

MINIFLEX® 3-BFN LK

Mechanical lock, low profile (Height 0.9 mm), 0.3 mm pitch, horizontal, backflip

Product Specifications:		Short Actuator	Long Actuator
Board Pitch		0.3 mm	
Wiping Length		Contact A: 0.9 mm	
		Contact B: 0.45 mm	
Size	Height	0.90 +/- 0.10 mm	
	Width	2.1 + (0.3 x pin count) mm	
	Depth	Open: 2.55 mm	
		Close: 3.0 mm	Close: 3.5 mm
Pin Counts	Range	9 to 37	29 to 71
	Available	9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37	51, 53, 57, 61, 71

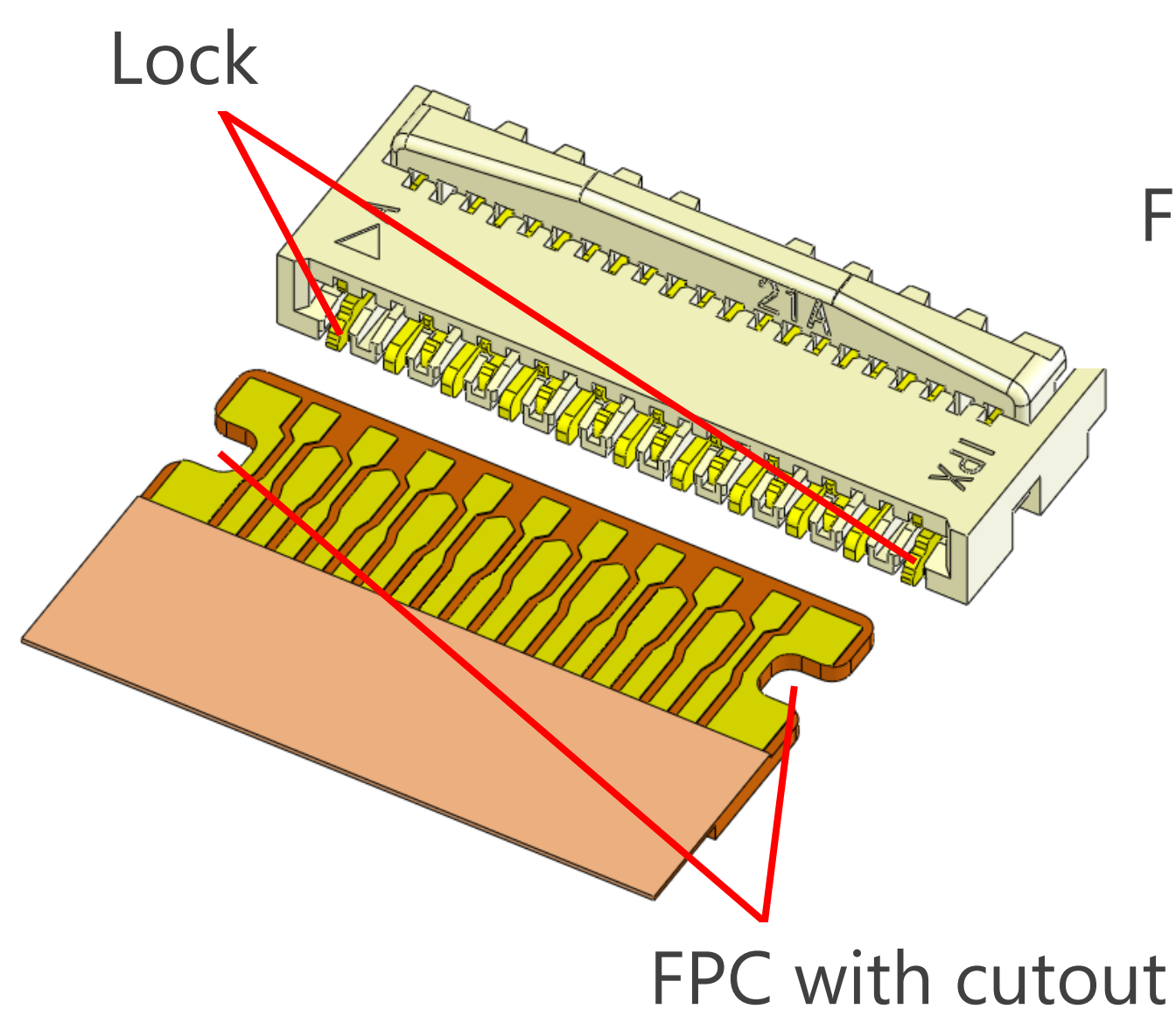
* Please inquire for pin counts not listed or outside of the pin count range.

Applicable FPC/FFC:

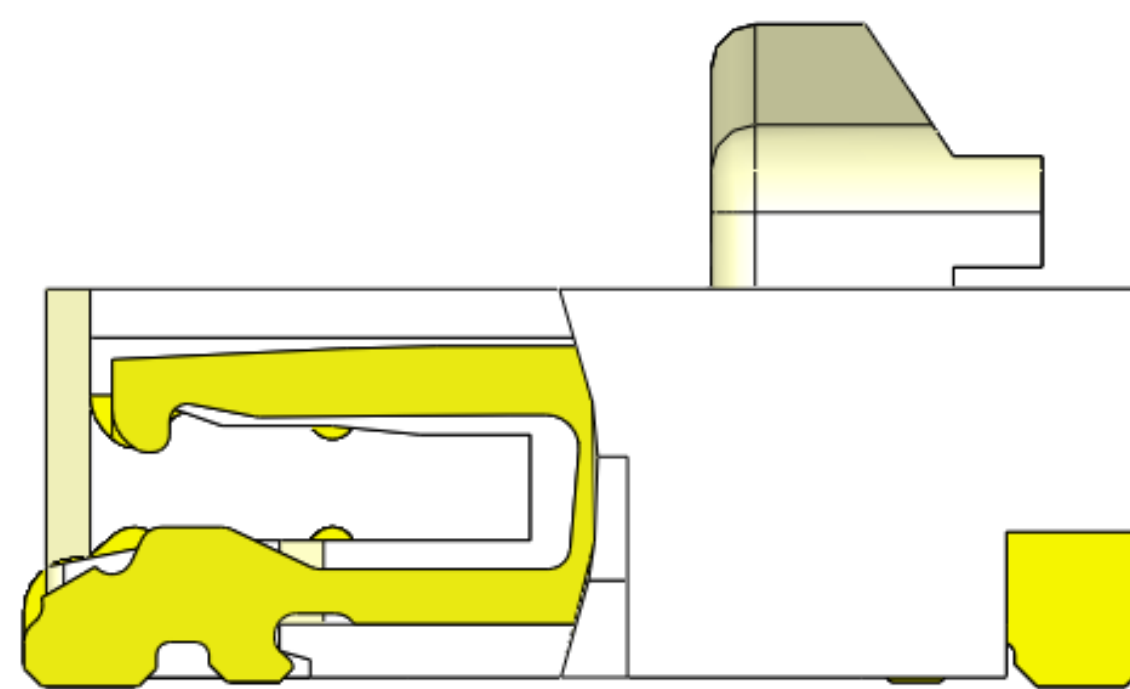
FPC/FFC Contact Pitch	0.3
FPC/FFC Contact Point	Top and Bottom
FPC/FFC Thickness	0.2 +/- 0.03 mm



► High FPC retention force with additional mechanical lock



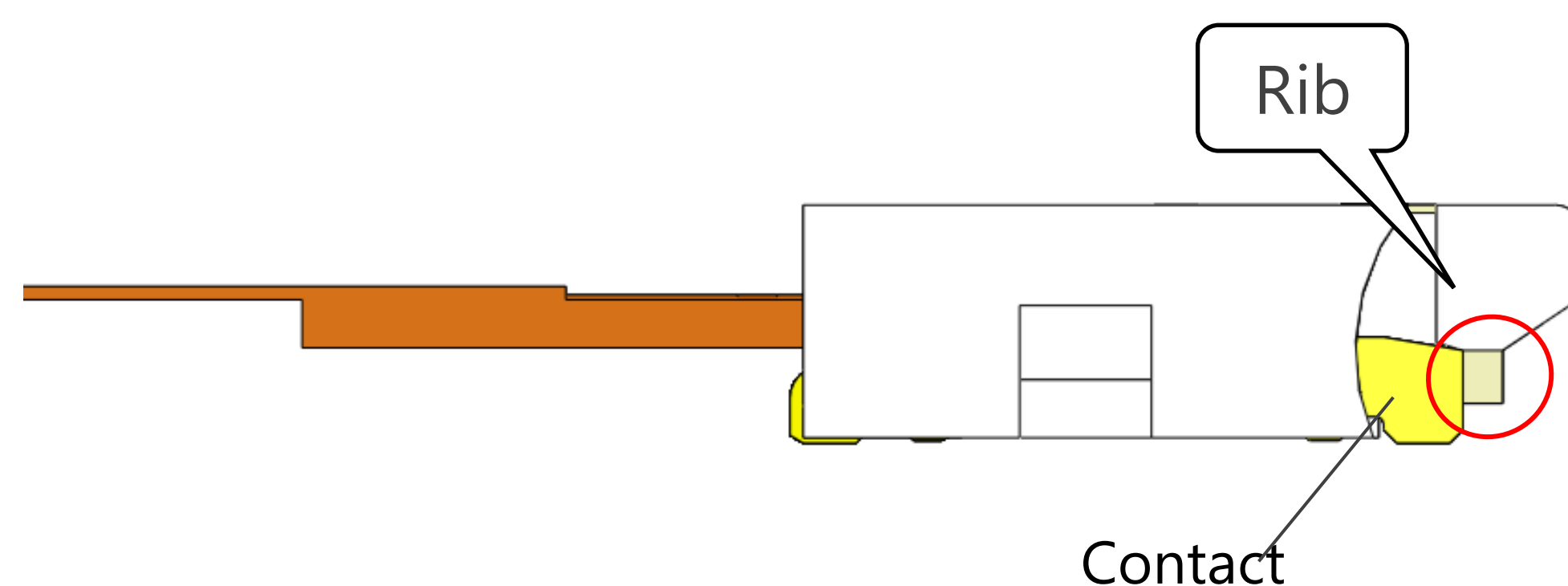
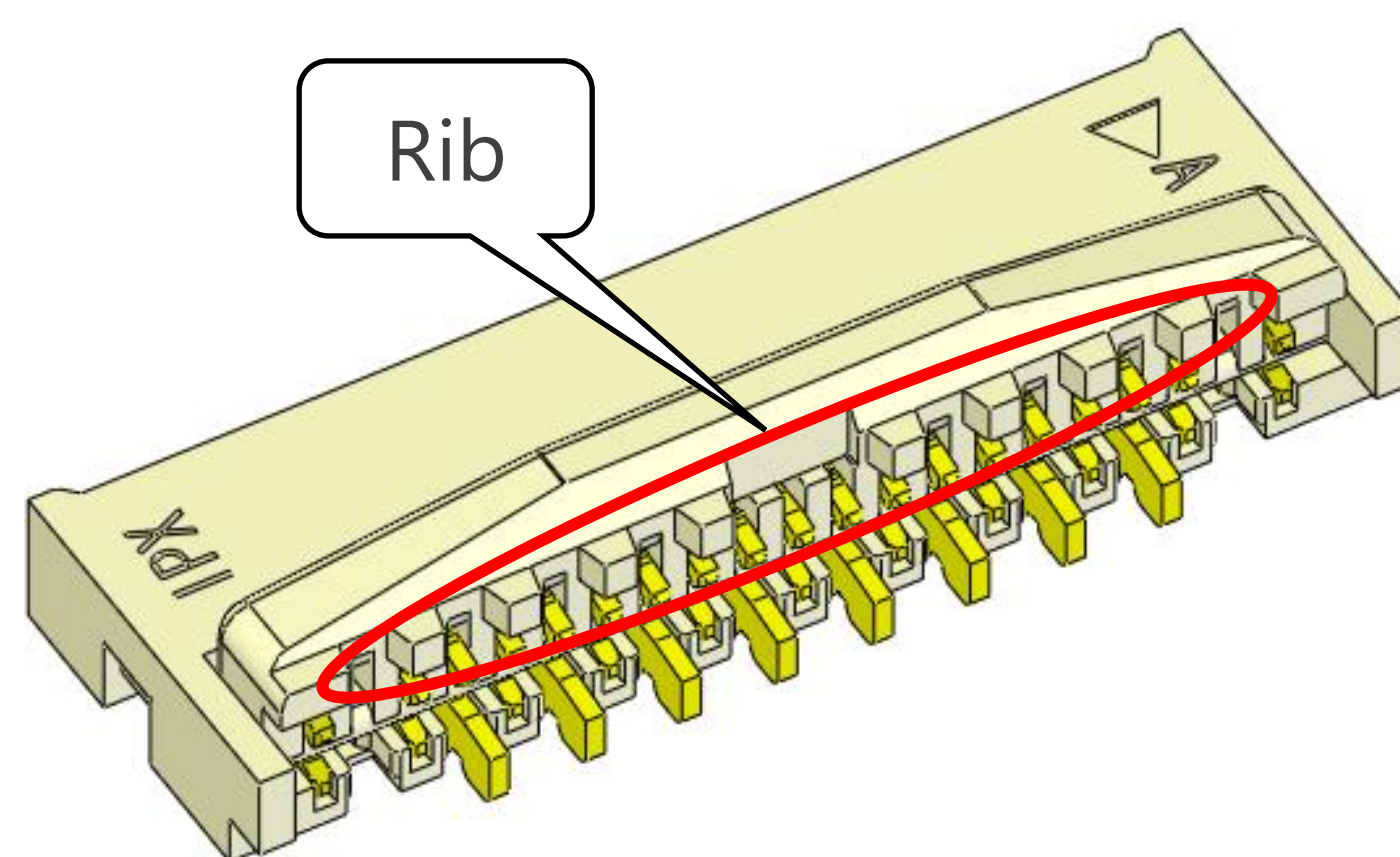
FPC LOCK mechanism maintains high FPC retention force



FPC retention force comparison (19 pin)

MINIFLEX® 3-BFN LK	MINIFLEX® 3-BFN
11.34 N	6.7 N

► Designed to prevent contact distortion

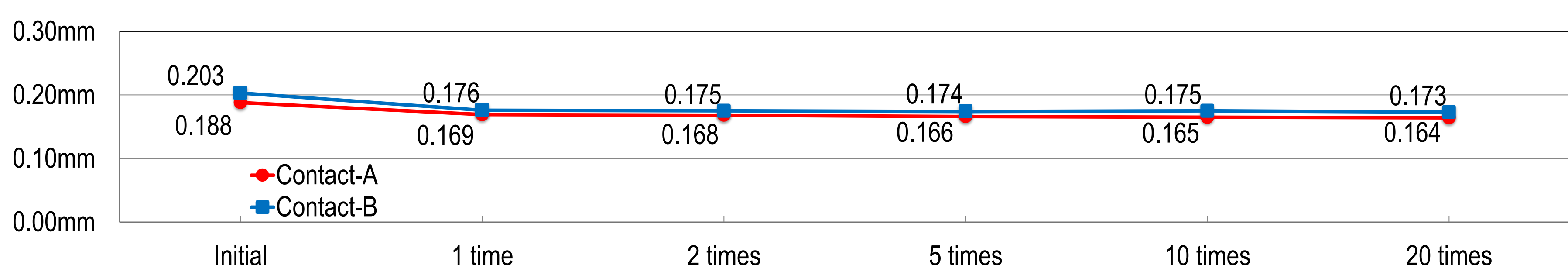


When opening the actuator, the ribs will prevent the contacts from being pulled up.

► Usability for closing actuator without FPC

The connector will still function even if the actuator is accidentally closed without the FPC being inserted after the SMT process.

- Connector will still function reliably (contact gap graph 35 pins before and after operating actuator without FPC inserted)

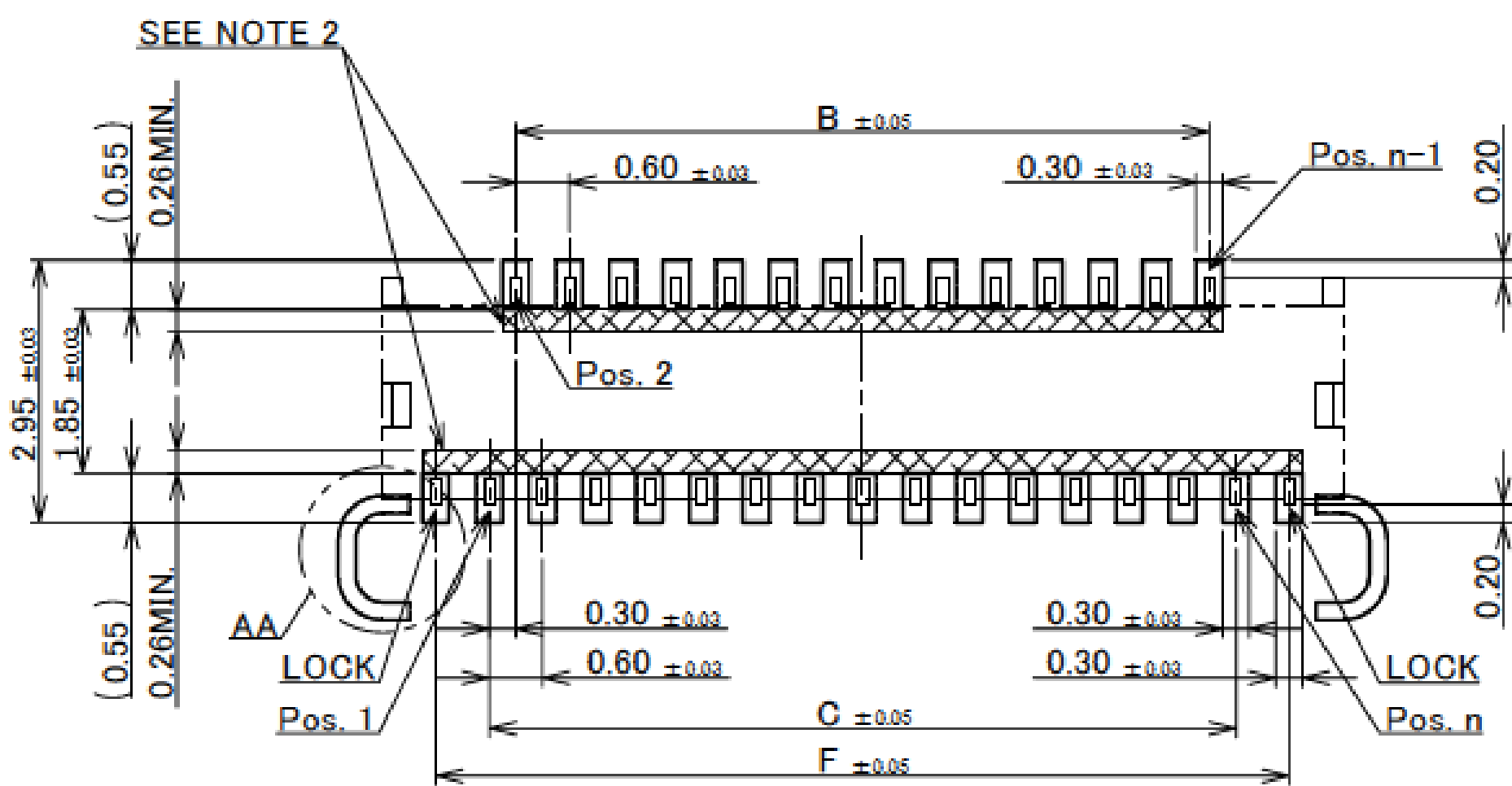
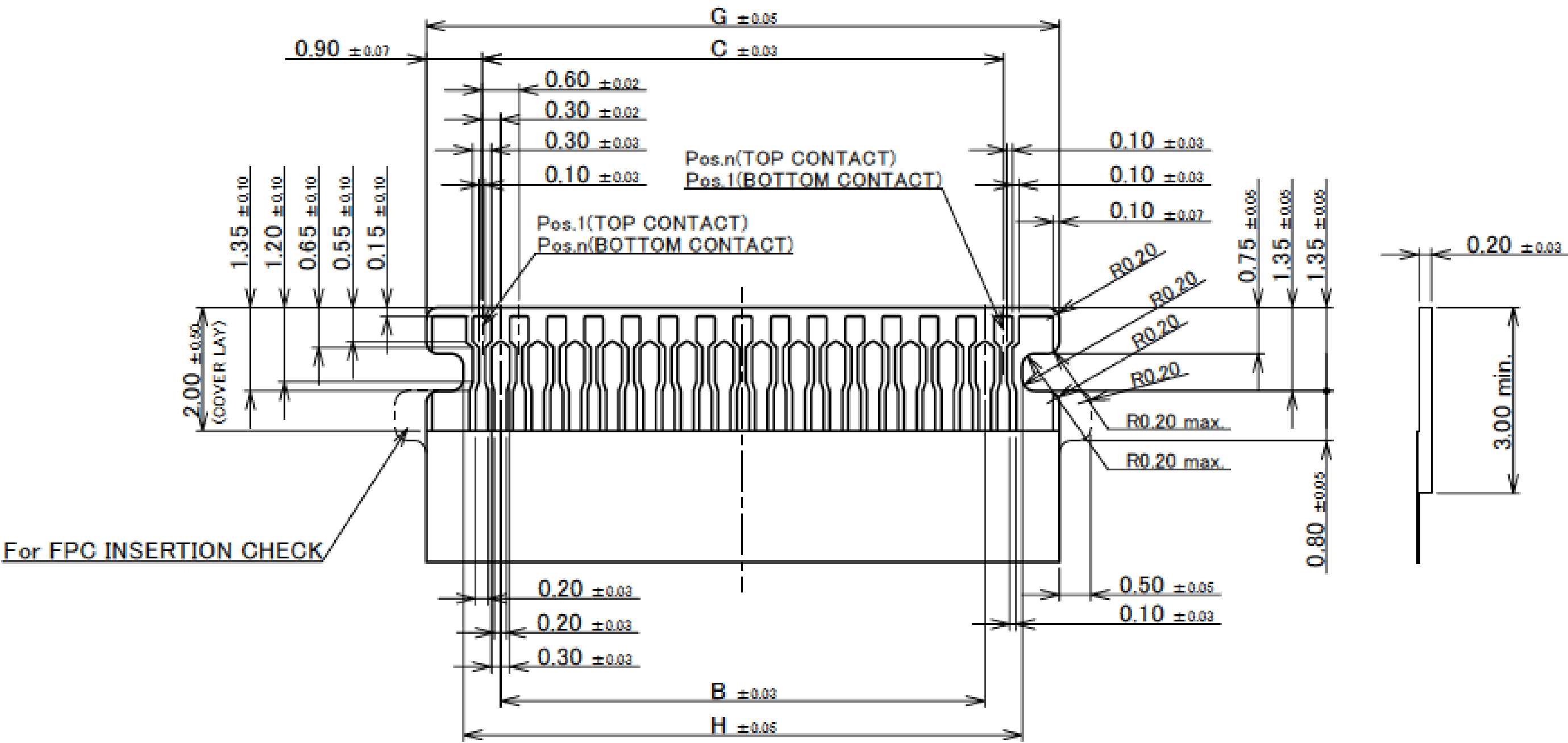


- Insertion force of connector goes up
- Retention force of connector does not change greatly

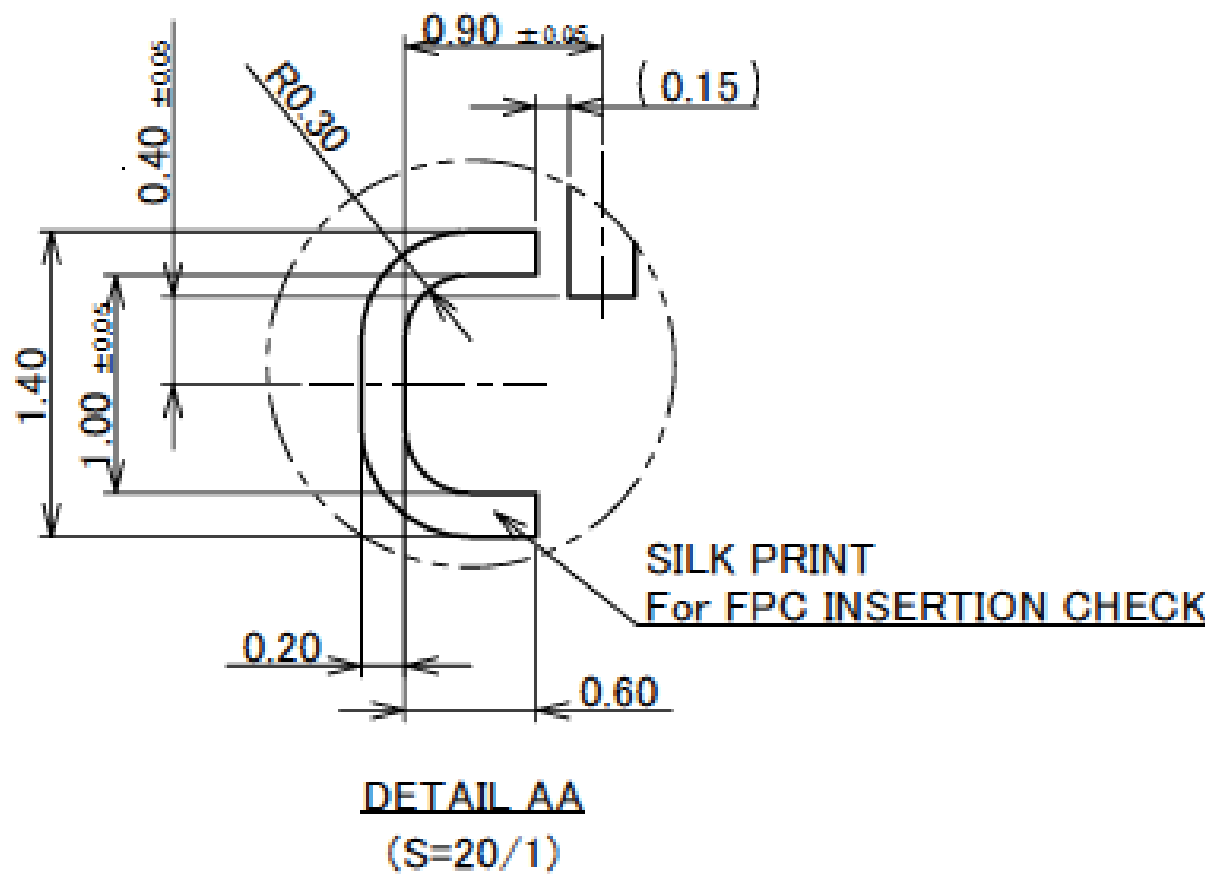
Connector Assembly

PART NO.	Pos.	B	C	F	G	H
20599-009E-01	9P	1.80	2.40	3.60	4.20	3.00
20599-011E-01	11P	2.40	3.00	4.20	4.80	3.60
20599-013E-01	13P	3.00	3.60	4.80	5.40	4.20
20599-015E-01	15P	3.60	4.20	5.40	6.00	4.80
20599-017E-01	17P	4.20	4.80	6.00	6.60	5.40
20599-019E-01	19P	4.80	5.40	6.60	7.20	6.00
20599-021E-01	21P	5.40	6.00	7.20	7.80	6.60
20599-023E-01	23P	6.00	6.60	7.80	8.40	7.20
20599-025E-01	25P	6.60	7.20	8.40	9.00	7.80
20599-027E-01	27P	7.20	7.80	9.00	9.60	8.40
20599-029E-01	29P	7.80	8.40	9.60	10.20	9.00
20599-031E-01	31P	8.40	9.00	10.20	10.80	9.60
20599-033E-01	33P	9.00	9.60	10.80	11.40	10.20
20599-035E-01	35P	9.60	10.20	11.40	12.00	10.80
20599-037E-01	37P	10.20	10.80	12.00	12.60	11.40

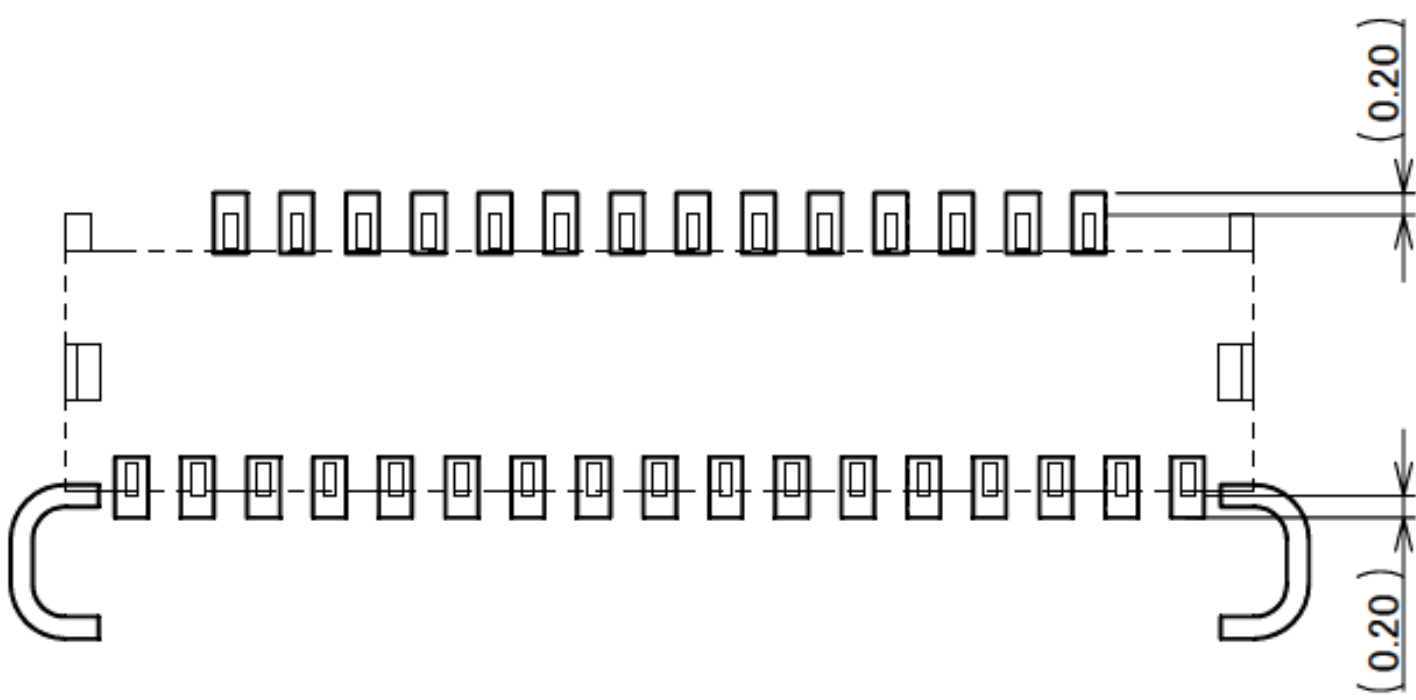
NOTES
2. SOLDER RESIST SHALL BE APPLIED TO PREVENT SHORT CIRCUITS WHEN PLACING SIGNAL LINES ON GROUND AREA.



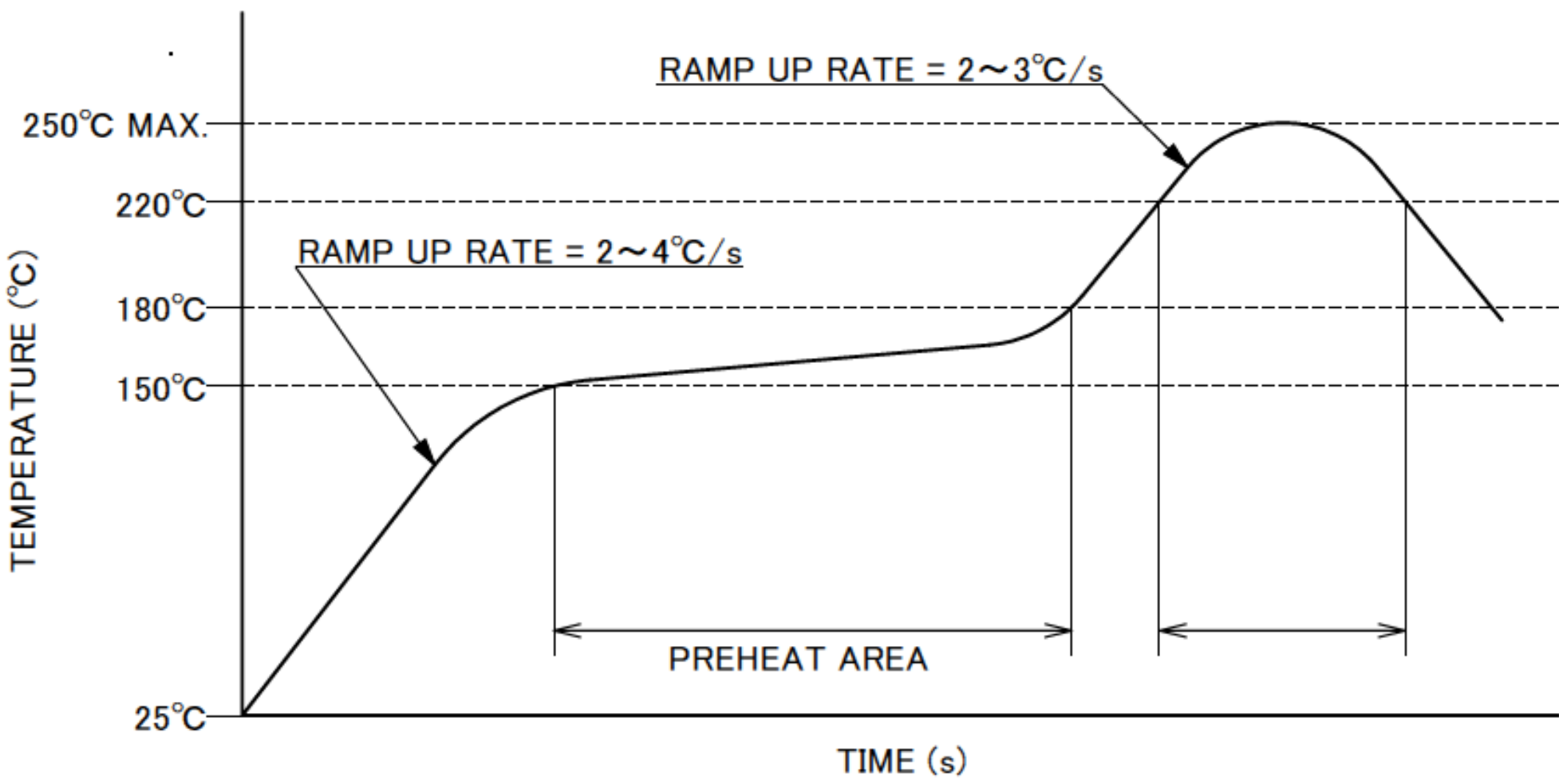
RECOMMENDED PCB LAYOUT & METAL MASK LAYOUT
METAL MASK THICKNESS : t=0.12mm



Rev.13



CONNECTOR ON RECOMMENDED PCB LAYOUT



REFLOW TEMPERATURE PROFILE
SENJU METAL INDUSTRY CO., LTD. : M705-SHF(Sn96.5 Ag3.0 Cu0.5)

Rev.13

Connector Assembly

ITEMS	SPECIFICATION
RATING VOLTAGE	50V AC/DC (PER CONTACT)
RATING AMPERAGE	0.3A DC (PER CONTACT)
OPERATING TEMPERATURE	233~358K(−40℃~85℃)
OPERATING HUMIDITY	20~80%RH (NON-CONDENSING)
CONTACT RESISTANCE	INITIAL : 60mohm MAX. / AFTER TEST : $\triangle$ 40mohm MAX.
INSULATION RESISTANCE	100Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	AC250V 1min
DURABILITY	20TH CYCLES
ACTUATOR LOCKING FORCE (INITIAL / 20TH CYCLES)	INITIAL / 20TH CYCLES : 0.3N(31gf) × (n + 2) MAX.
ACTUATOR UNLOCKING FORCE (INITIAL / 20TH CYCLES)	INITIAL / 20TH CYCLES : 0.02N(2gf) × (n + 2) MIN.
FPC RETENTION FORCE (INITIAL / AFTER TEST)	INITIAL : 0.13N(13gf) × n + 1.0N MIN. / AFTER TEST : 0.10N(10gf) × n + 1.0N MIN.
COPLANARITY	0.10 MAX.
PRODUCT SPECIFICATION	PRS-1861
TEST REPORT	TR-13085
PACKING STANDARD	PST-13035
INSTRUCTION MANUAL	HIM-12007
APPEARANCE CRITERIA No.	QLS-A***

※ "n" IS THE NUMBER OF PIN

Rev.13

Recommended P/N 20584-0**E-01

ODD NUMBER POS.

Technical drawing of the ODD NUMBER POS. connector. The top view shows a rectangular component with dimensions: A (total length), B (length of the first section), C (length of the second section), D (length of the third section), E (length of the fourth section), and F (length of the fifth section). The side view shows the profile of the component with dimensions: 0.20 (height), 0.12 (width), 0.36 (height), 0.17 (width), 0.30 (SOLDER TAIL), and 0.12 (width). The drawing also includes a detail view of the 45A contact point and a note: SEE NOTE 1.

HF Halogen Free
RoHS Compliant

Technical drawing of the LOCK (S=20/1) component. The side view shows dimensions: 0.36 (height), 0.17 (width), and 0.30 (SOLDER TAIL). The top view shows dimensions: 0.30 (SOLDER TAIL), LOCK (S=20/1), and 0.12 (width).

Technical drawing of the ACT. CLOSED component. The side view shows dimensions: 0.36 (height), 0.36 (width), and 0.30 (SOLDER TAIL). The top view shows dimensions: 0.30 (SOLDER TAIL), ACT. CLOSED, and 0.12 (width).

Technical drawing of the connector showing the LOCK, Pos. 1, Pos. n, Pos. 2, and Pos. n-1 components. The drawing includes a note: SEE NOTE 1.

Technical drawing of the connector showing the ②ACTUATOR, ③CONTACT (A), ④CONTACT (B), ①HOUSING, and ⑤LOCK components. The drawing includes a note: SEE NOTE 1.

PART NO.	Pos.	A	B	C	D	E	F
20584-029E-01	29P	10.80	7.80	8.40	10.25	6.25	9.60
20584-031E-01	31P	11.40	8.40	9.00	10.85	6.85	10.20
20584-035E-01	35P	12.60	9.60	10.20	12.05	8.05	11.40
20584-037E-01	37P	13.20	10.20	10.80	12.65	4.65	12.00
20584-039E-01	39P	13.80	10.80	11.40	13.25	5.25	12.60
20584-041E-01	41P	14.40	11.40	12.00	13.85	5.85	13.20
20584-045E-01	45P	15.60	12.60	13.20	15.05	7.05	14.40
20584-047E-01	47P	16.20	13.20	13.80	15.65	7.65	15.00
20584-051E-01	51P	17.40	14.40	15.00	16.85	8.85	16.20
20584-053E-01	53P	18.00	15.00	15.60	17.45	9.45	16.80
20584-057E-01	57P	19.20	16.20	16.80	18.65	10.65	18.00
20584-061E-01	61P	20.40	17.40	18.00	19.85	11.85	19.20
20584-063E-01	63P	21.00	18.00	18.60	20.45	8.45	19.80
20584-071E-01	71P	23.40	20.40	21.00	22.85	10.85	22.20

◆ MARK MEANS NOT AVAILABLE.

NOTES.

1. THIS DENT SHAPE IS PURPOSED FOR GOOD INJECTION QUALITY. THIS DENT SHAPE WILL NOT AFFECT CONNECTR FUNCTION. DENT SHAPE SHOWN ON DRAWING IS JUST FOR REFERENCE. DENT SHAPE AND QUANTITY MIGHT CHABGE FROM DIFFERENT PIN COUNT AND DIFFERENT TOOLING.
2. CONTACT POINT: TOP AND BOTTOM CONTACT

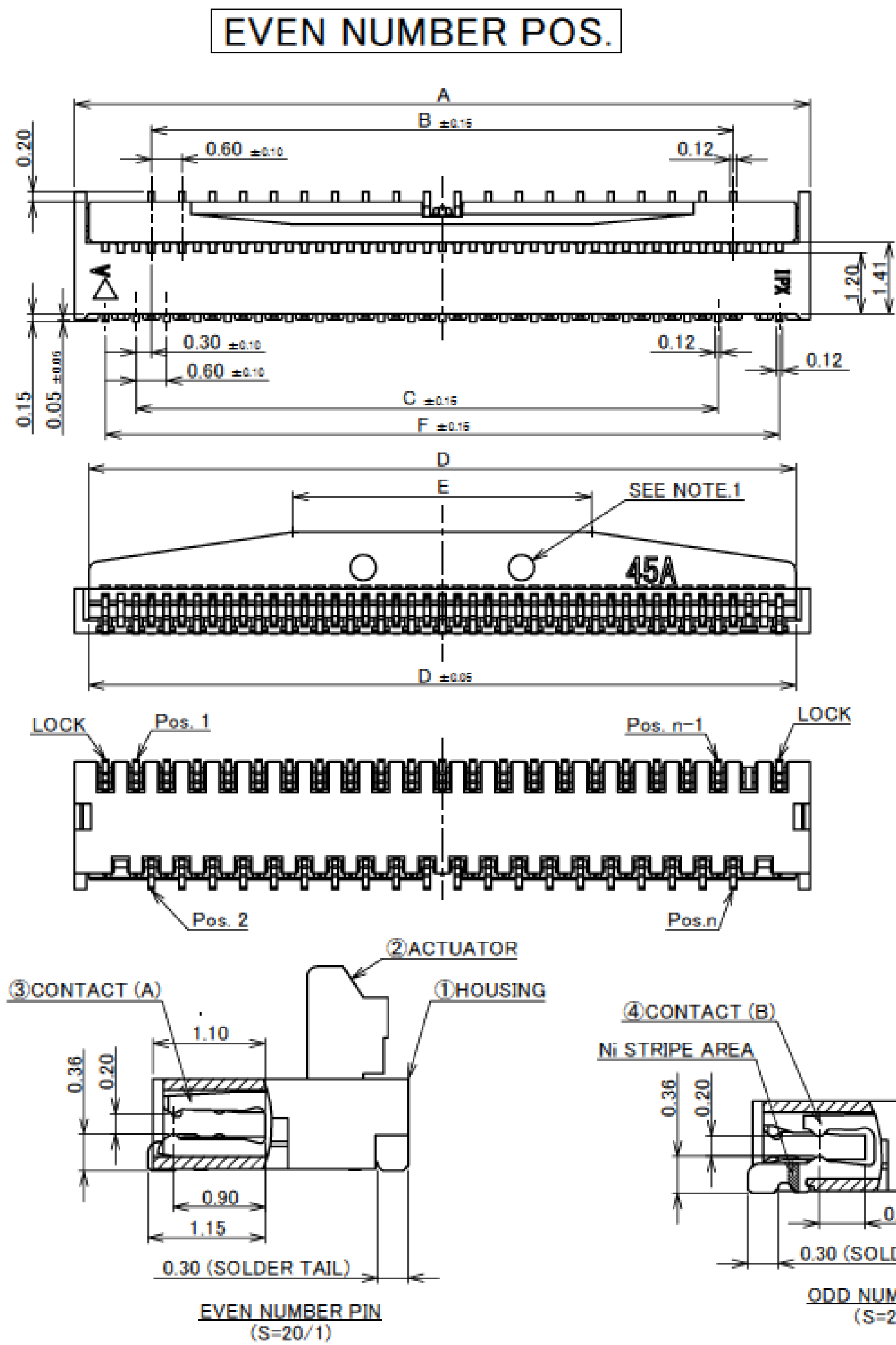
CAUTION VISIT OUR WEBSITE FOR LATEST VERSIONS OF INSTRUCTION MANUAL NO. HIM-12007 TO HANDLE THE PRODUCT PROPERLY AND SAFELY.

TABLE 1

PART NO.	FINISH		
20584-0**E-01	CONTACT AREA : Au 0.10 μm MIN. OVER Ni 1.00 μm MIN. SOLDERING AREA : Au 0.03 μm MIN. OVER Ni 1.00 μm MIN.		
5	LOCK	PHOSPHOR BRONZE	SOLDERING AREA : Au 0.03 μm MIN. OVER Ni 1.00 μm MIN.
4	CONTACT (B)	PHOSPHOR BRONZE	SEE TABLE 1, WITH Ni STRIPE
3	CONTACT (A)	PHOSPHOR BRONZE	SEE TABLE 1
2	ACTUATOR	LCP	UL94V-0, BEIGE
1	HOUSNIG	LCP	UL94V-0, BEIGE
NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS

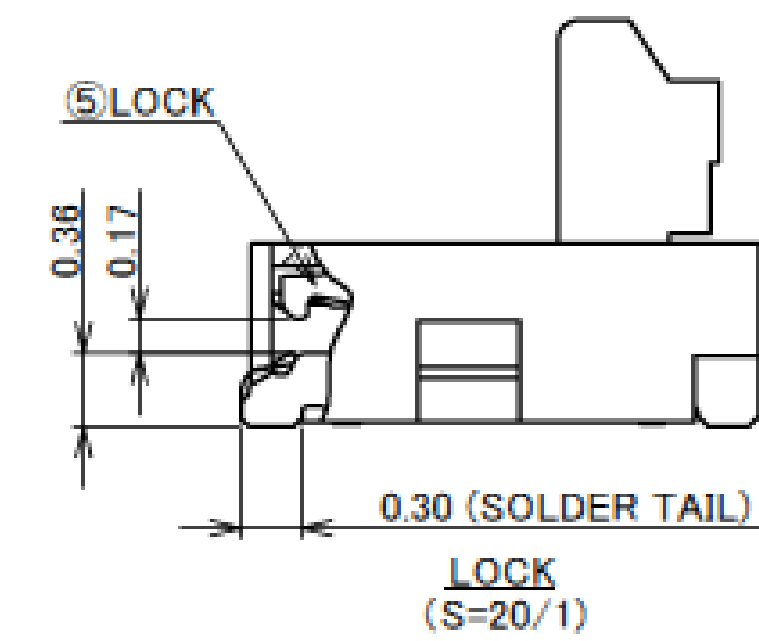
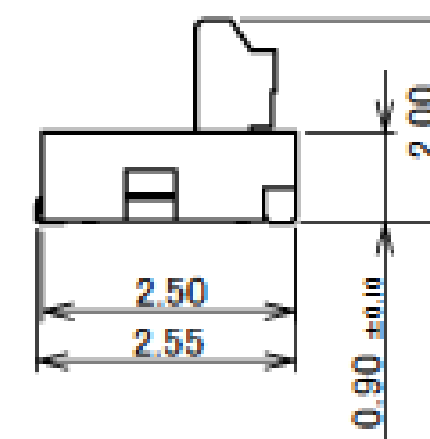
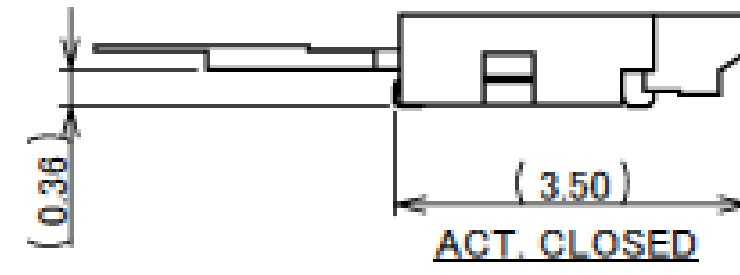
Rev.18

Connector Assembly

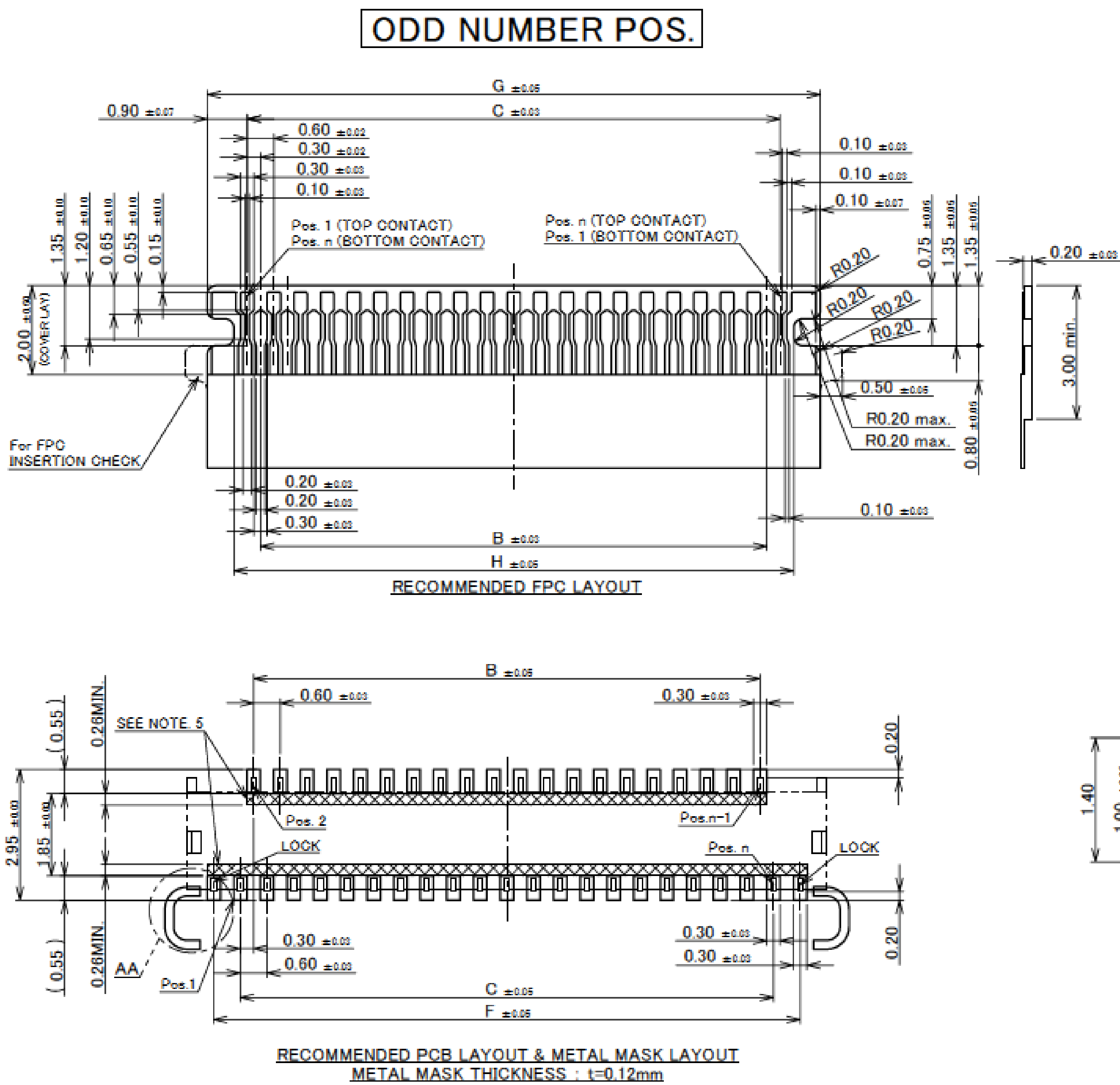


	PART NO.	Pos.	A	B	C	D	E	F
◆	20584-030E-01	30P	11.40	8.40	8.40	10.85	6.85	10.20
◆	20584-034E-01	34P	12.60	9.60	9.60	12.05	8.05	11.40
◆	20584-038E-01	38P	13.80	10.80	10.80	13.25	5.25	12.60
◆	20584-040E-01	40P	14.40	11.40	11.40	13.85	5.85	13.20
◆	20584-050E-01	50P	17.40	14.40	14.40	16.85	8.85	16.20
◆	20584-056E-01	56P	19.20	16.20	16.20	18.65	10.65	18.00

◆ MARK MEANS NOT AVAILABLE.



Rev.18



	PART NO.	Pos.	B	C	F	G	H
◆	20584-029E-01	29P	7.80	8.40	9.60	10.20	9.00
◆	20584-031E-01	31P	8.40	9.00	10.20	10.80	9.60
◆	20584-035E-01	35P	9.60	10.20	11.40	12.00	10.80
◆	20584-037E-01	37P	10.20	10.80	12.00	12.60	11.40
◆	20584-039E-01	39P	10.80	11.40	12.60	13.20	12.00
◆	20584-041E-01	41P	11.40	12.00	13.20	13.80	12.60
◆	20584-045E-01	45P	12.60	13.20	14.40	15.00	13.80
◆	20584-047E-01	47P	13.20	13.80	15.00	15.60	14.40
	20584-051E-01	51P	14.40	15.00	16.20	16.80	15.60
	20584-053E-01	53P	15.00	15.60	16.80	17.40	16.20
	20584-057E-01	57P	16.20	16.80	18.00	18.60	17.40
	20584-061E-01	61P	17.40	18.00	19.20	19.80	18.60
◆	20584-063E-01	63P	18.00	18.60	19.80	20.40	19.20
	20584-071E-01	71P	20.40	21.00	22.20	22.80	21.60

◆ MARK MEANS NOT AVAILABLE.

NOTES

3. MATERIAL

COVER FILM : PI

CONDUCTOR : COPPER(RARE)

BASE FILM : P1

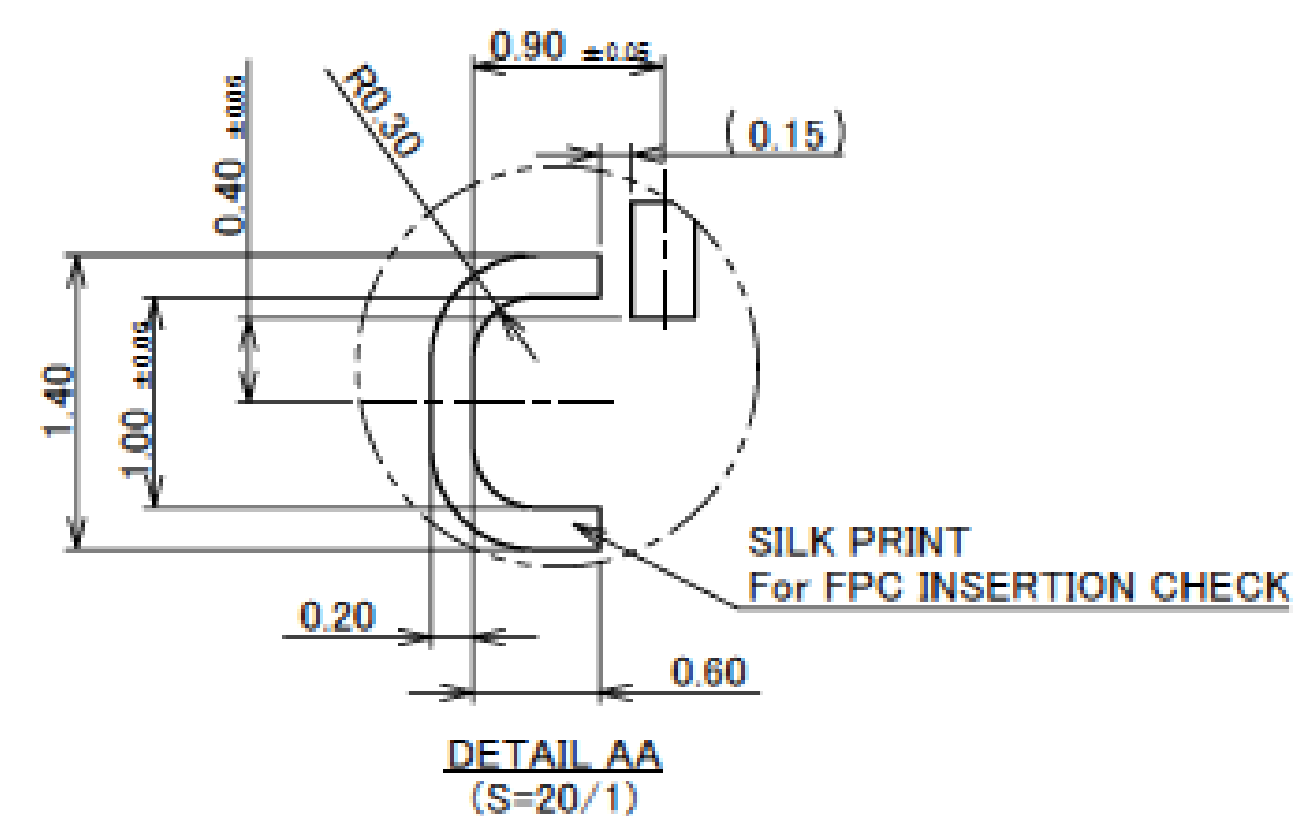
STIFFENER : PI

ADHESIVE: THERMOSETTING ADHESIVE

4. FINISH

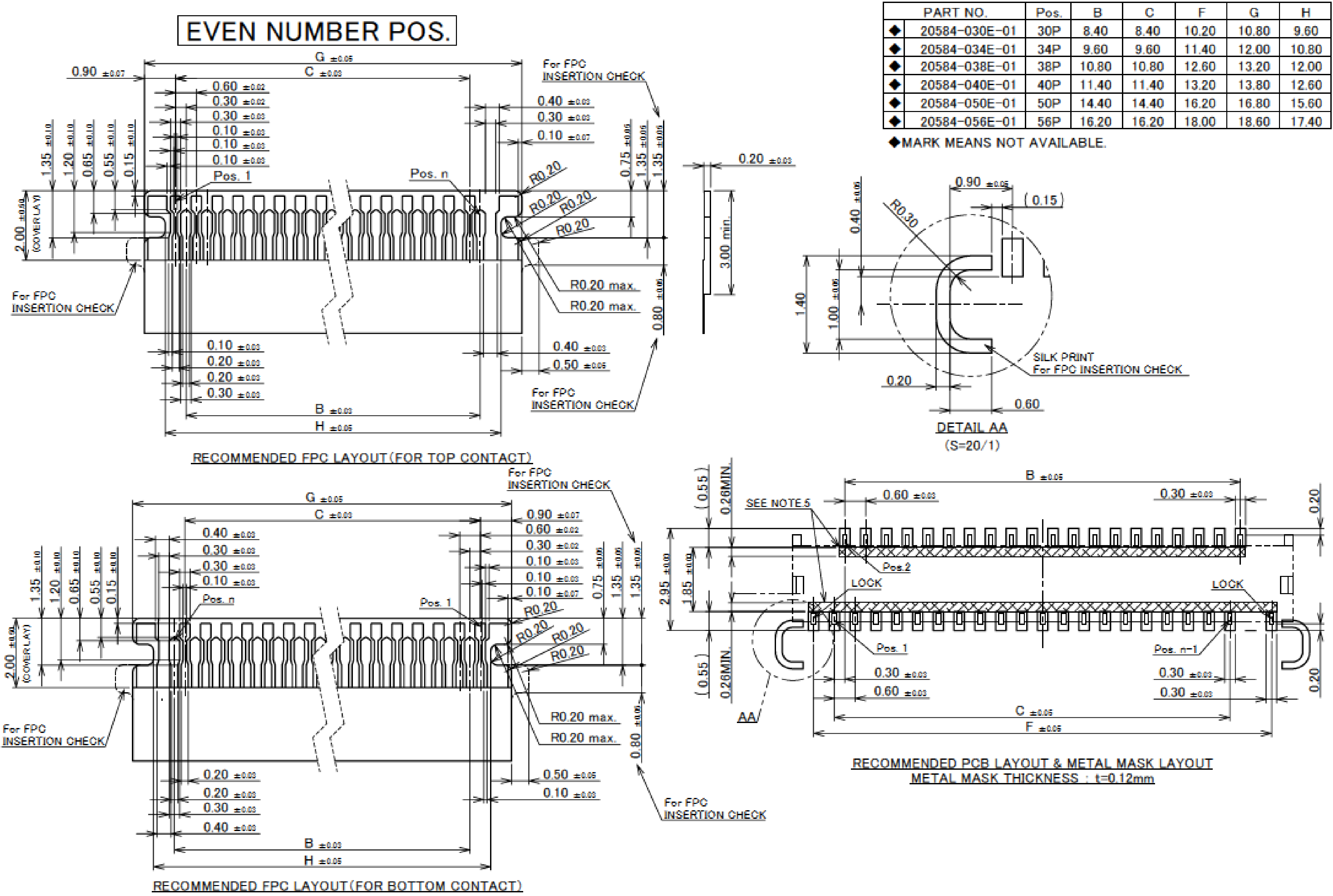
Au OVER Ni UNDER PLATING.

5. SOLDER RESIST SHALL BE APPLIED TO PREVENT SHORT CIRCUITS WHEN PLACING SIGNAL LINES ON GROUND AREA.

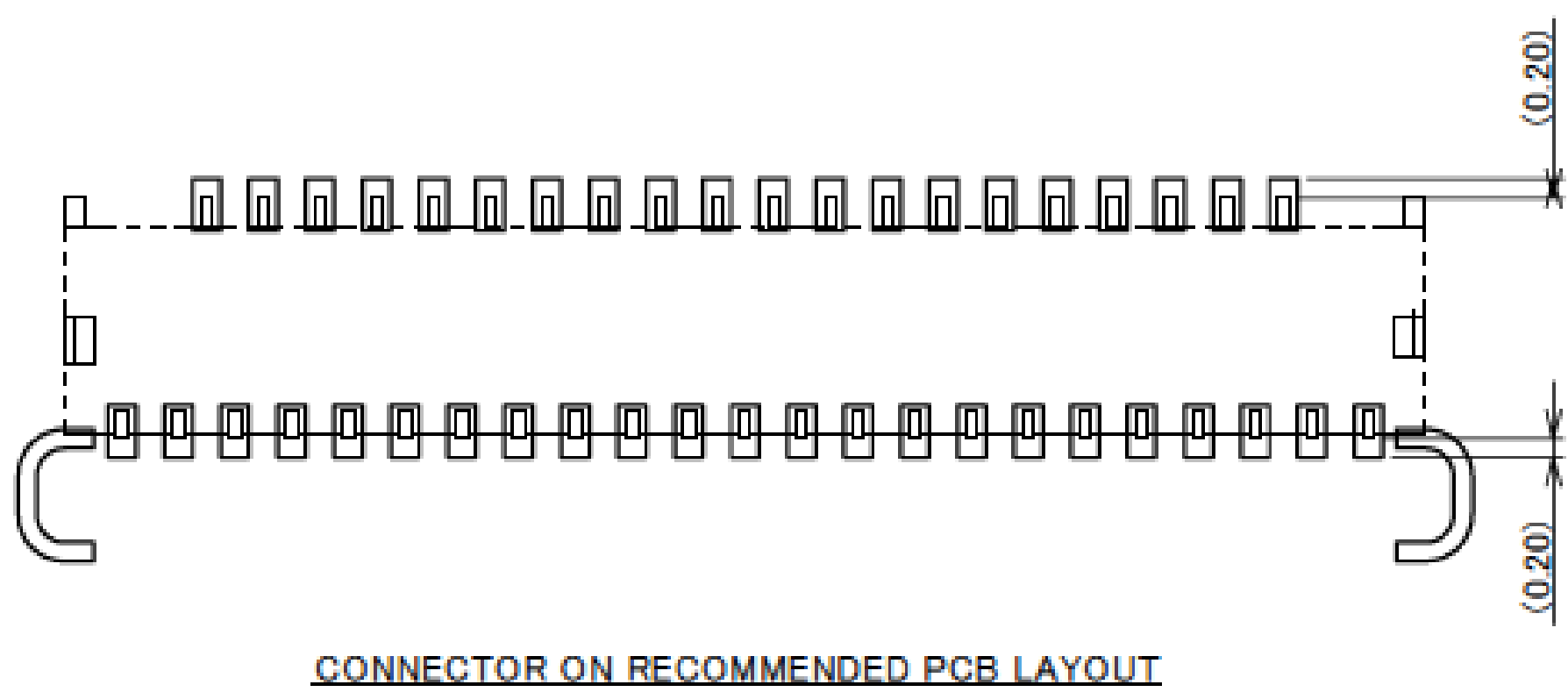


Rev.18

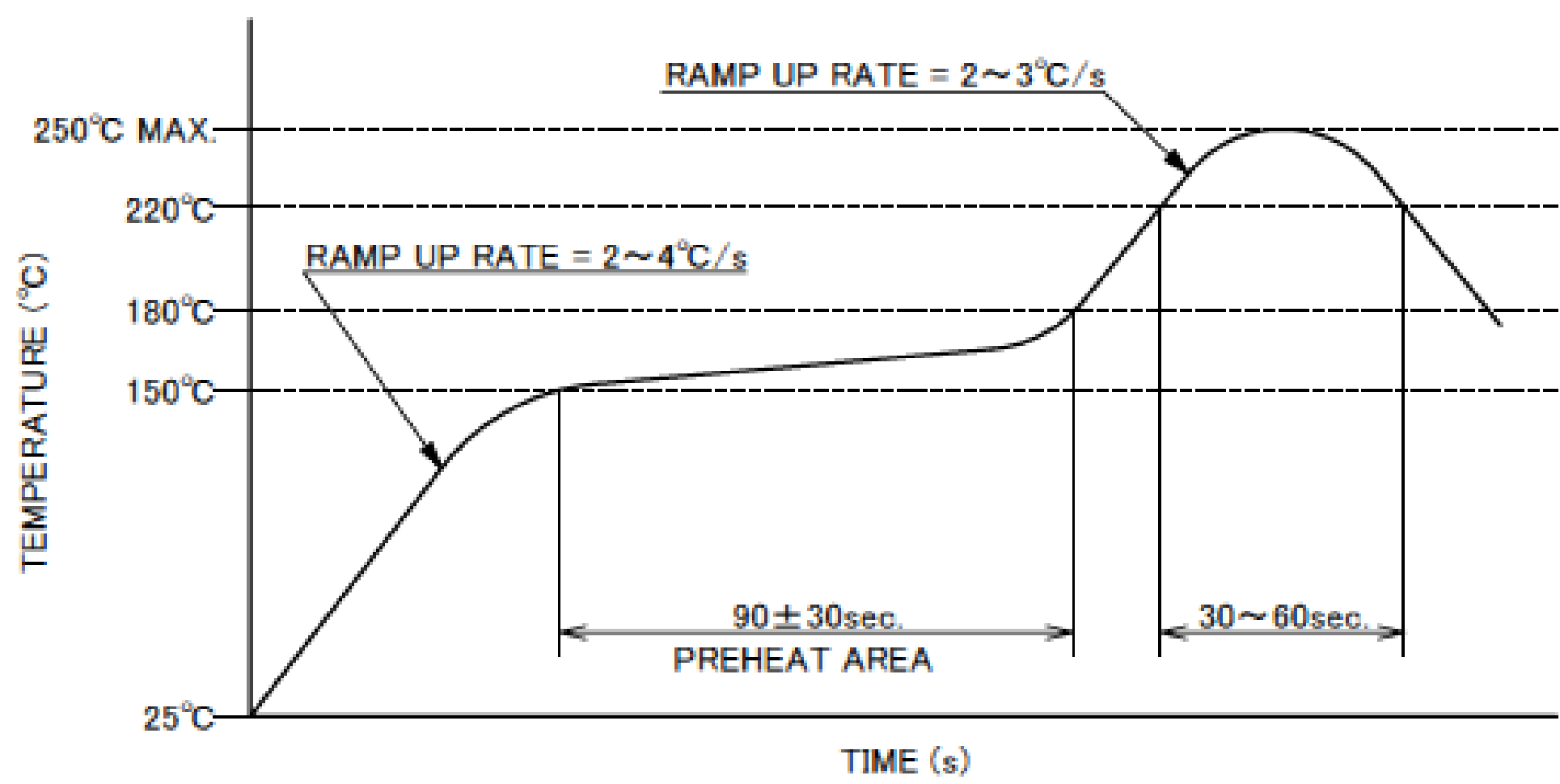
Connector Assembly



Rev.18



CONNECTOR ON RECOMMENDED PCB LAYOUT



REFLOW TEMPERATURE PROFILE
SENJU METAL INDUSTRY CO., LTD. : M705-SHF(Sn96.5 Ag3.0 Cu0.5)

Rev.18

Connector Assembly

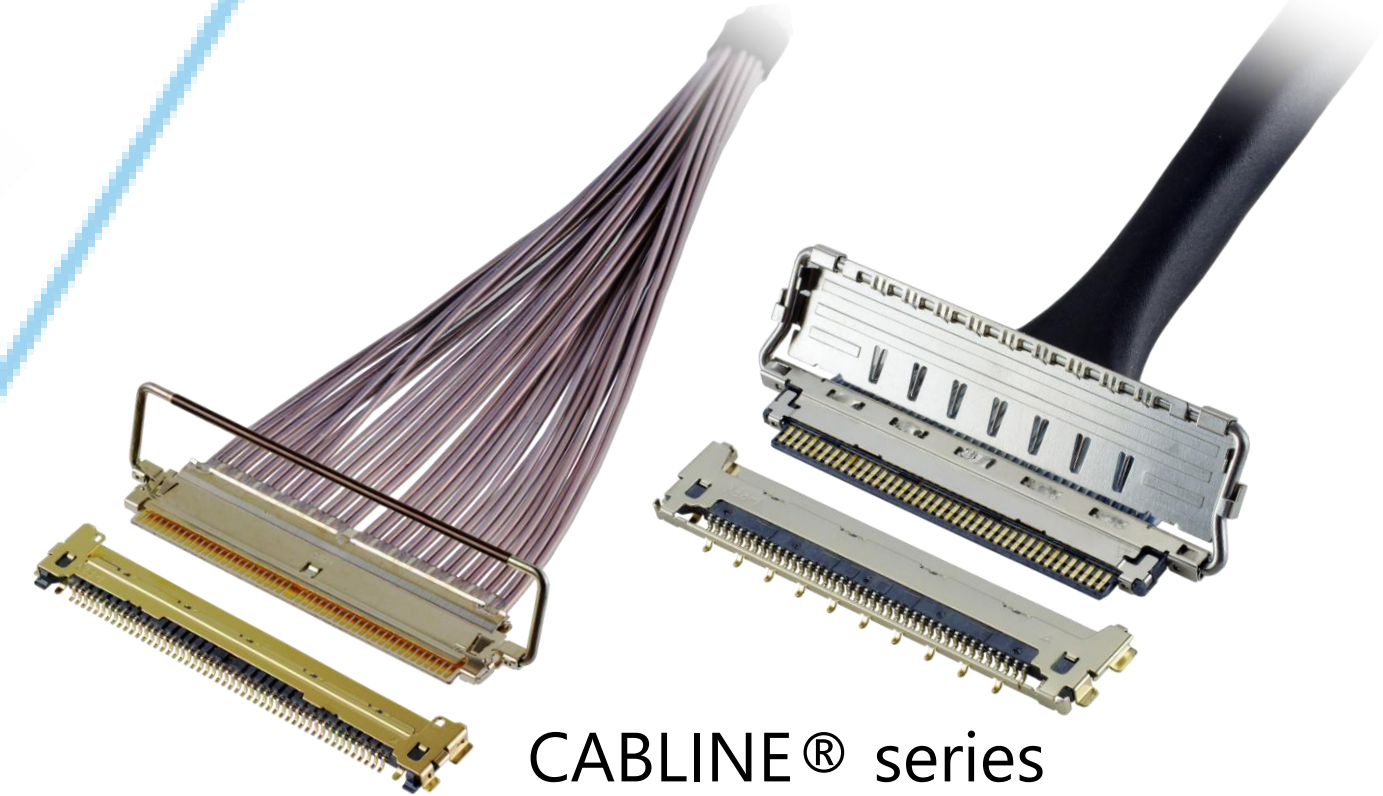
ITEMS	SPECIFICATION
RATING VOLTAGE	50V AC (PER CONTACT)
RATING AMPERAGE	0.3A DC (PER CONTACT)
OPERATING TEMPERATURE	233~358K (-40℃~+85℃)
OPERATING HUMIDITY	20~80%RH
CONTACT RESISTANCE	INITIAL : 60mohm MAX. / AFTER TEST : $\triangle$ 40mohm MAX.
INSULATION RESISTANCE	100Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	AC250V 1min
DURABILITY	20 CYCLES
ACTUATOR LOCKING FORCE (INITIAL / 20 CYCLES)	INITIAL / 20 CYCLES 0.21N (21gf) × (n + 2) MAX.
ACTUATOR UNLOCKING FORCE (INITIAL / 20 CYCLES)	INITIAL / 20 CYCLES 0.014N (1.4gf) × (n + 2) MIN.
FPC RETENTION FORCE (INITIAL / AFTER TEST)	INITIAL: 0.13N (13gf) × n + 1.0N MIN. / AFTER TEST: 0.10N (10gf) × n + 1.0N MIN.
COPLANARITY	0.10 MAX.
PRODUCT SPECIFICATION	PRS-1789
TEST REPORT	TR-13022
PACKING STANDARD	PST-13013
INSTRUCTION MANUAL	HIM-12007
APPEARANCE CRITERIA No.	QLS-A***

※ “n” IS THE NUMBER OF PIN

Custom Connectors Available

RF Connectors

MHF® series



CABLINE® series

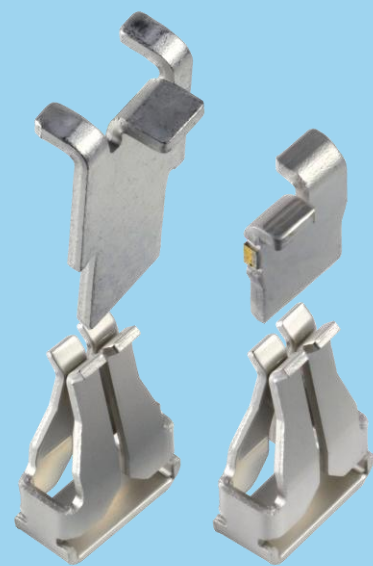


Micro-Coaxial/Twinaxial Connectors

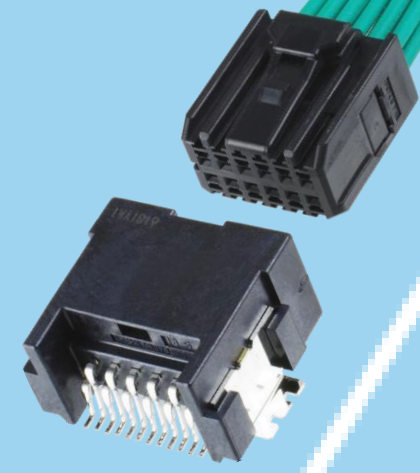


Wire-to-Board Connectors/ Terminals

AP series



ISH® series



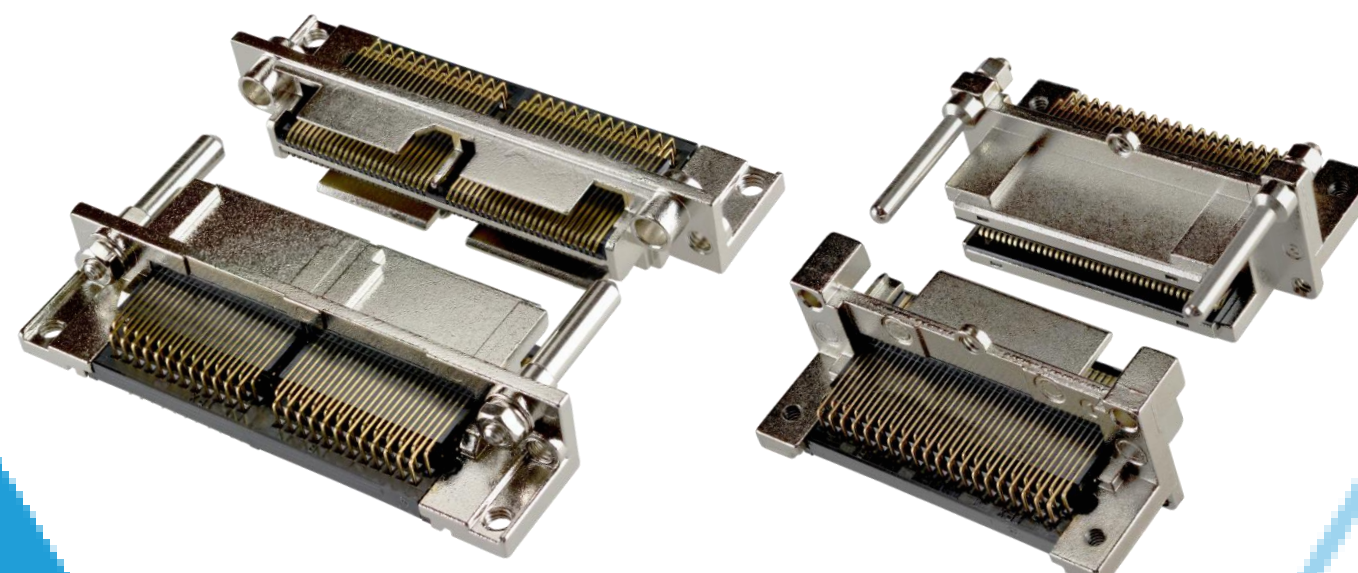
NOVASTACK® series



Board-to-Board Connectors



I/O Connectors



MINIDOCK™ series

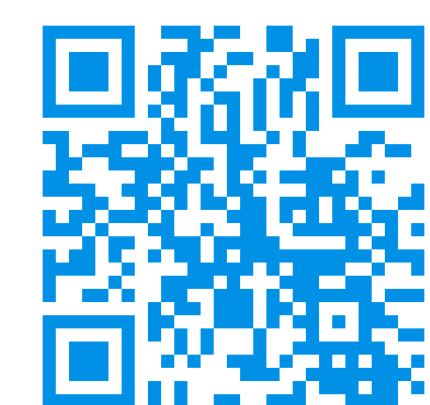
MINIFLEX® series EVAFLEX® series



FPC/FFC Connectors



Inquiry



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Contact your sales representative
or more detailed information.

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