	Indicate Secrecy Classifi- cation in accordance with ISM, as necessary.
TO :	Issue No. :
	Date of Issue : Jan.05, 2018
	Classification : New Change
PRODUCT SP	ECIFICATION FOR APPROVAL
Product Description	: NARROW-PITCH CONNECTORS
Product Part Number	:
	: AXQ1101HF1, AXQ1241HF1, AXQ1301HF1, AXQ1341HF1
Panasonic Part Number	: AXQ1401HF1
Pallasoffic Part Number	: AXQ2101HF1, AXQ2241HF1, AXQ2301HF1, AXQ2341HF1
	: AXQ2401HF1

- Drawing Name : SPECIFICATIONS
- * If you approve this specification, please fill in and sign the below and return 1 copy to us.

Approval	No. :		
Approval	Date :		
Executed	by :		
		(Signature)	
Title	:		
Dept.	:		

Electromechanical Control Business Division Automotive & Industrial Systems Company Panasonic Corporation

Prepared by Contact Person

> Signature Name (Print)

Authorized by

Signature

Title

Name (Print)

Title Phone : Automation Control Devices Business Unit Connector Business Planning & Development Department

Yoshihisa inaba

+81-596-58-2995

Kosuke yoshioka

Panasonic

Checked by Signature Name (Print) Title

No

Yoji miyazaki

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.

- 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

			NARROW-PITCH CONNECTORS		
SPECIFICATIONS		S	AXQ1001HF1/AXQ2001HF1		
			Page ; 1 / 9		
 Type : Stacking hei Part No. 	connectors for PC board ght 0.8 mm width 2.5mm : AXQ1○○1HF1				
Header 3-2) Product drawing Socket	: AXQ2OO1HF1 : AXQ1301HF1 : AXQ2301HF1				
Recommended metal mask p	attern Socket : AXQ1-SI Header : AXQ2-SI				
	: AXQ1301HF1 -H Emboss : AXQ2301HF1 -H Emboss	ed packagin	•		
3-3) Ordering information	<u></u>	AXQO C	<u>) 1 HF 1</u>		
AXQ1 : socket AXQ2 : header					
• Number of contacts (2 digit 10:10contacts 24:24contacts 30:3		contacts			
• Stacking height 1 : 0.8 mm					
•User No. (2 digits) HF					
• Code 1					
Notel) "-Q" is suffixed for th When there is no indication and "part number" are i 4. Material : Molded portion : Contact / Post : Metal bracket	on, made in Japan. Both " ndicated on the inner an : Heat resistant plastic	PRODUCTION d outer can	PLACE DISPLAY part number" rtons.		
• Terminal portio	• Upper surface of the Au plating over n	face of the ickel(excep e terminal ickel or ni	e terminal ; ot for top of the terminal) ; ickel plating		
: Metal bracket (S : Metal bracket (H	Socket): Pd + Au flash pl (except for to				
· metal blacket (H	• Bottom and side sur	ickel(excep e terminal	ot for top of the terminal);		
TO : Lenovo Mobile Communicatio	on Technology Ltd.	DATE : Ja	an. 05, 2018		
Panasonic Corporation	1. Juala	Reviewed by			
	Checked by 4. Minguple	Approved by \mathcal{H}_{\cdot}	Toshich		

			NARROW-PITCH	CONNECTORS
SPECIH	FICATION	S	AXQ1001HF1/A	AXQ2001HF
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(cellular phone 7. Characteristics	ns : compact portable devices es • smart phones • tablet PC) ecifications, when mated with	applicati	-	duct
Item	Specification	I SOCKEL E	Test condition	n
7-1. 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 M Ω (Initial stage)	Using 25	0 V DC megger (l minute)
4) Dielectric strength	150 V AC for 1 minute	Detection current : 1 mA		
5) Contact resistance	Max. 90 m Ω	According to the method of JIS C 5402		
7-2. 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 $ imes$ Number of contacts.			
 Contact holding force (Socket contact) 	Min.0.20 N/contact.	Measuring the maximum force. As the contact is axially pull out.		
7-3. Environmental characteristics				
 Ambient temperature (Operating temperature) 	-55 °C∼+85 °C	No icing	or condensation	1
2) Storage temperature	-55 ℃~+85 ℃ (Products only) -40 ℃~+50 ℃ (Packaging structure)	No icing	or condensation	1
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Panasonic Corporation

SPECIFICATIONS

NARROW-PITCH CONNECTORS

AXQ1 O 1HF1/AXQ2 O 1HF1

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Item	Specification	Test condition		
3) Thermal shock resistance	After 5 cycles Contact resistance	Conformed to MIL-STD-202F, method 107G		
(Header and socket mated)	Max. 90 mΩ Insulation resistance Min. 100 MΩ	$\begin{array}{ c c c c c c }\hline & Temperature & Time \\ \hline 0rder & (^{\circ}C) & (minutes) \\\hline 1 & -55 \begin{smallmatrix} 0 \\ -55 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix} & 30 \\\hline 2 & 5 & Max. 5 \\\hline 3 & 85 \begin{smallmatrix} *3 \\ -55 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix} & Max. 5 \\\hline & -55 \begin{smallmatrix} 0 \\ -55 \end{smallmatrix} & \\\hline \end{array}$		
 Humidity resistance (Header and socket mated) 	After 120 hours Contact resistance Max. 90 mΩ Insulation resistance Min. 100 MΩ	IEC60068-2-78 Bath temperature 40 $^{\circ}C \pm 2 ^{\circ}C$ Humidity 90 %RH to 95 %RH		
7-4. 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		
7-5. 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		
7-6. Solder paste thickness	The initial specification must be satisfied electrically and mechanically	Recommendation t=0.12 mm		
8. Package : Embossed pac	ckaging			
9. The place of origin	: Thailand or Japan			
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	Panasonic Corporation			

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

NARROW-PITCH CONNECTORS

AXQ1OO1HF1/AXQ2OO1HF1

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 $1 \ O$. 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.

1 1. Remarks

11-1. Regarding PC board design Refer to the recommended PC board pattern for keeping the strength of soldering.

11-2. 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.

11-3. 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.

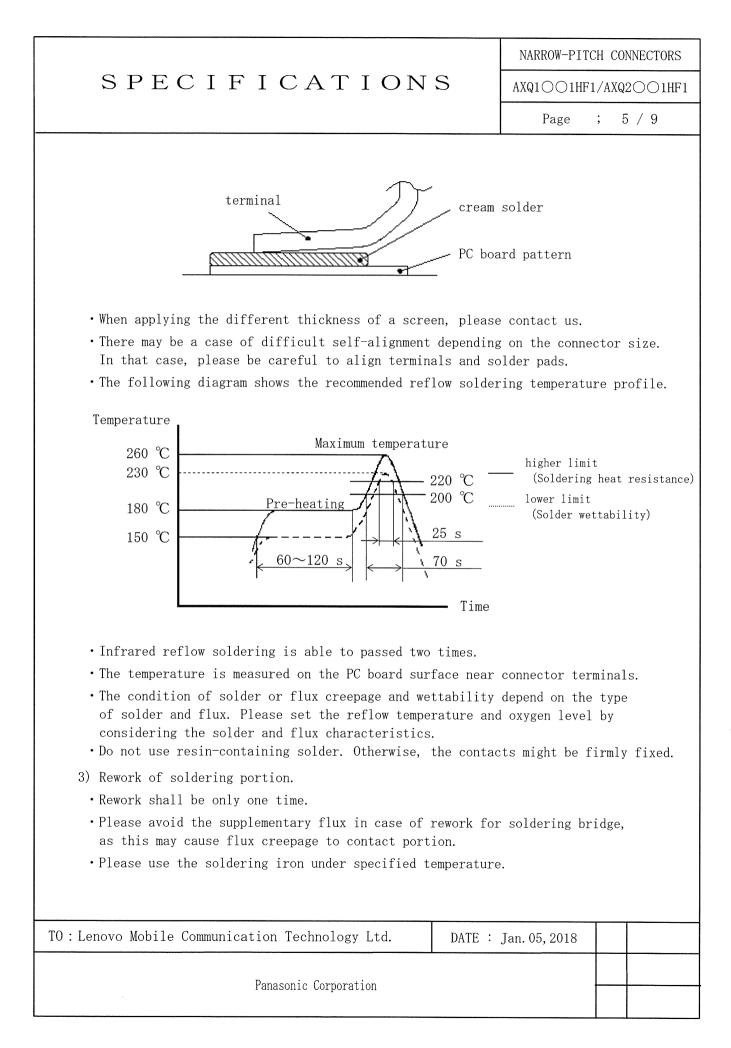
2) Reflow soldering.

- 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.

• Please avoid the excessive solder. Because the excessive solder makes incomplete mating by soldering interference.

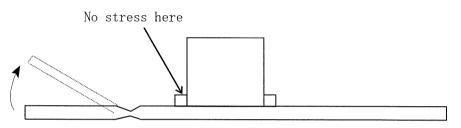
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SPECIFICATIONS	NARROW-PITCH CONNECTORS
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11-4. As the excessive force on the terminals may cause the def	formation and

- 11-4. 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.
- 11-5. 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.
- 11-6. When cutting the PC board after mounting the connector, please avoid the stress at the soldering portion.



11-7. PC board

As thick coverlay / solder resist and adhesive may cause poor soldering, please set thickness of coverlay and adhesive as thin as possible.

11-8. When mounting connectors on a FPC board :

• 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 $0.5 \sim 1.0$ mm). 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.

11-9. 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.

- 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.

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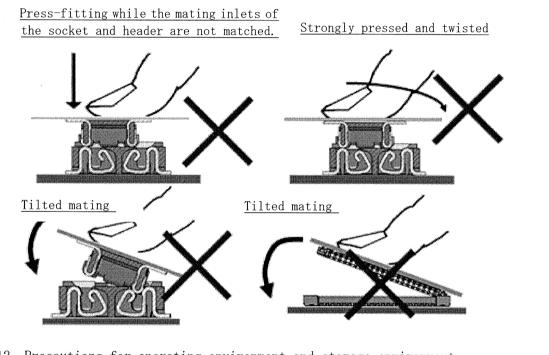
	NARROW-PITCH CONNECTORS			
SPECIFICATIONS	AXQ1001HF1/AXQ2001HF1			
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11-10. Restriction on the quantity of connector				

11-10. Restriction on the quantity of connector

• When using the board to board connectors, do not connect a pair of board with multiple connectors. Otherwise, misaligned connector positions may cause mating failure or product breakage.

11-11. 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.



11-12. Precautions for operating environment and storage environmentPanasonic Corporation does not guarantee the failures caused by condensation.

11-13. 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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SPECIFICATIONS

NARROW-PITCH CONNECTORS

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1 2. About safety Remarks

Observe the following safety precautions to prevent accidents and injuries.

- 12-1. 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.
- 12-2. 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.
- 12-3. 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.
- 1 3. 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.

• 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
 Chlorinated paraffins

SPECIFICATIONS

NARROW-PITCH CONNECTORS

$AXQ1 \bigcirc 1HF1 / AXQ2 \bigcirc 1HF1$; 9 / 9

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14. 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.

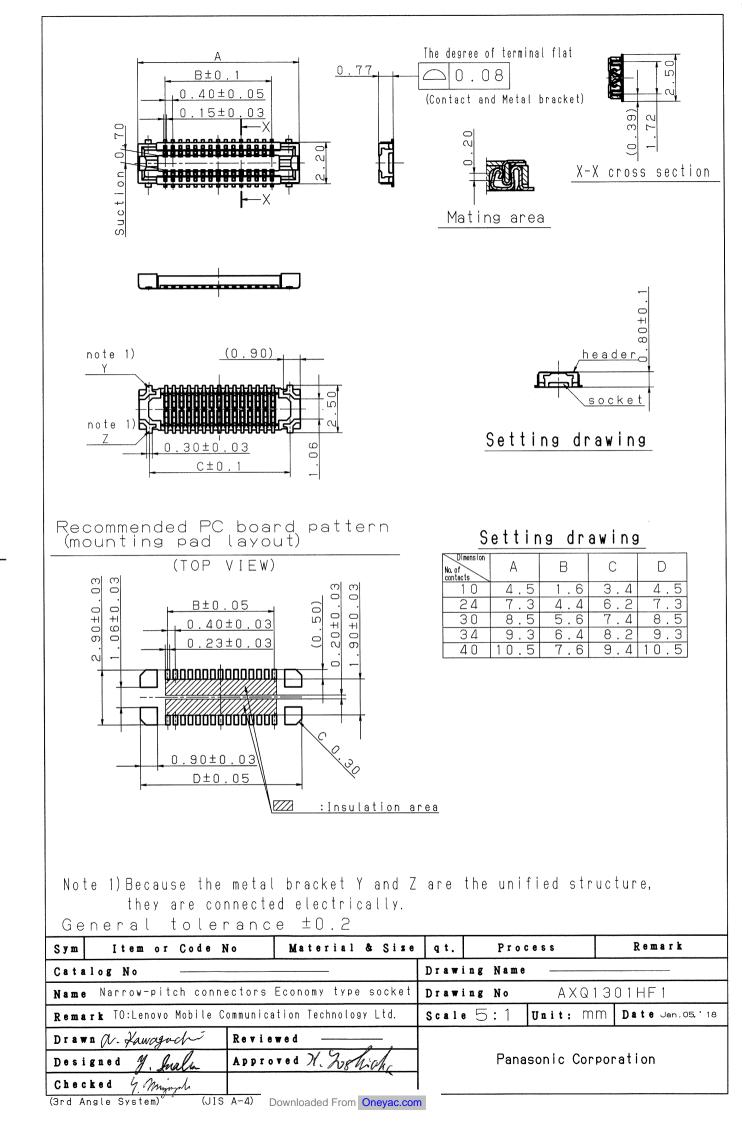
The secondary damage such as health damage of equipment users, caused by the failure of our products, is not compensated.

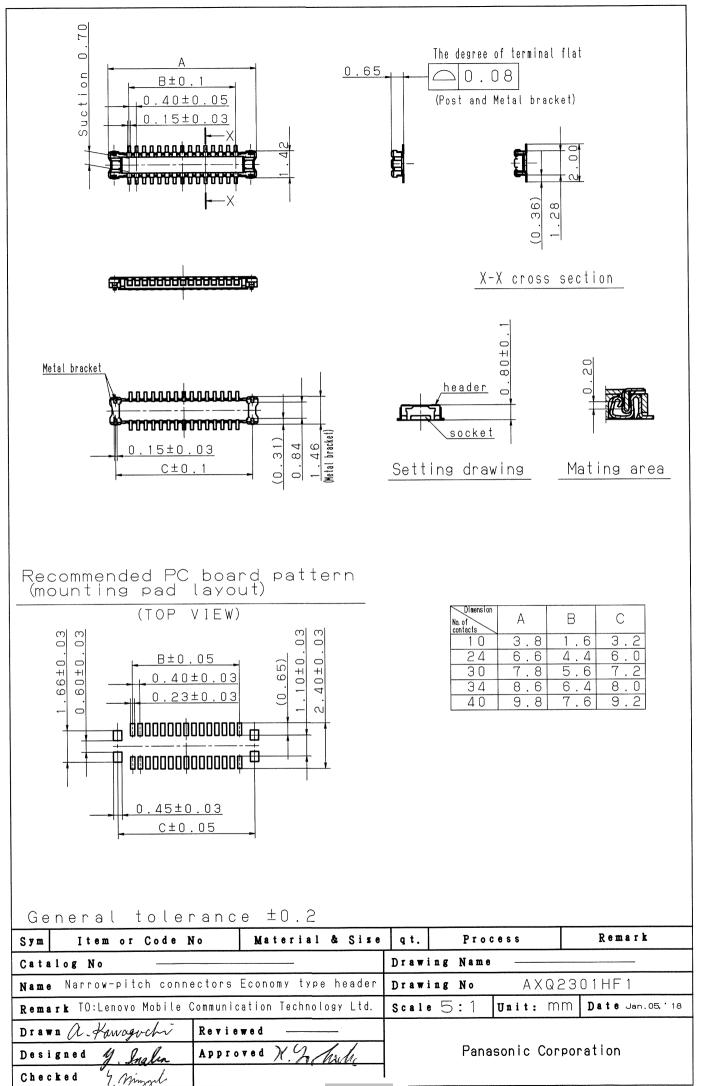
3) Panasonic Corporation will either repair or replace any products or parts thereof after mutual consultation if it is proven to be defective against only the items written in this specifications within one year from the date of products acceptance at the site of delivery unless another contract defined 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.

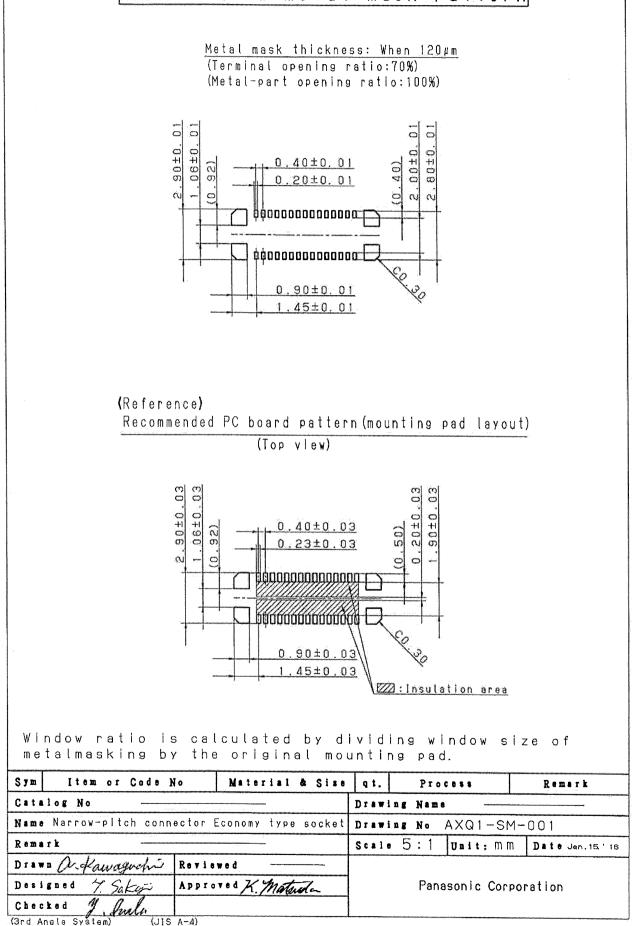
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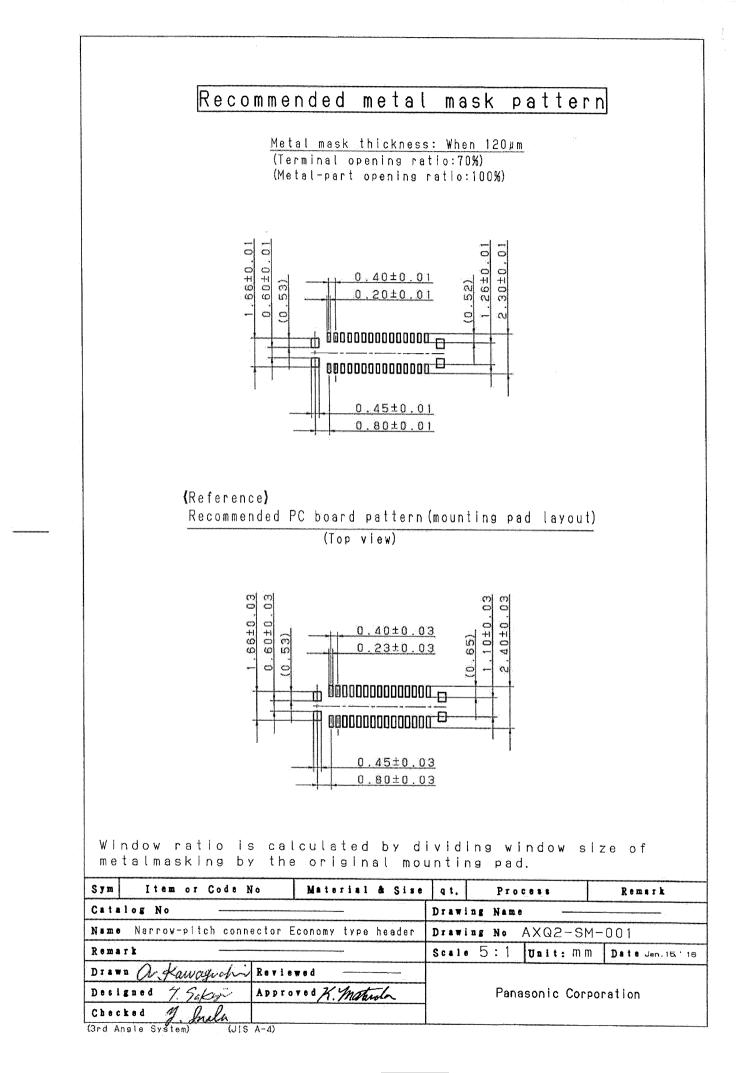


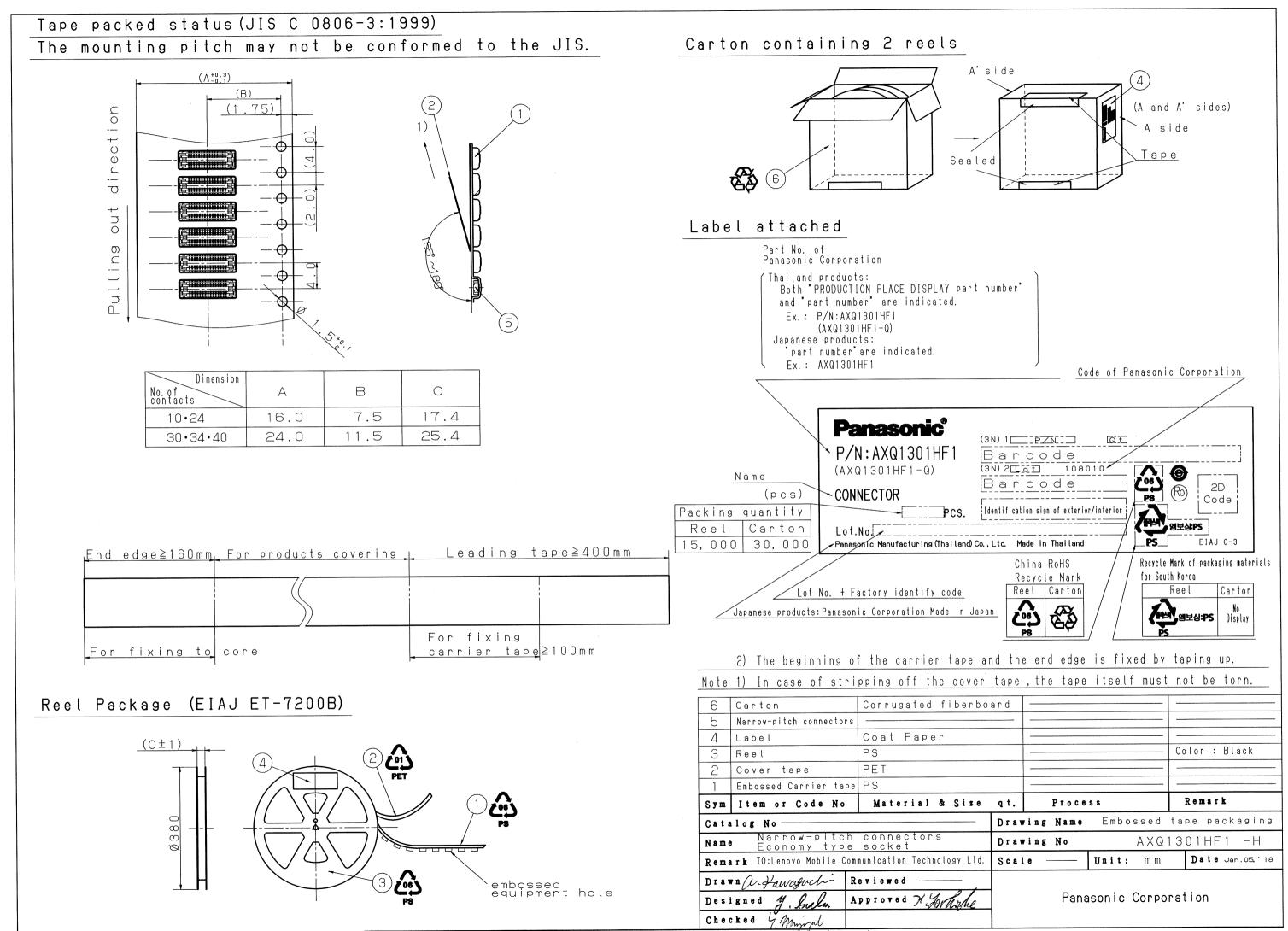


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Recommended metal mask pattern

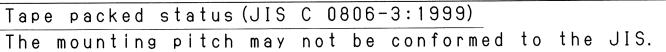


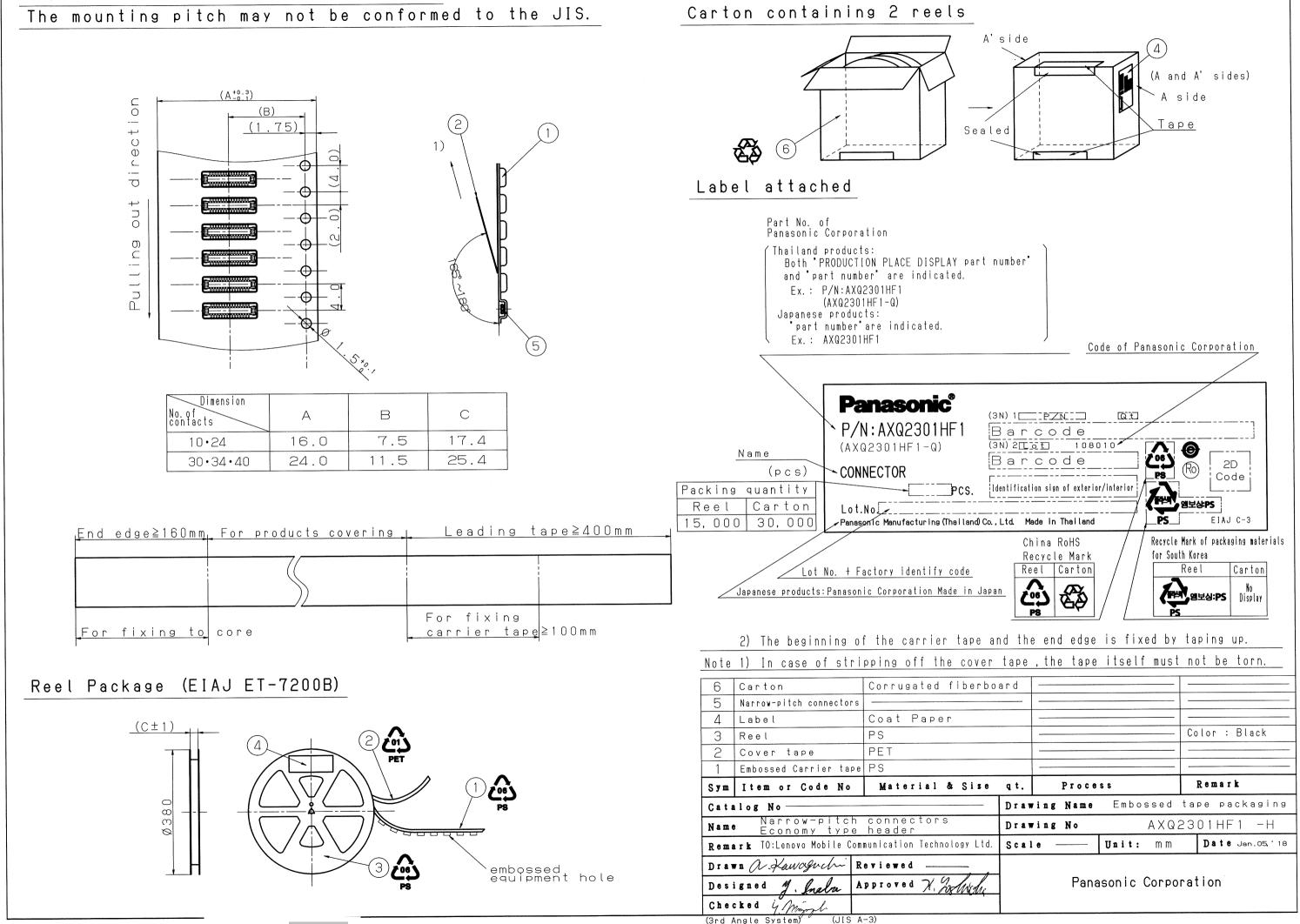




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(3rd Angle System)" (JIS A-3)





单击下面可查看定价,库存,交付和生命周期等信息

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