

SPECIFICATIONS

PRELIMINARY

NARROW-PITCH RF CONNECTORS

AXG3B0612HF1

AXG4B0612HF1

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6. Characteristics

The followings show specifications, when mated with socket and header of the part No. in this spec sheet. It is out of guarantee for the mating with other part No. or copy product.

Item	Specification	Test condition
6-1. Electrical characteristics		
1) Rated current	Contact / Post Max. 1.0 A/pin contact × 2 pin contacts and Max. 0.3 A/pin contact × 4 pin contacts IF Contact / Post Max. 0.3 A/pin contact × 2 pin contacts	
2) Rated voltage	30 V AC, DC	
3) Insulation resistance	Min. 1000 MΩ (Initial stage)	Using 250 V DC megger (1 minute)
4) Dielectric strength	150 V AC for 1 minute	Detection current : 1 mA
5) Contact resistance	Contact / Post Ground terminal Max. 90 mΩ	According to the method of JIS C 5402 (Current: 1mA)
6) Frequency	DC to 15 GHz	
7) Characteristic impedance	50 Ω	
8) V. S. W. R (Voltage Standing Wave Ratio)	DC~3GHz : 1.2 Max. 3~6GHz : 1.4 Max. 6~15GHz : 1.5 Max.	Measurement condition: Shown on the 4/10 page.
6-2. Mechanical characteristics		
1) Composite insertion force	Max. 60 N (Initial stage)	
2) Composite removal force	Min. 5.0 N (Initial stage)	

TO: Lenovo Mobile Communication Technology Ltd.

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Item	Specification	Test condition																		
<p>6-3. Environmental characteristics</p> <p>1) Ambient temperature (Operating temperature)</p> <p>2) Storage temperature</p> <p>3) Thermal shock resistance (Header and socket mated)</p> <p>4) Humidity resistance (Header and socket mated)</p> <p>5) Salt water spray resistance (Header and socket mated)</p> <p>6) H₂S resistance (Header and socket mated)</p>	<p>-55 °C ~ +85 °C</p> <p>-55 °C ~ +85 °C (Products only) -40 °C ~ +50 °C (Packaging structure)</p> <p>After 5 cycles Contact resistance Max. 90 mΩ (Contact/Post/ Ground terminal) Insulation resistance Min. 100 MΩ</p> <p>After 120 hours Contact resistance Max. 90 mΩ (Contact/Post/ Ground terminal) Insulation resistance Min. 100 MΩ</p> <p>After 24 hours Contact resistance Max. 90 mΩ (Contact/Post/ Ground terminal) Insulation resistance Min. 100 MΩ</p> <p>After 48 hours Contact resistance Max. 90 mΩ (Contact/Post/ Ground terminal)</p>	<p>Include the calorification from the connector. No icing or condensation</p> <p>No icing or condensation</p> <p>Conformed to MIL-STD-202F, method 107G</p> <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;">-55⁰₋₃</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;">85⁺³₀</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;">-55⁰₋₃</td> <td></td> </tr> </tbody> </table> <p>IEC60068-2-78</p> <p>Bath temperature 40 °C ± 2 °C Humidity 90RH % to 95 %RH</p> <p>IEC60068-2-11</p> <p>Bath temperature 35 °C ± 2 °C Salt water concentration : 5 % ± 1 %</p> <p>Bath temperature 40 °C ± 2 °C Gas concentration 3 ppm ± 1 ppm Humidity 75RH % to 80 %RH</p>	Order	Temperature (°C)	Time (minutes)	1	-55 ⁰ ₋₃	30	2	}	Max. 5	3	85 ⁺³ ₀	30	4	}	Max. 5		-55 ⁰ ₋₃	
Order	Temperature (°C)	Time (minutes)																		
1	-55 ⁰ ₋₃	30																		
2	}	Max. 5																		
3	85 ⁺³ ₀	30																		
4	}	Max. 5																		
	-55 ⁰ ₋₃																			

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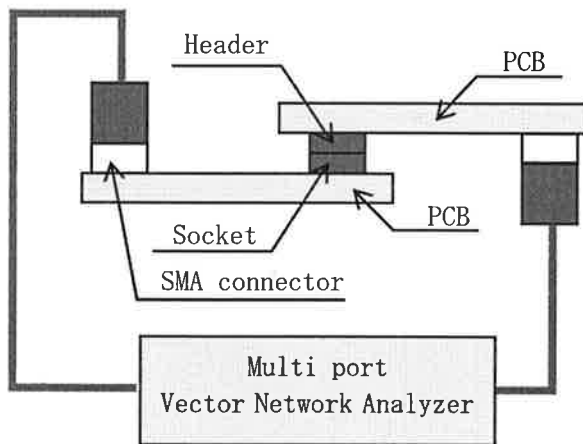
Page; 4 / 10

Item	Specification	Test condition
6-4. Life characteristics Insertion and removal life with no load	10 times Contact resistance Max. 90 mΩ (Contact/Post/ Ground terminal) Composite removal force Min. 5.0 N	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)
6-6. Solder paste thickness	The initial specification must be satisfied electrically and mechanically	Recommendation t=0.08 mm

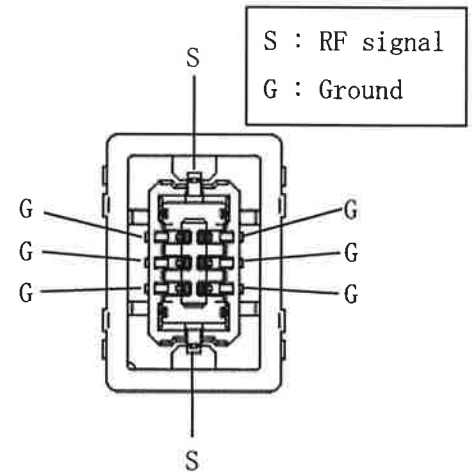
Measurement condition (6-1.8 V.S.W.R.)

Measure the V.S.W.R. with a vector network analyzer as shown below.

Remove the characteristics of the measurement fixture from the measurement results.



Measurement Fixture



Pin assignment

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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.

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.

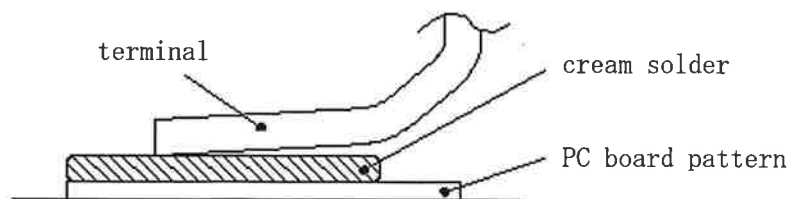
9-3. Soldering

1) Manual soldering.

As the ground terminals are arranged around the outside contacts, Panasonic Corporation does not guarantee the failures caused by manual soldering. The soldering iron interference may cause deformation or damage of contacts and molding.

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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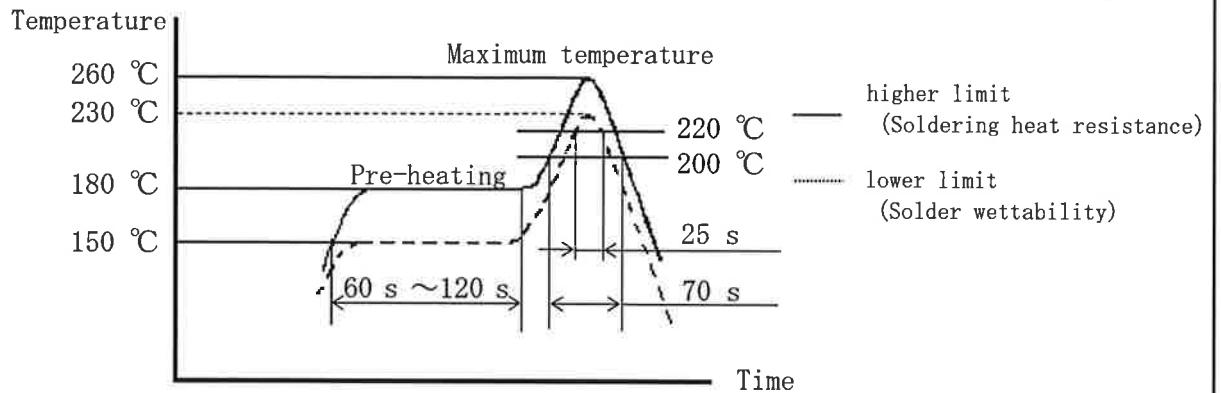
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- When applying the different thickness of a screen, please contact us.
- There may be a case of difficult self-alignment depending on the connector size. In that case, please be careful to align terminals and solder pads.
- There is no performance problem though there might be differences in the soldering appearance of the ground terminal.
- 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.

As the ground terminals are arranged around the outside contacts, Panasonic Corporation does not guarantee the failures caused by rework of soldering portion.

9-4. 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.

9-5. 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.

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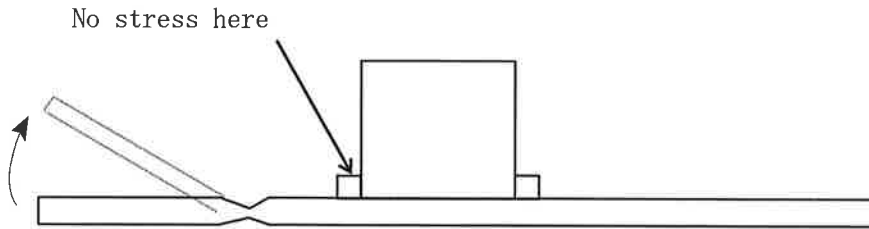
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9-6. When cutting the PC board after mounting the connector, please avoid the stress at the soldering portion.



9-7. PC board

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

9-8. 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 0.5~1.0mm).
- 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.

9-9. 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.

9-10. Restriction on the quantity of connector

When using the 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 failues caused by using the multiple connectors.

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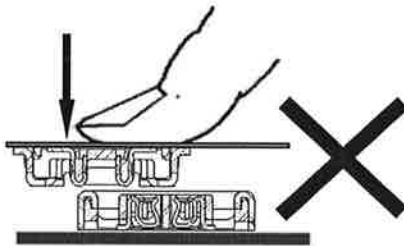
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9-11. Precautions for mating

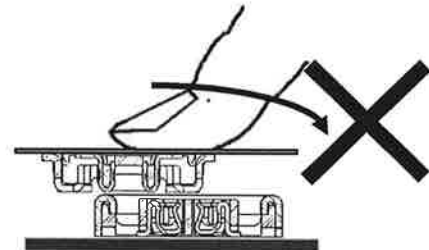
Our products are symmetrical structure. Please avoid reverse insertion of connector. Inserting a connector in a circuit direction opposite to that you intended may cause circuitry damage via abnormal heating, smoke, and fire.

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.

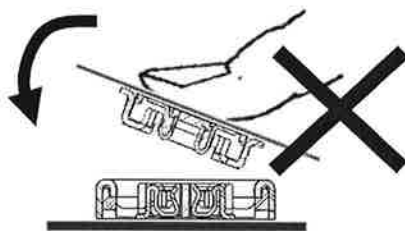
Press-fitting while the mating inlets of the socket and header are not matched.



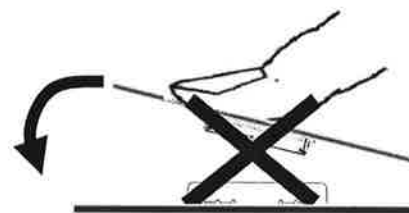
Strongly pressed and twisted



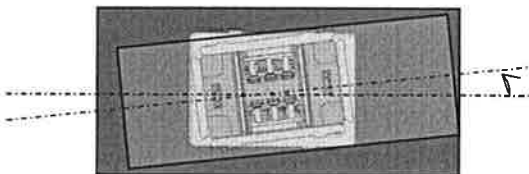
Tilted mating



Tilted mating



Strongly pressed and rotated



Do not remove or insert the electrified connector (in the state of carrying current or applying voltage).

9-12. Precautions for usage environment and storage environment

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

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

P R E L I M I N A R Y

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9-13. 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.

10. About safety Remarks

Observe the following safety precautions to prevent accidents and injuries.

- 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.
- 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.
- 10-3. This product is designed to have capacity to carry high current when mated with socket and header of the part No. in this spec sheet. It is out of guarantee for the mating with other part No. or copy product.
- 10-4. 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.

11. Environmental protection ;

Our products comply with RoHS Directive at the date of this specification issued.

12. Product appearance

There is no performance problem though there might be differences in appearance other than the contact part of the metal part, because of a manufacturing method.

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

P R E L I M I N A R Y

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1 3 . W a r r a n t y

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.

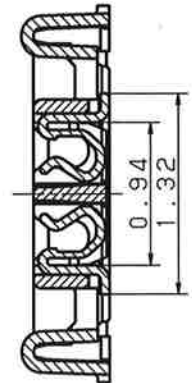
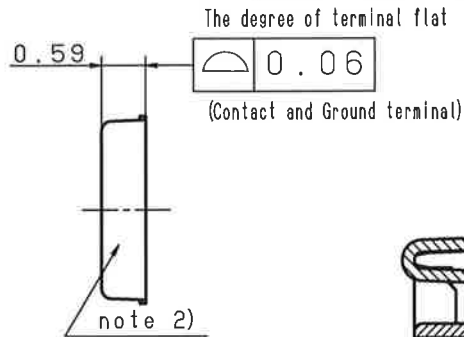
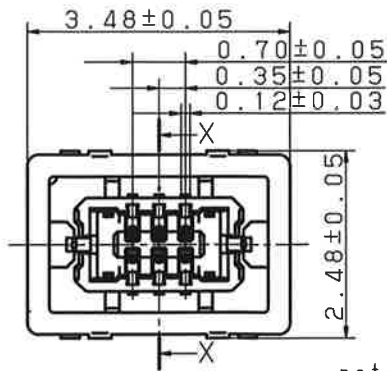
- ① Any consequential damages or loss of profits is resulted from malfunctions or defects of the product.
- ② The products are affected by the situation out of the specification at handling, the storage and the transport, etc. after the delivery.
- ③ An unforeseen situation arises which was unable to 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.

TO: Lenovo Mobile Communication Technology Ltd.

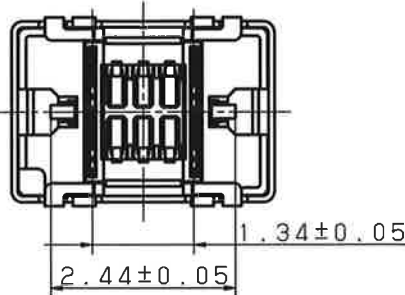
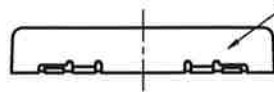
DATE : Apr. 16, 2021

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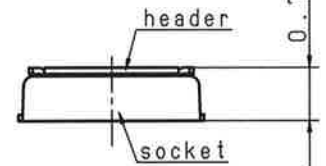
PRELIMINARY



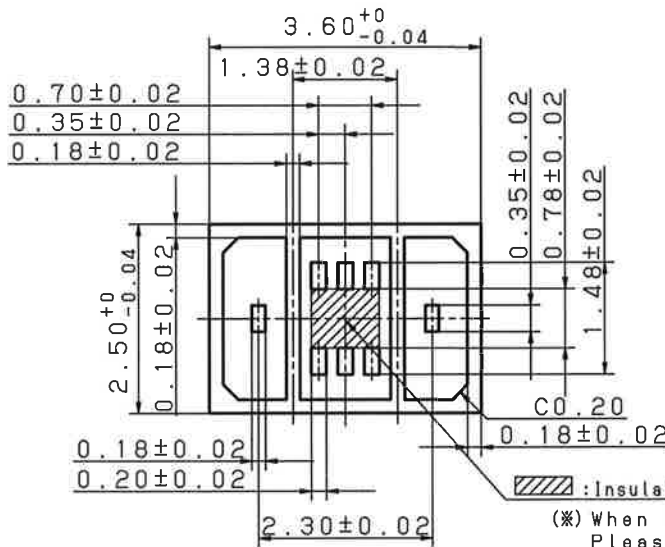
X-X cross section (20:1)



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



Setting drawing



(*) When wiring pattern in this area, Please coat it with solder resist etc.

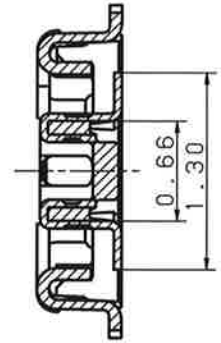
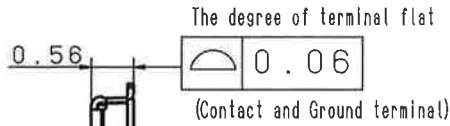
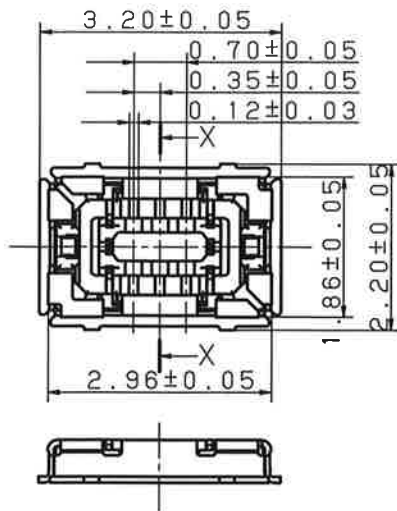
Note 1) Please don't reduce the inside pattern size less than this size because there is a possibility of solder creeping to the contact part.

Note 2) There might be differences in the exposure state of the ground terminal except terminal portion.

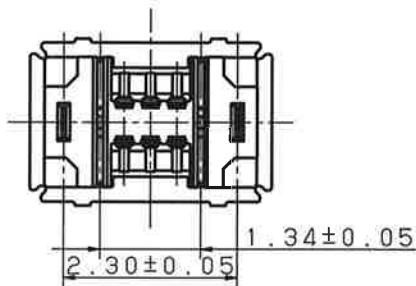
These dimensions might be changed, because this product is under development.
General tolerance ± 0.1

Sym	Item or Code No	Material & Size	qt.	Process	Remark
Catalog No			Drawing Name		
Name RF CONNECTORS RF4 Socket			Drawing No AXG3B0612HF1		
Remark TO:Lenovo Mobile Communication Technology Ltd.			Scale 10:1	Unit: mm	Date Apr.16, 2021
Drawn <i>N. Yamori</i>	Reviewed		Panasonic Corporation		
Designed <i>Y. Miki</i>	Approved <i>J. Tajima</i>				
Checked <i>T. Taka</i>					

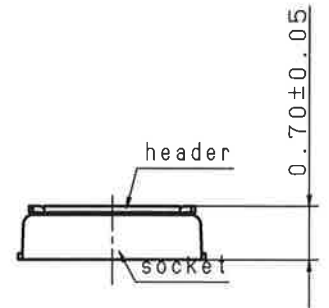
PRELIMINARY



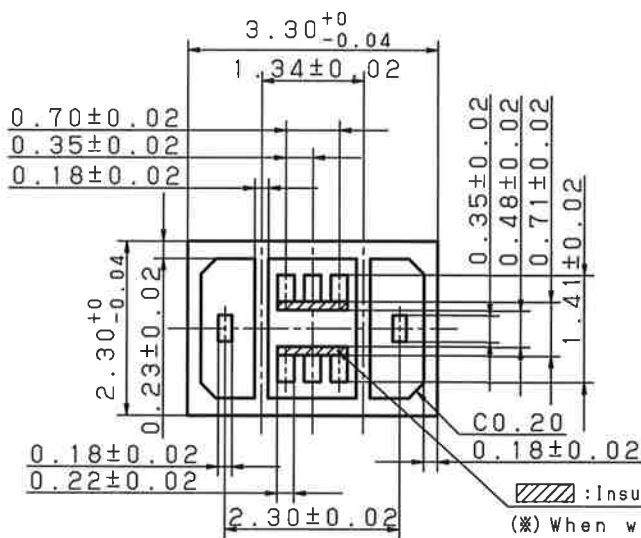
X-X cross section (20:1)



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



Setting drawing



(*) When wiring pattern in this area, Please coat it with solder resist etc.

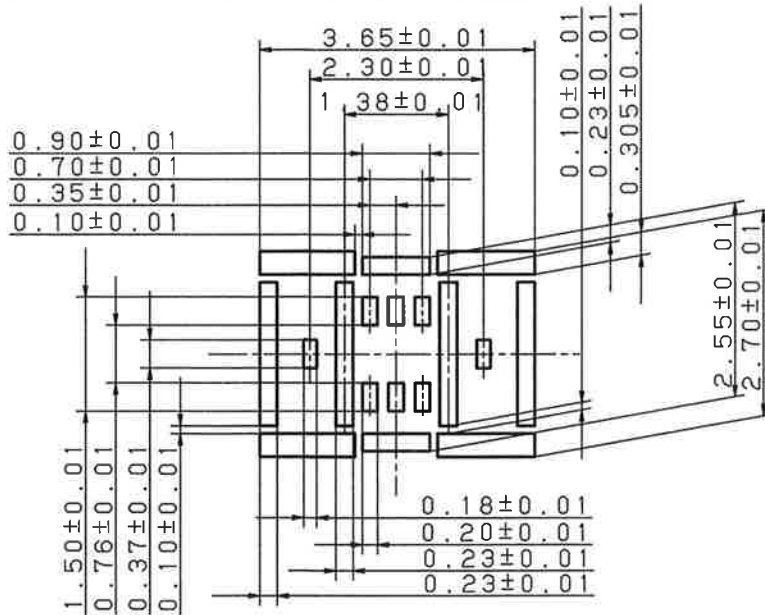
Note 1) Please don't reduce the inside pattern size less than this size because there is a possibility of solder creeping to the contact part.

These dimensions might be changed, because this product is under development.
General tolerance ± 0.1

Sym	Item or Code No	Material & Size	qt.	Process	Remark
Catalog No			Drawing Name		
Name RF CONNECTORS RF4 Header			Drawing No AXG4B0612HF1		
Remark TO:Lenovo Mobile Communication Technology Ltd.			Scale 10:1	Unit: mm	Date Apr.16, 2021
Drawn <i>M. Yamamoto</i>	Reviewed		Panasonic Corporation		
Designed <i>Y. Minami</i>	Approved <i>J. Takamori</i>				
Checked <i>T. Takahashi</i>					

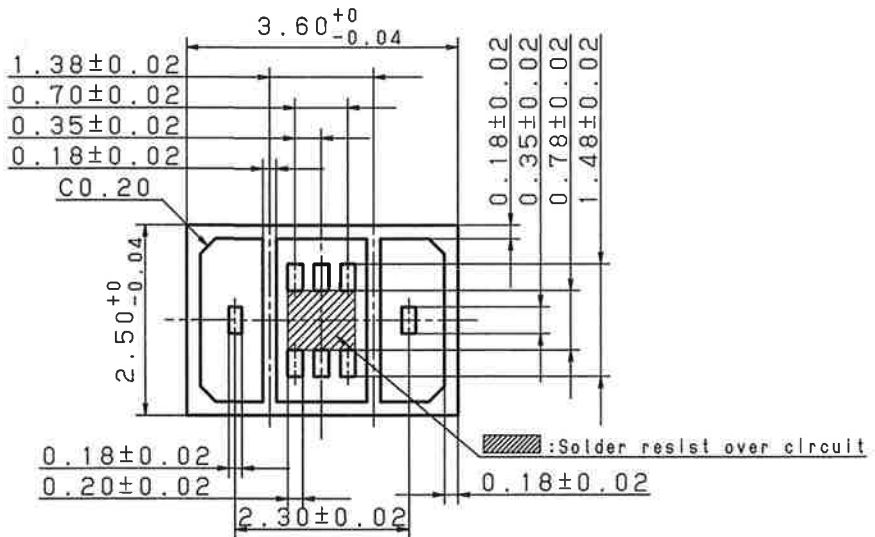
Recommended metal mask pattern

Metal mask thickness: When 60μm
 (Signal terminal opening ratio:106%)
 (Ground terminal opening ratio:127%)



(Reference)

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



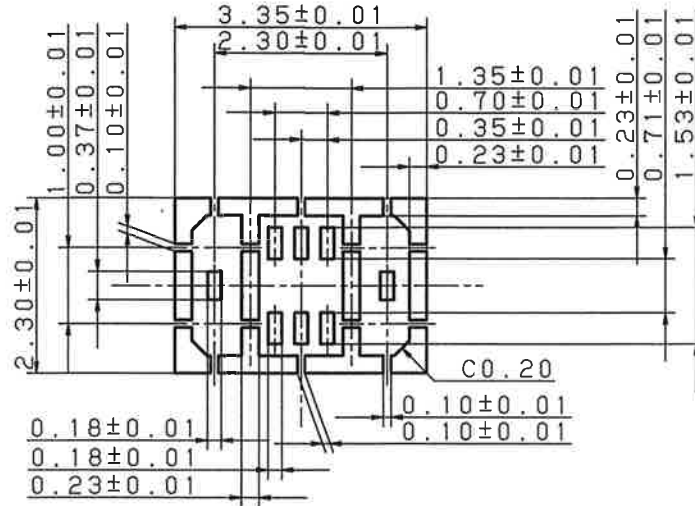
Window ratio is calculated by dividing window size of metalmasking by the original mounting pad.

These dimensions might be changed, because this product is under development.

Sym	Item or Code No	Material & Size	qt.	Process	Remark
Catalog No			Drawing Name		
Name RF CONNECTORS RF4 Socket			Drawing No AXG3B-SM-002		
Remark			Scale 10 : 1	Unit: mm	Date Apr.13, 2021
Drawn <i>Mr. Yamano</i>	Reviewed		Panasonic Corporation		
Designed <i>Y. Matsui</i>	Approved <i>J. Iyemori</i>				
Checked <i>J. Nishida</i>					

Recommended metal mask pattern

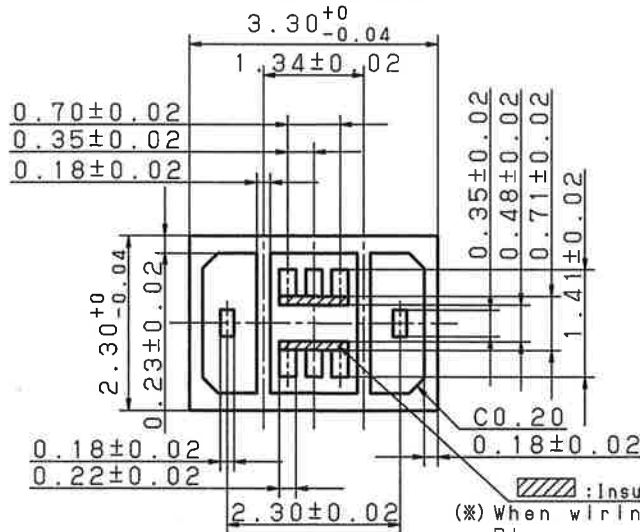
Metal mask thickness: When 60μm
 (Signal terminal opening ratio:106%)
 (Ground terminal opening ratio:102%)



(Reference)

Recommended PC board pattern (mounting pad layout)

(TOP VIEW)



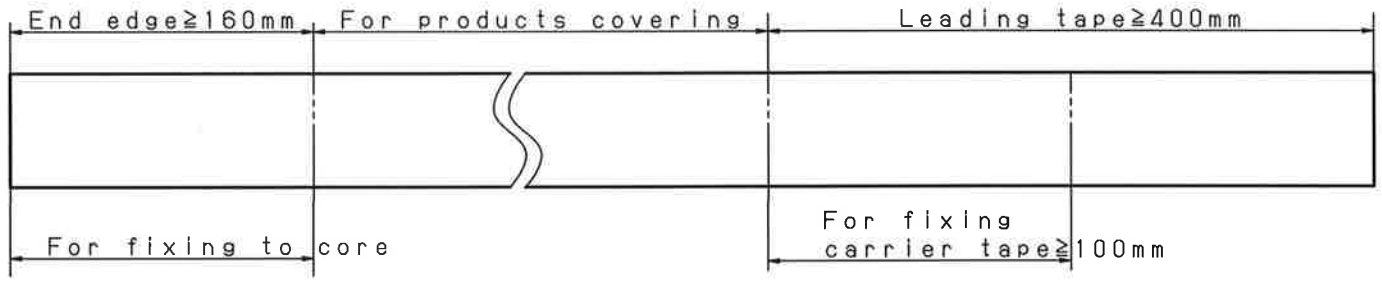
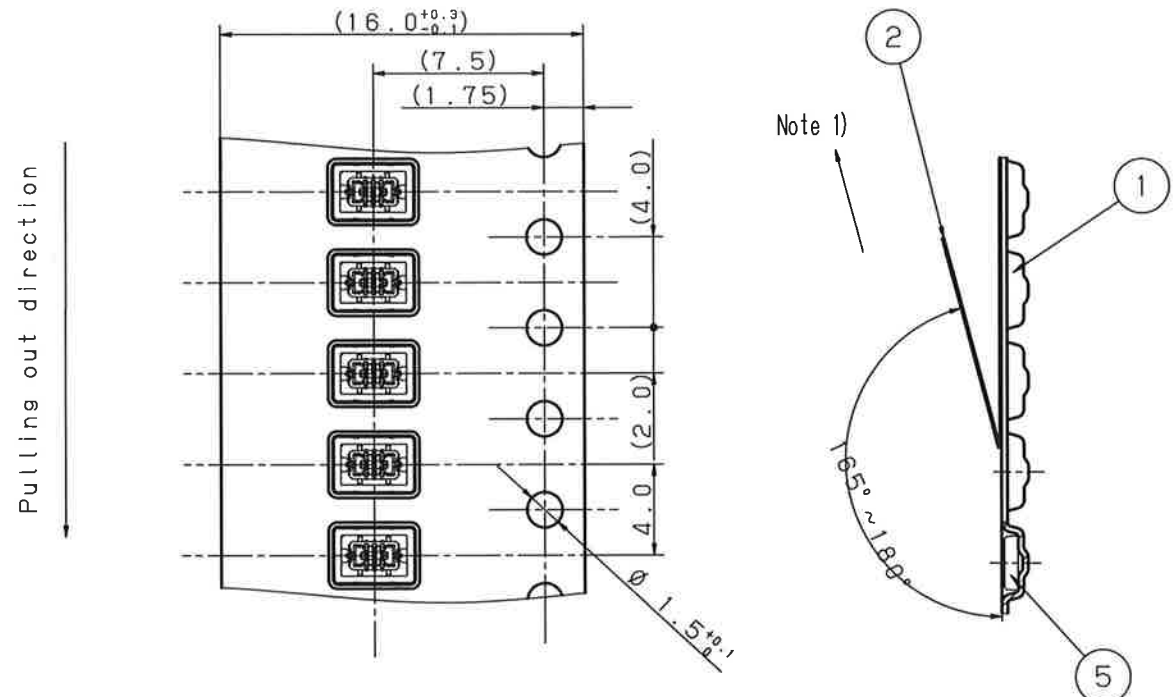
(※) When wiring pattern in this area, Please coat it with solder resist etc.

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

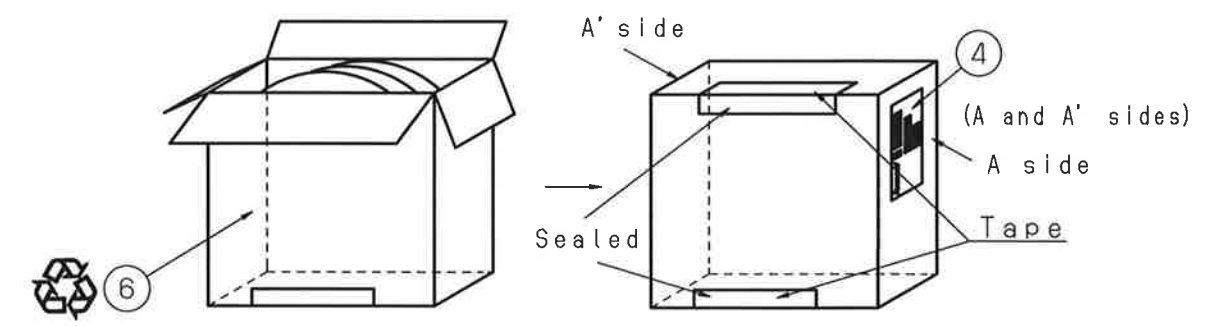
These dimensions might be changed, because this product is under development.

Sym	Item or Code No	Material & Size	qt.	Process	Remark
Catalog No				Drawing Name	
Name RF CONNECTORS RF4 Header				Drawing No AXG4B-SM-002	
Remark				Scale 10 : 1	Unit: mm Date Apr. 14, 2021
Drawn <i>M. Gama</i>	Reviewed			Panasonic Corporation	
Designed <i>Y. Minai</i>	Approved <i>J. Tajima</i>				
Checked <i>T. Nishida</i>					

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



Carton containing 2 reels



Label attached

Code of Panasonic Corporation

Parts No. **Panasonic** AXG3B0612HF1

Name **CONNECTOR**

(pcs) PCS.

Lot.No.

Panasonic Corporation Made In Japan

Date Code

Barcode (3N) 1 PZN

Barcode (3N) 2 108010

Identification sign of exterior/Interior

China RoHS Recycle Mark

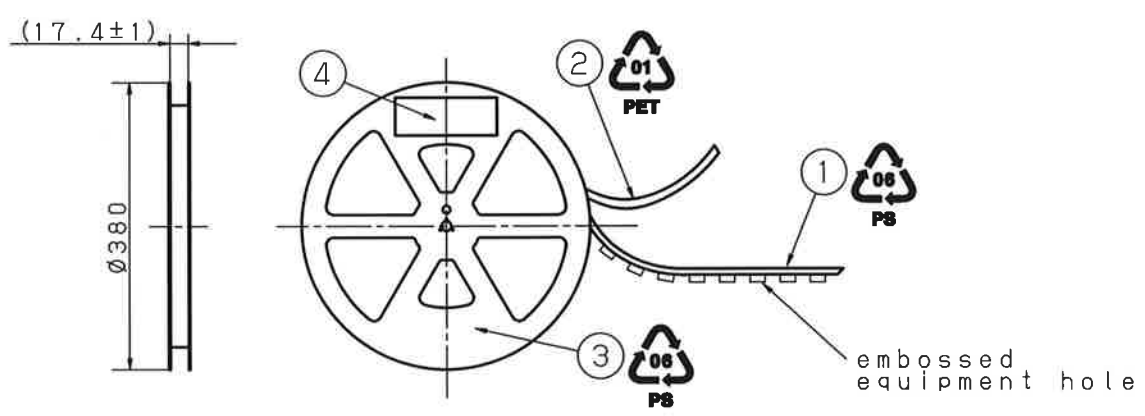
Reel	Carton

Recycle Mark of packaging materials for South Korea

Reel	Carton
	No Display

EIAJ C-3

Reel Package (EIAJ ET-7200B)



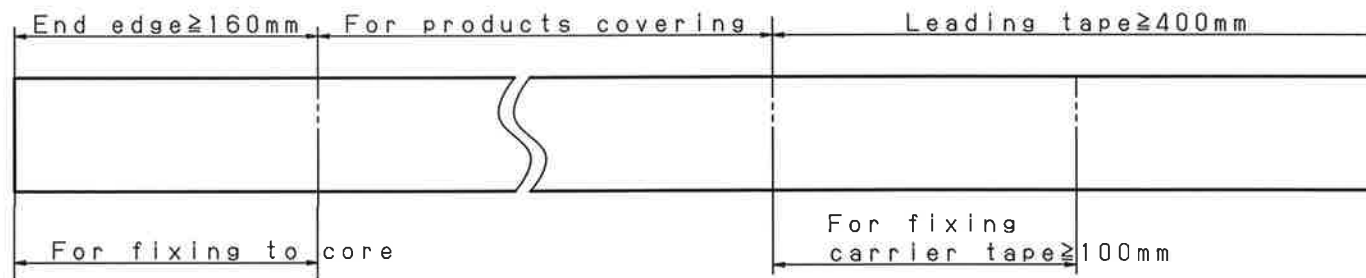
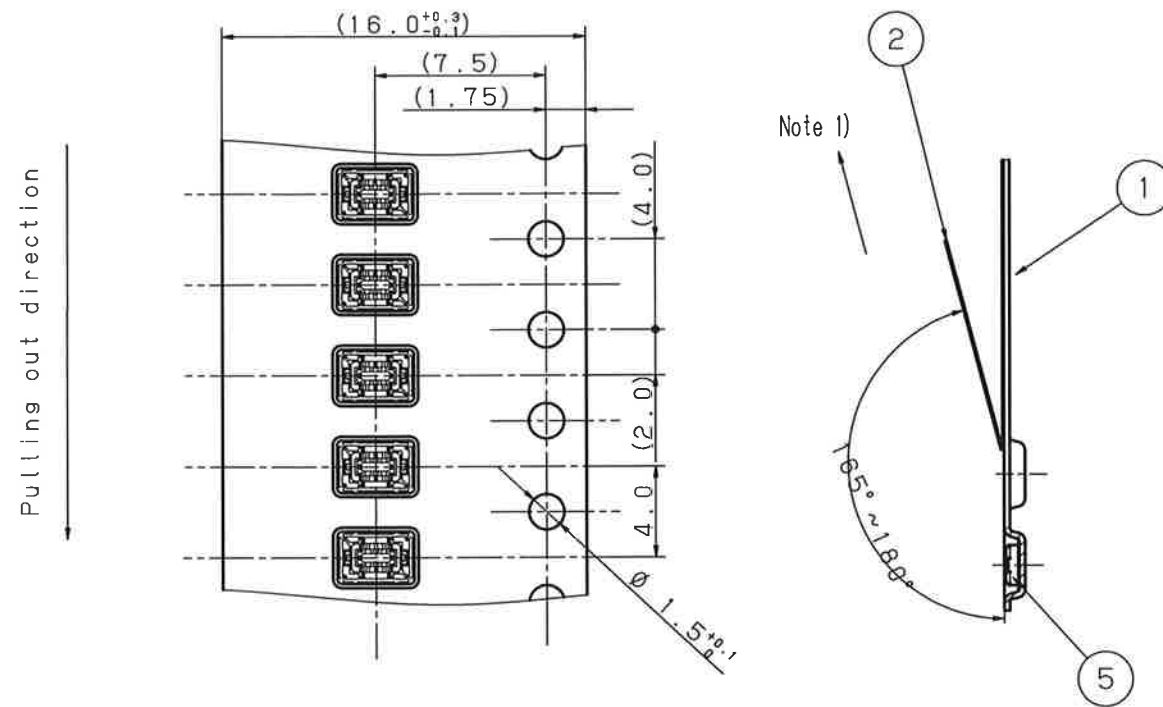
PRELIMINARY

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.

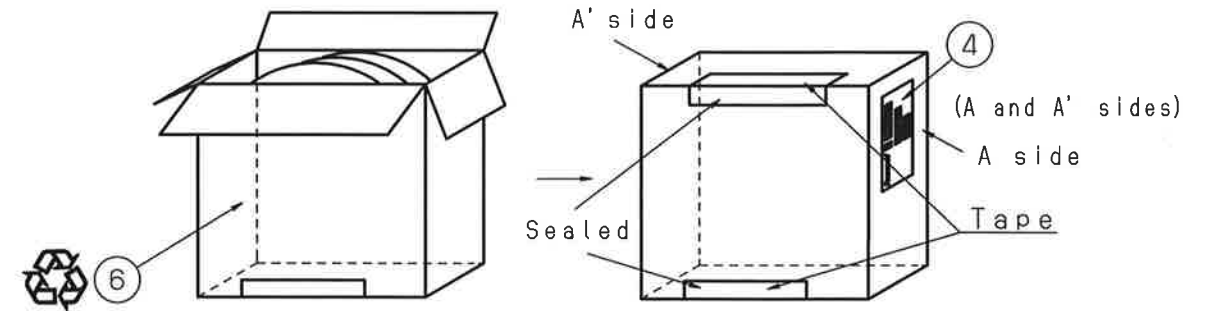
6	Carton	Corrugated fiberboard		
5	RF connectors			
4	Label	Coat Paper		
3	Reel	PS		Color : Black
2	Cover tape	PET		
1	Embossed Carrier tape	PS		

Sym	Item or Code No	Material & Size	qt.	Process	Remark
Catalog No		Drawing Name Embossed tape packaging			
Name RF CONNECTORS RF4 Socket		Drawing No AXG3B0612HF1H			
Remark TO:Lenovo Mobile Communication Technology Ltd.		Scale	Unit: mm	Date Apr.16, 2021	
Drawn	Reviewed	Panasonic Corporation			
Designed	Approved				
Checked					

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



Carton containing 2 reels



Label attached

Code of Panasonic Corporation

Parts No. **Panasonic** AXG4B0612HF1

Name **CONNECTOR**

(pcs) PCS.

Packing quantity

Reel	Carton
15000	30000

Lot.No. Panasonic Corporation

Date Code

Made In Japan

Barcode (3N) 1 PZN

Barcode (3N) 2 108010

Identification sign of exterior/interior

China RoHS Recycle Mark

Reel	Carton

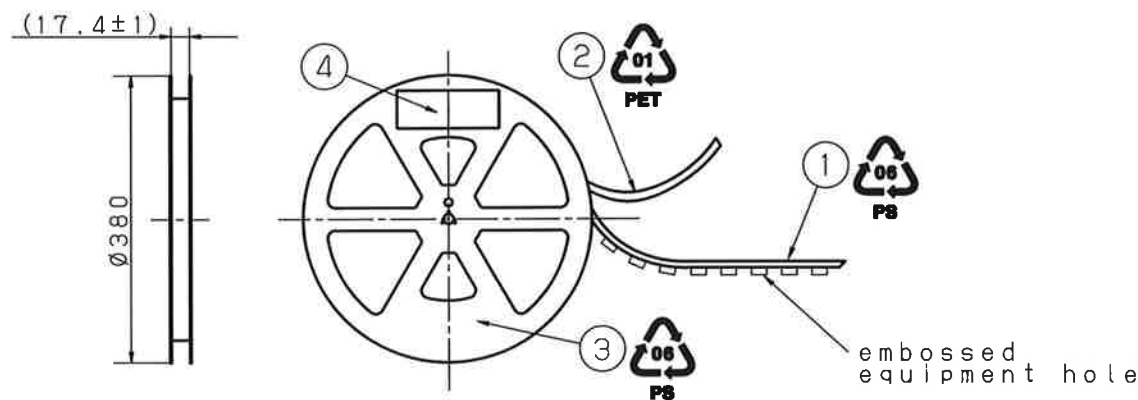
Recycle Mark of packaging materials for South Korea

Reel	Carton
	No Display

2D Code

PS EIAJ C-3

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Sym	Item or Code No	Material & Size	qt.	Process	Remark
Catalog No		Drawing Name Embossed tape packaging			
Name RF CONNECTORS RF4 Header		Drawing No AXG4B0612HF1H			
Remark TO:Lenovo Mobile Communication Technology Ltd.		Scale	Unit: mm	Date Apr. 16, 2021	
Drawn	<i>Y. Yamano</i>	Reviewed			
Designed	<i>Y. Yamano</i>	Approved	<i>Y. Yamano</i>		
Checked	<i>Y. Yamano</i>				

Panasonic Corporation

单击下面可查看定价，库存，交付和生命周期等信息

[>>Panasonic\(松下\)](#)