
44	10.60	8.40	10.00
48	11.40	9.20	10.80
50	11.80	9.60	11.20
54	12.60	10.40	12.00
60	13.80	11.60	13.20
64	14.60	12.40	14.00
70	15.80	13.60	15.20
80	17.80	15.60	17.20

General tolerance: ±0.2

Mated height/ dimension	D
1.0mm	0.83
1.2mm	1.01

#### Socket and Header are mated





Mated height: 1.0 mm

Mated height: 1.2 mm

Leading direction after packaging

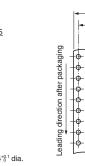
#### EMBOSSED TAPE DIMENSIONS (Unit: mm) (Common to all sockets and headers)

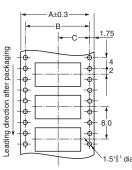
#### · Specifications for taping

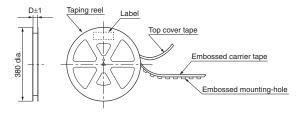
#### • Specifications for the plastic reel (In accordance with JIS C 0806:1990. However, not applied to (In accordance with EIAJET-7200B.) the mounting-hole pitch of some connectors.)

Tape I A±0.3

Tape II



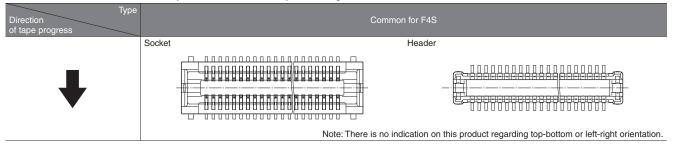




#### • Dimension table (Unit: mm)

	Type/Mated height	Number of pins	Type of taping	А	В	С	D	Quantity per reel
Common for sockets and headers: 1.0mm, 1.2mm	Common for	24 or less	Tape I	16.00	_	7.50	17.40	3,000
		26 to 70	Tape I	24.00	_	11.50	25.40	3,000
	80	Tape II	32.00	28.40	14.20	33.40	3,000	

#### • Connector orientation with respect to embossed tape feeding direction



For board-to-FPC

Connectors for inspection usage (0.4mm pitch)

F4S Series



RoHS compliant

#### **FEATURES**

- 1. 3,000 mating and unmating cycles
- 2. Same external dimensions and foot pattern 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	10	12	14	16	20	22	24	26	28	30	32	34	36	40	42	44	48	50	54	60	64	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.
- 5. Please note that this inspection connector cannot be connected to standard models with a stacking height of 1.2 mm (AXT5\*\*224 and AXT6\*\*224). Please contact our sales office for a type connectable to models with a stacking height of 1.2 mm.

#### **PRODUCT TYPES**

	Specifications	Part No.		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 local sales office.

#### **NOTES**

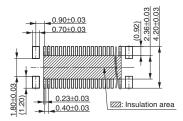
- 1. For high resistance to drop impact the F4 series is recommended.
- 2. Recommended PC board and metal mask patterns

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

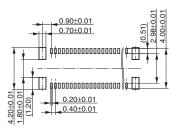
In order to reduce solder and flux rise, solder bridges and other issues make sure the proper levels of solder is used. The figures to the right are recommended metal mask patterns. Please use them as a reference.

#### Socket (Mated height: 1.0 mm)

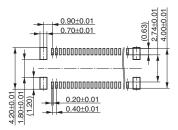
Recommended PC board pattern (TOP VIEW)



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

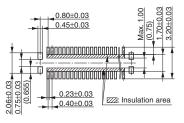


Recommended metal mask pattern Metal mask thickness: When 120µm (Terminal opening ratio: 60%) (Metal-part opening ratio: 100%)

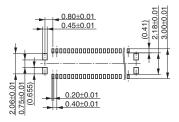


#### • Header (Mated height: 1.0 mm)

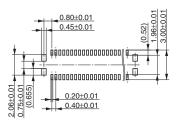
Recommended PC board pattern (TOP VIEW)



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



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



Please note that this inspection connector cannot be connected to standard models with a stacking height of 1.2 mm (AXT5\*\*224 and AXT6\*\*224).

Please contact our sales office for a type connectable to models with a stacking height of 1.2 mm.

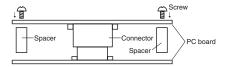
Please refer to the latest product specifications when designing your product.

#### Regarding the design of devices and PC board patterns

- 1) When connecting several connectors together by stacking, make sure to maintain proper accuracy in the design of structure and mounting equipment so that the connectors are not subjected to twisting and torsional forces.
- 2) With mounting equipment, there may be up to a  $\pm 0.2$  to 0.3-mm error in positioning. Be sure to design PC boards and patterns while taking into consideration the performance and abilities of the required equipment.
- 3) Some connectors have tabs embossed on the body to aid in positioning. When using these connectors, make sure that the PC board is designed with positioning holes to match these tabs.
- 4) To ensure the required mechanical strength when soldering the connector terminals, make sure the PC board meets recommended PC board pattern design dimensions given.

5) For all connectors of the narrow pitch series, to prevent the PC board from coming off during vibrations or impacts, and to prevent loads from falling directly on the soldered portions, be sure to design some means to fix the PC board in place.

#### Example) Secure in place with screws



When connecting PC boards, take appropriate measures to prevent the connector from coming off.

- 6) Notes when using a FPC.
- (1) When the connector is soldered to an FPC board, during its insertion and removal procedures, forces may be applied to the terminals and cause the soldering to come off. It is recommended to use a reinforcement board on the

backside of the FPC board to which the connector is being connected. Please make the reinforcement board dimensions bigger than the outer limits of the recommended PC board pattern (should be approximately 1 mm greater than the outer limit).

Material should be glass epoxy or polyimide, and the thickness should be between 0.2 and 0.3 mm.

- (2) Collisions, impacts, or turning of FPC boards, may apply forces on the connector and cause it to come loose. Therefore, make to design retaining plates or screws that will fix the connector in place.
- 7) The narrow pitch connector series is designed to be compact and thin. Although ease of handling has been taken into account, take care when mating the connectors, as displacement or angled mating could damage or deform the connector.

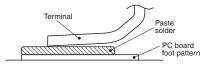
## Regarding the selection of the connector placement machine and the mounting procedures

- 1) Select the placement machine taking into consideration the connector height, required positioning accuracy, and packaging conditions.
- 2) Be aware that if the catching force of the placement machine is too great, it may deform the shape of the connector body or connector terminals.
- 3) Be aware that during mounting, external forces may be applied to the connector contact surfaces and terminals and cause deformations.
- 4) Depending on the size of the connector being used, self alignment may not be possible. In such cases, be sure to carefully position the terminal with the PC board pattern.
- 5) The positioning bosses give an approximate alignment for positioning on the PC board. For accurate positioning of the connector when mounting it to the PC board, we recommend using an automatic positioning machine.
- 6) Excessive mounter chucking force may deform the molded or metal part of the connector. Consult us in advance if chucking is to be applied.

#### Regarding soldering

#### 1. Reflow soldering

- 1) Measure the recommended profile temperature for reflow soldering by placing a sensor on the PC board near the connector surface or terminals. (The setting for the sensor will differ depending on the sensor used, so be sure to carefully read the instructions that comes with it.)
- 2) As for cream solder printing, screen printing is recommended.
- 3) To determine the relationship between the screen opening area and the PC-board foot pattern area, refer to the diagrams in the recommended patterns for PC boards and metal masks. Make sure to use the terminal tip as a reference position when setting. Avoid an excessive amount of solder from being applied, otherwise, interference by the solder will cause an imperfect contact.

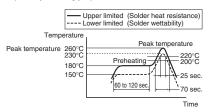


- Consult us when using a screenprinting thickness other than that recommended.
- 5) When mounting on both sides of the PC board and the connector is mounting on the underside, use adhesives or other means to ensure the connector is properly fixed to the PC board. (Double reflow soldering on the same side is possible.)
- 6) N₂ reflow, conducting reflow soldering in a nitrogen atmosphere, increases the solder flow too greatly, enabling wicking to occur. Make sure that the solder feed rate and temperature profile are appropriate.

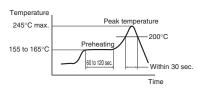
#### Soldering conditions

Please use the reflow temperature profile conditions recommended below for reflow soldering. Please contact us before using a temperature profile other than that described below (e.g. lead-free solder).

 Narrow pitch connectors (except P8 type)



Narrow pitch connector (P8)



For products other than the ones above, please refer to the latest product specifications.

- 7) The temperatures are measured at the surface of the PC board near the connector terminals. (The setting for the sensor will differ depending on the sensor used, so be sure to carefully read the instructions that comes with it.)
- 8) The temperature profiles given in this catalog are values measured when using the connector on a resin-based PC board. When performed reflow soldering on a metal board (iron, aluminum, etc.) or a metal table to mount on a FPC, make sure there is no deformation or discoloration of the connector beforehand and then begin mounting.
- 9) Consult us when using a screenprinting thickness other than that recommended.
- 10) Some solder and flux types may cause serious solder or flux creeping. Solder and flux characteristics should be taken into consideration when setting the reflow soldering conditions.

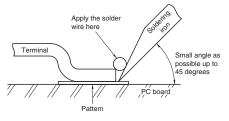
#### 2. Hand soldering

1) Set the soldering iron so that the tip temperature is less than that given in the table below.

Table A

Product name	Soldering iron temperature
SMD type connectors	300°C within 5 sec. 350°C within 3 sec.

- Do not allow flux to spread onto the connector leads or PC board. This may lead to flux rising up to the connector inside.
- 3) Touch the soldering iron to the foot pattern. After the foot pattern and connector terminal are heated, apply the solder wire so it melts at the end of the connector terminals.



- Be aware that soldering while applying a load on the connector terminals may cause improper operation of the connector.
- 5) Thoroughly clean the soldering iron.
- 6) Flux from the solder wire may get on the contact surfaces during soldering operations. After soldering, carefully check the contact surfaces and clean off any solder before use.
- 7) For soldering of prototype devices during product development, you can perform soldering at the necessary locations by heating with a hot-air gun by applying cream solder to the foot pattern beforehand. However, at this time, make sure that the air pressure does not move connectors by carefully holding them down with tweezers or other similar tool. Also, be careful not to go too close to the connectors and melt any of the molded components.
- 8) If an excessive amount of solder is applied during manual soldering, the solder may creep up near the contact points, or solder interference may cause imperfect contact.

#### 3. Solder reworking

- 1) Finish reworking in one operation.
- For reworking of the solder bridge, use a soldering iron with a flat tip. To prevent flux from climbing up to the contact surfaces, do not add more flux.
- 3) Keep the soldering iron tip temperature below the temperature given in Table A.

#### **Handling Single Components**

- 1) Make sure not to drop or allow parts to fall from work bench
- 2) Excessive force applied to the terminals could cause warping, come out, or weaken the adhesive strength of the solder. Handle with care.
- 3) Repeated bending of the terminals may cause terminals to break.
- 4) Do not insert or remove the connector when it is not soldered. Forcibly applied external pressure on the terminals can weaken the adherence of the terminals to the molded part or cause the terminals to lose their evenness.
- 5) Excessive prying-force applied to one end may cause product breakage and separation of the solder joints at the terminal.

Excessive force applied for insertion in a pivot action as shown may also cause product breakage.

Align the header and socket positions before connecting them.



#### Cleaning flux from PC board

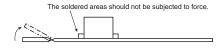
- To increase the cleanliness of the cleaning fluid and cleaning operations, prepare equipment for cleaning process beginning with boil cleaning, ultrasonic cleaning, and then vapor cleaning.
   Carefully oversee the cleanliness of
- cleaning, and then vapor cleaning.

  2) Carefully oversee the cleanliness of the cleaning fluids to make sure that the contact surfaces do not become dirty from the cleaning fluid itself.
- 3) Since some powerful cleaning solutions may dissolve molded components of the connector and wipe off or discolor printed letters, we recommend aqua pura electronic parts cleaners. Please consult us if you wish to use other types of cleaning fluids.
  4) Please note that the surfaces of molded parts may whiten when cleaned with alcohol.

#### Handling the PC board

 Handling the PC board after mounting the connector

When cutting or bending the PC board after mounting the connector, be careful that the soldered sections are subjected to excessive force.



#### Storage of connectors

1) To prevent problems from voids or air pockets due to heat of reflow soldering, avoid storing the connectors in areas of high humidity. When storing the connectors for more than six months, be sure to consider storage area where the humidity is properly controlled.

 Depending on the connector type, the color of the connector may vary from connector to connector depending on when it is produced. Some connectors may change color slightly if subjected to ultraviolet rays during storage. This is normal and will not affect the operation of the connector.

3) When storing the connectors with the PC boards assembled and components alreeady set, be careful not to stack them up so the connectors are subjected to excessive forces.

4) Avoid storing the connectors in locations with excessive dust. The dust may accumulate and cause improper connections at the contact surfaces.

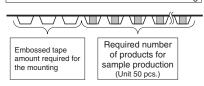
#### **Other Notes**

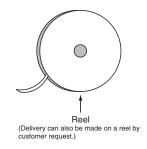
- 1) These products are made for the design of compact and lightweight devices and therefore the thickness of the molded components has been made very thin. Therefore, be careful during insertion and removal operations for excessive forces applied may damage the products.
- Dropping of the products or rough mishandling may bend or damage the terminals and possibly hinder proper reflow soldering.
- 3) Before soldering, try not to insert or remove the connector more than absolutely necessary.
- 4) When coating the PC board after soldering the connector to prevent the deterioration of insulation, perform the coating in such a way so that the coating does not get on the connector.
- 5) There may be variations in the colors of products from different production lots. This is normal.
- 6) The connectors are not meant to be used for switching.
- 7) Be sure not to allow external pressure to act on connectors when assembling PCBs or moving in block assemblies.

#### Regarding sample orders to confirm proper mounting

When ordering samples to confirm proper mounting with the placement machine, connectors are delivered in 50-piece units in the condition given right. Consult a sale representative for ordering sample units.

Condition when delivered from manufacturing



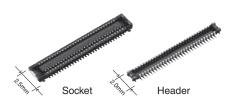


Please refer to the latest product specifications when designing your product.

## Narrow pitch connectors (0.35mm pitch)

## A35S Series



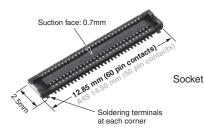


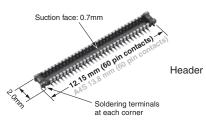
**RoHS** compliant

#### **FEATURES**

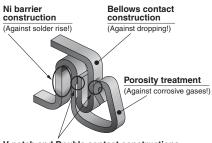
1. Small size (Terminal pitch: 0.35 mm, width: 2.5 mm and Mated height: 0.8 mm)

When mated, the footprint is reduced by approx. 10% from A4S series (60 pin contacts), contributing to the functionality enhancement and size reduction of end equipment.





2. "TDUGH CONTRET" ensures high resistance to various environments in lieu of its space-saving footprint.



V notch and Double contact constructions

(Against foreign particles and flux!)

- 3. Low-profile connector with up to 100 pin contacts.
- 4. Soldering terminals at each corner enhance mounting strength.
- 5. Simple lock structure provides tactile feedback to ensure excellent mating/unmating operation feel.
  6. Gull-wing-shaped terminals to
- 6. Gull-wing-shaped terminals t facilitate visual inspections.

#### **APPLICATIONS**

Suitable for board-to-FPC connections in mobile equipment that requires size and thickness reduction and functionality enhancement.

#### ORDERING INFORMATION

AXE		1	2	
7: Narrow Pitch Connector A35S (0.35 mm pitch) Socket 8: Narrow Pitch Connector A35S (0.35 mm pitch) Header				
Number of pins (2 digits)				
Mated height <socket> / <header> 1: For mated height 0.8 mm</header></socket>				
Functions 2: Without positioning bosses				
Surface treatment (Contact portion / Terminal portion) <socket> 7: Base: Ni plating, Surface: Au plating (for Ni barrier available) <header></header></socket>			_	
4: Base: Ni plating, Surface: Au plating				

#### **PRODUCT TYPES**

Mated height	Number of pins	Part number		Pac	king
Maleu Height	Number of pins	Socket	Header	Inner carton (1-reel)	Outer carton
	10	AXE710127	AXE810124		
	12	AXE712127	AXE812124		
	20	AXE720127	AXE820124		
	24	AXE724127	AXE824124		
	30	AXE730127	AXE830124	5,000 pieces	
	34	AXE734127	AXE834124		
0.8mm	40	AXE740127	AXE840124		10,000 pieces
	44	AXE744127	AXE844124		
	50	AXE750127	AXE850124		
	60	AXE760127	AXE860124		
	64	AXE764127	AXE864124		
	70	AXE770127	AXE870124		
	100	AXE700127	AXE800124		

Notes: 1. Order unit:

For volume production: 1-inner carton (1-reel) units
Samples for mounting check: 50-connector units. Please contact our sales office.
Samples: Small lot orders are possible. Please contact our sales office.

2. Please contact us for connectors having a number of pins other than those listed above.

#### **SPECIFICATIONS**

#### 1. Characteristics

	Item	Specifications	Conditions			
	Rated current	0.25A/pin contact (Max. 4 A at total pin contacts)				
	Rated voltage	60V AC/DC				
Electrical characteristics	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.			
Characteristics	Insulation resistance	Min. 1,000MΩ (initial)	Using 250V DC megger (applied for 1 min.)			
	Contact resistance	Max. 100mΩ	Based on the contact resistance measurement method specified by JIS C 5402.			
	Composite insertion force	Max. 0.981N/pin contacts × pin contacts (initial)				
Mechanical	Composite removal force	Min. 0.165N/pin contacts × pin contacts				
characteristics	Contact holding force (Socket contact)	Min. 0.20N/pin contacts	Measuring the maximum force. As the contact is axially pull out.			
	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.			
			Conformed to MIL-STD-202F, method 107G			
	Thermal shock resistance (header and socket mated)	mal shock resistance 5 cycles,	Order Temperature (°C) Time (minutes)			
			1 -55-3 30			
Environmental		insulation resistance min. $100M\Omega$ , contact resistance max. $100m\Omega$	2 S Max. 5			
characteristics		Contact resistance max. 100mg	3 85+3 30 4 Max 5			
			4 \ \ \ Max. 5 \ -55_\frac{0}{3}			
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100M $\Omega$ , contact resistance max. 100m $\Omega$	Bath temperature 40±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. 100m $\Omega$	Bath temperature 35±2°C, saltwater concentration 5±1%			
	H <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. 100m $Ω$	Bath temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.			
Lifetime characteristics	Insertion and removal life	30 times	Repeated insertion and removal speed of max. 200 times/ hours			
Unit weight		60 pin contact type: Socket: 0.03 g Header: 0.02 g				

#### 2. Material and surface treatment

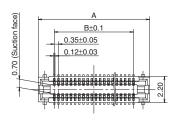
Part name	Material	Surface treatment
Molded	LCP resin	
portion	(UL94V-0)	
Contact and Post	Copper alloy	Contact portion: Base: Ni plating, Surface: Au plating Terminal portion: Base: Ni plating, Surface: Au plating (except the terminal tips) The socket terminals close to the portion to be soldered have 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)

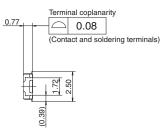
#### **DIMENSIONS** (Unit: mm) Socket (Mated height: 0.8 mm)

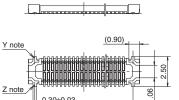
The CAD data of the products with a CAD Data mark can be downloaded from: http://industrial.panasonic.com/ac/e/

CAD Data









General tolerance: ±0.2

#### Dimension table (mm)

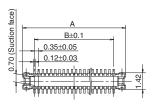
А		С
4.10	1.40	3.00
4.45	1.75	3.35
5.85	3.15	4.75
6.55	3.85	5.45
7.60	4.90	6.50
8.30	5.60	7.20
9.35	6.65	8.25
10.05	7.35	8.95
11.10	8.40	10.00
12.85	10.15	11.75
13.55	10.85	12.45
14.60	11.90	13.50
19.85	17.15	18.75
	4.10 4.45 5.85 6.55 7.60 8.30 9.35 10.05 11.10 12.85 13.55	4.10 1.40 4.45 1.75 5.85 3.15 6.55 3.85 7.60 4.90 8.30 5.60 9.35 6.65 10.05 7.35 11.10 8.40 12.85 10.15 13.55 10.85 14.60 11.90

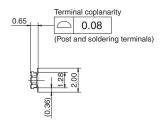
Note: Since the soldering terminals has a single-piece construction, sections Y and Z are electrically connected.

#### Header (Mated height: 0.8 mm)

#### CAD Data

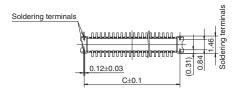






#### Dimension table (mm)

Number of pins/ dimension	А	В	С
10	3.40	1.40	2.80
12	3.75	1.75	3.15
20	5.15	3.15	4.55
24	5.85	3.85	5.25
30	6.90	4.90	6.30
34	7.60	5.60	7.00
40	8.65	6.65	8.05
44	9.35	7.35	8.75
50	10.40	8.40	9.80
60	12.15	10.15	11.55
64	12.85	10.85	12.25
70	13.90	11.90	13.30
100	19.15	17.15	18.55



General tolerance: ±0.2

#### Socket and Header are mated



#### EMBOSSED TAPE DIMENSIONS (Unit: mm)

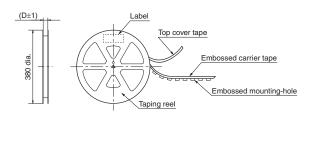
#### Specifications for taping

(In accordance with JIS C 0806-3:1999. However, not applied to the mounting-hole pitch of some connectors.)

# Tape I Tape II (A±0.3) (A±0.3) (B) (C) (1.75) (G/4) (1.75) (G/4) (G/5) (

#### • Specifications for the plastic reel

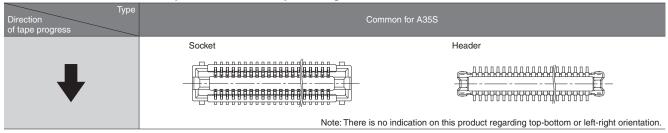
(In accordance with EIAJ ET-7200B.)



#### • Dimension table (Unit: mm)

Type/Mated height	Number of pins	Type of taping			С	D	Quantity per reel
	10 to 24	Tape I	16.00	_	7.50	17.40	5,000
Common for sockets and headers 0.8mm	30 to 70	Tape I	24.00	_	11.50	25.40	5,000
0.011111	100	Tape II	32.00	28.40	14.20	33.40	5,000

#### • Connector orientation with respect to embossed tape feeding direction



#### **NOTES**

#### ■ Design of PC board patterns

Conduct the recommended foot pattern design, in order to preserve the mechanical strength of terminal solder areas.

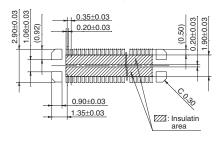
## ■ Recommended PC board and metal mask patterns

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

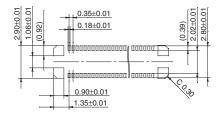
In order to reduce solder and flux rise, solder bridges and other issues make sure the proper levels of solder is used. The figures to the right are recommended metal mask patterns. Please use them as a reference.

#### Socket (Mated height: 0.8 mm)

Recommended PC board pattern (TOP VIEW)

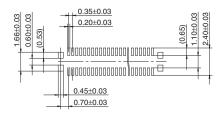


#### Recommended metal mask pattern Metal mask thickness: When 120μm (Terminal opening ratio: 70%) (Metal-part opening ratio: 100%)

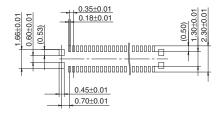


#### • Header (Mated height: 0.8 mm)

Recommended PC board pattern (TOP VIEW)



#### Recommended metal mask pattern Metal mask thickness: When 120μm (Terminal opening ratio: 70%) (Metal-part opening ratio: 100%)



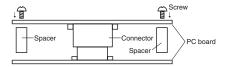
Please refer to the latest product specifications when designing your product.

#### Regarding the design of devices and PC board patterns

- 1) When connecting several connectors together by stacking, make sure to maintain proper accuracy in the design of structure and mounting equipment so that the connectors are not subjected to twisting and torsional forces.
- 2) With mounting equipment, there may be up to a  $\pm 0.2$  to 0.3-mm error in positioning. Be sure to design PC boards and patterns while taking into consideration the performance and abilities of the required equipment.
- 3) Some connectors have tabs embossed on the body to aid in positioning. When using these connectors, make sure that the PC board is designed with positioning holes to match these tabs.
- 4) To ensure the required mechanical strength when soldering the connector terminals, make sure the PC board meets recommended PC board pattern design dimensions given.

5) For all connectors of the narrow pitch series, to prevent the PC board from coming off during vibrations or impacts, and to prevent loads from falling directly on the soldered portions, be sure to design some means to fix the PC board in place.

#### Example) Secure in place with screws



When connecting PC boards, take appropriate measures to prevent the connector from coming off.

- 6) Notes when using a FPC.
- (1) When the connector is soldered to an FPC board, during its insertion and removal procedures, forces may be applied to the terminals and cause the soldering to come off. It is recommended to use a reinforcement board on the

backside of the FPC board to which the connector is being connected. Please make the reinforcement board dimensions bigger than the outer limits of the recommended PC board pattern (should be approximately 1 mm greater than the outer limit).

Material should be glass epoxy or polyimide, and the thickness should be between 0.2 and 0.3 mm.

- (2) Collisions, impacts, or turning of FPC boards, may apply forces on the connector and cause it to come loose. Therefore, make to design retaining plates or screws that will fix the connector in place.
- 7) The narrow pitch connector series is designed to be compact and thin. Although ease of handling has been taken into account, take care when mating the connectors, as displacement or angled mating could damage or deform the connector.

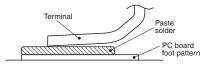
## Regarding the selection of the connector placement machine and the mounting procedures

- 1) Select the placement machine taking into consideration the connector height, required positioning accuracy, and packaging conditions.
- 2) Be aware that if the catching force of the placement machine is too great, it may deform the shape of the connector body or connector terminals.
- 3) Be aware that during mounting, external forces may be applied to the connector contact surfaces and terminals and cause deformations.
- 4) Depending on the size of the connector being used, self alignment may not be possible. In such cases, be sure to carefully position the terminal with the PC board pattern.
- 5) The positioning bosses give an approximate alignment for positioning on the PC board. For accurate positioning of the connector when mounting it to the PC board, we recommend using an automatic positioning machine.
- 6) Excessive mounter chucking force may deform the molded or metal part of the connector. Consult us in advance if chucking is to be applied.

#### Regarding soldering

#### 1. Reflow soldering

- 1) Measure the recommended profile temperature for reflow soldering by placing a sensor on the PC board near the connector surface or terminals. (The setting for the sensor will differ depending on the sensor used, so be sure to carefully read the instructions that comes with it.)
- 2) As for cream solder printing, screen printing is recommended.
- 3) To determine the relationship between the screen opening area and the PC-board foot pattern area, refer to the diagrams in the recommended patterns for PC boards and metal masks. Make sure to use the terminal tip as a reference position when setting. Avoid an excessive amount of solder from being applied, otherwise, interference by the solder will cause an imperfect contact.

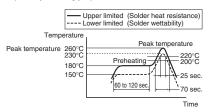


- Consult us when using a screenprinting thickness other than that recommended.
- 5) When mounting on both sides of the PC board and the connector is mounting on the underside, use adhesives or other means to ensure the connector is properly fixed to the PC board. (Double reflow soldering on the same side is possible.)
- 6) N₂ reflow, conducting reflow soldering in a nitrogen atmosphere, increases the solder flow too greatly, enabling wicking to occur. Make sure that the solder feed rate and temperature profile are appropriate.

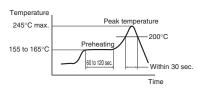
#### Soldering conditions

Please use the reflow temperature profile conditions recommended below for reflow soldering. Please contact us before using a temperature profile other than that described below (e.g. lead-free solder).

 Narrow pitch connectors (except P8 type)



Narrow pitch connector (P8)



For products other than the ones above, please refer to the latest product specifications.

- 7) The temperatures are measured at the surface of the PC board near the connector terminals. (The setting for the sensor will differ depending on the sensor used, so be sure to carefully read the instructions that comes with it.)
- 8) The temperature profiles given in this catalog are values measured when using the connector on a resin-based PC board. When performed reflow soldering on a metal board (iron, aluminum, etc.) or a metal table to mount on a FPC, make sure there is no deformation or discoloration of the connector beforehand and then begin mounting.
- 9) Consult us when using a screenprinting thickness other than that recommended.
- 10) Some solder and flux types may cause serious solder or flux creeping. Solder and flux characteristics should be taken into consideration when setting the reflow soldering conditions.

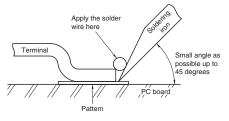
#### 2. Hand soldering

1) Set the soldering iron so that the tip temperature is less than that given in the table below.

Table A

Product name	Soldering iron temperature
SMD type connectors	300°C within 5 sec. 350°C within 3 sec.

- Do not allow flux to spread onto the connector leads or PC board. This may lead to flux rising up to the connector inside.
- 3) Touch the soldering iron to the foot pattern. After the foot pattern and connector terminal are heated, apply the solder wire so it melts at the end of the connector terminals.



- Be aware that soldering while applying a load on the connector terminals may cause improper operation of the connector.
- 5) Thoroughly clean the soldering iron.
- 6) Flux from the solder wire may get on the contact surfaces during soldering operations. After soldering, carefully check the contact surfaces and clean off any solder before use.
- 7) For soldering of prototype devices during product development, you can perform soldering at the necessary locations by heating with a hot-air gun by applying cream solder to the foot pattern beforehand. However, at this time, make sure that the air pressure does not move connectors by carefully holding them down with tweezers or other similar tool. Also, be careful not to go too close to the connectors and melt any of the molded components.
- 8) If an excessive amount of solder is applied during manual soldering, the solder may creep up near the contact points, or solder interference may cause imperfect contact.

#### 3. Solder reworking

- 1) Finish reworking in one operation.
- For reworking of the solder bridge, use a soldering iron with a flat tip. To prevent flux from climbing up to the contact surfaces, do not add more flux.
- 3) Keep the soldering iron tip temperature below the temperature given in Table A.

#### **Handling Single Components**

- 1) Make sure not to drop or allow parts to fall from work bench
- 2) Excessive force applied to the terminals could cause warping, come out, or weaken the adhesive strength of the solder. Handle with care.
- 3) Repeated bending of the terminals may cause terminals to break.
- 4) Do not insert or remove the connector when it is not soldered. Forcibly applied external pressure on the terminals can weaken the adherence of the terminals to the molded part or cause the terminals to lose their evenness.
- 5) Excessive prying-force applied to one end may cause product breakage and separation of the solder joints at the terminal.

Excessive force applied for insertion in a pivot action as shown may also cause product breakage.

Align the header and socket positions before connecting them.



#### Cleaning flux from PC board

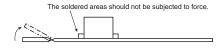
- To increase the cleanliness of the cleaning fluid and cleaning operations, prepare equipment for cleaning process beginning with boil cleaning, ultrasonic cleaning, and then vapor cleaning.
   Carefully oversee the cleanliness of
- cleaning, and then vapor cleaning.

  2) Carefully oversee the cleanliness of the cleaning fluids to make sure that the contact surfaces do not become dirty from the cleaning fluid itself.
- 3) Since some powerful cleaning solutions may dissolve molded components of the connector and wipe off or discolor printed letters, we recommend aqua pura electronic parts cleaners. Please consult us if you wish to use other types of cleaning fluids.
  4) Please note that the surfaces of molded parts may whiten when cleaned with alcohol.

#### Handling the PC board

 Handling the PC board after mounting the connector

When cutting or bending the PC board after mounting the connector, be careful that the soldered sections are subjected to excessive force.



#### Storage of connectors

1) To prevent problems from voids or air pockets due to heat of reflow soldering, avoid storing the connectors in areas of high humidity. When storing the connectors for more than six months, be sure to consider storage area where the humidity is properly controlled.

 Depending on the connector type, the color of the connector may vary from connector to connector depending on when it is produced. Some connectors may change color slightly if subjected to ultraviolet rays during storage. This is normal and will not affect the operation of the connector.

3) When storing the connectors with the PC boards assembled and components alreeady set, be careful not to stack them up so the connectors are subjected to excessive forces.

4) Avoid storing the connectors in locations with excessive dust. The dust may accumulate and cause improper connections at the contact surfaces.

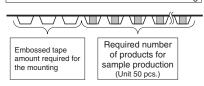
#### **Other Notes**

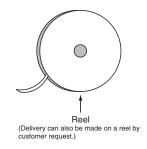
- 1) These products are made for the design of compact and lightweight devices and therefore the thickness of the molded components has been made very thin. Therefore, be careful during insertion and removal operations for excessive forces applied may damage the products.
- Dropping of the products or rough mishandling may bend or damage the terminals and possibly hinder proper reflow soldering.
- 3) Before soldering, try not to insert or remove the connector more than absolutely necessary.
- 4) When coating the PC board after soldering the connector to prevent the deterioration of insulation, perform the coating in such a way so that the coating does not get on the connector.
- 5) There may be variations in the colors of products from different production lots. This is normal.
- 6) The connectors are not meant to be used for switching.
- 7) Be sure not to allow external pressure to act on connectors when assembling PCBs or moving in block assemblies.

#### Regarding sample orders to confirm proper mounting

When ordering samples to confirm proper mounting with the placement machine, connectors are delivered in 50-piece units in the condition given right. Consult a sale representative for ordering sample units.

Condition when delivered from manufacturing



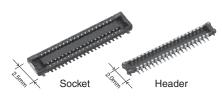


Please refer to the latest product specifications when designing your product.

For board-to-FPC

#### Narrow pitch connectors (0.4mm pitch)





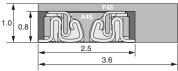
RoHS compliant

#### **FEATURES**

#### 1. 2.5 mm wide slim two-piece type connector

Compact and slim structure contributes overall miniaturization of product design. <Compared to F4S series (40 pin contacts, when mated)>

- Width: 30% down
- Footprint: 30% down



2. "TOUGH CONTRET" ensures high resistance to various environments in lieu of slim and low profile body



Ni barrier construction Bellows contact construction (Against solder rise!) (Against dropping!) Porosity treatment (Against corrosive gases!)

V notch and Double contact constructions

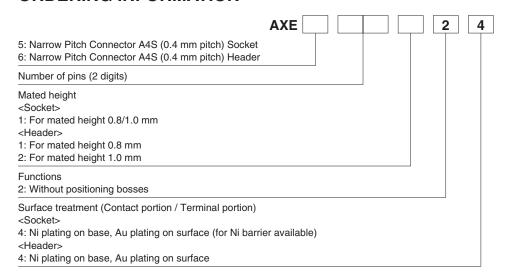
(Against foreign particles and flux!)

- 3. Mated heights of 0.8 and 1.0 mm are available for the same foot pattern.
- 4. Connectors for inspection available

#### **APPLICATIONS**

Recommended for board-to-FPC connections of mobile equipment, such as cellular phones, smart phones, laptops, and portable music

#### ORDERING INFORMATION



#### **PRODUCT TYPES**

Mated height	Number of pins	Part r	umber	Packi	ng
Maleu Height	Number of pins	Socket	Header	Inner carton (1-reel)	Outer carton
	10	AXE510124	AXE610124		
	12	AXE512124	AXE612124		
	14	AXE514124	AXE614124		
	16	AXE516124	AXE616124		
	18	AXE518124	AXE618124		
	20	AXE520124	AXE620124		
	22	AXE522124	AXE622124		
	24	AXE524124	AXE624124		
	26	AXE526124	AXE626124		
	28	AXE528124	AXE628124		
0.8mm	30	AXE530124	AXE630124		
0.011111	32	AXE532124	AXE632124		
	34	AXE534124	AXE634124		10,000 pieces
	36	AXE536124	AXE636124		
	40	AXE540124	AXE640124		
	44	AXE544124	AXE644124		
	50	AXE550124	AXE650124		
	54	AXE554124	AXE654124		
	60	AXE560124	AXE660124	5,000 pieces	
	64	AXE564124	AXE664124		
	70	AXE570124	AXE670124		
	80	AXE580124	AXE680124		
	10	AXE510124	AXE610224		
	12	AXE512124	AXE612224		
	14	AXE514124	AXE614224		
	20	AXE520124	AXE620224		
	24	AXE524124	AXE624224		
	26	AXE526124	AXE626224		
	30	AXE530124	AXE630224		
1.0mm	32	AXE532124	AXE632224		
	40	AXE540124	AXE640224		
	44	AXE544124	AXE644224		
	50	AXE550124	AXE650224		
	54	AXE554124	AXE654224		
	60	AXE560124	AXE660224		
	70	AXE570124	AXE670224		
	80	AXE580124	AXE680224		

Notes: 1. Order unit:
For volume production: 1-inner carton (1-reel) units
Samples for mounting check: 50-connector units. Please contact our sales office.
Samples: Small lot orders are possible. Please contact our sales office.
2. Please contact us for connectors having a number of pins other than those listed above.

#### **SPECIFICATIONS**

#### ■ Characteristics

	Item	Specifications		Co	nditions		
	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.		No short-circuiting or damage at a detection current of when the specified voltage is applied for one minute.			
characteristics	Insulation resistance	Min. 1,000M $\Omega$ (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. 1.200N/pin contacts × pin contacts (initial)					
Mechanical	Composite removal force	Min. 0.165N/pin contacts × pin contacts					
characteristics	Contact holding force (Socket contact)	Min. 0.20N/pin contacts		ing the maximum for contact is axially pull			
	Ambient temperature	-55°C to +85°C	No free:	zing at low temperat	ures. No dew condensation.		
	Soldering heat resistance	Peak temperature: 260°C or less (on the surface of the PC board around the connector terminals)	Infrared	rared reflow soldering			
Sto	-	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.				
			Conformed to MIL-STD-202F, method 107G				
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100M $\Omega$ , contact resistance max. 90m $\Omega$	Order	Temperature (°C)	Time (minutes)		
			1	-55 <sub>-3</sub>	30		
Environmental			2	S	Max. 5		
characteristics			3	85 <sup>+3</sup> <sub>0</sub>	30		
			4	<b>S</b>	Max. 5		
				<b>−</b> 55 <sub>−3</sub> °			
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. $100M\Omega$ , contact resistance max. $90m\Omega$		Bath temperature 40±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. $90m\Omega$		Bath temperature 35±2°C, saltwater concentration 5±1%			
	H <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. $90m\Omega$		Bath temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.			
Lifetime characteristics	Insertion and removal life	30 times	Repeate	Repeated insertion and removal speed of max. 200 times/ hours			
Unit weight		20 pin contact type: Socket: 0.02 g Header: 0.01 g					

#### ■ Material and surface treatment

- material	material and cariace acatinent					
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)				

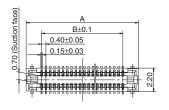
#### **DIMENSIONS** (Unit: mm)

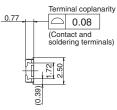
The CAD data of the products with a CAD Data mark can be downloaded from: http://industrial.panasonic.com/ac/e/

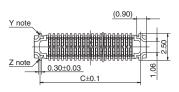
■ Socket (Mated height: 0.8 mm/1.0 mm)

#### CAD Data









General tolerance: ±0.2

#### Dimension table (mm)

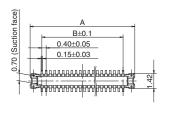
Number of pins/ dimension	А	В	С
10	4.50	1.60	3.40
12	4.90	2.00	3.80
14	5.30	2.40	4.20
16	5.70	2.80	4.60
18	6.10	3.20	5.00
20	6.50	3.60	5.40
22	6.90	4.00	5.80
24	7.30	4.40	6.20
26	7.70	4.80	6.60
28	8.10	5.20	7.00
30	8.50	5.60	7.40
32	8.90	6.00	7.80
34	9.30	6.40	8.20
36	9.70	6.80	8.60
40	10.50	7.60	9.40
44	11.30	8.40	10.20
50	12.50	9.60	11.40
54	13.30	10.40	12.20
60	14.50	11.60	13.40
64	15.30	12.40	14.20
70	16.50	13.60	15.40
80	18.50	15.60	17.40

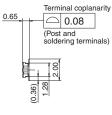
#### Note: Since the soldering terminals has a single-piece construction, sections Y and Z are electrically connected.

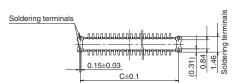
#### ■ Header (Mated height: 0.8 mm)

#### CAD Data









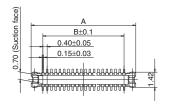
General tolerance: ±0.2

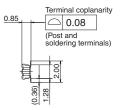
#### Dimension table (mm)

Number of pins/ dimension	Α		С
10	3.80	1.60	3.20
12	4.20	2.00	3.60
14	4.60	2.40	4.00
16	5.00	2.80	4.40
18	5.40	3.20	4.80
20	5.80	3.60	5.20
22	6.20	4.00	5.60
24	6.60	4.40	6.00
26	7.00	4.80	6.40
28	7.40	5.20	6.80
30	7.80	5.60	7.20
32	8.20	6.00	7.60
34	8.60	6.40	8.00
36	9.00	6.80	8.40
40	9.80	7.60	9.20
44	10.60	8.40	10.00
50	11.80	9.60	11.20
54	12.60	10.40	12.00
60	13.80	11.60	13.20
64	14.60	12.40	14.00
70	15.80	13.60	15.20
80	17.80	15.60	17.20

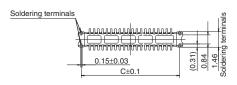
#### ■ Header (Mated height: 1.0 mm)







#### 



General tolerance: ±0.2

#### Dimension table (mm)

Number of pins/ dimension	А		С
10	3.80	1.60	3.20
12	4.20	2.00	3.60
14	4.60	2.40	4.00
20	5.80	3.60	5.20
24	6.60	4.40	6.00
26	7.00	4.80	6.40
30	7.80	5.60	7.20
32	8.20	6.00	7.60
40	9.80	7.60	9.20
44	10.60	8.40	10.00
50	11.80	9.60	11.20
54	12.60	10.40	12.00
60	13.80	11.60	13.20
70	15.80	13.60	15.20
80	17.80	15.60	17.20

#### ■ Socket and Header are mated





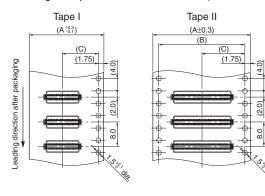
## EMBOSSED TAPE DIMENSIONS (Unit: mm) (Common for respective contact types, sockets and headers)

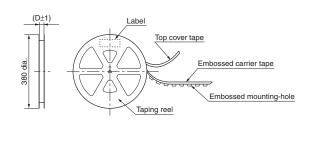
#### ■ Specifications for taping

(In accordance with JIS C 0806-3:1999. However, not applied to the mounting-hole pitch of some connectors.)

#### ■ Specifications for the plastic reel

(In accordance with EIAJ ET-7200B.)

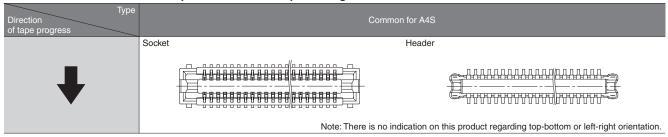




#### ■ Dimension table (Unit: mm)

	'						
Type/Mated height	Number of pins	Type of taping			С	D	Quantity per reel
Common for sockets	Max. 24	Tape I	16.00	_	7.50	17.40	5,000
and headers	26 to 70	Tape I	24.00	_	11.50	25.40	5,000
0.8 mm/1.0 mm	80	Tape II	32.00	28.40	14.20	33.40	5,000

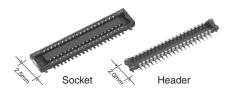
#### ■ Connector orientation with respect to embossed tape feeding direction



For board-to-FPC

# Connectors for inspection usage (0.4mm pitch)

## A4S Series



RoHS compliant

#### **FEATURES**

- 1. 3,000 mating and unmating cycles
- 2. Same external dimensions and foot pattern 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																					
A4S	10	12	14	16	18	20	22	24	26	28	30	32	34	36	40	44	50	54	60	64	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	AXE5E**26	Header	Without positioning bosses	AXE6E**26

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

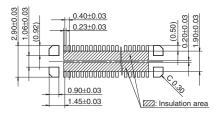
#### **NOTES**

## ■ Recommended PC board and metal mask patterns

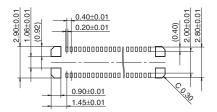
Connectors are mounted with high pitch density, intervals of 0.35 mm, 0.4 mm or 0.5 mm.

In order to reduce solder and flux rise, 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.

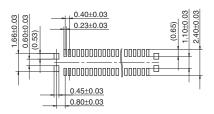
## • Socket (Mated height: 0.8mm/1.0mm) Recommended PC board pattern (TOP VIEW)



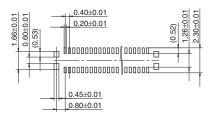
#### Recommended metal mask pattern Metal mask thickness: When 120µm (Terminal opening ratio: 70%) (Metal-part opening ratio: 100%)



## • Header (Mated height: 0.8mm/1.0mm) Recommended PC board pattern (TOP VIEW)



#### Recommended metal mask pattern Metal mask thickness: When 120µm (Terminal opening ratio: 70%) (Metal-part opening ratio: 100%)



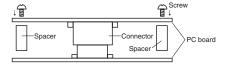
Please refer to the latest product specifications when designing your product.

#### Regarding the design of devices and PC board patterns

- 1) When connecting several connectors together by stacking, make sure to maintain proper accuracy in the design of structure and mounting equipment so that the connectors are not subjected to twisting and torsional forces.
- 2) With mounting equipment, there may be up to a  $\pm 0.2$  to 0.3-mm error in positioning. Be sure to design PC boards and patterns while taking into consideration the performance and abilities of the required equipment.
- 3) Some connectors have tabs embossed on the body to aid in positioning. When using these connectors, make sure that the PC board is designed with positioning holes to match these tabs.
- 4) To ensure the required mechanical strength when soldering the connector terminals, make sure the PC board meets recommended PC board pattern design dimensions given.

5) For all connectors of the narrow pitch series, to prevent the PC board from coming off during vibrations or impacts, and to prevent loads from falling directly on the soldered portions, be sure to design some means to fix the PC board in place.

#### Example) Secure in place with screws



When connecting PC boards, take appropriate measures to prevent the connector from coming off.

- 6) Notes when using a FPC.
- (1) When the connector is soldered to an FPC board, during its insertion and removal procedures, forces may be applied to the terminals and cause the soldering to come off. It is recommended to use a reinforcement board on the

backside of the FPC board to which the connector is being connected. Please make the reinforcement board dimensions bigger than the outer limits of the recommended PC board pattern (should be approximately 1 mm greater than the outer limit).

Material should be glass epoxy or polyimide, and the thickness should be between 0.2 and 0.3 mm.

- (2) Collisions, impacts, or turning of FPC boards, may apply forces on the connector and cause it to come loose. Therefore, make to design retaining plates or screws that will fix the connector in place.
- 7) The narrow pitch connector series is designed to be compact and thin. Although ease of handling has been taken into account, take care when mating the connectors, as displacement or angled mating could damage or deform the connector.

## Regarding the selection of the connector placement machine and the mounting procedures

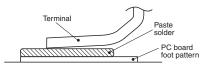
- 1) Select the placement machine taking into consideration the connector height, required positioning accuracy, and packaging conditions.
- 2) Be aware that if the catching force of the placement machine is too great, it may deform the shape of the connector body or connector terminals.
- 3) Be aware that during mounting, external forces may be applied to the connector contact surfaces and terminals and cause deformations.
- 4) Depending on the size of the connector being used, self alignment may not be possible. In such cases, be sure to carefully position the terminal with the PC board pattern.
- 5) The positioning bosses give an approximate alignment for positioning on the PC board. For accurate positioning of the connector when mounting it to the PC board, we recommend using an automatic positioning machine.
- 6) Excessive mounter chucking force may deform the molded or metal part of the connector. Consult us in advance if chucking is to be applied.

# Notes on Using Narrow pitch Connectors

# Regarding soldering

# 1. Reflow soldering

- 1) Measure the recommended profile temperature for reflow soldering by placing a sensor on the PC board near the connector surface or terminals. (The setting for the sensor will differ depending on the sensor used, so be sure to carefully read the instructions that comes with it.)
- 2) As for cream solder printing, screen printing is recommended.
- 3) To determine the relationship between the screen opening area and the PC-board foot pattern area, refer to the diagrams in the recommended patterns for PC boards and metal masks. Make sure to use the terminal tip as a reference position when setting. Avoid an excessive amount of solder from being applied, otherwise, interference by the solder will cause an imperfect contact.

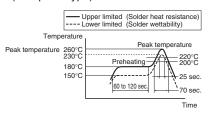


- Consult us when using a screenprinting thickness other than that recommended.
- 5) When mounting on both sides of the PC board and the connector is mounting on the underside, use adhesives or other means to ensure the connector is properly fixed to the PC board. (Double reflow soldering on the same side is possible.)
- 6)  $N_2$  reflow, conducting reflow soldering in a nitrogen atmosphere, increases the solder flow too greatly, enabling wicking to occur. Make sure that the solder feed rate and temperature profile are appropriate.

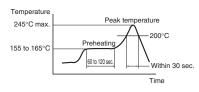
# Soldering conditions

Please use the reflow temperature profile conditions recommended below for reflow soldering. Please contact us before using a temperature profile other than that described below (e.g. lead-free solder).

 Narrow pitch connectors (except P8 type)



Narrow pitch connector (P8)



For products other than the ones above, please refer to the latest product specifications.

- 7) The temperatures are measured at the surface of the PC board near the connector terminals. (The setting for the sensor will differ depending on the sensor used, so be sure to carefully read the instructions that comes with it.)
- 8) The temperature profiles given in this catalog are values measured when using the connector on a resin-based PC board. When performed reflow soldering on a metal board (iron, aluminum, etc.) or a metal table to mount on a FPC, make sure there is no deformation or discoloration of the connector beforehand and then begin mounting.
- 9) Consult us when using a screenprinting thickness other than that recommended.
- 10) Some solder and flux types may cause serious solder or flux creeping. Solder and flux characteristics should be taken into consideration when setting the reflow soldering conditions.

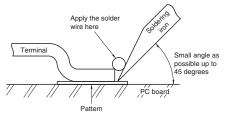
# 2. Hand soldering

1) Set the soldering iron so that the tip temperature is less than that given in the table below.

Table A

Product name	Soldering iron temperature
SMD type connectors	300°C within 5 sec. 350°C within 3 sec.

- Do not allow flux to spread onto the connector leads or PC board. This may lead to flux rising up to the connector inside.
- 3) Touch the soldering iron to the foot pattern. After the foot pattern and connector terminal are heated, apply the solder wire so it melts at the end of the connector terminals.



- 4) Be aware that soldering while applying a load on the connector terminals may cause improper operation of the connector.
- 5) Thoroughly clean the soldering iron.
- 6) Flux from the solder wire may get on the contact surfaces during soldering operations. After soldering, carefully check the contact surfaces and clean off any solder before use.
- 7) For soldering of prototype devices during product development, you can perform soldering at the necessary locations by heating with a hot-air gun by applying cream solder to the foot pattern beforehand. However, at this time, make sure that the air pressure does not move connectors by carefully holding them down with tweezers or other similar tool. Also, be careful not to go too close to the connectors and melt any of the molded components.
- 8) If an excessive amount of solder is applied during manual soldering, the solder may creep up near the contact points, or solder interference may cause imperfect contact.

# 3. Solder reworking

- 1) Finish reworking in one operation.
- For reworking of the solder bridge, use a soldering iron with a flat tip. To prevent flux from climbing up to the contact surfaces, do not add more flux.
- 3) Keep the soldering iron tip temperature below the temperature given in Table A.

# Notes on Using Narrow pitch Connectors

# **Handling Single Components**

- 1) Make sure not to drop or allow parts to fall from work bench
- 2) Excessive force applied to the terminals could cause warping, come out, or weaken the adhesive strength of the solder. Handle with care.
- 3) Repeated bending of the terminals may cause terminals to break.
- 4) Do not insert or remove the connector when it is not soldered. Forcibly applied external pressure on the terminals can weaken the adherence of the terminals to the molded part or cause the terminals to lose their evenness.
- 5) Excessive prying-force applied to one end may cause product breakage and separation of the solder joints at the terminal.

Excessive force applied for insertion in a pivot action as shown may also cause product breakage.

Align the header and socket positions before connecting them.



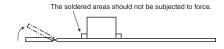
# Cleaning flux from PC board

- 1) To increase the cleanliness of the cleaning fluid and cleaning operations, prepare equipment for cleaning process beginning with boil cleaning, ultrasonic cleaning, and then vapor cleaning.
  2) Carefully oversee the cleanliness of
- 2) Carefully oversee the cleanliness of the cleaning fluids to make sure that the contact surfaces do not become dirty from the cleaning fluid itself.
- 3) Since some powerful cleaning solutions may dissolve molded components of the connector and wipe off or discolor printed letters, we recommend aqua pura electronic parts cleaners. Please consult us if you wish to use other types of cleaning fluids.
  4) Please note that the surfaces of molded parts may whiten when cleaned with alcohol.

# Handling the PC board

• Handling the PC board after mounting the connector

When cutting or bending the PC board after mounting the connector, be careful that the soldered sections are subjected to excessive force.



# Storage of connectors

- 1) To prevent problems from voids or air pockets due to heat of reflow soldering, avoid storing the connectors in areas of high humidity. When storing the connectors for more than six months, be sure to consider storage area where the humidity is properly controlled.
- 2) Depending on the connector type, the color of the connector may vary from connector to connector depending on when it is produced.

Some connectors may change color slightly if subjected to ultraviolet rays during storage. This is normal and will not affect the operation of the connector.

3) When storing the connectors with the PC boards assembled and components alreeady set, be careful not to stack them up so the connectors are subjected to excessive forces.

4) Avoid storing the connectors in locations with excessive dust. The dust may accumulate and cause improper connections at the contact surfaces.

# **Other Notes**

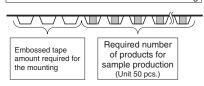
- 1) These products are made for the design of compact and lightweight devices and therefore the thickness of the molded components has been made very thin. Therefore, be careful during insertion and removal operations for excessive forces applied may damage the products.
- Dropping of the products or rough mishandling may bend or damage the terminals and possibly hinder proper reflow soldering.
- 3) Before soldering, try not to insert or remove the connector more than absolutely necessary.
- 4) When coating the PC board after soldering the connector to prevent the deterioration of insulation, perform the coating in such a way so that the coating does not get on the connector.
- 5) There may be variations in the colors of products from different production lots. This is normal.
- 6) The connectors are not meant to be used for switching.
- 7) Be sure not to allow external pressure to act on connectors when assembling PCBs or moving in block assemblies.

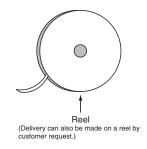
# Notes on Using Narrow pitch Connectors

# Regarding sample orders to confirm proper mounting

When ordering samples to confirm proper mounting with the placement machine, connectors are delivered in 50-piece units in the condition given right. Consult a sale representative for ordering sample units.

Condition when delivered from manufacturing





For FPC/FFC\*

# **FPC** connectors (0.5mm pitch) Back lock

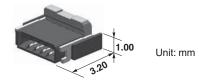
# **Y5B/Y5BW Series**



- 1. Low profile, space saving back lock type with improved lever operability 2. Mechanical design freedom
- achieved by top and bottom double contacts
- 3. Wide selection, including a type with a small number of pins

Low profile and space saving design of 1.0 mm high and 3.20 mm deep (3.70 mm with lever)

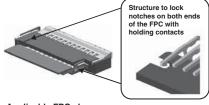
Y5B and Y5BW can have a minimum of four and two contacts respectively, maximum reduction in design packaging.



4 pin contacts (Y5B: minimum)

- 4. Wiring patterns can be placed underneath the connector.
- 5. Man-hours for assembly can be reduced by delivering the connectors with their levers opened.
- 6. Y5BW features advanced functionality, including a structure to temporarily hold the FPC and a higher holding force.

The FPC holding contacts located on both ends of the connector facilitate positioning of FPC and further enhance the FPC holding force.



Applicable FPC shape



- (1) The inserted FPC can be temporarily held until the lever is
- closed.

  (2) When the lever is closed, the holding contacts lock the FPC by its notches, enhancing the FPC holding force.
- \* (Y5BW is compatible with FPC only.)

# **APPLICATIONS**

A wide range of digital equipment, including mobile phones, smartphones, PCs, digital still camera. and digital video camera. Ideal for touch panels and LCD backlights, which require connectors with a small number of pins.

# ORDERING INFORMATION

RoHS compliant

AYF 5 3	5
53: FPC Connector 0.5 mm pitch (Back lock)	
Number of pins (2 digits)	
Function 3: Top and bottom double contacts (Y5B) 6: Top and bottom double contacts, lock holding type (Y5BW)	
Surface treatment (Contact portion / Terminal portion) 5: Au plating/Au plating (Ni barrier)	

# **PRODUCT TYPES**

Height	Y5B		Y5BW		Packing	
Height	Number of pins	Part number	Number of pins	Part number	Inner carton (1-reel)	Outer carton
	4	AYF530435	2	AYF530265		
	5	AYF530535	3	AYF530365		
	6	AYF530635	4	AYF530465		
	8	AYF530835	6	AYF530665		
	10	AYF531035	8	AYF530865	5,000 pieces	10,000 pieces
	12	AYF531235	10	AYF531065		
	14	AYF531435	12	AYF531265		
1.0 mm	16	AYF531635	14	AYF531465		
1.0 111111	24	AYF532435	22	AYF532265		
	28	AYF532835	26	AYF532665		
	30	AYF533035	28	AYF532865		
	32	AYF533235	30	AYF533065		
	34 AYF533435 32 AYF53	AYF533265				
	40	AYF534035	38	AYF533865		
	42	AYF534235	40	AYF534065		
	50	AYF535035	48	AYF534865		

Notes: 1. Order unit;

For volume production: 1-inner carton (1-reel) units

Samples for mounting check: 50-connector units. Please contact our sales office.

Samples: Small lot orders are possible. Please contact our sales office.

2. Please contact our sales office for connectors having a number of pins other than those listed above.

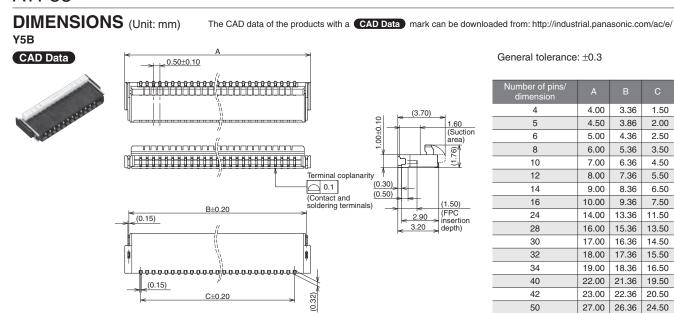
# **SPECIFICATIONS**

# 1. Characteristics

	Item	Specifications	Conditions		
	Rated current	0.5A/pin contact (Except for holding contact)			
	Rated voltage	50V AC/DC			
Electrical Insulation resistance		Min. 1,000M $\Omega$ (initial)	Using 250V DC megger (applied for 1 min.)		
characteristics	Breakdown voltage	250V 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.		
	Contact resistance	Max. 100mΩ	Based on the contact resistance measurement method specified by JIS C 5402.		
Mechanical characteristics	FPC holding force	Y5B: Min. 0.2N/pin contacts × pin contacts (initial) Y5BW: Min. 0.2N/pin contacts × pin contacts + 2.0N (initial)	Measurement of the maximum force applied until the inserted compatible FPC is pulled out in the insertion axis direction while the connector lever is closed		
	Ambient temperature	−55°C to +85°C			
	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 (with FPC mated)		Conformed to MIL-STD-202F, method 107G		
			Order Temperature (°C) Time (minutes)		
		5 cycles,	1 -55_3 30		
		insulation resistance min. 100M $\Omega$ ,	2 Max. 5		
		contact resistance max. 100mΩ	3 85+3 30		
Environmental			4 \ \ \ Max. 5 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
characteristics	Humidity resistance (with FPC mated)	120 hours, insulation resistance min. 100M $\Omega$ , contact resistance max. 100m $\Omega$	Bath temperature 40±2°C, humidity 90 to 95% R.H.		
	Saltwater spray resistance (with FPC mated)	24 hours, insulation resistance min. 100M $\Omega$ , contact resistance max. 100m $\Omega$	Bath temperature 35±2°C, saltwater concentration 5±1%		
	H <sub>2</sub> S resistance (with FPC mated)	48 hours, contact resistance max. $100m\Omega$	Bath temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.		
	Caldavina haat vasiatavas	Peak temperature: 260°C or less	Reflow soldering		
	Soldering heat resistance	300°C within 5 sec. 350°C within 3 sec.	Soldering iron		
Lifetime characteristics	Insertion and removal life	20 times	Repeated insertion and removal: min. 10 sec./time		
Unit weight		Y5B (50 pin contacts): 0.16 g			

# 2. Material and surface treatment

Part name	Material	Surface treatment
Molded portion	Housing: LCP resin (UL94V-0) Lever: LCP resin (UL94V-0)	_
Contact	Copper alloy	Contact portion; Base: Ni plating, Surface: Au plating Terminal portion; Base: Ni plating, Surface: Au plating
Holding contact portion	Copper alloy	Terminal portion; Base: Ni plating, Surface: Au plating
Soldering terminals portion	Copper alloy	Base: Ni plating, Surface: Au plating



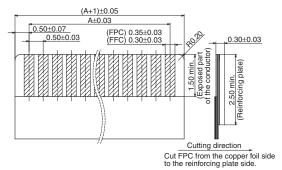
# General tolerance: ±0.3

Number of pins/ dimension	А	В	С
4	4.00	3.36	1.50
5	4.50	3.86	2.00
6	5.00	4.36	2.50
8	6.00	5.36	3.50
10	7.00	6.36	4.50
12	8.00	7.36	5.50
14	9.00	8.36	6.50
16	10.00	9.36	7.50
24	14.00	13.36	11.50
28	16.00	15.36	13.50
30	17.00	16.36	14.50
32	18.00	17.36	15.50
34	19.00	18.36	16.50
40	22.00	21.36	19.50
42	23.00	22.36	20.50
50	27.00	26.36	24.50

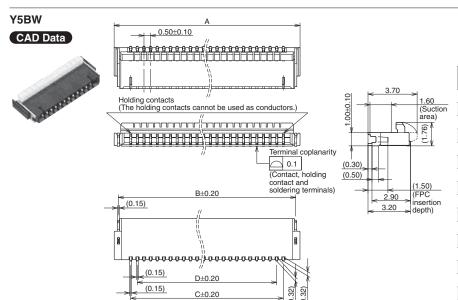
### Y5B RECOMMENDED FPC/FFC DIMENSIONS

(Finished thickness:  $t = 0.3\pm0.03$ )

The conductive parts should be based by Ni plating and then Au plating.



Number of pins/ dimension	А
4	1.50
5	2.00
6	2.50
8	3.50
10	4.50
12	5.50
14	6.50
16	7.50
24	11.50
28	13.50
30	14.50
32	15.50
34	16.50
40	19.50
42	20.50
50	24.50



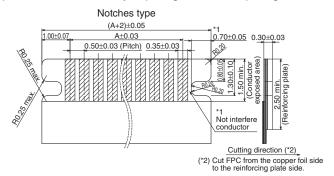
Number of pins/ dimension	А	В	С	D
2	4.00	3.36	1.50	0.50
3	4.50	3.86	2.00	1.00
4	5.00	4.36	2.50	1.50
6	6.00	5.36	3.50	2.50
8	7.00	6.36	4.50	3.50
10	8.00	7.36	5.50	4.50
12	9.00	8.36	6.50	5.50
14	10.00	9.36	7.50	6.50
22	14.00	13.36	11.50	10.50
26	16.00	15.36	13.50	12.50
28	17.00	16.36	14.50	13.50
30	18.00	17.36	15.50	14.50
32	19.00	18.36	16.50	15.50
38	22.00	21.36	19.50	18.50
40	23.00	22.36	20.50	19.50
48	27.00	26.36	24.50	23.50

General tolerance: ±0.3

### Y5BW RECOMMENDED FPC DIMENSIONS

(Finished thickness:  $t = 0.3\pm0.03$ )

The conductive parts should be based by Ni plating and then Au plating.



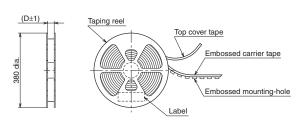
Number of pins/ dimension	Α
2	0.50
3	1.00
4	1.50
6	2.50
8	3.50
10	4.50
12	5.50
14	6.50
22	10.50
26	12.50
28	13.50
30	14.50
32	15.50
38	18.50
40	19.50
48	23.50

# EMBOSSED TAPE DIMENSIONS (Unit: mm) (Common for respective contact type)

# • Specifications for taping

# 

# • Specifications for the plastic reel (In accordance with EIAJ ET-7200B.)



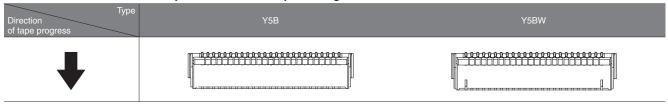
# • Y5B Dimension table (Unit: mm)

Number of pins	Type of taping	А	В	С	D	Quantity per reel
4 to 10	Tape I	16.00	7.50	_	17.40	5,000
12 to 30	Tape I	24.00	11.50	-	25.40	5,000
32 to 34	Tape II	32.00	14.20	28.40	33.40	5,000
40 to 50	Tape II	44.00	20.20	40.40	45.40	5,000

# • Y5BW Dimension table (Unit: mm)

Number of pins	Type of taping	А	В	С	D	Quantity per reel
2 to 8	Tape I	16.00	7.50	_	17.40	5,000
10 to 28	Tape I	24.00	11.50	-	25.40	5,000
30 to 32	Tape II	32.00	14.20	28.40	33.40	5,000
38 to 48	Tape II	44.00	20.20	40.40	45.40	5,000

# · Connector orientation with respect to embossed tape feeding direction



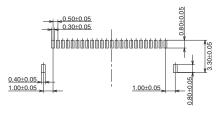
# **NOTES**

# 1. Recommended PC board and metal mask patterns

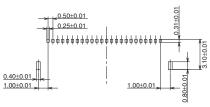
Connectors are mounted with high pitch density, intervals of 0.3 mm or 0.5 mm. In order to reduce solder and flux rise, solder bridges and other issues make sure the proper levels of solder is used. The figures to the right are recommended metal mask patterns. Please use them as a reference.

# • Y5B/Y5BW

Recommended PC board pattern (mounting layout) (TOP VIEW)



Recommended metal mask pattern Metal mask thickness: When 120µm (Terminal portion opening area ratio: 31.8%) (Soldering terminal portion opening area ratio: 100%)



### ■ PC board design

Design the recommended foot pattern in order to secure the mechanical strength in the soldered areas of the terminal.

# ■ FPC and equipment design

- Design the FPC based with recommended dimensions to ensure the required connector performance.
- When using back lock type, secure enough space for closing the lever and for open-close operation of the lever.
- Make sure that connector positioning and FPC length are appropriate to prevent diagonal insertion of the FPC.
   Due to the FPC size, weight, or the reaction force of the routed FPC, FPC may be removed. Carefully check the equipment design.

Take required measures to prevent the FPC from being removed due to a fall, vibration, or other impact.

# (Y3BW/Y5BW)

### ■ The holding contacts cannot be used as conductors.

The holding contacts are located on both ends of the contacts, and the shape of the soldered portions is the same as that of the other contacts.

Use caution to ensure connect identification.

# (Y3BL)

### ■ Soldering terminal structure

Since soldering terminals touch FPC, note that the short circuit may occur when the metal parts exposed on side of FPC.

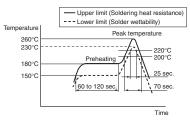
### **■** Connector mounting

Excessive mounter chucking force may deform the molded or metal part of the connector. Consult us in advance if chucking is to be applied.

# ■ Soldering

- 1) Manual soldering
- Due to the connector's compact size, if an excessive amount of solder is applied during manual soldering, the solder may creep up and flux wicking near the contact points, or solder interference may cause contact failure.
- Make sure that the soldering iron tip is heated within the temperature and time limits indicated in the specifications.
- Flux from the solder wire may adhere to the contact surfaces during soldering operations. After soldering, carefully check the contact surfaces and cleans off any flux solder use.
- Be aware that a load applied to the connector terminals while soldering may displace the contact.
- Thoroughly clean the iron tip.
- 2) Reflow soldering
- Screen-printing is recommended for printing paste solder.
- To achieve the appropriate soldering state, make sure that the reflow temperature, PC board foot pattern, window size and thickness of metal mask are recommended condition.
- Note that excess solder on the terminals prevents complete insertion of the FPC, and causes flux climbing up.
- A screen thickness of 120μm is recommended during cream solder printing.
- Consult us when using a screen-printing thickness other than that recommended.
- Depending on the size of the connector being used, self alignment may not be possible. Accordingly, carefully position the terminal with the PC board pattern.

• The recommended reflow temperature profile is given in the figure below.



- The temperature is measured on the surface of the PC board near the connector terminals.
- Depending on reflow condition, poor contact may occur by solder and flux wicking.

Please set the reflow conditions that considering the characteristics of solder and flux. Also please make consideration in setting the reflow times and O<sub>2</sub> concentration to prevent poor contact by solder and flux wicking.

 When performing reflow soldering on the back of the PC board after reflow soldering the connector, secure the connector using, for example, an adhesive.

(Double reflow soldering on the same side is possible.)
Do not touch the lever or apply any load to the lever until the second reflow soldering. Otherwise, contact deflection occurs and the terminals may be deformed by reflow heating.

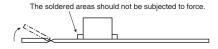
3) Reworking on a soldered portion

- Finish reworking in one operation.
- For reworking of the solder bridge, use a soldering iron with a flat tip.

Do not add flux, otherwise the flux may creep to the contact parts.

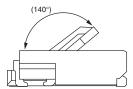
When adding the solder for reworking, do not add an excessive solder. Otherwise, solder and flux may creep up and solder bridges may occur.

- Use a soldering iron whose tip temperature is within the temperature range specified in the specifications.
- Do not drop or handle the connector carelessly. Otherwise, the terminals may become deformed due to excessive force or applied solderability may be during reflow degrade.
- Do not open/close the lever or insert/remove an FPC until the connector is soldered. Forcibly applied external pressure on the terminals can weaken the adherence of the terminals to the molded part or cause the terminals to lose their evenness. In addition, do not insert an FPC into the connector before soldering the connector.
- When cutting or bending the PC board after mounting the connector, be careful that the soldered sections are subjected to excessive force.



# ■ Precautions for insertion/removal of FPC <Front-Lock>

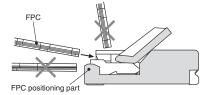
- To open the lever, hold its center and pull it up. An uneven load applied to the lever on one side may deform and break the lever. Do not apply an excessive load to the lever in the opening direction, otherwise, the terminals may be deformed.
- Don't further apply an excessive load to the fully opened lever; otherwise, the lever may be deformed.
- Fully open the lever to insert an FPC.
- Since this product connects at the bottom, please insert the FPC so that its electrode plane is facing the board to which it will be mounted. Do not insert the FPC in the reverse direction of the contact section; otherwise, operation failures or malfunctions may be caused.



## (Y3FT)

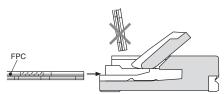
 This product has a structure to position an inserted FPC using the FPC tabs.

Therefore, insert an FPC at an angle to the board. If the FPC is inserted in the direction parallel to the board, the molded positioning parts block the FPC, leading to incomplete insertion. Do not insert the FPC at an excessive angle to the board. Otherwise, it may cause the deformation of metal parts, FPC insertion failures, and FPC circuit breakages.



# (Y3F)

 Completely insert the FPC horizontally. Do not insert the FPC at an excessive angle to the board. Otherwise, it may cause the deformation of metal parts, FPC insertion failures, and FPC circuit breakages.

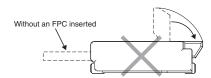


- Insert the FPC to the full depth of the connector without altering the angle.
- When closing the lever, carefully use the tip of your finger to push the entire lever or both sides of it. If pressure to the lever is applied unevenly, IE: only the edge, it may deform or break the FPC. Make sure that the lever is closed completely. Not doing so will cause a faulty connection.
- Avoid applying an excessive load to the top of the lever during or after closing the lever. Otherwise, the terminals may be deformed
- Remove the FPC at an angle with the lever fully opened. If the lever is closed, or if the FPC is forcedly pulled into a direction parallel to the board, the molded part may break.

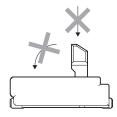
### <Back-Lock>

 Avoid touching the lever (applying any external force) until an FPC is inserted.

Do not open/close the lever without an FPC inserted. Failure to follow this instruction will cause the contacts to warp, leading to the contact tips to interfere with the insertion of an FPC, deforming the terminals. Failure to follow this instruction may cause the lever to be removed, terminals to be deformed, and/or the FPC insertion force to increase.



- The FPC insertion section is on the opposite side of the lever. Be careful not to make a mistake in the FPC insertion position or the lever opening/closing position. Otherwise, a contact failure or connector breakage may occur.
- Do not insert an FPC upside down. Inserting an FPC in a direction opposite to that you intended may cause an operation failure or malfunction.
- Insert an FPC with the lever opened at right angle, that is, in the factory default position.
- Completely insert the FPC horizontally. An FPC inserted at an excessive angle to the board may cause the deformation of metal parts, FPC insertion failures, and FPC circuit breakages.
- Insert the FPC to the full depth of the connector without altering the angle.
- Insert the FPC into the connector after checking the position of FPC insertion slot and FPC. Do not insert the FPC without positioning the FPC and connector. Otherwise, it may cause connector breakages. When it is hard to insert the FPC, do not insert the FPC on that condition. Confirm the FPC and connector positioning.
- Do not apply an excessive load to the lever in the opening direction beyond its open position; otherwise, the lever may be deformed or removed.
- Do not apply an excessive load to the lever in a direction perpendicular to the lever rotation axis or in the lever opening direction; otherwise, the terminals may be deformed, and the lever may be removed.



• To close the lever, turn down the lever by pressing the entire lever or both sides of the lever with fingers tips. And close the lever completely. Be careful not to apply partial load to the lever that may cause its deformation or destruction.

Close the lever completely to prevent contact failure.

- If pressure to the lever is applied unevenly, it may deform or break the FPC. Make sure that the lever is closed completely. Not doing so will cause a faulty connection.
- Avoid applying an excessive load to the top of the lever during or after closing the lever. Otherwise, the terminals may be deformed.
- When opening the lever to remove the FPC, ensure that the lever will not go over the initial position; otherwise, the lever may be removed.

- Remove the FPC at parallel with the lever fully opened. If the lever is closed, or if the FPC is forcedly pulled, the product or FPC may break.
- If a lever is accidentally detached during the handling of a connector, do not use the connector any longer.
- After an FPC is inserted, carefully handle it so as not to apply excessive stress to the base of the FPC. When using FPC with a bent condition, please pay attention to precautions below; otherwise, in some conditions it may cause conduction failure, connector breakage, unlocking lever or FPC disconnection.
- Design so that a load is not applied to connector directly by FPC bending.
- Avoid sharp FPC bending at the root of FPC insertion part.
- Design so that a load is not applied to the part of FPC bending.
- Fix the FPC if there might be a load on FPC when using the FPC with cutout, do not apply a bending load to the cutout part of FPC. Otherwise, it may cause FPC disconnection and deformation since the cutout part of FPC is subjected to bending stress.



# ■ Other cautions

- When coating the PC board after soldering the connector (to prevent the deterioration of insulation), perform the coating in such a way so that the coating does not get on the connector.
- The connectors are not meant to be used for switching.
- There is no problem on the product quality though the swelling and the black spot, etc. might be generated in the molding parts.

For FPC

# FPC connectors (0.3mm pitch) Back lock

# Y3B/Y3BW

**Series** 



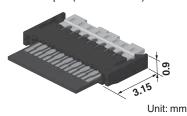
RoHS compliant

Y3BW

# **FEATURES**

# 1. Slim and low profile design (Pitch: 0.3 mm)

Back lock type and the slim body with a 3.15 mm depth (with the lever).



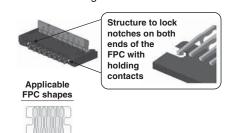
# 2. Mechanical design freedom is achieved with double top and bottom contacts

Top and bottom double contacts eliminate the need of using different connectors (with either top or bottom contacts) depending on the FPC wiring conditions.

- 3. Easy-to-handle back lock structure
- 4. Man-hours of assembly time can be reduced by delivering the connectors with their levers opened.
- 5. Wiring patterns can be placed underneath the connector.
- 6. Ni barrier with high resistance to solder creepage

7. Y3BW features advanced functionality, including a structure to temporarily hold the FPC and a higher holding force.

The FPC holding contacts located on both ends of the connector facilitate positioning of FPC and further enhance the FPC holding force.

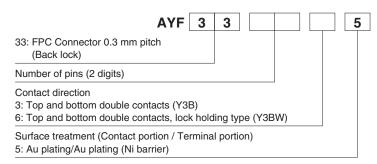


- (1) The inserted FPC can be temporarily held until the lever is closed.
- (2) When the lever is closed, the holding contacts lock the FPC by its notches, enhancing the FPC holding force.

# **APPLICATIONS**

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

# **ORDERING INFORMATION**



# **PRODUCT TYPES**

Height	Number of pins	Part number	Pacl	king
Height	Number of pins	Part number	Inner carton	Outer carton
	7	AYF330735		
	8	AYF330835		
	9	AYF330935		
	11	AYF331135		
	13	AYF331335		
	15	AYF331535		
	17	AYF331735		
	21	AYF332135		
	23	AYF332335		
0.9 mm	25	AYF332535	5,000 pieces	10,000 pieces
	27	AYF332735		
	31	AYF333135		
	33	AYF333335		
	35	AYF333535		
	37	AYF333735		
	39	AYF333935		
	45	AYF334535		
	51	AYF335135		
	61	AYF336135		

# **Y3BW**

Hoight	Number of pine	Part number	Pac	king
Height	Number of pins	Fait Humber	Inner carton (1-reel)	Outer carton
	11	AYF331165		
0.9 mm	25	AYF332565	5,000 pieces	10,000 pieces
	51	AYF335165		

Notes: 1. Order unit; For volume production: 1-inner carton (1-reel) units.

# **SPECIFICATIONS**

# 1. Characteristics

	Item	Specifications		Co	onditions	
	Rated current	0.2A/pin contact				
	Rated voltage	50V AC/DC				
Electrical	Insulation resistance	Min. 1,000M $\Omega$ (initial)	Using 2	50V DC megger (ap	oplied for 1 min.)	
characteristics	Breakdown voltage	150V AC for 1 min.			ge at a detection cur is applied for one mi	
	Contact resistance	Max. 100mΩ		on the contact resist d by JIS C 5402.	ance measurement	method
Mechanical characteristics	FPC holding force	Y3B: Min. 0.13N/pin contacts × pin contacts (initial) Y3BW: Min. 0.13N/pin contacts × pin contacts + 1.00N (initial)	inserted		um force applied un pulled out in the insort lever is closed	
	Ambient temperature	-55°C to +85°C				
	Storage temperature	-55°C to +85°C (product only) -40°C to +50°C (emboss packing)	No free:	zing at low temperat	tures. No dew conde	nsation.
			Conforn	ned to MIL-STD-202	2F, method 107G	
			Order	Temperature (°C)	Time (minutes)	
		5 cycles,	1	<b>-</b> 55_ <sup>0</sup>	30	
	Thermal shock resistance (with FPC mated)	insulation resistance min. 100M $\Omega$ ,	2	S	Max. 5	
	(with the mateur)	contact resistance max. $80m\Omega$	3	85⁺8	30	
Environmental			4	_55_ <sup>0</sup>	Max. 5	
characteristics	Humidity resistance (with FPC mated)	120 hours, insulation resistance min. 100M $\Omega$ , contact resistance max. 100m $\Omega$		mperature 40±2°C, y 90 to 95% R.H.		
	Saltwater spray resistance (with FPC mated)	24 hours, insulation resistance min. 100M $\Omega$ , contact resistance max. 100m $\Omega$		mperature 35±2°C, er concentration 5±1	%	
	H <sub>2</sub> S resistance (with FPC mated)	48 hours, contact resistance max. 100m $Ω$		mperature 40±2°C, of 75 to 80% R.H.	gas concentration 3±	1 ppm,
	Caldarina haat rasistaras	Peak temperature: 260°C or less	Reflow	soldering		
	Soldering heat resistance	300°C within 5 sec. 350°C within 3 sec.	Solderin	ng iron		
Lifetime characteristics	Insertion and removal life	20 times	Repeate	ed insertion and rem	noval: min. 10 sec./tii	me
Unit weight		Y3B: 61 pin contact type: 0.10 g Y3BW: 51 pin contact type: 0.09 g				

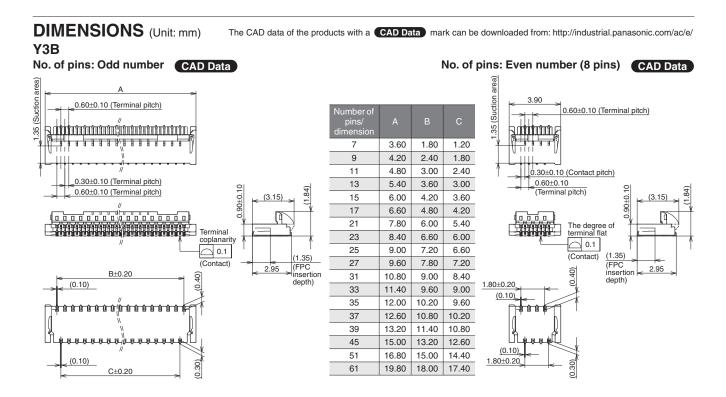
Samples for mounting check: 50-connector units. Please contact our sales office.

Samples: Small lot orders are possible. Please contact our sales office.

2. Please contact our sales office for connectors having a number of pins other than those listed above.

### 2. Material and surface treatment

Part name	Material	Surface treatment
Molded portion	Housing: LCP resin (UL94V-0) Lever: LCP resin (UL94V-0)	_
Contact	Copper alloy	Contact portion; Base: Ni plating, Surface: Au plating Terminal portion; Base: Ni plating, Surface: Au plating



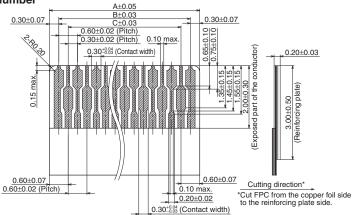
# RECOMMENDED FPC DIMENSIONS

# **Y3B**

(Finished thickness:  $t = 0.2\pm0.03$ )

The conductive parts should be based by Ni plating and then Au plating.

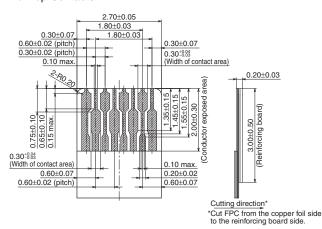
# No. of pins: Odd number



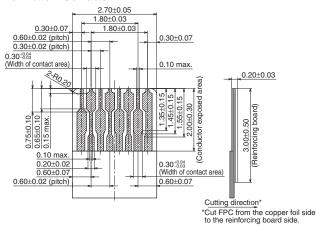
Number of pins/dimension	A		С
7	2.40	1.80	1.20
9	3.00	2.40	1.80
11	3.60	3.00	2.40
13	4.20	3.60	3.00
15	4.80	4.20	3.60
17	5.40	4.80	4.20
21	6.60	6.00	5.40
23	7.20	6.60	6.00
25	7.80	7.20	6.60
27	8.40	7.80	7.20
31	9.60	9.00	8.40
33	10.20	9.60	9.00
35	10.80	10.20	9.60
37	11.40	10.80	10.20
39	12.00	11.40	10.80
45	13.80	13.20	12.60
51	15.60	15.00	14.40
61	18.60	18.00	17.40

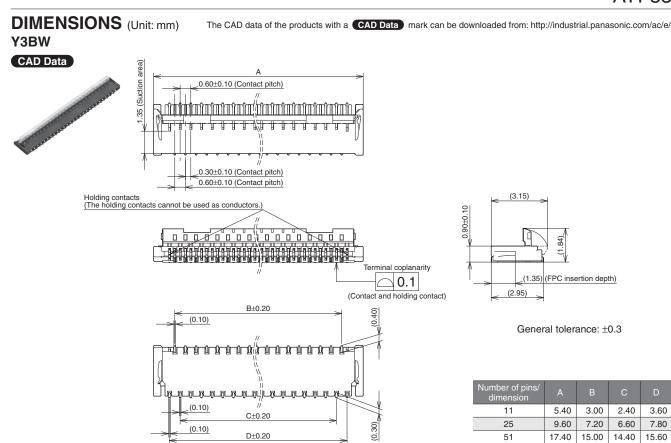
# No. of pins: Even number (8 pins)

For Top Contacts



### For Bottom Contacts



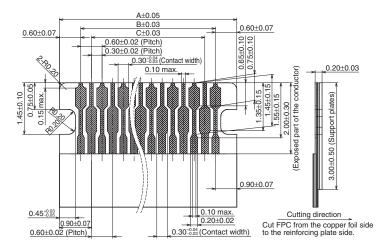


# RECOMMENDED FPC DIMENSIONS

### Y3BW

(Finished thickness:  $t = 0.2\pm0.03$ )

The conductive parts should be based by Ni plating and then Au plating.



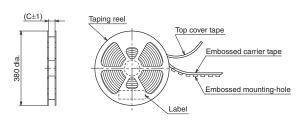
Number of pins/ dimension	А		С
11	4.20	3.00	2.40
25	8.40	7.20	6.60
51	16.20	15.00	14.40

# EMBOSSED TAPE DIMENSIONS (Unit: mm) (Common for respective contact type)

# · Specifications for taping

# Tape I (A±0.3) (A±0.3)

# • Specifications for the plastic reel (In accordance with EIAJ ET-7200B.)



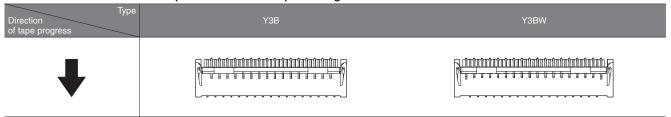
# • Y3B Dimension table (Unit: mm)

Number of pins	Type of taping	A	В	С	Quantity per reel
7 to 17	Tape I	16.00	7.50	17.40	5,000
21 to 45	Tape I	24.00	11.50	25.40	5,000
51, 61	Tape II	32.00	14.20	33.40	5,000

### • Y3BW Dimension table (Unit: mm)

Number of pins	Type of taping	A	В	С	Quantity per reel
11	Tape I	16.00	7.50	17.40	5,000
25	Tape I	24.00	11.50	25.40	5,000
51	Tape II	32.00	14.20	33.40	5,000

# Connector orientation with respect to embossed tape feeding direction



# **NOTES**

# 1. Recommended PC board and metal mask patterns

Connectors are mounted with high pitch density, intervals of 0.3 mm or 0.5 mm. In order to reduce solder and flux rise, 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.

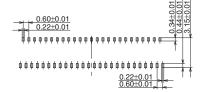
# • Y3B

# No. of pins: Odd number

Recommended PC board pattern (mounting layout) (TOP VIEW)

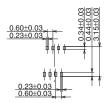


Recommended metal mask pattern Metal mask thickness: When 120µm (Front terminal portion opening area ratio: 96%) (Back terminal portion opening area ratio: 96%)



# No. of pins: Even number (8 pins)

Recommended PC board pattern (mounting layout) (TOP VIEW)

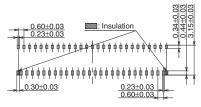


Recommended metal mask pattern Metal mask thickness: When 120µm (Front terminal portion opening area ratio: 96%) (Back terminal portion opening area ratio: 96%)

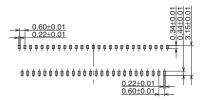


# • Y3BW

Recommended PC board pattern (mounting layout) (TOP VIEW)



Recommended metal mask pattern Metal mask thickness: When 120µm (Front terminal portion opening area ratio: 96%) (Back terminal portion opening area ratio: 96%)



### ■ PC board design

Design the recommended foot pattern in order to secure the mechanical strength in the soldered areas of the terminal.

# ■ FPC and equipment design

- Design the FPC based with recommended dimensions to ensure the required connector performance.
- When using back lock type, secure enough space for closing the lever and for open-close operation of the lever.
- Make sure that connector positioning and FPC length are appropriate to prevent diagonal insertion of the FPC.
   Due to the FPC size, weight, or the reaction force of the routed FPC, FPC may be removed. Carefully check the equipment design.

Take required measures to prevent the FPC from being removed due to a fall, vibration, or other impact.

### (Y3BW/Y5BW)

### ■ The holding contacts cannot be used as conductors.

The holding contacts are located on both ends of the contacts, and the shape of the soldered portions is the same as that of the other contacts.

Use caution to ensure connect identification.

# (Y3BL)

### ■ Soldering terminal structure

Since soldering terminals touch FPC, note that the short circuit may occur when the metal parts exposed on side of FPC.

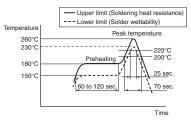
### ■ Connector mounting

Excessive mounter chucking force may deform the molded or metal part of the connector. Consult us in advance if chucking is to be applied.

# ■ Soldering

- 1) Manual soldering
- Due to the connector's compact size, if an excessive amount of solder is applied during manual soldering, the solder may creep up and flux wicking near the contact points, or solder interference may cause contact failure.
- Make sure that the soldering iron tip is heated within the temperature and time limits indicated in the specifications.
- Flux from the solder wire may adhere to the contact surfaces during soldering operations. After soldering, carefully check the contact surfaces and cleans off any flux solder use.
- Be aware that a load applied to the connector terminals while soldering may displace the contact.
- Thoroughly clean the iron tip.
- 2) Reflow soldering
- Screen-printing is recommended for printing paste solder.
- To achieve the appropriate soldering state, make sure that the reflow temperature, PC board foot pattern, window size and thickness of metal mask are recommended condition.
- Note that excess solder on the terminals prevents complete insertion of the FPC, and causes flux climbing up.
- A screen thickness of 120μm is recommended during cream solder printing.
- Consult us when using a screen-printing thickness other than that recommended.
- Depending on the size of the connector being used, self alignment may not be possible. Accordingly, carefully position the terminal with the PC board pattern.

• The recommended reflow temperature profile is given in the figure below.



- The temperature is measured on the surface of the PC board near the connector terminals.
- Depending on reflow condition, poor contact may occur by solder and flux wicking.

Please set the reflow conditions that considering the characteristics of solder and flux. Also please make consideration in setting the reflow times and O<sub>2</sub> concentration to prevent poor contact by solder and flux wicking.

 When performing reflow soldering on the back of the PC board after reflow soldering the connector, secure the connector using, for example, an adhesive.

(Double reflow soldering on the same side is possible.)
Do not touch the lever or apply any load to the lever until the second reflow soldering. Otherwise, contact deflection occurs and the terminals may be deformed by reflow heating.

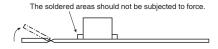
3) Reworking on a soldered portion

- Finish reworking in one operation.
- For reworking of the solder bridge, use a soldering iron with a flat tip.

Do not add flux, otherwise the flux may creep to the contact parts.

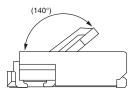
When adding the solder for reworking, do not add an excessive solder. Otherwise, solder and flux may creep up and solder bridges may occur.

- Use a soldering iron whose tip temperature is within the temperature range specified in the specifications.
- Do not drop or handle the connector carelessly. Otherwise, the terminals may become deformed due to excessive force or applied solderability may be during reflow degrade.
- Do not open/close the lever or insert/remove an FPC until the connector is soldered. Forcibly applied external pressure on the terminals can weaken the adherence of the terminals to the molded part or cause the terminals to lose their evenness. In addition, do not insert an FPC into the connector before soldering the connector.
- When cutting or bending the PC board after mounting the connector, be careful that the soldered sections are subjected to excessive force.



# ■ Precautions for insertion/removal of FPC <Front-Lock>

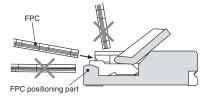
- To open the lever, hold its center and pull it up. An uneven load applied to the lever on one side may deform and break the lever.
   Do not apply an excessive load to the lever in the opening direction, otherwise, the terminals may be deformed.
- Don't further apply an excessive load to the fully opened lever; otherwise, the lever may be deformed.
- Fully open the lever to insert an FPC.
- Since this product connects at the bottom, please insert the FPC so that its electrode plane is facing the board to which it will be mounted. Do not insert the FPC in the reverse direction of the contact section; otherwise, operation failures or malfunctions may be caused.



## (Y3FT)

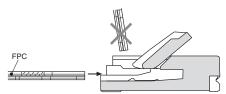
• This product has a structure to position an inserted FPC using the FPC tabs.

Therefore, insert an FPC at an angle to the board. If the FPC is inserted in the direction parallel to the board, the molded positioning parts block the FPC, leading to incomplete insertion. Do not insert the FPC at an excessive angle to the board. Otherwise, it may cause the deformation of metal parts, FPC insertion failures, and FPC circuit breakages.



# (Y3F)

 Completely insert the FPC horizontally. Do not insert the FPC at an excessive angle to the board. Otherwise, it may cause the deformation of metal parts, FPC insertion failures, and FPC circuit breakages.

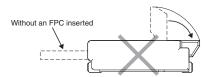


- Insert the FPC to the full depth of the connector without altering the angle.
- When closing the lever, carefully use the tip of your finger to push the entire lever or both sides of it. If pressure to the lever is applied unevenly, IE: only the edge, it may deform or break the FPC. Make sure that the lever is closed completely. Not doing so will cause a faulty connection.
- Avoid applying an excessive load to the top of the lever during or after closing the lever. Otherwise, the terminals may be deformed
- Remove the FPC at an angle with the lever fully opened. If the lever is closed, or if the FPC is forcedly pulled into a direction parallel to the board, the molded part may break.

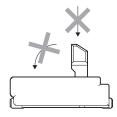
### <Back-Lock>

 Avoid touching the lever (applying any external force) until an FPC is inserted.

Do not open/close the lever without an FPC inserted. Failure to follow this instruction will cause the contacts to warp, leading to the contact tips to interfere with the insertion of an FPC, deforming the terminals. Failure to follow this instruction may cause the lever to be removed, terminals to be deformed, and/or the FPC insertion force to increase.



- The FPC insertion section is on the opposite side of the lever. Be careful not to make a mistake in the FPC insertion position or the lever opening/closing position. Otherwise, a contact failure or connector breakage may occur.
- Do not insert an FPC upside down. Inserting an FPC in a direction opposite to that you intended may cause an operation failure or malfunction.
- Insert an FPC with the lever opened at right angle, that is, in the factory default position.
- Completely insert the FPC horizontally. An FPC inserted at an excessive angle to the board may cause the deformation of metal parts, FPC insertion failures, and FPC circuit breakages.
- Insert the FPC to the full depth of the connector without altering the angle.
- Insert the FPC into the connector after checking the position of FPC insertion slot and FPC. Do not insert the FPC without positioning the FPC and connector. Otherwise, it may cause connector breakages. When it is hard to insert the FPC, do not insert the FPC on that condition. Confirm the FPC and connector positioning.
- Do not apply an excessive load to the lever in the opening direction beyond its open position; otherwise, the lever may be deformed or removed.
- Do not apply an excessive load to the lever in a direction perpendicular to the lever rotation axis or in the lever opening direction; otherwise, the terminals may be deformed, and the lever may be removed.



• To close the lever, turn down the lever by pressing the entire lever or both sides of the lever with fingers tips. And close the lever completely. Be careful not to apply partial load to the lever that may cause its deformation or destruction.

Close the lever completely to prevent contact failure.

- If pressure to the lever is applied unevenly, it may deform or break the FPC. Make sure that the lever is closed completely. Not doing so will cause a faulty connection.
- Avoid applying an excessive load to the top of the lever during or after closing the lever. Otherwise, the terminals may be deformed.
- When opening the lever to remove the FPC, ensure that the lever will not go over the initial position; otherwise, the lever may be removed.

- Remove the FPC at parallel with the lever fully opened. If the lever is closed, or if the FPC is forcedly pulled, the product or FPC may break.
- If a lever is accidentally detached during the handling of a connector, do not use the connector any longer.
- After an FPC is inserted, carefully handle it so as not to apply excessive stress to the base of the FPC. When using FPC with a bent condition, please pay attention to precautions below; otherwise, in some conditions it may cause conduction failure, connector breakage, unlocking lever or FPC disconnection.
- Design so that a load is not applied to connector directly by FPC bending.
- Avoid sharp FPC bending at the root of FPC insertion part.
- Design so that a load is not applied to the part of FPC bending.
- Fix the FPC if there might be a load on FPC when using the FPC with cutout, do not apply a bending load to the cutout part of FPC. Otherwise, it may cause FPC disconnection and deformation since the cutout part of FPC is subjected to bending stress.



# ■ Other cautions

- When coating the PC board after soldering the connector (to prevent the deterioration of insulation), perform the coating in such a way so that the coating does not get on the connector.
- The connectors are not meant to be used for switching.
- There is no problem on the product quality though the swelling and the black spot, etc. might be generated in the molding parts.

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Require NCNR7 (no or der cancellation & st ock liability, typically only for custom products)	NO	00	2 2	ON	NO	NO	NO	ON S	2 2	2 02	ON	ON	NO	ON	ON	ON :	ON ON	ON ON	ON	ON	ON	ON	NO	ON .	ON ON	ON ON	ON .	ON	ON	NO	NO	ON	00 00	2 2	ON O	ON.	NO	00	ON ON	2 9	ON	NO	ON	ON :	9 9	NO.	NO	ON	ON :	2 2	NO	NO	ON	02 02	2 2	ON	90
igh definition product o picture attached?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	MIN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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Part Number Dascription	Narrow Pitch Connector (Board to FPC) 0.4mm	Narrow Pitch Connector (Board to FP.C) 0.4mm	Narrow Pitch Connector (Board to FPC) 0.4mm			Narrow Plich Connector (Board to FPC) 0.4mm	Nanow Pilch Connector (Board to FPC) 0.4mm		Narrow Pilon Connector (Board to P.C.) 0.4mm	Narrow Pich Connector (Bland to FPC) 0.4mm	Narrow Pilds Connector (Board to FPC) 0.4mm	Narrow Pich Connector (Board to FPC) 0.4mm	Narow Plots Connector (Board to FPC) 0.4mm	Narrow Plich Connector (Board to FPC) 0.4mm	Narrow Pilch Connector (Board to FPC) 0.4mm	Narrow Ploth Connector (Board to FPC) 0.4mm	Pidn Connector (Board to	Connector (Board to F	Narrow Pilch Connector (Board to FPC) 0.4mm		Namow Ploth Connector (Board to FPC) 0.4mm (500 pleoe)	Narrow Pitch Connector (Board to FPC) 0.4mm (500 pleos)	Namow Ploth Connector (Board to FPC) 0.4mm (500 pleos)	Narrow Plich Connector (Board to FP.C) 0.4mm (500 pleos)	Name Pich Connector (Board to FPC) (14mm (900 pecs))	Narrow Pich Cornector Board to FPC 0.4mm (500 deco.)	Narrow Plich Connector (Board to FP.C.) 0.4mm (500 pleos)	Namow Pich Connector (Board to FPC) 0.4mm (500 plece)	Narrow Pich Connector (Board to FPC) 0.4mm (500 pleos)	Namow Pich Connector (Board to FPC) 0.4mm (500 piece)	Nanow Ploth Connector (Board to FPC) 0.4mm (500 plece)		Narrow Ploth Connector (Board to FPC) 0.4mm (B00 pleos)	Connector (Board to FBC) (Literal	Narrow Ploth Connector (Board to FPC) 0.4mm (500 pleos)	Com	v Pitch Comedor (Board to FPC) 0.35mm (900 piece)	Namow Pitch Comedor (Board to FPC) 0.35mm (300 piete)	Namow Ploth Connector (Board to PPC) 0.35mm (900 piece)	Namow Pich Comedia (Board to FNC) 0.35mm (300 plece)	Namow Pich Cornector (Board to FPC) 0.35mm (900 plece)	Namow Plich Cornector (Board to FPC) 0.35mm (900 plece)		Narrow Pitch Cornector (Board to FPC) 0.35mm (900 plece)	Namow Pitch Comedor (Board to PINC) 0.35mm (300 prece) Namow Pitch Comedor (Board to PINC) 0.35mm (300 prece)	Namow Ploch Cornector (Board to FPC) 0.35mm (900 piece)	Namow Ploth Comedor (Board to FPC) 0.35mm (300 piece)	Namow Pitch Connector (Board to FPC) 0.35mm (900 pleos)		Narrow Pitch Cornector (Board to FPC) 0.35mm (300 pleot)	Comedor (Board to FPC) 0.35r	Namow Plich Cornector (Board to FPC) 0.35mm (500 pleos)	Namow Plich Comedor (Board to FPC) 0.35mm (900 pleos)	Namow Pitch Connector (Board to FPC) 0.35mm (500 peop)	Namow Ploch Comedia (Board to FPC) 0.35mm (300 pleos)	Namow Pich Comedia (Board to FPC) 0.35mm (900 pleos)	Namow Pitch Comedia' (Board to FPC) 0.35mm (900 pleos)
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AXS840044A	Ageus	0.3A/oortact 80V ACIDC	Namow Pitch Connector (Board to FPC) 0.35mm (800 place)	e) YES	N/A	NO	79 per,	009 0	500 6-8 we	ON syles	9	ON.	NES.	NoPb	250 Japan	n 8536.69.4040	E AR99	Comedors	Namow Pitch Comedions	STD ROHS	say yes	YES	YES YES
AXG850044A	A3BUS	0.3A/cortact 60V ACIDC	Namow Pitch Connector (Board to Board) 0.35mm (500 piece	oo) YES	N/A	NO R	Ted 50	009 (	500 6 8 wv	ON sylan	Q	ON	YES	NoPb	250 Japan	n 8536.69.4040	EAR99	Comedors	Namow Pitch Connectors	STD ROHS	3 YES	YES	
	PSKS	-	Narrow Pitch Connector (Board to Board) 0.5mm (500 piso)		N/A	NO NO	Red SK	009	500 6.8 w	ON syles	9	9	YES	NoPb	250 Jape	n 8536.69.4040	EAR99	Connectors	Namow Pitch Connectors	STD ROHS			YES YES
	PSKS	05ACortact 80V ACIDC	Nerrow Pitch Connector (Board to Board) O.Smm (BOD piece)	_	N/A N/A	ON ON	Red S	009	500 6-8 w	ON Sylven	2 2	Q Q	YES YES	NoPb	1	n 8538.69.4040	EAR99	Comedors	Namow Pitch Comedons	STD ROHS		VES VES	
AXIOSSOCIATIVA	Paks	05ACortact 60V ACIDC	Narrow Pich Connector (Board to Board) Usmim (500 piece)	(a) YES	N/A	ON ON	tod 50	009	500 6-8 W	ON SHOW	2 2	2 2	VES VES	No.Ph	appar ogg	8536.684040	EARS9	Comedors	Namow High Comedons	STD ROHS	7ES 4	VES VES	VES VES
	PSKS	rtact	Conc	1	N/A	QV ON	90	2009	500 6-8 w	ON	9	9	, All	NoPh	250	0 9638 69.4040	EA899	Comedors	Namow Pitch Cornectors	STD STD	XES .	, AES	N SBA
	PGKS		Narrow Ploth Connector (Board to Board) 0.5mm (500 pleos)	Ļ	N/A	NO	09 po.	009 (	500 6-8 w	ON Sylva	9	ON.	YES	NoPb	250 Japan	n 8535,69,4040	EAR99	Connectors	Namow Pitch Connectors	STD ROHS	3 YES	YES	YES YES
AXK6S30047YA	PSKS	0.5A/Cortact 60V ACIDC	Narrow Pitch Connector (Board to Board) 0.5mm (500 place	00) YES	N/A	NO	79 per	009 (	500 6 · 8 w.	ON syste	Q	ON	YES	NoPb	250 Jape	n 8538.69.4040	EAR99	Comedors	Namow Pitch Comedons	STD ROHS	3 YES	YES	YES
AXI65S30247YA	PBKS	0.5A/Cortact 80V ACIDC	Narow Ploth Connector (Board to Board) 0.5mm (500 pleos)	w) YES	N/A	NO F	76 per	009 (	500 6-8 w	ON syles	Q	ON	×ES	NoPb	250 Jape	n 8535.69.4040	EAR99	Comedors	Namow Pitch Comectors	STD ROHS	3 YES	YES	YES Y
AXH55330347YA	PBKS	0.5A/Cortact 80V ACIDC	Narrow Plich Connector (Board to Board) 0.5mm (500 pleos)	m) YES	N/A	NO	Ted 50	009 (	500 6 8 wv	ON sylan	Q	ON	YES	NoPb	250 Japan	n 8536.69.4040	EAR99	Comedors	Namow Pitch Connectors	STD ROHS	3 YES	YES	YES YE
AXK5S40047YA	PSKS	0.5A/Cortact 80V ACIDC	Narrow Pich Connector (Board to Board) 0.5mm (500 piso)	90) YES	N/A	NO	ted 50.	009 (	500 6 8 w	ON syste	Q	ON	YES	NoPh	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comedons	STD ROHS	3 YES	YES	YES YE
AXIGIS40247YA	PSKS	0.5A/Cortact 80V ACIDC	Narrow Pich Connector (Board to Board) 0.5mm (500 piece)	9) YES	N/A	NO N	teel 50.	009 (	500 6 8 w	ON syles	Q	ON	YES	NoPb	250 Japo	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comectors	STD ROHS	3 YES	YES	YES M
AXI65940347YA	PBKS	0.5A/Cortact 80V ACIDC	Narrow Ploth Connector (Board to Board) 0.5mm (500 pleos	w) YES	N/A	NO	ted 50	009 (	500 6 · 8 w.	ON sylan	9	9	YES	NoPb	250 Japan	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comectons	STD ROHS	YES	YES	YES
AXK5S50047YA	PSKS	0.5A/Cortact 80V AC/DC	Narrow Pich Connector (Board to Board) 0.5mm (500 piece	w) YES	N/A	NO	99 pa,	009 (	500 6-8 w	ON sales	9	ON.	YES	NoPh	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comedons	STD ROHS	3 YES	YES	YES YE
	PBKS	0.5A/Cortact 80V AC/DC	Narrow Ploth Connector (Board to Board) 0.5mm (500 pleos)	e) YES	N/A	NO	99.	1 500	500 6-8 w	ON SHee	9	ON.	YES	NoPh	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comedons	STD ROHS	sa ves	YES	W Say
	PBKS	0.5A/Cortact 80V ACIDC	Narrow Ploth Connector (Board to Board) 0.5mm (500 pleo	6	N/A	NO	09 po.	009 (	600 6·8 w	ON syee	9	ON.	YES	NoPb	250 Jape	n 8536.69.4040	EAR99	Connectors	Namow Pitch Connectors	SHDR RDHS	3 YES	YES	YES YE
AXK5S80047YA	PBKS	0.5A/Cortact 80V AC/DC	Narrow Pich Connector (Board to Board) 0.5mm (500 pisto)	w) YES	N/A	NO .	09 po.	1 500	500 6-8 w	ON syee.	9	ON	YES	NoPh	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comectons	STD ROHS	3 YES	YES	YES
	PBKS	0.5A/Cortact 80V ACIDC	1 5	Ľ	N/A	NO	99	, 500	500 6-8 w	ON NO	9	ON.	YES	NoPb	250 3804	n 8538.69.4010	EAR99	Comedors	Namow Pitch Comedions	STD ROHS	YES	YES	Y ES
AXIGSB0347YA	PSKS	15	0.5mm	1	N/A	NO	90	009	500 6-8 w	ON	9	ON.	VES.	NoPb	250	n 8536.69.4040	EAR99	Comedors	Namow Pitch Connectors	STD ROHS	, YES	S S	X 83 A
	b Mr. G	OffatCorrace 80V & C/DC	Manual Beds Conserve Board to Board Offerm MOD risks	viii viii v	NA	ON	Oy pro	909	6.8 w	ON	9	ON	VES	No.09s	osco pare	8696 60 4040	E 4000	Comadore	Marrow Block Cornactors	SHUB	\ \ \	884	N Sec
	0.00	1	The state of the s	1	*****	2 9				9	2 9	2	2 3	10.00	on on	900000000000000000000000000000000000000	00000		The second secon	010		3	20.
	BBKS	OSA/Cortact any ACIDC	Newscare Diede Conseque (Doesd to Doesd) Offeren (600 place)	C S	MATE	2 9	9	88	+	ole ole	2 2	2 2	2 0	MAGIN	oden oden	9636 60 4040	5,600	Compage	Name and Company	one one	2	, m	8 9
	1 000	V row	1		VIII.	01	0 0	000	000	91	9	9	011	1000	oran oran	000000000000	00000	o common o	anous transcomments	010		011	001
	Paks	ti	Narrow Pitch Connector (Board to Board) 0.5mm (300 perce	_	N/A	ON .	See See	200	+	ON SHee	9	9	ves.	NoPb	220	n 8536.69.4040	E ARS9	Comedors	Namow Intch Comedions	STD MOHS	YES	ALL S	w .
	PGKS	05ACortact 80V ACIDC	Narrow Pich Connector (Board to Board) 0.5mm (5000 pecos)	_	N/A	00	Sed S	800	8-9 we	ON SHOOM	2 !	02	VES.	NoPb	oge .	n 8536.69.4040	EAR99	Comedors	Namow Pitch Cornectors	STD ROHS	X X	YES	W SS
	ravo	5	ivertow rittor Cannactor (planta to Blanta) (commission para	1	N/A	2	0	000	900	ON Sales	2	2	150	O.JON.	ader ogs	000000004040	E-MAN SS	Comedias	Namow mich Comiscions	O I I	821	, a	150
	PSKS	5	Narrow Pilds Connector (Board to Board) 0.5mm (300 piece	_	N/A	9	Zool Di	009	+	ON Sylen	9	9	eg.	NoPb	1	n 8536.69.4040	E AR99	Comedors	Namow Pitch Comectors	STD ROHS	S VES	ÆS	W SBY
	PBKS	ortact	Connector (Board to Board) 0.5mm	_	NIA	00	Sed Bes	009	900 e-8w	NO SHOOM	2	2	VES.	NoPb	250 Japan	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comectors	STD ROHS	YES	YES	YES
	PBKS	25	Narrow Pildh Connector (Board to Board) 0.5mm (500 piso		N/A	9	Sod	009	+	ON Sylven	9	9	YES	NoPb	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comectors	STD ROHS	3 YES	YES	YES
AXI03S40-M7YA	PSKS	0.5A/Cortact 80V ACIDC	Narrow Pilch Connector (Board to Board) 0.5mm (500 piece)	e) YES	N/A	- ON	Zeel St.	2009	500 6-8 wv	ON SHEET	9	Q.	YES	NoPb	250 Jape	n 8536.69.4040	E AR99	Comedors	Namow Pitch Comedons	STD ROHS	YES	YES	YES M
AXI65S40547YA	PBKS	0.5A/Cortact 80V AC/DC	Narrow Plich Connector (Board to Board) 0.5mm (500 pleos)	o) YES	N/A	NO	ted 50.	009 0	500 6-8 we	ON Sylvan	9	ON	YES	NoPb	250 Japan	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comectons	STD ROHS	3 YES	YES	YES Y
AXI05S40647YA	PBKS	0.5A/Cortact 80V ACIDC	Narrow Pilch Connector (Board to Board) 0.5mm (500 pisos	w) YES	N/A	NO	Ted 50	009	8.8 w	ON sylva	2	00	YES	NoPh	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comedons	STD ROHS	YES	YES	YES
AXI65SIO467YA	PBKS	0.5A/Cortact 80V AC/DC	Narrow Pich Connector (Board to Board) 0.5mm (500 piece)	s) YES	N/A	NO F	76 par,	009 (	500 6-8 we	ON syles	9	ON	YES	NoPb	250 Jape	n 8535.69.4040	EAR99	Comedors	Namow Pitch Comedions	STD ROHS	say yes	NES.	W 83Y
AX165950547YA	PBKS	0.5A/Cortact 80V AC/DC	Narrow Ploth Connector (Board to Board) 0.5mm (500 pleos)	w) YES	N/A	NO F	09 pa,	009 (	500 6 · 8 wv	ON sylva	9	ON	YES	NoPb	250 Japa	n 8536.69.4040	EAR99	Comedars	Namow Pitch Comedons	STD ROHS	3 YES	YES	Y Say
AXI65950647YA	PBKS	0.5A/Cortact 80V AC/DC	Narrow Pich Connector (Board to Board) 0.5mm (500 piece	w) YES	N/A	NO	06 per.	009	500 6-8 w	ON syee	9	ON	YES	NoPh	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comedons	STD ROHS	3 YES	YES	YES
	PBKS	0.5A/Cortact 80V AC/DC	Narrow Pich Connector (Board to Board) 0.5mm (500 piece)	») YES	N/A	NO	99 par.	009	500 6-8 we	ON syles	9	ON	YES	NoPh	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comedions	STD ROHS	s yes	YES	Y 83Y
	PBKS	05A/Cortact 80V ACDC	Narrow Pilch Connector (Board to Board) 0.5mm (500 place	Ļ	N/A	NO NO	90	200	500 6-8 w	ON	9	ON.	VES.	NoPb	250	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comedons	STD ROHS	YES	YES	YES
	PBKS	05A/Cortact 80V AC/DC	Narow Pitch Connector (Board to Board) 0.5mm (500 piece	Ĺ	N/A	NO	90	200	500 6 8 W	ON	9	ON	ÆS	NoPb	. Japa	n 8536.69.4040	EA899	Comedors	Narrow Pitch Comectors	STD ROHS	YES	Æ	YES
	B	ceare	conserior (Board to EDC) 0.4mm	ľ	N/A	ON	9	600	6.8 w	ON	2	QN	NE S	No.09s	260 1904	8536 69 4040	E 10000	Comedore	Namow Mich Comedons	STD SHOW	S S S	9	887
	ā	١,	Monocus Bioth Connection (B cond to CDC) O dress (600 orders)	1	MAZA	9	1 6		9 9 9	2	9	92	9	MAGN	360 Issue	9636 69 4040	2000	Compagne	Name of State Connection	070	2	9	9
1	. 4	O 38 location	Sept Social Control Control Sept Sept Sept Sept Sept Sept Sept Sept	1	NIA.	2	0 0	000		ON ON	2	2 2	2 0	No. Ch.	adan adan	9636 60 4040	0000	Compage	Manual Math Company	OTO OTO	2	S S	22. 3
	2	к	Namow Pich Connector (Board to PPC) (LArm) (50) prese	1	NA	2	Coop Co	900	200	ON SHEET	2	2	car	O-GOA	ader our	0000.084040	66000	Comedars	Namow High Comedoors	SID MOTE	182	100	100
	P.	0.3M/contact 60V ACIDC	Namow Pitch Connector (Board to FPC) 0.4mm (500 pleos)		NA	00	Rod	009	800 6-8 W	ON System	9	9	YES	NoPb	250 Jape	n 8536.69.4040	E/R99	Comedors	Namow Pitch Comedions	STD ROHS	YES	YES	YES
	P4	0.3A/oortact 80V ACIDC	Namow Pilds Connector (Board to FPC) 0.4mm (50) pleas	a) YES	N/A	NO ON	Red 9.	2009	500 6-8 w	NO sales	9	9	YES	NoPb	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comedons	STD ROHS	YES	YES	YES
	P4	0.3A/oortact 80V ACIDC	Narrow Ploth Connector (Board to FPC) 0.4mm (500 pleos	9) YES	N/A	NO	ted SC	009	500 6-8 w	ON sylen	9	ON.	YES	NoPb	250 Jape	n 8536.69.4040	E AR 99	Comedors	Namow Pitch Comectors	STD ROHS	3 YES	YES	YES M
	P4	0.3A/contact 80V ACIDC	Namow Plich Connector (Board to FPC) 0.4mm (500 pleos)	) YES	N/A	NO F	ted 50.	009 0	8.8 w	ON sylan	9	NO	YES	NoPb	250 Japo	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comedons	STD ROHS	3 YES	YES	YES YE
	P4	0.3A/cortact 60V ACIDC	Narrow Pitch Connector (Board to FPC) 0.4mm (500 pleos	) YES	N/A	NO	Ted 50	009	8.8 w	ON sylva	2	00	YES	NoPh	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comedons	STD ROHS	YES	YES	YES
	P4	0.3A/oortact 80V ACIDC	Namow Pitch Connector (Board to FPC) 0.4mm (500 pleos	sav (e	N/A	NO N	, sed 50	009 (	500 6-8 w.	ON sylen	Q	ON	YES	NoPh	250 Japa	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comedions	STD ROHS	S YES	YES	W SBY
AXK780347GA	p4	0.3M/contact 80V AC/DC	Namow Pilch Connector (Board to FPC) 0.4mm (500 plece)	s) YES	N/A	NO F	76 pa,	009 (	500 6 · 8 wv	CN syee	9	ON	YES	NoPb	220 Pale	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comectons	STD ROHS	3 YES	YES	YES YE
	P4	0.3A/oortact 80V ACIDC	Narrow Pilch Connector (Board to FPC) 0.4mm (500 pleop	) YES	N/A	NO	79 po,	009 (	500 6 · 8 · w	ON sylon	9	ON	YES	NoPh	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Comectors	STD ROHS	3 YES	YES	YES YE
AXICT80247GA	P4	0.3A/oortact 80V ACIDC	Namow Pitch Connector (Board to FPC) 0.4mm (500 pleos)	e) YES	N/A	NO	99 994	009 (	500 6-8 wv	ON syee	9	ON.	YES	NoPh	250 Jape	n 8536.69.4040	E AR99	Comedors	Namow Pitch Comedions	STD ROHS	s ves	YES	YES M
AXICT80347GA	P4	0.3A/oortact 80V ACIDC	Nanow Pilch Connector (Board to FPC) 0.4mm (500 plece)		N/A	NO	99 pa.	1 500	500 6-8 we	ON	9	ON.	YES	NoPb	250 Japan	n 8536.69.4040	EAR99	Comedors	Namow Pitch Connectors	STD ROHS	YES	YES	YES Y
A0K780147A	P4	0.3Avortact 60V ACIDC	Nanow Ploth Cornector (Board to FPC) 04mm (500 ploss	L	N/A	NO	90	200	500 6-8 W	ON	9	ON	Æ	NoPh	250 Japs	n 8536.69.4040	E 4899	Comedors	Narrow Pitch Comectors	STD ROHS	YES	YES	YES
	PA	0.3Alooract 80V ACIDC	Namow Pitch Connector Board to FPC1 04mm (500 piece)		N/A	ON	99	200	500 G-8 wv	ON SHARE	9	QV	YES	NoPh	250	n 8536 69.4040	E AR 90	Comedors	Namow Pitch Connections	SHOW GTS	YES	YES	YES
AXICTBIOATGA	26		Namow Ploth Connector (Board to FPC) 0.4mm (60) decor	ļ	N/A	ON	06	wy con	500 A.8 w	CN	9	CN	VES.	NoPh	and. OXC	0 8636 69 4040	E/839	Comedors	Namow Pitch Connections	SHOR GTS	YES	YES	SA SAA
ANOBO046418	ā	and a	Monour Diete Connected Donnel to DDC O Area Att Species	1	MAZA	9	1 8		9 9 9	3	9		9	MAGN	360	9636 69 4040	2000	Compagne	Marrow Stoth Connection	omo omo		9	
				Ţ		9				9	9	91	0 0		-	0 00 00 00 00	0000			own or or			0007
200000000000000000000000000000000000000	Ē.		reactions are consecut (code to the constant constant (code to the code)	1	VII.	2	0	000	0.0	ON O	2	2	031	no.	order order	00000000000	Evendo	COLLEGORO	WILL THUI CONTROLLS	or norm	3	201	200
A39620245WA	P.	ortact	Namow Pitch Connector (Board to FPC) 0.4mm (500 pleos)		NA	00	Rod	009	800 6-8 W	ON System	9	9	YES	NoPb	250 Jape	n 8536.69.4040	E/R99	Comedors	Namow Pitch Connectors	STD ROHS	YES	YES	YES
A39340145WA	P4	15	Namow Pitch Connector (Board to FPC) 0.4mm (500 piece	e) YES	N/A	ON	ted 50	009	500 6-8 w	ON syles	9	ON	νES	NoPh	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Connectors	STD ROHS	3 YES	YES	YES Y
A39840245WA	P4	0.3Woortact 80V ACIDC	Namow Ploth Connector (Board to FPC) 0.4mm (500 pleos)	a) YES	N/A	NO	ted 50.	009 0	500 6-8 w	ON sylen	9	ON	YES	NoPb	250 Japo	n 8536.69.4040	EAR99	Comedors	Namow Pitch Connectors	STD ROHS	3 YES	YES	YES Y
A320850145WA	P4	0.34/cortact 60V ACIDC	Narrow Pitch Connector (Board to FPC) 0.4mm (500 pleos)	) YES	N/A	NO	Ted 50	009	500 6 · 8 w	ON sylva	2	00	YES	NoPh	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Connectors	STD ROHS	YES	YES	YES
	P4	0.3A/oortact 80V ACIDC	Namow Pitch Connector (Board to FPC) 0.4mm (500 pleos	) YES	N/A	NO	99 994	009 (	500 6-8 w	ON syee	9	ON.	YES	NoPh	250 Jape	n 8536.69.4040	E AR99	Comedors	Namow Pitch Connectors	STD ROHS	s ves	YES	YES M
AX8860145WA	P4	0.3A/cortact 80V AC/DC	Namow Pilch Connector (Board to FPC) 0.4mm (500 pleos)	s) YES	N/A	NO	09 par	009	500 6-8 w	ON sylon	9	ON	YES	NoPh	250 Japo	n 8535.69.4040	EAR99	Comedors	Namow Pitch Connectors	SHOR ROHS	3 YES	YES	YES
A390860245WA	P4	0.3A/oortact 80V AC/DC	Namow Pitch Connector (Board to FPC) 0.4mm (500 pleos)	) YES	N/A	NO	06 po	009	500 6 8 W	ON sylon	Q	ON	YES	NoPh	250 Jape	n 8538.69.4040	EAR99	Comedors	Namow Pitch Connectors	STD ROHS	3 YES	YES	YES YE
A 303804 46.944	M	0.14/ovesce 80V.A.C/D.C	Narrow Bloth Connector (Board to BBC) O Arram (400 risco	VES.	N/A	ON	Oy pro	9	6.8 w	ON CO	9	ON	VES	No.09s	360 have	8696 69 4040	E 4000	Comadore	Marrow Birch Connectors	SHOR OLD	\ \ \	884	N SEA
	: 2	1	and and an	T.	*****	2 9				9	2 9	2	2 3	10.00	on on	900000000000000000000000000000000000000	00000		The second secon	010		9	20.
	ž.	к	Namow Pilch Connector (Board to PPC) (L4mm (500) peop)	a) YES	N/A	9	N Cod	900	900 6.8%	NO SHOOL	2	2	TES.	NOPD	oder over	n 8535.654040	EVERN	Comediars	Namow Mich Connectors	SID MOHS	, res	TES	TES TE
	P4S	0.3A/cortact 60V ACIDC	Narrow Pilch Connector (Board to FPC) 0.4mm (500 pleop	) YES	N/A	- ON	Red St	009	600 6 8 M	ON system	9	ON	YES	NoPh	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Connectors	STD ROHS	YES	YES	YES
	P4S	0.3Aloontact 80V ACIDC	Namow Pich Connector (Board to FPC) 0.4mm (500 piece	) YES	N/A	NO ON	ted St.	009	500 6-8 w	ON Sylven	Q	ON	YES	NoPb	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Connectors	STD ROHS	3 YES	YES	YES Y
AXT324124A	P45	0.3Woortact 80V ACIDC	Namow Pilch Connector (Board to FPC) 0.4mm (500 pleco)	e) YES	N/A	9	ted 50	009 (	500 6-8 w	ON syles	9	9	YES	NoPb	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Connectors	STD ROHS	YES	YES	YES
	P4S	0.3A'cortact 60V ACIDC	Narrow Plots Connector (Board to FPC) 0.4mm (500 pleos	s) YES	N/A	NO R	76 pa <sub>1</sub>	009 (	500 6 · 8 w.	ON syee	9	ON	YES	NoPb	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Connectors	SHOR GTS	3 YES	YES	YES YE
	P4S	0.3A/oprisid 80V ACIDC	Narrow Pitch Connector (Board to FPC) 0.4mm (500 pleos	e) YES	N/A	NO	99 per,	009	500 6-8 w	ON skee	9	ON.	YES	NoPh	250 Jape	n 8536.69.4040	EAR99	Comedors	Namow Pitch Connectors	STD ROHS	s ves	YES	Y S3Y
	SPd	0.3Moortact ROV ACIDG	Namow Ploth Connector (Board to FPC) 0.4mm (50) place	L	N/A	ON	90	200	+	CN	9	92	VES	NoPh	250	0 8536 69 4040	FAR99	Comedors	Namow Pitch Connections	SHOW GTS	X KBA	VES	W SHY
	P4S	+	_	4	N/A	02	o pos	+		Notice Inc.	2 !	2	TES.	Noero	7	n 85-35-591-4040	EAR99	Comedors	Namow Pitch Connectors	STD huma	X X	YES	W SS
				_	N/A	00	Sed 500	+	_		9	0	YES	NoPb	+	n 8536.69.4040	EAR99	Comedors	Namow Pitch Connectors	STD ROHS	3 YES	YES	YES
AXT420124A		0.3Aloontact 80V ACIDC	Narrow Pitch Connector (Board to FP.C) 0.4mm (500 pleos)	sav (e	N/A	NO	Sed 500	009 0	500 6 - 8 weeks	ON syees	Q	9	YES	NoPh	250 Japa	Japan 8535.69.4040	EAR99	Comedors	Namow Pitch Connectors	STD ROHS	S YES	YES	W SBY
				4					-	1			1		1								

AXT424124A	P4S	0.3A/cortact	80V ACIDC	Namow Pich Connector (Board to FPC) 0.4mm (500 pleos)	YES	N/A	NO	Red	900 90	500 500	6 - 8 weeks	QU	Q	NO	YES P	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedors	Namow Pitch Comectons S	STD R	NOHS Y	YES YES	YES	YES
AXT430124A	P4S	0.34/contact	80V ACIDC	Narrow Pitch Connector (Board to FPC) 0.4mm (500 pleos)	YES	N/A	NO	Red	900 80	500 500	6 - 8 weeks	QV	Q	NO	YES N	NoPb	250 Jb	Japan 8536.69.4040	EAR99 Comedors		STD R		YES YES	YES	YES
AXT434124A	P4S	0.34/contact	60V ACIDC	Narrow Pilch Connector (Board to FPC) 0.4mm (500 pleos)	YES	N/A	ON.	Red	900 90	200 200	6 · 8 wasks	Q	2	ON.	YES	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedon	Namow Pitch Comedions 8	STD R	NOHS Y	YES YES	YES	YES
AXT440124A	P4S	0.3A/oortact	DON YOU	Narrow Pich Connector (Board to FPC) 0.4mm (500 pleos)	YES	N/A	NO	Red	900 20	200 009	6 - 8 weeks	QN	QV	NO	YES N	NoPh	250 38	Japan 8536.69.4040	EAR99 Comedars	Namow Pitch Comectors §	STD R	ROHS Y	YES YES	SBA	YES
AXT510124A	F4S	0.3A/oortact	DON YOU	Narrow Ploth Connector (Board to FP.C) 0.4mm (500 pleoe)	YES	N/A	ON	Red	900 20	200 200	6 - 8 weeks	QN	QV	NO	YES N	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedors	Namow Pitch Comectons 8	STD R	ROHS Y	YES YES	YES	YES
AXT520124A	F4S	0.3A/oortact	80V ACIDC	Nanow Pids Connector (Board to FPC) 0.4mm (500 piece)	YES	N/A	ON NO	Red	900 20	200 200	6 - 8 wasks	Q	9	ON.	YES N	NoPb	250 Ja	Japan 8535.69.4040	EAR99 Comedors	Namow Pitch Comectors 8	STD R	PICHS Y	YES YES	YES	YES
AXT524124A	F4S	0.3A/oortact	DON YOU	Narrow Pich Connector (Board to FPC) 0.4mm (500 pleos)	YES	N/A	NO	Red	900 20	200 009	6 - 8 weeks	QN	QV	NO	YES N	NoPb	250 38	Japan 8536.69.4040	EAR99 Comedars	Namow Pitch Comectors §	STD R	ROHS Y	YES YES	SBA	YES
AXT530124A	F4S	0.3A/oortact	DOD A ACIDC	Namow Plots Connector (Board to FPC) 0.4mm (500 pleos)	YES	N/A	NO	Red	900 20	200 200	6 · 8 weeks	QN	Q	NO	ves n	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedors	Namow Pitch Comectors 8	STD R	NOHS Y	YES YES	YES	YES
AXT534124A	F4S	0.3A/oortact	80V ACIDC	Nanow Pich Connector (Board to FPC) 0.4mm (500 piece)	YES	N/A	ON.	Red	900 90	200 200	6 - 8 wasks	Q	9	ON	YES N	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedors	Namow Pitch Comectors 8	STD R	NOHS Y	YES YES	YES	YES
AXT540124A	F4S	0.3A/oortact	80V ACIDC	Namow Pich Connector (Board to FP C) 0.4mm (500 pleos)	YES	N/A	ON.	Red	900 80	200 200	6 - 8 weeks	9	9	ON	ves v	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedars	Namow Pitch Comectons S	STD R	ROHS Y	YES YES	YES	VÆ8
AXT550124A	F48	0.3A/oortact	80V ACIDC	Namow Ploth Connector (Board to FPC) 0.4mm (500 plece)	YES	N/A	ON.	Red	900 20	200 200	6 · 8 weeks	9	9	ON	YES	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedars	Narrow Pitch Comectors 5	STD R	NOHS Y	YES YES	YES	YES
AXT560124A	F48	0.3A/oortact	80V ACIDC	Nanow Pich Connector (Board to FPC) 0.4mm (500 pleos)	YES	N/A	ON.	Red	900 20	200 200	6 - 8 wasks	9	9	ON.	YES N	NoPh	250 Ja	Japan 8536.69.4040	EAR99 Comedors	Narrow Pitch Cornectors 8	STD RK	NOHS Y	YES YES	YES	YES
AXT580124A	F4S	0.3A/oortact	80V ACIDC	Namow Pich Connector (Board to FPC) 0.4mm (500 pleos)	YES	N/A	ON.	Red	900 20	200 200	6 - 8 weeks	9	9	ON.	YES P	NoPh	250 Jb	Japan 8535.69.4040	EAR99 Comedats	Namow Pitch Comectors 8	STD R	Y NOHS	YES YES	YES	YES
AXT610124A	F4S	0.3Moortact	80V ACIDC	Namow Ploth Connector (Board to FPC) 0.4mm (500 pleas)	YES	N/A	ON.	Red	900 80	200 200	6 - 8 weeks	Q	Q	ON	YES N	NoPh	250 Jb	Japan 8536.69.4040	EAR99 Comedars	Namow Pitch Comectors 8	STD R	Y NOHS	YES YES	YES	YES
AXT620124A	F48	0.3A/oortact	80V ACIDC	Nanow Pich Connector (Board to FPC) 0.4mm (500 pleos)	YES	N/A	ON.	Red	900 20	200 200	6 - 8 wasks	9	9	ON.	YES N	NoPh	250 Ja	Japan 8535.69.4040	EAR99 Comedors	Namow Pitch Comedons 8	STD RK	NOHS Y	YES YES	YES	YES
AXT624124A	F4S	0.3A/oortact	90V ACIDC	Namw Plich Connector (Board to FPC) 0.4mm (500 pleos)	YES	N/A	ON.	Red	900	200 200	6 - 8 weeks	9	9	ON.	vES v	NoPh	250 Jb	Japan 8535.69.4040	EAR99 Comedats	Namow Pitch Comedions S	STD R	NOHS Y	YES YES	YES	¥.
AXT630124A	F4S	0.3A/cortact	90V ACIDC	Namow Ploth Connector (Board to FPC) 0.4mm (500 pleos)	YES	N/A	ON.	Red	900 80	200 200	6 - 8 wasks	Q	9	ON.	VES N	NoPb	250 Jb	Japan 8535.69.4040	EAR99 Comedars	Namow Pitch Comectors S	STD R	NOHS Y	YES YES	YES	YES
AXT634124A	F4S	0.3A/oortact	80V ACIDC	Nanow Pich Connector (Board to FPC) 0.4mm (500 piece)	YES	N/A	ON.	Red	900 90	200 200	6 - 8 wasks	Q	9	ON	YES N	NoPh	250 Ja	Japan 8536.69.4040	EAR99 Comedors	Namow Pitch Comectons S	STD R	NOHS Y	YES YES	YES	YES
AXT640124A	F4S	0.3A/oortact	80V ACIDC	Namow Pitch Connector (Board to FPC) 0.4mm (500 piece)	YES	N/A	ON.	Red	900 20	200 200	6 - 8 weeks	9	9	ON	VES N	NoPb	250 Ja	Japan 8535.69.4040	EAR99 Comedors	Namow Pitch Comectors S	STD R	ROHS Y	YES YES	YES	YES
AXT650124A	F4S	0.3Moortact	90V ACIDC	Narrow Ploth Connector (Board to FP.C) 0.4mm (500 plece)	YES	N/A	ON.	Red	900 20	200 200	6 - 8 weeks	Q	9	ON	YES N	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedors	Namow Pitch Comectors 8	STD RK	NOHS Y	YES YES	YES	YES
AXT660124A	F4S	0.3A/oortact	80V ACIDC	Namow Pitch Connector (Board to FPC) 0.4mm (500 piece)	YES	N/A	ON.	Red	900 20	200 200	6 - 8 weeks	9	9	ON	VES N	NoPb	250 Ja	Japan 8535.69.4040	EAR99 Comedars	Namow Pitch Comectons S	STD R	ROHS Y	YES YES	YES	YES
AXT680124A	F4S	0.3A/oortact	DOD A ACIDC	Namow Plots Connector (Board to FPC) 0.4mm (500 pleos)	YES	N/A	NO	Red	900 20	200 009	6 · 8 weeks	QN	Q	NO	ves n	NoPb	250 Ja	Japan 8535.69.4040	EAR99 Comedors	Namow Pitch Comectors 8	STD R	NOHS Y	YES YES	YES	YES
AYF330735A	Y38	02A/Cortact	90V ACIDC	FP.C.Connector (0.3mm) 500 piece	YES	N/A	ON NO	Red	900 20	200 200	6 - 8 wasks	Q	9	ON.	YES N	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedors	FPC Connectors 8	STD RK	PICHS Y	YES YES	YES	YES
AYF331165A	Y38	02A/Cortact	DON YOU	FP C Connector (0.3mm) 500 piece	YES	N/A	NO	Red	900 20	200 009	6 - 8 weeks	QN	QV	NO	v Sav	NoPb	250 Ja	Japan 8535.69.4040	EAR99 Comedate	FPC Connectors §	STD RK	ROHS Y	YES YES	SBA	YES
AYF331535A	Y38	02A/Cortact	DON YOUC	FP.C.Connector (0.3mm) 500 piece	YES	N/A	NO	Red	900 20	200 200	6 · 8 weeks	QN	Q	NO	v sav	NoPb	250 Ja	Japan 8535.69.4040	EAR99 Comedors	FPC Connectors 8	STD RK	NOHS Y	YES YES	YES	YES
AYF331735A	Y38	02A/Cortact	50V ACIDC	FP C Connector (0.3mm) 500 pisos	YES	N/A	NO	Red	900 20	500 500	6 - 8 wasks	ON	QV	NO	YES N	NoPb	250 Ja	Japan 8535.69.4040	EAR99 Comedats		STD RK		YES YES	YES	YES
AYF332135A	Y38	0.2A/Cortact	50V ACIDC	FP C Connector (0.3mm) 500 piece	YES	N/A	NO	Red	900 90	500 500	6 - 8 weeks	NO	Q	NO	YES	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedors	FPC Connectors 5	STD R	ROHS Y	YES YES	YES	YES
AYF332335A	Y38	02A/Cortact	80V ACIDC	FPC Connector (0.3mm) 500 place	YES	N/A	9	Red	900	200 200	6 · 8 weeks	9	9	ON.	vES v	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedors		STD	NOHS Y	YES YES	YES	YES
AYF332565A	Y3BW	02A/Cortact	50V ACIDC	FP C Connector (0.3mm) 500 pisos	YES	N/A	NO	Red	900 20	200 200	6 - 8 wasks	ON	QV	NO	YES N	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedors		STD RK		YES YES	YES	YES
AYF333135A	Y38	0.2A/Cortact	50V ACIDC	FP C Connector (0.3mm) 500 piece	YES	N/A	NO	Red	900 90	900 900	6 - 8 weeks	NO	Q	NO	YES	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedons	FPC Connectors 5	STD R	ROHS Y	YES YES	YES	YES
AYF33335A	Y38	02A/Cortact	DON YOUC	FP.C.Connector (0.3mm) 500 piece	YES	N/A	NO	Red	900 20	200 200	6 · 8 weeks	QN	Q	NO	v sav	NoPb		Japan 8535.69.4040	EAR99 Comedors		STD RK	NOHS Y	YES YES	YES	YES
AYF333636A	Y38	02A/Cortact	SOV ACIDIC	FP.C Connector (0.3mm) 500 piece	YES	N/A	ON	Red	900 20	200 200	6 · 8 wasks	ON	Q	NO	VES N	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedors	FPC Connectors 8	STD RK	NOHS Y	YES YES	YES	YES
AYF333735A	Y38	02A/Cortact	90V ACIDC	FP C Connector (0.3mm) 500 piece	YES	N/A	NO	Red	900 20	500 500	6 - 8 weeks	ON	QV	NO	YES N	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedors	FPC Connectors 8	STD RK	POHS Y	YES YES	YES	YES
AYF333935A	Y38	02A/Cortact	DON YOUC	FP.C.Connector (0.3mm) 500 piece	YES	N/A	NO	Red	900 20	200 200	6 · 8 weeks	QN	Q	NO	v sav	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedors		STD RK		YES YES	YES	YES
AYF335135A	Y38	02A/Cortact	SOV ACIDIC	FP.C Connector (0.3mm) 500 piece	YES	N/A	ON	Red	900 20	009 009	6 · 8 wasks	ON	Q	NO	VES N	NoPb	250 Ja	Japan 8535.69.4040	EAR99 Comedors	FPC Connectors 8	STD RK	NOHS Y	YES YES	YES	YES
AYF335165A	WBEA	02A/Cortact	DON YOU	FP C Connector (0.3mm) 500 piece	YES	N/A	NO	Red	900 20	200 009	6 - 8 weeks	QN	QV	NO	v Sav	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedate	FPC Connectors §	STD RK		YES YES	SBA	YES
AYFS30265TA	WBSA	0.5A/Cortact	90V ACIDC	FP.C.Connector (0.5mm) 500 place	YES	N/A	ON.	Red	900 20	200 200	6 - 8 weeks	Q	9	ON	VES N	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedars	FPC Connectors 8	STD RK	ROHS Y	YES YES	YES	YES
AYF630435A	158	0.5A/Cortact	50V ACIDIC	FP.C Connector (0.5mm) 500 pieces	YES	N/A	ON.	Red	900 20	200 200	6 - 8 wasks	9	9	ON.	VES N	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedats	FPC Connectors	STD RK	NOHS Y	YES YES	YES	YES
AYF530855TA	WBSA	0.5A/Cortact	50V ACIDC	FP C Connector (0.5mm) 500 piece	YES	N/A	ON.	Red	900 80	200 200	6 - 8 weeks	9	9	ON	v Sav	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedars	FPC Connectors 5	STD R	ROHS Y	YES YES	YES	VÆ8
AYF631035A	W58	0.5A/Cortact	90V ACIDC	FP.C.Connector (0.5mm) 500 piece	YES	N/A	ON.	Red	900 20	200 200	6 - 8 wasks	9	9	ON.	VES N	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedas	FPC Connectors	STD R	NOHS Y	YES YES	YES	YES
AYF632365TA	WBSA	0.5A/Cortact	90V ACIDC	FP.C.Connector (0.5mm) 500 piece	YES	N/A	ON.	Red	900 20	200 200	6 - 8 weeks	9	9	ON	VES N	NoPb	250 Ja	Japan 8535.69.4040	EAR99 Comedars	FPC Connectors 5	STD R	ROHS Y	YES YES	YES	YES
AYF632435A	YSB	0.5A/Cortact	DON YOU	FP.C.Connector (0.5mm) 500 place	YES	N/A	ON	Red	900 20	200 200	6 - 8 weeks	QN	QV	NO	VES N	NoPb	250 Ja	Japan 8535.69.4040	EAR99 Comedors	FPC Connectors 8	STD RK	ROHS Y	YES YES	YES	YES
AYF833035A	158	0.5A/Cortact	90V ACIDC	FP.C.Connector (0.5mm) 500 piece	YES	N/A	ON	Red	900 20	200 200	6 - 8 wasks	Q	9	ON.	YES N	NoPb	250 Ja	Japan 8535.69.4040	EAR99 Comedors	FPC Connectors 8	STD RK	PICHS Y	YES YES	YES	YES
AYF833085TA	WBSA	0.5A/Cortact	DON YOU	FP C Connector (0.5mm) 500 piece	YES	N/A	NO	Red	900 20	200 009	6 - 8 weeks	QN	QV	NO	v Sav	NoPb	250 Ja	Japan 8536.69.4040	EAR99 Comedars	FPC Connectors §	STD RK	ROHS Y	YES YES	SBA	YES
AYF634865TA	WBSA	0.5A/Cortact	90V AC/DC	FP.C Connector (0.5mm) 500 place	YES	N/A	ON ON	Red	900 80	200 200	6 - 8 weeks	Q	9	NO NO	ves v	NoPb	250 Ja	Japan 8535.69.4040	EAR99 Comedors		STD RK	NOHS Y	YES YES	YES	YES
AYF635035A	158	0.5A/Cortact	SOV ACIDIC	FP.C Connector (0.5mm) 500 piece	YES	N/A	ON	Red	900 20	009 009	6 - 8 weeks	ON	Q	NO	VES N	NoPb	250 Ja	Japan 8535.69.4040	EAR99 Comedors	FPC Connectors 8	STD RK	NOHS Y	YES YES	YES	YES