

# MINIFLEX® 3-BFN LK

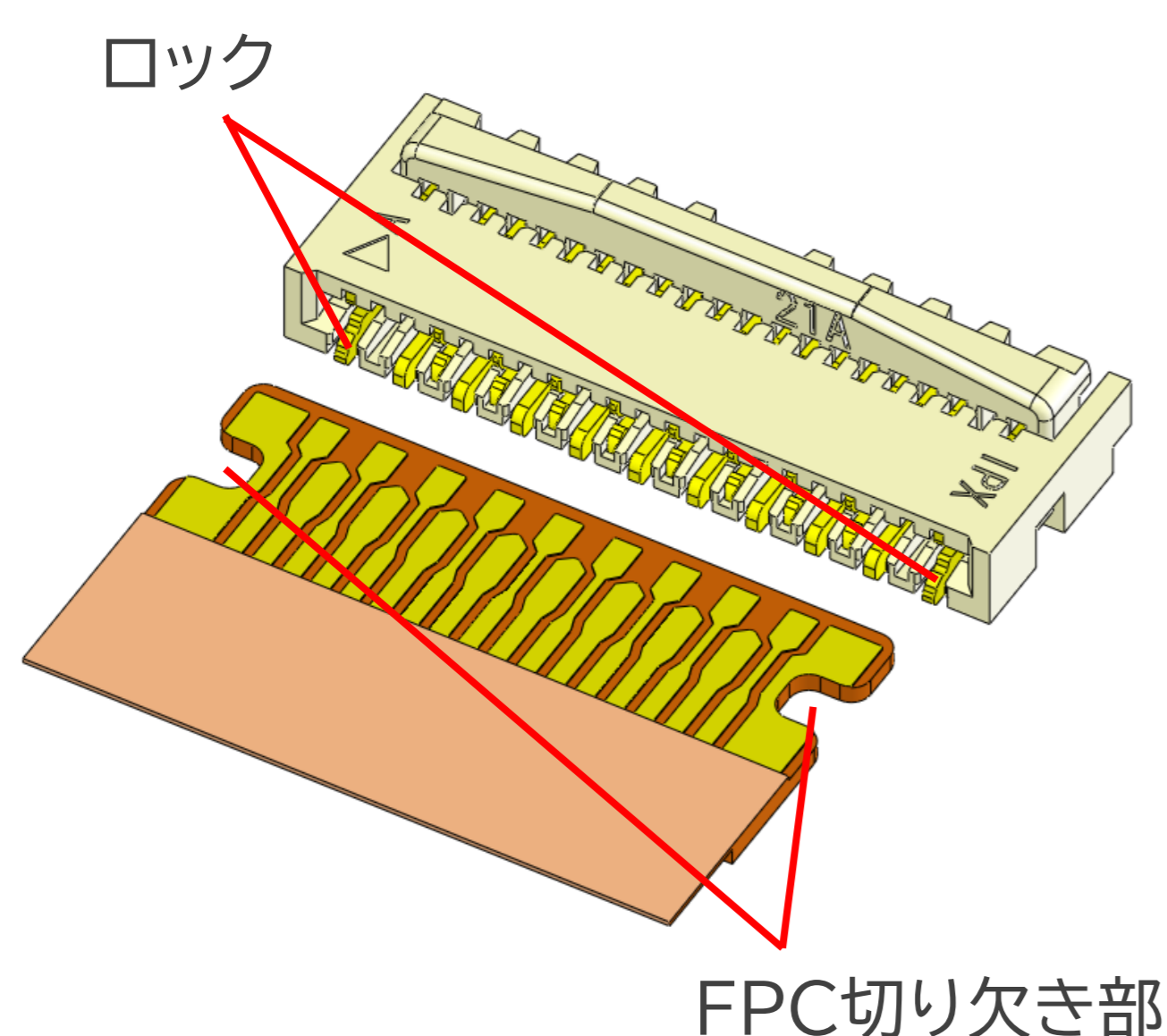
メカニカルロック、低背（高さ = 0.9 mm）、0.3 mmピッチ、水平嵌合、バックフリップ

Product Specifications:		Short Actuator	Long Actuator	Applicable FPC/FFC:	
Board Pitch (mm)		0.3		FPC/FFC Contact Pitch	0.3
Wiping Length (mm)		Contact A: 0.9 Contact B: 0.45		FPC/FFC Contact Point	Top and Bottom
Size (mm)	Height	0.90 +/- 0.10		FPC/FFC Thickness (mm)	0.2 +/- 0.03
	Width	Formula: 2.1 + (0.3*?p)			
	Depth	Open: 2.55	Close: 3	Close: 3.5	
Pin counts	Range	9-37 (odd)	29-71 (odd)		
	Available	9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37	51, 53, 57, 61, 71		

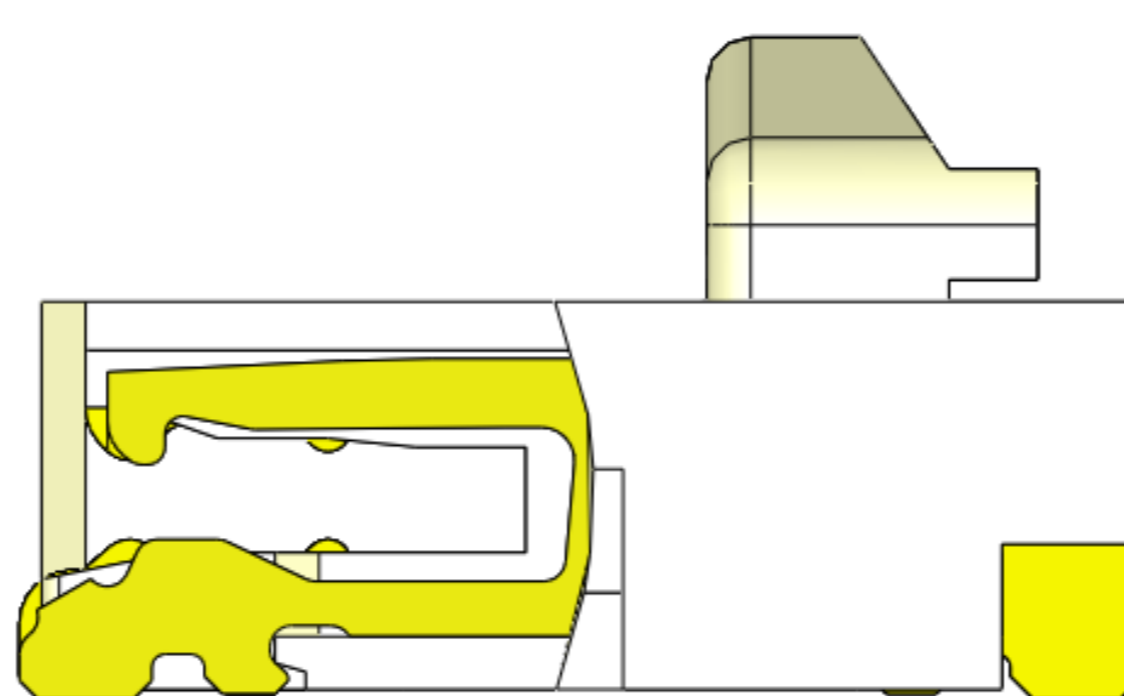
\*記載のない極数の対応状況についてはお問い合わせください。



## ▶ メカニカルロックによる高FPC保持力



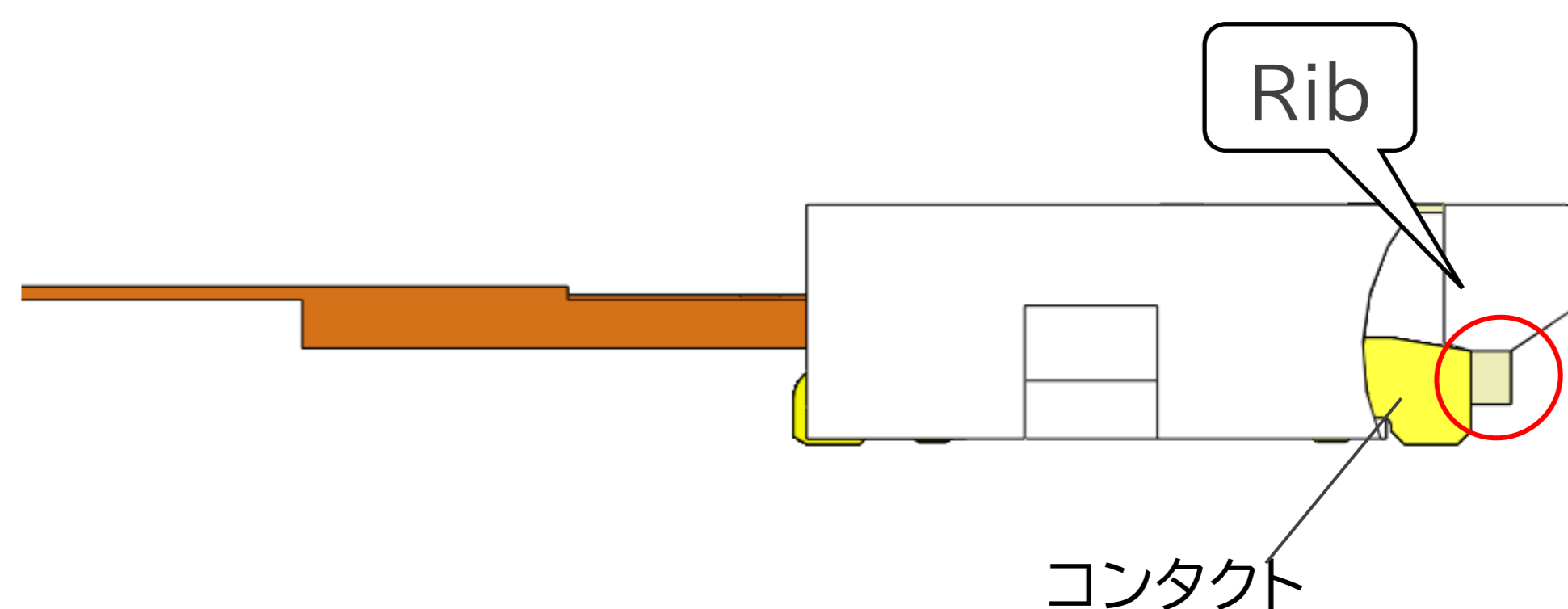
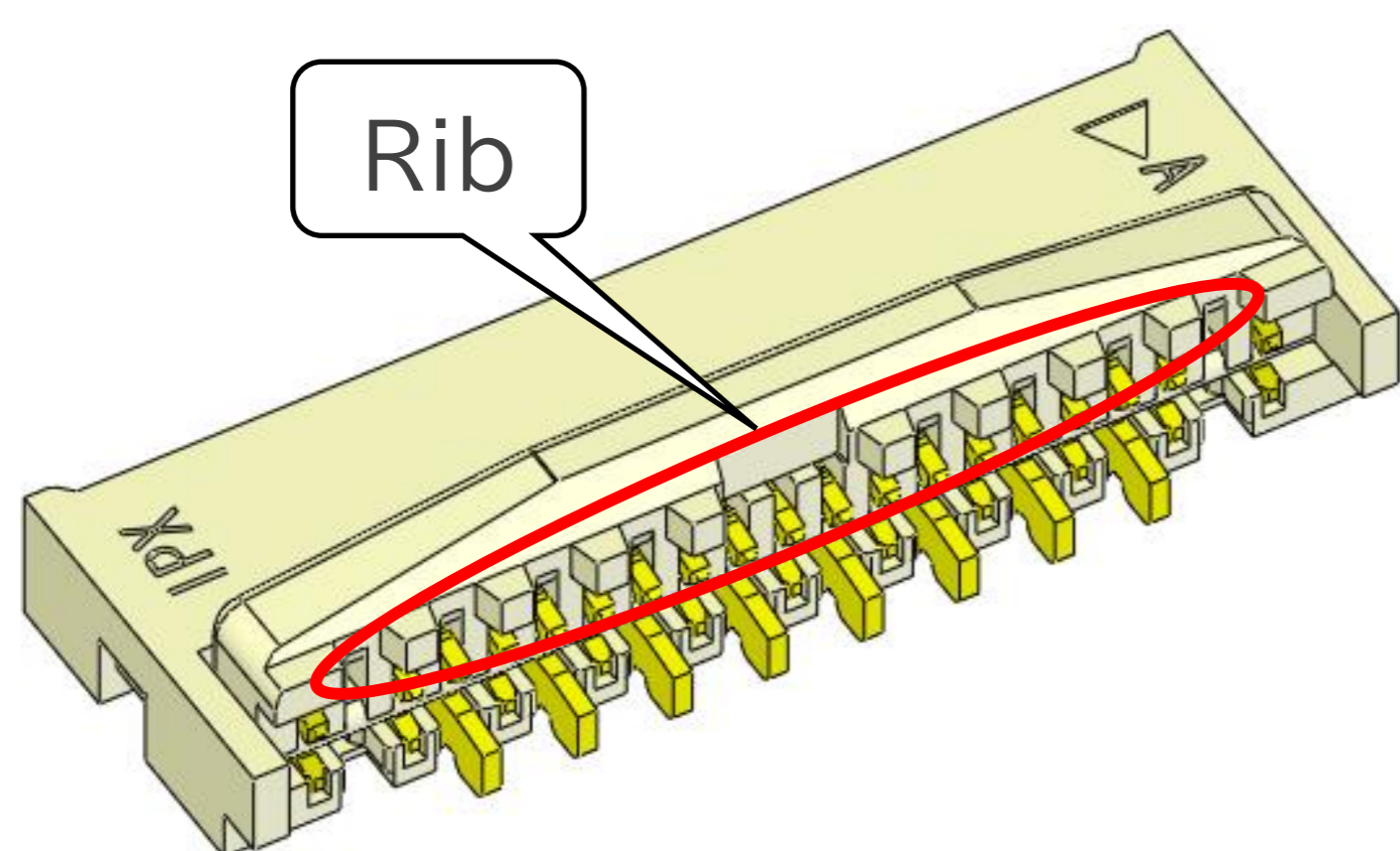
FPCロックメカニズムによる  
高FPC保持力



FPC 保持力比較 (19 p)

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

## ▶ コンタクト変形防止設計

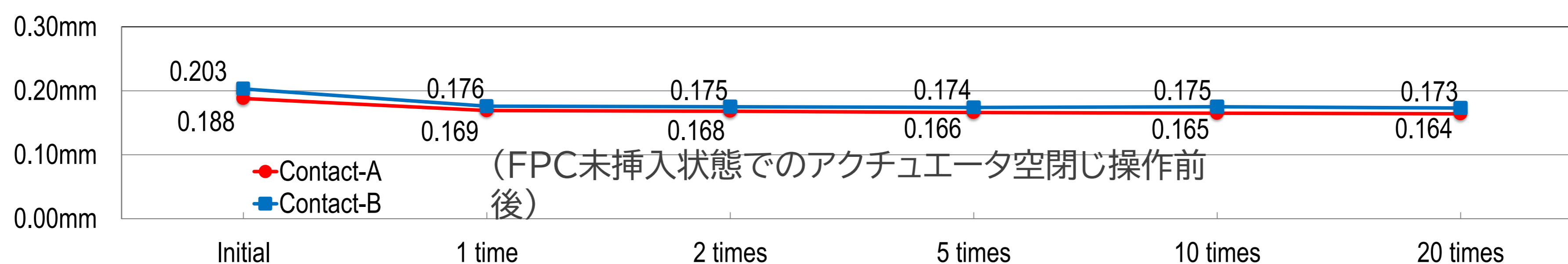


アクチュエータ操作時に引っ掛かりなどからコンタクトを保護するRibs構造

## ▶ FPC未挿入状態でのアクチュエータ空閉じ操作

SMTプロセス後に、もしもFPC未挿入状態でアクチュエータを操作してしまった場合でも十分にコネクタとして機能します

- FPC未挿入状態でのアクチュエータ空閉じ操作前後のコンタクト接点間寸法（表図 MINIFLEX® 3-BFN LK 35 pins）

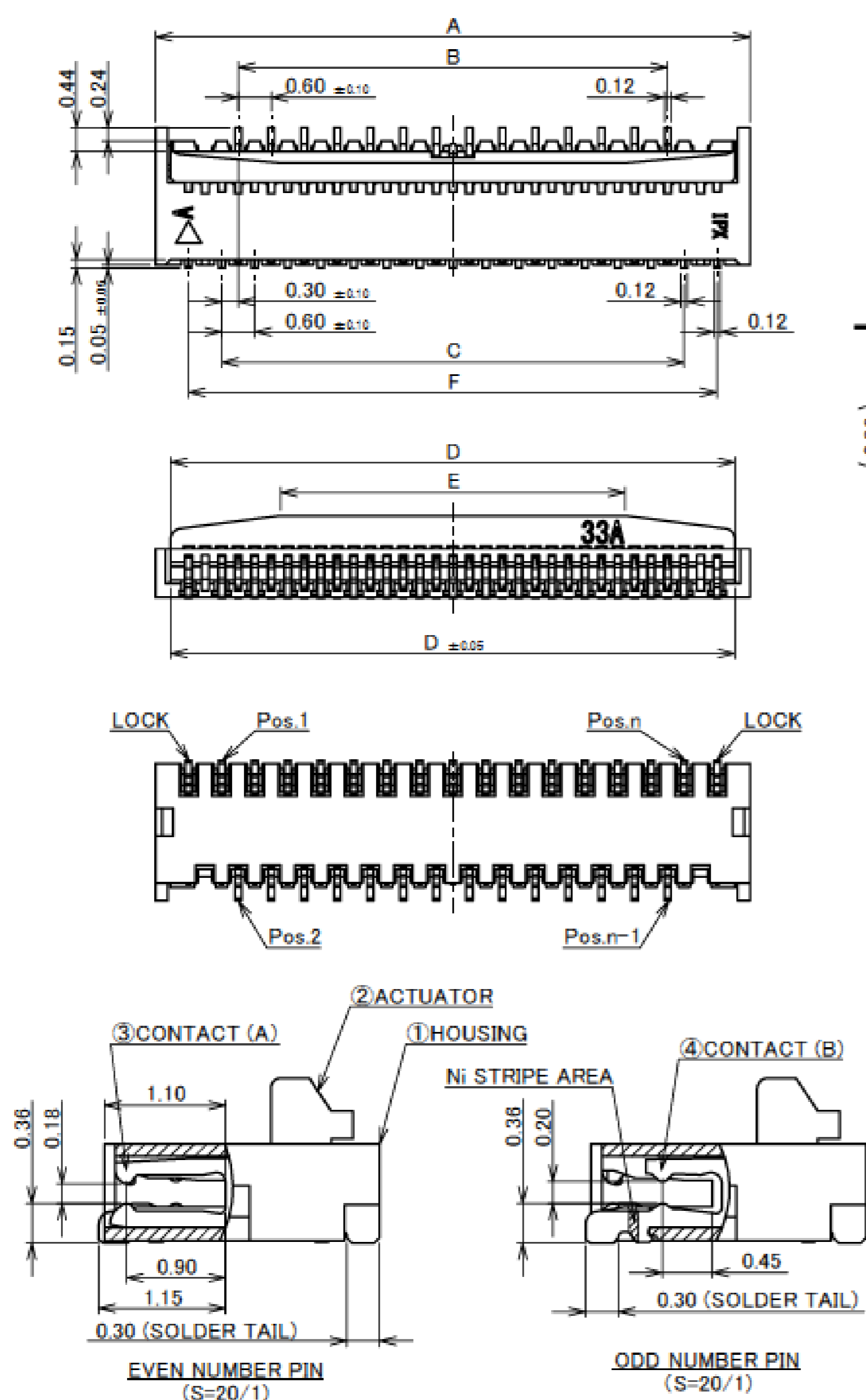


- FPC挿入力は上昇します
- FPC保持力に大きな変化はありません

# Component Parts Details

## Connector Assembly

Recommended P/N 20599-0\*\*E-01



PART NO.	Pos.	A	B	C	D	E	F
20599-009E-01	9P	4.80	1.80	2.40	4.25	2.25	3.60
20599-011E-01	11P	5.40	2.40	3.00	4.85	2.85	4.20
20599-013E-01	13P	6.00	3.00	3.60	5.45	3.45	4.80
20599-015E-01	15P	6.60	3.60	4.20	6.05	4.05	5.40
20599-017E-01	17P	7.20	4.20	4.80	6.65	4.65	6.00
20599-019E-01	19P	7.80	4.80	5.40	7.25	5.25	6.60
20599-021E-01	21P	8.40	5.40	6.00	7.85	5.85	7.20
20599-023E-01	23P	9.00	6.00	6.60	8.45	6.45	7.80
20599-025E-01	25P	9.60	6.60	7.20	9.05	7.05	8.40
20599-027E-01	27P	10.20	7.20	7.80	9.65	7.65	9.00
20599-029E-01	29P	10.80	7.80	8.40	10.25	8.25	9.60
20599-031E-01	31P	11.40	8.40	9.00	10.85	8.85	10.20
20599-033E-01	33P	12.00	9.00	9.60	11.45	9.45	10.80
20599-035E-01	35P	12.60	9.60	10.20	12.05	10.05	11.40
20599-037E-01	37P	13.20	10.20	10.80	12.65	10.65	12.00

NOTES  
1. 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

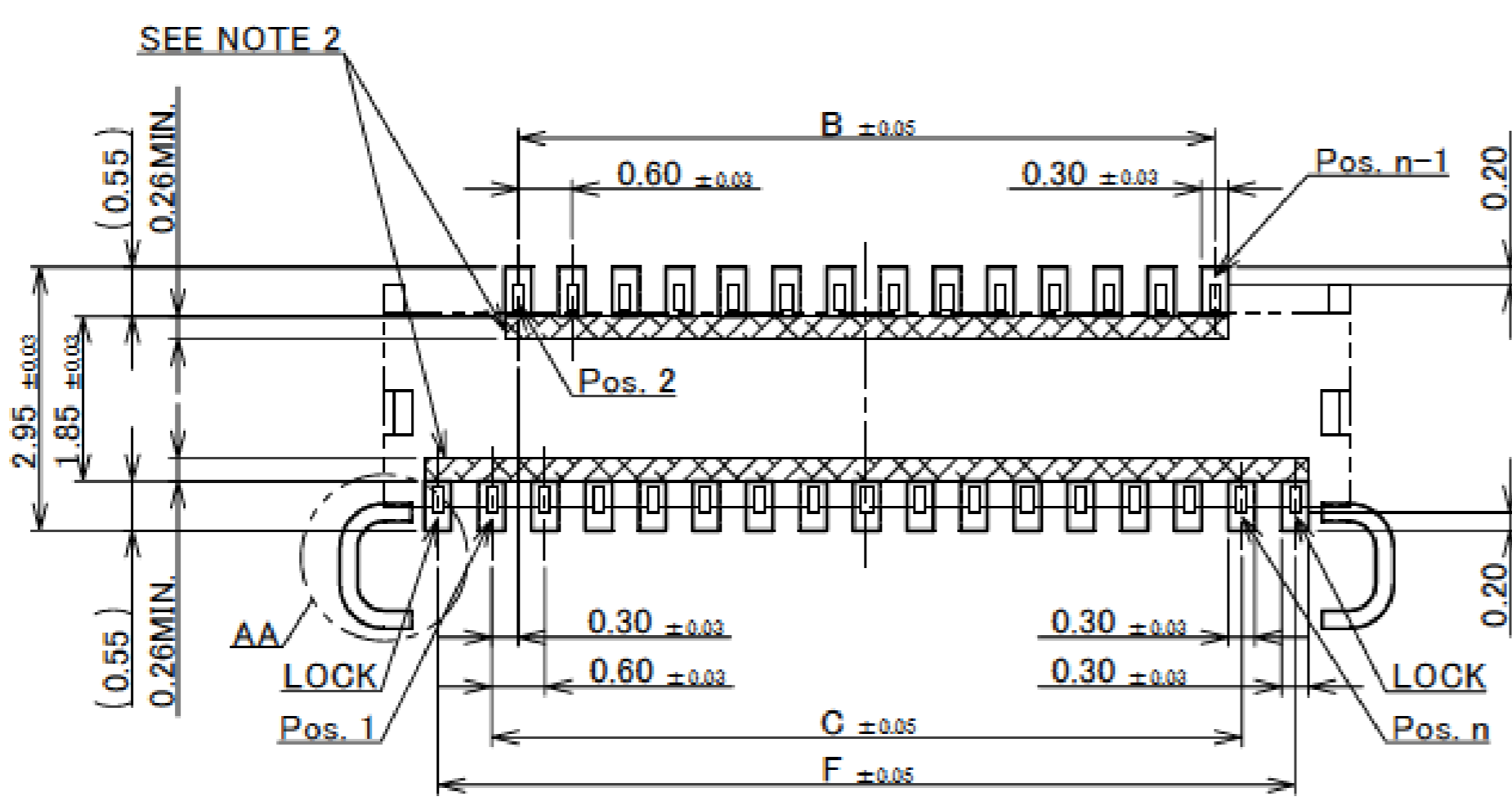
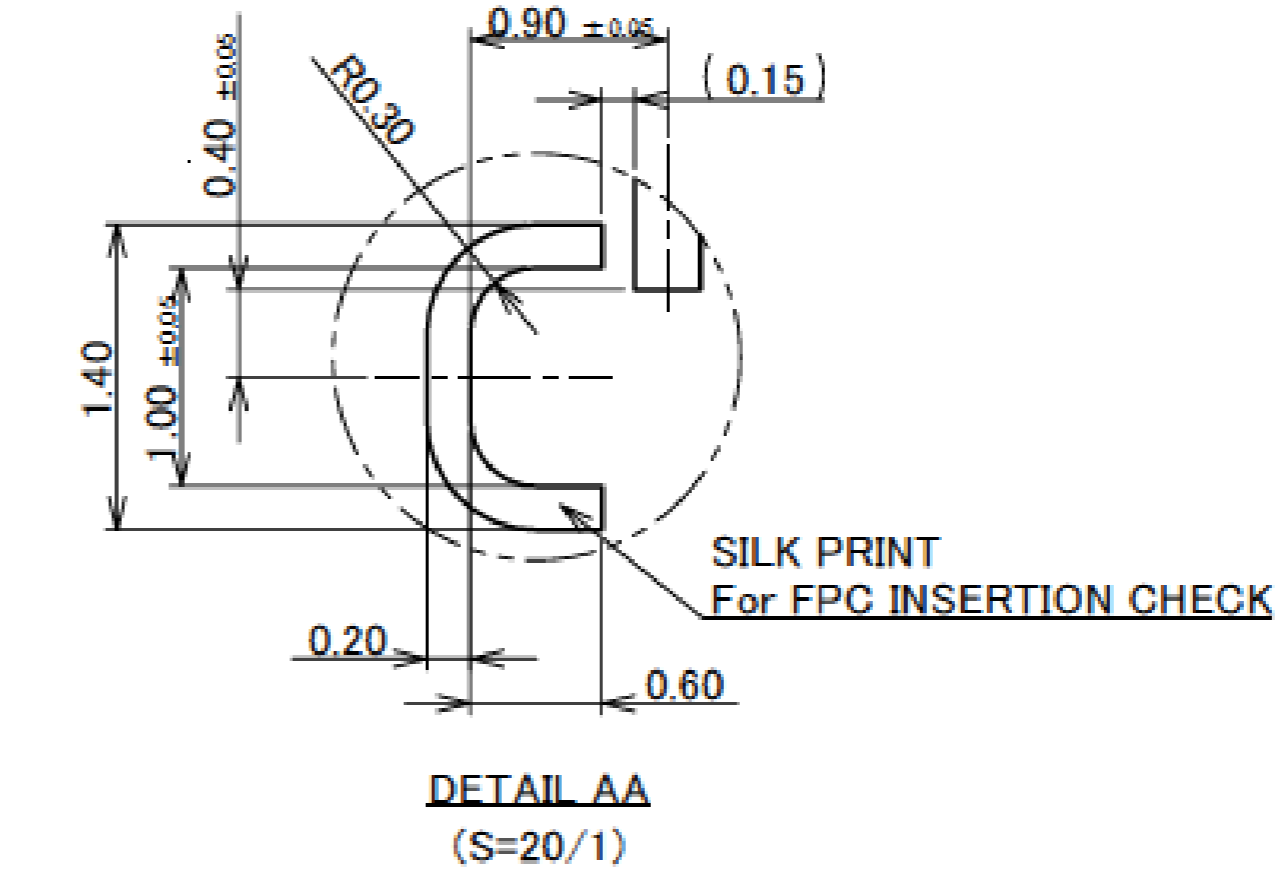
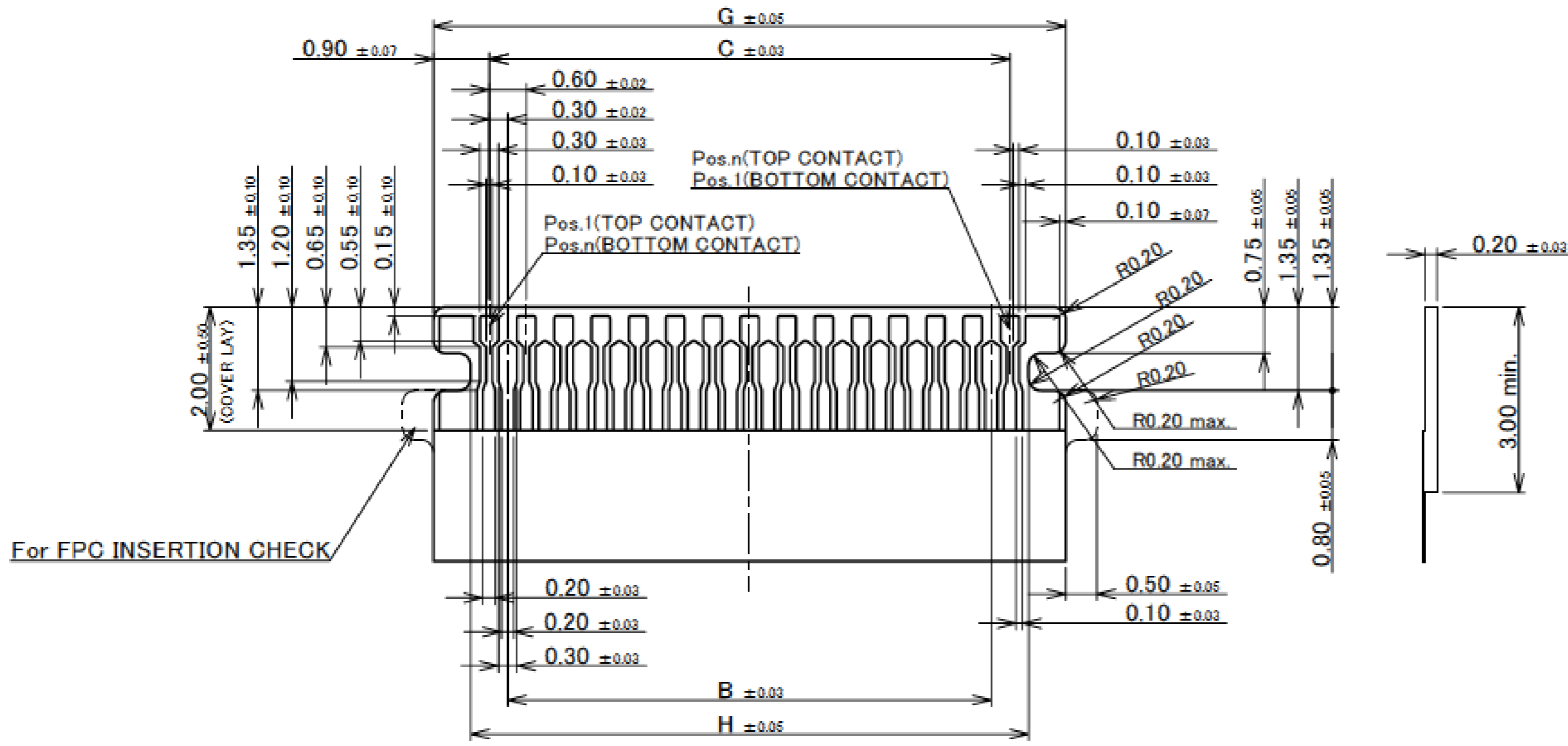
PART NO.	FINISH		
20599-0**E-01	CONTACT AREA : Au 0.10 μm MIN. OVER Ni 1.00 μm MIN. SOLDERING AREA : Au 0.03 μm MIN. OVER Ni 1.00 μm MIN.		
5	LOCK	PHOSPHOR BRONZE SOLDERING AREA : Au 0.03 μm MIN. OVER Ni 1.00 μm MIN.	
4	CONTACT (B)	PHOSPHOR BRONZE SEE TABLE 1, WITH Ni STRIPE	
3	CONTACT (A)	PHOSPHOR BRONZE SEE TABLE 1	
2	ACTUATOR	LCP UL94V-0, BEIGE	
1	HOUSING	LCP UL94V-0, BEIGE	
NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS



# Connector Assembly

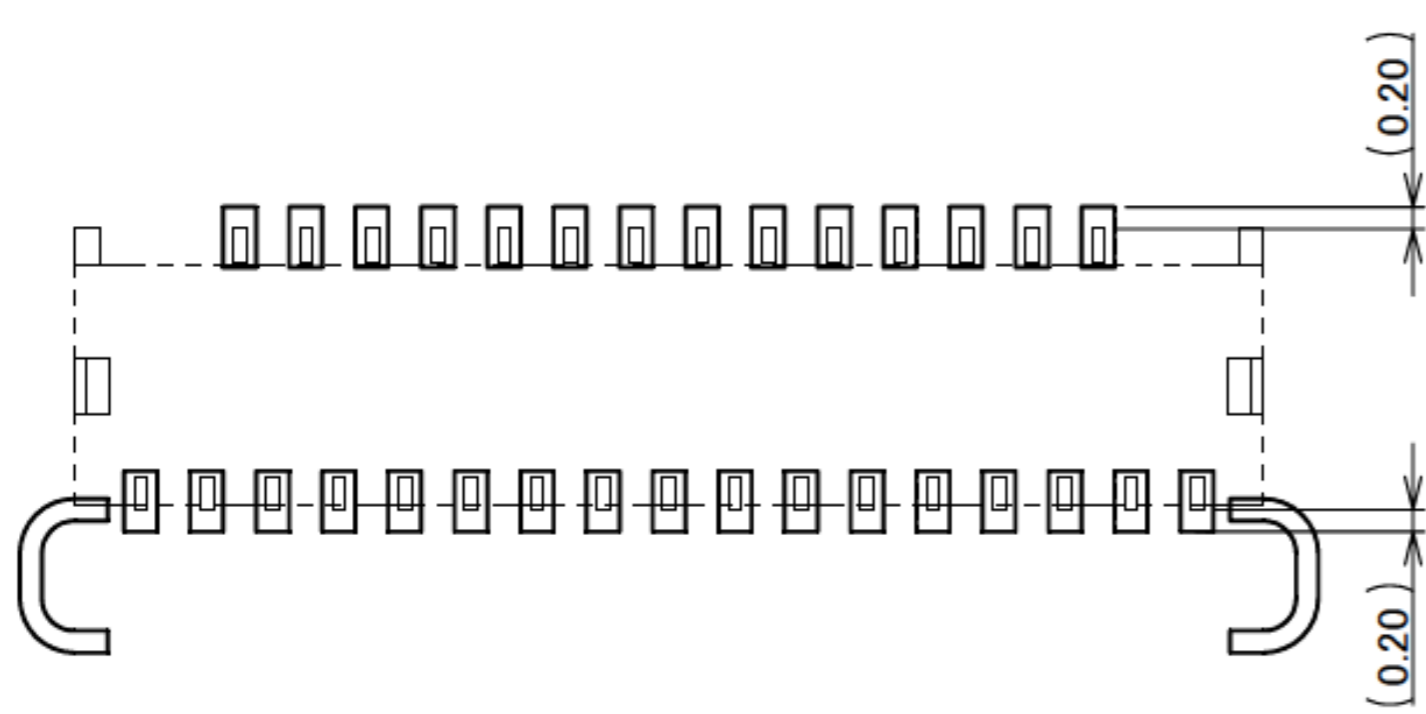
PART NO.	Pos.	B	C	F	G	H
20599-009E-01	9P	1.80	2.40	3.60	4.20	3.00
20599-011E-01	11P	2.40	3.00	4.20	4.80	3.60
20599-013E-01	13P	3.00	3.60	4.80	5.40	4.20
20599-015E-01	15P	3.60	4.20	5.40	6.00	4.80
20599-017E-01	17P	4.20	4.80	6.00	6.60	5.40
20599-019E-01	19P	4.80	5.40	6.60	7.20	6.00
20599-021E-01	21P	5.40	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.

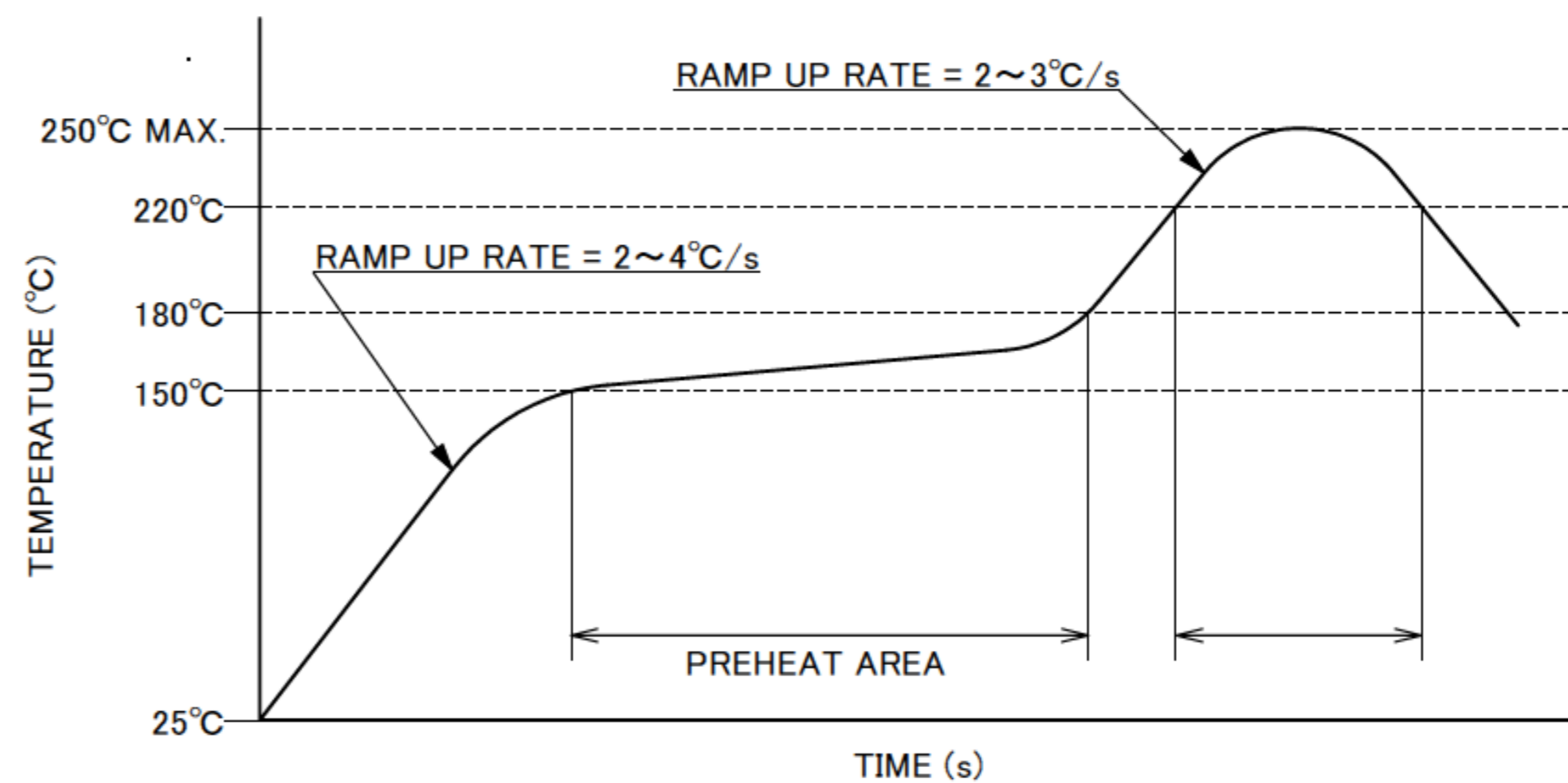


RECOMMENDED PCB LAYOUT & METAL MASK LAYOUT  
 METAL MASK THICKNESS :  $t=0.12\text{mm}$

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

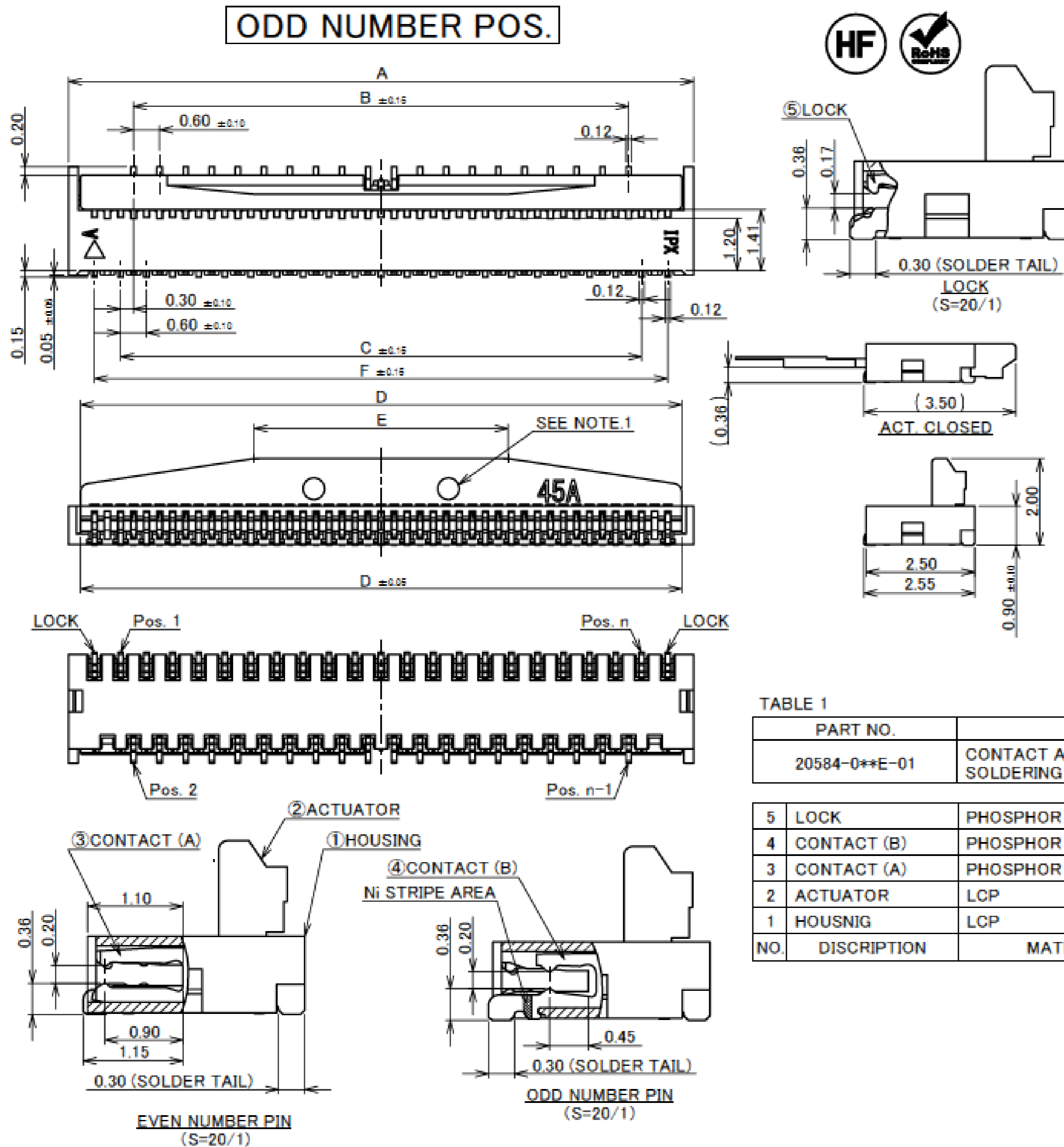
ITEMS	SPECIFICATION
RATING VOLTAGE	50V AC/DC (PER CONTACT)
RATING AMPERAGE	0.3A DC (PER CONTACT)
OPERATING TEMPERATURE	233~358K(-40°C~85°C)
OPERATING HUMIDITY	20~80%RH (NON-CONDENSING)
CONTACT RESISTANCE	INITIAL : 60mohm MAX. / AFTER TEST : $\triangleleft$ 40mohm MAX.
INSULATION RESISTANCE	100Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	AC250V 1min
DURABILITY	20TH CYCLES
ACTUATOR LOCKING FORCE (INITIAL / 20TH CYCLES)	INITIAL / 20TH CYCLES : 0.3N(31gf) $\times$ (n + 2) MAX.
ACTUATOR UNLOCKING FORCE (INITIAL / 20TH CYCLES)	INITIAL / 20TH CYCLES : 0.02N(2gf) $\times$ (n + 2) MIN.
FPC RETENTION FORCE (INITIAL / AFTER TEST)	INITIAL : 0.13N(13gf) $\times$ n + 1.0N MIN. / AFTER TEST : 0.10N(10gf) $\times$ 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.



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.

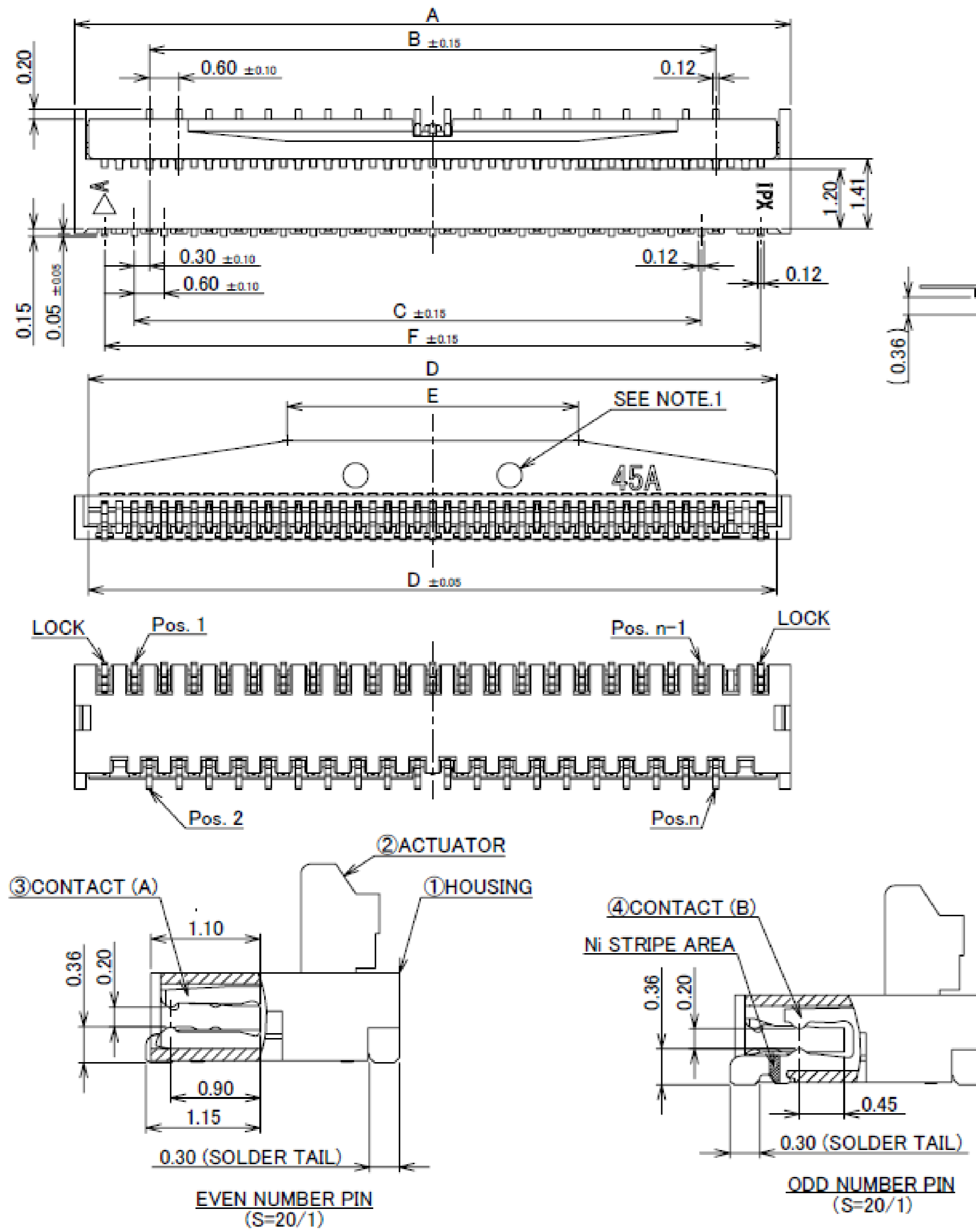
TABLE 1

PART NO.	FINISH		
20584-0**E-01	CONTACT AREA : Au 0.10 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m MIN. SOLDERING AREA : Au 0.03 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m MIN.		
5	LOCK	PHOSPHOR BRONZE	SOLDERING AREA : Au 0.03 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m 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.17

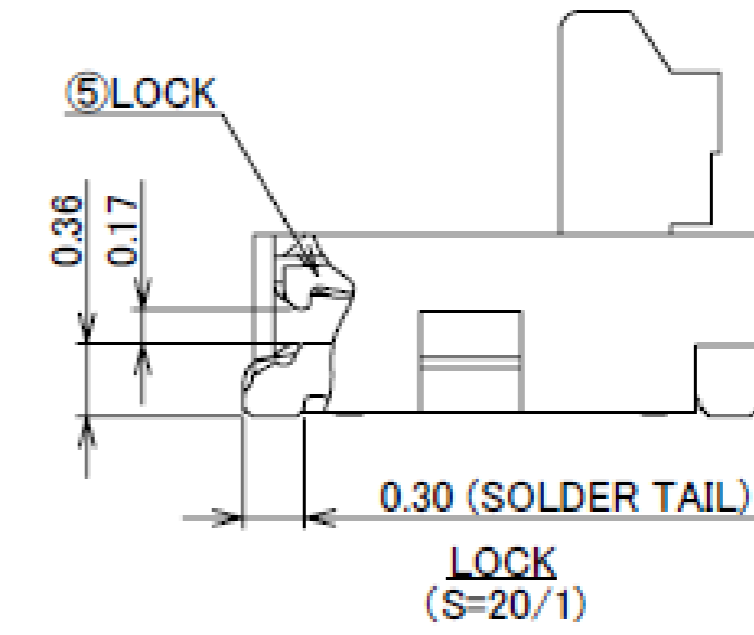
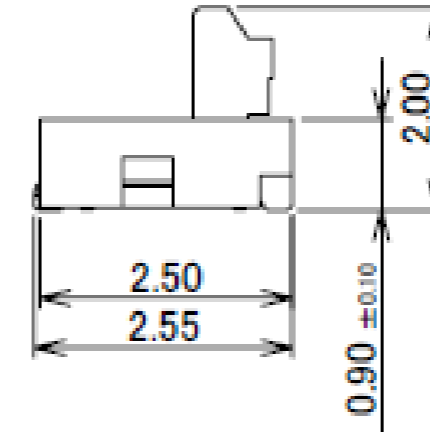
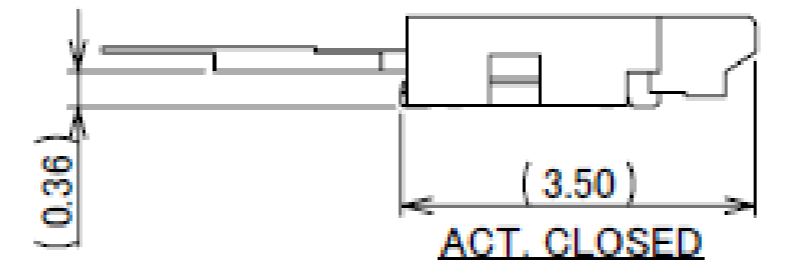
# Connector Assembly

## EVEN NUMBER POS.



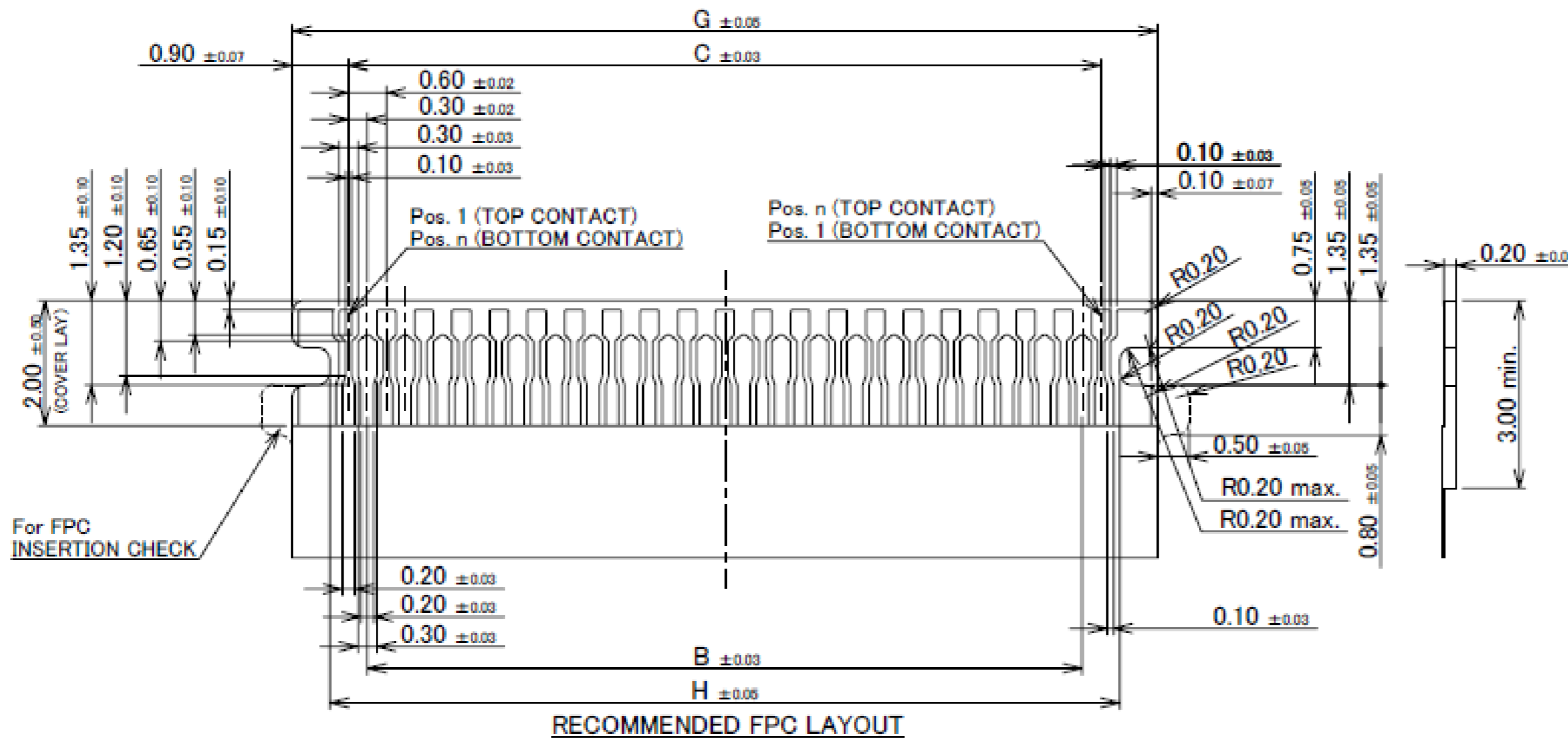
PART NO.	Pos.	A	B	C	D	E	F
◆ 20584-030E-01	30P	11.40	8.40	8.40	10.85	6.85	10.20
◆ 20584-034E-01	34P	12.60	9.60	9.60	12.05	8.05	11.40
◆ 20584-038E-01	38P	13.80	10.80	10.80	13.25	5.25	12.60
◆ 20584-040E-01	40P	14.40	11.40	11.40	13.85	5.85	13.20
◆ 20584-050E-01	50P	17.40	14.40	14.40	16.85	8.85	16.20
◆ 20584-056E-01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

◆ MARK MEANS NOT AVAILABLE.



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## ODD NUMBER POS.



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

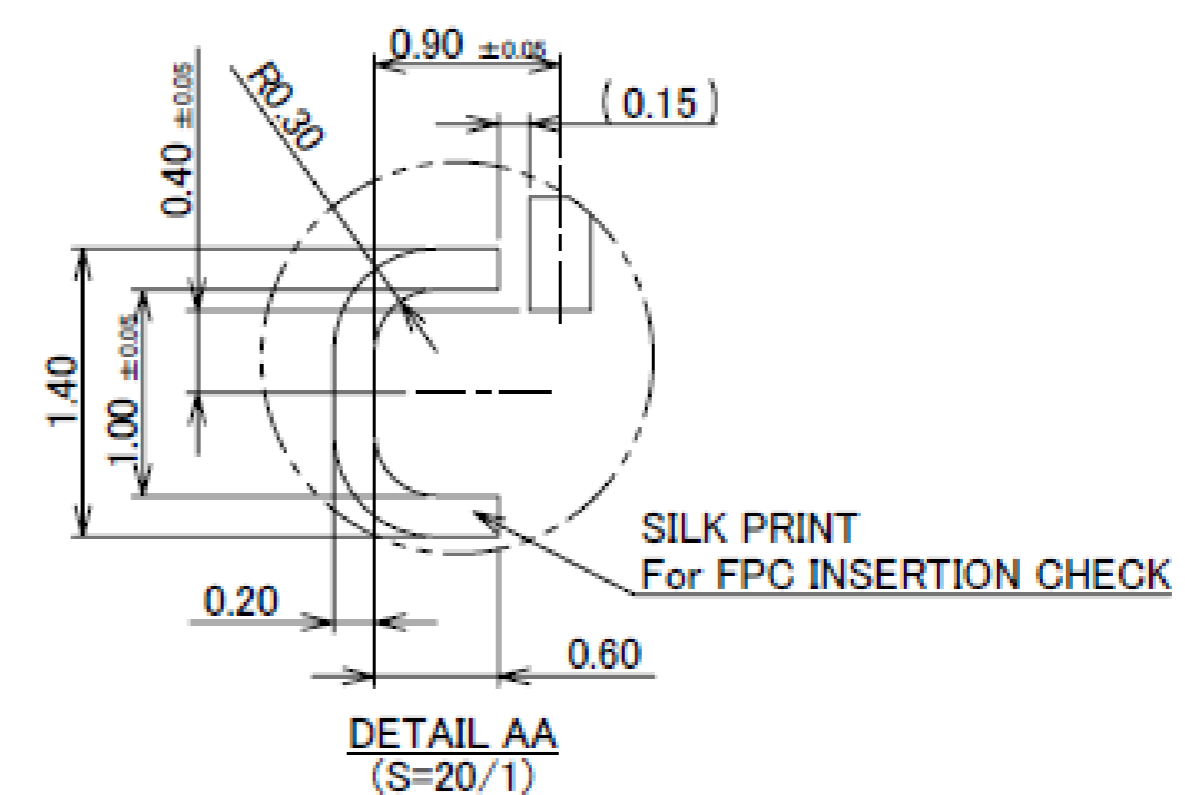
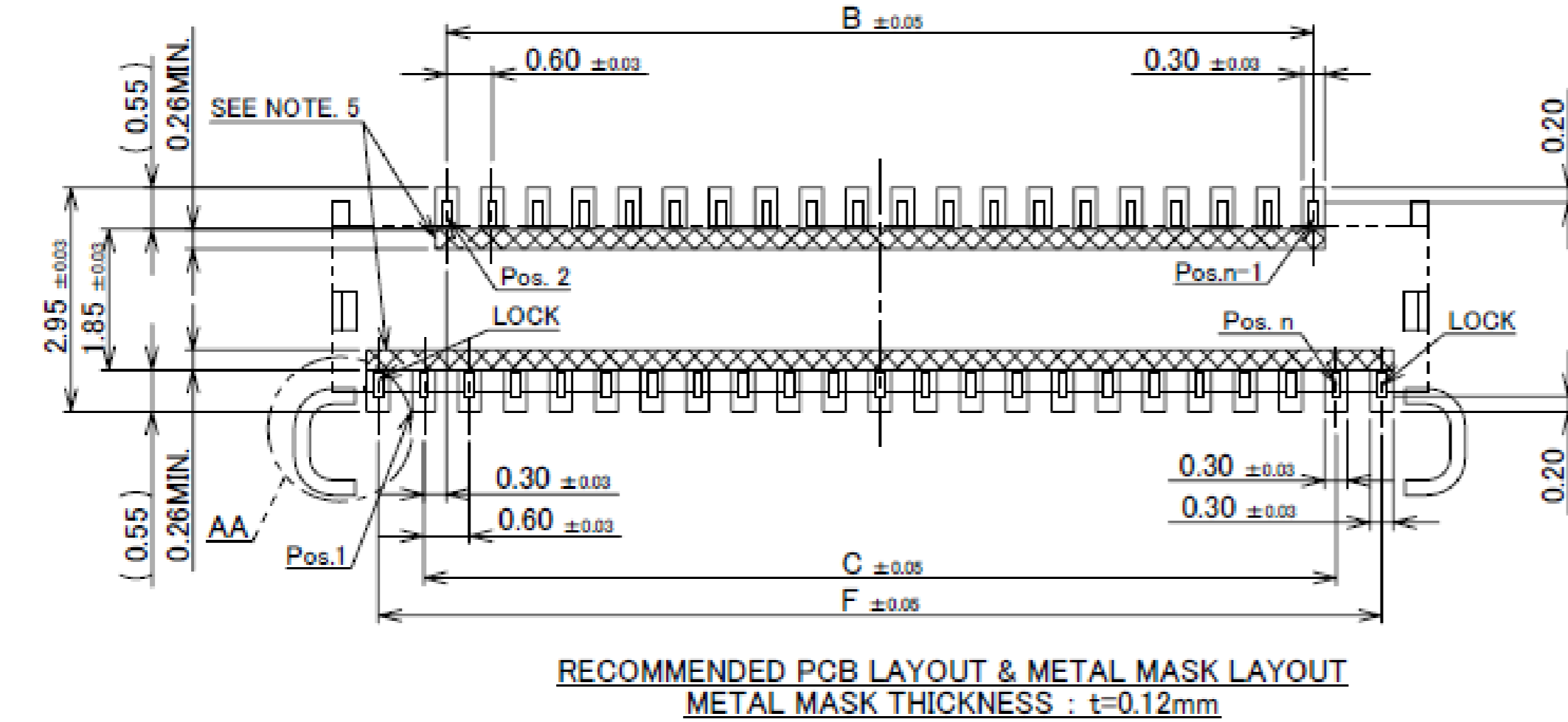
#### 3. MATERIAL

- COVER FILM : PI
- CONDUCTOR : COPPER(RARE)
- BASE FILM : PI
- STIFFENER : PI
- ADHESIVE : THERMOSETTING ADHESIVE

#### 4. FINISH

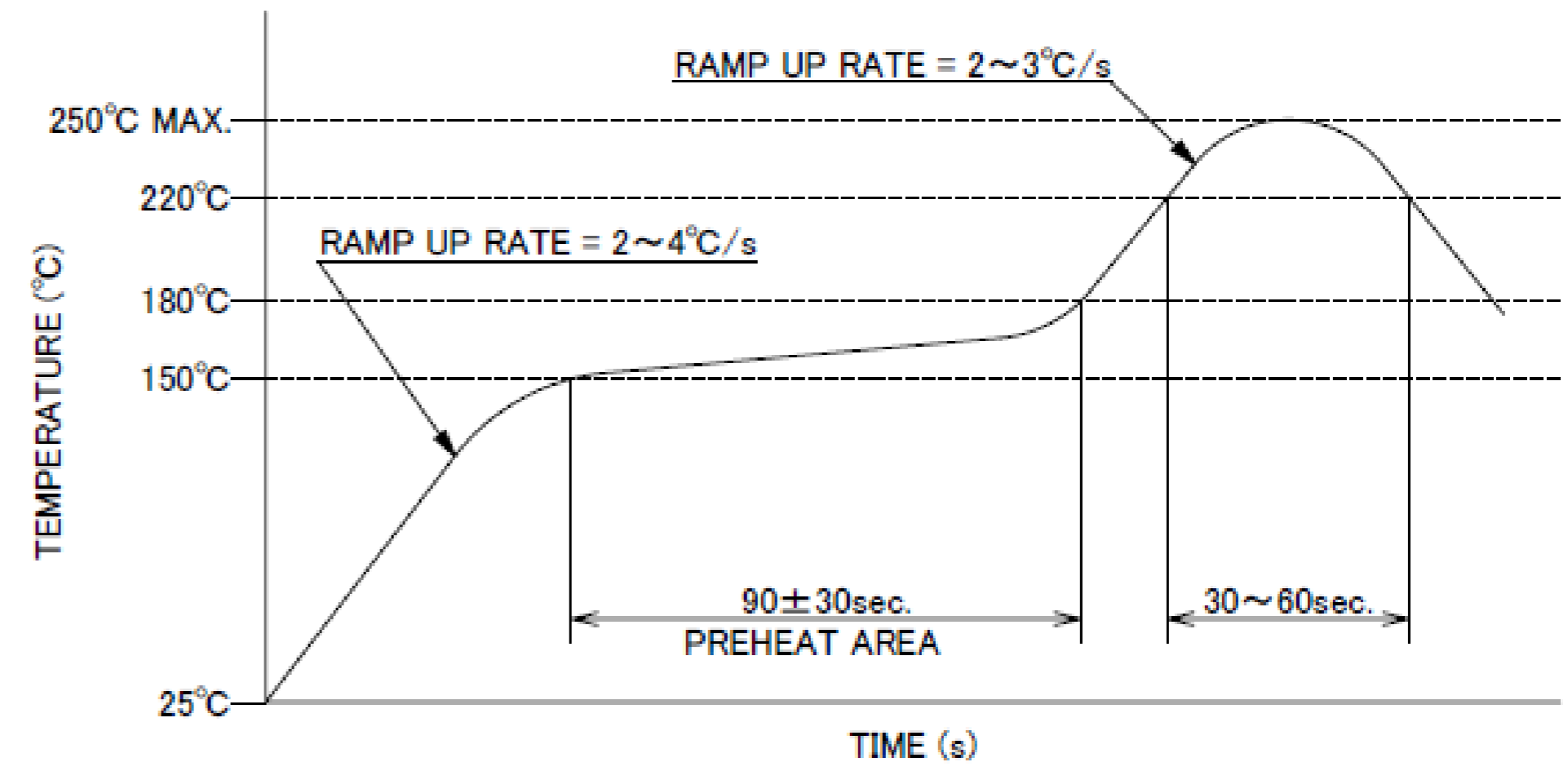
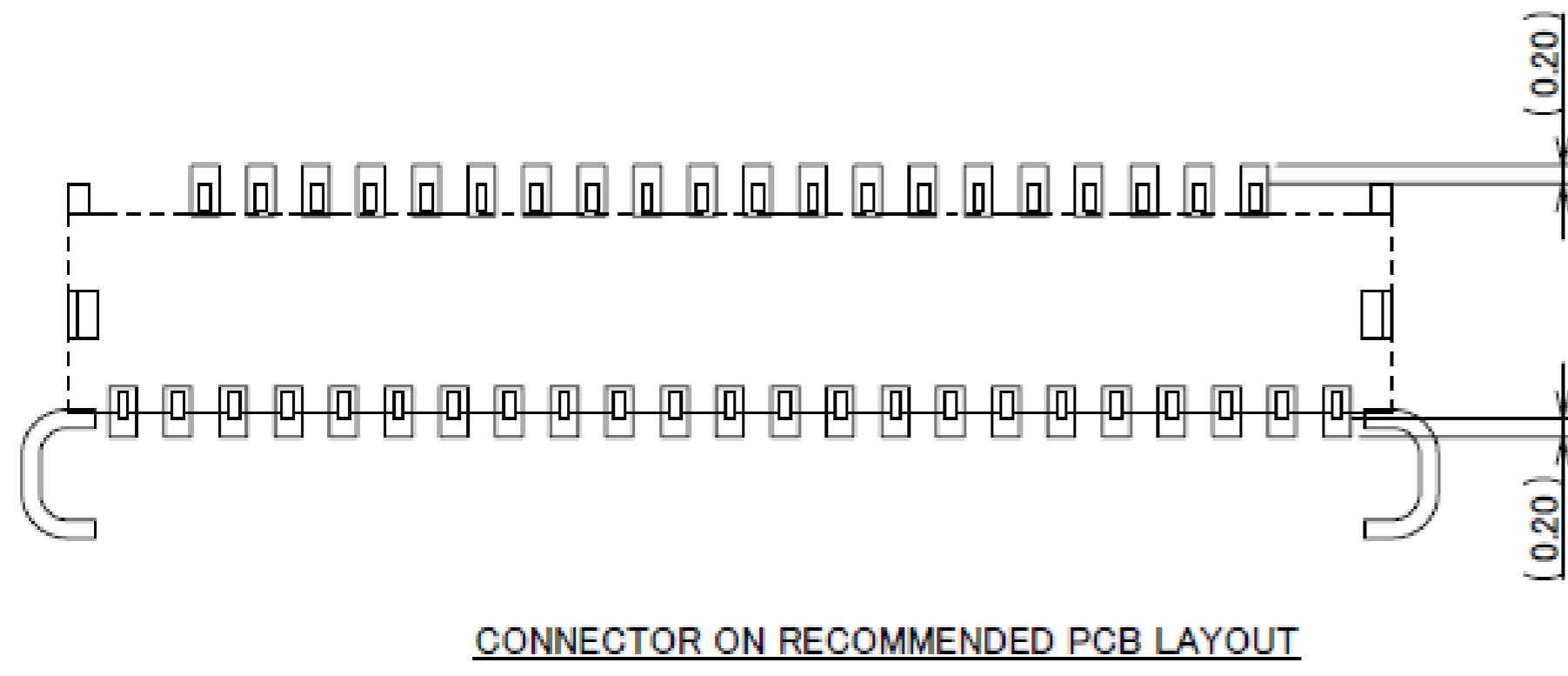
- Au OVER Ni UNDER PLATING.

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



Rev.17

# Connector Assembly



Rev.17

ITEMS	SPECIFICATION
RATING VOLTAGE	50V AC (PER CONTACT)
RATING AMPERAGE	0.3A DC (PER CONTACT)
OPERATING TEMPERATURE	233~358K (-40°C~+85°C)
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	20 CYCLES
ACTUATOR LOCKING FORCE (INITIAL / 20 CYCLES)	INITIAL / 20 CYCLES 0.21N (21gf) $\times$ (n + 2) MAX.
ACTUATOR UNLOCKING FORCE (INITIAL / 20 CYCLES)	INITIAL / 20 CYCLES 0.014N (1.4gf) $\times$ (n + 2) MIN.
FPC RETENTION FORCE (INITIAL / AFTER TEST)	INITIAL: 0.13N (13gf) $\times$ n + 1.0N MIN. / AFTER TEST: 0.10N (10gf) $\times$ 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 Connector

MHF® series



Micro-coaxial/Twinax/  
Discrete Wire Connector



CABLINE® series



Optical Module

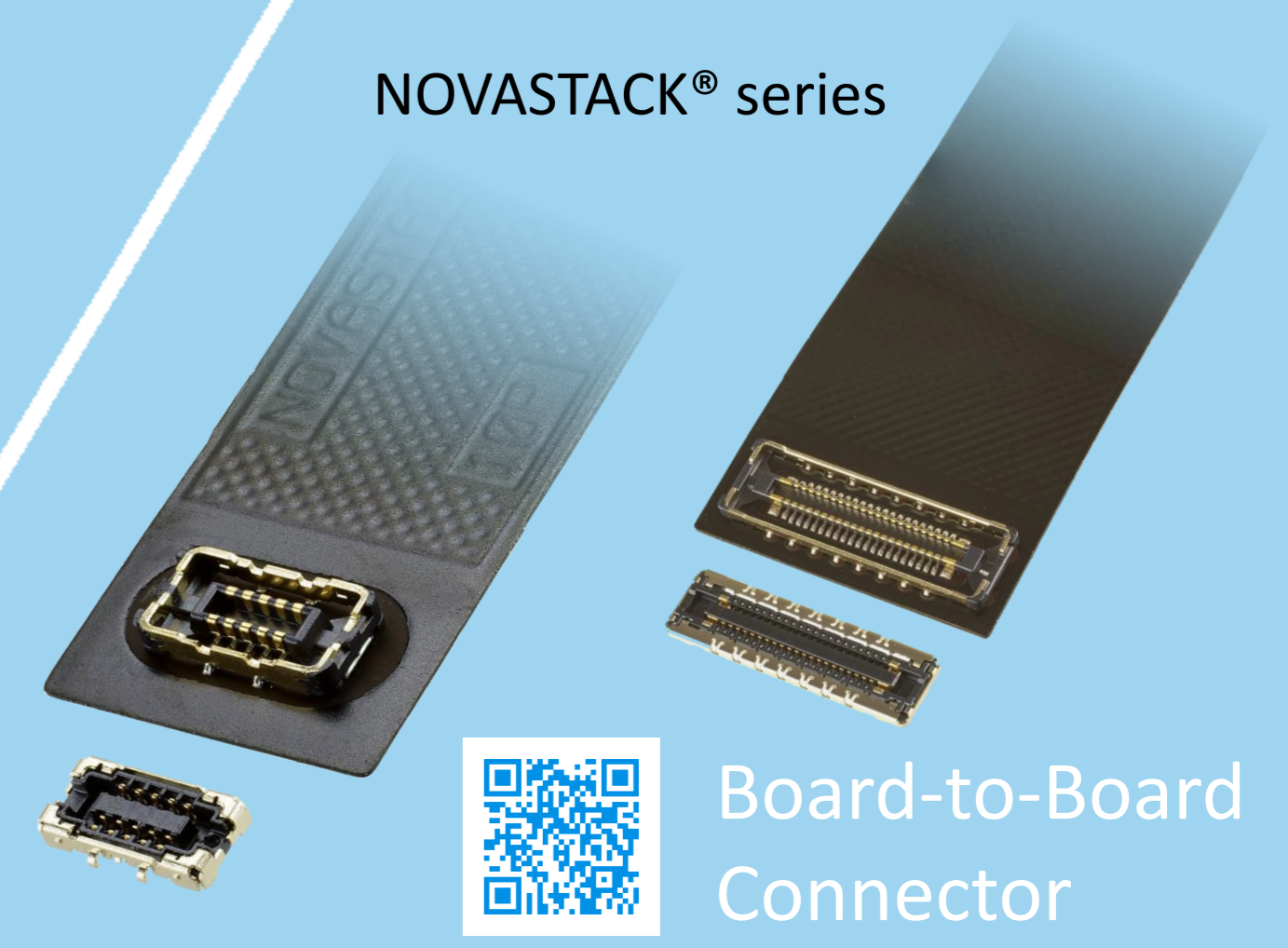
LIGHTPASS® series



NOVASTACK® series



Board-to-Board Connector



Power Connector/  
Terminal

AP series

ISH® series



MINIFLEX® series

EVAFLEX® series



FPC FFC Connector



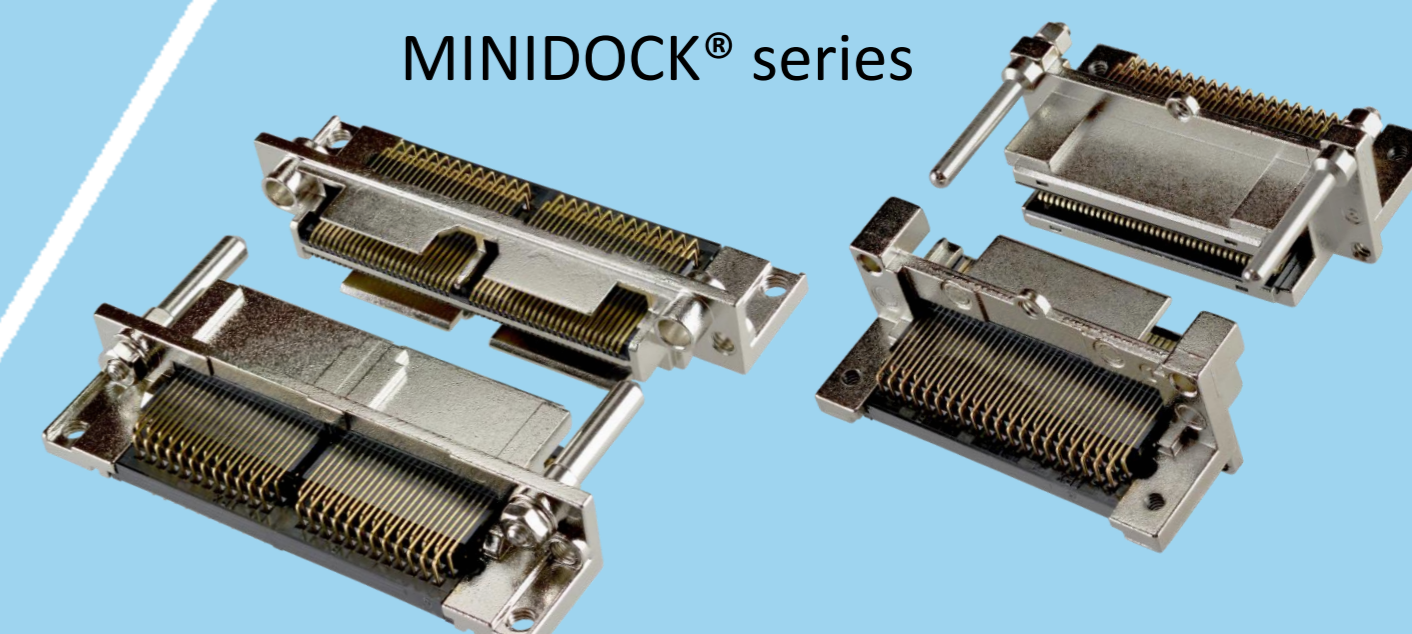
Inquiry



MINIDOCK® series



I/O Connector



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Contact your sales representative or more detailed information.

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