

Order Placement Recommendations and Considerations

The Products and Specifications listed in this document are subject to change (including specifications, manufacturing facility and discontinuing the Products) as occasioned by the improvements of Products. Consequently, when you review the mass-production design for the Products listed or when you place orders for these Products, Panasonic Corporation asks you to contact one of our customer service representatives and check that the details listed in the document are commensurate with the most up-to-date information.

[Safety precautions]

Panasonic Corporation is consistently striving to improve quality and reliability. However, the fact remains that electrical components and devices generally cause failures at a given statistical probability. Furthermore, their durability varies with use environments or use conditions. In this respect, please check for actual electrical components and devices under actual conditions before use. Continued usage in a state of degraded condition may cause the deteriorated insulation, thus result in abnormal heat, smoke or firing. Please carry out safety design and periodic maintenance including redundancy design, design for fire spread prevention, and design for malfunction prevention so that no accidents resulting in injury or death, fire accidents, or social damage will be caused as a result of failure of the Products or ending life of the Products.

As scope of warranty changes in accordance with your application, quality standards of Products fall into the following three categories depending on the applications of the products: Reference Standards, Special Standards, and Specified Standards that meet the quality assurance program designated by the customer. These quality standards have been established so that our products will be used for the applications listed below.

Reference Standards: Computers, office automation equipment, communications equipment, audio-video products, home electrical appliances, machine tools, personal devices, industrial robots

Special Standards: Transportation equipment (automobiles, trains, ships, etc.), traffic signal equipment, crime and disaster prevention devices, electric power equipment, various safety devices, and medical equipment not directly targeted for life support

Specified Standards: Aircraft equipment, aeronautical and space equipment, seabed relay equipment, nuclear power control systems, and medical equipment, devices and systems for life support

In the case that your usage is under the following conditions without exchanging the new specifications, Panasonic Corporation shall not warrant the quality of the Products. Panasonic Corporation asks you to contact one of our customer service representatives before exchange written in specifications.

- (1) When our products are to be used in any of the applications listed for the Special Standards or Specified Standards
- (2) When, even for any of the applications listed for the Reference Standards, our products may possibly be used beyond the range of the specifications, environment or conditions listed in the document or when you are considering the use of our products in any conditions or an environment that is not listed in the document
- (3) When you change to other equipment that have different usage condition after exchange the specifications in the usage above condition (1).

[Acceptance inspection]

In connection with the products you have purchased from us or with the products delivered to your premises, please perform an acceptance inspection with all due speed and, in connection with the handling of our products both before and during the acceptance inspection, please give full consideration to the control and preservation of our products.

[Warranty period]

Unless otherwise stipulated by both parties, the warranty period of our products is one year after their purchase by you or after their delivery to the location specified by you.

[Scope of warranty]

In the event that Panasonic Corporation confirms any failures or defects of the Products by reasons solely attributable to Panasonic Corporation during the warranty period, Panasonic Corporation shall supply the replacements of the Products, parts or replace and/or repair the defective portion by free of charge at the location where the Products were purchased or delivered to your premises as soon as possible.

However, the following failures and defects are not covered by the warranty:

- (1) When the failure or defect was caused by a specification, standard, handling method, etc. which was specified by you
- (2) When the failure or defect was caused after purchase or delivery to your premises by an alteration in construction, performance, specification, etc. which did not involve us
- (3) When the failure or defect was caused by a phenomenon that could not be predicted by the technology at purchasing or contracted time
- (4) When the use of our Products deviated from the scope of the conditions and environment set forth in the catalog and specifications
- (5) When, after our Products were incorporated into your Products or equipment for use, damage resulted which could have been avoided if your Products or equipment had been equipped with the functions, construction, etc. the provision of which is accepted practice in the industry
- (6) When the failure or defect was caused by a natural disaster or other force majeure

The terms and conditions of the warranty set forth in this Order Placement Recommendations and Consideration shall apply to the Products purchased or delivered to your premises. And the above terms and conditions shall not cover any induced damages by the failure or defects of the Products.

Panasonic Corporation
Electromechanical Control Business Division

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- | | | |
|---|-----------------------------------|---------------------------------|
| { | Packing quantity : 4, 5, 6mm type | : 1500 pcs/reel, 2 reels/carton |
| | 4.5, 5.5, 6.5mm type | : 1500 pcs/reel, 2 reels/carton |
| | 7, 8, 9mm type | : 1000 pcs/reel, 2 reels/carton |

Approved by *K. Motundu*

S P E C I F I C A T I O N S		NARROW-PITCH CONNECTORS	
		AXK5S○○○○7YG	
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4. Material : Molded portion : Heat resistant plastic (UL 94V-0), Natural color 			

SPECIFICATIONS

NARROW-PITCH CONNECTORS

AXK5S○○○○7YG

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Item	Specification	Test condition																		
6-3. Environmental characteristics																				
1) Ambient temperature	-55℃～+85℃	No icing or condensation																		
2) Storage temperature	-55℃～+85℃ (Products only) -40℃～+50℃ (Packaging structure)	No icing or condensation																		
3) Thermal shock Resistance (Header and socket mated)	After 5 cycles Insulation resistance Min. 100 MΩ Contact resistance Used AXK5S○○○0○7Y AXK5S○○○2○7Y Max. 60 mΩ Used AXK5S○○○3○7Y Max. 80 mΩ	Conformed to MIL-STD-202F, method 107G <table border="1"> <tr> <th>Order</th><th>Temperature (℃)</th><th>Time (minutes)</th></tr> <tr> <td>1</td><td>-55⁰₋₃</td><td>30</td></tr> <tr> <td>2</td><td>∩</td><td>Max. 5</td></tr> <tr> <td>3</td><td>85⁺³₀</td><td>30</td></tr> <tr> <td>4</td><td>∩</td><td>Max. 5</td></tr> <tr> <td></td><td>-55⁰₋₃</td><td></td></tr> </table>	Order	Temperature (℃)	Time (minutes)	1	-55 ⁰ ₋₃	30	2	∩	Max. 5	3	85 ⁺³ ₀	30	4	∩	Max. 5		-55 ⁰ ₋₃	
Order	Temperature (℃)	Time (minutes)																		
1	-55 ⁰ ₋₃	30																		
2	∩	Max. 5																		
3	85 ⁺³ ₀	30																		
4	∩	Max. 5																		
	-55 ⁰ ₋₃																			
4) Humidity resistance (Header and socket mated)	After 120 hours Insulation resistance Min. 100 MΩ Contact resistance Used AXK5S○○○0○7Y AXK5S○○○2○7Y Max. 60 mΩ Used AXK5S○○○3○7Y Max. 80 mΩ	IEC60068-2-78 Bath temperature 40℃±2℃ Humidity 90%RH to 95%RH																		
5) Salt water spray Resistance (Header and socket mated)	After 24 hours Insulation resistance Min. 100 MΩ Contact resistance Used AXK5S○○○0○7Y AXK5S○○○2○7Y Max. 60 mΩ Used AXK5S○○○3○7Y Max. 80 mΩ	IEC60068-2-11 Bath temperature 35℃±2℃ Salt water concentration : 5%±1%																		

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S P E C I F I C A T I O N S

NARROW-PITCH CONNECTORS

AXK5S○○○○7YG

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Item	Specification	Test condition
6) H ₂ S resistance (Header and socket mated)	After 48 hours Contact resistance Used AXK5S○○○0○7Y AXK5S○○○2○7Y Max. 60 mΩ Used AXK5S○○○3○7Y Max. 80 mΩ	Bath temperature 40 °C±2 °C Gas concentration 3 ppm±1 ppm Humidity 75%RH to 80 %RH
6-4. Life characteristics Insertion and removal life with no load	50 times • Composite removal force same as 6-2-2) • Contact resistance Used AXK5S○○○0○7Y AXK5S○○○2○7Y Max. 60 mΩ Used AXK5S○○○3○7Y Max. 80 mΩ	Repeated insertion and removal cycles of max. 200 times/hour
6-5. Soldering temperature resistance	The initial specification must be satisfied electrically and mechanically	Max. peak temperature of 260 °C Infrared reflow soldering (PC board surface temperature near connector terminals) Soldering iron 300 °C within 5 s 350 °C within 3 s
6-6. Solder paste thickness	The initial specification must be satisfied electrically and mechanically	Recommendation t=0.15 mm

7. Package : Embossed packaging

8. Precaution for use

Please use our products in the conditions described in our specification sheets.
Panasonic Corporation does not guarantee the failures caused by the usage in the
conditions beyond the specifications.

9. Remarks

9-1. Regarding PC board design

Refer to the recommended PC board pattern for keeping the strength of soldering.

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9-2. Connector placement

In case of dry condition, please note the occurrence of static electricity.
The product may be adhered to the embossed carrier tape or the cover tape in dry condition.
Recommended humidity is from 40%RH to 60%RH and please remove static electricity by ionizer in manufacturing process.

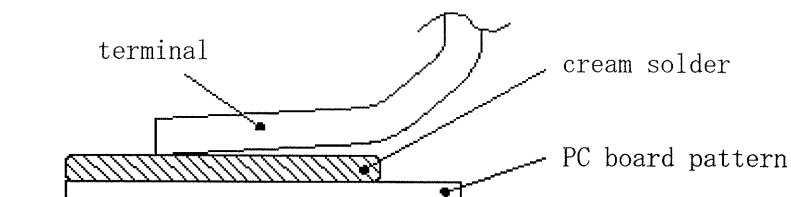
9-3. Soldering

1) Manual soldering.

- As this product is low profile type, please avoid the excessive solder. Because the excessive solder makes creepage at contact portion, or incomplete mating by soldering interference.
- Please use the soldering iron under specified temperature and times.
- Soldering flux may contaminate the contact portion, please check the contact portion after soldering with a magnifying glass. If the contamination is found, please clean the contamination before use.
- As excessive force to terminal by manual soldering has some possibilities of contact portion deformation, please be careful to the force by hand.
- Please clean soldering iron tip.

2) Reflow soldering.

- When cream solder printing is used, screen method is recommended.
 - The relation between the screen opening area and PC board foot pattern area should be referred to "Recommended PC board pattern" drawings and "Recommended metal mask pattern" drawings.
- Especially your consideration is appreciated not to expand the dimensions of the PC board pattern and the metal mask at the root part of terminals.



- When applying the different thickness of a screen, please contact us.
- There may be a case of difficult self-alignment depending on the connector size.
In that case, please be careful to align terminals and solder pads.

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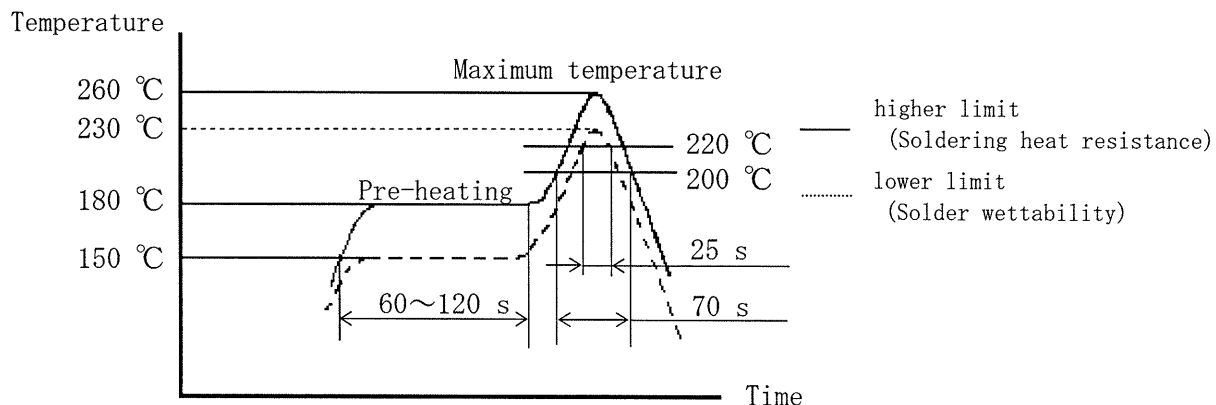
SPECIFICATIONS

NARROW-PITCH CONNECTORS

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- The following diagram shows the recommended reflow soldering temperature profile.



- Infrared reflow soldering is able to passed two times.
- The temperature is measured on the PC board surface near connector terminals.
- The condition of solder or flux creepage and wettability depend on the type of solder and flux. Please set the reflow temperature and oxygen level by considering the solder and flux characteristics.
- Do not use resin-containing solder. Otherwise, the contacts might be firmly fixed.

3) Rework of soldering portion.

- Rework shall be only one time.
- Please avoid the supplementary flux in case of rework for soldering bridge, as this may cause flux creepage to contact portion.
- Please use the soldering iron under specified temperature.

9-4. Preventing vibration and shock

Secure PC boards to prevent them from falling off as a result of vibrations and shocks, to prevent a direct load from being applied to the soldered portions.

9-5. As the excessive force on the terminals may cause the deformation and the integrity of solderability will be lost during reflow soldering, please avoid dropping or rough handling of the product.

9-6. When the soldering is not completed, do not mate nor unmate the connectors. And the external compulsory force to the terminal may cause the fixing force lowering between the terminal and the molding or the coplanarity failures.

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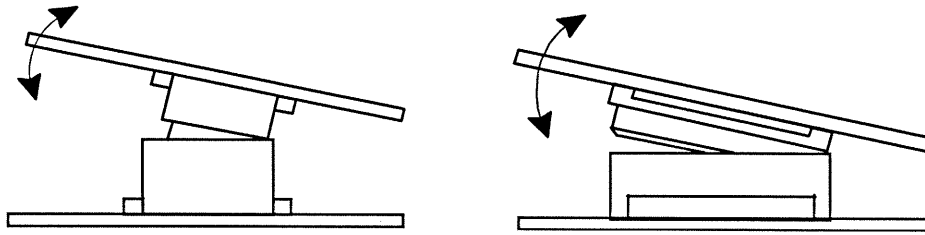
SPECIFICATIONS

NARROW-PITCH CONNECTORS

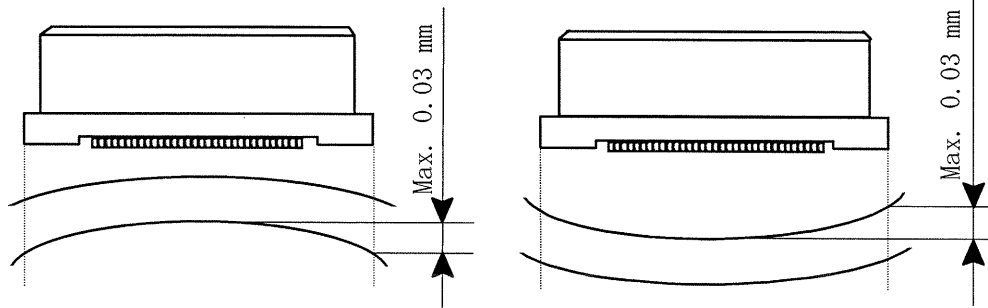
AXK5S000007YG

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- 9-7. These models are made very thin so that they may be smaller in size and light in weight than before.
Take care not to give then excessive force and insert by sliding when mating them together or unmating them; otherwise, breakage may result. To prevent damage from incorrect insertions, please confirm the correct position before mating connectors.

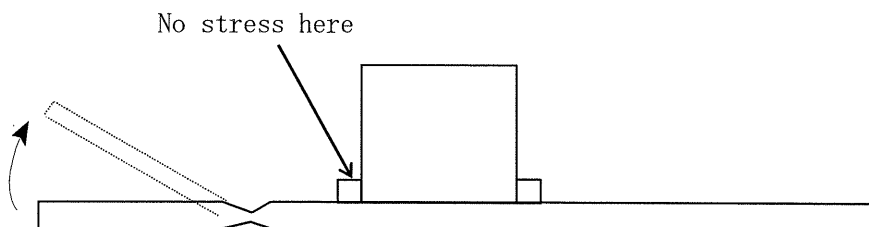


- 9-8. Keep the PC board warp 0.03 mm or below as against the overall length of the connector.



- 9-9. Applied the connector with positioning projection.
Though this connector has positioning tab for outline setting,
Please recommend to assemble by an automatic placement machine.

- 9-10. When cutting the PC board after mounting the connector, please avoid the stress at the soldering portion.



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<p>9-11. Although the incorrect insertion is prevented by its construction, do not put on excessive force to the connector, or it may damage it.</p> <p>9-12. PC board As thick coverlay / solder resist and adhesive may cause poor soldering, please set thickness of coverlay and adhesive as thin as possible.</p> <p>9-13. When mounting connectors on a FPC board :</p> <ul style="list-style-type: none">• When the connector soldered to FPC is mated or unmated, solder detachment may occur by the force to the terminals. Connector handling is recommended in the condition when the reinforcing plate is attached to the backside of FPC where the connector is mounted. The external dimension of the reinforcing plate is recommended to be larger than the dimension of "PC board recommended process pattern" (extended dimension of one side is approximately 0.5~1.0mm). The materials and thickness of the reinforcing plate are glass epoxy or polyimide (thickness 0.2-0.3mm) or SUS (thickness 0.1-0.2mm) .• As this connector has temporary locking structure, the connector mating may be separated by the dropping impact depend on the size, weight or bending force of the FPC. Please consider the measures at usage to prevent the mating separation. <p>9-14. Cleaning treatment Cleaning this product is not needed basically. Please note the following points to prevent the negative effect to the product when cleaning is necessary.</p> <ul style="list-style-type: none">• Please keep the cleanliness of the cleaning fluid to make sure that the contact surfaces are not contaminated by the cleaning fluid itself.• Semi-aqueous cleaning solvent is recommended as some powerful solvent may dissolve the molding portion or the marked letters. Please contact us when other solvent is used. <p>9-15. Restriction on the quantity of connector</p> <ul style="list-style-type: none">• When using board to board connectors, a pair of board shall NOT be connected with multiple connectors. Otherwise, misaligned connector positions may cause mating failure or product breakage. Panasonic corporation does not guarantee the failures caused by using the multiple connectors.			
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NARROW-PITCH CONNECTORS

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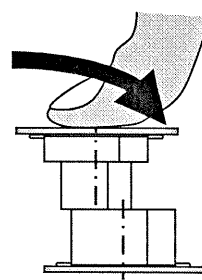
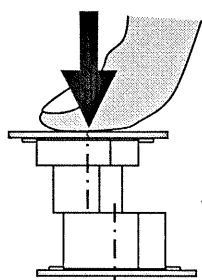
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9-16. Precautions for mating

This product is designed with ease of handling. However, in order to prevent the deformation or damage of contacts and molding, do not mate the connectors as shown below.

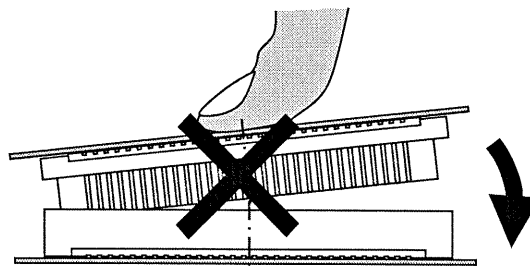
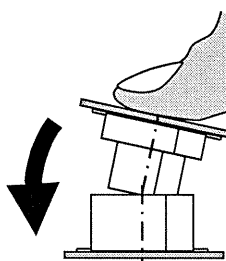
Press-fitting while the mating inlets of the socket and header are not matched.

Strongly pressed and twisted



Tilted mating

Tilted mating



9-17. Precautions for operating environment and storage environment

- Panasonic Corporation does not guarantee the failures caused by condensation.

9-18. Other precautions

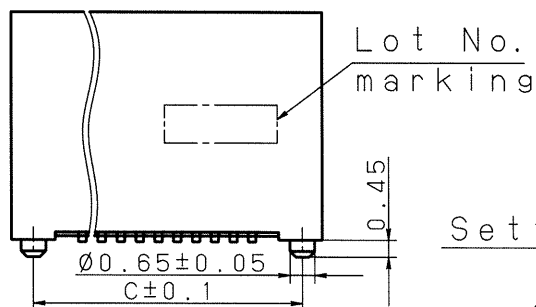
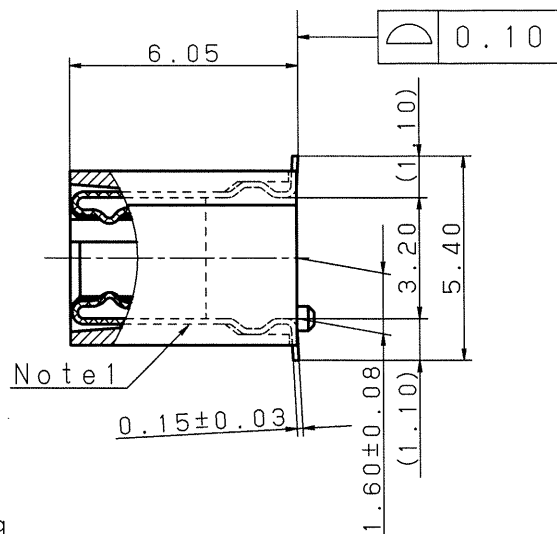
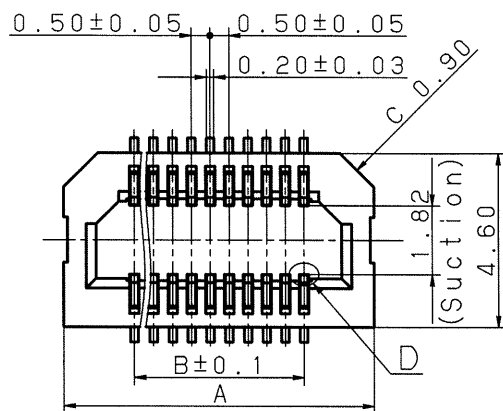
- When the coating material is used for preventing PC board isolation deterioration after soldering, please assure the coating material is not adhered on any part of connector.
- Please avoid the usage of connector as electric switching basically.

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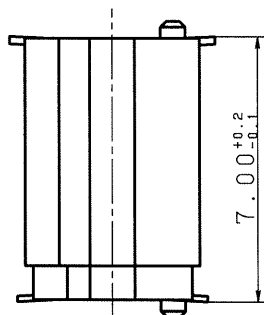
Panasonic Corporation

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	A X K 5 S O O O O 7 Y G		
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1 0. About safety Remarks			
Observe the following safety precautions to prevent accidents and injuries.			
<div>10-1. Do not use these connectors beyond the specification sheets. The usage outside of specified rated current, dielectric strength, and environmental conditions and so on may cause circuitry damage via abnormal heating, smoke, and fire.</div> <div>10-2. In order to avoid accidents, your thorough specification review is appreciated. Please contact us if your usage is out of the specifications. Otherwise, Panasonic Corporation cannot guarantee the quality and reliability.</div> <div>10-3. Panasonic Corporation is consistently striving to improve quality and reliability. However, the fact remains that electrical components and devices generally cause failures at a given statistical probability. Furthermore, their durability varies with use environments or use conditions. In this respect, please check for actual electrical components and devices under actual conditions before use. Continued usage in a state of degraded condition may cause the deteriorated insulation, thus result in abnormal heat, smoke or firing. Please carry out safety design and periodic maintenance including redundancy design, design for fire spread prevention, and design for malfunction prevention so that no accidents resulting in injury or death, fire accidents, or social damage will be caused as a result of failure of the products or ending life of the products.</div>			
1 1. Environmental protection ;			
The raw materials, components, etc., that constitute our products do not include the following hazardous materials. And we don't use the following hazardous materials while performing production activities.			
<div>• Ozone-depleting materials ; CFC- 11, 12, 13, 111, 112, 113, 114, 115, 211, 212, 213, 214, 215, 216, 217 Halon 1211, 1301, 2402 Carbon tetrachloride Methyl chloroform</div> <div>• Polybrominated flame retardants ; PBBOs, PBDO, PBDPO, PBDPE, DBDO, OBDO, TBDO, PBBs, PBDE</div> <div>• Specified chemical substances (Impurities are excepted) ; Mercury, Cadmium, Hexavalent chromium, Lead</div> <div>• Other toxic substances Asbestos Organic tin compounds (Tributyl tin compounds, Triphenyl tin compounds) Polychlorinated biphenyls Polychlorinated naphthalenes Azo compounds Chlorinated paraffins</div>			
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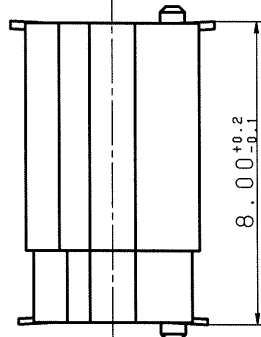
S P E C I F I C A T I O N S	NARROW-PITCH CONNECTORS		
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1 2. Warranty			
Although the best attention will be paid for the quality controls of the products, please consider the followings :			
1) To avoid uses of the product not in accordance with its specifications, Panasonic Corporation asks the purchaser to present the purchaser' s specification, the final destination, application of the final product and the method of installation of the product.			
2) Please adopt the dual circuit (protection or redundant circuit) and conduct safety test when the connector is used under the following condition. -When the significant damage to life and property are expected. -When the relay is used in instruments required high safety. The secondary damage such as health damage of equipment users, caused by the failure of our products, is not compensated.			
3) Panasonic Corporation will either repair or replace any products or parts thereof after mutual consultation if it is proven to be defective against only the items written in this specifications within one year from the date of products acceptance at the site of delivery unless another contract defined each other.			
The following are excluded from the warranty condition.			
① Any consequential damages or loss of profits is resulted from malfunctions or defects of the product.			
② The products are affected by the situation out of the specification at handling, the storage and the transport, etc. after the delivery.			
③ An unforeseen situation arises which was unable to be predicted technically at the time of shipment			
④ A natural or man-made disaster which is beyond Panasonic Corporation' s control occurs such as earthquake, flood, fire or social strife.			
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Panasonic Corporation			



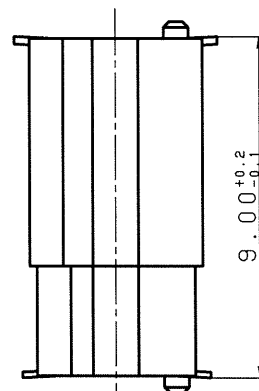
Setting drawing



AXK6S00400Y
header used



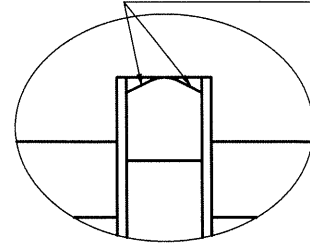
AXK6S00500Y
header used



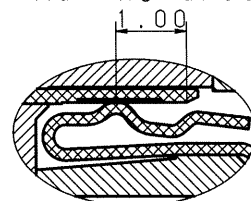
AXK6S00600Y
header used

Detail "D"

Contact with
both-ends chamfered

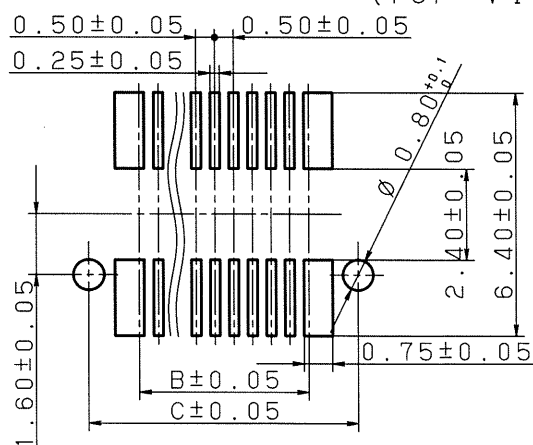


Mating area



Recommended PC board pattern
(mounting pad layout)

(TOP VIEW)



Dimension No. of contacts	A	B	C
20	8.20	4.50	7.10
30	10.70	7.00	9.60
40	13.20	9.50	12.10
50	15.70	12.00	14.60
60	18.20	14.50	17.10
70	20.70	17.00	19.60
80	23.20	19.50	22.10
100	28.20	24.50	27.10

Note1) The vicinity of soldering part
processes Nickel barrier. (Nickel exposure)

General tolerance ± 0.2

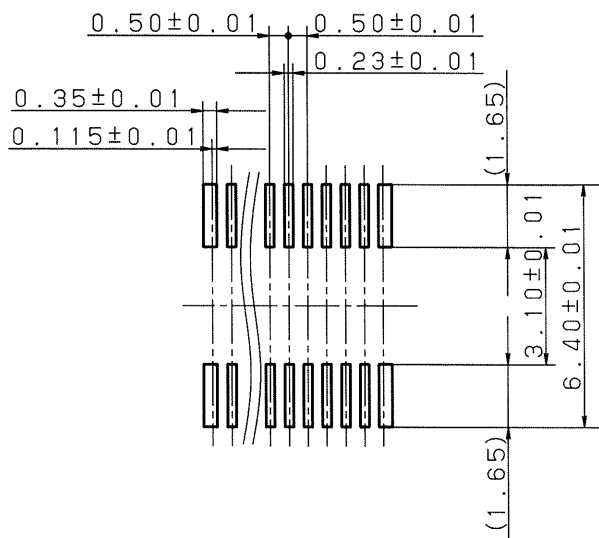
Sym	Item or Code No	Material & Size	qt.	Process	Remark
Catalog No			Drawing Name		
Name Narrow-pitch connectors P5KS series socket			Drawing No AXK5S20337Y		
Remark			Scale 5:1	Unit: mm	Date May 16, '16
Drawn H. Tsuji		Reviewed	Panasonic Corporation		
Designed T. Sakaji		Approved K. Motomura			
Checked Y. Iwaki					

(3rd Angle System)

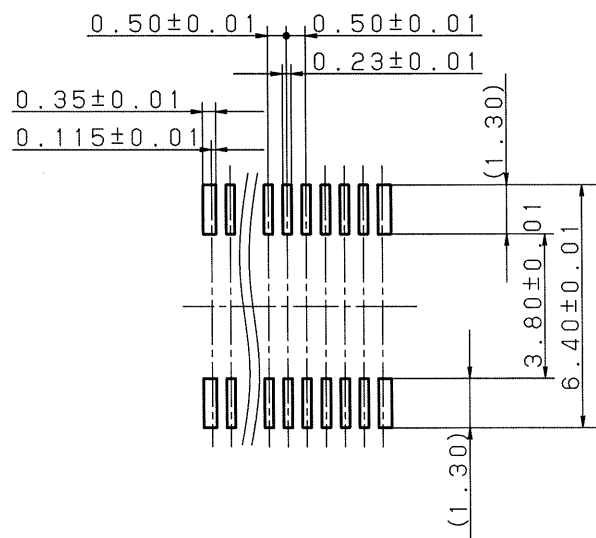
(JIS A-4)

Recommended window size of metal mask

Metal mask thickness: When 120 μ m
(Opening ratio:76%)

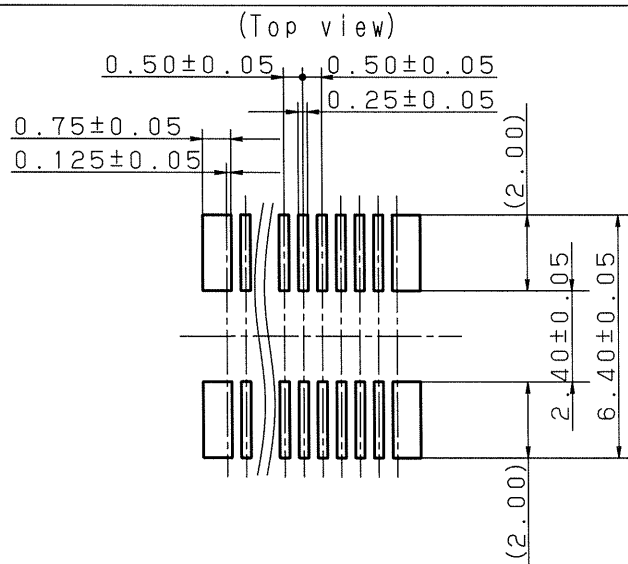


Metal mask thickness: When 150 μ m
(Opening ratio:60%)



(Reference)

Recommended PC board pattern (mounting layout)



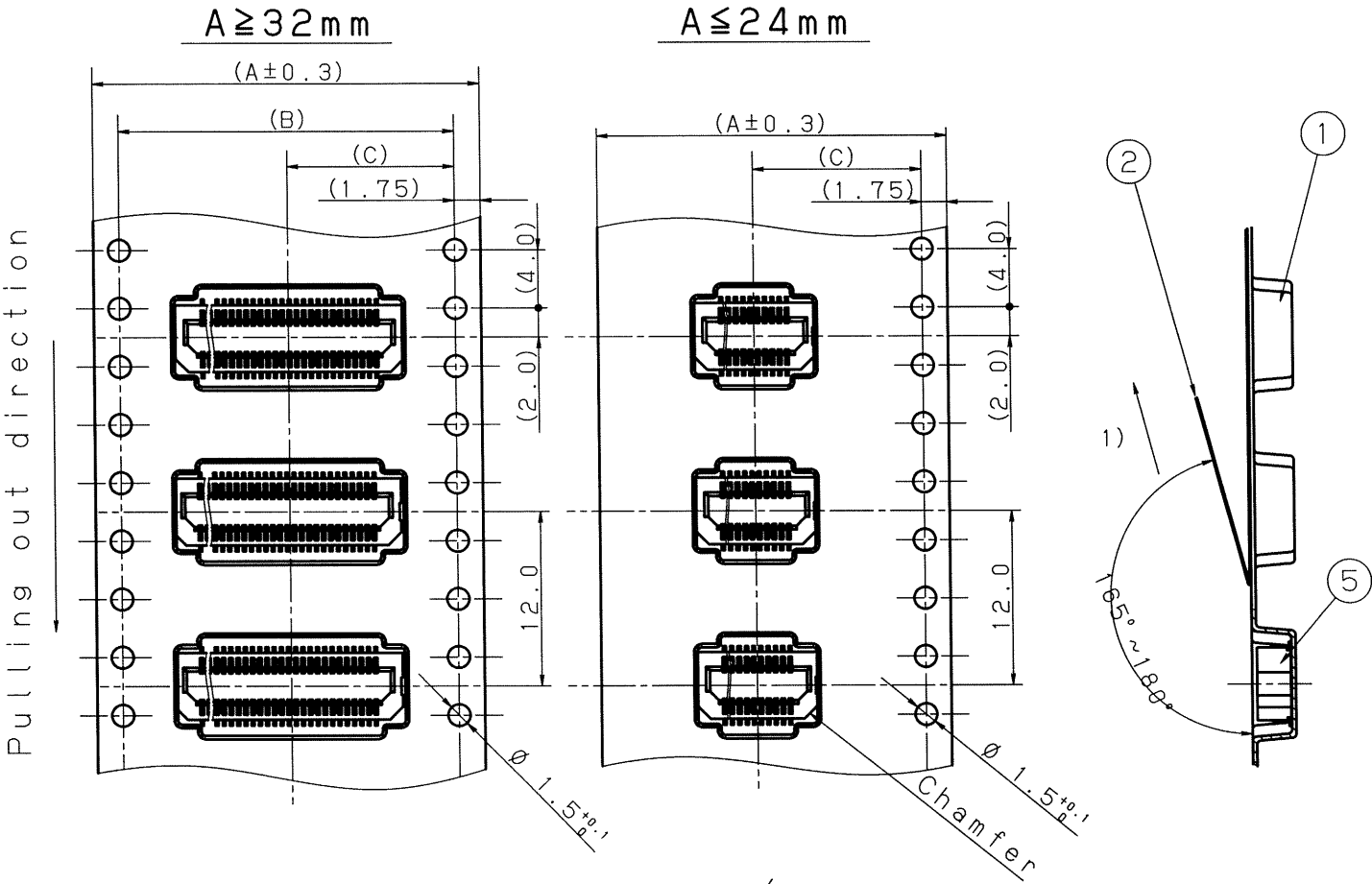
Sym	Item or Code No	Material & Size	qt.	Process	Remark
Catalog No			Drawing Name		
Name Narrow-pitch connector P5KS socket			Drawing No AXK5S-SM-001		
Remark			Scale 5 : 1	Unit: mm	Date May 16, '16
Drawn H. Tsuji	Reviewed		Panasonic Corporation		
Designed T. Sakai	Approved K. Matsuda				
Checked T. Ishii					

(3rd Angle System)

(JIS A-4)

Tape packed status (JIS C 0806-1990)
The mounting pitch may not be conformed to the JIS.

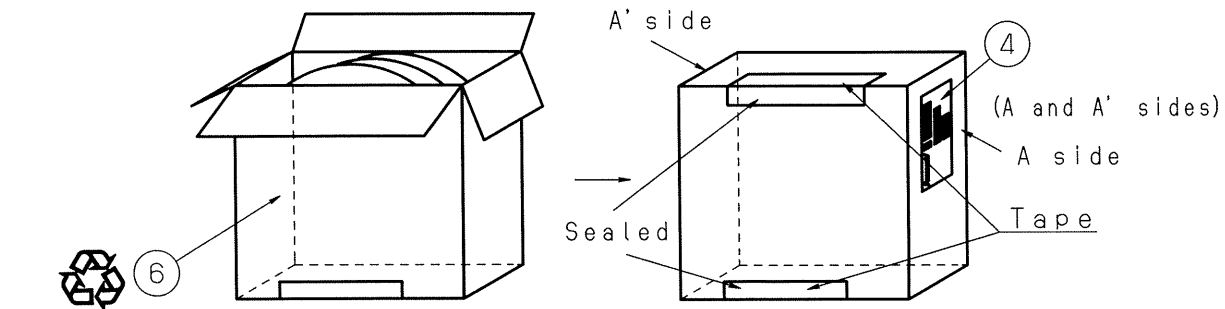
Carton Containing 2 reels



Dimension	A	B	C	D
No. of contacts				
Max. : 50	24.0	—	11.5	25.4
60~70	32.0	28.4	14.2	33.4
80~100	44.0	40.4	20.2	45.4

(Chamfering of connectors should face to the supply direction as shown above.)

Packing quantity	Reel	Carton
Stacking height (mm)		
4, 4.5, 5, 5.5, 6, 6.5	1500	3000
7, 8, 9	1000	2000



Label attached

Code of Panasonic Corporation

Parts No. AXK5S20047YG

Name CONNECTOR

PCS.

Lot No. Panasonic Corporation

Made in Japan

China RoHS Recycle Mark

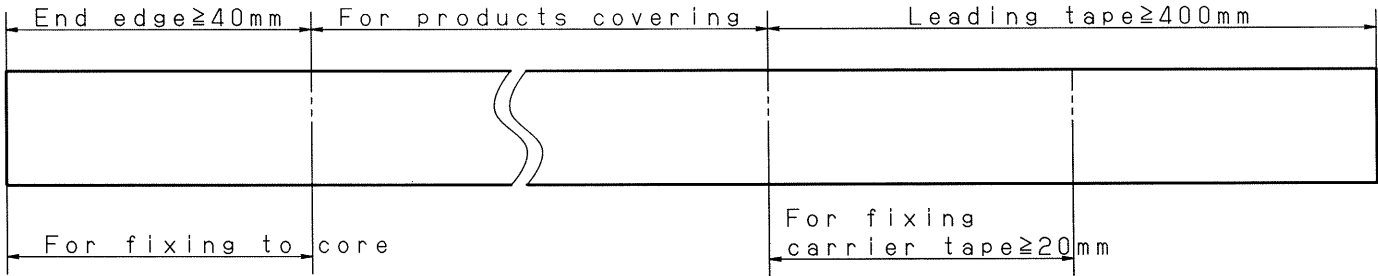
Reel Carton

Recycle Mark of packaging materials for South Korea

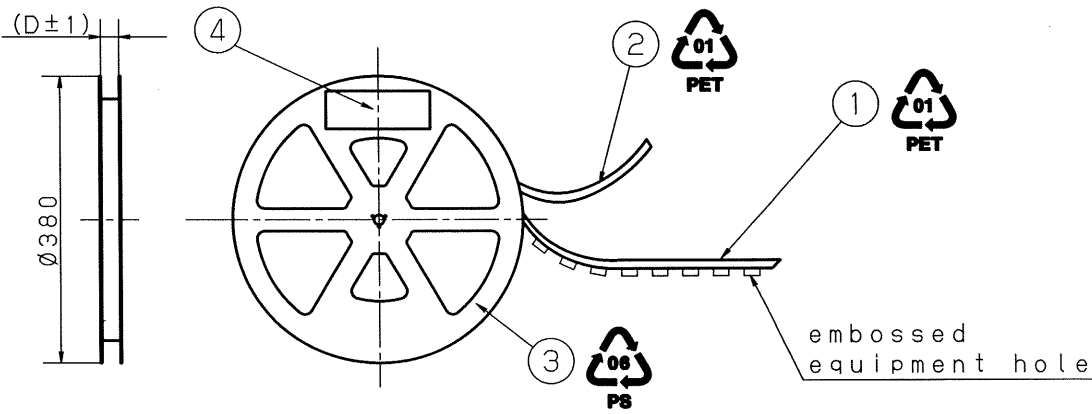
Reel Carton

No Display

Cover Tape



Reel Package (EIAJ ET-7200B)



2) The beginning of the carrier tape and the end edge is fixed by taping up.
1) In case of stripping off the top cover tape, the tape itself must not be torn.

6	Carton	Corrugated fiberboard			
5	Narrow-pitch connectors				
4	Label	Paper			
3	Reel	PS		Color : Black	
2	Cover tape	PET			
1	Embossed Carrier tape	PET			
Sym	Item or Code No	Material & Size	qt.	Process	Remark
Catalog No			Drawing Name Embossed tape packaging		
Name Narrow-pitch connectors P5KS series socket			Drawing No AXK5S20047YG		
Remark			Scale 2 : 1	Unit: mm	Date May 16, '16
Drawn	Jd. Tsuji	Reviewed	Panasonic Corporation		
Designed	T. Sakag	Approved K. Matsuda			
Checked	G. Imaki				