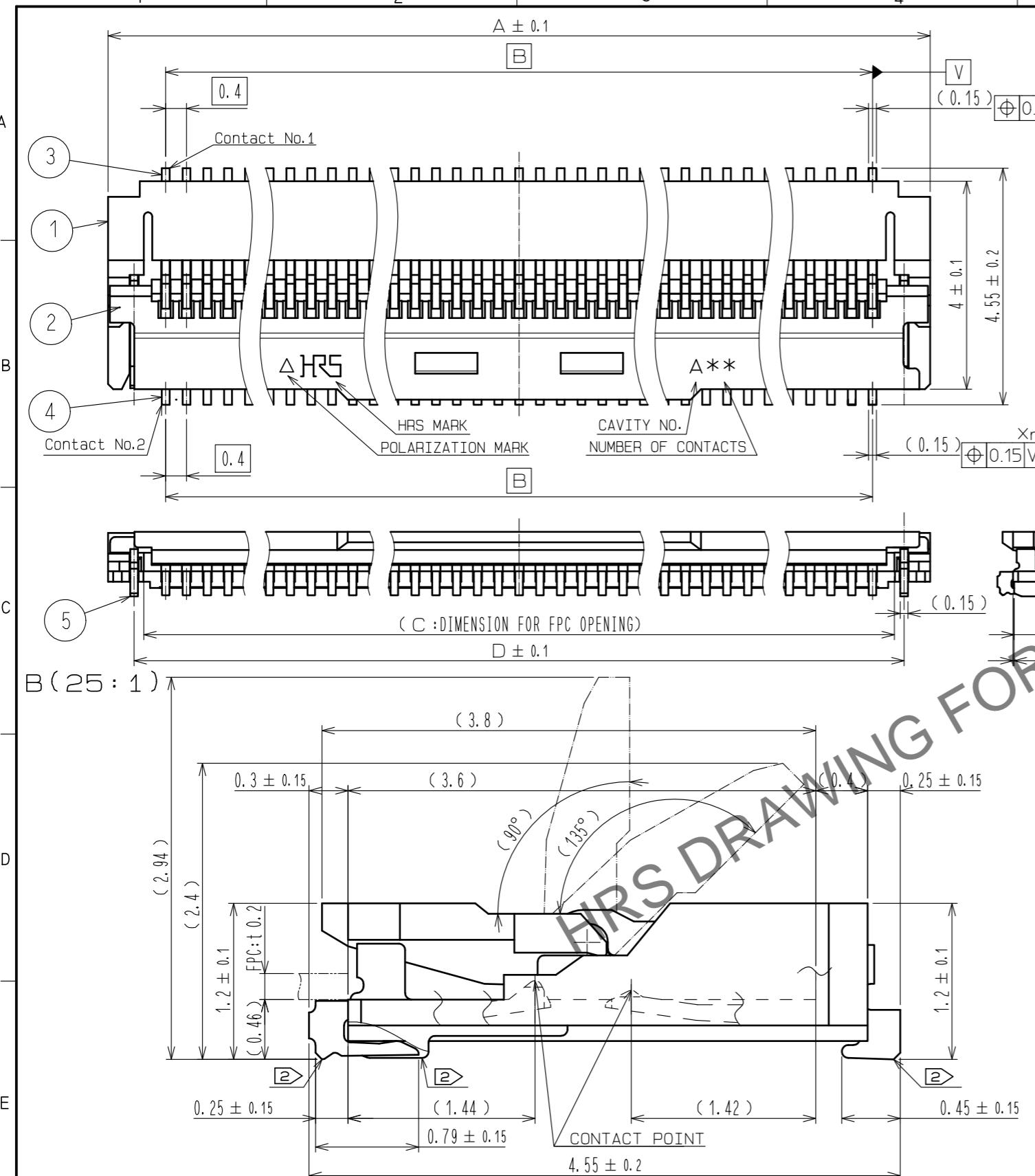
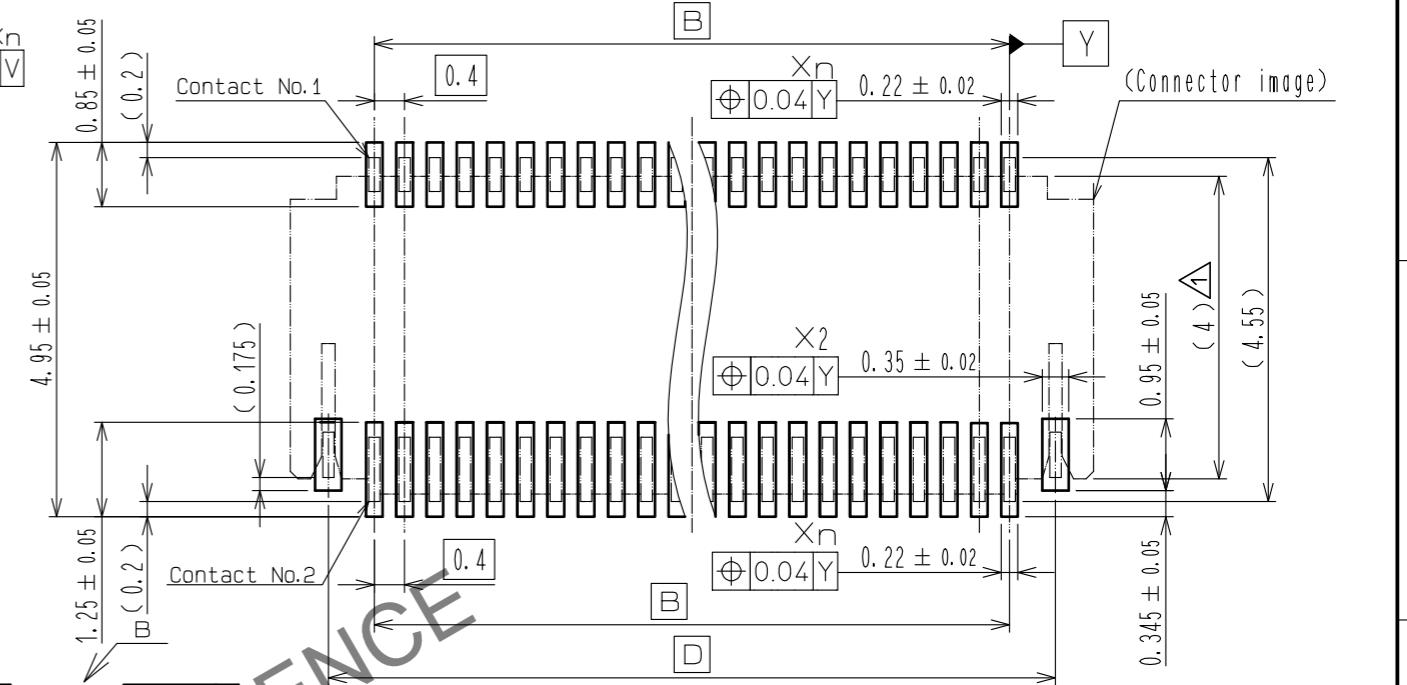


This technical drawing provides a detailed view of a component's structure and dimensions. The top view (B) shows a series of contacts labeled 1, 2, 3, and 4, with specific dimensions for contact height (4.55 ± 0.2), contact width (0.15), and contact spacing (0.4). It also includes markings for 'HRS' and 'Polarization Mark'. The cross-sectional view (C) shows a central cavity with a height of 4.55 ± 0.2, and a dimension 'C' for FPC opening. The bottom view (E) shows a detailed cross-section of the contacts and their mounting, with dimensions for lead height (1.2 ± 0.1), lead width (0.46), and lead spacing (0.79 ± 0.15). A note specifies a lead co-planarity of 0.1 max. The drawing also includes a note about lead pattern dimensions being example values based on mounting requirements. A note at the bottom states that the product satisfies halogen-free requirements with maximum chlorine at 900 ppm, maximum bromine at 900 ppm, and a total of 1500 ppm for chlorine and bromine.

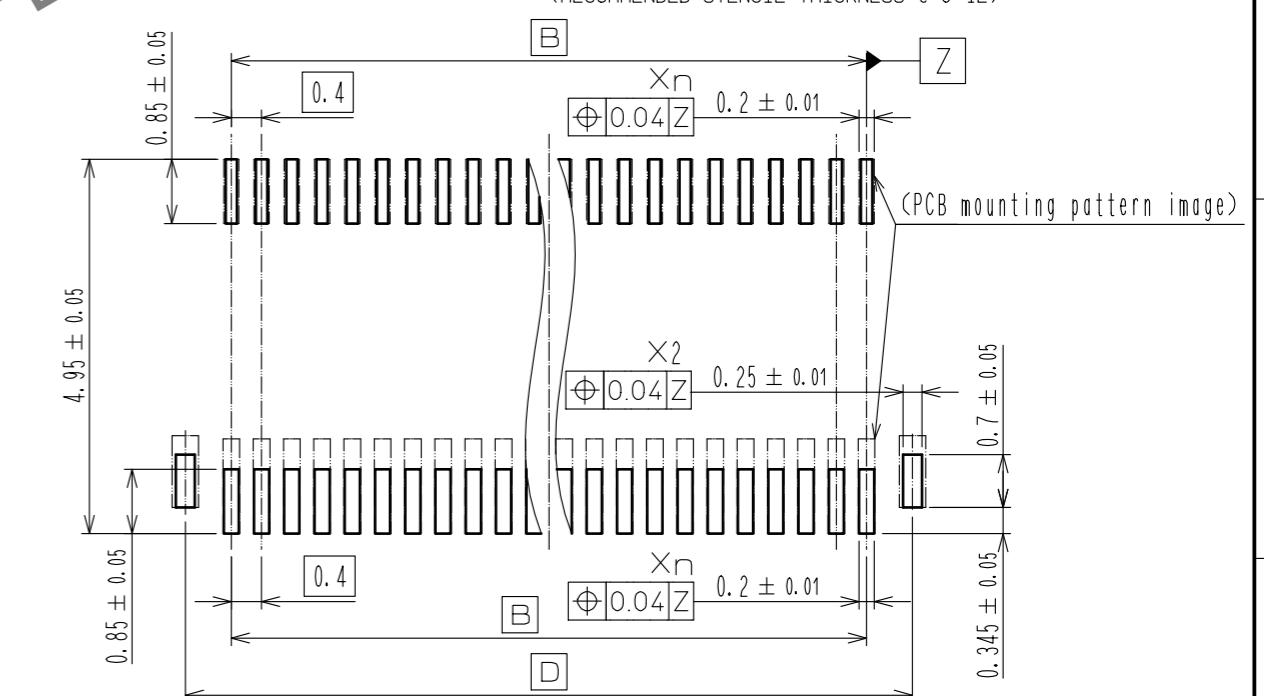


## 5 RECOMMENDED PCB MOUNTING PATTERN



## 5 RECOMMENDED STENCIL PATTERN

(RECOMMENDED STENCIL THICKNESS:  $t = 0, 12$ )



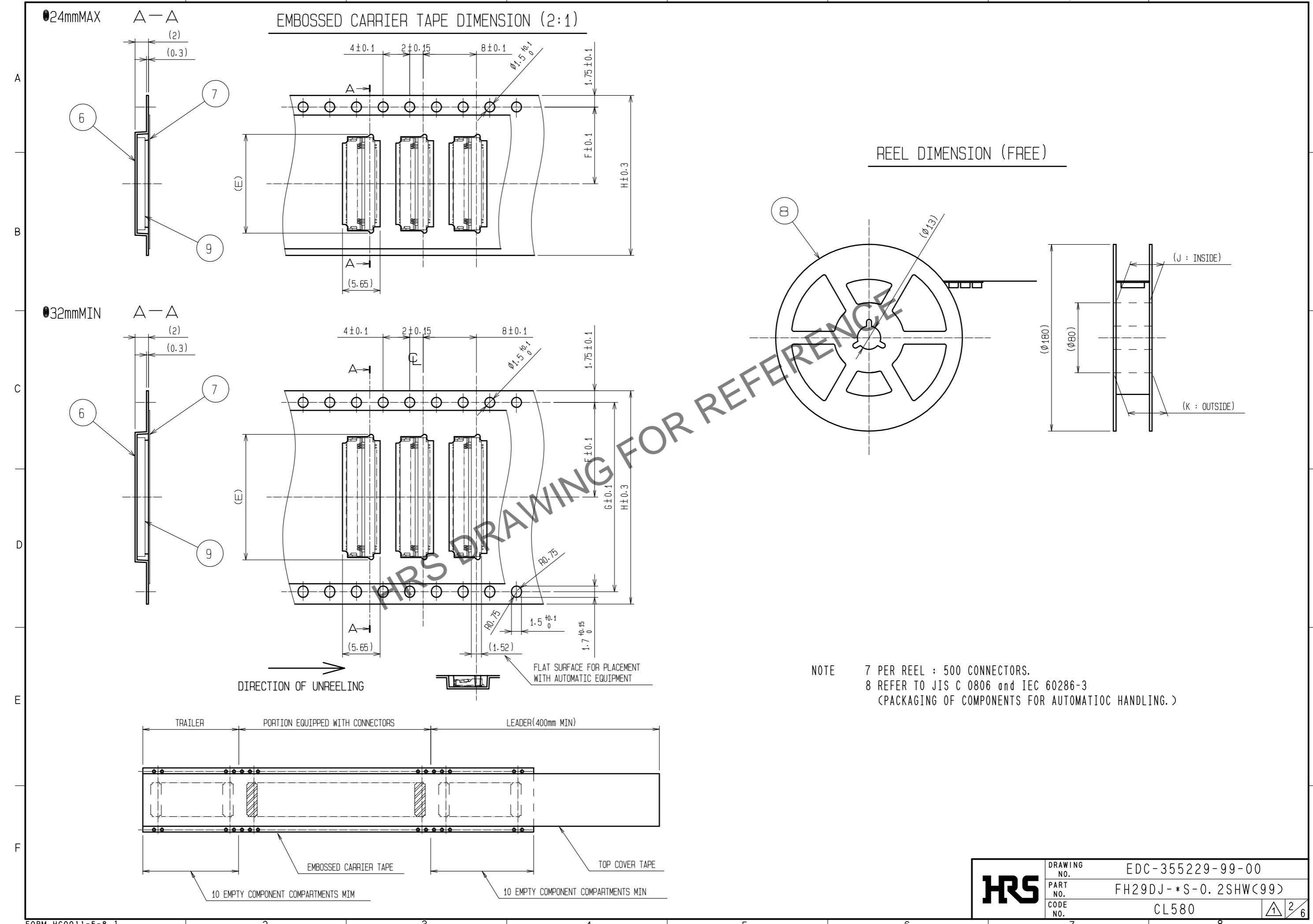
4	PHOSPHOR BRONZE	CONTACT AREA, LEAD: GOLD 0.05μm MIN OVER NICKEL 1μm MIN OTHER: NICKEL 1μm MIN	9	(CONNECTOR)	
			8	POLYSTYRENE	
3	PHOSPHOR BRONZE	CONTACT AREA, LEAD: GOLD 0.05μm MIN OVER NICKEL 1μm MIN OTHER: NICKEL 1μm MIN	7	POLYESTER	
			6	POLYSTYRENE	
2	PPS	BLACK	UL94V-0		
1	LCP	BEIGE	UL94V-0		
NO.	MATERIAL [MAKER]	FINISH, REMARKS	NO.	MATERIAL [MAKER]	FINISH, REMARKS

DRAWER		SCALE		COUNT	DESCRIPTION OF REVISIONS		DESIGNED	CHECKED	DATE
UNITS mm		10 : 1		4	DIS-F-00008871		ST. YUDATE	HY. YAMAZAKI	20210408
<b>HIROSE ELECTRIC CO., LTD.</b>		APPROVED : NF. MIYAZAKI		20160330	DRAWING NO.	EDC-355229-99-00			
		CHECKED : YH. MICHIDA		20160330	PART NO.	FH29DJ-*S-0.2SHW(99)			
		DESIGNED : KN. KOBAYASHI		20160330	CODE NO.	CL580			
		DRAWN : RN. IIDA		20160324					

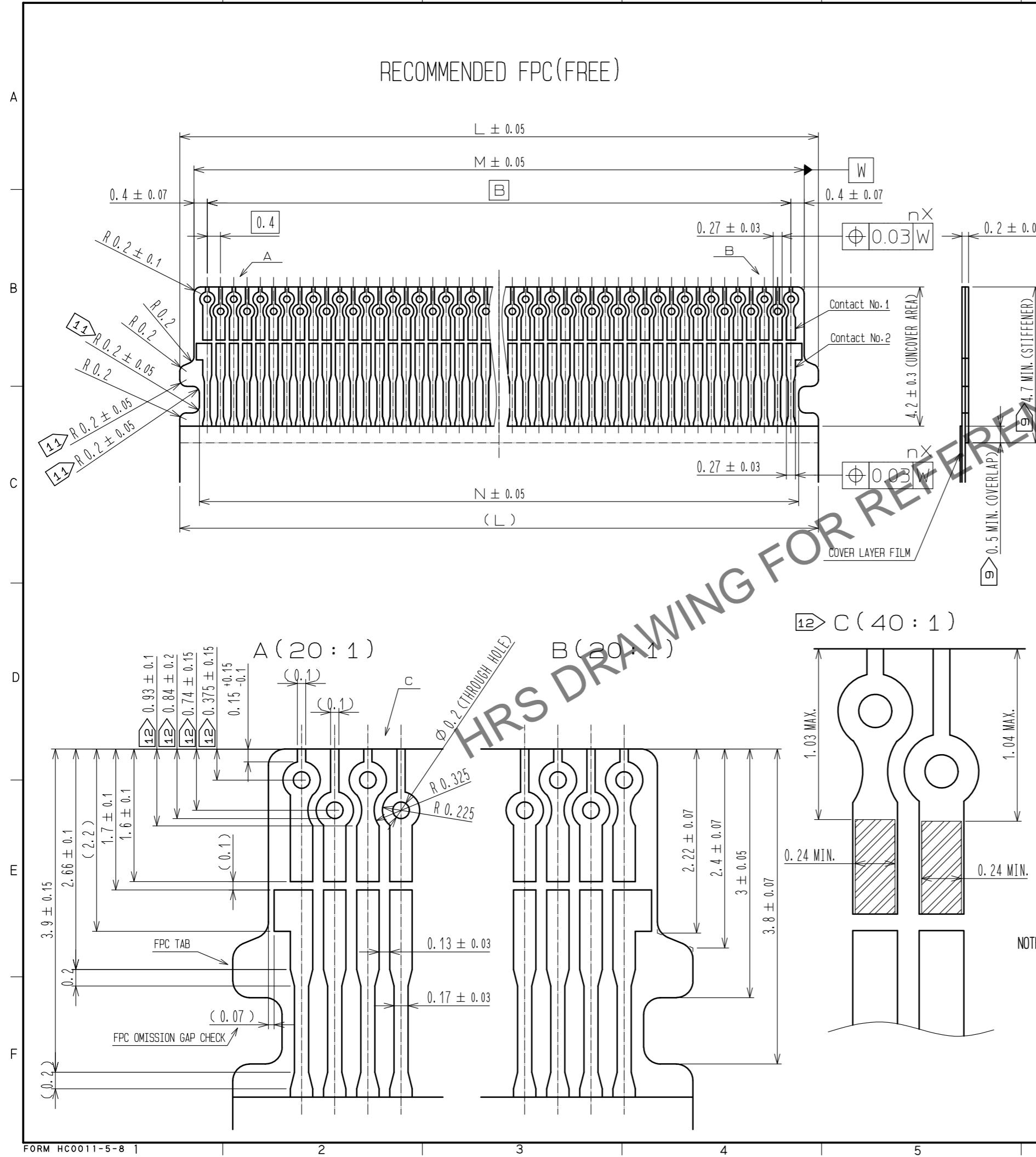
**HRS** HIRO  
ELEC  
CO.,

卷之三

## EMBOSSED CARRIER TAPE DIMENSION (2:1)

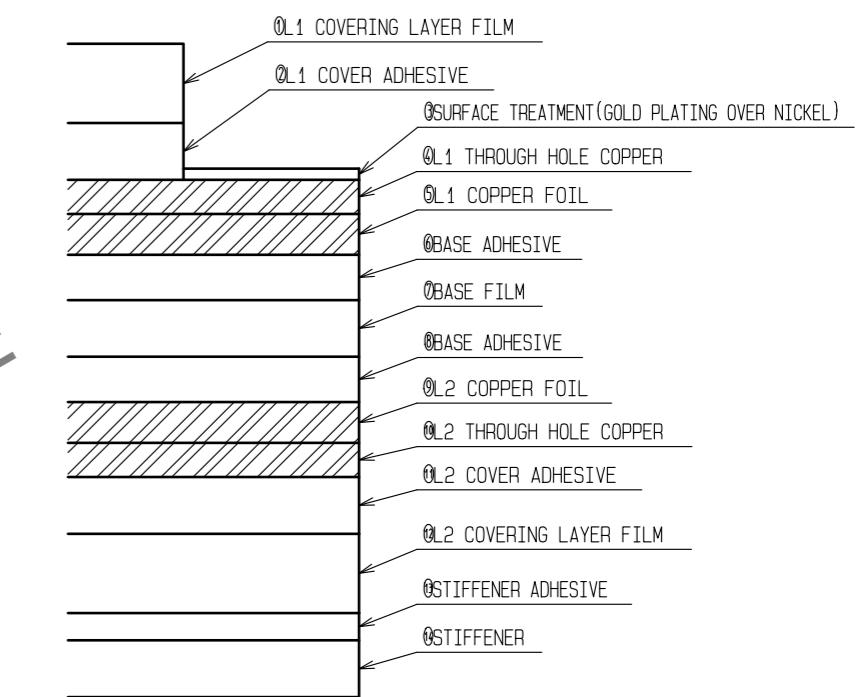


### RECOMMENDED FPC(FREE)



## FPC CONFIGURATION (REFERENCE EXAMPLE)

(SCALE : FREE)



	THICKNESS (μm)		NOTES
	3 LAYERS CCL	2 LAYERS CCL	
①	25	12.5	
②	30	25	
③	3.5	3.5	GOLD PLATING OVER NICKEL
④	13	13	
⑤	18	12	
⑥	10	NO ADHESION MATERIAL	
⑦	25	25	
⑧	10	NO ADHESION MATERIAL	
⑨	18	12	
⑩	13	13	
⑪	25	20	
⑫	12.5	12.5	
⑬	30	30	POLYIMIDE +
⑭	25	75	HEAT-HARDENED ADHESIVE
TOTAL	203	216	TOTAL OF ③~⑭

9 THE AMOUNT OF OVERLAP MUST BE 0.5mm MINIMUM WHEN THE STIFFENER IS SHORTER THAN 1.7mm

THE AMOUNT OF OVERHANG MUST BE 0.3MM MINIMUM WHEN THE STIFFENER IS SHORTER THAN 40 EPC. THICKNESS TO BE  $\pm 0.20 \pm 0.03$ MM, REFERRING TO THE COMPONENT CONSTRUCTION.

11) R TO BE 0.25mm MAX WHEN THE FPC MANUFACTURING TOLERANCE DOES NOT SATISFY  $\pm 0.05$ mm.

12> IN CASE THE DESIGNATED DIMENSIONS  $0.93 \pm 0.1$ ,  $0.84 \pm 0.2$ ,  $0.74 \pm 0.15$ , AND  $0.3$

ARE UNMEASURABLE, PLEASE RESERVE THE HATCHING AREA OF MAGNIFIED DRAWING C.



DRAWING NO.	EDC-355229-99-00
PART NO.	FH29DJ-*S-0.2SHW(99)
CODE NO.	CL580

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8

PART NUMBER	CL NUMBER	NUMBER OF CONTACT	DIMENSION OF CONNECTOR, PCB MOUNTING PATTERN AND STENCIL						DIMENSION OF DRAWING FOR PACKING						DIMENSION OF RECOMMENDED FPC		
			A	B	C	D	E	F	G	H	J	K	L	M	N		
FH29DJ-44S-0.2SHW(99)	-	44	10.62	8.4	9.24	9.615	22	11.62	11.5	-	24	25.4	29.4	10.06	9.2	8.87	
FH29DJ-50S-0.2SHW(99)	CL580-0338-6-99	50	11.82	9.6	10.44	10.815	25	12.82	11.5	-	24	25.4	29.4	11.26	10.4	10.07	
FH29DJ-60S-0.2SHW(99)	CL580-0343-6-99	60	13.82	11.6	12.44	12.815	30	14.82	11.5	-	24	25.4	29.4	13.26	12.4	12.07	
FH29DJ-70S-0.2SHW(99)	CL580-0336-0-99	70	15.82	13.6	14.44	14.815	35	16.82	11.5	-	24	25.4	29.4	15.26	14.4	14.07	
FH29DJ-80S-0.2SHW(99)	CL580-0341-0-99	80	17.82	15.6	16.44	16.815	40	18.82	14.2	28.4	32	33.4	37.4	17.26	16.4	16.07	
FH29DJ-90S-0.2SHW(99)	CL580-0340-8-99	90	19.82	17.6	18.44	18.815	45	20.82	20.2	40.4	44	45.4	49.4	19.26	18.4	18.07	
FH29DJ-100S-0.2SHW(99)	CL580-0335-8-99	100	21.82	19.6	20.44	20.815	50	22.82	20.2	40.4	44	45.4	49.4	21.26	20.4	20.07	
FH29DJ-110S-0.2SHW(99)	-	110	23.82	21.6	22.44	22.815	55	24.72	20.2	40.4	44	45.4	49.4	23.26	22.4	22.07	
FH29DJ-120S-0.2SHW(99)	CL580-0342-3-99	120	25.82	23.6	24.44	24.815	60	26.82	20.2	40.4	44	45.4	49.4	25.26	24.4	24.07	

⚠ CONTACT POSITIONS WITHOUT CODE NUMBERS ARE CURRENTLY UNDER PLANNING.  
PLEASE CONTACT HIROSE FOR DETAILED INFORMATION ABOUT PRODUCT VARIATION.

	DRAWING NO.	EDC-355229-99-00
	PART NO.	FH29DJ-*S-0.2SHW(99)
	CODE NO.	CL580
		1 4 6

A  
This connector is small and thin and requires delicate and careful handling.  
Read through the instructions shown below and handle 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

Minimize warp of the board as much as possible.  
Lead co-planarity including reinforced metal fittings is 0.1 mm or less.  
Too much warp of the board may result in a soldering failure.

◆Flexible board design

Please make sure to put a stiffener on the backside of the flexible board.  
We recommend a glass epoxy material with the thickness of 0.3mm MIN.

◆Load to Connector

Do not add 0.5N or greater external force when unreel or pick and place the connector etc.  
or it may get broken.  
In addition, do not insert the FPC or operate the connector before mounting it.

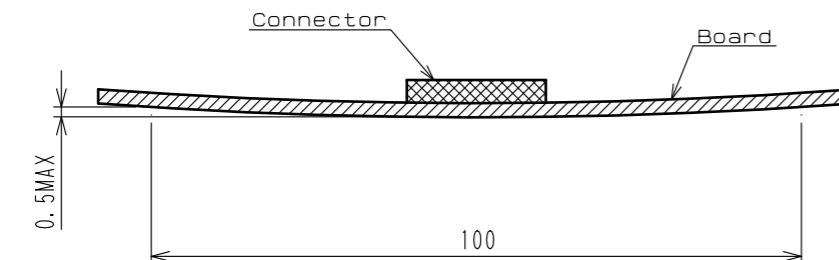
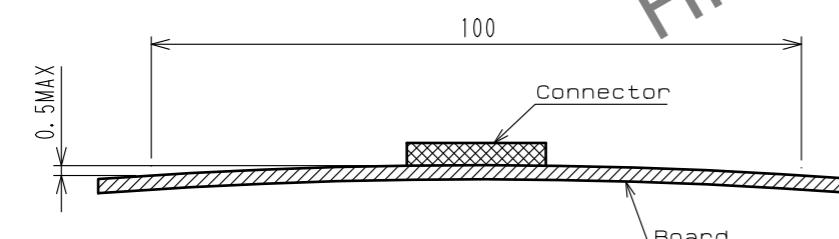
**[INSTRUCTIONS FOR PCB HANDLING AFTER MOUNTING THE CONNECTOR]**

◆Load to Board

•Splitting a large board into several 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 100mm wide board should be 0.5 mm or less.  
The warp of board suffers stress on connector and the connector may become defective.

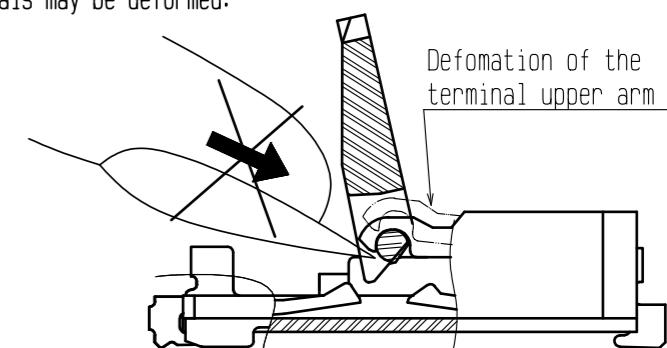
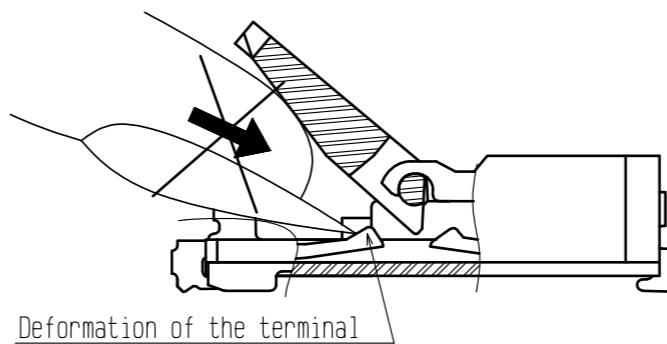


**[INSTRUCTIONS ON INSERTING FPC AND CONNECTION]**

◆Use of the Actuator

1. Be very careful not to apply excessive force when releasing the actuator in the initial position (with no FPC inserted).

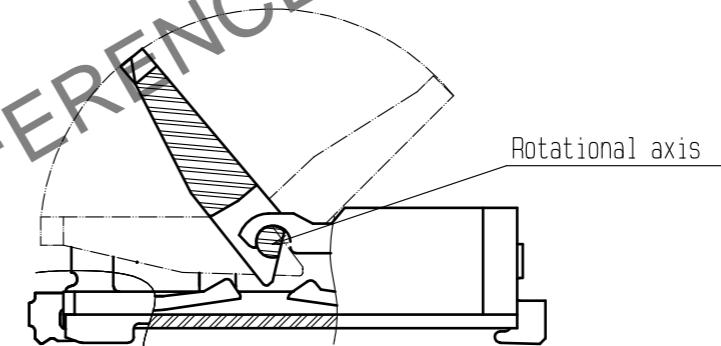
If you use your nail or finger as shown below, the terminals may be deformed.



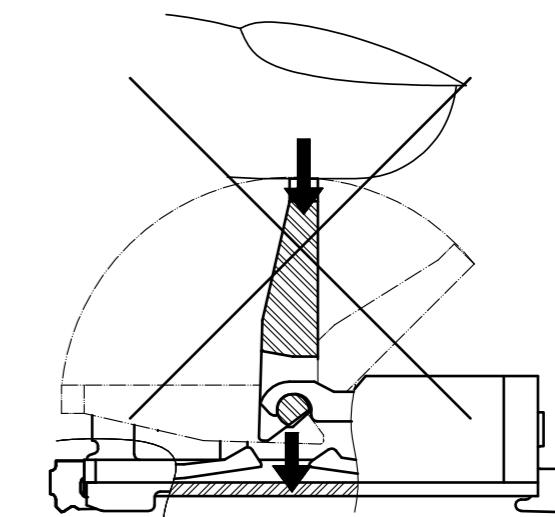
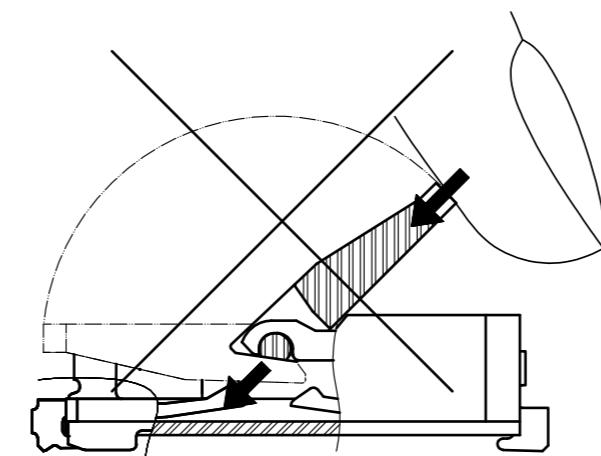
Example 1

Example 2

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

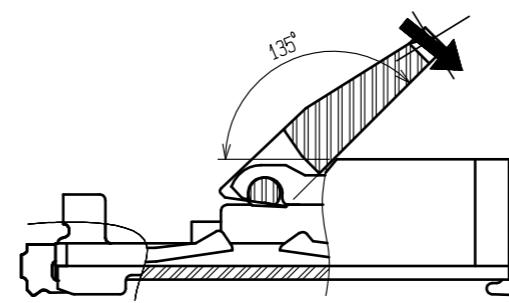


3. Please do not push downwards to the actuator with more than 0.5N force, as shown below.  
Otherwise, the actuator may fall off or be damaged.



4. The actuator will not open more than 135°.

Do not apply any force backward beyond this point. Otherwise, the actuator may come off or break.



5. Move the actuator at approximately the center.  
(It may break if operate the edge of the actuator with 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 the FPC with the exposed conductors face down.

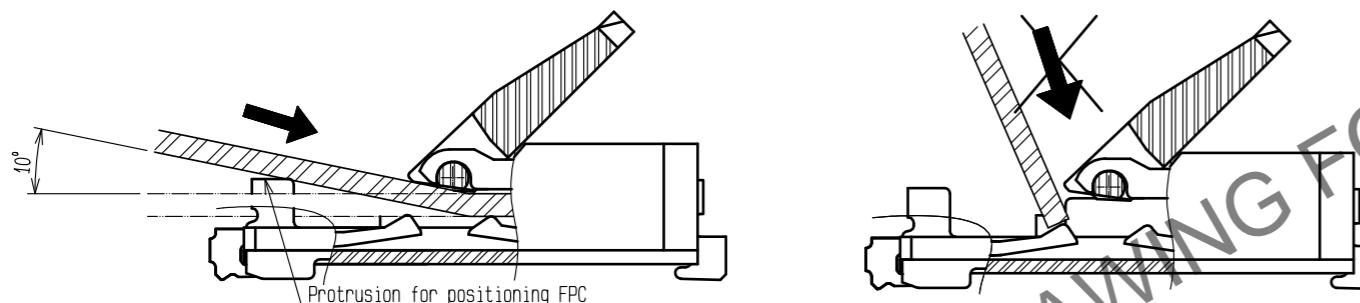
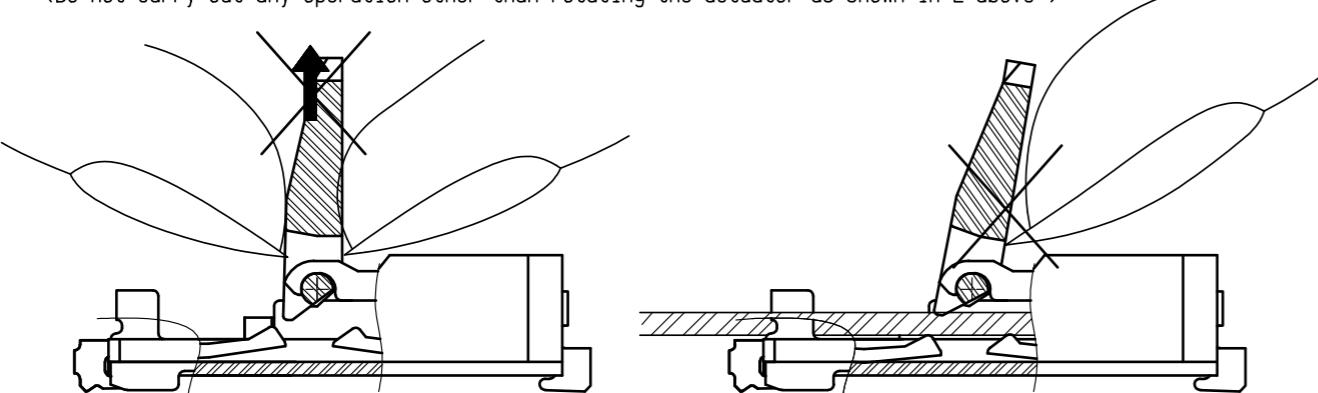
**◆Inserting the FPC**

1. Insert the FPC by about 10 degrees along the surface and at a right angle to the connector.  
Insert it properly to the very end.  
If the FPC is inserted at a slant (incorrectly),  
the conductors may short-circuit due to pitch shift or the edge of the FPC may catch in the terminals,  
resulting in deformation of the terminals.

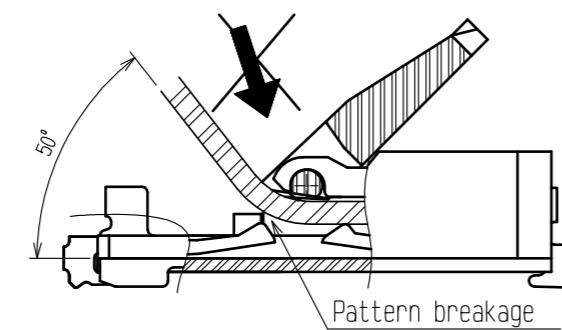
**◆Keep a sufficient FPC insertion space in the stage of the layout in order to avoid incorrect FPC insertion.**  
Besides, it is not difficult to insert FPC correctly all the way to the end.  
Design the proper layout of parts.

**◆Make adjustments with the FPC manufacturer for FPC bending performance and wire breakage.**

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



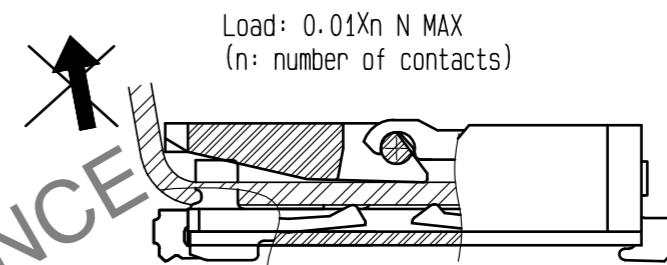
2. Do not insert the FPC diagonally from above.  
If the FPC is inserted at a slant (incorrectly) as shown below in the FPC insertion process,  
the FPC may bend and patterns may break or the FPC may not insert completely,  
resulting in improper conduction.



#### [INSTRUCTIONS ON FPC LAYOUT AFTER CONNECTION]

##### ◆Load to FPC

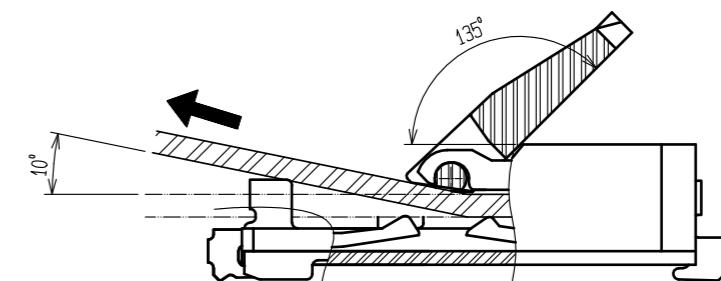
Be very careful not to apply any force to the FPC after inserting it.  
Otherwise, the connector may become unlocked or the FPC may break.  
Fix the FPC, in particular, when loads are applied to it continuously.  
Design the FPC layout with care not to bend it sharply near the insertion opening.



#### [INSTRUCTIONS ON REMOVING FPC]

◆Release the actuator at approximately the center.  
(It may break if operate the edge of the actuator with FPC inserted.)

◆Release the actuator to remove the FPC.  
Remove the FPC by about 10 degrees along the surface.



#### [OTHER INSTRUCTIONS]

##### ◆Instructions on Manual Soldering

Follow the instructions shown below when soldering the connector manually during repair work, etc.

1. Do not perform reflow soldering or manual soldering with the 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 in poor contact or a rotation failure of the actuator.