

Order Placement Recommendations and Considerations

The products and specifications listed in this document are subject to change (including changes made to specifications and the suspension of production) as occasioned by the improvements that we introduce into our products. Consequently, when you review the mass-production design for the products listed or when you place orders for these products, we ask 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]

We are 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, we ask you to check for actual electrical components and devices under actual conditions before use without fail. Continuously using them in a state of degraded performance may cause deterioration in insulation performance, thus resulting in abnormal heat generation, smoke generation, or firing. To avoid that, we ask you to carry out safety design including redundancy design, design for fire spread prevention, and design for malfunction prevention as well as periodic maintenance so that no accidents resulting in injury or death, fire accidents, or social damage will be caused as a result of our product failure or service life.

Although it has always been our policy to make a continual effort to improve quality and reliability, the fact remains that electrical components and devices do fail at a given statistical probability. In this respect, we ask you to take adequate steps to ensure safety design by, for instance, introducing redundancy design, taking measures in design to prevent fires from spreading, and preventing incorrect operation also in design so that no bodily injury, fire accidents or any social damage will be caused by the failure of any of our products.

Our quality standards 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

Before considering the use of our products under the following conditions, you must contact one of our customer service representatives without fail and exchange written 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

[Acceptance inspection]

In connection with the products you have purchased from us or with the products delivered to your premises, we ask that you perform an acceptance inspection with all due speed and, in connection with the handling of our products both before and during the acceptance inspection, we ask that you 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 we are found to blame for any failures or defects in our products during the warranty period, we will provide replacements or supply the necessary spare parts or replace and/or repair the defective sections free of charge and with all due speed at the location where the products concerned were purchased or delivered.

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 by you 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 that was being applied in practice either after purchase by you or at the time when the contract was signed
- (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 here set forth apply solely to the warranty of the discrete products which were purchased by you or delivered to your premises, and they do not cover any damage induced by their failure or defects.

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6. Characteristics

The followings show specifications, when mated with Socket and Header.

Item	Specification	Test condition
6-1. Electrical characteristics		
1) Rated current	Each pin ; Max 0.3 A All pins can carry ; Max. 5 A	
2) Rated voltage	AC, DC 60 V	
3) Insulation resistance	Min. 1000 MΩ (Initial stage)	Using 250 V DC megger (1 minute)
4) Breakdown voltage	150 V AC for 1 minute	Detection current : 1 mA
5) Contact resistance	Max. 90 mΩ	According to the method of JIS C 5402
6-2. Mechanical characteristics		
1) Composite insertion force	Max. 1.200 N/contact × Number of contacts. (Initial stage)	
2) Composite removal force	Min. 0.165 N/contact × Number of contacts.	
3) Contact holding force (Socket contact)	Min. 0.20 N/contact.	Measuring the maximum force. As the contact is axially pull out.
6-3. Environmental characteristics		
1) Ambient temperature (Operating temperature)	-55 °C ~ +85 °C	No freezing or condensation
2) Storage temperature	-55 °C ~ +85 °C (Products only) -40 °C ~ +50 °C (Packaging structure)	No freezing or condensation

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Item	Specification	Test condition																		
3) Thermal shock resistance (Header and socket mated)	After 5 cycles Contact resistance Max. 90 mΩ Insulation resistance Min. 100 MΩ	Conformed to MIL-STD-202F, method 107G <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Order</th> <th style="width: 20%;">Temperature (°C)</th> <th style="width: 10%;">Time (minutes)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">-55₋₃⁰</td> <td style="text-align: center;">30</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">}</td> <td style="text-align: center;">Max. 5</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">85₀⁺³</td> <td style="text-align: center;">30</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">}</td> <td style="text-align: center;">Max. 5</td> </tr> <tr> <td></td> <td style="text-align: center;">-55₋₃⁰</td> <td></td> </tr> </tbody> </table>	Order	Temperature (°C)	Time (minutes)	1	-55 ₋₃ ⁰	30	2	}	Max. 5	3	85 ₀ ⁺³	30	4	}	Max. 5		-55 ₋₃ ⁰	
Order	Temperature (°C)	Time (minutes)																		
1	-55 ₋₃ ⁰	30																		
2	}	Max. 5																		
3	85 ₀ ⁺³	30																		
4	}	Max. 5																		
	-55 ₋₃ ⁰																			
4) Humidity resistance (Header and socket mated)	After 120 hours Contact resistance Max. 90 mΩ Insulation resistance Min. 100 MΩ	Conformed to MIL-STD-1344A, method 1002 Bath temperature 40 °C ± 2 °C Humidity 90 % to 95 %RH																		
6-4. Life characteristics Insertion and removal life with no load	10 times • Contact resistance Max. 90 mΩ • Composite removal force Min. 0.165 N/contact × Number of contacts.	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=0.12 mm																		

7. Package : Embossed packaging

8. The place of origin : Thailand or Japan

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9. About safety Remarks

- 9-1. Do not use these connectors outside the specification ranges for the rated current, breakdown voltage and other environmental conditions, or the connectors may make damages to the circuit by generating an abnormal level of heat, giving off smoke or catching fire.
- 9-2. To prevent an accident, please refer the specifications and / or the operation manuals before start using connectors. In the case the connector has to be used outside the specification, please consult us.
- 9-3. We are 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, we ask you to check for actual electrical components and devices under actual conditions before use without fail. Continuously using them in a state of degraded performance may cause deterioration in insulation performance, thus resulting in abnormal heat generation, smoke generation, or firing. To avoid that, we ask you to carry out safety design including redundancy design, design for fire spread prevention, and design for malfunction prevention as well as periodic maintenance so that no accidents resulting in injury or death, fire accidents, or social damage will be caused as a result of our product failure or service life.

10. Remarks

- 10-1. Regarding PC board design
Refer the recommended PC board pattern for keeping the strength of soldering.
- 10-2. Connector placement
When the placement machine has excessive keeping force.
The housing will be transformation. Please check the placement machine.
- 10-3. Soldering
- 1) Manual soldering.
 - These connector is low profile type. If too much solder is supplied for hand soldering, It makes miss mating because of interference at soldering portion. Please pay attentions.
 - Please use the soldering iron under specification' s temperature and times.
 - Please care not to contaminate the contact portion with solder flux from the soldering iron tip. And make sure that the contact portion are not contaminated to dispersed solder flux with a magnifying glass and so on.
When the contact portion is contaminated, please clean it by washing or so.
 - Please pay attentions. Not to deform terminals when mating or unmating connectors without mounting to PC boards. Don' t apply an excessive force to terminals, or the connection between terminals and a housing may lose.
 - Please soldering iron is cleaning.

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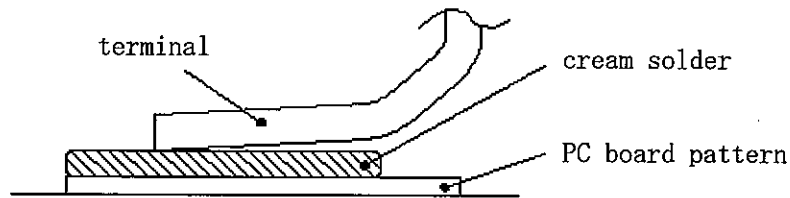
NARROW-PITCH CONNECTORS

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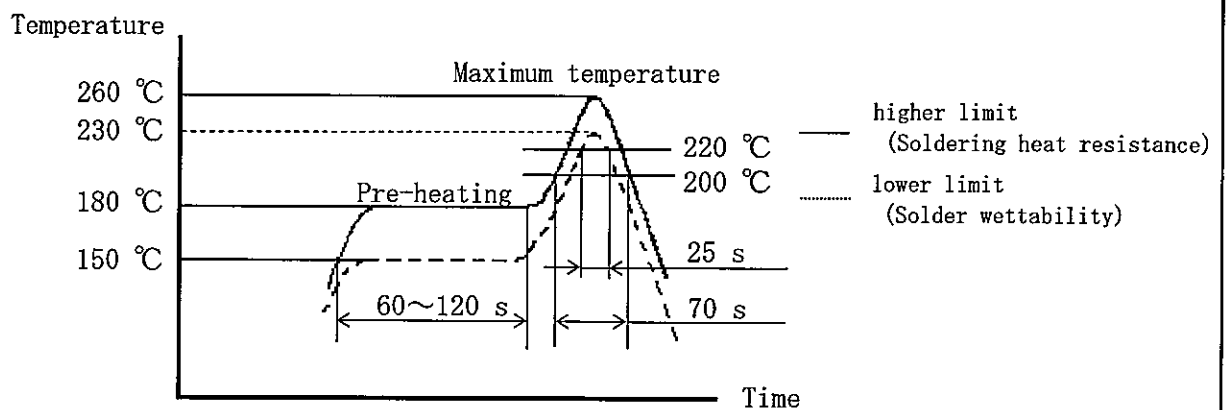
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2) Reflow soldering.

- Please use screen soldering regarding cream solder printing.
- PC board and metalmasking drawing show the relationship between screen open window area and PC board foot pattern area. The side of terminal tip is base.
- Please pay attentions not to provide too much solder. It makes miss mating because of interference at soldering portion when mating.



- When applying the different thickness of a screen, please consult us.
- There may be a case of difficult self-alignment depending on the connector size. In that case, please pay attentions to align terminals and solder pads.
- The following diagram shows the recommended reflow soldering temperature profile.



- Infrared reflow soldering is able to passed two times.
- The temperature measured on the PC board surface near connector terminals.
- There is the possibility that the solder rize is generated by the kind of solder and flux. Please set the reflow condition in consideration of the characteristic of solder and flux used.
- After reflow soldering, In case of PC board surface the reverse side using reflow soldering, for example an adhesive and so on connector of fixed disposition.

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3) Rework of soldering portion.

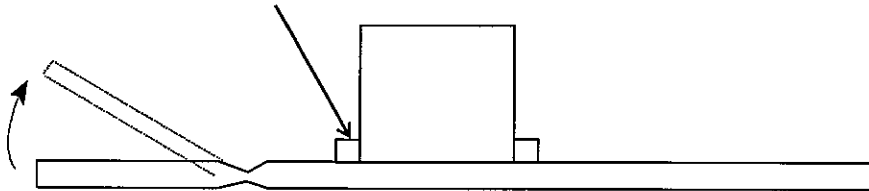
- Rework is one time.
- In case of soldering rework of bridges. Please use a flat-head soldering iron and don't use supplementary solder flux. Doing so may cause contact problems by flux.
- Please use the soldering iron under specification's temperature.

10-4. Since excessive force on the terminals will cause deformation and the integrity of the soldering will be lost during reflow soldering, avoid dropping or rough handling of the product.

10-5. Be careful not to deform the terminals or brackets when inserting or removing the connector before soldering. Do not put excessive force to terminals. Doing so may loosen the fixation of terminals and molding parts.

10-6. When cutting the PC board after mounting the connector, please assure soldered terminals aren't affected by the stress.

The stress should not affect the terminals soldered.



10-7. When mounting connectors on a FPC board : Due to it's flexibility, a FPC board may make the connector terminal soldering connection weak. In order to strengthen the connection and prevent the peeling off of terminal soldering, a stiffener is strongly recommended to be attached to the backside of the connector area.

The size of stiffener should be bigger than the recommended PC board pattern area shown in the drawing. (Outward dimension + approximate 1 mm)

Recommended material of reinforcement is Glass-Fiber board or Polyimide board which have 0.2 to 0.3 mm thickness.

This connector have temporary lock structure. However connector would be taken off due to size, weight or bending force of FPC at dropping condition.

Please check the connector not to be taken off at real equipment.

In order to secure connector's connection even when a shock applied, please take measures against taking off of the connector.

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10-8. Other cautions.

- After soldering is no coating. In case of using coating.
Please don' t stick to the terminal.
- Connector doesn' t have switching fundamentally.

1 1. We declare the following ;

In the manufacturing process for the products being provided to your company, the following materials are not used at all.

- 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
- Polybrominated flame retardants ;
PBBO_s, PBDO, PBDPO, PBDPE, DBDO, OBDO, TBDO, PBB_s, PBDE
- Specified chemical substances (Impurities are excepted) ;
Mercury, Cadmium, Hexavalent chromium, Lead
- Other toxic substances
Asbestos
Organic tin compounds (Tributyl tin compounds, Triphenyl tin compounds)
Polychlorinated biphenyls
Polychlorinated naphthalenes
Azo compounds

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1 2. Note

Although the best attention will be paid for the quality controls of the products, please consider the followings :

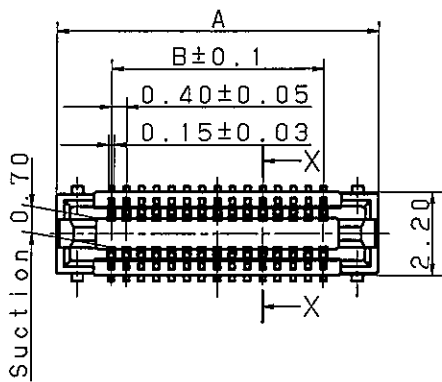
- 1) To prevent unexpected failures as much as possible under the conditions not shown in this specifications, please let us know the detailed information on the application, such as the environmental, operational and mounting condition.
- 2) By any chance, if the failure of the product is considered to cause a personal injury or death or property damage, the safety rate should be added to the specified values shown in this specifications and the dual safety structure or circuit is recommended to be taken from the stand point of the Product Liability Indemnity.
- 3) We will either repair or replace any products or parts thereof which prove to be defective against only the items written in this specifications within 1 year from the date of products acceptance at the site of delivery.

The following cases are exclusive from the indemnity.

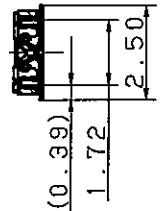
- ① The case of other damage caused by the failure or defect of the product.
- ② The case that the product condition changed by handling, storage and / or transportation after delivery.
- ③ The case caused by the phenomenon which has never been discovered and is impossible to be foreknown with the existing technologies.
- ④ The case of force majeure, such as acts of Got, public enemy or war, fires, floods and any other causes beyond the control of the people concerned.

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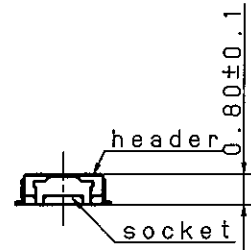
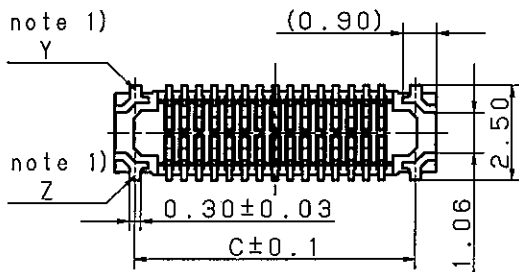
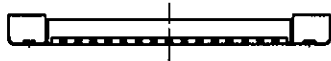


The degree of terminal flat
 0.77
 0.08
 (Contact and Metal bracket)



X-X cross section

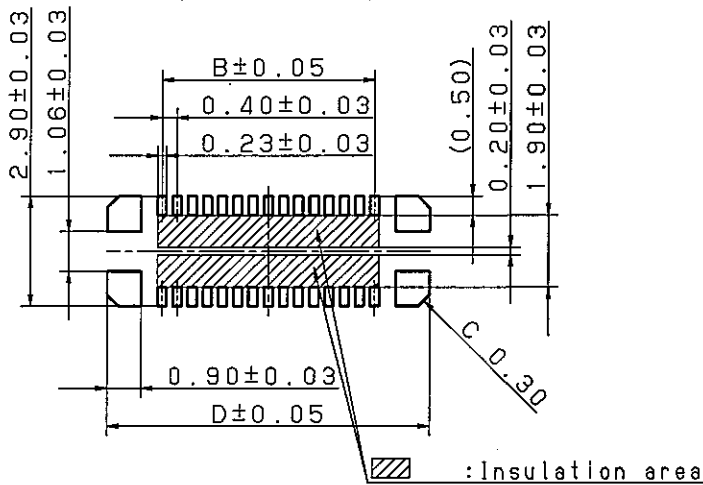
Mating area



Setting drawing

Recommended PC board pattern
 (mounting pad layout)

(TOP VIEW)



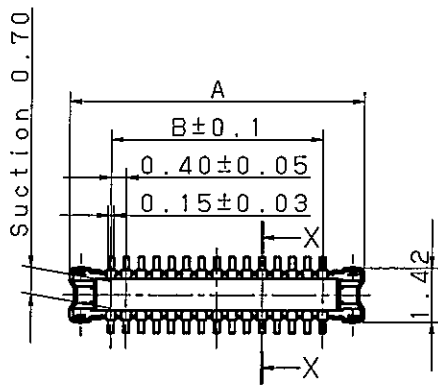
Setting drawing

Dimension No. of contacts	A	B	C	D
10	4.5	1.6	3.4	4.5
20	6.5	3.6	5.4	6.5
24	7.3	4.4	6.2	7.3
30	8.5	5.6	7.4	8.5
34	9.3	6.4	8.2	9.3
40	10.5	7.6	9.4	10.5

Note 1) Because the metal bracket Y and Z are the unified structure,
 they are connected electrically.

General tolerance ±0.2

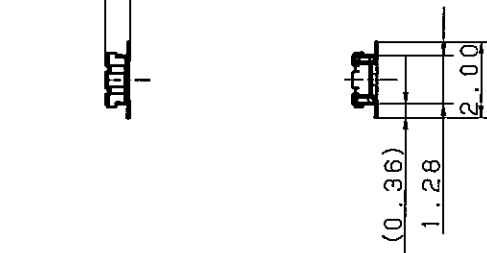
Sym	Item or Code No	Material & Size	qt.	Process	Remark
Catalog No			Drawing Name		
Name Narrow-pitch connectors Economy type socket			Drawing No AXQ1301		
Remark			Scale 5:1	Unit: mm	Date Dec.24 '13
Drawn <i>A. Kawaguchi</i>	Reviewed <i>J. Inaba</i>		Panasonic Corporation Automation Controls Business Division		
Designed <i>T. Sakai</i>	Approved <i>S. Kato</i>				
Checked <i>M. Kadowaki</i>					



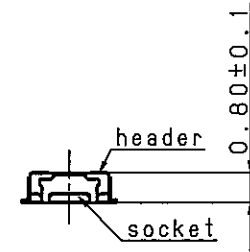
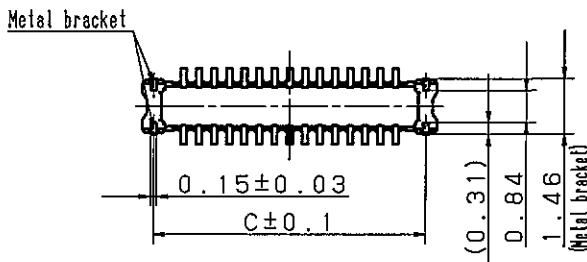
The degree of terminal flat

	0.08
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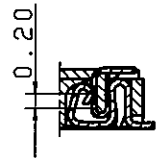
(Post and Metal bracket)



X-X cross section



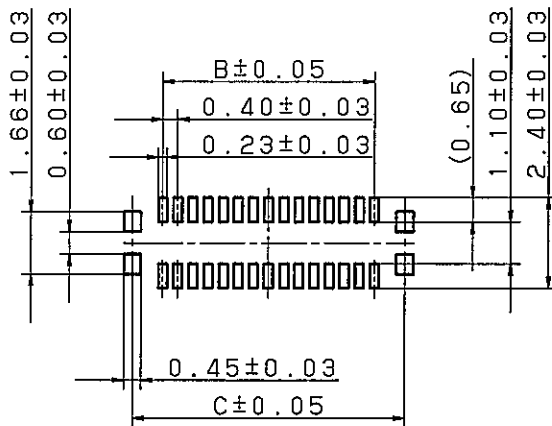
Setting drawing



Mating area

Recommended PC board pattern
(mounting pad layout)

(TOP VIEW)



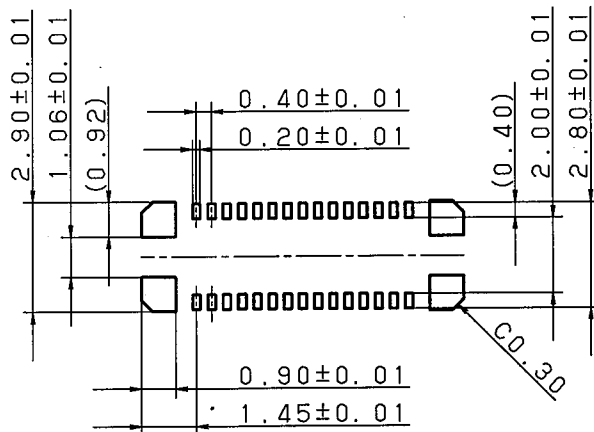
Dimension No. of contacts	A	B	C
10	3.8	1.6	3.2
20	5.8	3.6	5.2
24	6.6	4.4	6.0
30	7.8	5.6	7.2
34	8.6	6.4	8.0
40	9.8	7.6	9.2

General tolerance ± 0.2

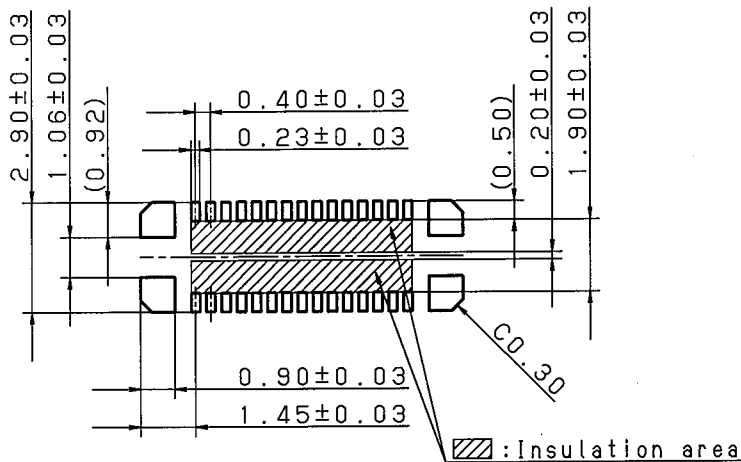
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Catalog No				Drawing Name	
Name Narrow-pitch connectors Economy type header				Drawing No AXQ2301	
Remark				Scale 5:1	Unit: mm Date Dec.24 '13
Drawn	<i>A. Kawaguchi</i>	Reviewed	<i>M. Inaba</i>	Panasonic Corporation Automation Controls Business Division	
Designed	<i>T. Sakay</i>	Approved	<i>S. Kato</i>		
Checked	<i>M. Kadowaki</i>				

Recommended window size of metal mask

Metal mask thickness: When 120 μ m
 (Terminal opening ratio: 70%)
 (Metal-part opening ratio: 100%)



(Reference)
 Recommended PC board pattern (mounting pad layout)
 (Top view)

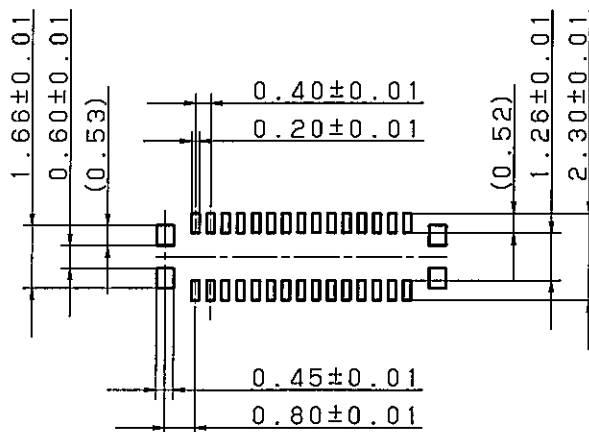


Window ratio is calculated by dividing window size of metalmasking by the original mounting pad.

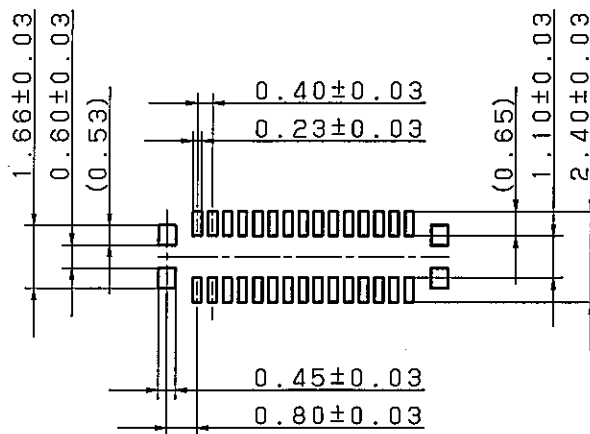
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Catalog No			Drawing Name		
Name Narrow-pitch connector Economy type socket			Drawing No AXQ1-SM-001		
Remark			Scale 5:1	Unit: mm	Date Dec.24 '13
Drawn <i>A. Kawaguchi</i>	Reviewed <i>Y. Inaba</i>	Panasonic Corporation Automation Controls Business Division			
Designed <i>T. Sakaji</i>	Approved <i>S. Kato</i>				
Checked <i>M. Kadonaki</i>					

Recommended window size of metal mask

Metal mask thickness: When 120 μ m
 (Terminal opening ratio:70%)
 (Metal-part opening ratio:100%)



(Reference)
Recommended PC board pattern (mounting pad layout)
 (Top view)

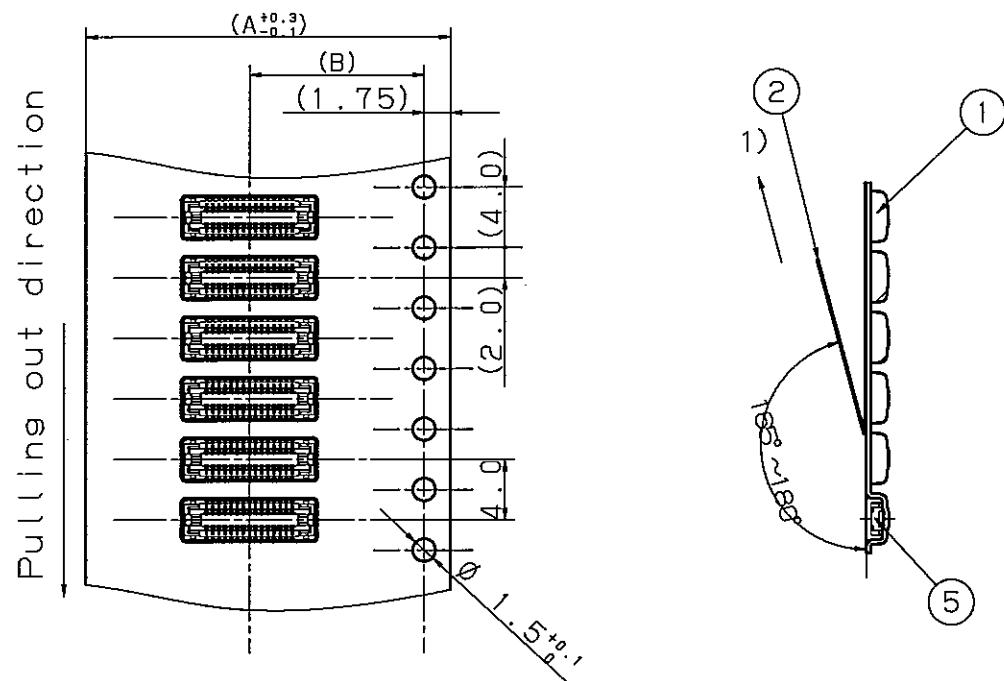


Window ratio is calculated by dividing window size of metalmasking by the original mounting pad.

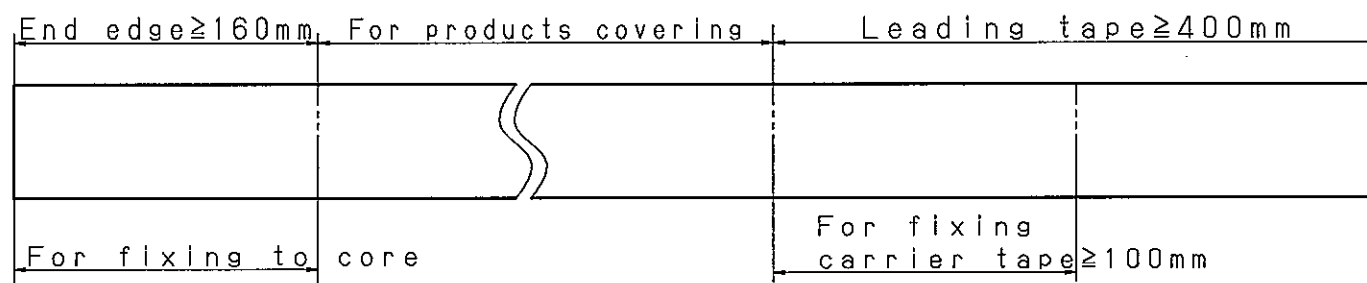
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Catalog No			Drawing Name		
Name Narrow-pitch connector Economy type header			Drawing No AXQ2-SM-001		
Remark			Scale 5 : 1	Unit: mm	Date Dec.24 '13
Drawn <i>A. Kawaguchi</i>	Reviewed <i>Y. Inaba</i>	Panasonic Corporation Automation Controls Business Division			
Designed <i>T. Sakai</i>	Approved <i>S. Kato</i>				
Checked <i>M. Kadowaki</i>					

Tape packed status (JIS C 0806-3:1999)

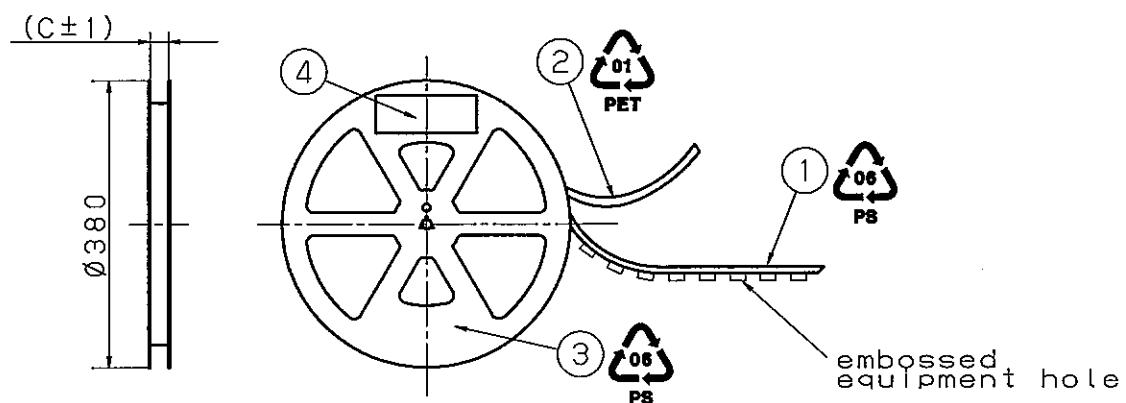
The mounting pitch may not be conformed to the JIS.



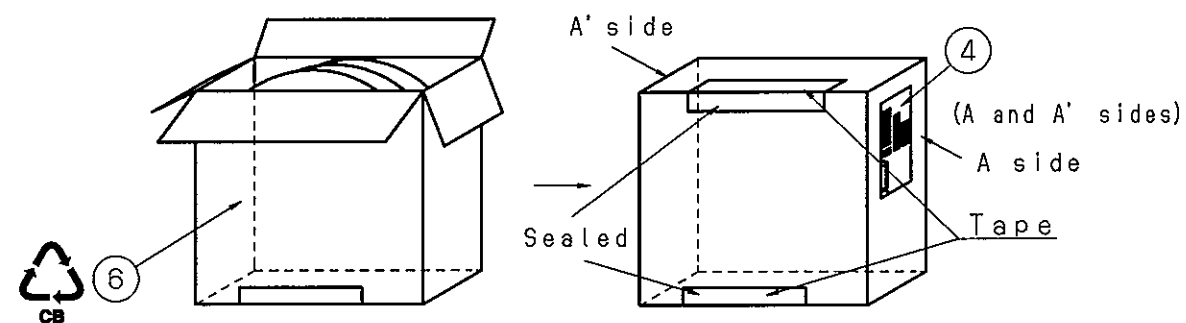
Dimension	A	B	C
No. of contacts			
Max:24	16.0	7.5	17.4
30~40	24.0	11.5	25.4



Reel Package (EIAJ ET-7200B)



Carton containing 2 reels



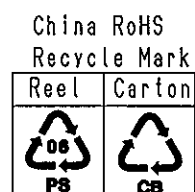
Label attached

Part No. of Panasonic Corporation

Thailand products:
Both 'PRODUCTION PLACE DISPLAY part number' and 'part number' are indicated.

Ex.: P/N:AXQ1301 (AXQ1301-Q)

Japanese products:
'part number' are indicated.
Ex.: AXQ1301



Code of Panasonic Corporation

Panasonic
P/N:AXQ1301 (AXQ1301-Q)

Name (pcs) CONNECTOR

Packing quantity: Reel 15,000, Carton 30,000

Lot.No. [] PCS. Panasonic Manufacturing (Thailand) Co., Ltd. Made in Thailand

Barcode (3N) 1 [] PZN [] [] []
Barcode (3N) 2 [] [] [] []

2D Code

Identification sign of exterior/interior

Lot No. + Factory identify code

Japanese products: Panasonic Corporation Made in Japan

2) The beginning of the carrier tape and the end edge is fixed by taping up.

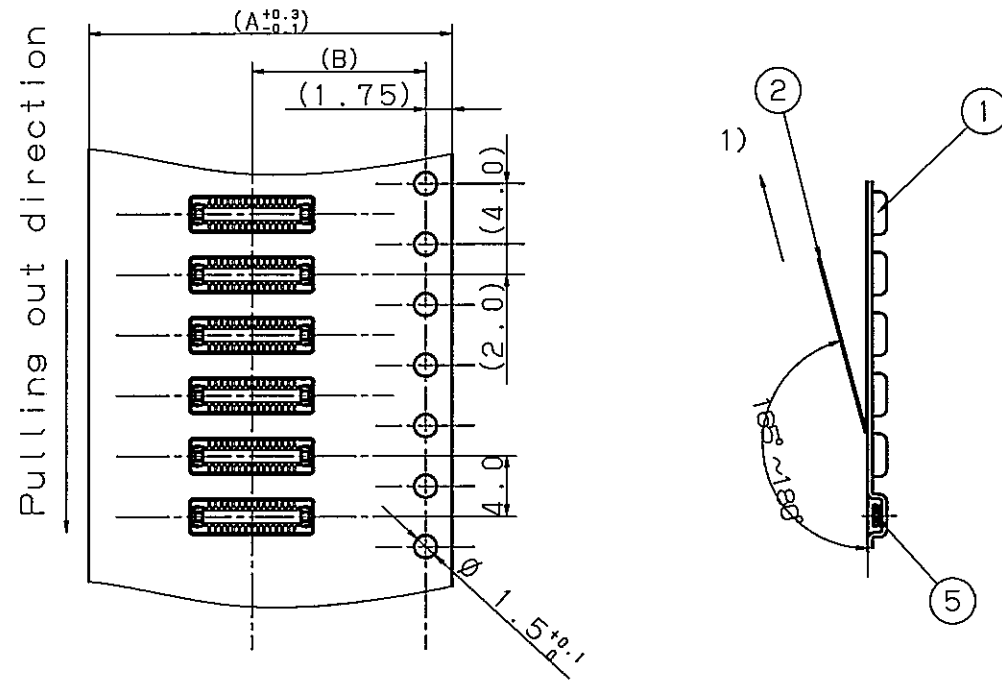
Note 1) In case of stripping off the cover tape, the tape itself must not be torn.

Sym	Item or Code No	Material & Size	qt.	Process	Remark
6	Carton	Corrugated fiberboard			
5	Narrow-pitch connectors				
4	Label	Coat Paper			
3	Reel	PS			Color : Black
2	Cover tape	PET			
1	Embossed Carrier tape	PS			

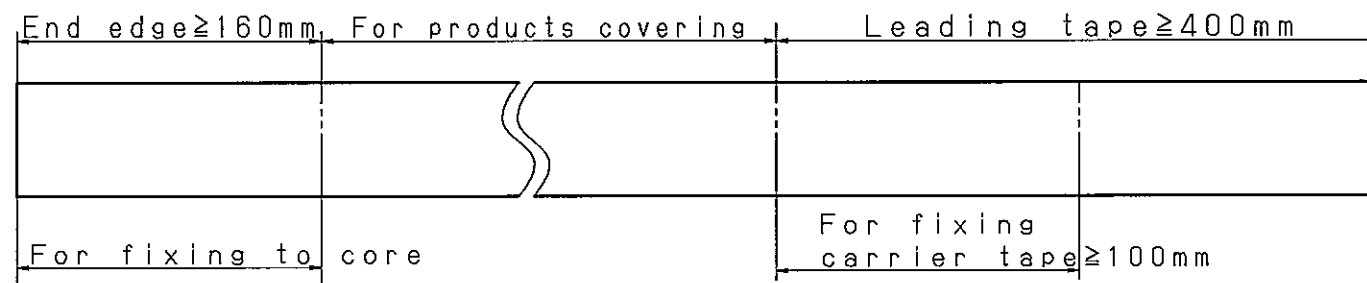
Catalog No		Drawing Name Embossed tape packaging			
Name Narrow-pitch connectors Economy type socket		Drawing No AXQ1301H			
Remark		Scale	Unit: mm	Date Dec.24,'13	
Drawn <i>A. Kawaguchi</i>	Reviewed <i>M. Saka</i>	Panasonic Corporation Automation Controls Business Division			
Designed <i>T. Sakaji</i>	Approved <i>S. Kato</i>				
Checked <i>M. Katowaki</i>					

Tape packed status (JIS C 0806-3:1999)

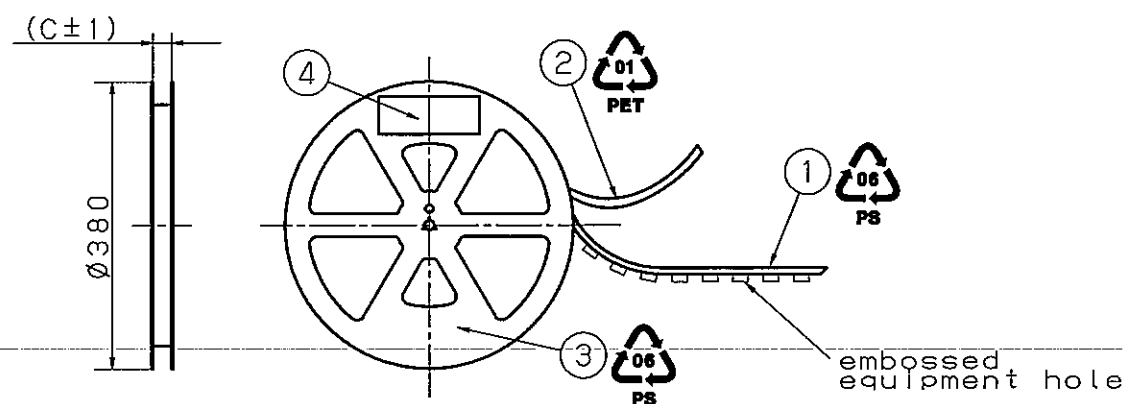
The mounting pitch may not be conformed to the JIS.



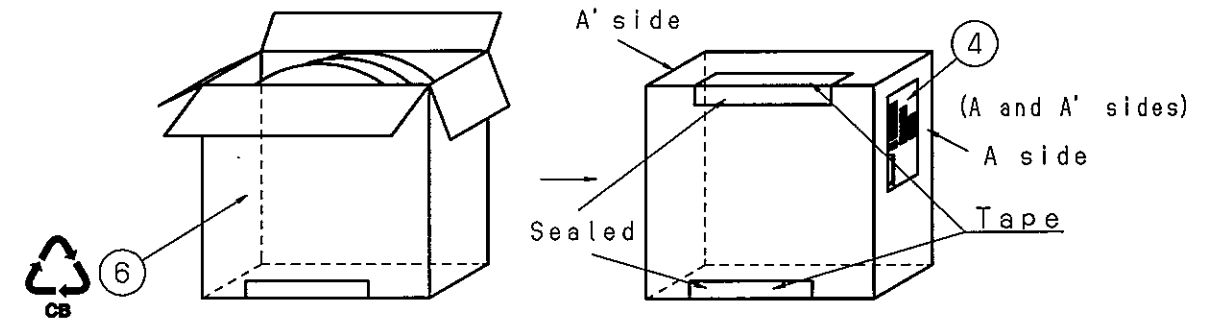
Dimension No. of contacts	A	B	C
Max:24	16.0	7.5	17.4
30~40	24.0	11.5	25.4



Reel Package (EIAJ ET-7200B)

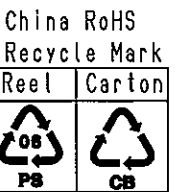


Carton containing 2 reels



Label attached

Part No. of Panasonic Corporation
 (Thailand products: Both "PRODUCTION PLACE DISPLAY part number" and "part number" are indicated.
 Ex.: P/N:AXQ2301 (AXQ2301-Q)
 Japanese products: "part number" are indicated.
 Ex.: AXQ2301



Code of Panasonic Corporation

Panasonic
 P/N:AXQ2301 (AXQ2301-Q)
 Name (pcs) CONNECTOR
 Packing quantity: Reel 15,000, Carton 30,000
 Lot.No. [] PCS.
 Panasonic Manufacturing (Thailand) Co., Ltd. Made in Thailand
 Identification sign of exterior/interior
 Lot No. + Factory identify code
 Japanese products: Panasonic Corporation Made in Japan

(3N) 1 [] PZN [] []
 Barcode
 (3N) 2 [] [] []
 Barcode
 2D Code
 PS CB
 PS CB
 EIAJ C-3

2) The beginning of the carrier tape and the end edge is fixed by taping up.

Note 1) In case of stripping off the cover tape, the tape itself must not be torn.

Sym	Item or Code No	Material & Size	qt.	Process	Remark
6	Carton	Corrugated fiberboard			
5	Narrow-pitch connectors				
4	Label	Coat Paper			
3	Reel	PS			Color : Black
2	Cover tape	PET			
1	Embossed Carrier tape	PS			

Catalog No		Drawing Name Embossed tape packaging		
Name Narrow-pitch connectors Economy type header		Drawing No AXQ2301H		
Remark		Scale	Unit: mm	Date Dec.24, '13
Drawn <i>A. Kawaguchi</i>	Reviewed <i>J. Suda</i>	Panasonic Corporation Automation Controls Business Division		
Designed <i>Y. Sakai</i>	Approved <i>S. Kato</i>			
Checked <i>M. Kadonaka</i>				

单击下面可查看定价，库存，交付和生命周期等信息

[>>Panasonic\(松下\)](#)