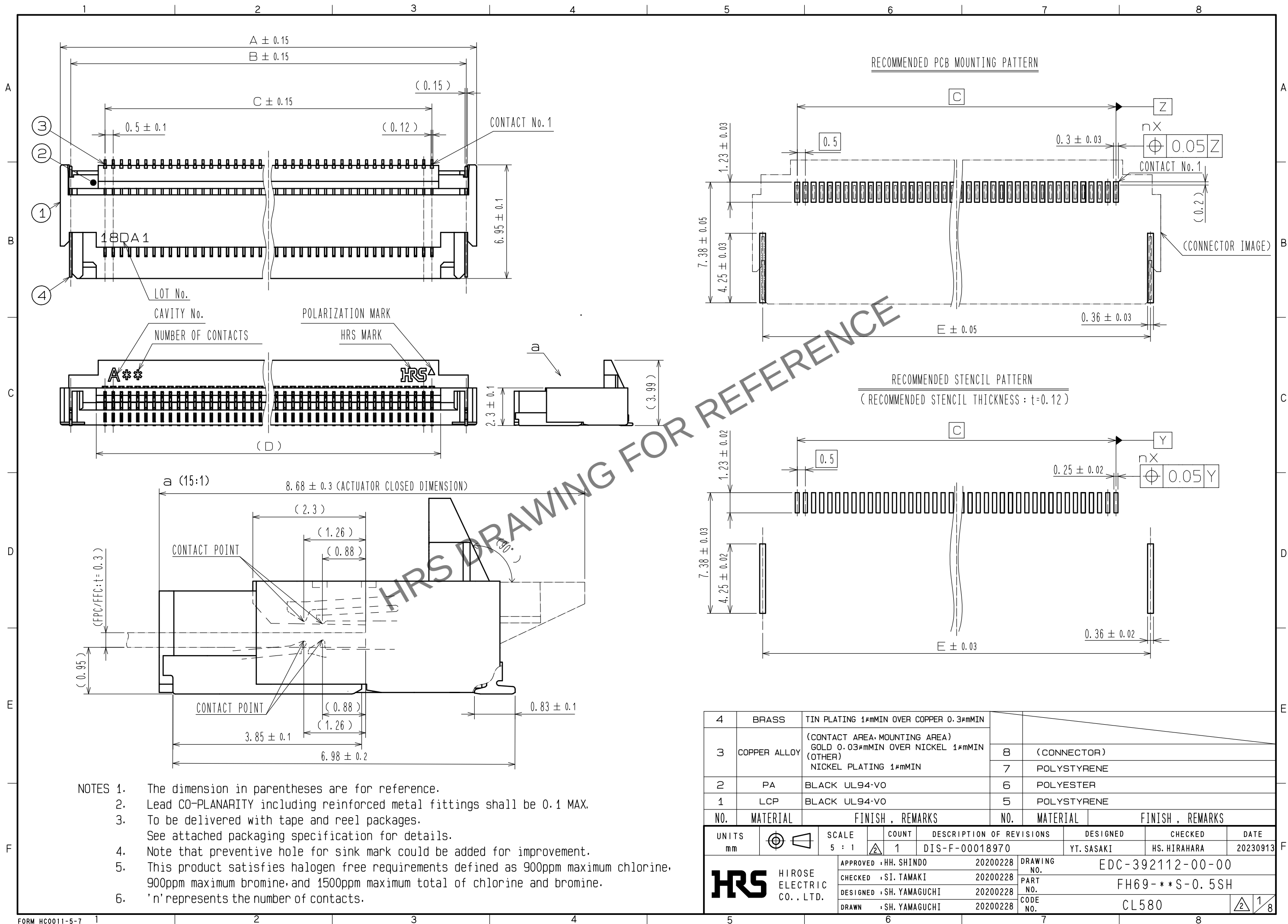


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4	BRASS	TIN PLATING 1#mMIN OVER COPPER 0.3#mMIN			
3	COPPER ALLOY	(CONTACT AREA, MOUNTING AREA) GOLD 0.03#mMIN OVER NICKEL 1#mMIN (OTHER) NICKEL PLATING 1#mMIN	8	(CONNECTOR)	
			7	POLYSTYRENE	
2	PA	BLACK UL94-V0	6	POLYESTER	
1	LCP	BLACK UL94-V0	5	POLYSTYRENE	
NO.	MATERIAL	FINISH , REMARKS	NO.	MATERIAL	FINISH , REMARKS

UNITS mm		SCALE 5 : 1		COUNT 1	DESCRIPTION OF REVISIONS DIS-F-00018970	DESIGNED YT. SASAKI	CHECKED HS. HIRAHARA	DATE 20230913
			APPROVED :HH. SHINDO		20200228	DRAWING NO. EDC-392112-00-00		
			CHECKED :SI. TAMAKI		20200228			
			DESIGNED :SH. YAMAGUCHI		20200228	PART NO. FH69-**S-0.5SH		
			DRAWN :SH. YAMAGUCHI		20200228			
						CODE NO. CL580		1 8

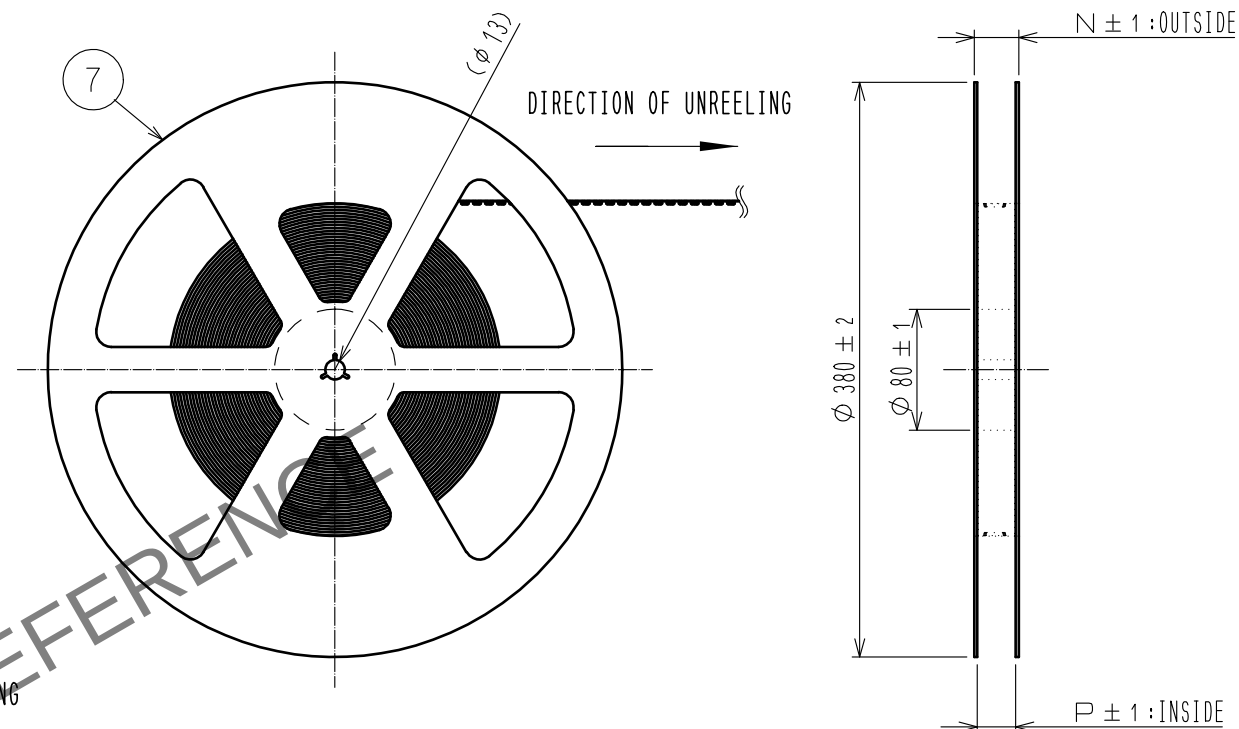
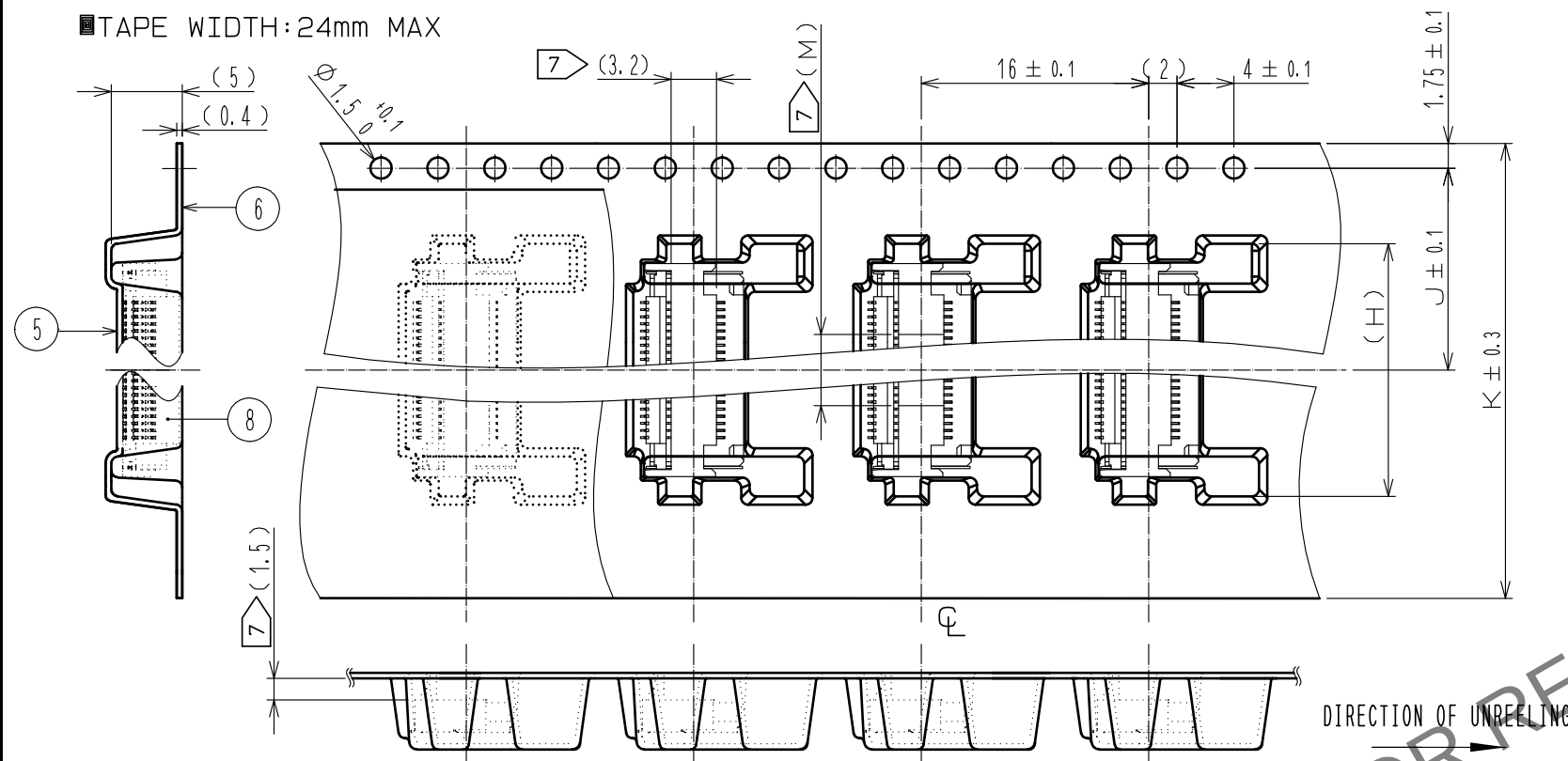


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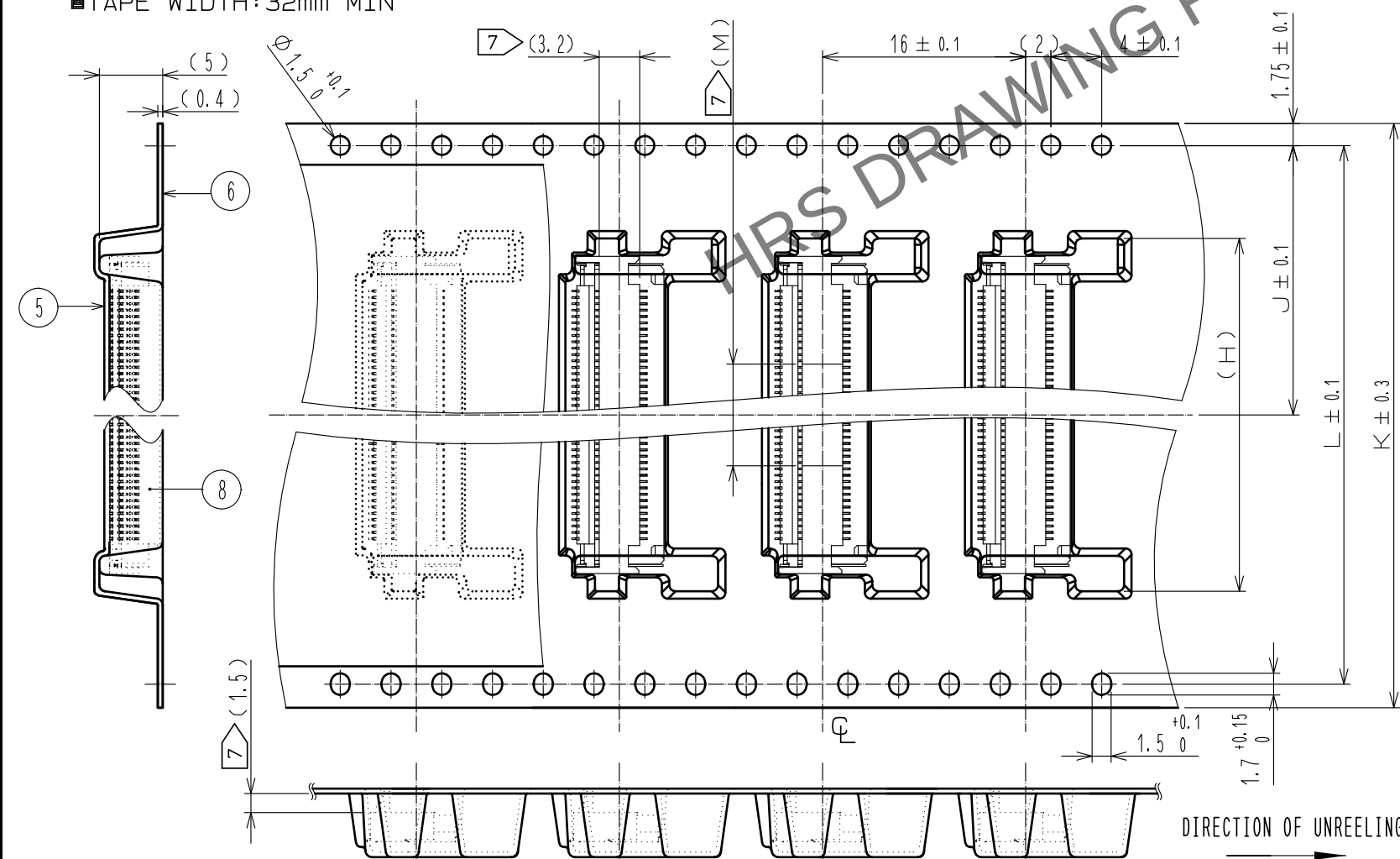
EMBOSSED CARRIER TAPE DIMENSION (2:1)

REEL DIMENSION (FREE)

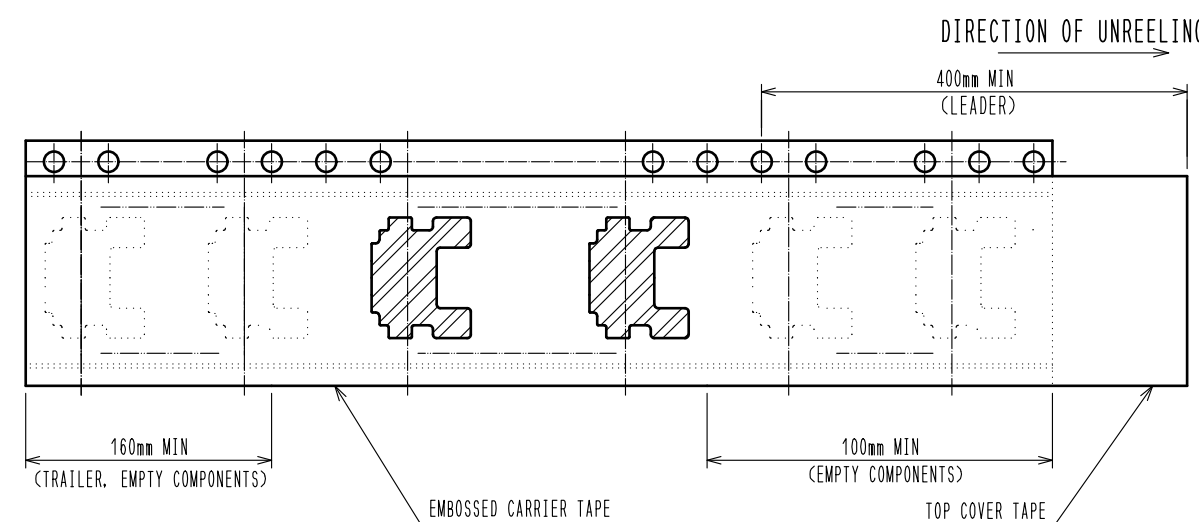
■ TAPE WIDTH: 24mm MAX



■ TAPE WIDTH: 32mm MIN



LEADER, TRAILER DIMENSION (FREE)



- NOTES
- 7 The indicated dimension indicates the pick-up area or pick-up position for automatic mounting.
 - 8. 1 reel : 1000 connectors.
 - 9. Refer to JIS C 0806 and IEC 60286-3.
(Packaging of components for automatic mounting.)

<PACKING SPECIFICATION>

DRAWING NO.	EDC-392112-00-00
PART NO.	FH69-**-S-0.5SH
CODE NO.	CL580

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PART NUMBER	CODE NUMBER	NUMBER OF CONTACT	DIMENSION OF CONNECTOR, PCB MOUNTING PATTERN, AND FFC/FPC								DIMENSION OF DRAWING FOR PACKING					
			A	B	C	D	E	F	G	H	J	K	L	M	N	P
FH69-10S-0.5SH	CL580-5003-0-00	10	9.98	8.7	4.5	5.57	8.73	7.15	5.5	12.66	11.5	24	-	5.0	29.4	25.4
FH69-20S-0.5SH	————	20	14.98	13.7	9.5	10.57	13.73	12.15	10.5	17.66	14.2	32	28.4	8.0	37.4	33.4
FH69-30S-0.5SH	CL580-5004-0-00	30	19.98	18.7	14.5	15.57	18.73	17.15	15.5	22.66	20.2	44	40.4	8.0	49.4	45.4
FH69-40S-0.5SH	CL580-5006-0-00	40	24.98	23.7	19.5	20.57	23.73	22.15	20.5	27.66	20.2	44	40.4	8.0	49.4	45.4
FH69-50S-0.5SH	CL580-5008-0-00	50	29.98	28.7	24.5	25.57	28.73	27.15	25.5	32.66	26.2	56	52.4	8.0	61.4	57.4
FH69-60S-0.5SH	CL580-5007-0-00	60	34.98	33.7	29.5	30.57	33.73	32.15	30.5	37.66	26.2	56	52.4	8.0	61.4	57.4

※THE PRODUCTS WITHOUT CODE NUMBER ARE CURRENTLY UNDER PLANNING.
PLEASE CONTACT HIROSE FOR DETAILED INFORMATION ABOUT PRODUCT VARIATION.

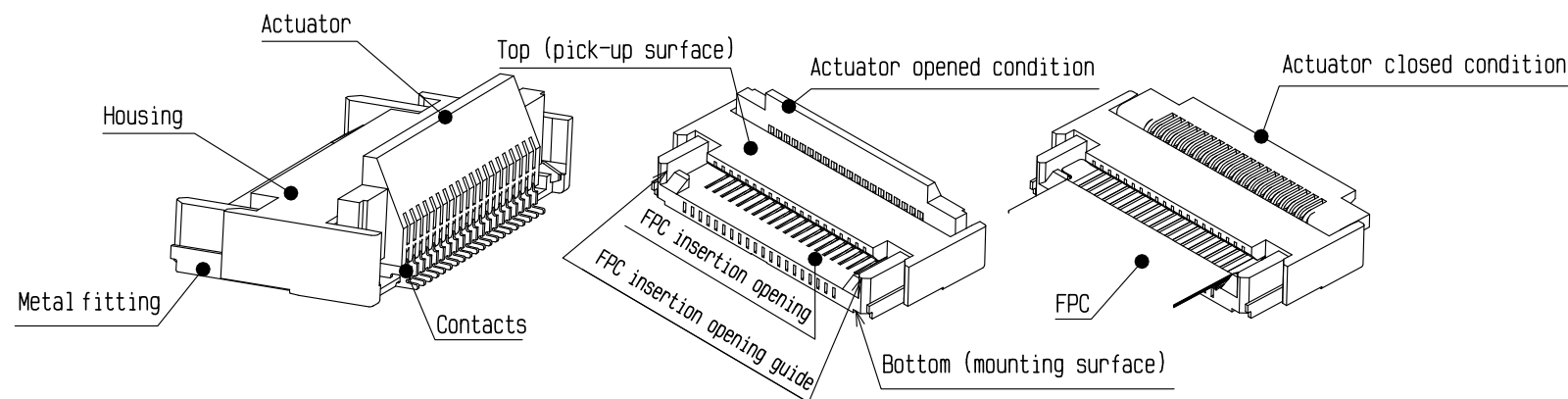
<DIMENSION TABLE>

HR5	DRAWING NO.	EDC-392112-00-00	
	PART NO.	FH69-**S-0.5SH	
	CODE NO.	CL580	48

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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.

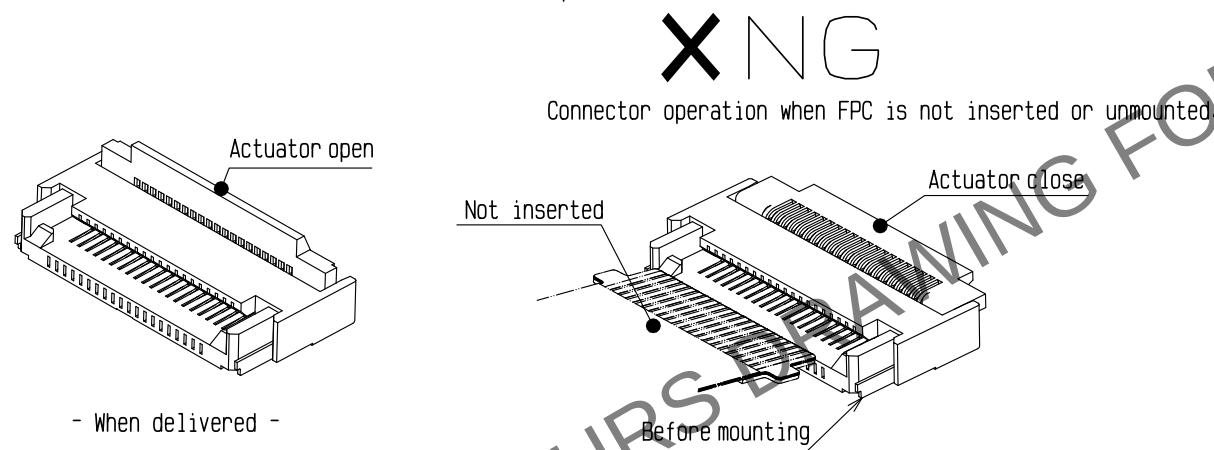
[Connector Part Nomenclature]



[Operation and cautions]

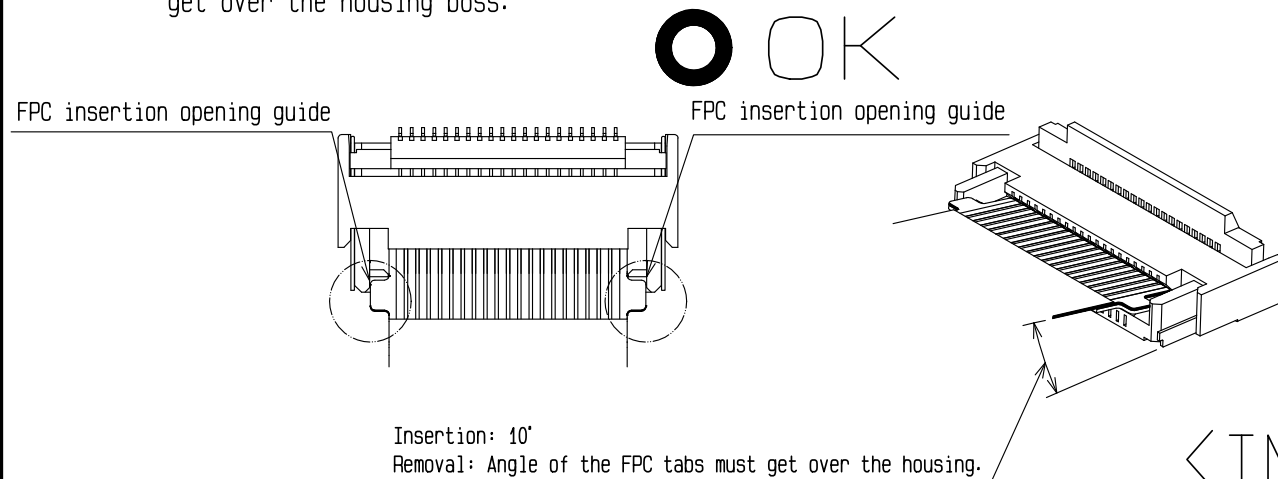
1. Initial condition

Actuator does not have to be operated before inserting FPC,
as the connector is delivered with the actuator opened.



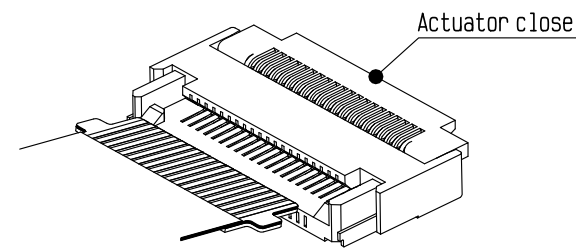
2. How to insert and remove FPC

- When inserting the FPC, insert the FPC at about 10 degree angle to the PCB mounting surface.
Also, please position both ends of the FPC by insertion opening guide and then insert it straightly.
- When removing the FPC, please pull it out diagonally upward so that the both end tab of FPC
get over the housing boss.



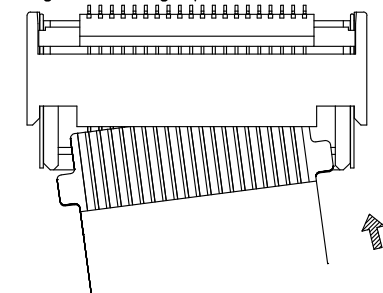
✗ NG

Insertion and removal with actuator close



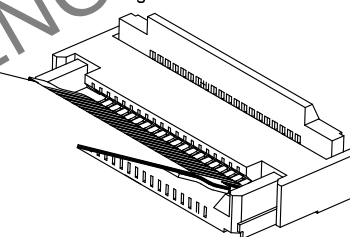
✗ NG

Insertion and removal during wrenching up, down, left and right.



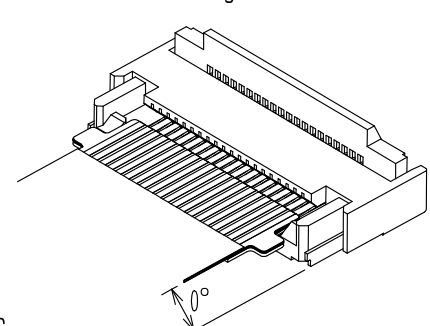
✗ NG

Insertion and removal excessive angles from PCB surface



✗ NG

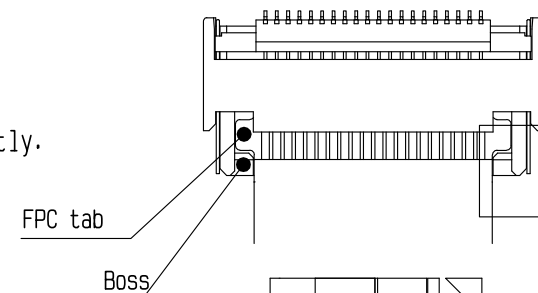
Insertion and removal horizontal angle from PCB surface



- ##### 3. FPC insertion check and mating confirmation of the FPC
- Guide 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 and mating.

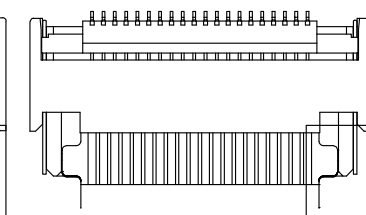
○ OK

FPC(Proper position)



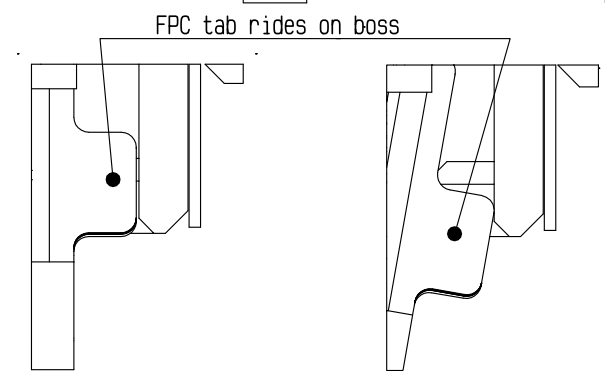
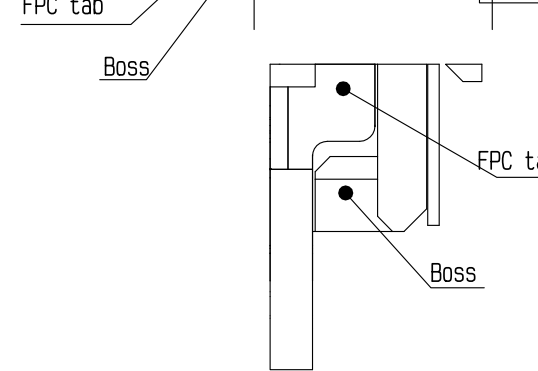
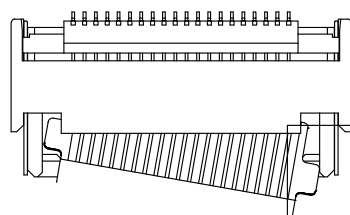
✗ NG

FPC(shallow Position)



✗ NG

FPC(Slanted)



<INSTRUCTION MANUAL (1)>

HR5

DRAWING NO.	EDC-392112-00-00
PART NO.	FH69-**S-0.5SH
CODE NO.	CL580

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4. How to lock and unlock

The actuator rotates around the rotational axis.

Lock : Apply load to rotate the actuator by 90 degree after inserting the FPC.

Unlock : Slowly flip up the Actuator lock

How to lock

OK

90°

Rotation axis

How to unlock

Rotation axis

OK

Operate the center of the actuator

Operate near both-ends of the actuator at the same timing moment.
(Around 3 PIN from the end)

NG

Operate at one end of the actuator

NG

Force from reverse direction to actuator.

NG

Push horizontally to lock

NG

Push vertical to lock

NG

Pick the actuator to lift

NG

Operate with a sharp tool

NG

Operation to push the actuator into connector

NG

Excessive force to housing

NG

Operation from FPC insertion opening side

<INSTRUCTION MANUAL (2)>

HRS

DRAWING NO.	EDC-392112-00-00
PART NO.	FH69-**S-0.5SH
CODE NO.	CL580

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[Instructions for PCB layout]

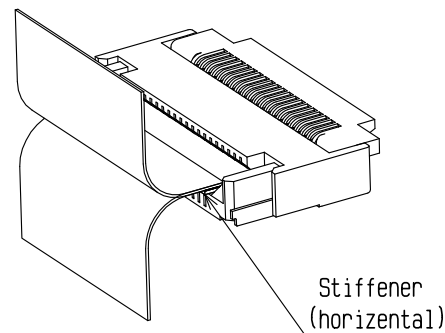
Please design a PCB layout not to apply load to connector and FPC.

[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.

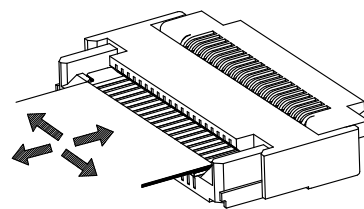
OK

No load applied to stiffener



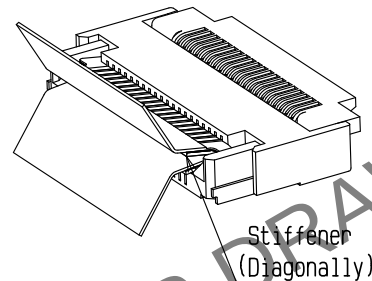
NG

Load applied to FPC



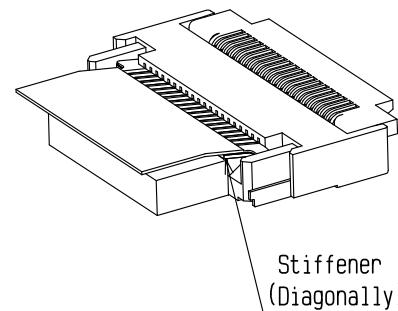
NG

Load applied to stiffener



NG

Housing or parts interfering with the FPC



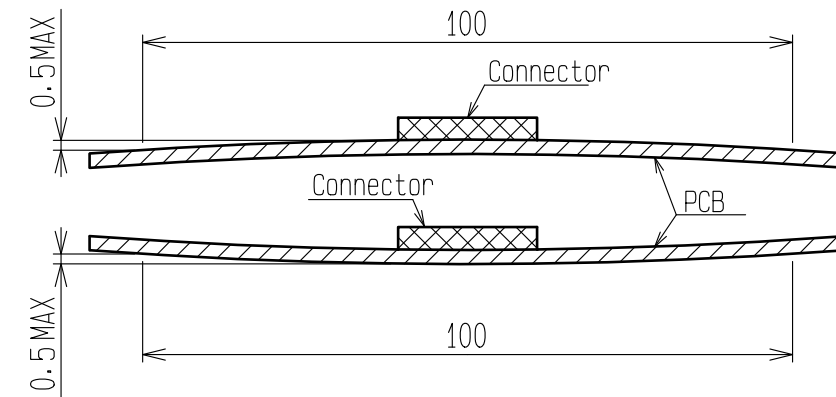
[Instructions for mounting on the PCB]

- 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.

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



[Instructions of hand soldering]

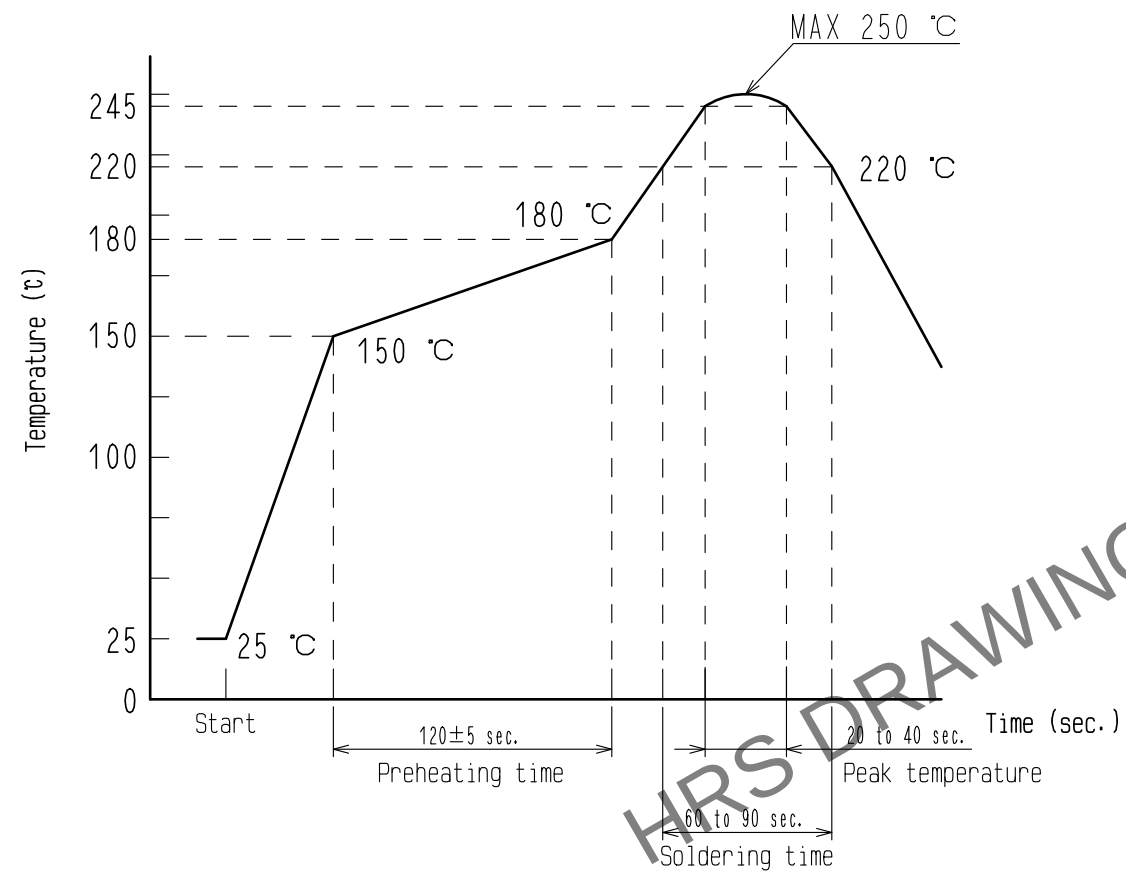
- Do not perform hand soldering with the FPC inserted into the connector.
- Do not apply excessive heat. And soldering iron must not touch connector except terminal leads area.
- Do not supply excessive solder (flux).

<INSTRUCTION MANUAL (3)>

[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.



<INSTRUCTION MANUAL (4)>

HRS

DRAWING NO.	EDC-392112-00-00
PART NO.	FH69-**S-0.5SH
CODE NO.	CL580