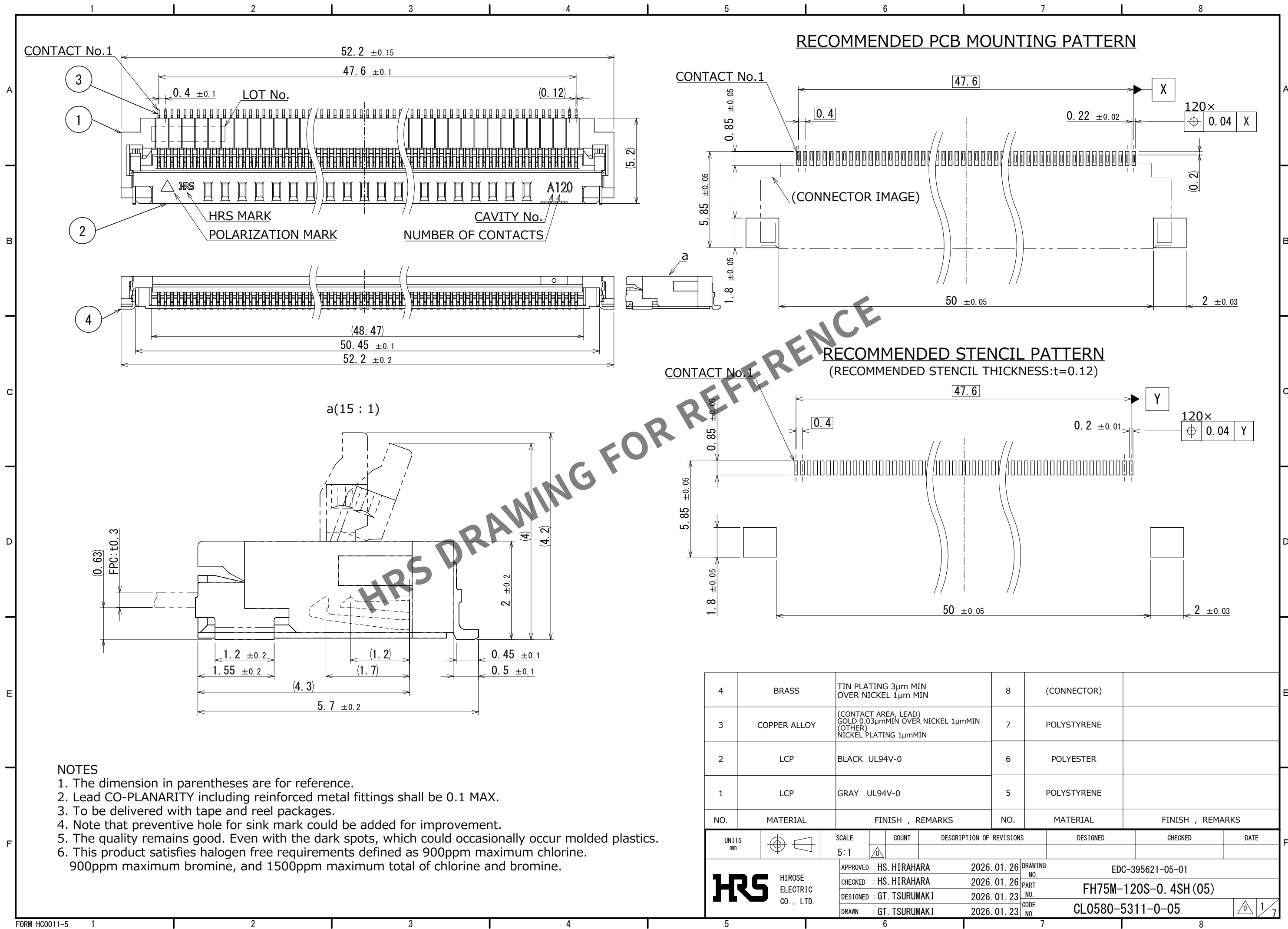


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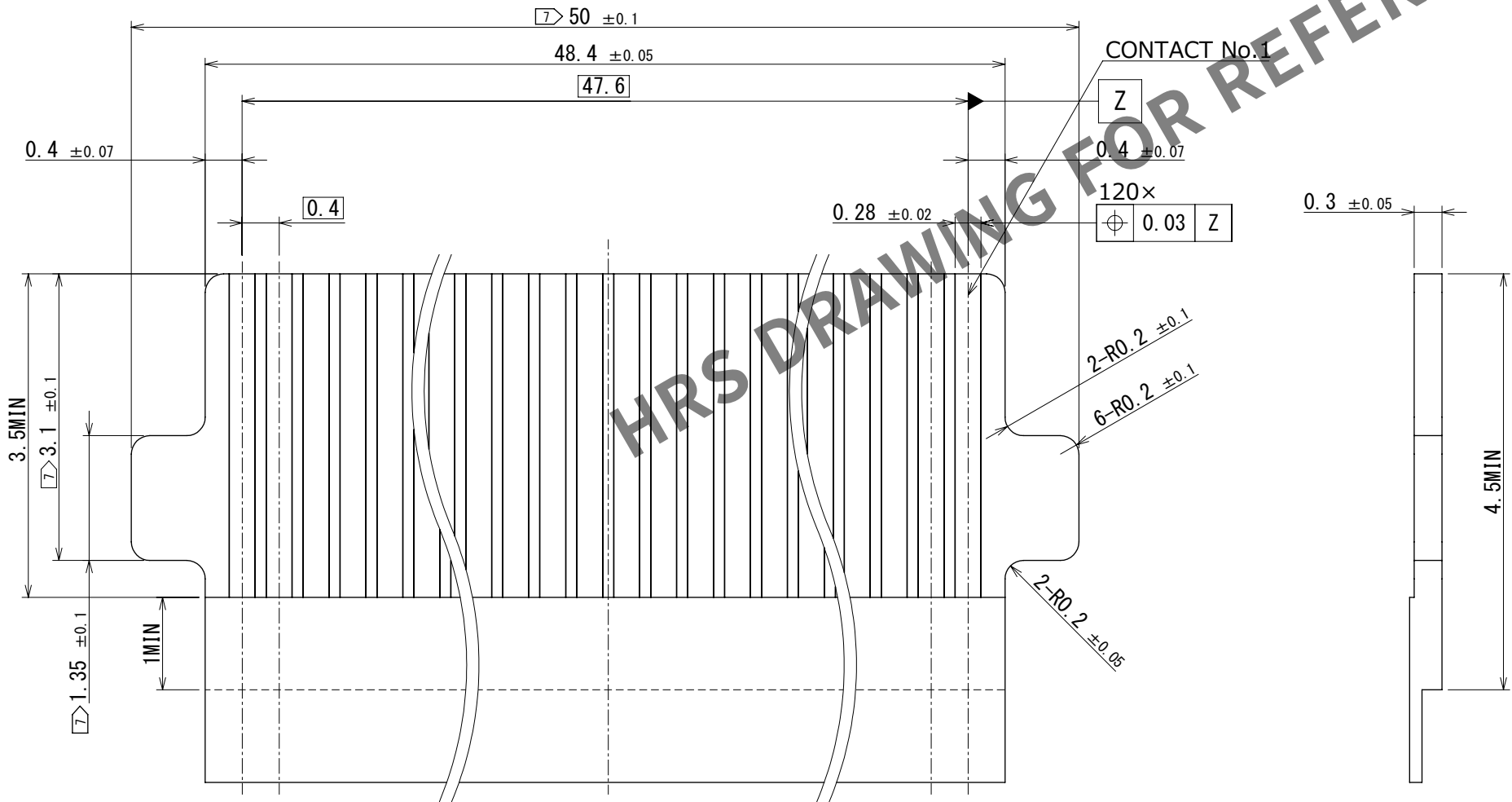


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FPC CONFIGURATION (REFERENCE EXAMPLE) (SCALE:FREE)

MATERIAL NAME	MATELIAL	THICKNESS(μm)
COVERING FILM LAYER	POLYIMIDE 1mil thick.	25
COVER ADHESIVE		25
SURFACE TREATMENT	1μm to 5μm NICKEL UNDERPLATED 0.2μm GOLD PLATED	(3)
COPPER FOIL	Cu 1 oz	35
BASE ADHESIVE	HEAT-HARDENED ADHESIVE	25
BASE FILM	POLYIMIDE 1mil thick	25
REINFORCEMENT MATERIAL ADHESIVE	HEAT-HARDENED ADHESIVE	30
STIFFNER	POLYIMIDE 7mil thick	175

RECOMMENDED FPC (15:1)

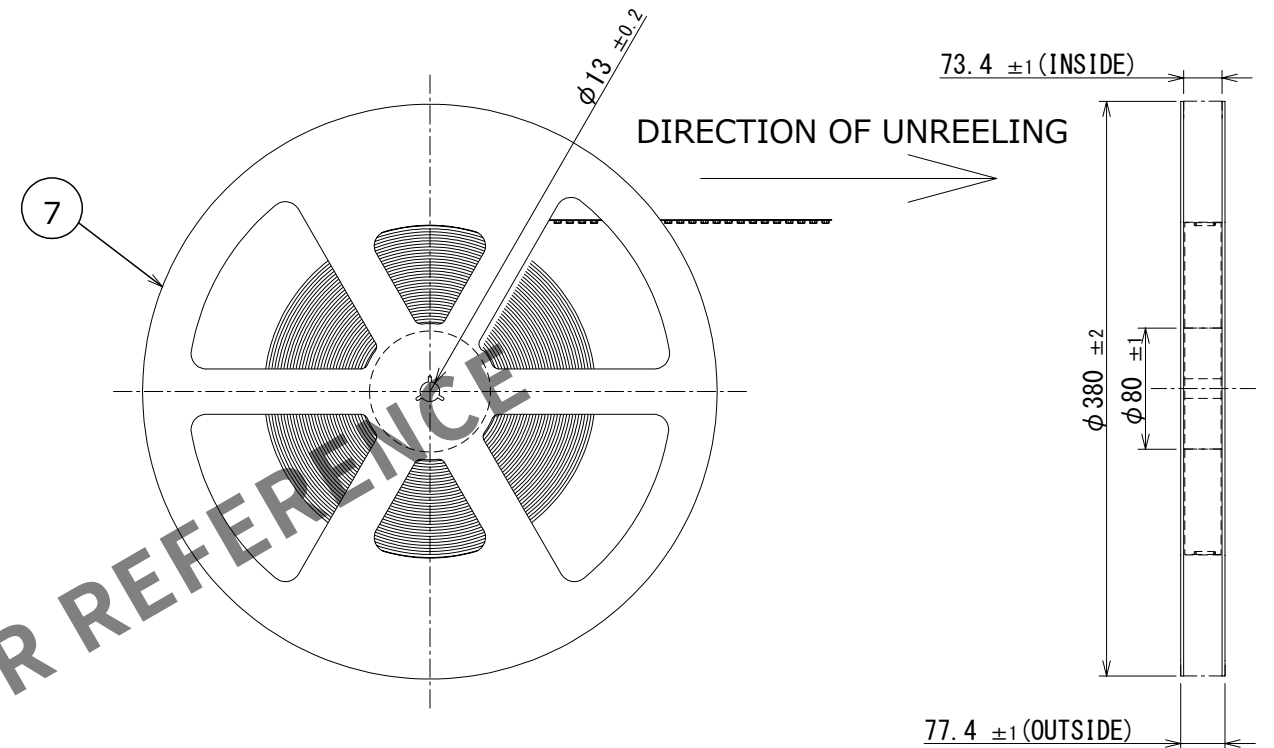


NOTES

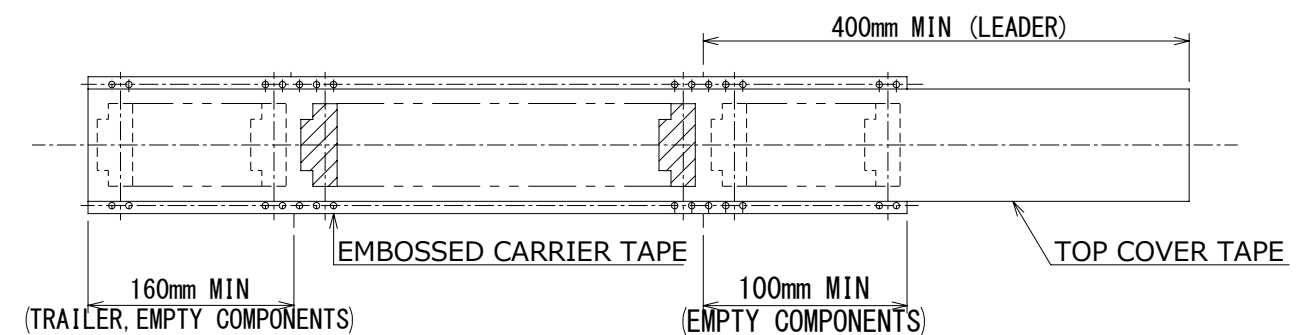
- 7 FPC without tabs is also available.
- In case of using FPC without tabs. dimensions relating tabs are not required.

<RECOMMENDED FPC>

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REEL DIMENSION (NO SCALE)

DIRECTION OF UNREELING



- NOTES
8. 1 reel : 2000 connectors.
9. Refer to JIS C 0806 and IEC 60286-3 (Packaging of components for automatic handling.)

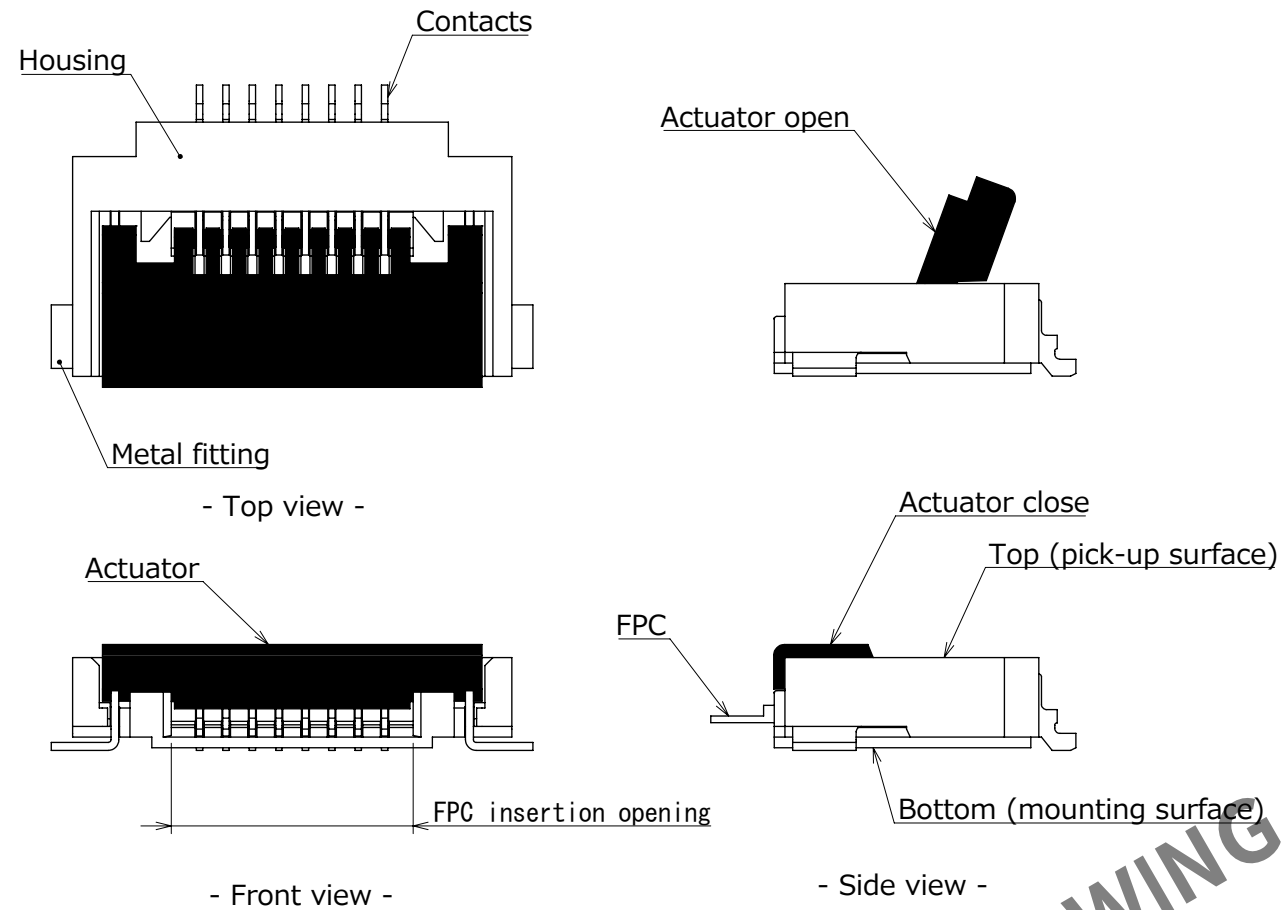
<PACKING SPECIFICATION>

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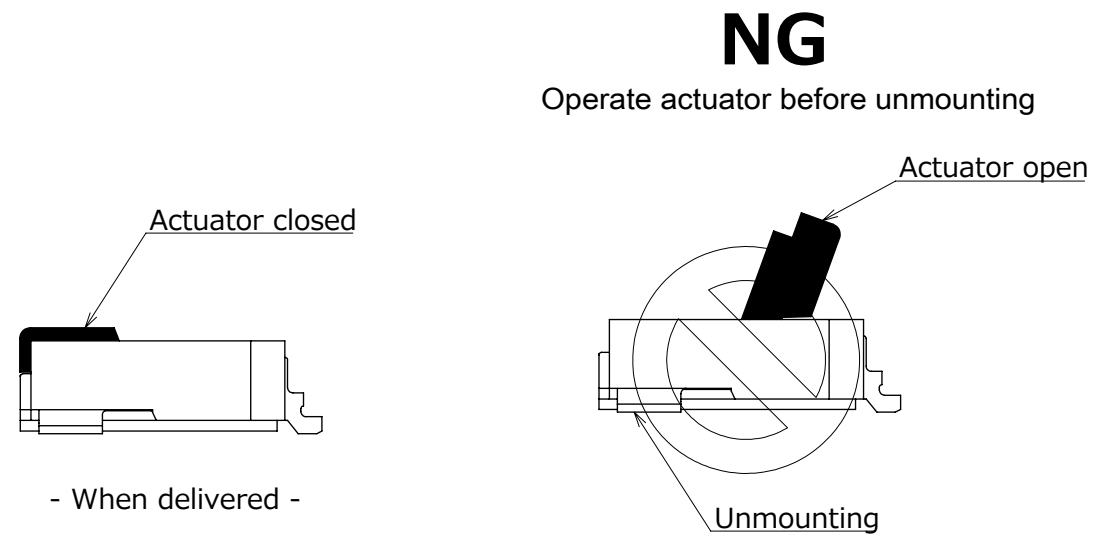
Indicates connector usage for a typical Front-flip structure.
To prevent connector/FPC breakage and contact failure (mating failure, FPC pattern breakage, etc),
read through the instructions shown below and handle the connector properly.
Although this instruction manual is applicable to usage with FPC/FFC.
For convenience, only the FPC is mentioned.

【Connector Part Nomenclature】

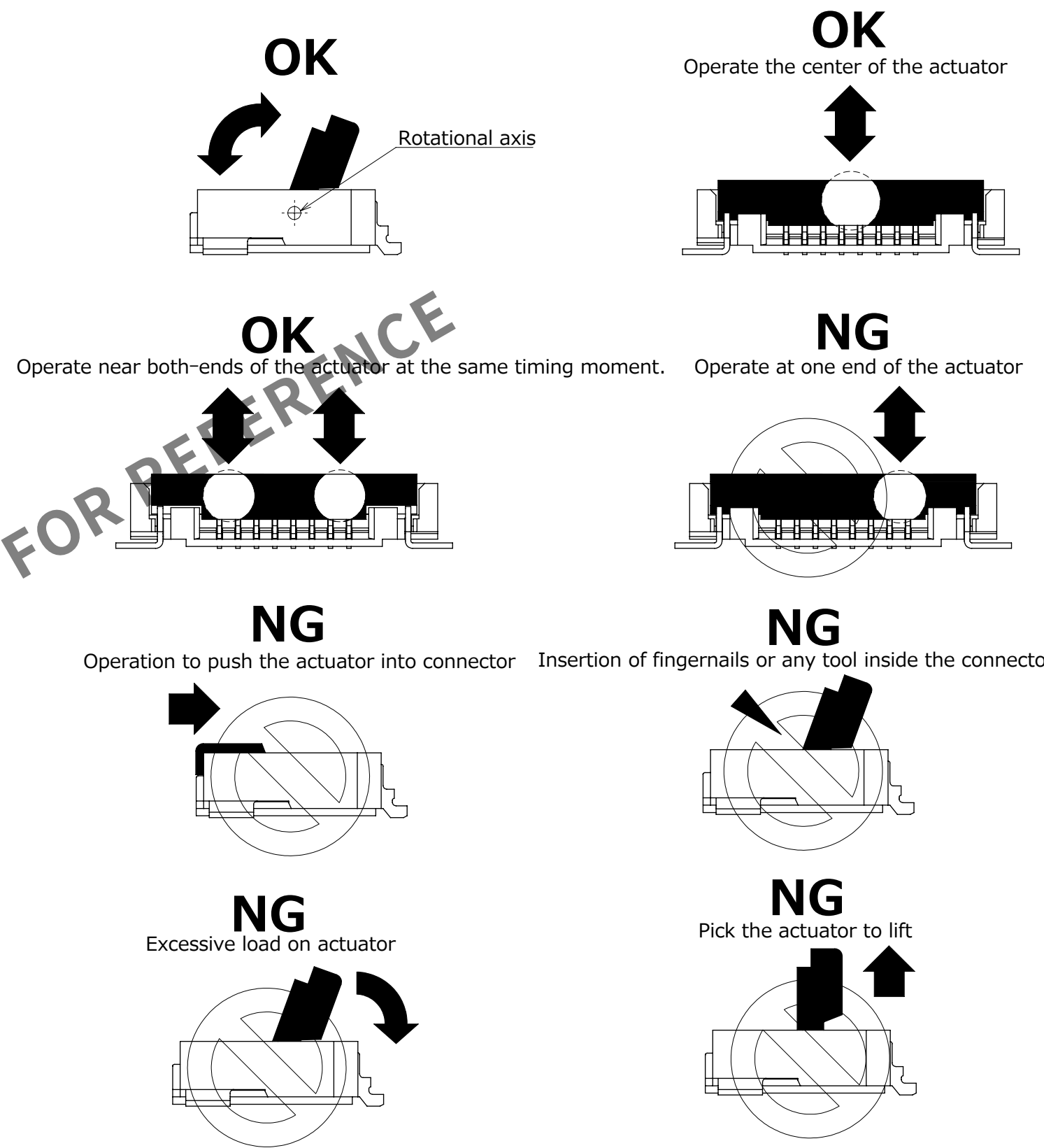


【Operation and cautions】

1. Initial condition
The connector is delivered with the actuator closed.



2. How to lock and unlock
The actuator rotates around the rotational axis.
Lock : Apply load to rotate the actuator after inserting the FPC.
Ensure that both ends of the actuator are completely closed.
If they are not, press both ends of the actuator until they are completely closed.
Unlock : Slowly flip up the actuator to release the lock.



<INSTRUCTION MANUAL(1)>

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3. How to insert and remove FPC
This connector has contacts on the bottom, insert the FPC with the exposed conductors face down.
This connector has boss for positioning FPC, insert the FPC at about 10 degree angle to the PCB mounting surface.
In case of using FPC without tabs, insert the FPC horizontally along the surface.
After rotating the actuator to the fully opened position carefully withdraw the FPC pulling out at about 10 degree angle to the PCB mounting surface.
In case of using FPC without tabs, pull out the FPC horizontally along the surface.

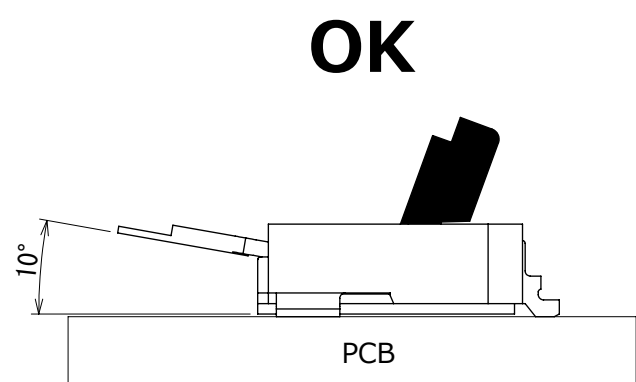
4. FPC insertion check and mating confirmation of the FPC
Boss for positioning FPC guide the FPC tabs to the correct position.
Make sure that the FPC tabs are located in correct position as shown in the figure below after FPC insertion.

OK

FPC (Proper position)

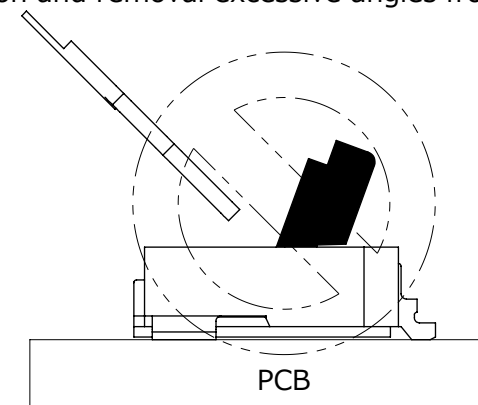
- When FPC insertion is completed -

- When actuator lock is completed -

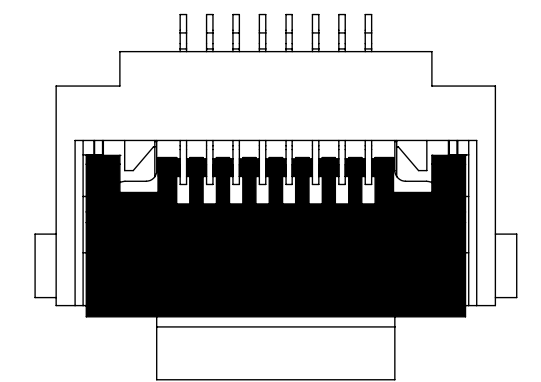
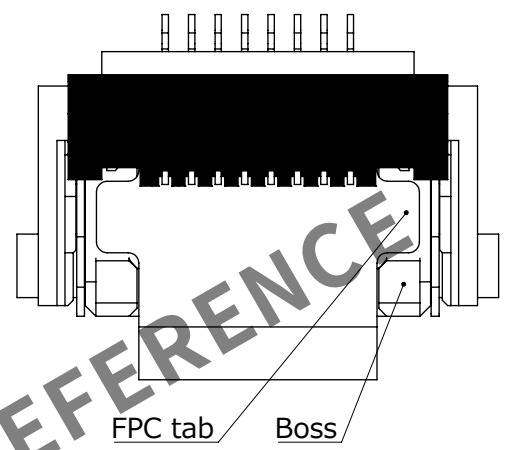


OK

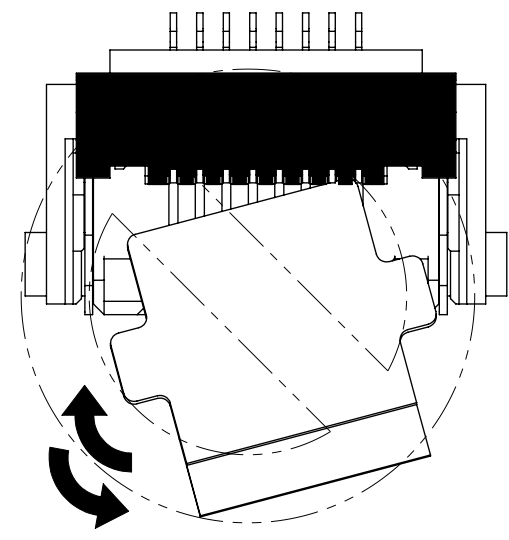
NG
Insertion and removal excessive angles from PCB surface



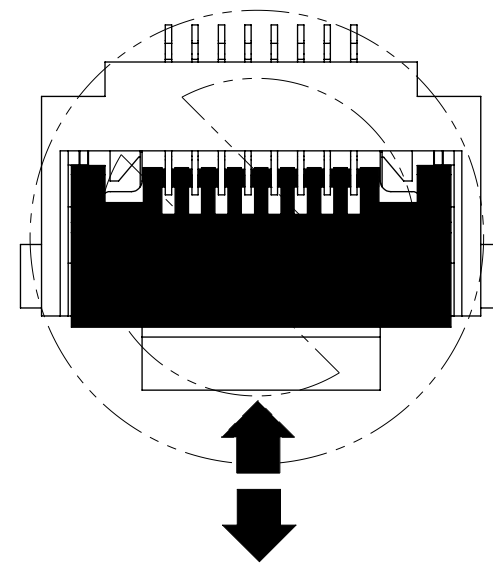
NG



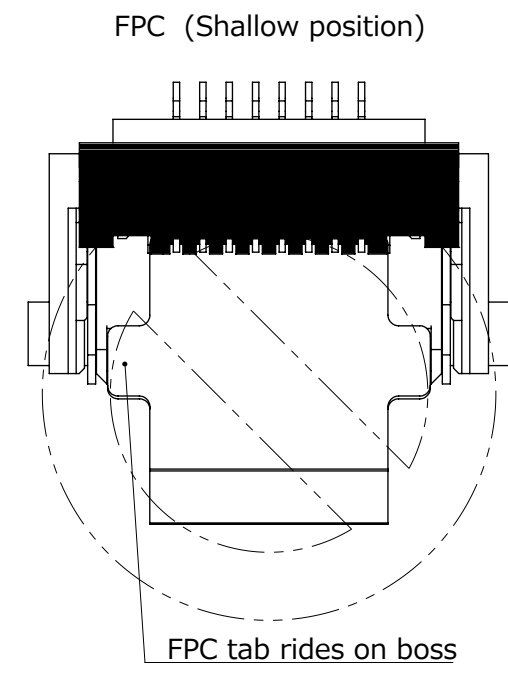
NG
Insertion and removal during wrenching up, down, left and right. NG
Insertion and removal with actuator close



NG

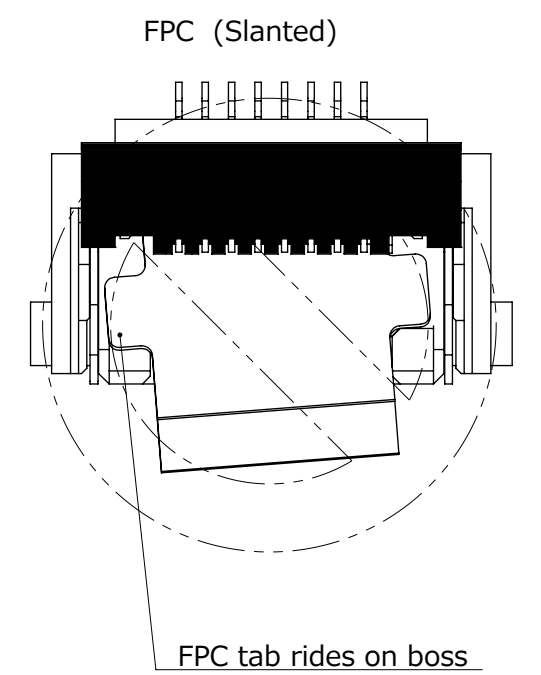


NG



FPC (Shallow position)

NG



FPC (Slanted)

<INSTRUCTION MANUAL(2)>

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【Instructions for PCB layout】

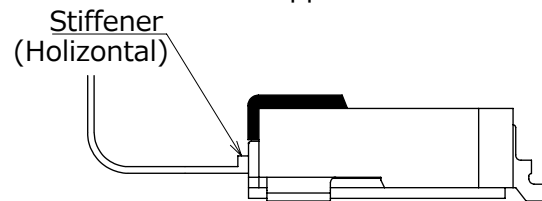
Please design a PCB layout not to apply load to connector and FPC.

【Cautions】

- If the FPC has to be curled/bended in your cabling design, please keep enough degree of freedom in your design to keep the FPC tension free. In this regard, the stiffener is parallel to the PCB.
- Do not mount other components underneath the FPC stiffener which may interfere with the connection.
- Please consult with the FPC manufacturer about FPC bending performance and wire breakage strength while making design.
- Keep enough space for the rotation of the actuator during PCB and component layout design.
- Please consult with our sales representative if you are using FPC with different configuration from our recommendation.

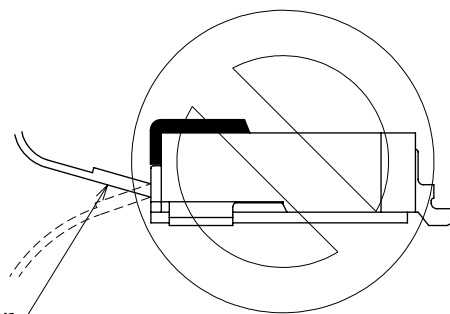
OK

No load applied to stiffener



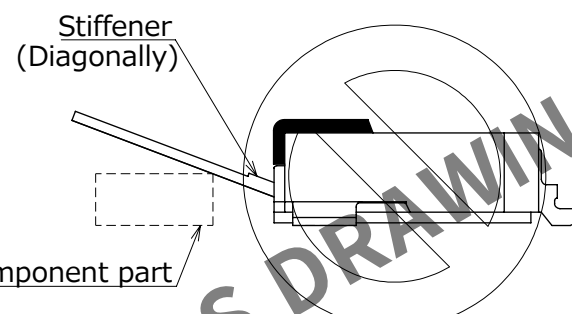
NG

Load applied to stiffener



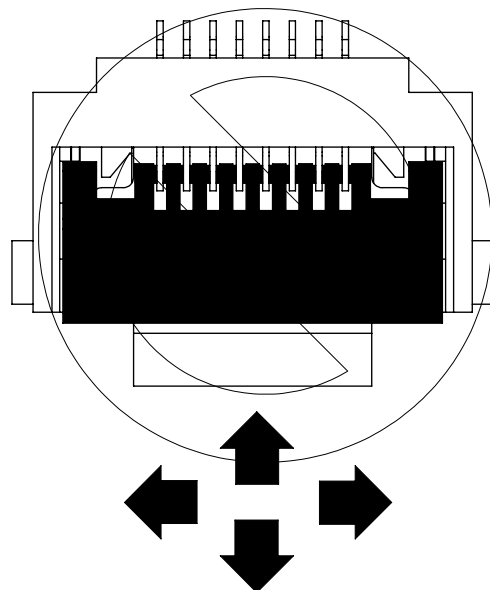
NG

Housing or parts interfering with the FPC



NG

Load applied to FPC



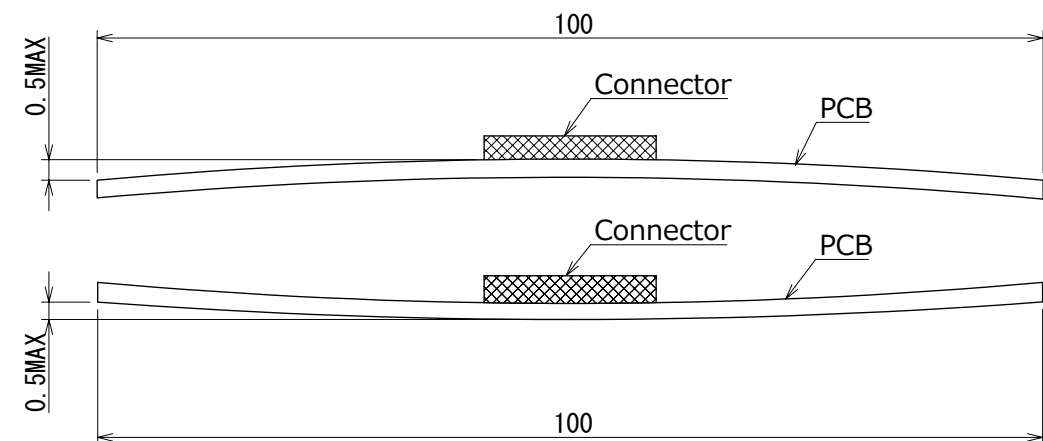
【Instructions for mounting on the PCB】

- Refer to recommended layouts for PCB, stencil pattern and FPC dimension. Please inspect the size of solder fillet and flux climbing height of the mounted connector while using different land/stencil pattern from our recommendation.
- Please verify your solder resist/silk screening design carefully before implementing the design.
- Apply reflow temperature profile within the specified conditions. For specific applications, the recommended temperature may vary depending on type/volume/thickness of solder paste and size/thickness of PCB. Please consult with your solder paste and equipment manufacturer for specific recommendations.
- Please try to minimize the warpage of the PCB. Soldering failure could still occur due to the PCB warpage even if the coplanarity of the connector is under 0.1mm.
- If the connector is mounting on FPC, please make sure to put a stiffener on the backside of the FPC. Recommended stiffener: Glass epoxy material with thickness of 0.3mm MIN.
- Do not apply 0.5N or greater external force on the connector when unreeling or handling the connector before mounting. Excessive mechanical stress may damage the connector before mounting.

【Instructions for PCB handling after mounting the connector】

The warpage of PCB may apply excessive stress on the connector and damage the connector.

- During the assembly processes described below, care shall be taken so as not to give any stresses of deflection or twisting to the PCB.
 - Splitting a large PCB into several pieces
 - Installing mounting screw on PCB
- The warpage of a 100mm wide PCB should remain within 0.5mm.



【Instructions of manual soldering】

- Do not perform hand soldering with the FPC inserted into the connector.
- Do not apply excessive heat. And soldering iron must not touch connector except terminal leads area.
- Do not supply excessive solder (flux).

<INSTRUCTION MANUAL(3)>

HRS

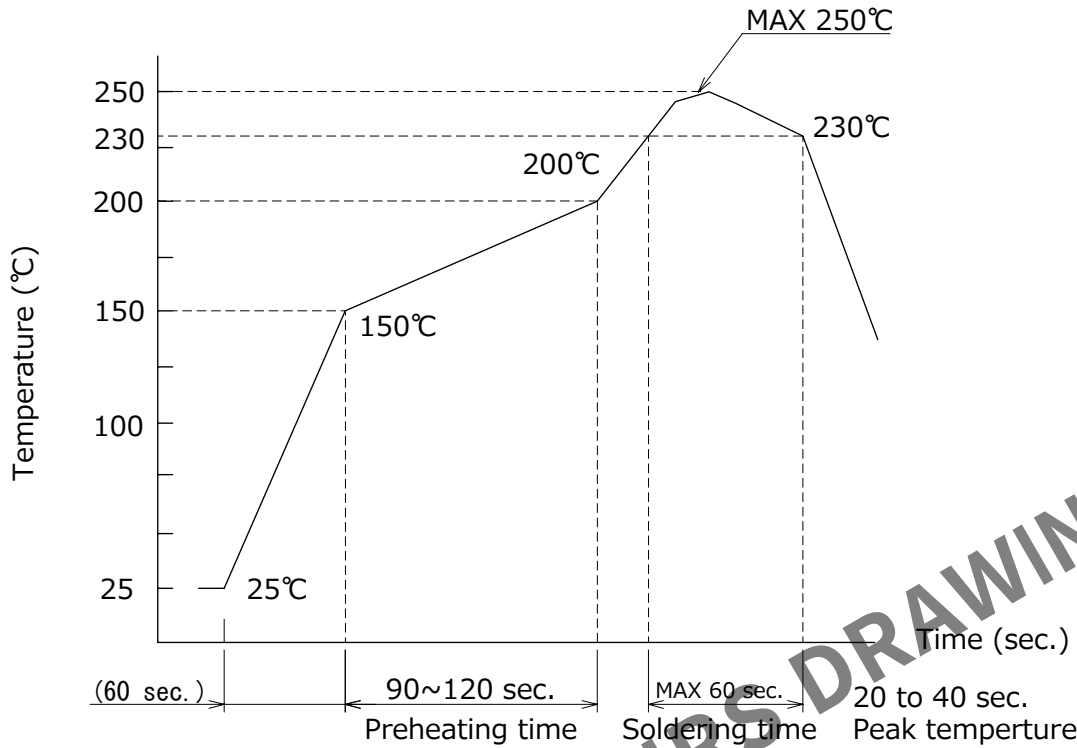
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【Recommended reflow temperature profile】

The temperatures mentioned above refer to the PCB surface temperature near the connector leads.
For specific applications, the recommended temperature may vary depending on type/volume/thickness of solder paste and size/thickness of PCB.
Please consult with your solder paste and equipment manufacturer for specific recommendations.

- Reflow method:IR reflow
- Number of reflow cycles:2 cycles MAX.



【Others】

- Attachment of foreign particles with the connector contact may lead to conduction failure.
In this particular case, the conduction failure may be fixed by re-inserting the FPC.

<RECOMMENDED REFLOW TEMPERATURE PROFILE>

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