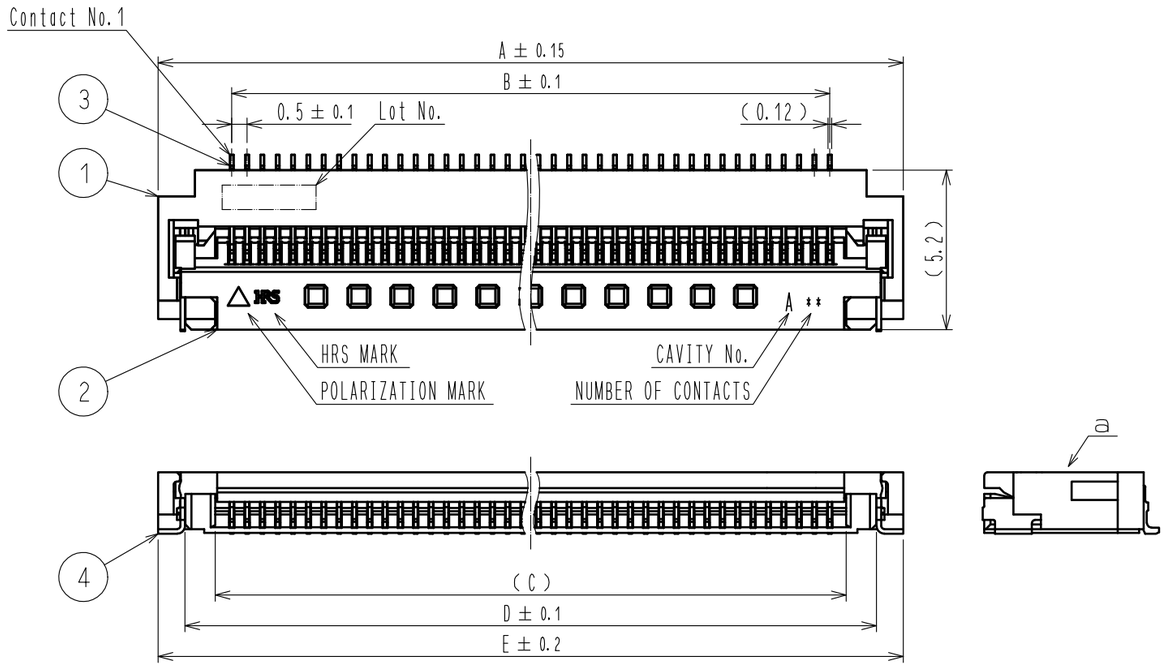
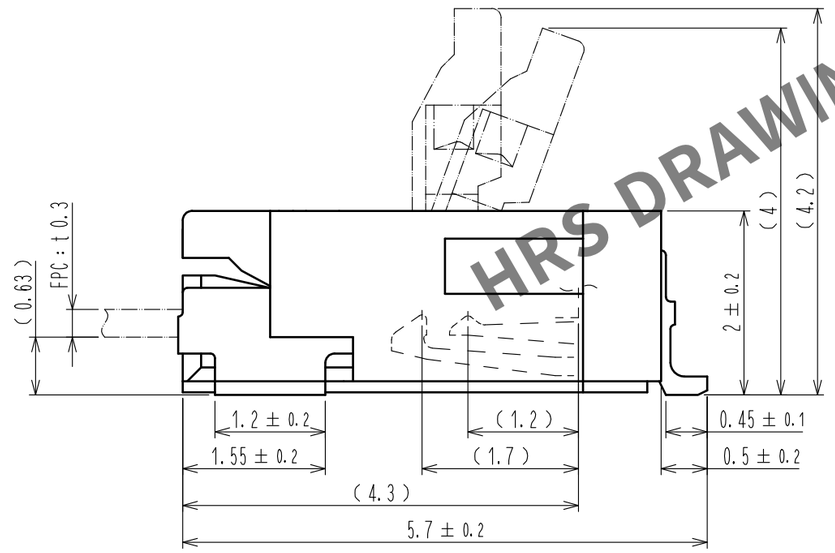
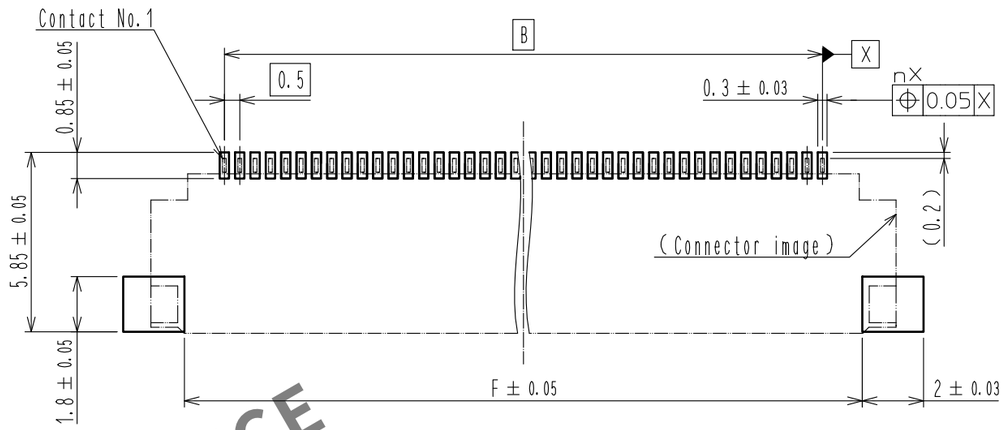
Mar.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.
In case of consideration for using Automotive equipment / device which demand high reliability, kindly contact our sales window correspondents.



a (15 : 1)

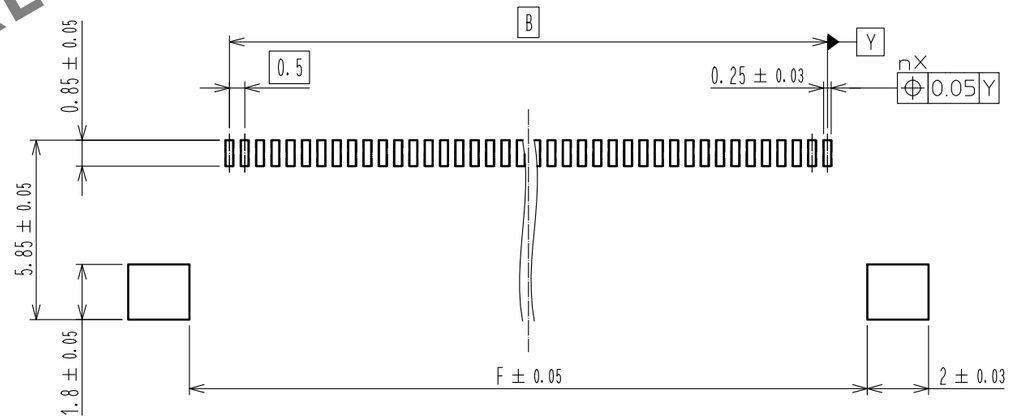


RECOMMENDED PCB MOUNTING PATTERN



RECOMMENDED STENCIL PATTERN

(RECOMMENDED STENCIL THICKNESS : t=0.12)



HRS DRAWING FOR REFERENCE

NOTES
1. The dimension in parentheses are for reference.
2. Lead CO-PLANARITY including reinforced metal fittings shall be 0.1 MAX.
3. To be delivered with tape and reel packages.
4. Note that preventive hole for sink mark could be added for improvement.
5. The quality remains good. Even with the dark spots, which could occasionally occur molded plastics.
6. This product satisfies halogen free requirements defined as 900ppm maximum chlorine, 900ppm maximum bromine, and 1500ppm maximum total of chlorine and bromine.
7. 'n' represents the number of contacts.

NO.	MATERIAL	FINISH , REMARKS	NO.	MATERIAL	FINISH , REMARKS
4	BRASS	TIN PLATING 3μm MIN OVER NICKEL 1μm MIN	8	(CONNECTOR)	
3	COPPER ALLOY	(CONTACT AREA, LEAD) GOLD 0.03μmMIN OVER NICKEL 1μmMIN (OTHER) NICKEL PLATING 1μmMIN	7	POLYSTYRENE	
2	LCP	BLACK UL94V-0	6	POLYESTER	
1	LCP	GRAY UL94V-0	5	POLYSTYRENE	

UNITS	SCALE		COUNT	DESCRIPTION OF REVISIONS	DESIGNED	CHECKED	DATE
mm	5 : 1	1	2	DIS-F-00018787	HN. UCHIUMI	HS. HIRAHARA	20230808

HIROSE ELECTRIC CO., LTD.

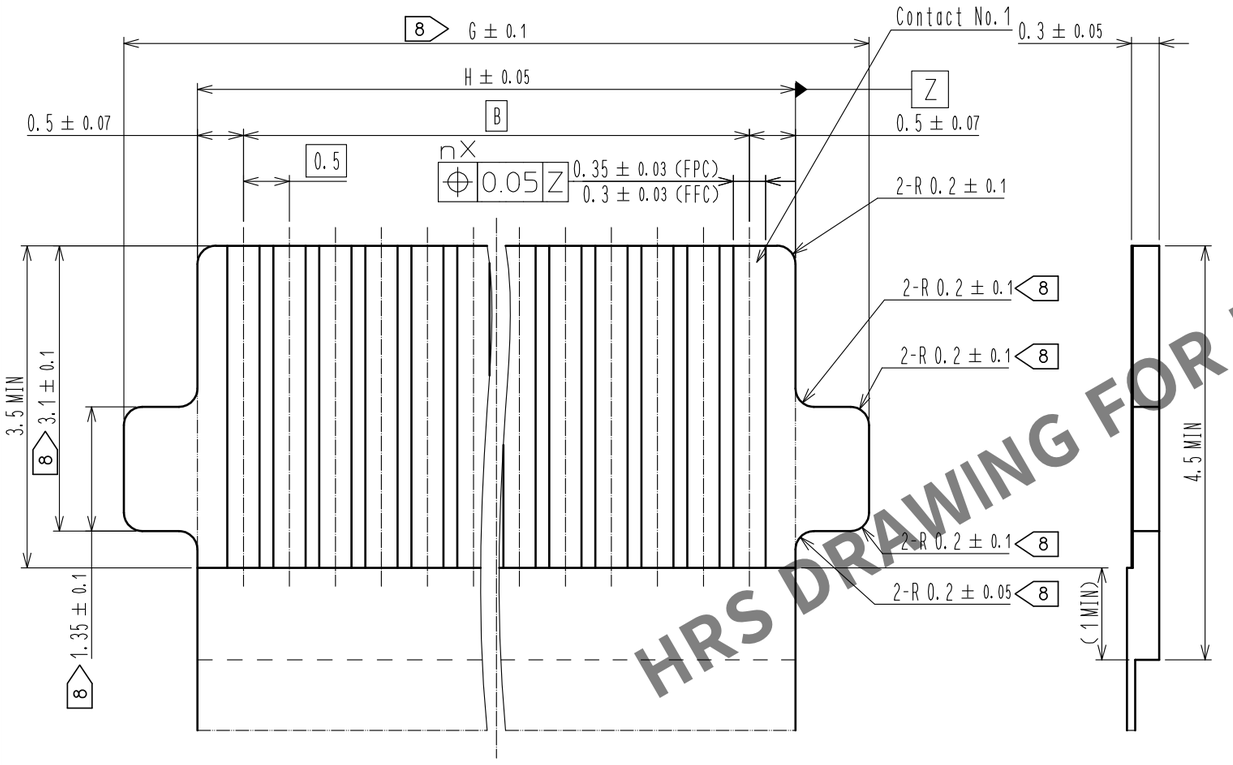
APPROVED	KN. SHIBUYA	20211007
CHECKED	HH. MURAKAMI	20211006
DESIGNED	YT. NINOMIYA	20211006
DRAWN	YT. NINOMIYA	20211006

DRAWING NO.	EDC-391183-01-00
PART NO.	FH75-**S-0.5SH(01)
CODE NO.	CL580

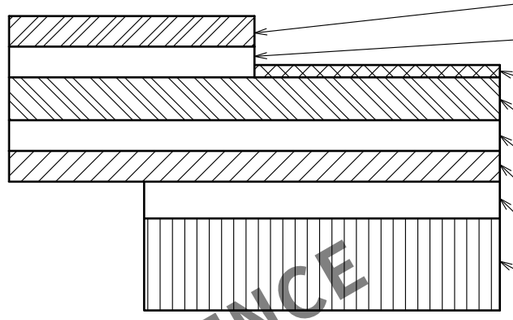
1/9

Mar.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.
In case of consideration for using Automotive equipment / device which demand high reliability, kindly contact our sales window correspondents.

RECOMMENDED FPC/FFC (15:1)

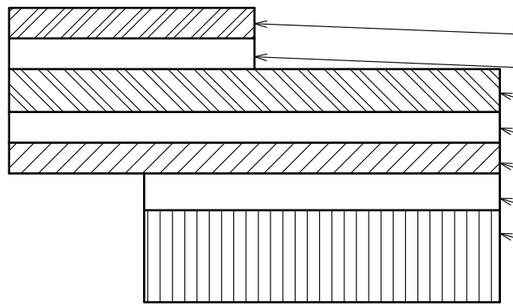


FPC CONFIGURATION (REFERENCE EXAMPLE) (SCALE:FREE)



MATERIAL NAME	MATERIAL	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
STIFFENER	POLYIMIDE 7mil thick	175

FFC CONFIGURATION (REFERENCE EXAMPLE) (SCALE:FREE)



MATERIAL NAME	MATERIAL	THICKNESS(μm)
POLYESTER FILM		(12)
ADHESIVE	POLYESTER THERMOPLASTIC TYPE	(30)
GOLD PLATED, SOFT COPPER FILM		35
ADHESIVE	POLYESTER	30
POLYESTER		12
ADHESIVE	POLYESTER	30
STIFFENER	POLYESTER	188

NOTES 8 FPC/FFC without tabs is also available.
In case of using FPC/FFC without tabs, dimensions relating tabs are not required.

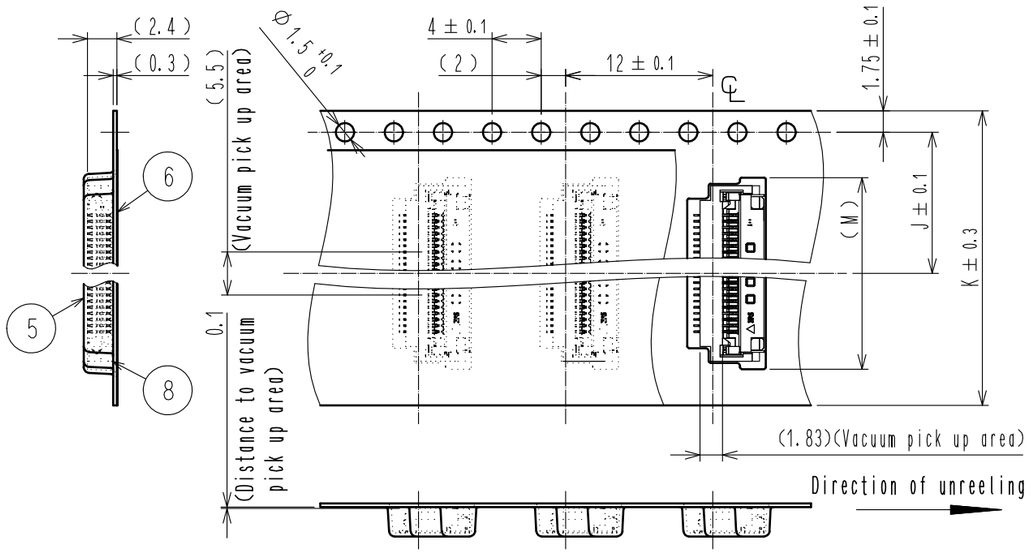
HRS DRAWING FOR REFERENCE

DRAWING NO.	EDC-391183-01-00
PART NO.	FH75-**S-0.5SH(01)
CODE NO.	CL580

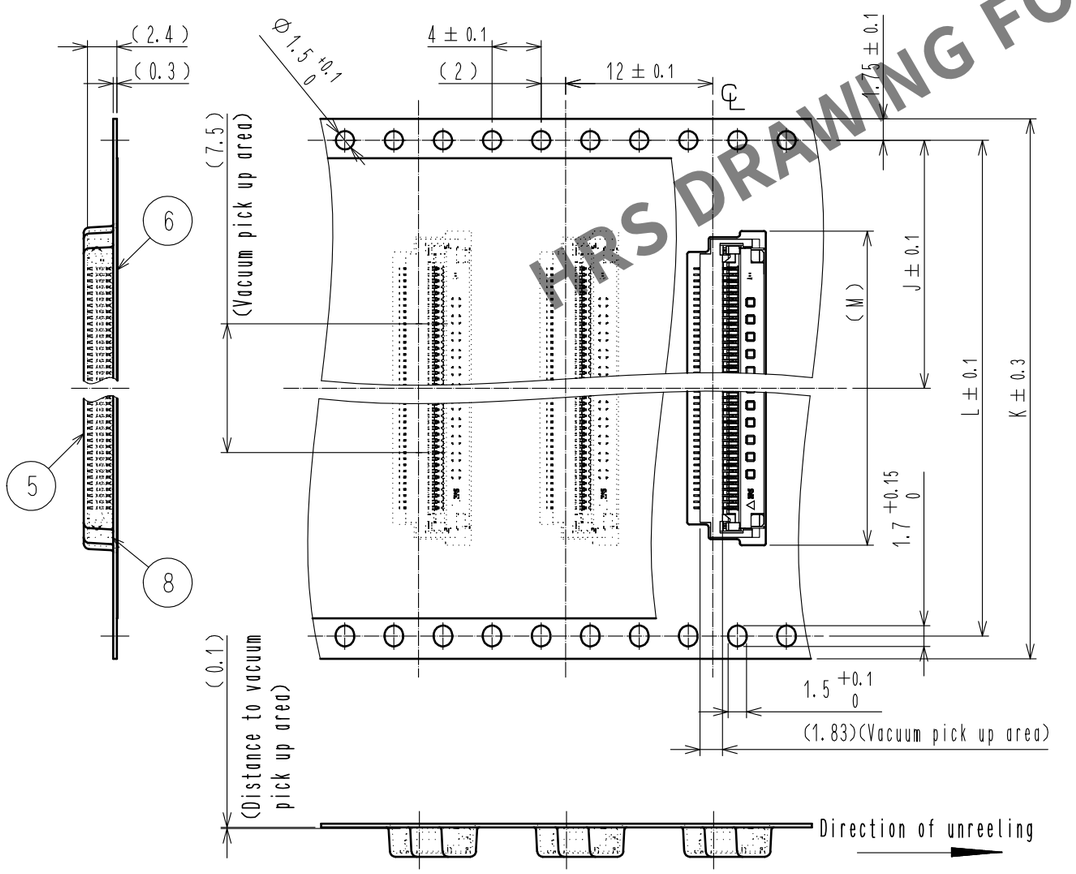
Mar.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.
In case of consideration for using Automotive equipment / device which demand high reliability, kindly contact our sales window correspondents.

Embossed carrier tape dimension (2:1)

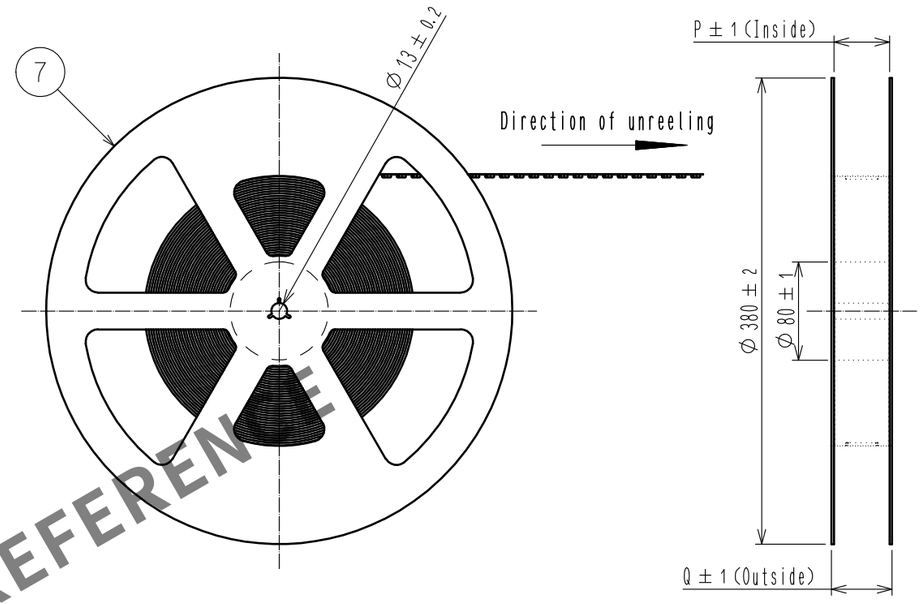
■Tape width : 24mm MAX



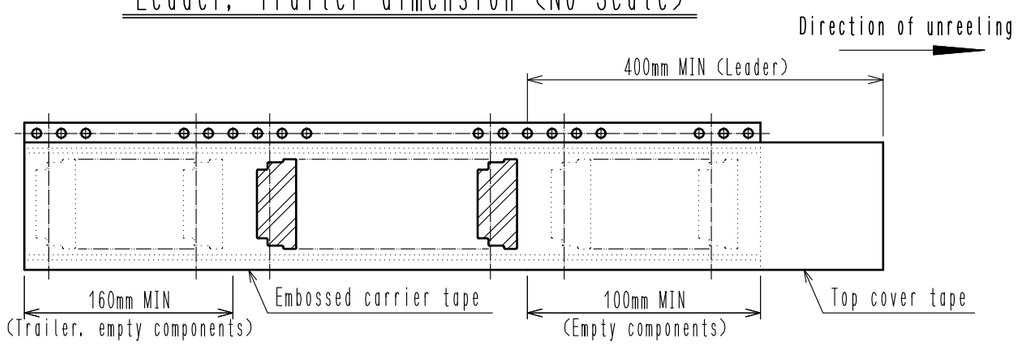
■Tape width : 32mm MIN



Reel dimension (No Scale)



Leader, Trailer dimension (No Scale)



NOTES 9. 1 reel : 3000 connectors.
10. Refer to JIS C 0806 and IEC 60286-3 (Packaging of components for automatic handling.)

HRS DRAWING FOR REFERENCE

〈Packing specification〉

HRS	DRAWING NO.	EDC-391183-01-00
	PART NO.	FH75-**S-0.5SH(01)
	CODE NO.	CL580

Mar.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.
In case of consideration for using Automotive equipment / device which demand high reliability, kindly contact our sales window correspondents.

	Part No.	Code Number	Number of contacts	Dimension of connector, PCB mounting pattern, stencil pattern and FPC								Dimension of drawing for packing					
				A	B	C	D	E	F	G	H	J	K	L	M	P	Q
	FH75-8S-0.5SH(01)	————	8	8.3	3.5	4.57	6.55	8.3	6.1	6.1	4.5	11.5	24	–	9.6	25.4	29.4
△1	FH75-10S-0.5SH(01)	CL0580-5303-0-01	10	9.3	4.5	5.57	7.55	9.3	7.1	7.1	5.5	11.5	24	–	10.6	25.4	29.4
	FH75-15S-0.5SH(01)	————	15	11.8	7.0	8.07	10.05	11.8	9.6	9.6	8.0	11.5	24	–	13.1	25.4	29.4
	FH75-30S-0.5SH(01)	————	30	19.3	14.5	15.57	17.55	19.3	17.1	17.1	15.5	20.2	44	40.4	20.6	45.4	49.4
	FH75-40S-0.5SH(01)	————	40	24.3	19.5	20.57	22.55	24.3	22.1	22.1	20.5	20.2	44	40.4	25.6	45.4	49.4
	FH75-50S-0.5SH(01)	————	50	29.3	24.5	25.57	27.55	29.3	27.1	27.1	25.5	20.2	44	40.4	39.6	45.4	49.4
△1	FH75-60S-0.5SH(01)	CL0580-5301-0-01	60	34.3	29.5	30.57	32.55	34.3	32.1	32.1	30.5	26.2	56	52.4	45.6	57.4	61.4

※The products without code number are currently under planning.
Please contact Hirose for detailed information about product variation.

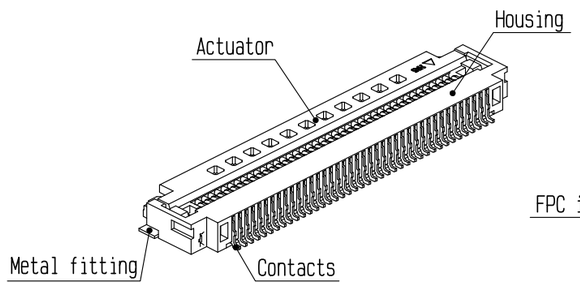
HRS DRAWING FOR REFERENCE

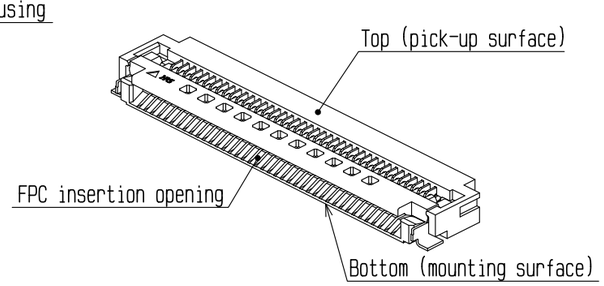
HRS	DRAWING NO.	EDC-391183-01-00
	PART NO.	FH75-**S-0.5SH(01)
	CODE NO.	CL580 △1 4/9

Mar.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.
In case of consideration for using Automotive equipment / device which demand high reliability, kindly contact our sales window correspondents.

To prevent connector/FPC breakege 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.

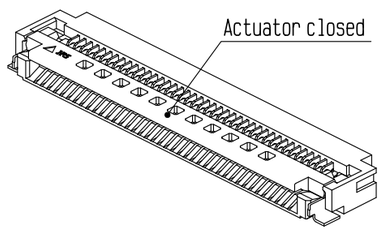
[Connector Part Nomenclature]





[Operation and cautions]

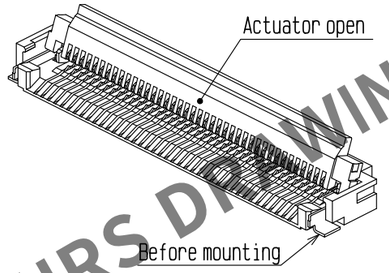
1. Initial condition
   The connector is delivered with the actuator closed.



- When delivered -

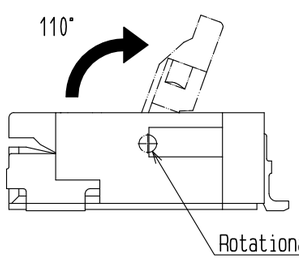
NG

Operate actuator before mounting



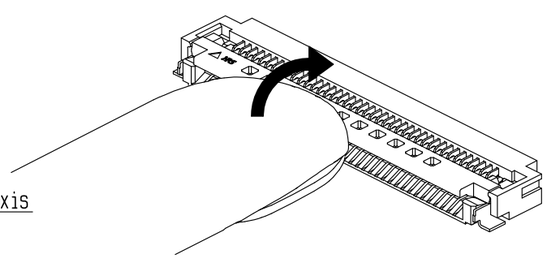
2. How to unlock (Before inserting FPC)
   The actuator rotates on its axis as shown below.
   Slowly flip up the actuator to release the lock.

OK



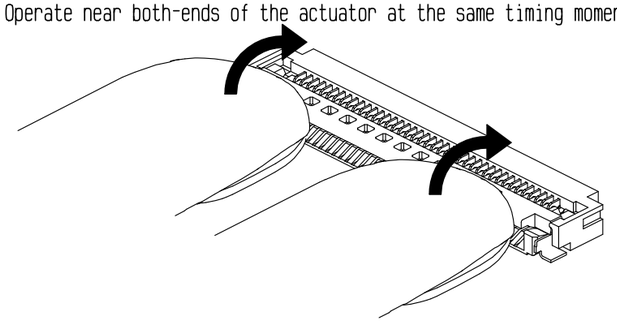
OK

Operate the center of the actuator



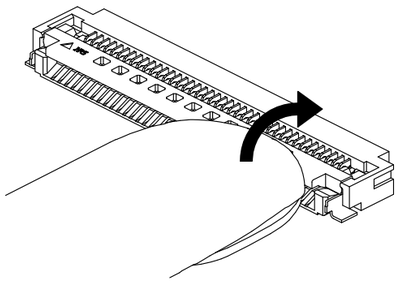
OK

Operate near both-ends of the actuator at the same timing moment.



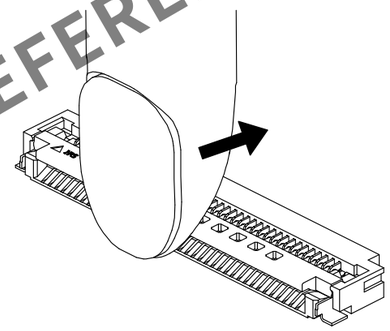
NG

Operate at one end of the actuator



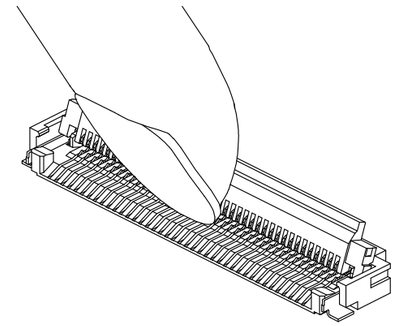
NG

Operation to push the actuator into connector



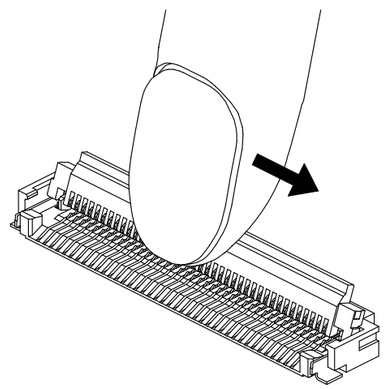
NG

Insertion of fingernails or any tool inside the connector



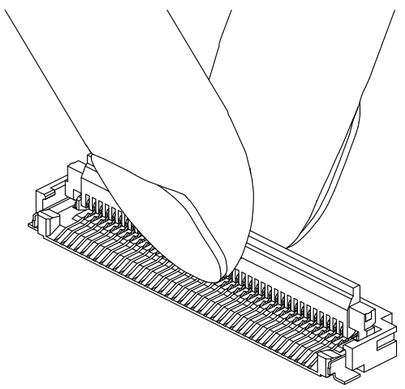
NG

Excessive load on actuator



NG

Pick the actuator to lift



FOR REFERENCE
HRS DRAWING FOR

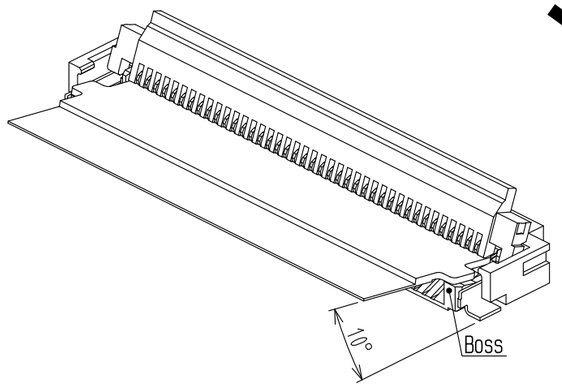
<Instruction manual(1)>

HRS	DRAWING NO.	EDC-391183-01-00
	PART NO.	FH75-**S-0.5SH(01)
	CODE NO.	CL580

Mar.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.
In case of consideration for using Automotive equipment / device which demand high reliability, kindly contact our sales window correspondents.

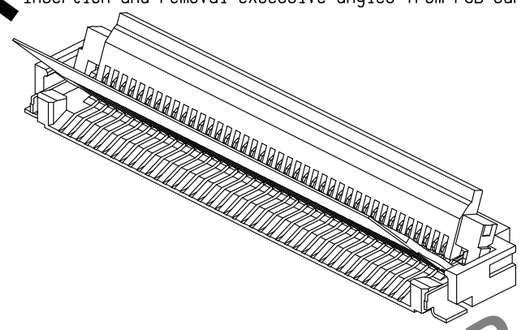
3. How to insert FPC
This connector has contacts on the bottom, insert the FPC with the exposed conductors face down.
This connector has boss for positioning FPC, insert the FPC at about 10 degree angle to the PCB mounting surface.
In case of using FPC without tabs, insert the FPC horizontally along 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.

OK



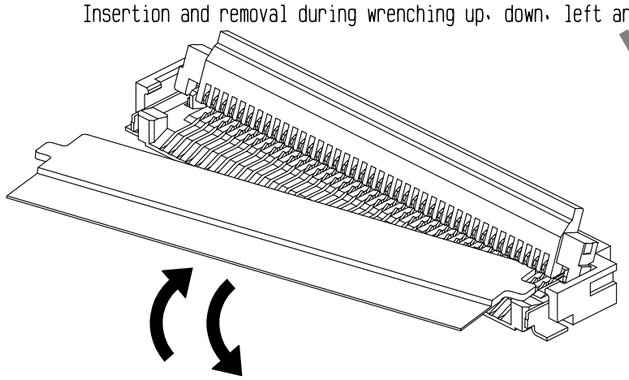
NG

Insertion and removal excessive angles from PCB surface



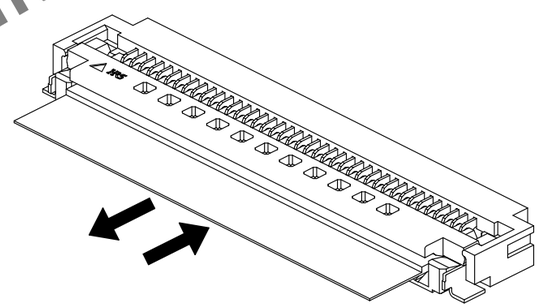
NG

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



NG

Insertion and removal with actuator close

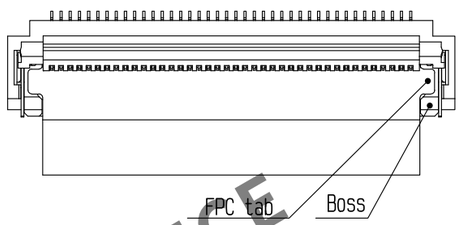


4. FPC insertion check and mating confirmation of the FPC
Boss for positioning FPC guide the FPC tabs to the correct position.
Make sure that the FPC tabs are located in correct position as shown in the figure below after FPC insertion.

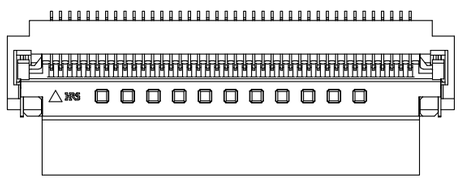
OK

FPC (Proper position)

- When FPC insertion is completed -



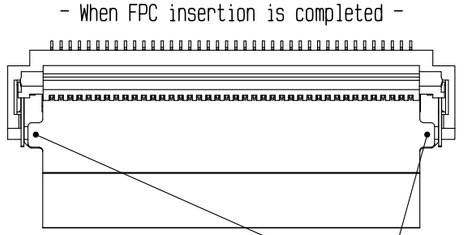
- When actuator lock is completed -



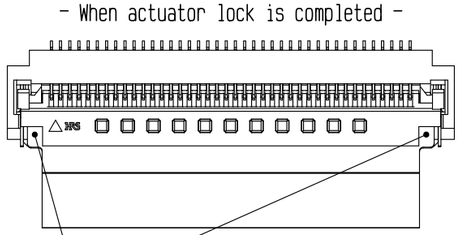
NG

FPC (Shallow position)

- When FPC insertion is completed -



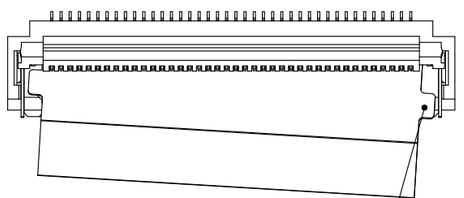
- When actuator lock is completed -



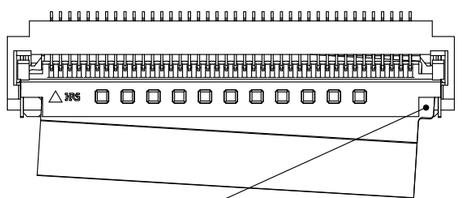
NG

FPC (Slanted)

- When FPC insertion is completed -



- When actuator lock is completed -



HRS DRAWING FOR REFERENCE

〈Instruction manual(2)〉

DRAWING NO.	EDC-391183-01-00
PART NO.	FH75-**S-0.5SH(01)
CODE NO.	CL580

Mar.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.
In case of consideration for using Automotive equipment / device which demand high reliability, kindly contact our sales window correspondents.

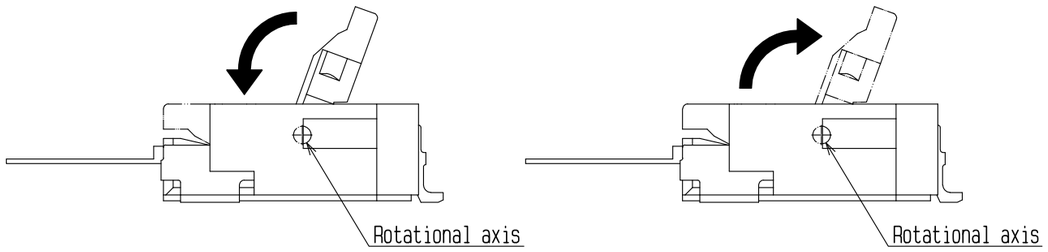
5. How to lock and unlock

The actuator rotates around the rotational axis.

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

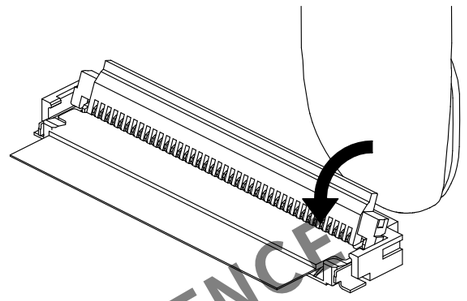
Unlock : Slowly flip up the actuator to release the lock.

OOK

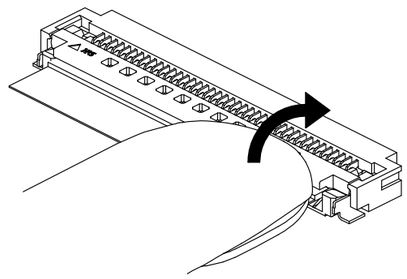


XNG

Operate at one end of the actuator

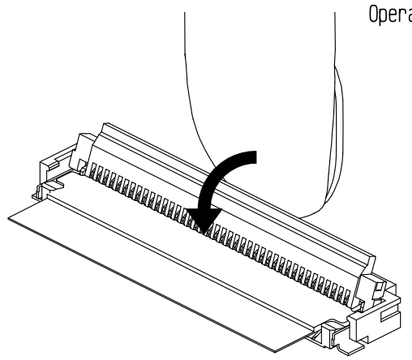


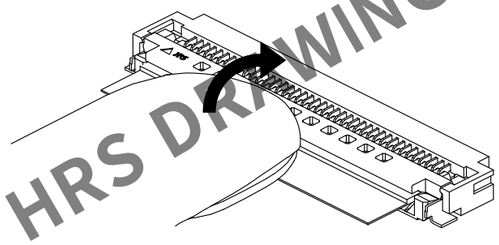
If there is a part that is not closed.
press it again to close it.



OOK

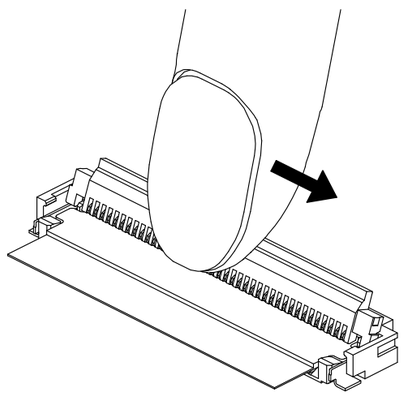
Operate the center of the actuator





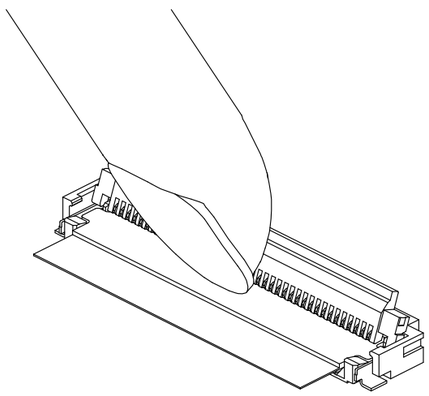
XNG

Excessive load on actuator



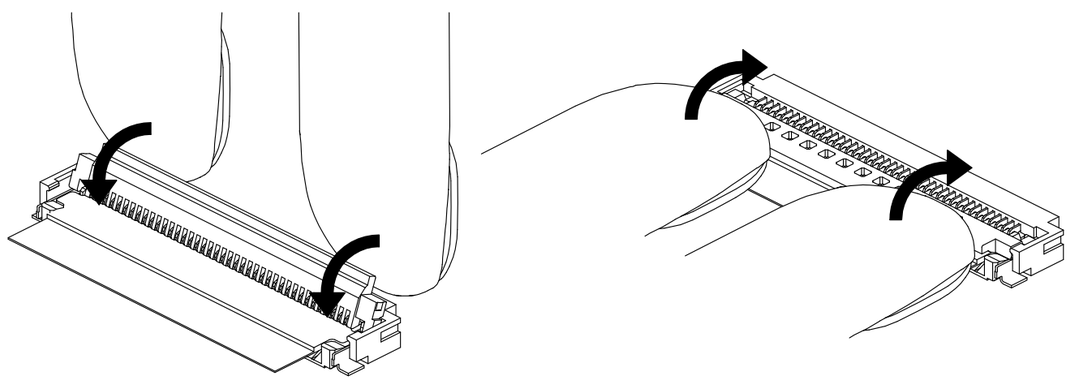
XNG

Insertion of fingernails or any tool inside the connector



OOK

Operate near both-ends of the actuator at the same timing moment.



HRS DRAWING FOR REFERENCE

<Instruction manual(3)>

DRAWING NO.	EDC-391183-01-00
PART NO.	FH75-**S-0.5SH(01)
CODE NO.	CL580

Mar.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.
In case of consideration for using Automotive equipment / device which demand high reliability, kindly contact our sales window correspondents.

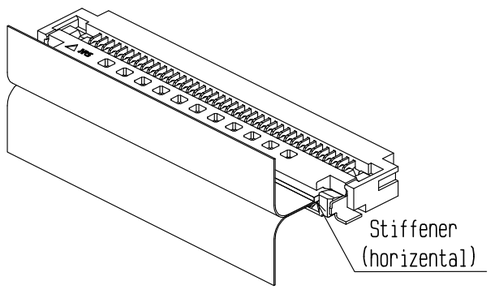
[Instructions for PCB layout]

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

[Cautions]
- When fixing FPC after FPC cabling, avoid pulling FPC, and route the wire FPC with slack.
  In this regard, the stiffener is parallel to the PCB.
- Do not mount other components touching to the FPC underneath the FPC stiffener.
- Make adjustments with the FPC manufacturer for FPC bending performance and wire breakage.
- Keep spaces for the actuator movement and its operation for PCB design and component layout.
- Please contact Hirose incase you would like to use an FPC with a different dimension
  or shape than recommended.

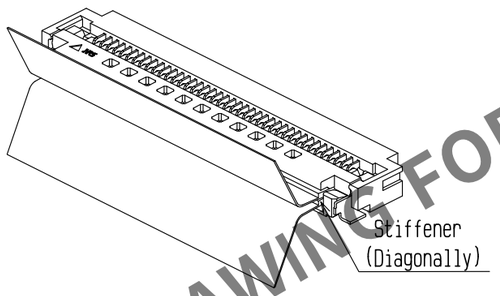
OOK

No load applied to stiffener



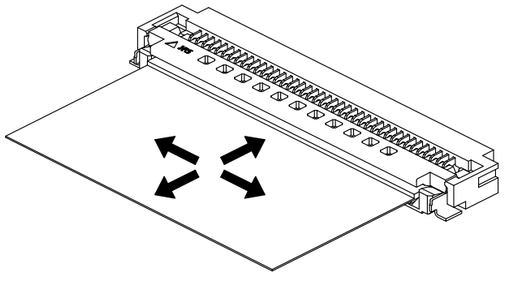
XNG

Load applied to stiffener



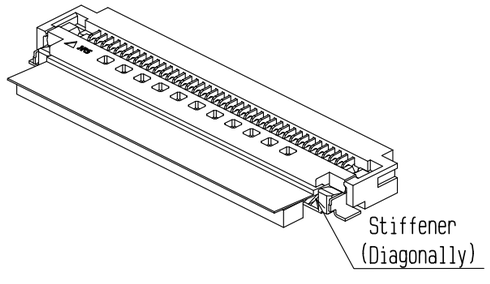
XNG

Load applied to FPC



XNG

Housing or parts interfering with the FPC



HRS DRAWING FOR REFERENCE

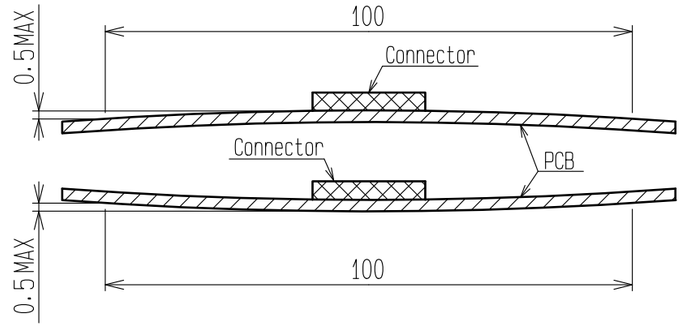
[Instructions for mounting on the PCB]

- Refer to recommended layouts for PCB, stencil pattern and FPC dimension.
- When there is silk printing etc. on the bottom of the connector,
  please check the mounting condition before use.
- Apply reflow temperature profile within the specified conditions.
  The mounting condition may change depending on the type of cream solder, manufacturer, PCB size.
  Please check the mounting condition before use and conditions of other mounting parts.
- Prevent warpage of PCB, the co-planarity of the connector is less than 0.1mm.
  but when the warpage of the PCB is large, soldering failure occurs.
- When mounting on the flexible board, please make sure to put a stiffener
  on the backside of the flexible board.
  We recommend a glass epoxy material with the thickness of 0.3 mm min.
- Do not add 0.5 N or greater external force when unreel or adsorb the connector etc,
  or it may get broken.

[Instructions for PCB handling after mounting the connector]

Due to warpage of the PCB, load may be applied to the connector and it may be damaged.

- ·Splitting a large PCB into several pieces
  ·Screwing the PCB
  During the handling described above, do not exert an excessive force on the PCB.
  Otherwise, the connector may become defective.
- The warp of a 100 mm wide PCB should be 0.5 mm or less.
  The warp of PCB suffers stress on connector and the connector may become defective



[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(4)>

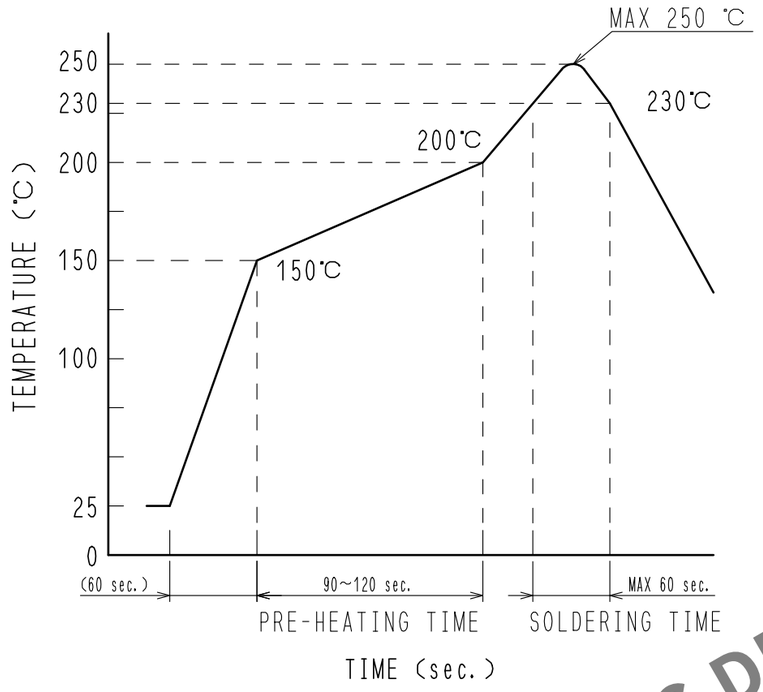
HRS	DRAWING NO.	EDC-391183-01-00
	PART NO.	FH75-**S-0.5SH(01)
	CODE NO.	CL580

Mar.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.
In case of consideration for using Automotive equipment / device which demand high reliability, kindly contact our sales window correspondents.

|Recommended reflow temperature profile|

The temperatures mentioned above refer to the PCB surface
temperature near the connector leads.
In individual applications the actual temperature may vary,
depending on solder paste type, volume/thickness and board size/thickness.
Consult your solder paste and equipment manufacturer for specific recommendations.

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



HRS DRAWING FOR REFERENCE

<Recommended reflow temperature profile>

HRS	DRAWING NO.	EDC-391183-01-00
	PART NO.	FH75-**S-0.5SH(01)
	CODE NO.	CL580