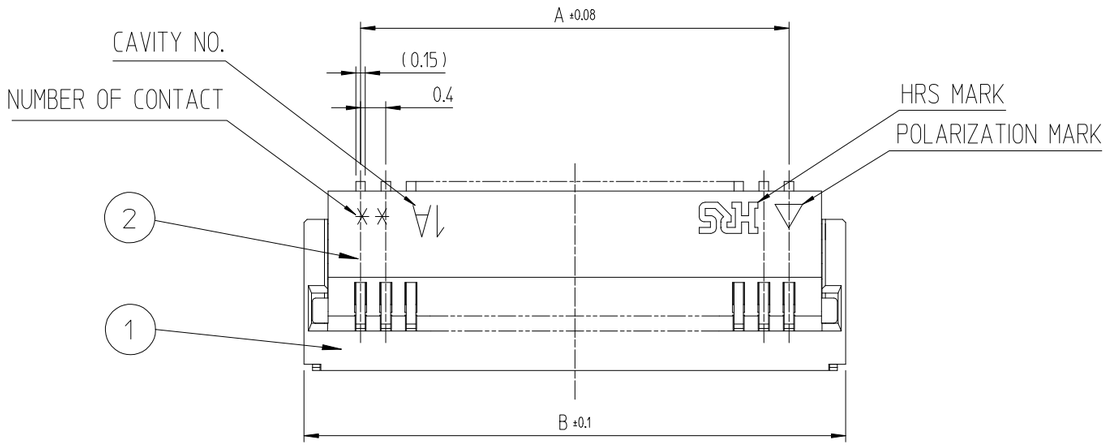
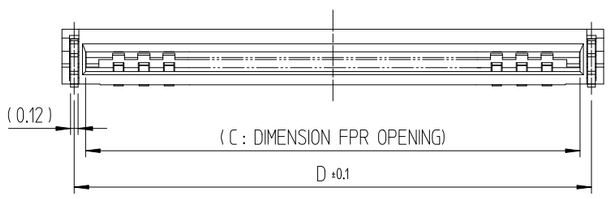
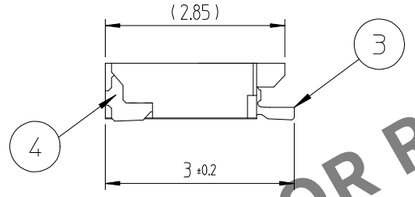
Mar.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.
In case of consideration for using Automotive equipment / device which demand high reliability, kindly contact our sales window correspondents.

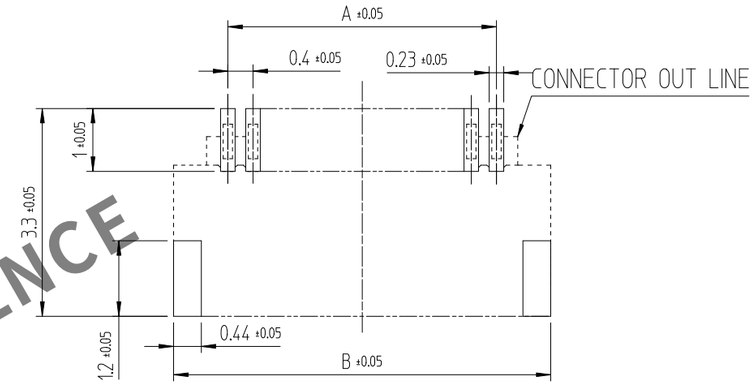
	△数 COUNT	訂正事項 DESCRIPTION OF REVISIONS	擔當 B Y	檢圖 CHKD	年月日 DATE		△数 COUNT	訂正事項 DESCRIPTION OF REVISIONS	擔當 B Y	檢圖 CHKD	年月日 DATE
1	-	RE-5-1603	LSG	CDH	17. 03 . 09	4	3	RE-5-2459	OCU	CDH	20. 07 . 15
2	-	RE-5-1833	OCU	CDH	17. 12 . 04	△					. .
3	3	RE-5-2408	OCU	CDH	20. 05 . 13	△					. .





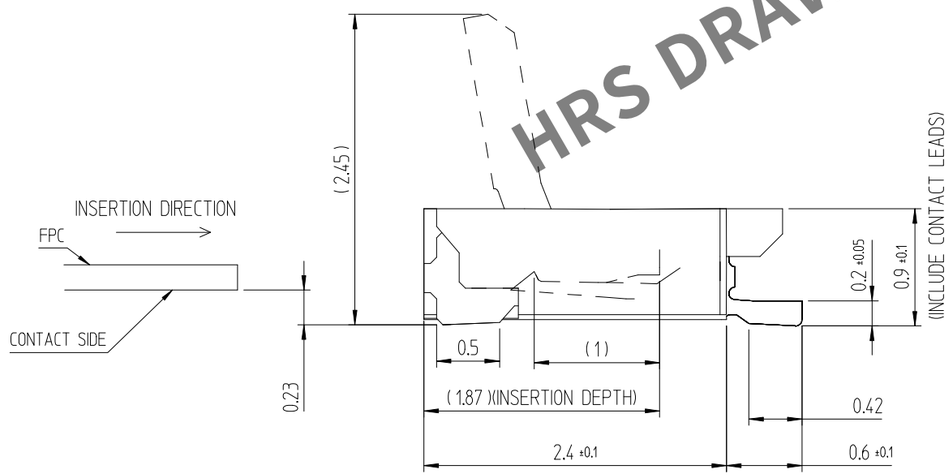


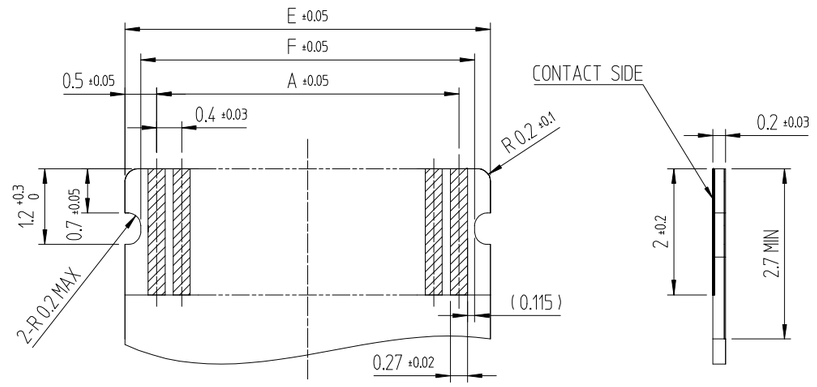
RECOMMENDED LAND PATTERN, METAL MASK (FREE)
RECOMMENDED METAL MASK THICKNESS: t=0.10



△4 RECOMMENDED FFC/FPC (FREE)

VIEW B(20:1)





HRS DRAWING FOR REFERENCE

NOTE 1 LEAD CO-PLANARITY INCLUDING REINFORCED METAL FITTINGS SHALL BE 0.1MAX.
2 TO BE DELIVERED WITH TAPE AND REEL PACKAGES.

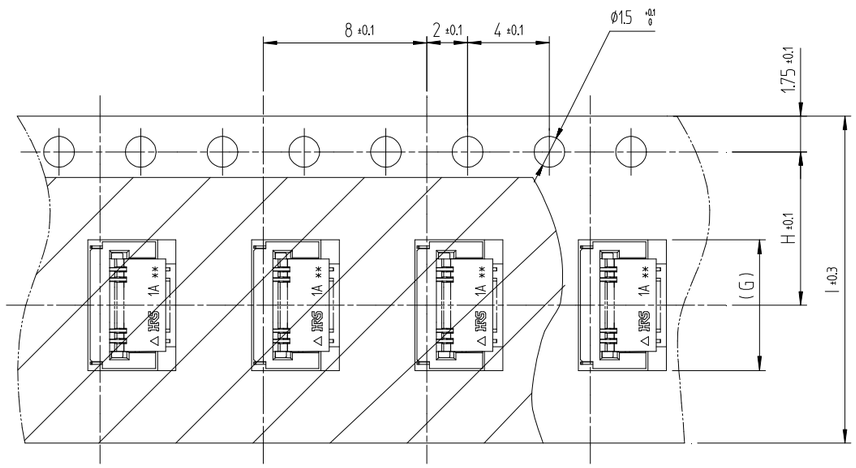
			4	PHOSPHOR BRONZE	TIN PLATING 1μm MIN, OVER NICKEL 1μm MIN.
2	LCP	BLACK UL94V-0	3	PHOSPHOR BRONZE	(CONTACT AREA) GOLD 0.05μm MIN OVER NICKEL 1μm MIN (LEAD) GOLD 0.05μm MIN OVER NICKEL 1μm MIN (OTHER) NICKEL PLATING 1μm MIN
1	LCP	BLACK UL94V-0			
NO.	MATERIAL	FINISH,REMARKS	NO.	MATERIAL	FINISH,REMARKS

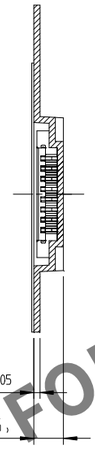
CODE NO. (OLD)	DRAWN	DESIGNED	CHECKED	APPROVED	RELEASED
	OH 17.03.07 C.U	OH 17.03.07 C.U	CHO 17.03.07 D.H	SONG 17.03.07 H.C	ENG 20.07.15 DEPT

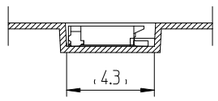
SCALE 10:1 UNITS mm	DRAWING NO. EDC3-632309-80 HRS HIROSE KOREA CO.,LTD.	PART NO. TF13BSA-Series (800) CODE NO CL 6508-0037-2-800 1/4

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.

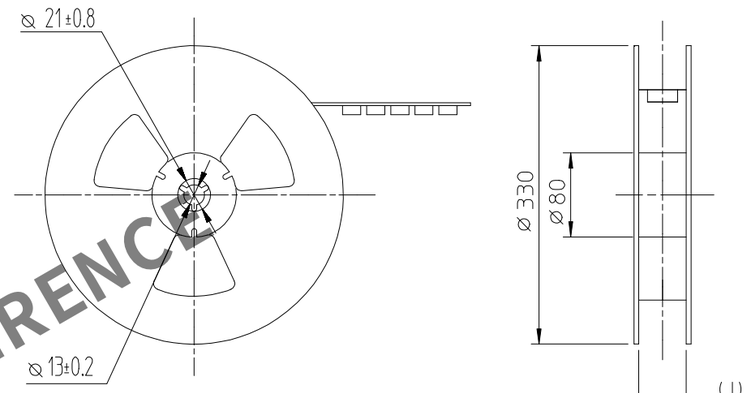
EMBOSS CARRIER TAPE DIMENSION





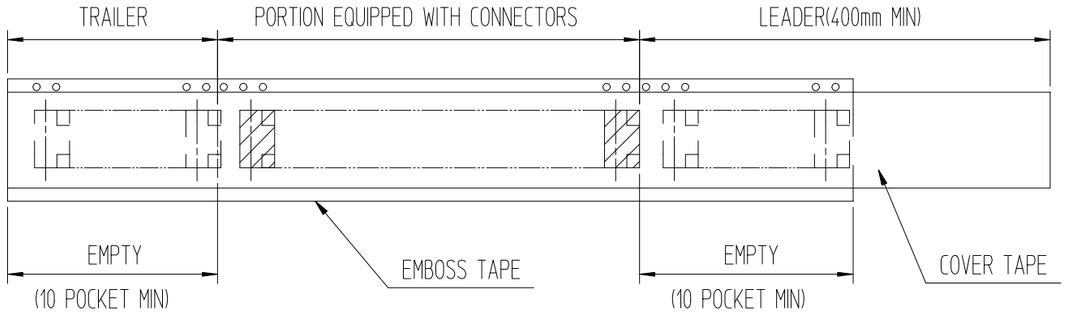


⚠ REEL DIMENSION(FREE)



HRS DRAWING FOR REFERENCE

PART NUMBER	NUMBER OF CONTACTS	DIMENSION OF CONNECTOR FFC / FPC, PCB MOUNTING PATTERN						DIMENSION OF PACKING			
		A	B	C	D	E	F	G	H	I	J
TF13BSA-14S-0.4SH(800)	14	5.2	7.0	6.25	6.61	6.2	5.7	7.2	7.5	16	16.5
TF13BSA-16S-0.4SH(800)	16	6.0	7.8	7.05	7.41	7.0	6.5	8.0	11.5	24	24.5
TF13BSA-18S-0.4SH(800)	18	6.8	8.6	7.85	8.21	7.8	7.3	8.8	11.5	24	24.5
TF13BSA-20S-0.4SH(800)	20	7.6	9.4	8.65	9.01	8.6	8.1	9.6	11.5	24	24.5



NOTE 1. 1REEL CONTAINS 5,000PCS.

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.

This connector requires dslicate and careful handing.
Read through the instructions shown below and the connector properly.
Each values indicating here are for reference and may differ from standard value.

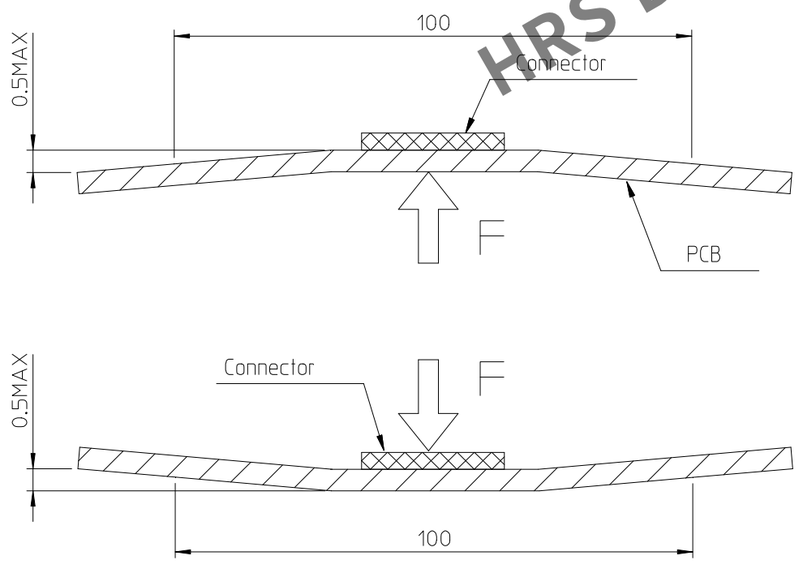
[INSTRUCTIONS FOR MOUNTING ON THE BOARD]

◆ Warp of Board
Minmize warp of the board as possible
Lead co-planarity including reinforced metal fitting is 0.1mm or less
Too much warp of the board may result in a soldering problem.

◆ Load to Connector
Do not apply a force of 0.5N or more to the connector before mounting it on the board.
Otherwise, the connector may be broken.
Do not warp the FPC or operate the connector before mounting it.

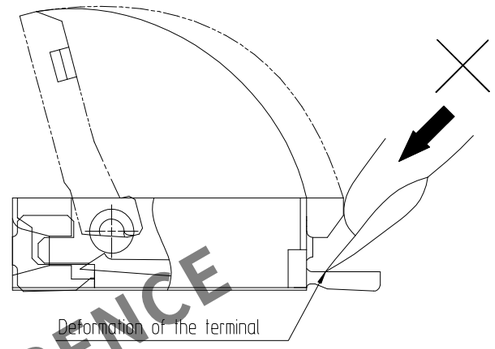
◆ Load to board
°Splitting a large board into seveal pieces
°Screwing the board
Avoid the handling described above so that no force is exerted on the board during the assembly process.
Otherwise, the connector may become defective.

◆ Amount of Warp
The warp of a 100-mmwide board should be 0.5mm or less.
The warp of board suffers stress on connector and connector may become defective.

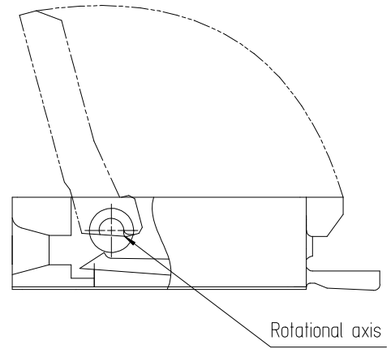


[INSTRUCTIONS ON INSERTING FFC/FPC AND CONNECTOR]

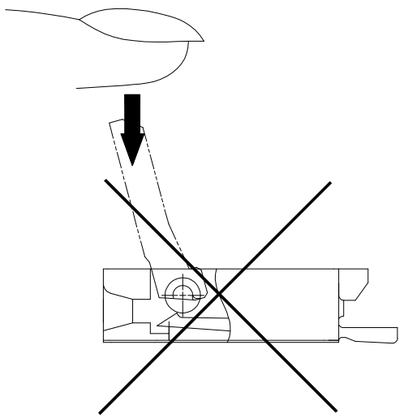
◆ Use of the Actuator
1. Be very careful not to apply excessive force when releasing the Actuator.
in the initial position (with no FFC/FPC inserted)
if you use your nail or finger as shown, the terimals may be deformed.



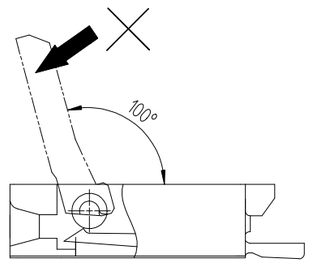
2. The actuator rotates around the rotational axis as shown below.
Please rotate the actuator.



3. Please do not push downwards to the Actuator with more than 0.5N force, as shown below.
Otherwise, the Actuator may fall off or be damaged.



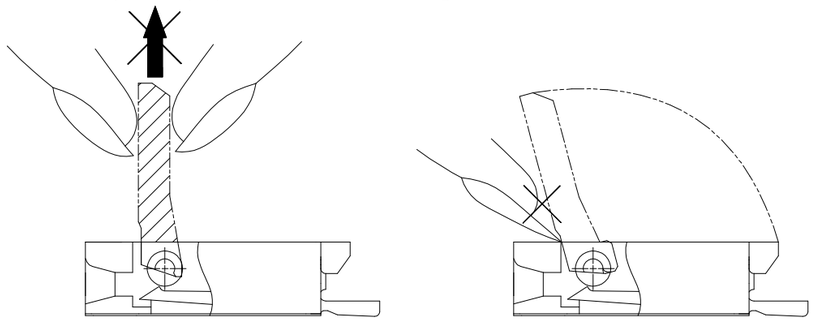
4. The actuator will not open more than 100°.
Do not apply any force backward beyond this point.
Otherwise the actuator may come off or braek.



HRS DRAWING FOR REFERENCE

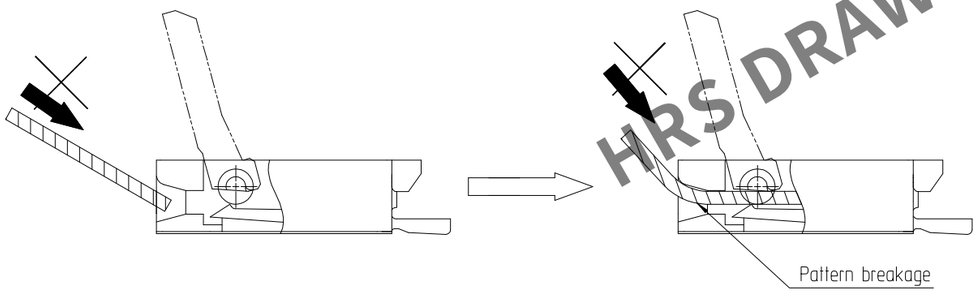
Mar.1.2024 Copyright 2024 HIROSE ELECTRIC CO., LTD. All Rights Reserved.
In case of consideration for using Automotive equipment / device which demand high reliability, kindly contact our sales window correspondents.

5. Move the actuator at approximately the center.
   (It may break if operate the edge of the actuator with FFC/FPC inserted.)
6. Do not pinch or pick the actuator to lift it as shown below, Otherwise, it may break.
   (Do not carry out any operation other than rotating the actuator as shown in 2 above.)



♦ Direction of Contacts
This connector has contacts on the bottom. Thus, insert FFC/FPC with the exposed conductors face down.

⚠ Inserting the FFC/FPC
1. Insert the FFC/FPC horizontally along the surface and at a right angle to the connector.
   Insert it properly to the very end.
   If the FFC/FPC is inserted at a slant(incorrectly)
   the conductors may short-circuit due to pitch shift or the edge of the FFC/FPC may catch in the terminals.
   resulting in deformation of the terminals.
   This connector has a ZIF structure and its effective engagement length is 1.87mm
   (when the recommended FFC/FPC nominal is used)
   Use the actuator carefully to prevent the FFC/FPC from dislocating after inserting it.



2. Do not insert the FFC/FPC diagonally from above
   If the FFC/FPC is inserted at a slat (incorrectly) as shown below in the FFC/FPC insertion process,
   the FFC/FPC may bend and patterns may break or the FFC/FPC may not insert completely.
   resulting in improper conduction.

Keep a sufficient FFC/FPC insertion space in the stage of the layout in order to avoid incorrect FFC/FPC insertion.
Besodes, it is not difficult to insert FFC/FPC correctly al the way to the end.
Designed the proper layout of parts.

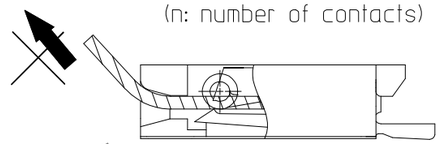
Make adjustments with the FFC/FPC manufacturer for bending performance and breakage resistant.

♦ Checking the Locking Condition
In the locked condition, make sure that actuator is gorizontal on board surface.
Do not apply excessive force to it near the 0°position of the actuator.
Otherwise, the terminals may be deformed. (Allowable force:1N or less)

[INSTRUCTION ON FPC LAYOUT AFTER CONNECTOR]

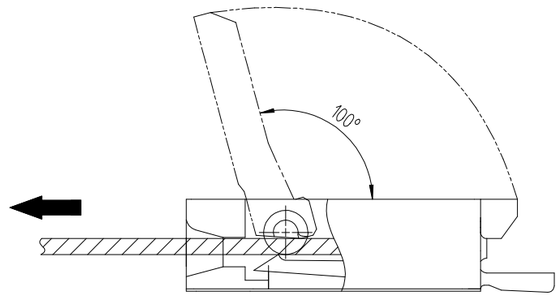
♦ Load to FFC/FPC
Be very careful not to apply any force to the FFC/FPC after inserting it.
Otherwise, the connector may become unlocked or the FFC/FPC may break.
Fix the FFC/FPC, in particular, when loads are applied to it continuously.
Design the FFC/FPC layout with care not to bend it sharply near the insertion opening.

Load: 0.03(N) x n MAX
(n: number of contacts)



[INSTRUCTIONS ON REMOVING FFC/FPC]

♦ Release the actuator at approximately the center.
(It may break if ioerate the edge of the actuator with FFC/FPC inserted.)



[OTHER INSTRUCTIONS]

♦ Instruction on Manual Soldering
Follow the instructions shown when soldering the connector manually during repair work, etc
1. Do not perform reflow soldering or manual soldering with the FFC/FPC inserted into the connector.
2. Do not heat the connector excessively. Be very careful not to let the soldering iron contact
   any parts other than connector leads. Otherwise, the connector may be deformed or melt.
3. Do not use excessive solder(or flux)
   if excessive solder(or flux) is used on the terminals, solder or flux may adhere to the contacts
   or rotating parts of the actuator, resulting inpoor contact or a rotation failure
   of the actuator.

HRS DRAWING FOR REFERENCE