

# CABLINE®-UM

Fully-shielded and multi-point ground, Mechanical lock, High-data-rate transfer (20 Gbps/lane), 0.4 mm pitch, Right angle vertical mating type micro-coaxial connector

**Product Specifications:**

Mating type	Right Angle Vertical	
Board Pitch (mm)	0.4	
Wiping Length (mm)	0.65	
Mated size (mm)	Height	With Lock Cover : 2.2 +/- 0.15
		Without Lock Cover : 2.0 +/- 0.15
		With Pull Tape Holder: 2.2 +/- 0.15
Mated size (mm)	Width	Formula: 5.0 + (0.4 * ? p)
	Depth	5.0 with lock cover
Pin Counts	Range	Up to 60
	Available	30, 40, 60

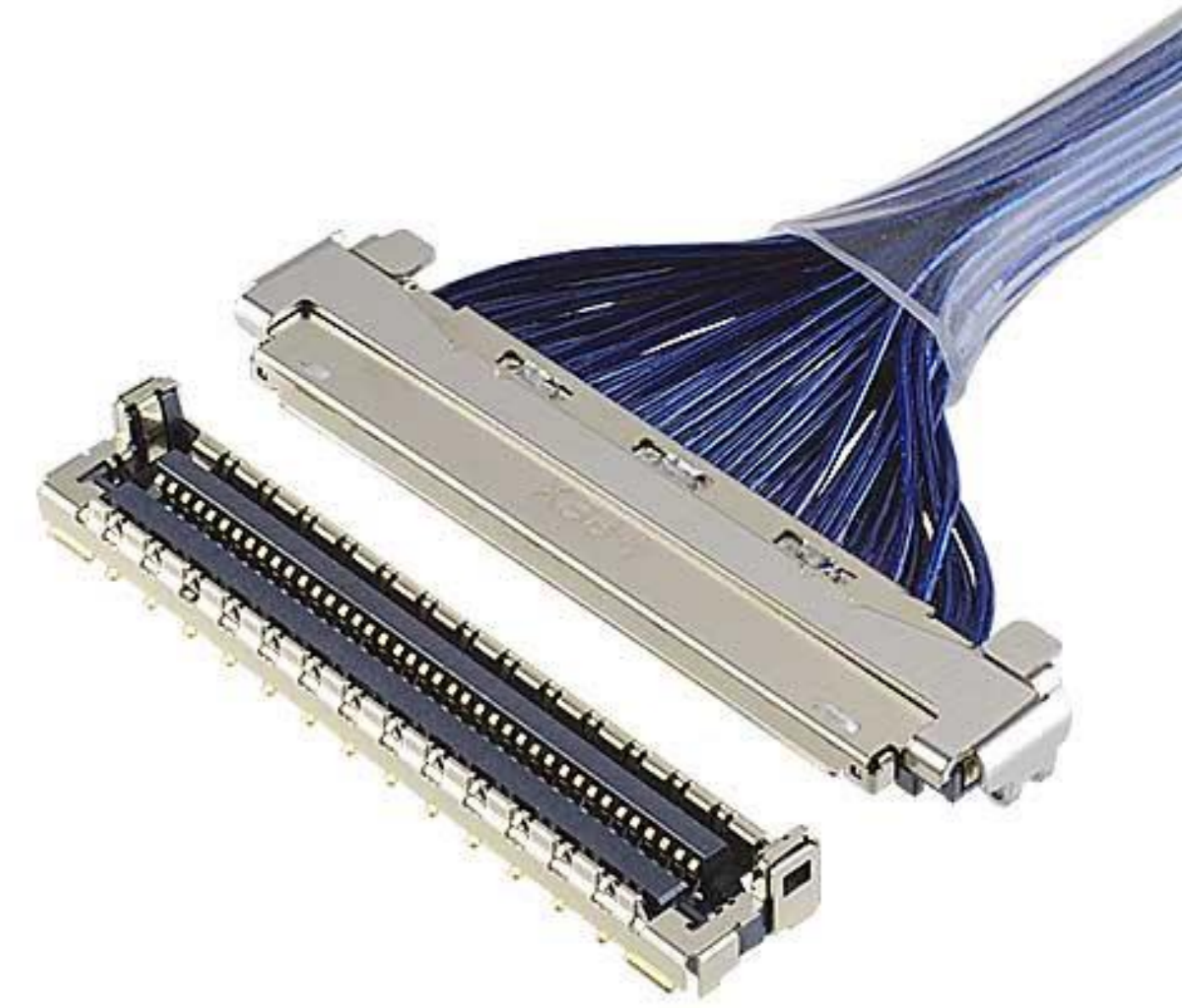
\* Please inquire for pin counts not listed or outside of the pin count range.

**Applicable Cable Size:**

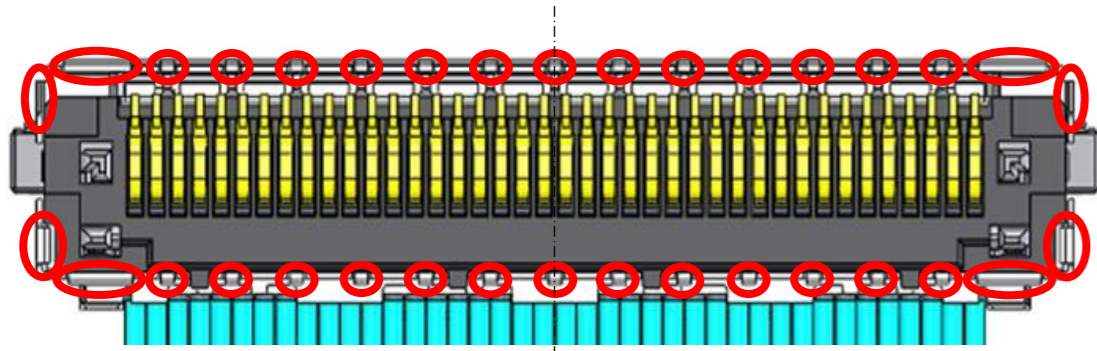
Maximum O.D. (mm)	0.4
Micro-Coaxial for Signal (AWG)	45 ohm: #38 or smaller 50 ohm: #40 or smaller
Twinax (AWG)	#40, #42
Discrete (AWG)	#34 or smaller

**Applicable Standards (Reference Only):**

USB4/Thunderbolt 4 (20 Gbps/lane), PCIe Gen 4 (16GT/s), eDP HBR 3 (8.1 Gbps)

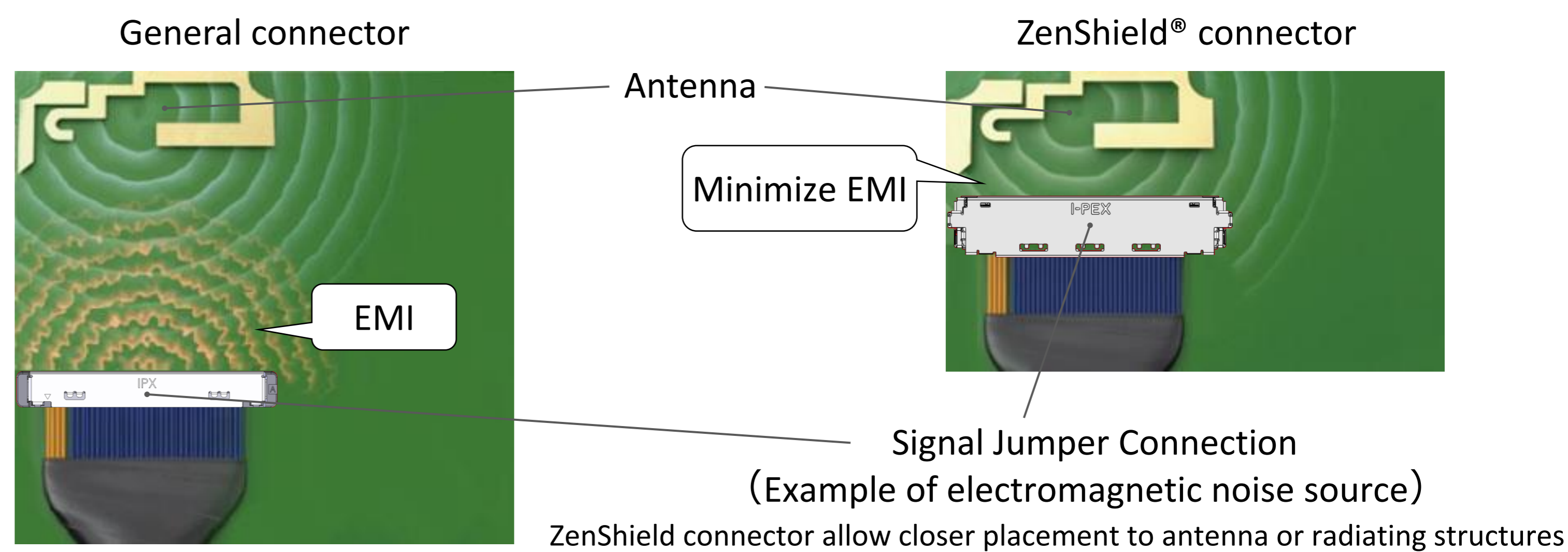


## ZenShield® fully-shielded with multi-point grounds to prevent EMI leakage



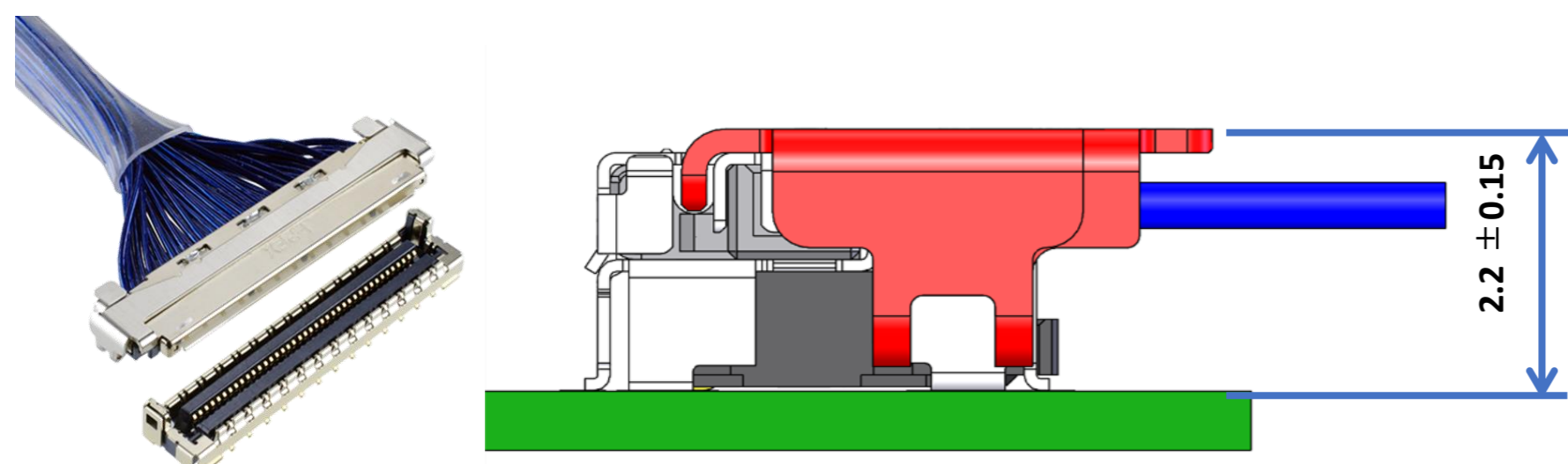
View From Underside

○ Ground SMT points

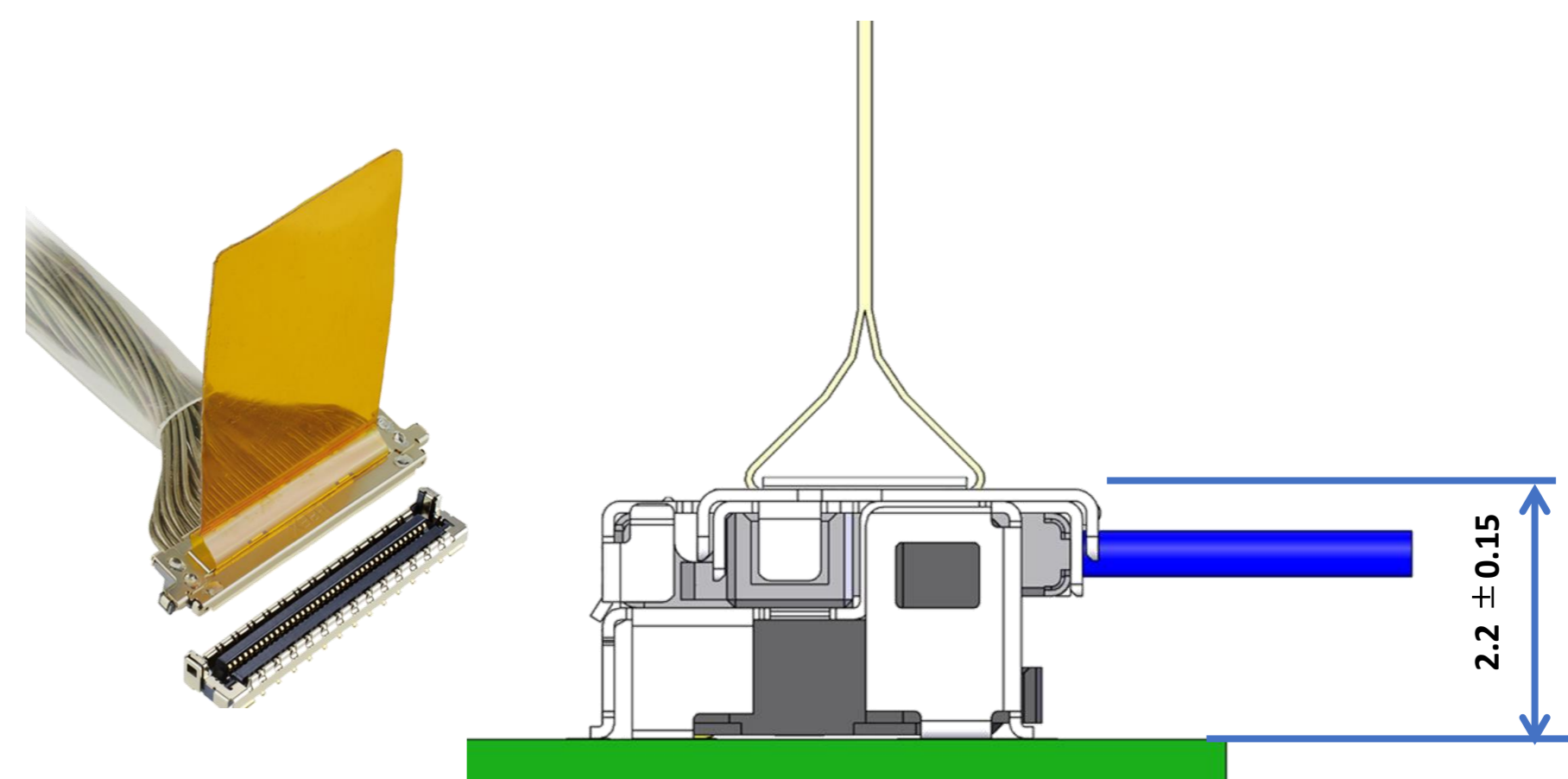


## Wide range of variations

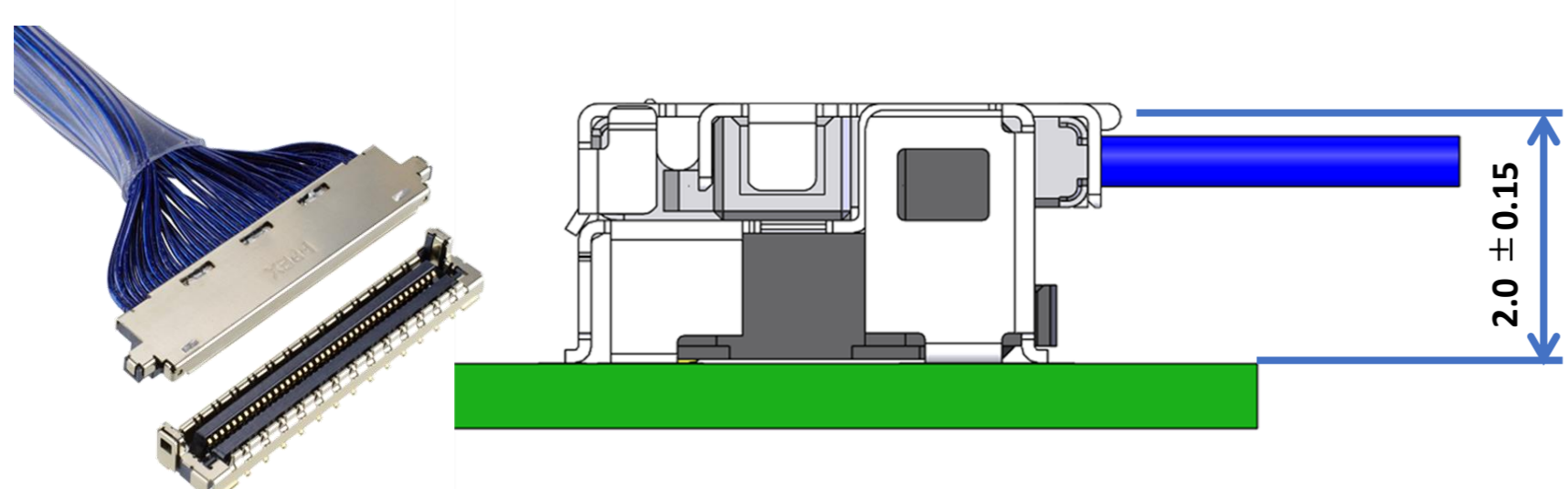
With Lock Cover---Enhanced mating retention force



With Pull tape holder---Improve unplug efficiency

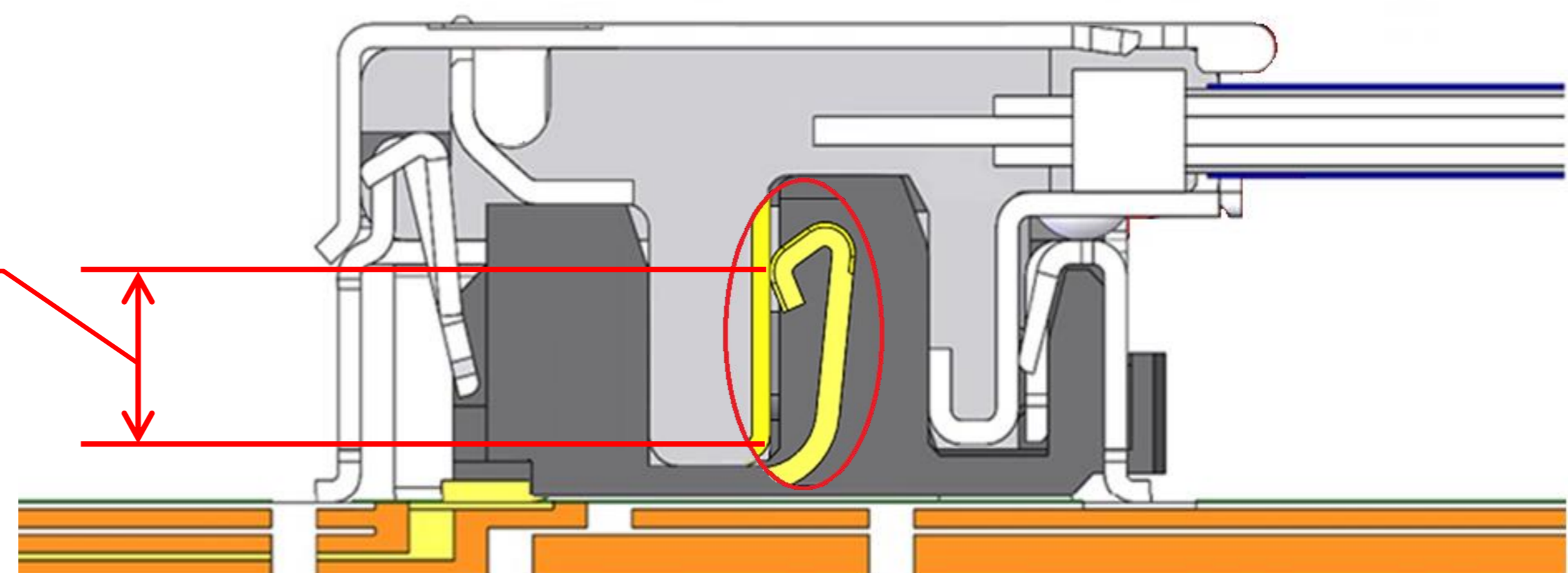


Without Lock Cover---Low profile



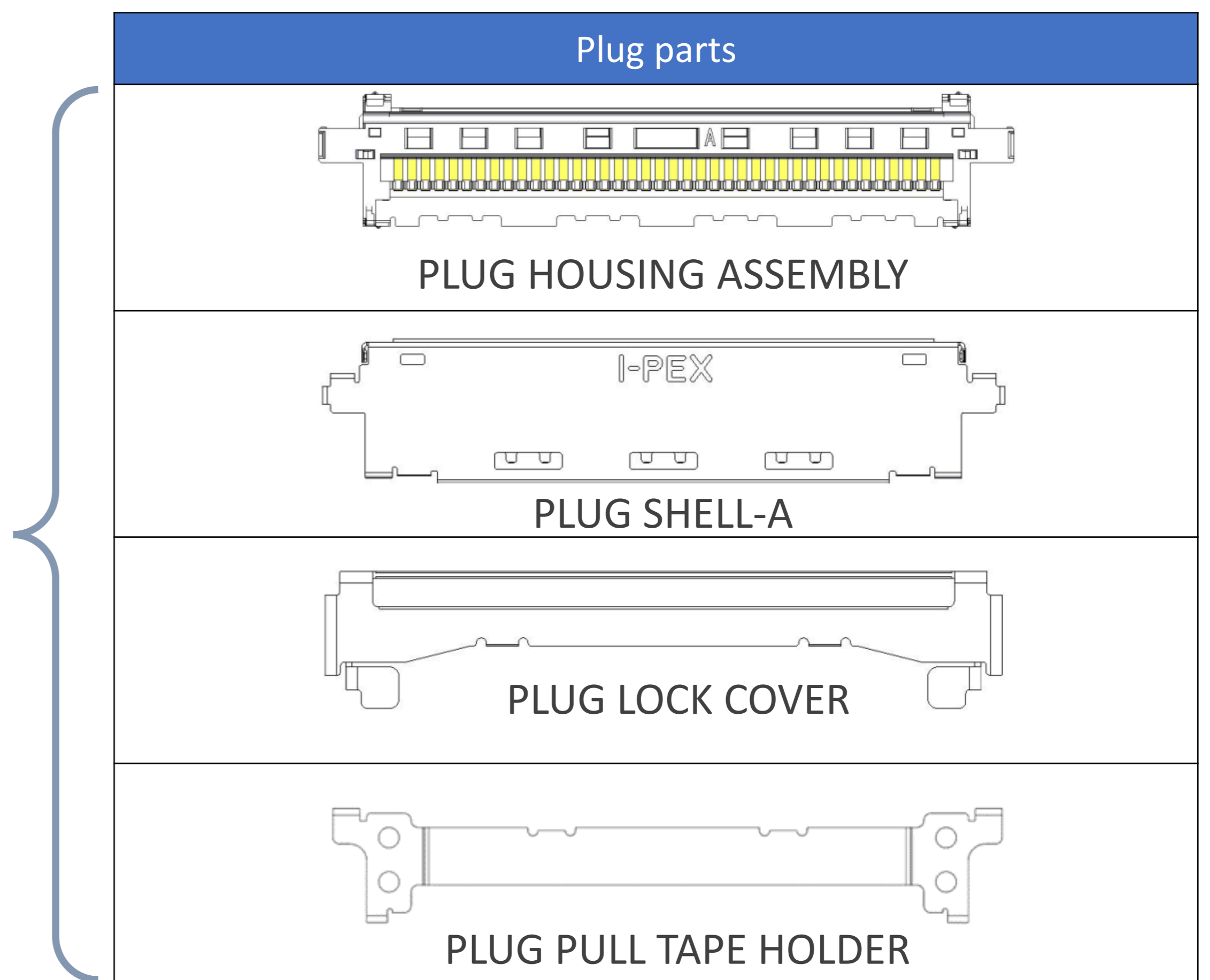
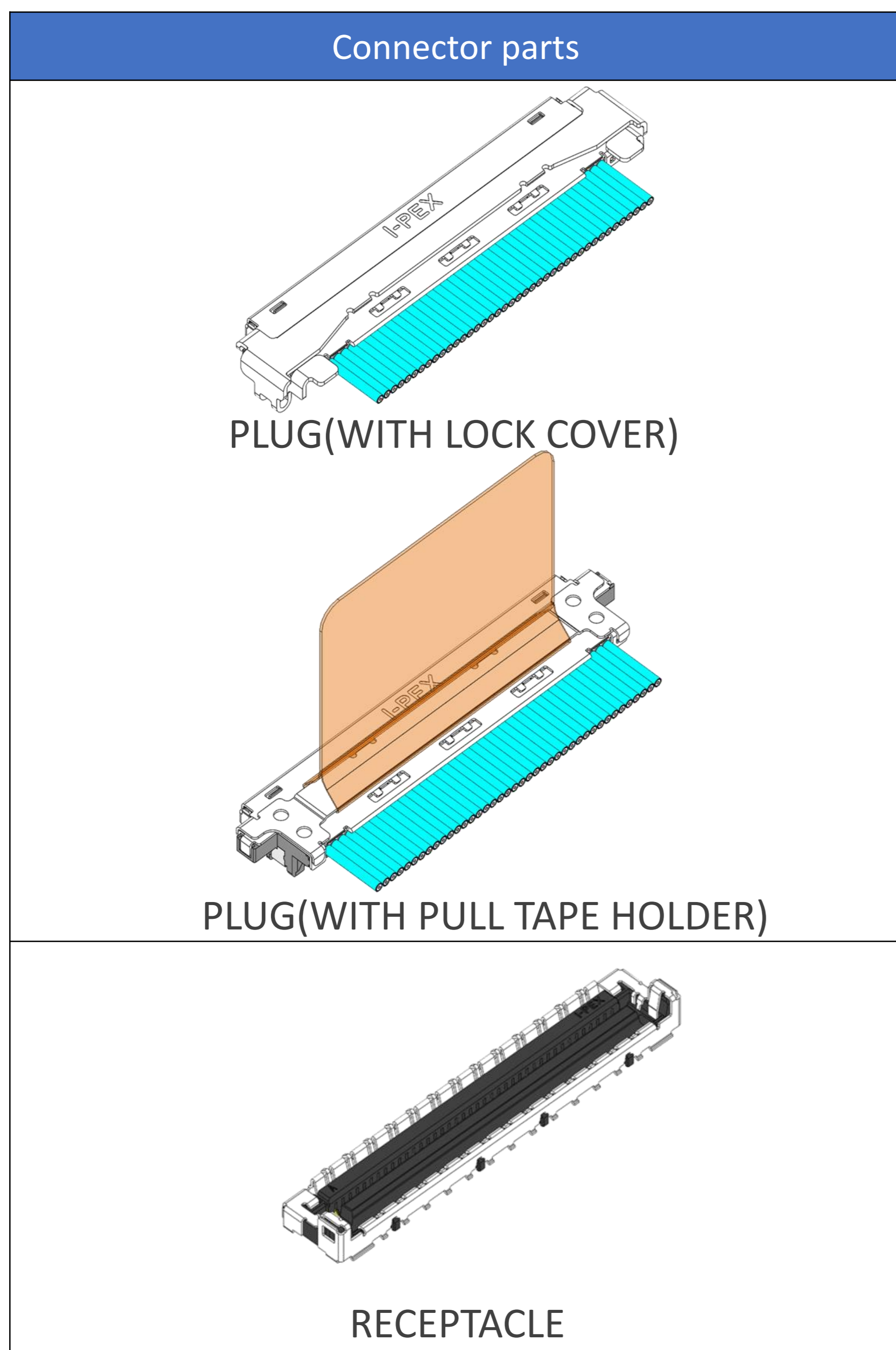
## High contact reliability

Wiping length : 0.65 mm min.



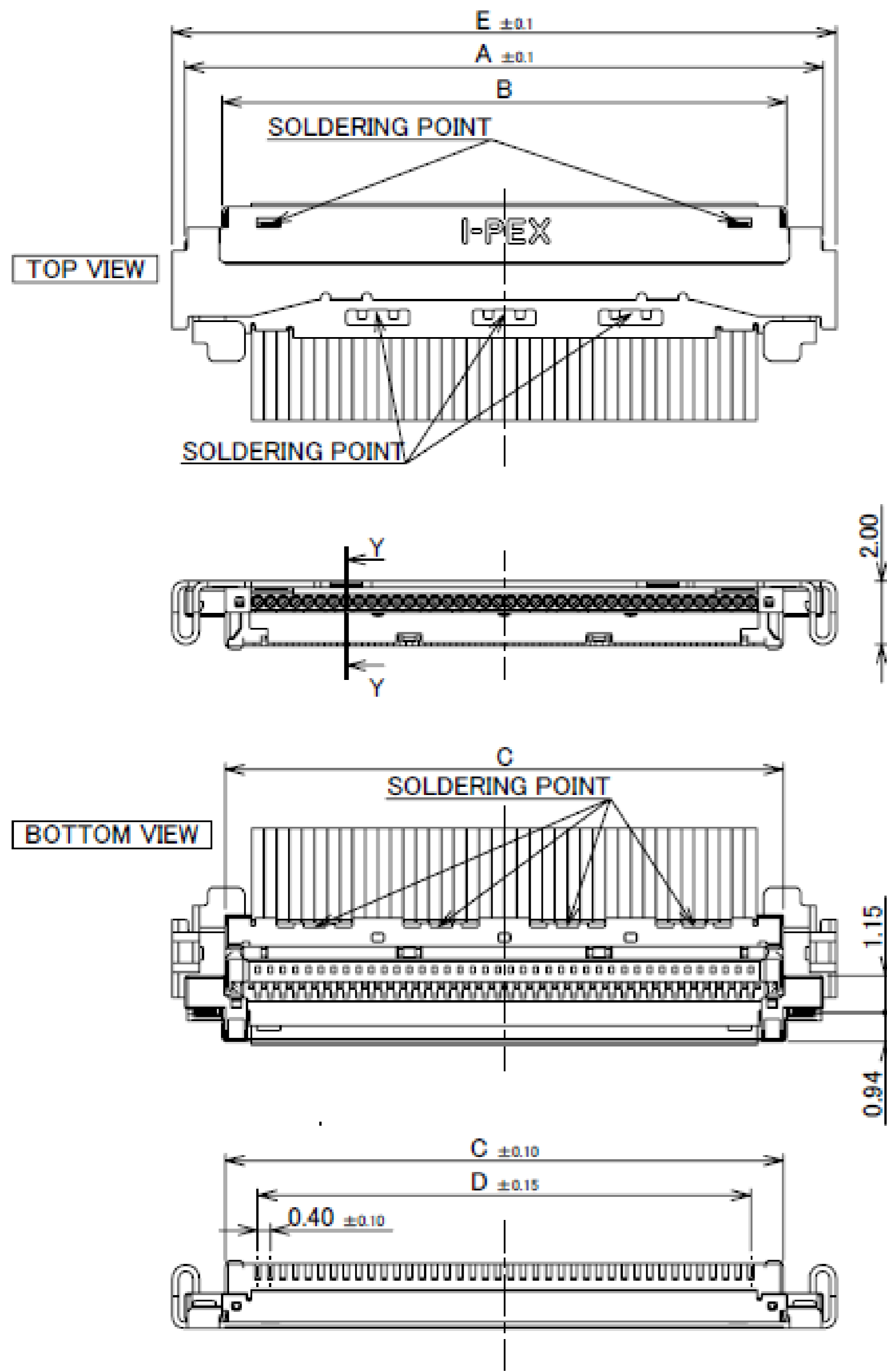
# Component Parts Details

## Component Parts

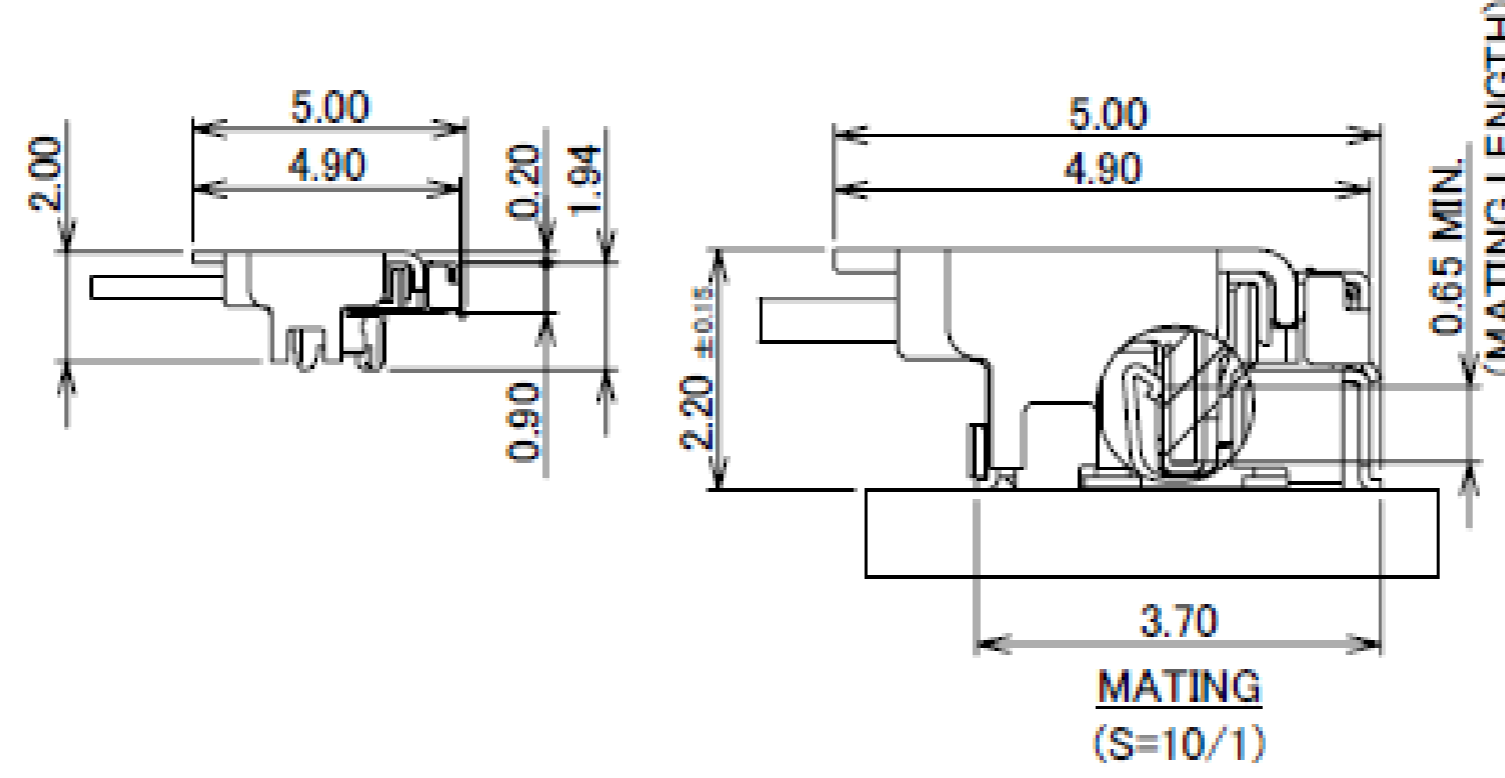
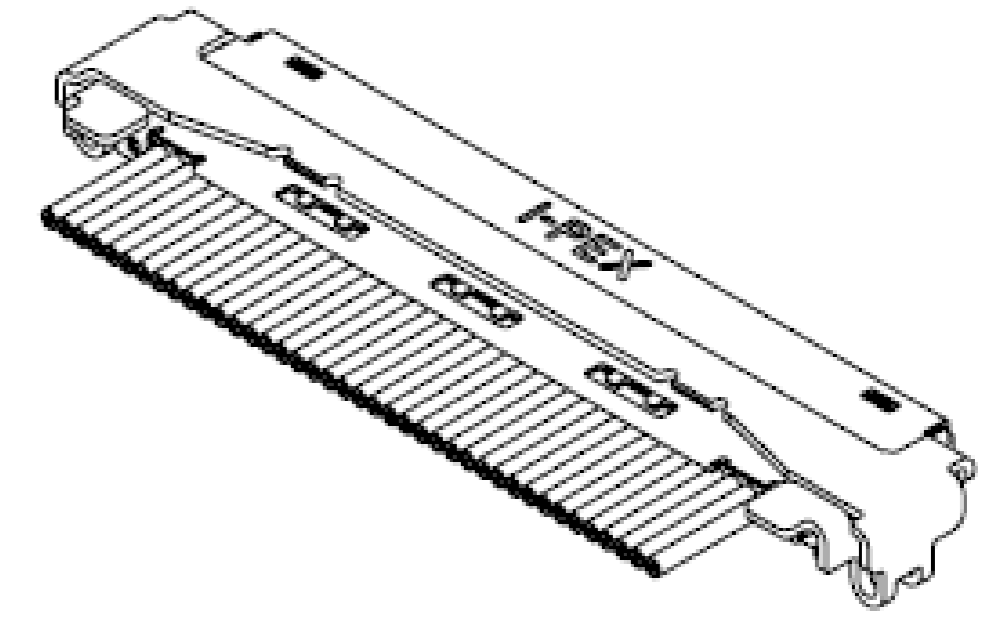
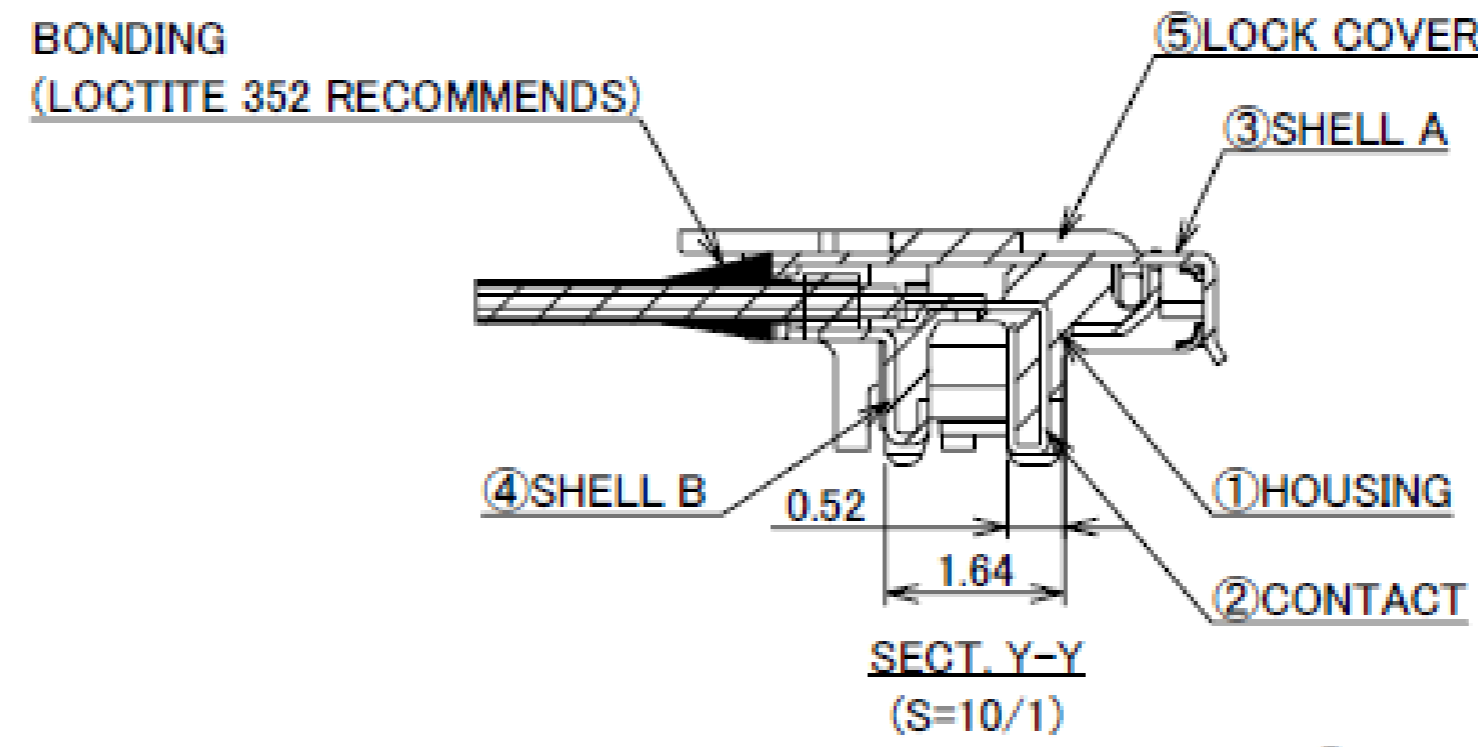


# Plug for Cable Assembly

Recommended P/N		20877-0**T-01				
PART NO.	Pos.	A	B	C	D	E
20877-030T-01	30	16.20	13.85	13.65	11.60	17.00
20877-040T-01	40	20.20	17.85	17.65	15.60	21.00
20877-060T-01	60	28.20	25.85	25.65	23.60	29.00



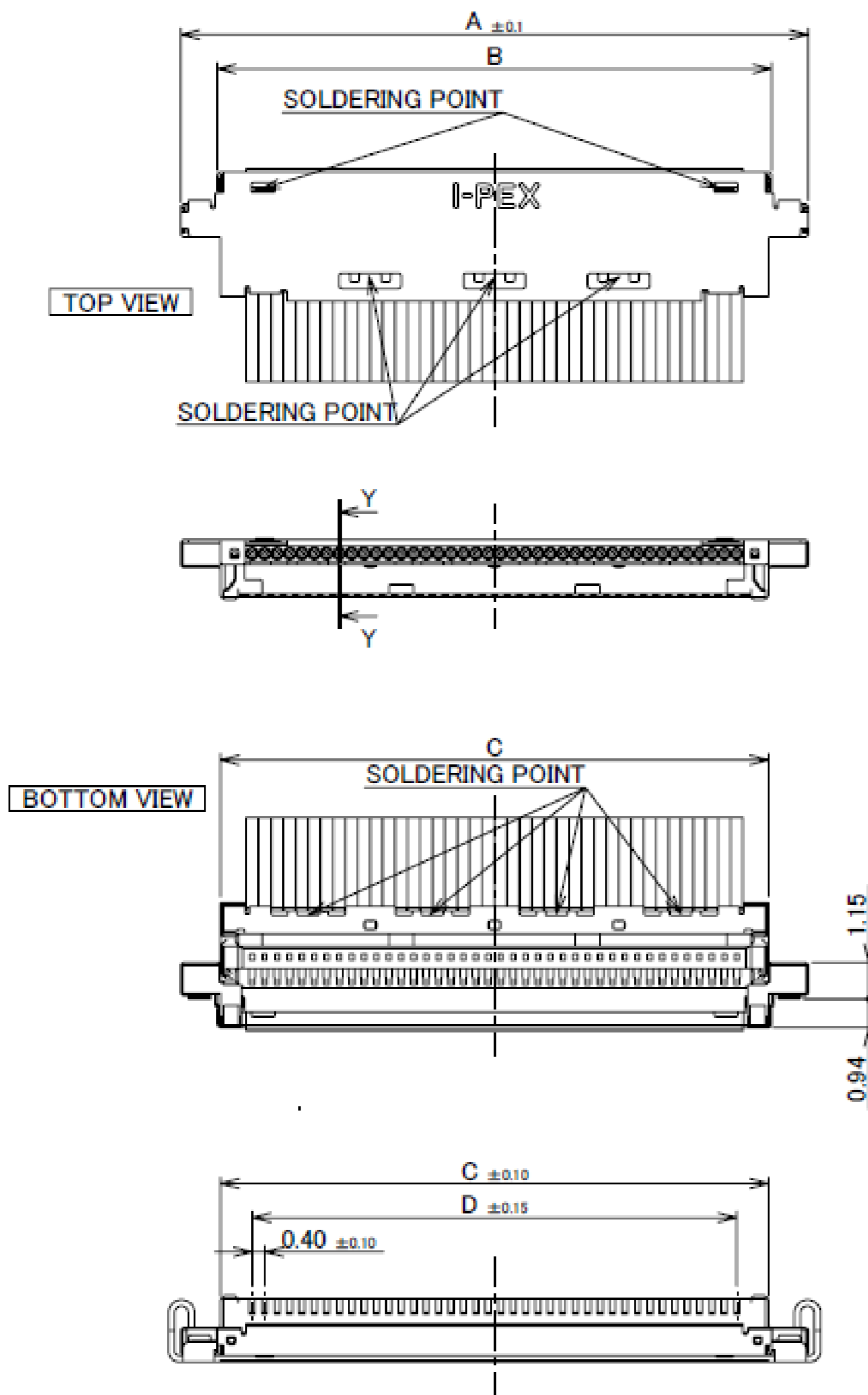
## With LOCK COVER



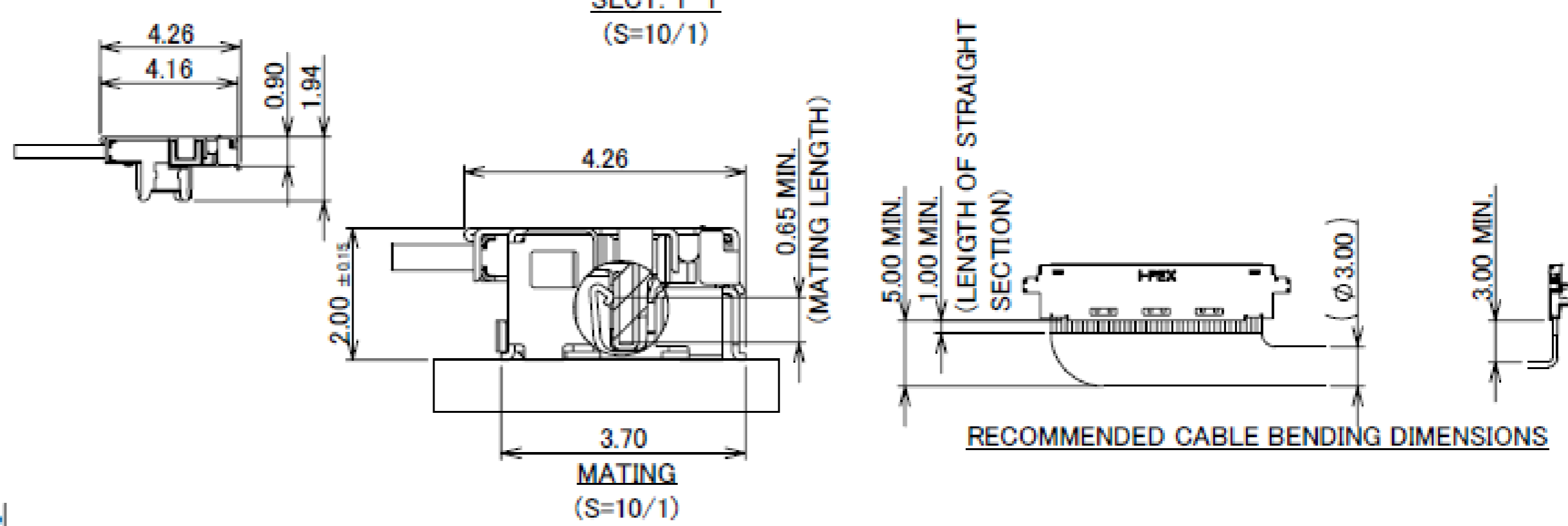
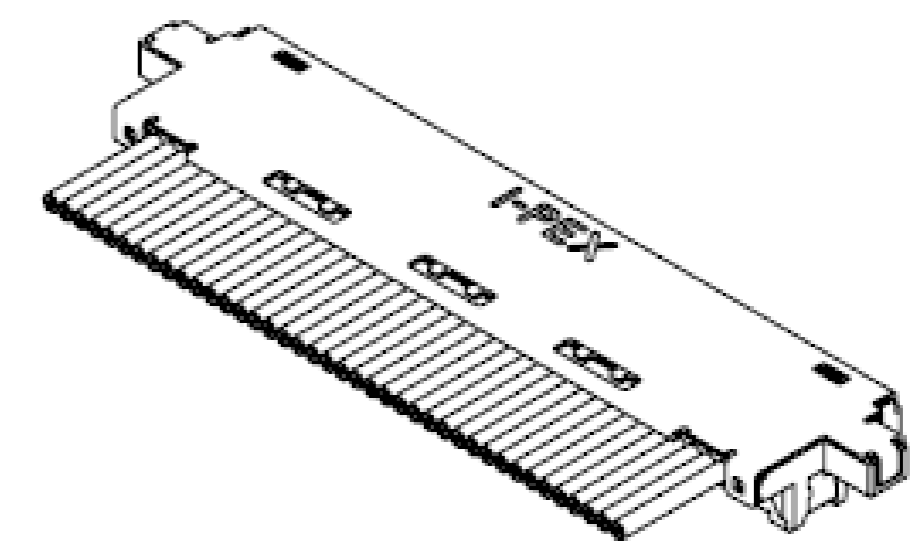
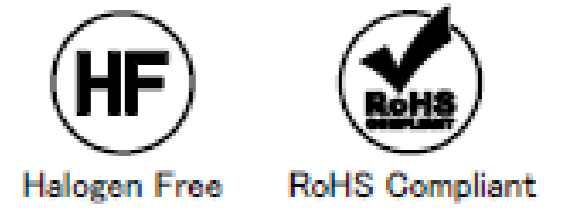
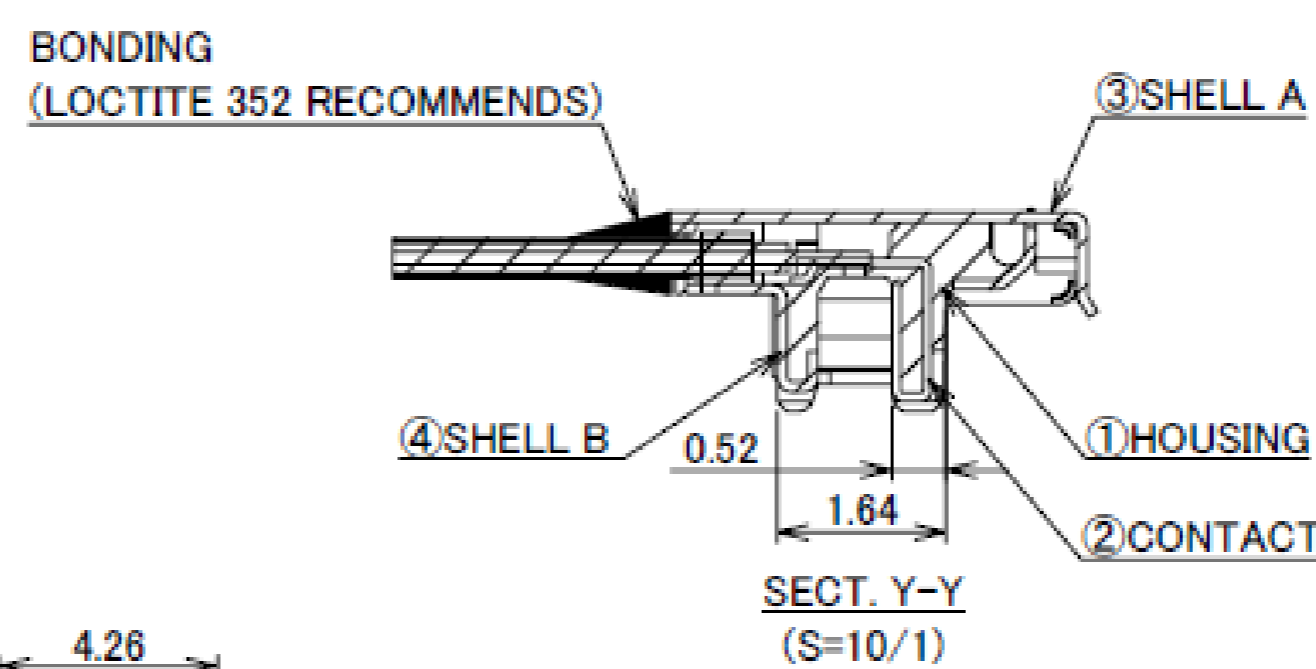
NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
5	LOCK COVER	PHOSPHOR BRONZE	ALL OVER Ni 1.0 μm MIN.
4	SHELL B	PHOSPHOR BRONZE	PARTIAL Au 0.003 μm MIN. OVER Ni 1.0 μm MIN.
3	SHELL A	PHOSPHOR BRONZE	PARTIAL Au 0.003 μm MIN. OVER Ni 1.0 μm MIN.
2	CONTACT	CORSON ALLOY	ALL OVER Ni 1.0 μm MIN. CONTACT & SOLDERING AREA : Au 0.03 μm MIN.
1	HOUSING	LCP	UL94V-0 ,BLACK

Rev.11

Recommended P/N		20877-0**T-01			
PART NO.	Pos.	A	B	C	D
20877-030T-02	30	16.20	13.85	13.65	11.60
20877-040T-02	40	20.20	17.85	17.65	15.60
20877-060T-02	60	28.20	25.85	25.65	23.60



## Without LOCK COVER



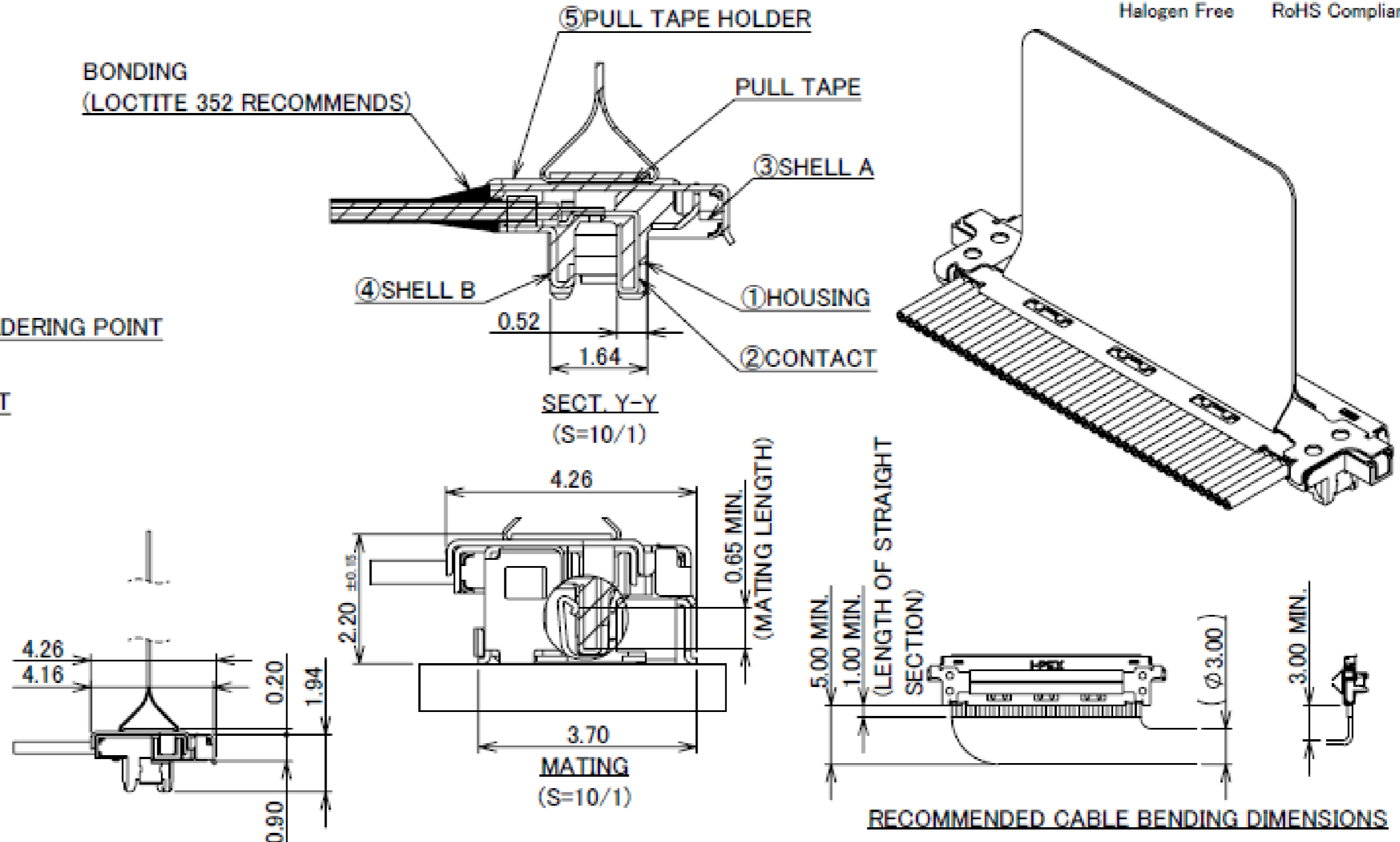
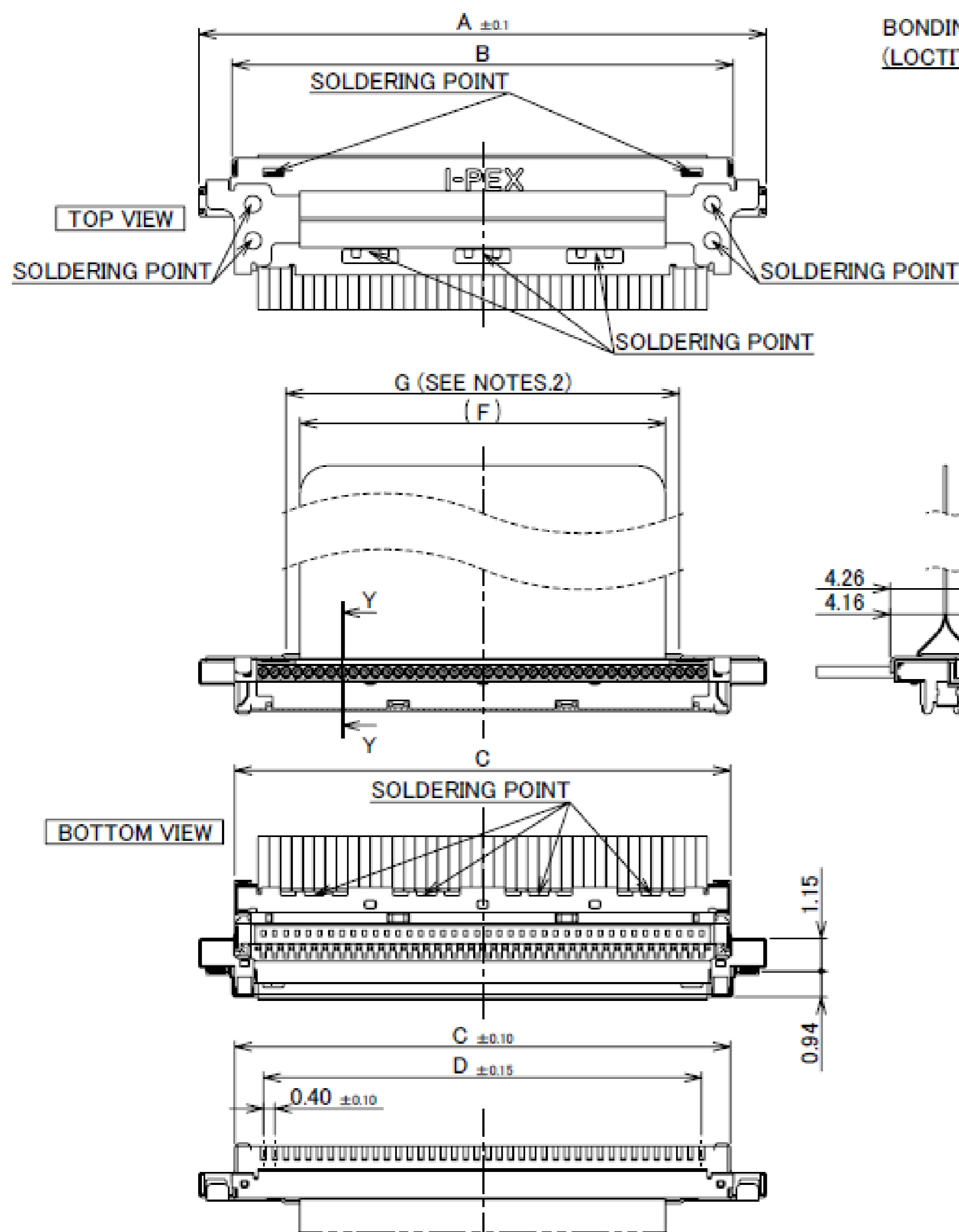
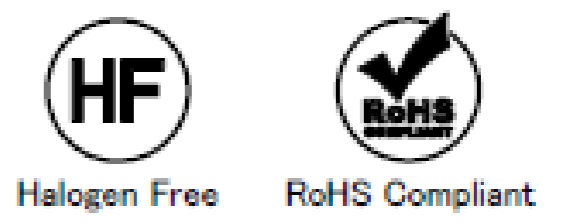
NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
4	SHELL B	PHOSPHOR BRONZE	PARTIAL Au 0.003 μm MIN. OVER Ni 1.0 μm MIN.
3	SHELL A	PHOSPHOR BRONZE	PARTIAL Au 0.003 μm MIN. OVER Ni 1.0 μm MIN.
2	CONTACT	CORSON ALLOY	ALL OVER Ni 1.0 μm MIN. CONTACT & SOLDERING AREA : Au 0.03 μm MIN.
1	HOUSING	LCP	UL94V-0 ,BLACK

Rev.11

# Plug for Cable Assembly

Recommended P/N		20877-0**T-01					
PART NO.	Pos.	A	B	C	D	F	G
20877-030T-03	30	16.20	13.85	13.65	11.80	9.00	10.00
20877-040T-03	40	20.20	17.85	17.65	15.80	13.00	14.00
20877-060T-03	60	28.20	25.85	25.65	23.80	21.00	22.00

With PULL TAPE HOLDER

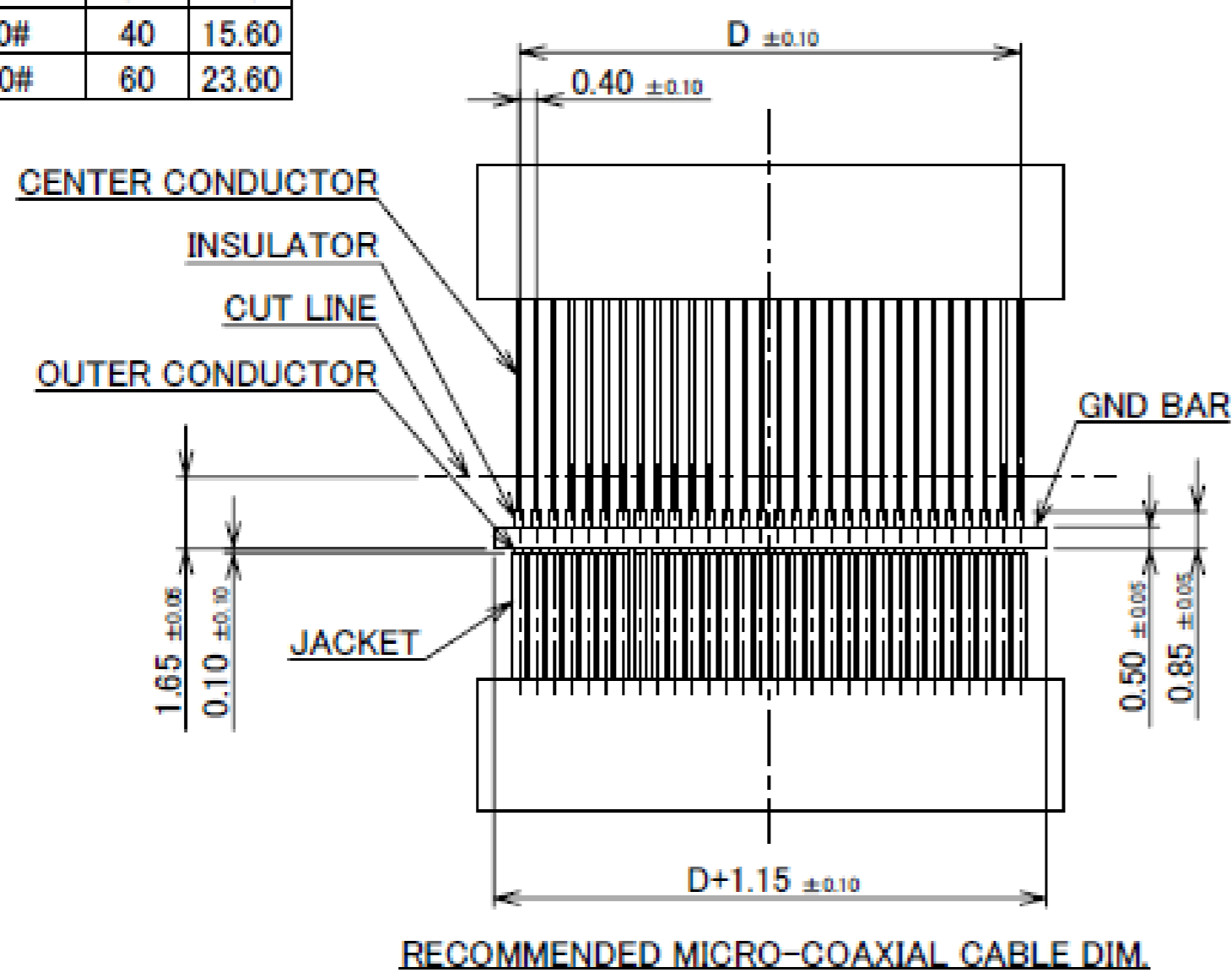


NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
5	PULL TAPE HOLDER	PHOSPHOR BRONZE	PARTIAL Au 0.003 μm MIN. OVER Ni 1.0 μm MIN.
4	SHELL B	PHOSPHOR BRONZE	PARTIAL Au 0.003 μm MIN. OVER Ni 1.0 μm MIN.
3	SHELL A	PHOSPHOR BRONZE	PARTIAL Au 0.003 μm MIN. OVER Ni 1.0 μm MIN.
2	CONTACT	CORSON ALLOY	ALL OVER Ni 1.0 μm MIN. CONTACT & SOLDERING AREA : Au 0.03 μm MIN.
1	HOUSING	LCP	UL94V-0 ,BLACK

**NOTES.**  
 1.RECOMMENDED PULL-TAPE  
 PULL-TAPE : TERAOKA's INSULATION TAPE No.650S(#50) t=0.08  
 2.PULL-TAPE CAN BE PUT WITHIN THE RANGE OF "G" STRIAIGHT AREA.

Rev.11

PART NO.	Pos.	D
20877-030T-0#	30	11.60
20877-040T-0#	40	15.60
20877-060T-0#	60	23.60



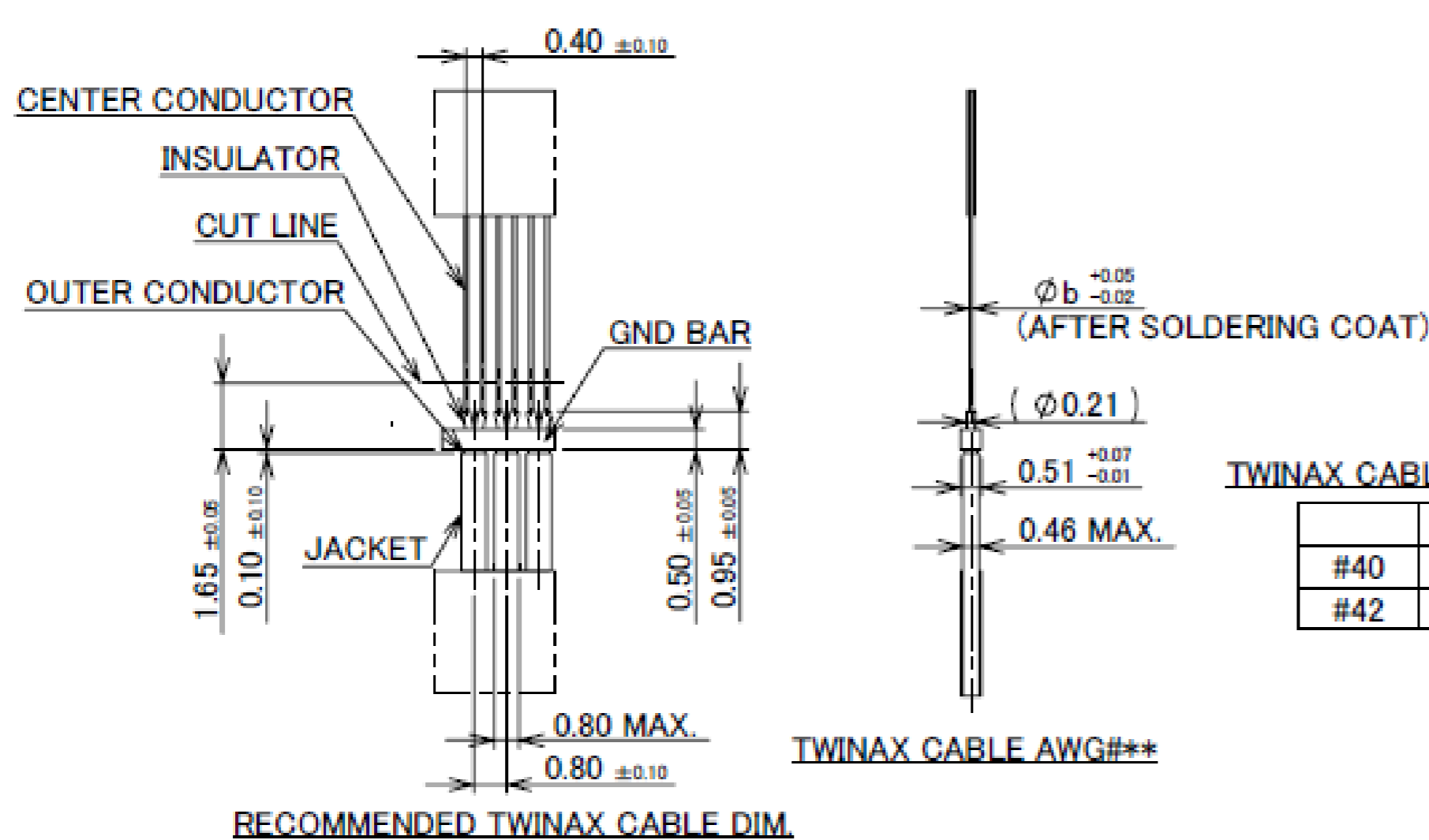
CHARACTERISTIC IMPEDANCE MATCHING MICRO-COAXIAL CABLE

	a
#38	0.12
#40	0.09
#42	0.075
#44	0.063

CHARACTERISTIC IMPEDANCE UN-MATCHING MICRO-COAXIAL CABLE

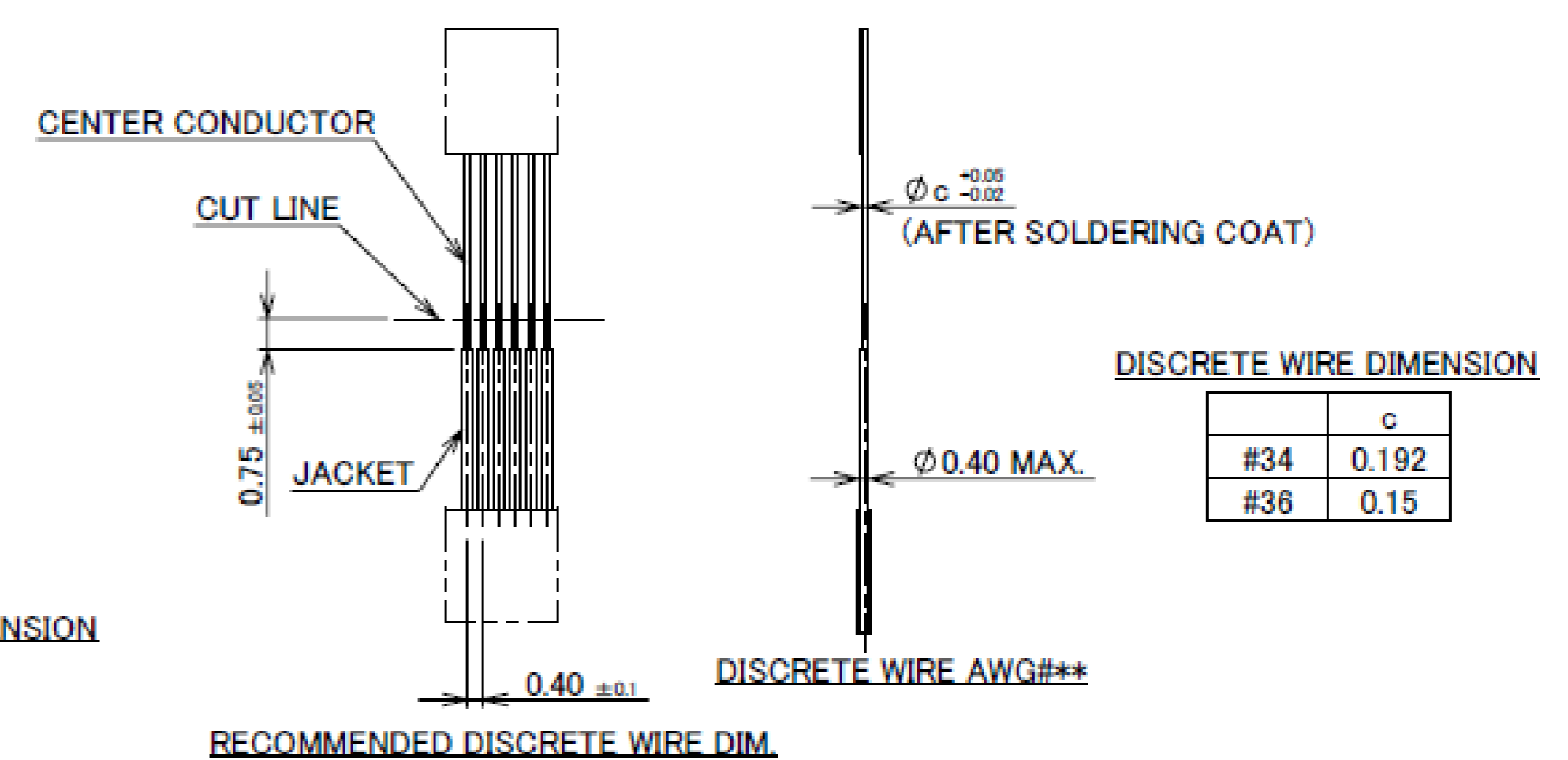
	a
#36	0.15

MICRO-COAXIAL CABLE #36 : NOT RECOMMENDED FOR HIGH SPEED SIGNAL TRANSFER



TWINAX CABLE DIMENSION

	b
#40	0.09
#42	0.075



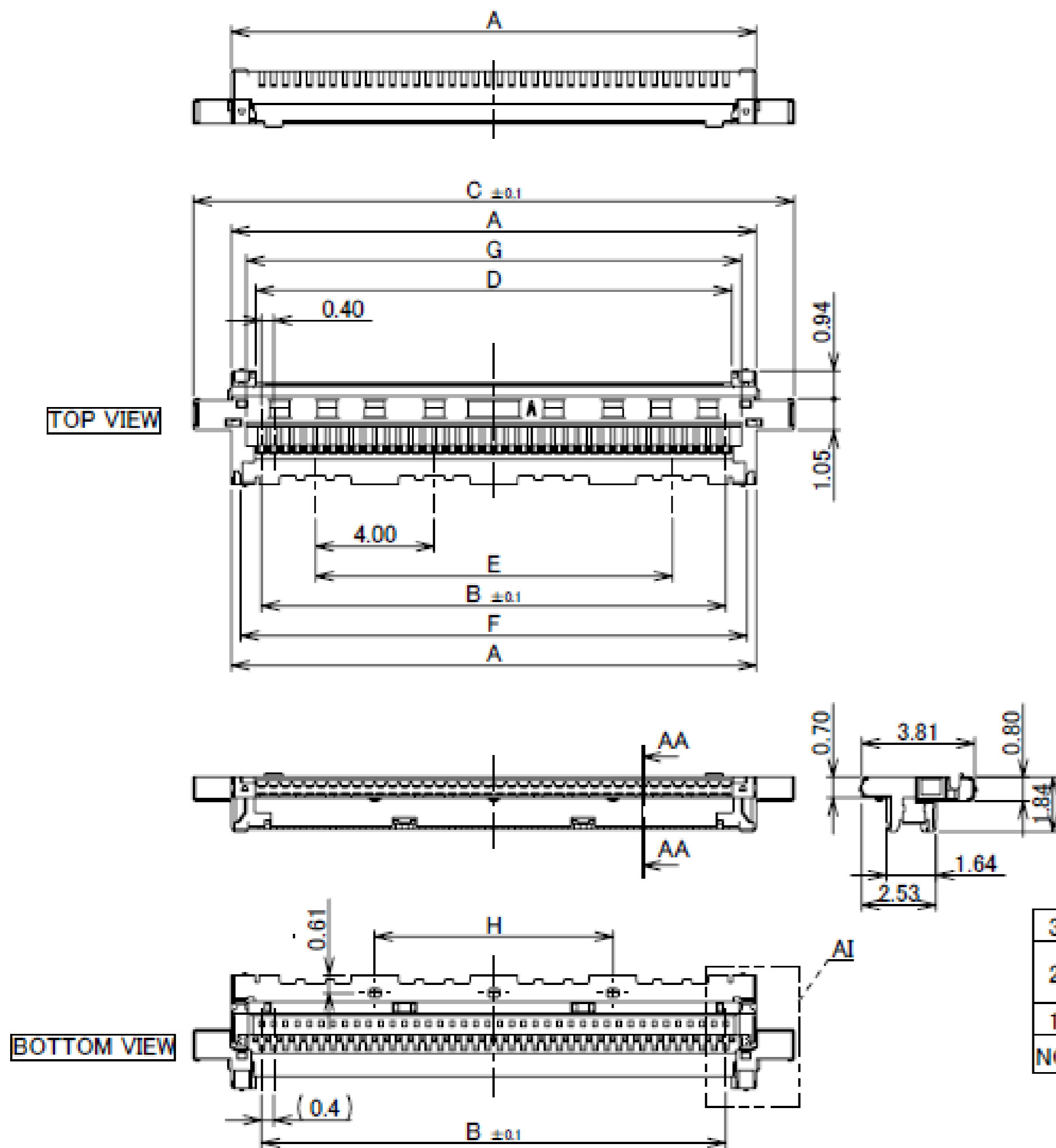
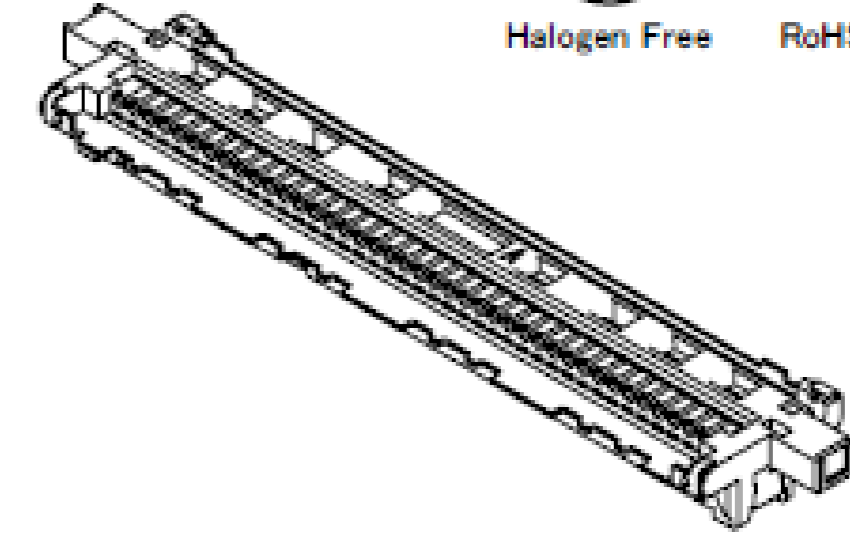
DISCRETE WIRE DIMENSION

	c
#34	0.192
#36	0.15

# Plug Housing Assembly

Recommended P/N 20878-0\*\*T-01

PART No.	Pos.	A	B	C	D	E	F	G	H
20878-030T-01	30	13.65	11.60	16.20	12.01	8.00	13.00	12.65	4.0
20878-040T-01	40	17.65	15.60	20.20	16.01	12.00	17.00	16.65	8.0
20878-060T-01	60	25.65	23.60	28.20	24.01	20.00	25.00	24.65	16.00



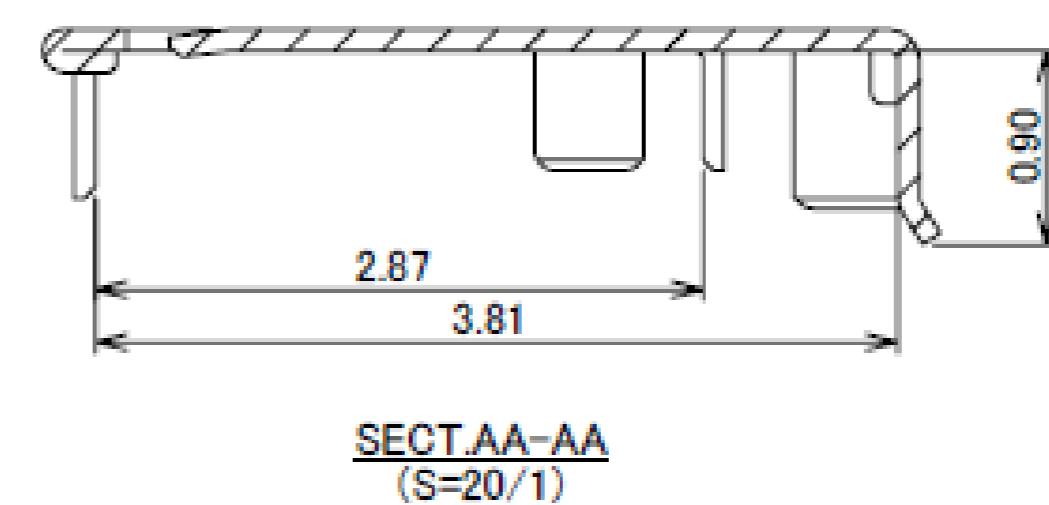
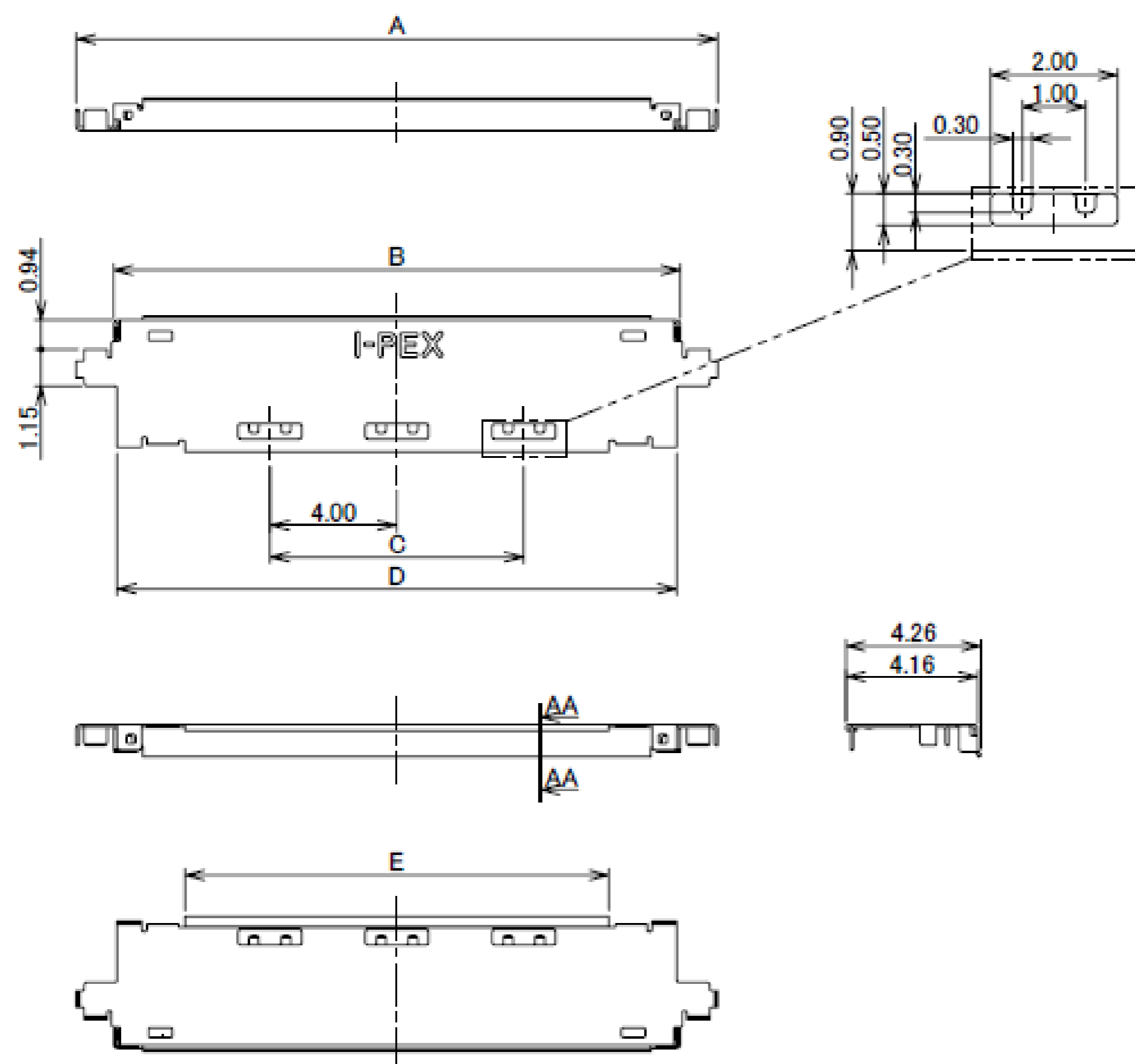
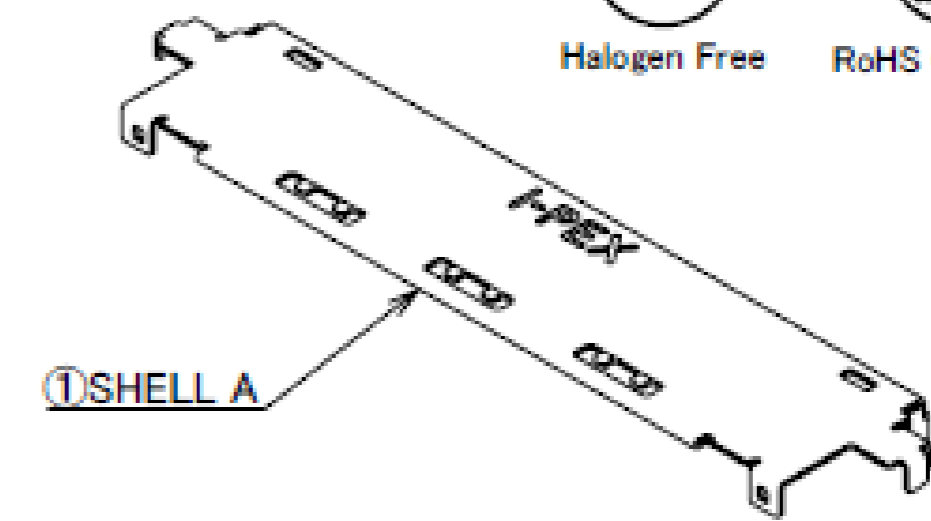
NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
3	SHELL B	PHOSPHOR BRONZE	PARTIAL Au 0.003 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m MIN.
2	CONTACT	CORSON ALLOY	ALL OVER Ni 1.00 $\mu$ m MIN. CONTACT & SOLDERING AREA : Au 0.03 $\mu$ m MIN.
1	HOUSING	LCP	UL94V-0 .BLACK

Rev.4

# Plug Shell-A

Recommended P/N 3488-0\*\*1

PART No.	Pos.	A	B	C	D	E
3488-0301	30	16.20	13.88	4.00	13.65	9.36
3488-0401	40	20.20	17.88	8.00	17.65	13.36
3488-0601	60	28.20	25.88	16.00	25.65	21.36

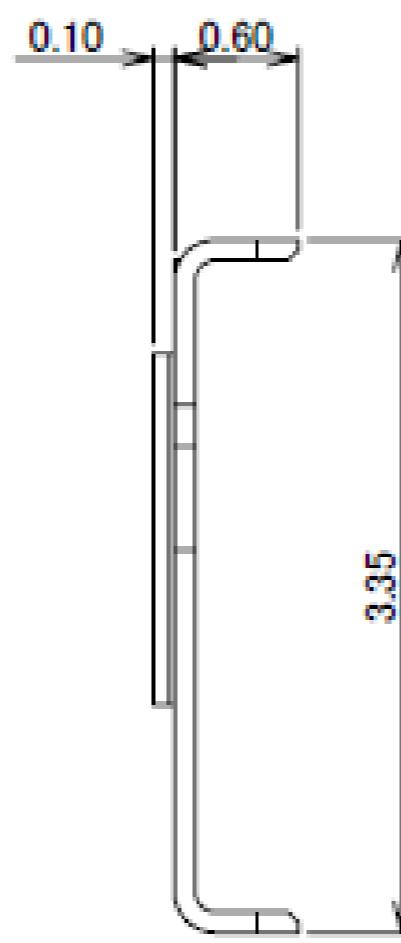
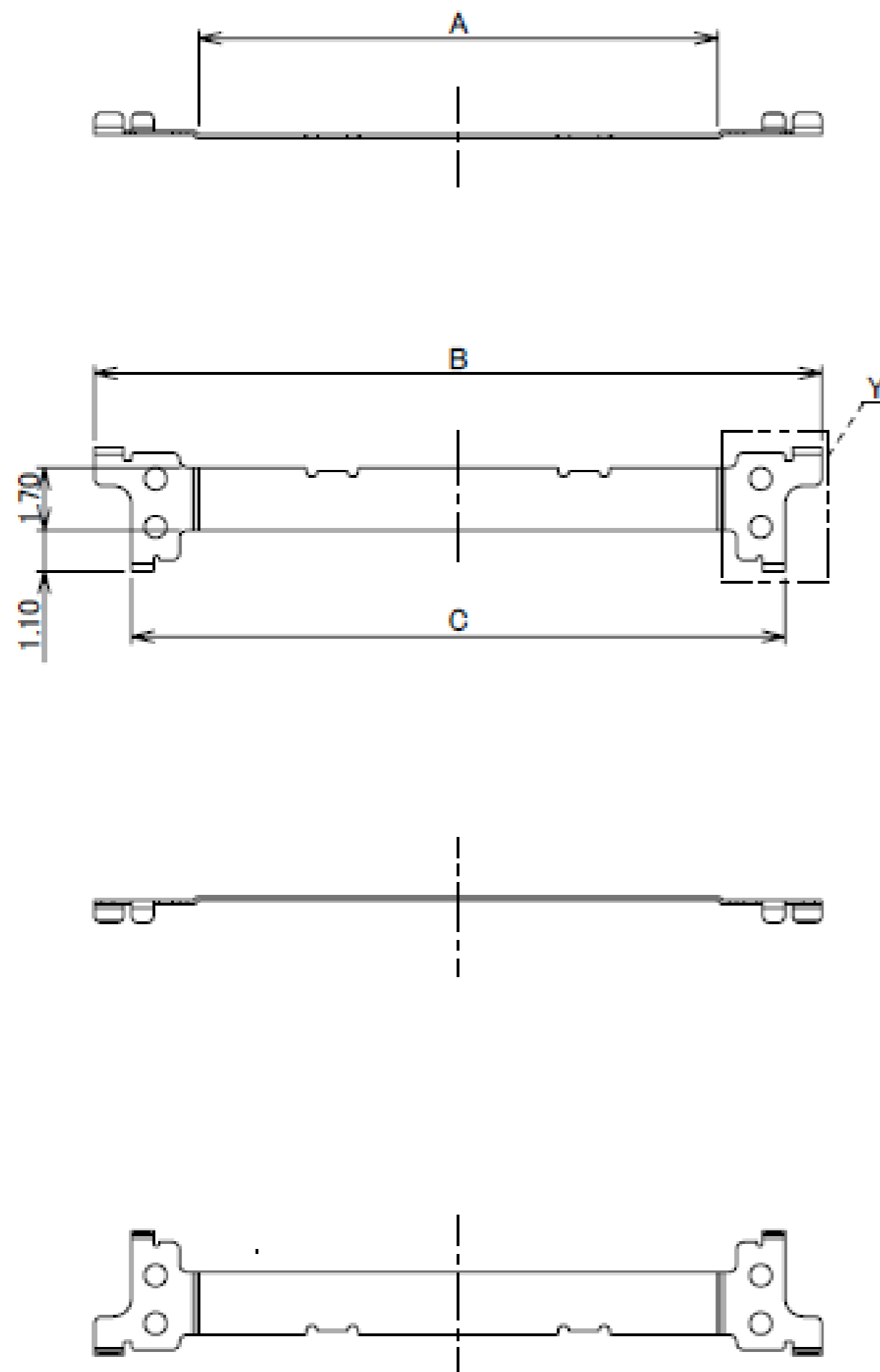


NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
1	SHELL A	PHOSPHOR BRONZE	PARTIAL Au 0.003 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m MIN.

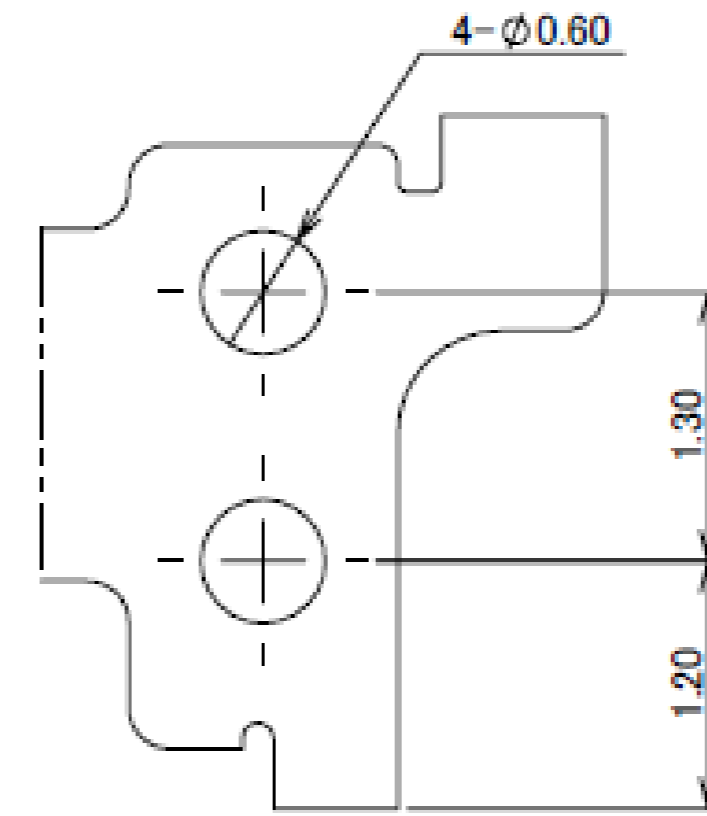
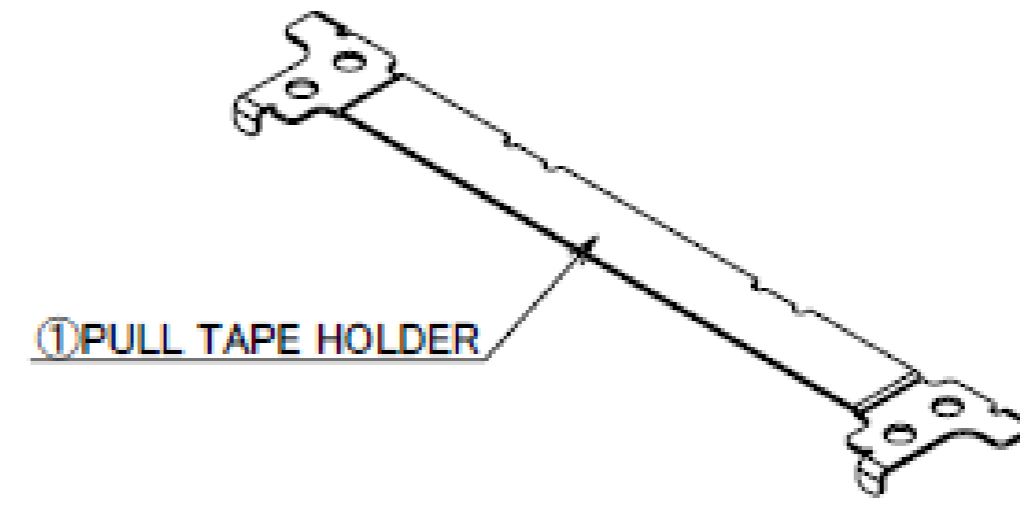
Rev.2

# Plug Pull Tape Holder

Recommended P/N		3588-0**1		
PART NO.	Pos.	A	B	C
3588-0301	30	10.00	15.65	13.65
3588-0401	40	14.00	19.65	17.65
3588-0601	60	22.00	27.65	25.65



DETAIL X  
(S=20 : 1)



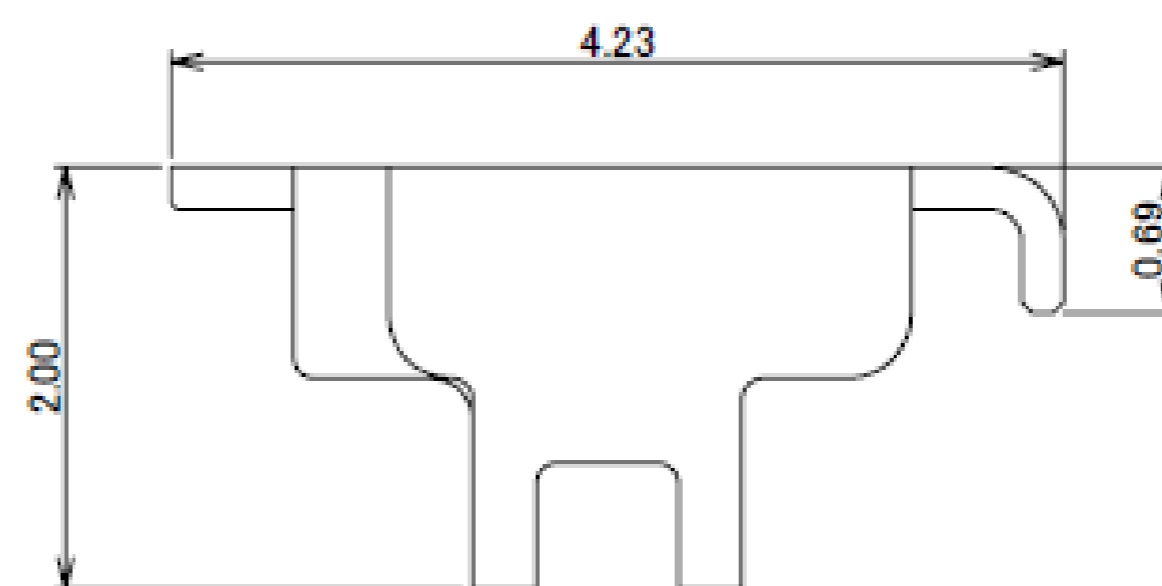
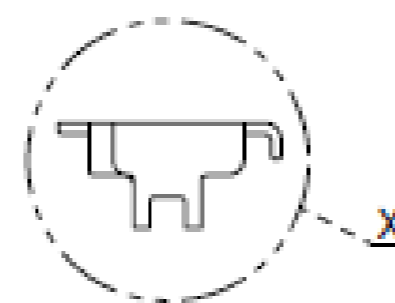
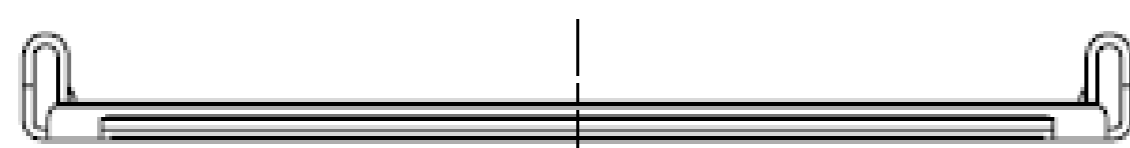
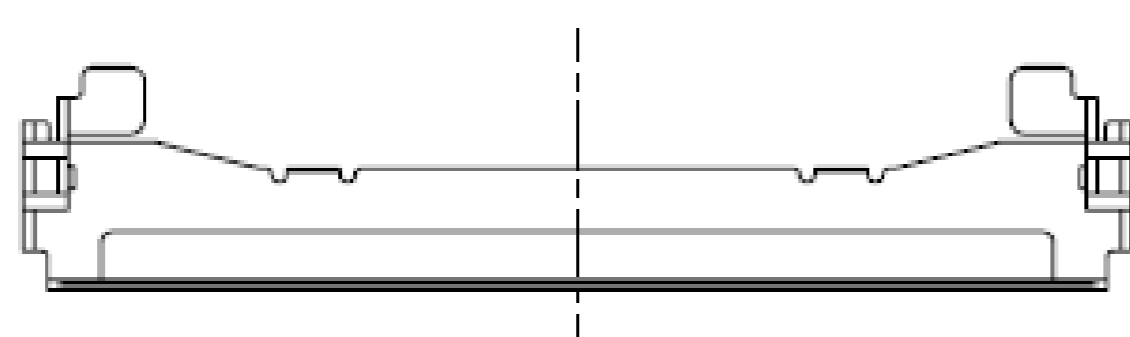
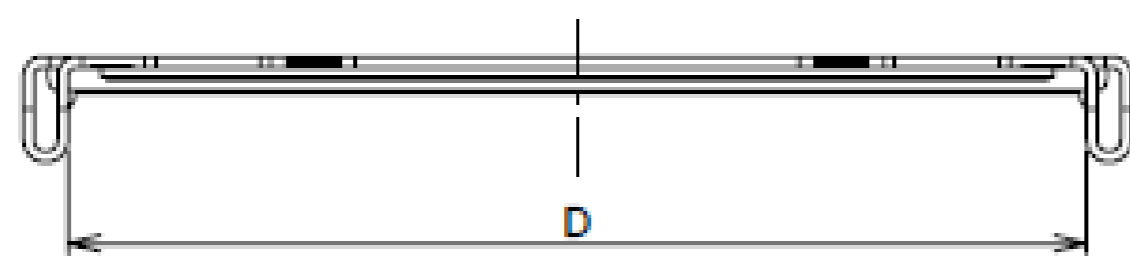
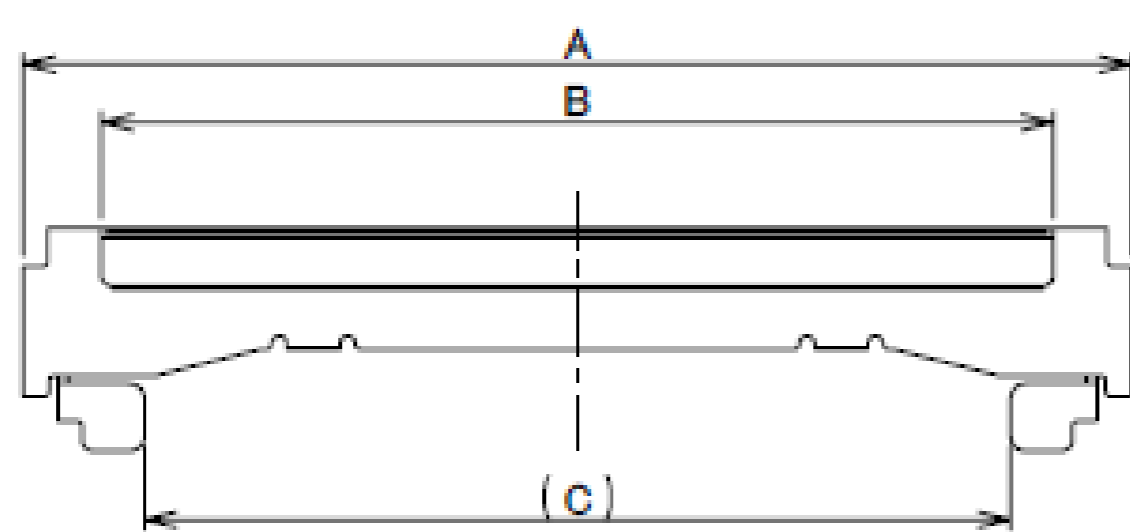
DETAIL Y  
(S=20 : 1)

NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
1	PULL TAPE HOLDER	PHOSPHOR BRONZE	PARTIAL Au 0.003 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m MIN.

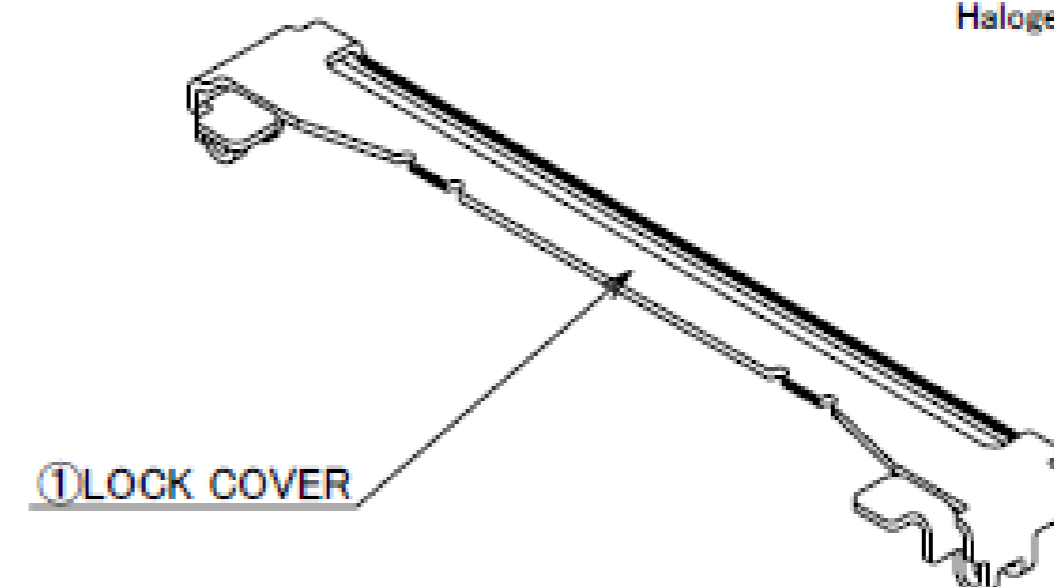
Rev.3

# Lock Cover

Recommended P/N		3493-0**1			
PART NO.	Pos.	A	B	C	D
3493-0301	30	17.00	14.05	12.40	15.30
3493-0401	40	21.00	18.05	16.40	19.30
3493-0601	60	29.00	26.05	24.40	27.30



DETAIL X  
(S=20 : 1)



NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
1	LOCK COVER	PHOSPHOR BRONZE	ALL OVER Ni 1.00 $\mu$ m MIN.

Rev.3

# Receptacle Assembly

Recommended P/N		20879-0**E-01							
PART NO.	Pos.	A	B	C	D	E	F	G	H
20879-030E-#1	30	15.27	13.01	11.60	9.60	12.07	12.88	15.27	13.65
20879-040E-#1	40	19.27	17.01	15.60	14.40	16.07	16.88	19.27	17.65
20879-060E-#1	60	27.27	25.01	23.60	21.60	24.07	24.88	27.27	25.65

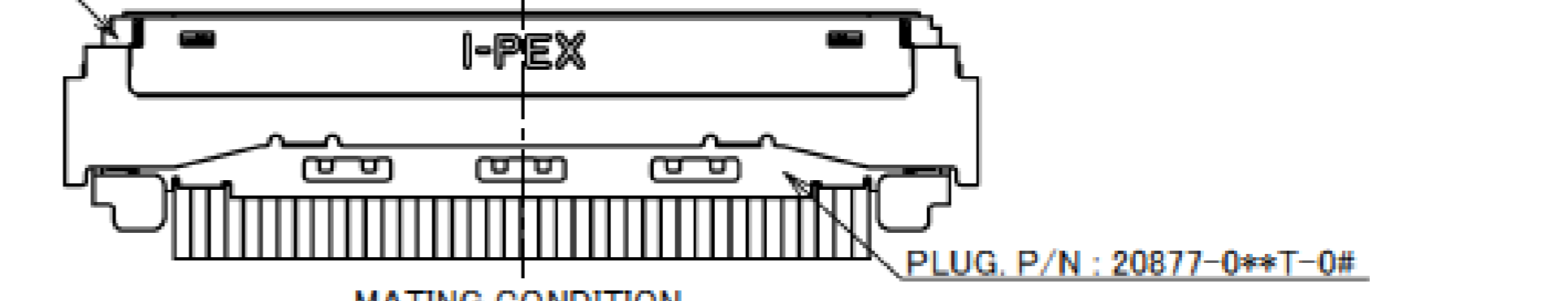
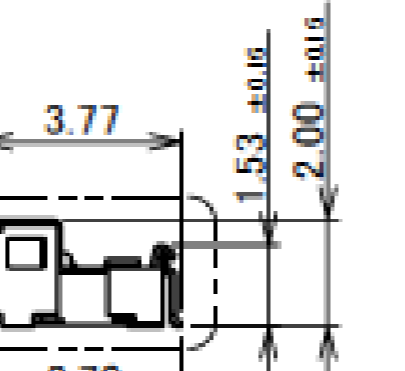
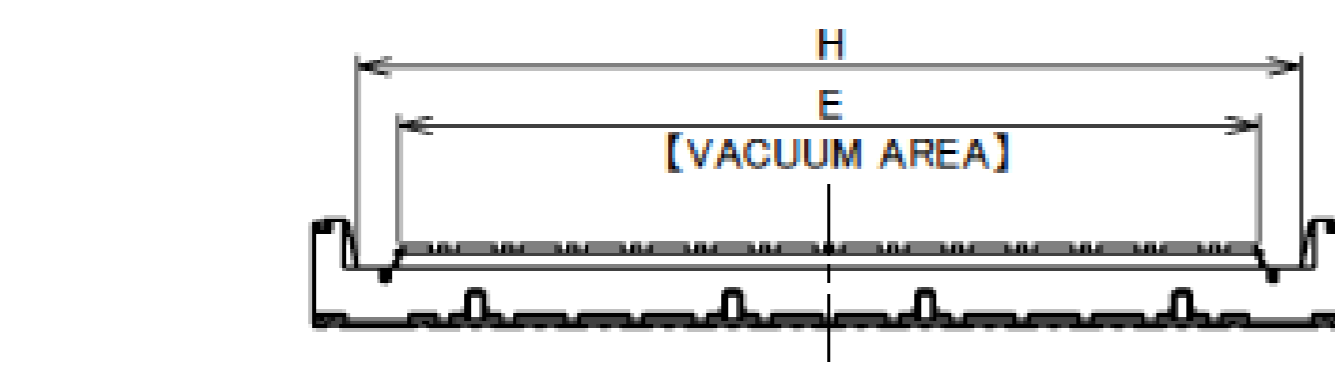
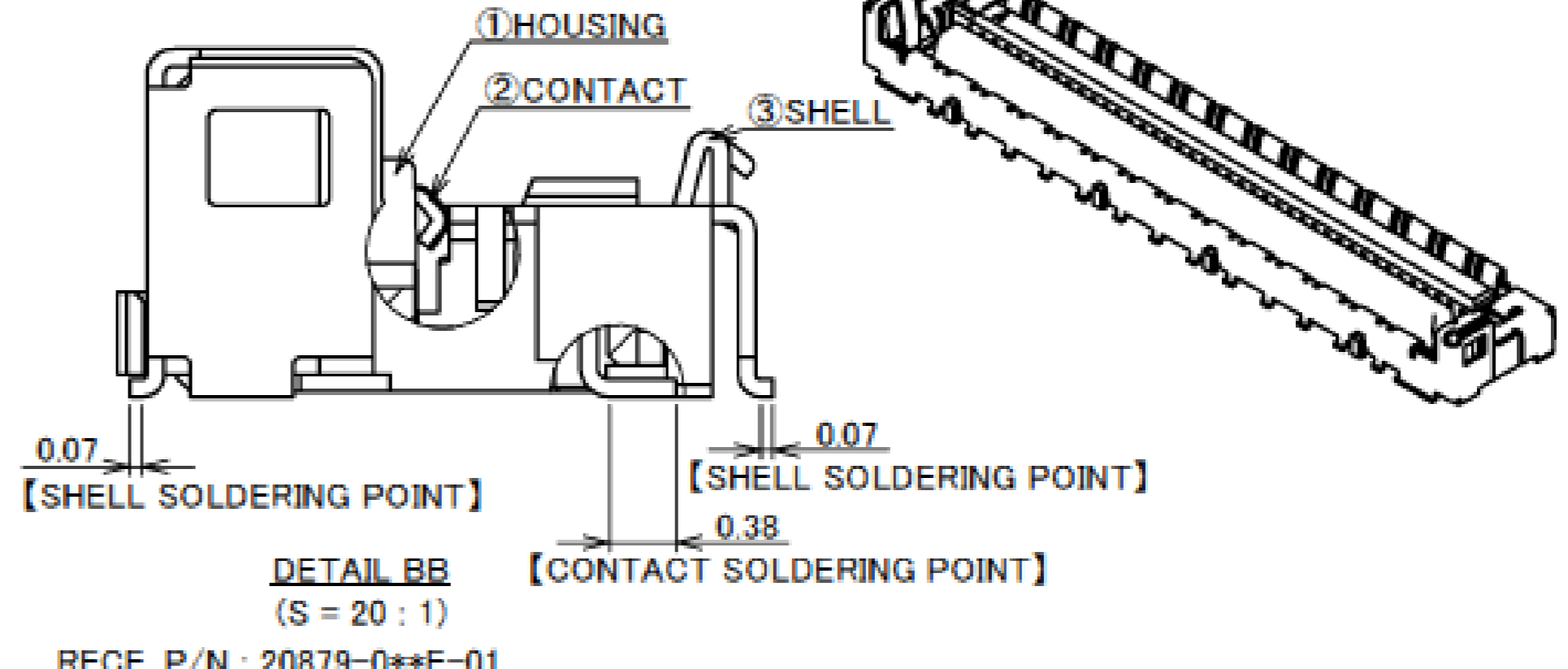
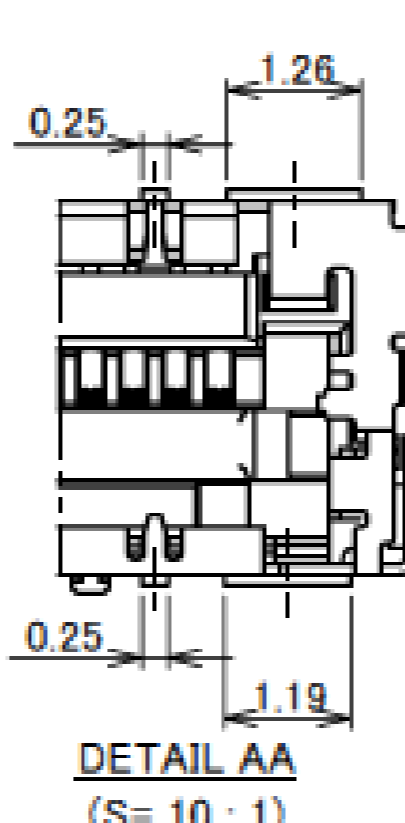
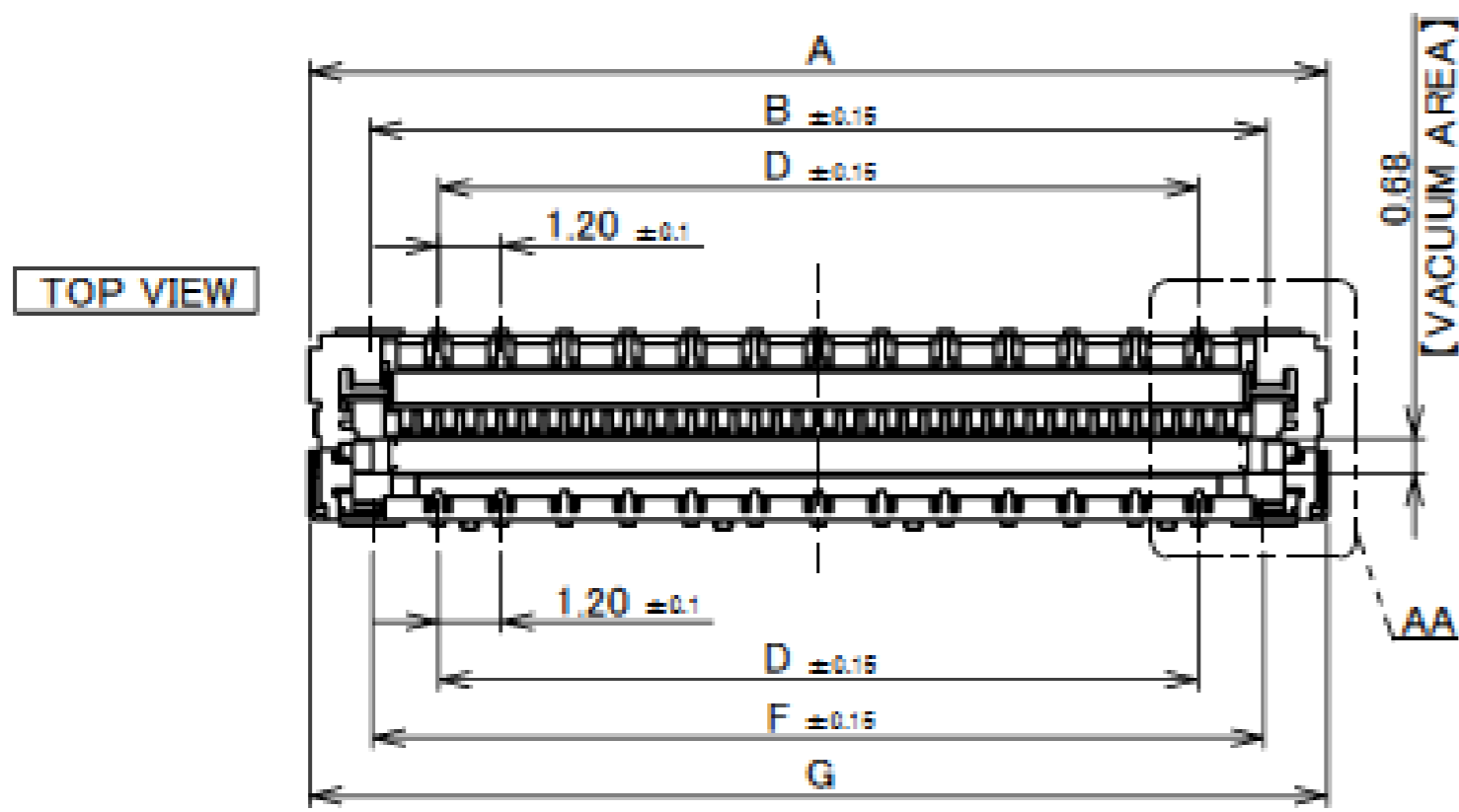
P/N : 20879-0\*\*E-##  
Pos.

1 : NARROW GROUND PIN TYPE  
2 : WIDER GROUND PIN TYPE  
SEE TABLE.1

**#1 TYPE**



Halogen Free RoHS Compliant



MATING CONDITION TABLE.1

PART NO.	CONTACT FINISH
20879-0**E-01	ALL OVER Ni 1.00 μm MIN. CONTACT & SOLDERING AREA : Au 0.03 μm MIN.
20879-0**E-11	ALL OVER Ni 1.27 μm MIN. CONTACT AREA : Au 0.254 μm MIN. SOLDERING AREA : Au 0.03 μm MIN.

3	SHELL	PHOSPHOR BRONZE	ALL OVER : Ni 1.00 μm MIN. SOLDERING AREA : Au 0.02 μm MIN.
2	CONTACT	CORSON ALLOY	SEE TABLE.1
1	HOUSING	LCP	UL94V-0, BLACK

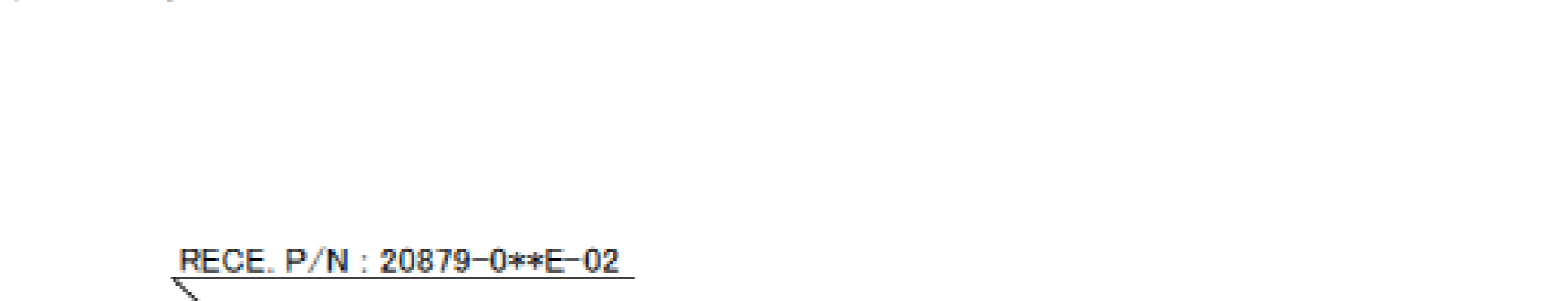
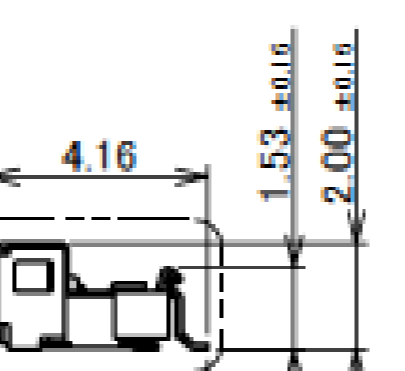
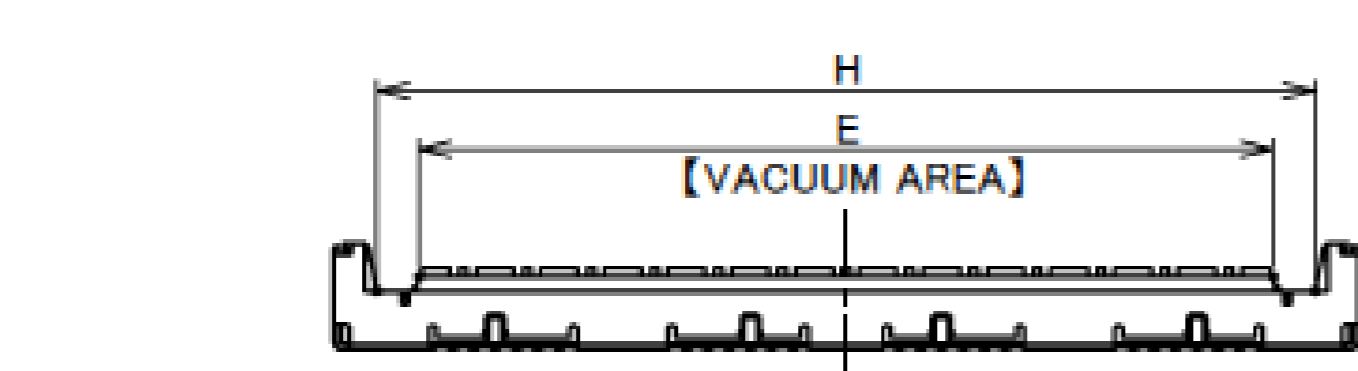
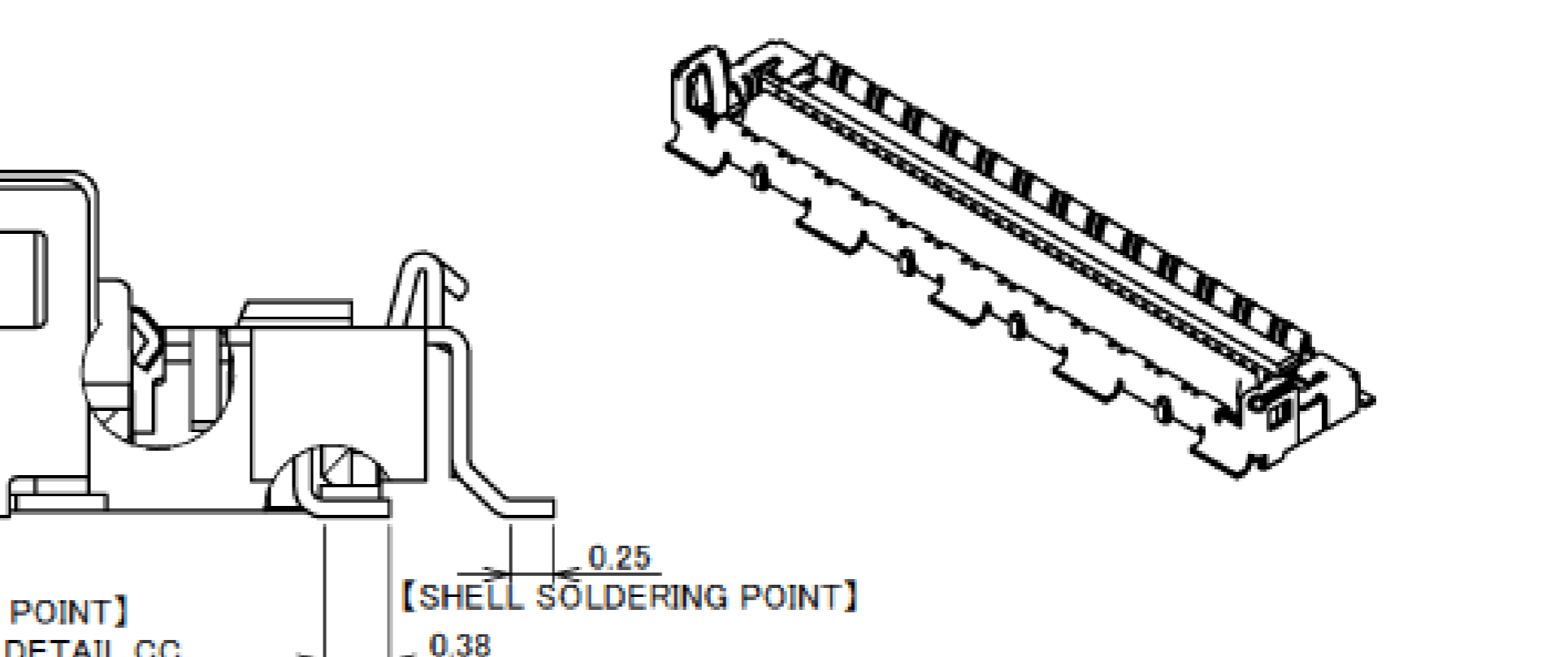
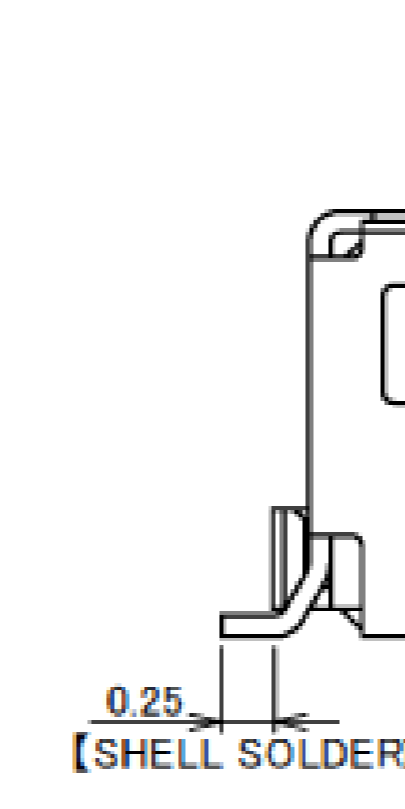
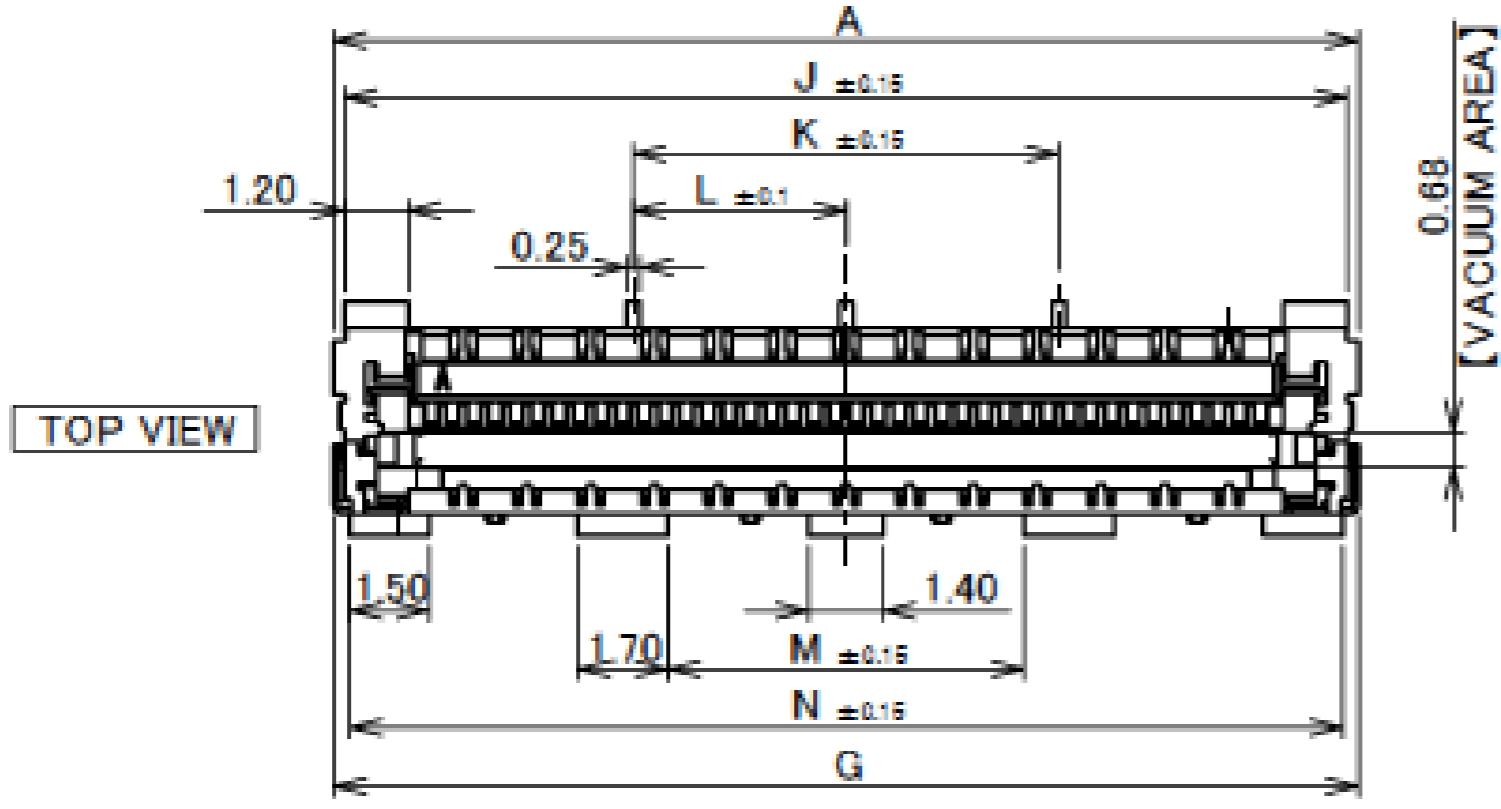
Rev.12

Recommended P/N		20879-0**E-01										
PART NO.	Pos.	A	C	E	G	H	J	K	L	M	N	
20879-030E-02	30	15.27	11.60	12.07	15.27	13.65	14.87	4.00	-	7.09	14.69	
20879-040E-02	40	19.27	15.60	16.07	19.27	17.65	18.87	8.00	4.00	6.70	18.69	
20879-060E-02	60	27.27	23.60	24.07	27.27	25.65	26.87	17.60	11.20	10.70	26.69	

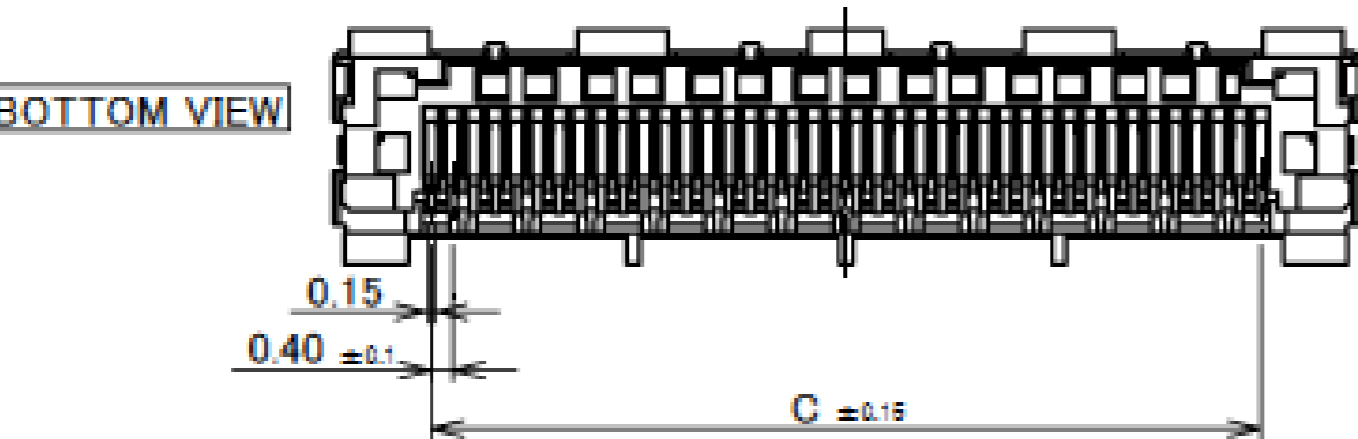
**02 TYPE**



Halogen Free RoHS Compliant



MATING CONDITION



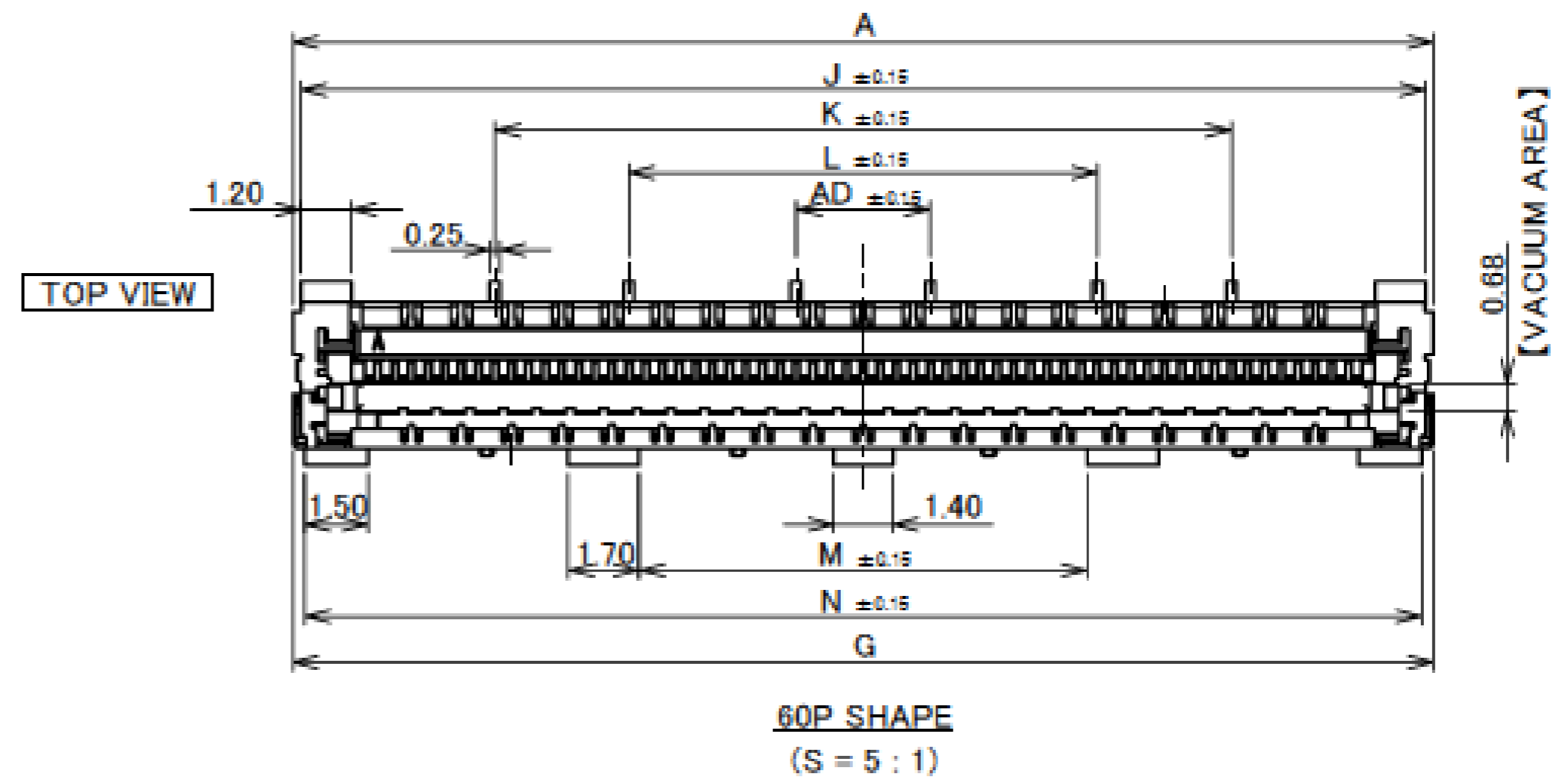
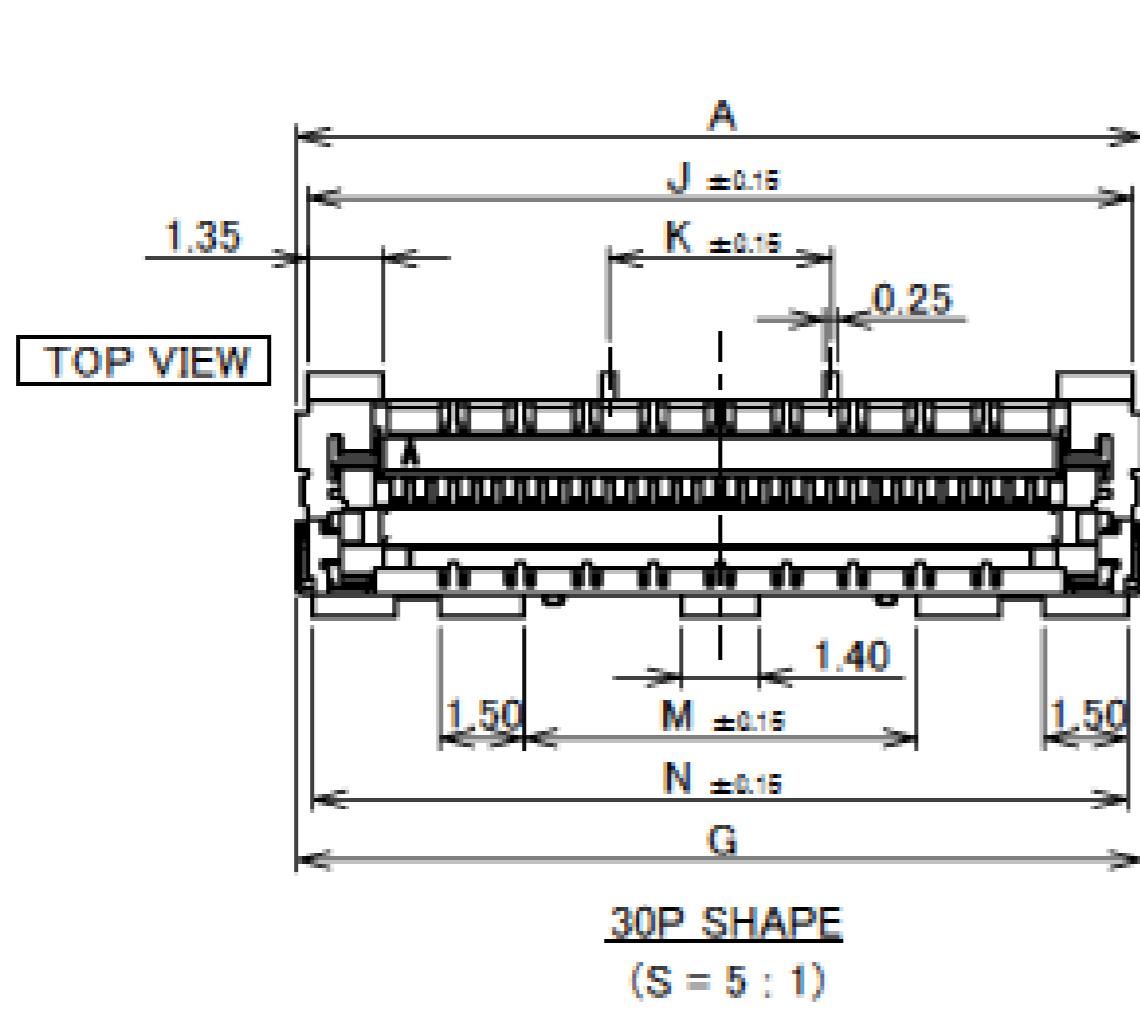
Rev.12

# Receptacle Assembly

Recommended P/N 20879-0\*\*E-01

PART NO.	Pos.	A	C	E	G	H	J	K	L	M	N	AD
20879-030E-02	30	15.27	11.60	12.07	15.27	13.65	14.87	4.00	-	7.09	14.69	-
20879-040E-02	40	19.27	15.60	16.07	19.27	17.65	18.87	8.00	4.00	6.70	18.69	-
20879-060E-02	60	27.27	23.60	24.07	27.27	25.65	26.87	17.60	11.20	10.70	26.69	3.20

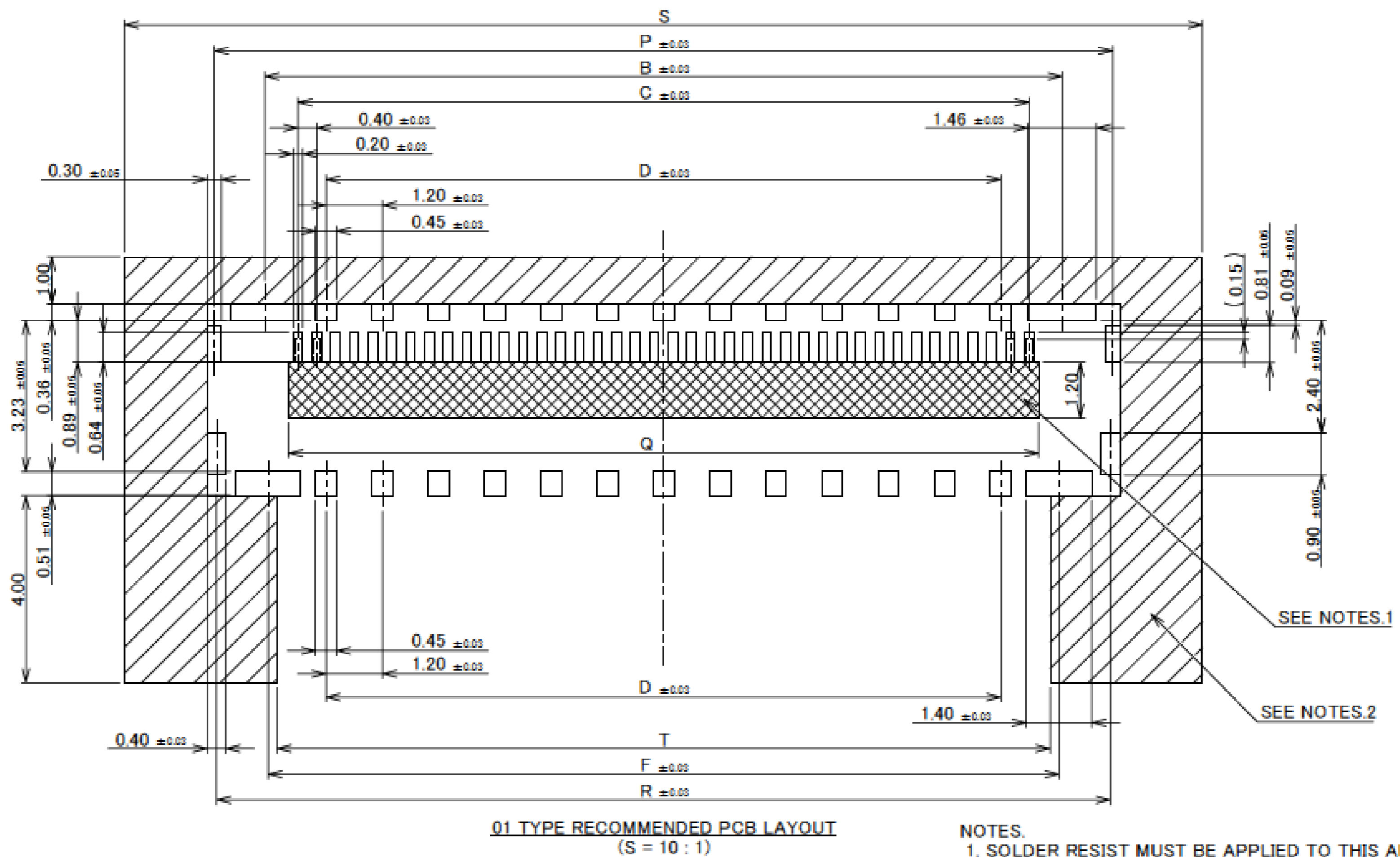
02 TYPE



Rev.12

PART No.	Pos.	B	C	D	F	P	Q	R	S	T
20879-030E-#1	30	13.01	11.60	9.60	12.88	15.17	12.00	15.07	19.00	12.50
20879-040E-#1	40	17.01	15.60	14.40	16.88	19.17	16.00	19.07	23.00	16.50
20879-060E-#1	60	25.01	23.60	21.60	24.88	27.17	24.00	27.07	31.00	24.50

#1 TYPE



NOTES:  
1. SOLDER RESIST MUST BE APPLIED TO THIS AREA.  
2. DO NOT MOUNT ANOTHER COMPONENT IN THIS AREA.

Rev.12

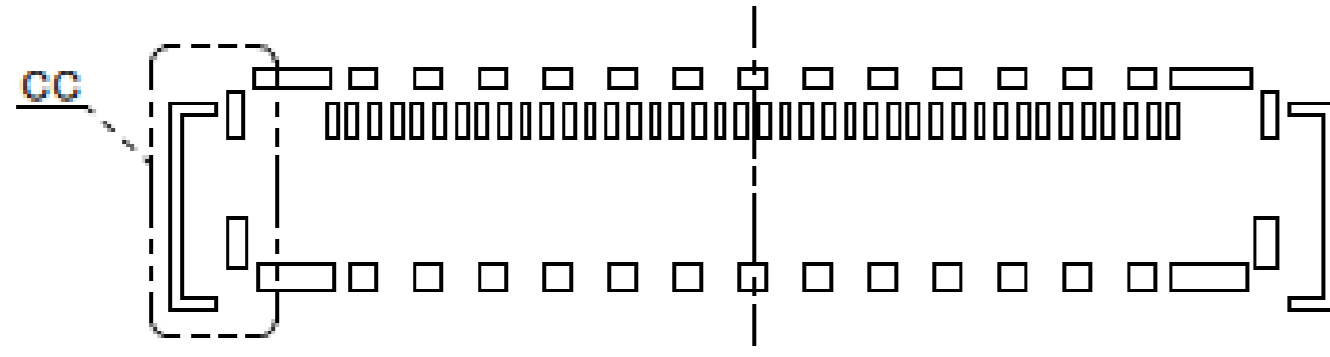


# Receptacle Assembly

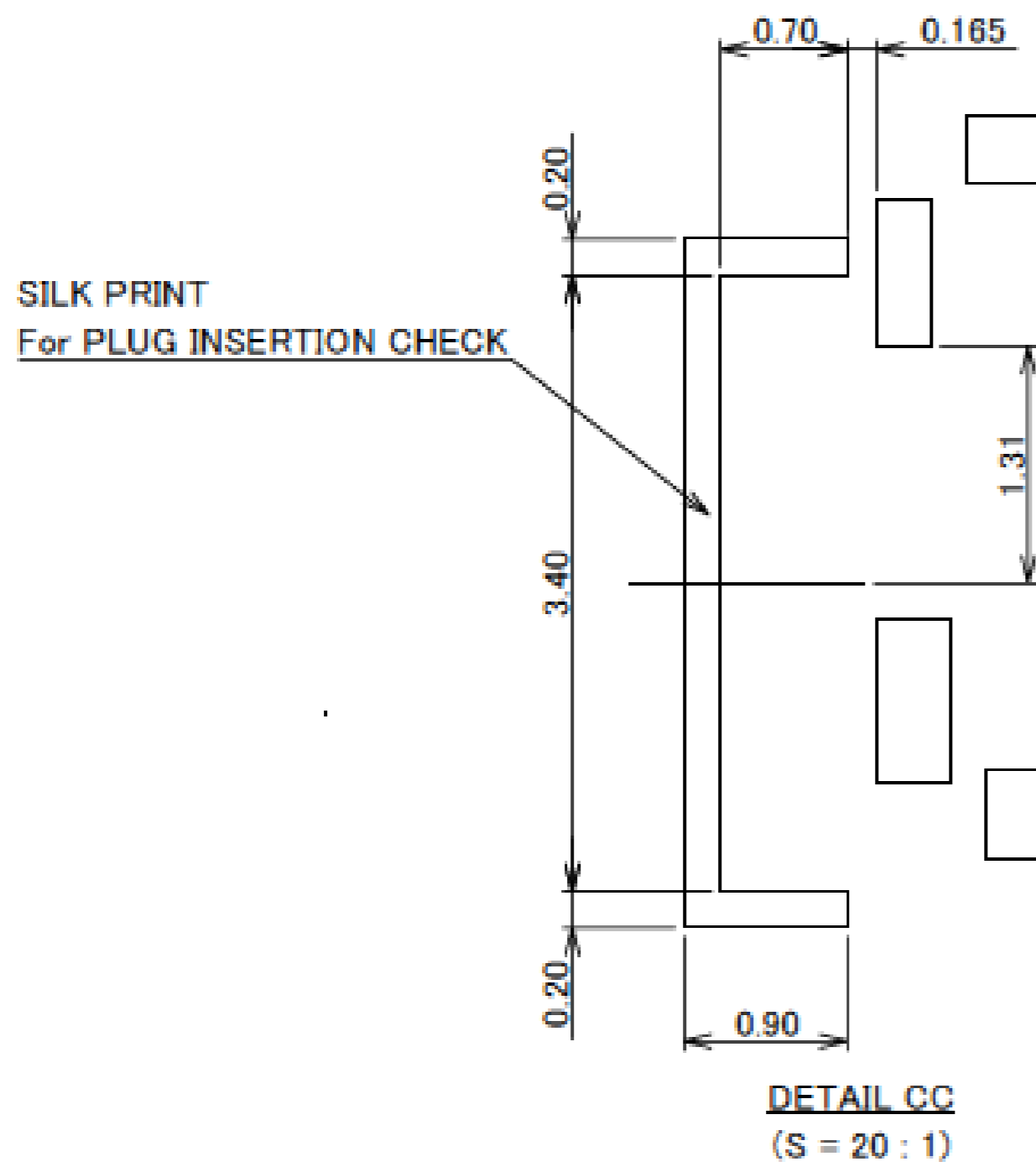
PART No.	Pos.
20879-030E-#1	30
20879-040E-#1	40
20879-060E-#1	60

#1 TYPE

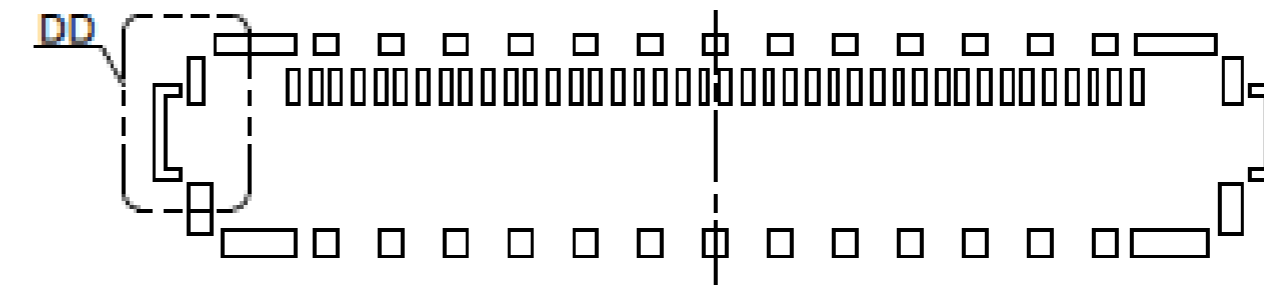
With LOCK COVER



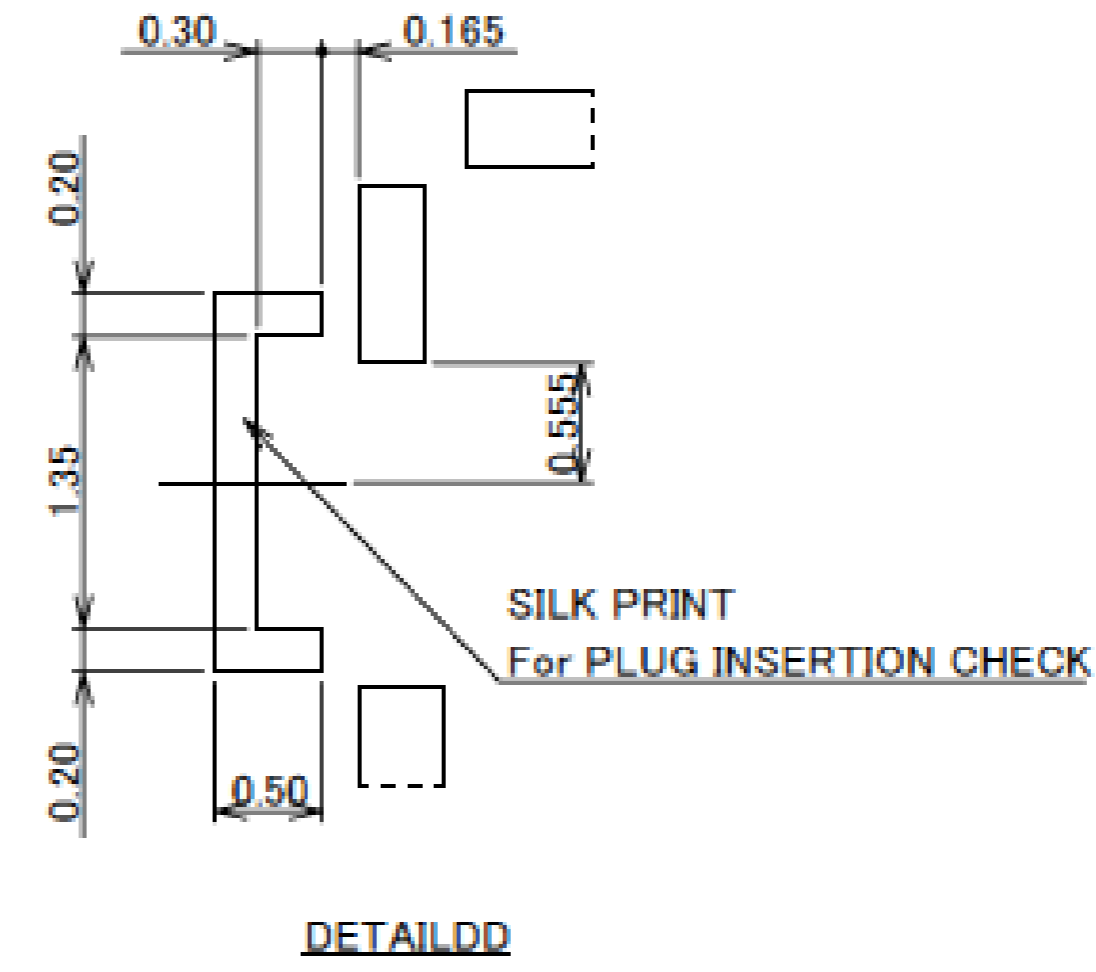
RECOMMENDED SILK PRINT For With LOCK COVER  
(S = 5 : 1)



Without LOCK COVER & With PULL TAPE HOLDER



RECOMMENDED SILK PRINT For Without LOCK COVER  
(S = 5 : 1)

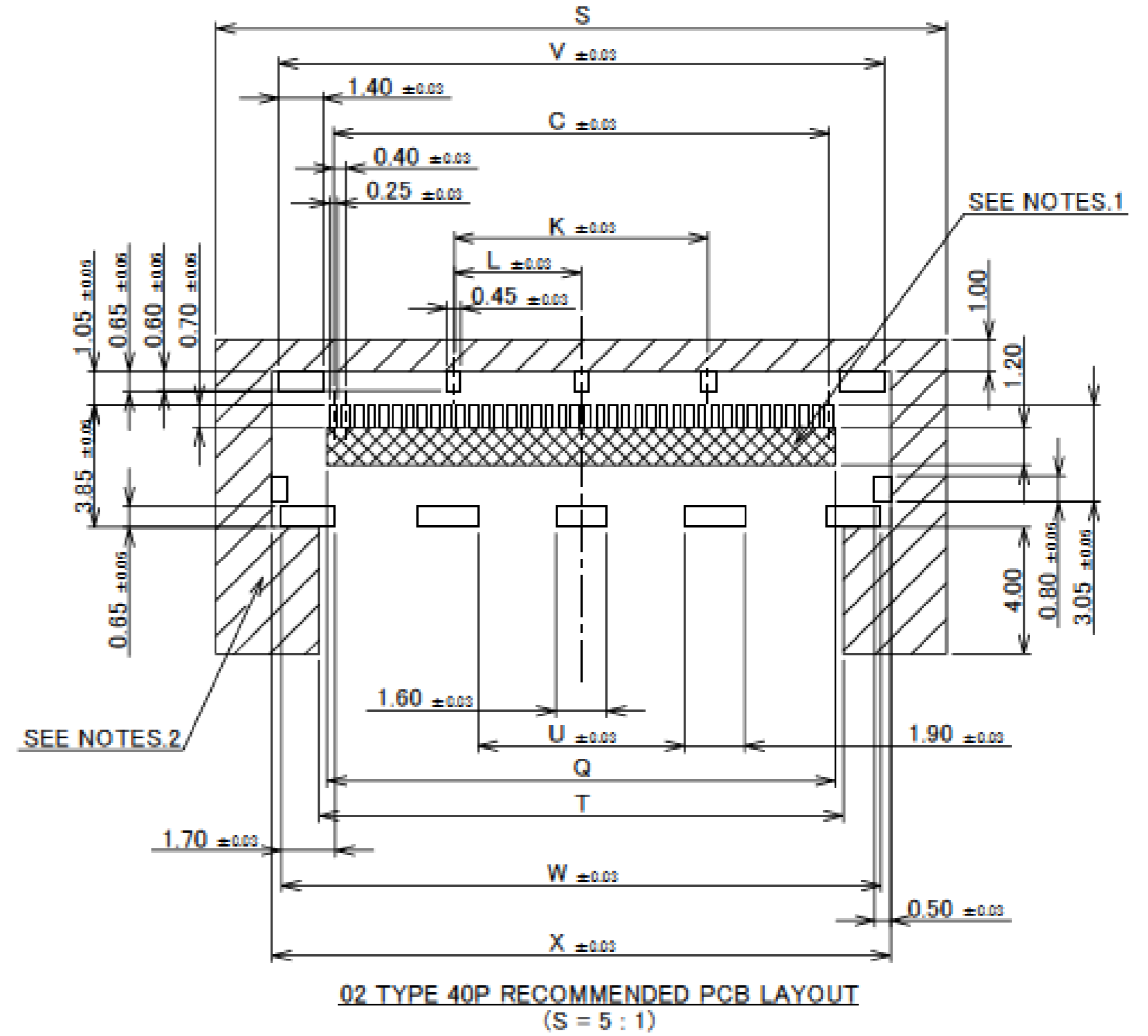
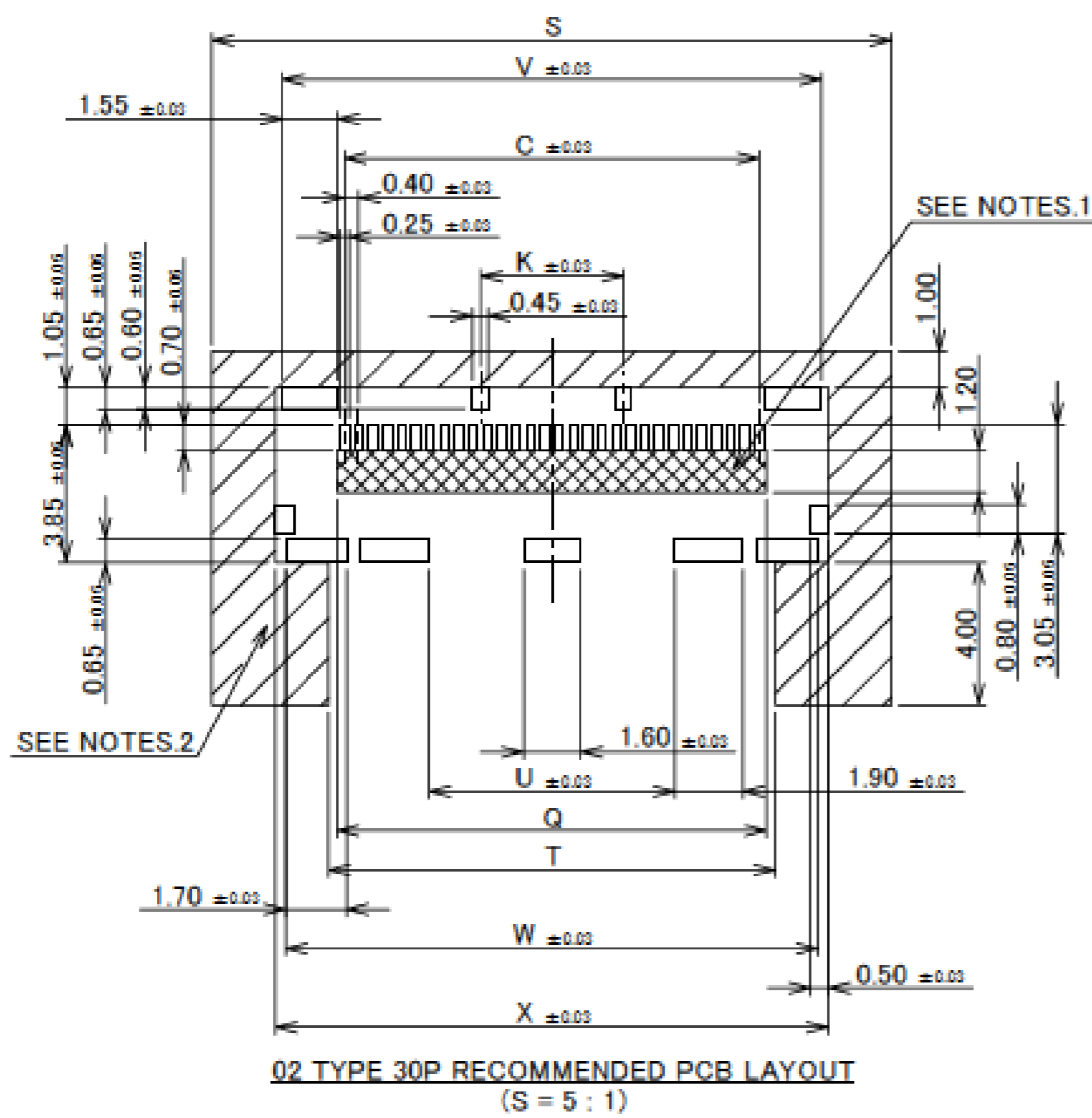


Rev.12

PART No.	Pos.	C	K	L	Q	S	T	U	V	W	X
20879-030E-02	30	11.60	4.00	-	12.00	19.00	12.50	6.89	15.07	14.89	15.47
20879-040E-02	40	15.60	8.00	4.00	16.00	23.00	16.50	6.50	19.07	18.89	19.47
20879-060E-02	60	23.60	17.60	11.20	24.00	31.00	24.50	10.50	27.07	26.89	27.47

PATENT PENDING

02 TYPE



- NOTES.  
1. SOLDER RESIST MUST BE APPLIED TO THIS AREA.  
2. DO NOT MOUNT ANOTHER COMPONENT IN THIS AREA.

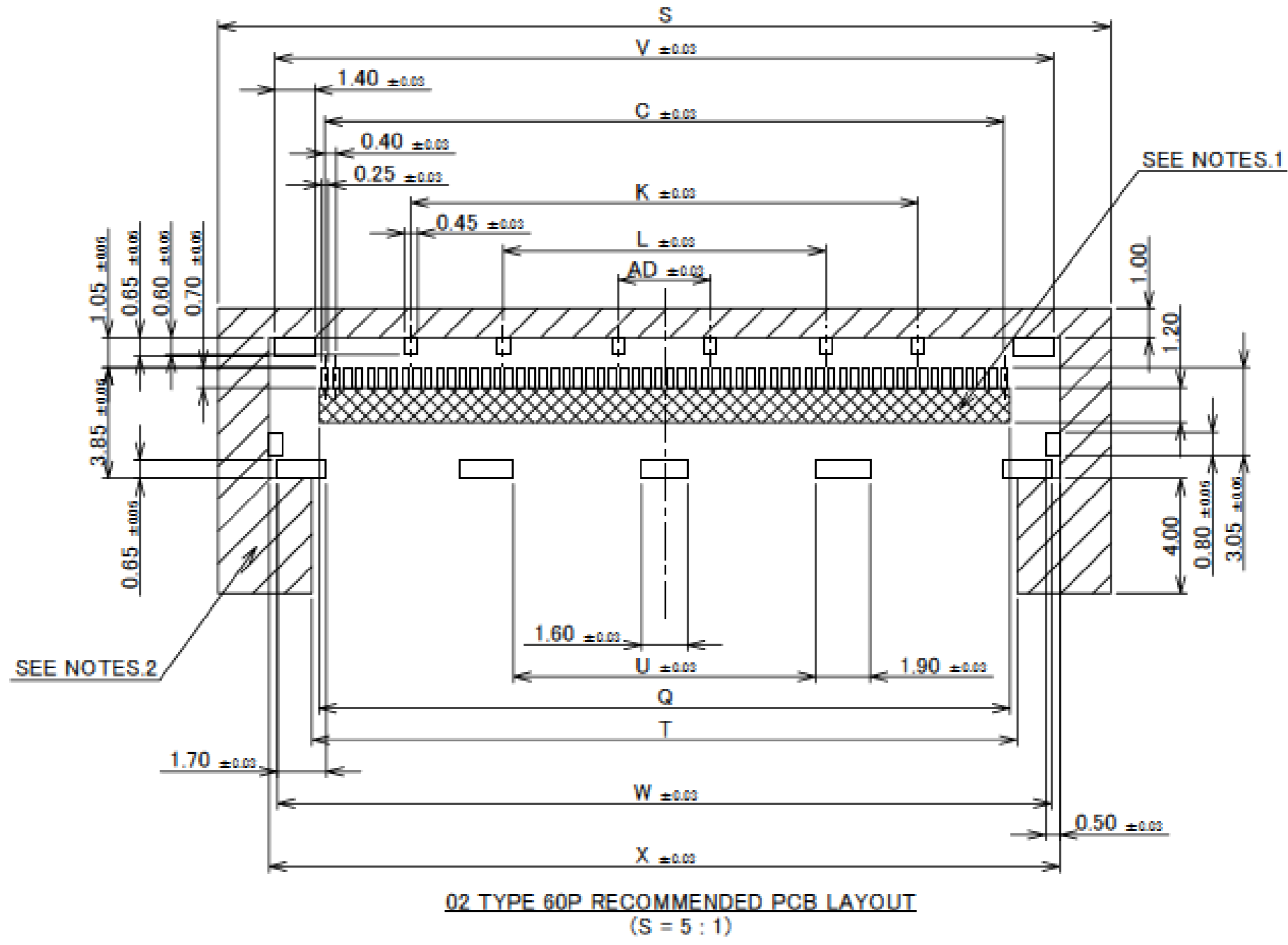
Rev.12

# Receptacle Assembly

PART No.	Pos.	C	K	L	Q	S	T	U	V	W	X	AD
20879-030E-02	30	11.60	4.00	-	12.00	19.00	12.50	6.89	15.07	14.89	15.47	-
20879-040E-02	40	15.60	8.00	4.00	16.00	23.00	16.50	6.50	19.07	18.89	19.47	-
20879-060E-02	60	23.60	17.60	11.20	24.00	31.00	24.50	10.50	27.07	26.89	27.47	3.20

**PATENT PENDING**

**02 TYPE**

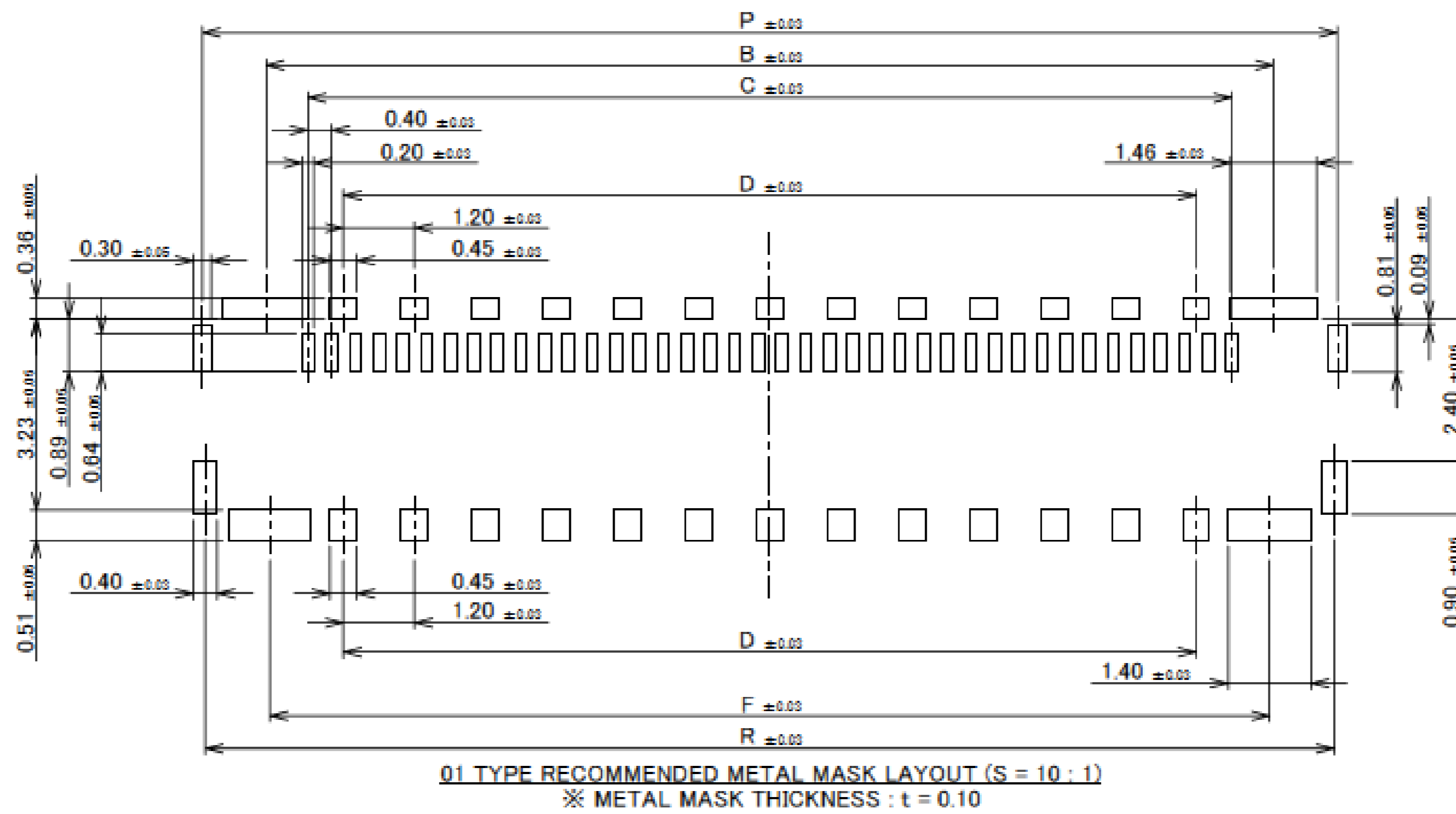


- NOTES.  
 1. SOLDER RESIST MUST BE APPLIED TO THIS AREA.  
 2. DO NOT MOUNT ANOTHER COMPONENT IN THIS AREA.

Rev.12

PART No.	Pos.	B	C	D	F	P	R
20879-030E-#1	30	13.01	11.60	9.60	12.88	15.17	15.07
20879-040E-#1	40	17.01	15.60	14.40	16.88	19.17	19.07
20879-060E-#1	60	25.01	23.60	21.60	24.88	27.17	27.07

**#1 TYPE**

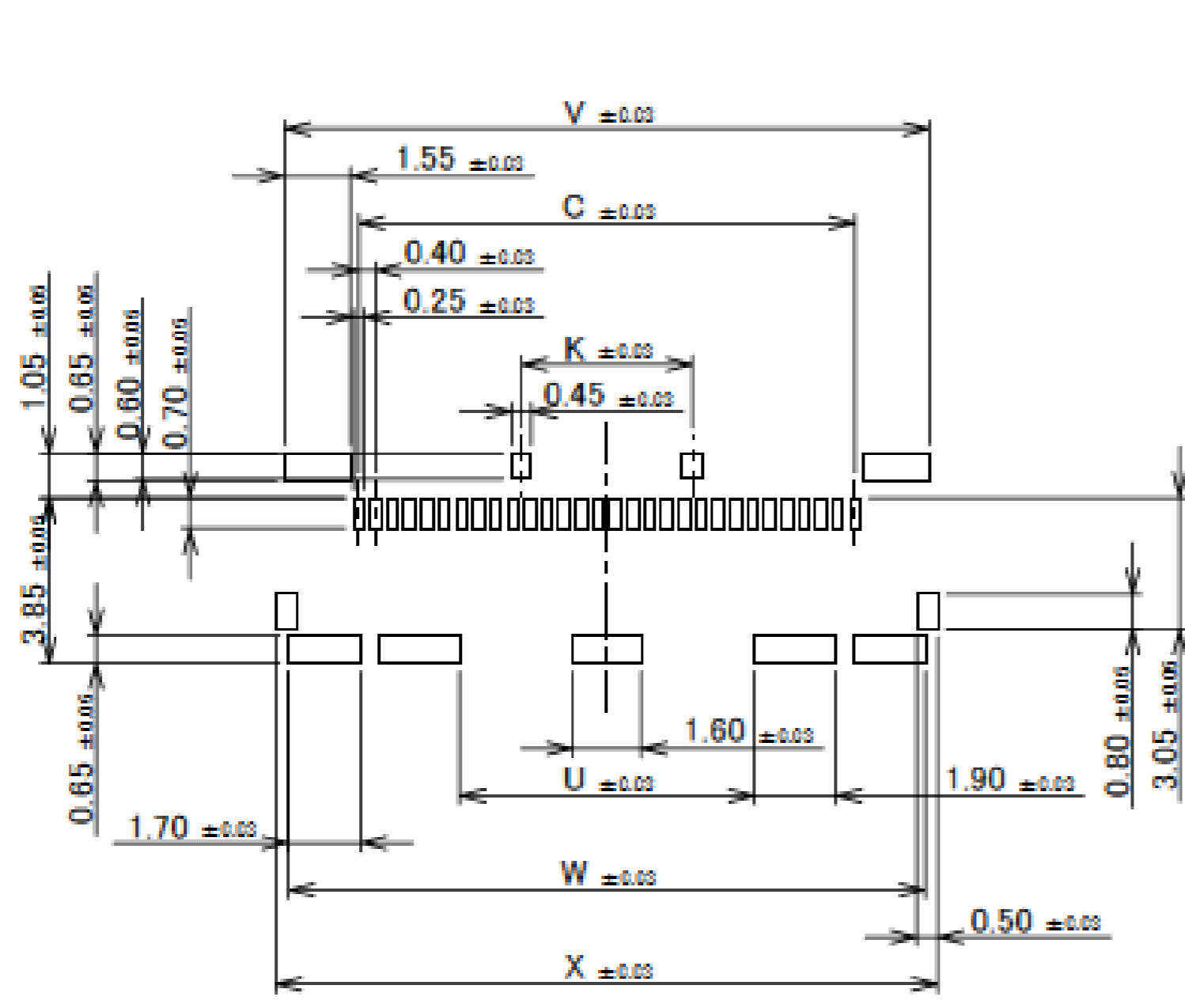


Rev.12

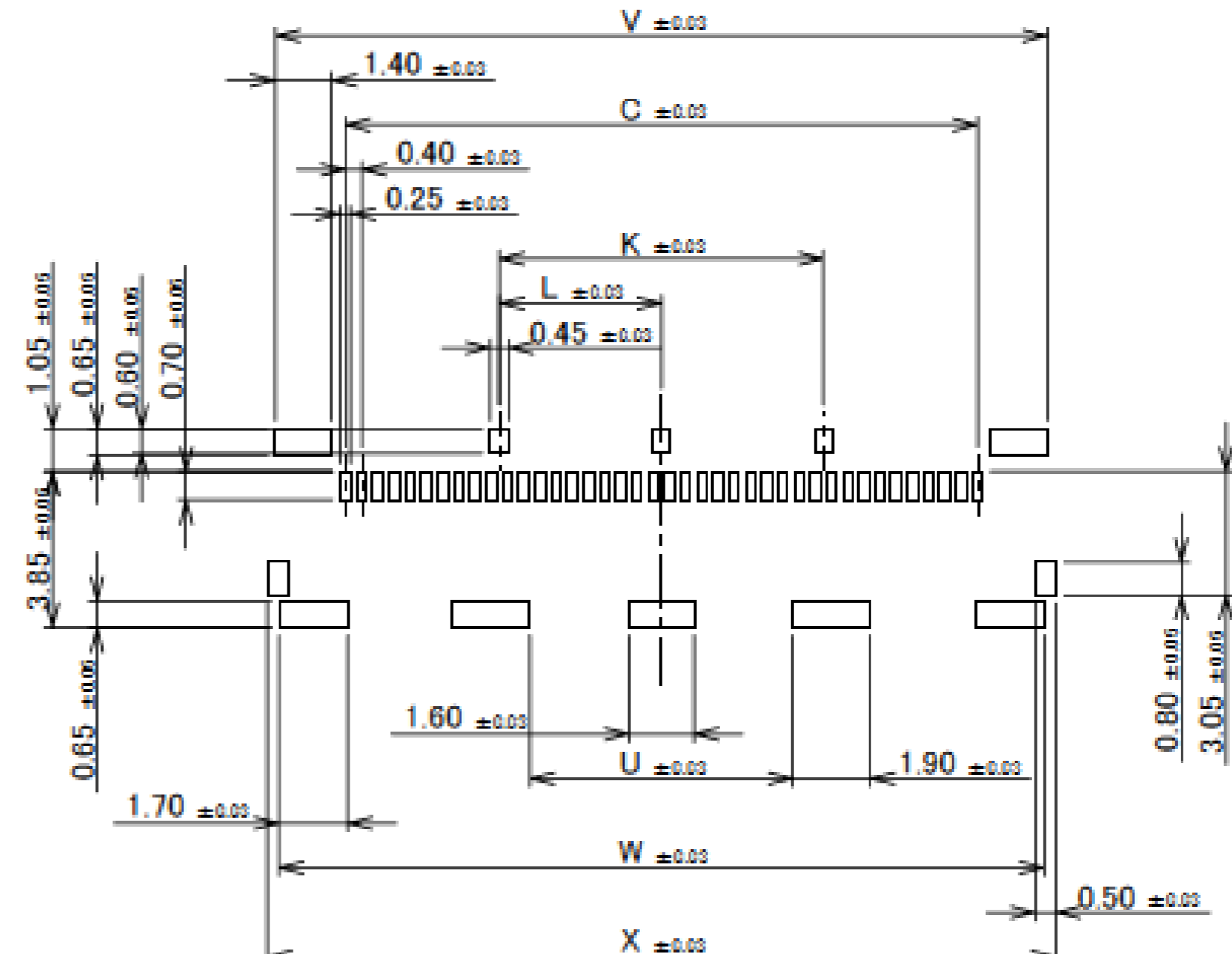
# Receptacle Assembly

PART No.	Pos.	C	K	L	U	V	W	X
20879-030E-02	30	11.60	4.00	-	6.89	15.07	14.89	15.47
20879-040E-02	40	15.60	8.00	4.00	6.50	19.07	18.89	19.47
20879-060E-02	60	23.60	17.60	11.20	10.50	27.07	26.89	27.47

02 TYPE



02 TYPE 30P RECOMMENDED METAL MASK LAYOUT (S = 5 : 1)  
※ METAL MASK THICKNESS : t = 0.12

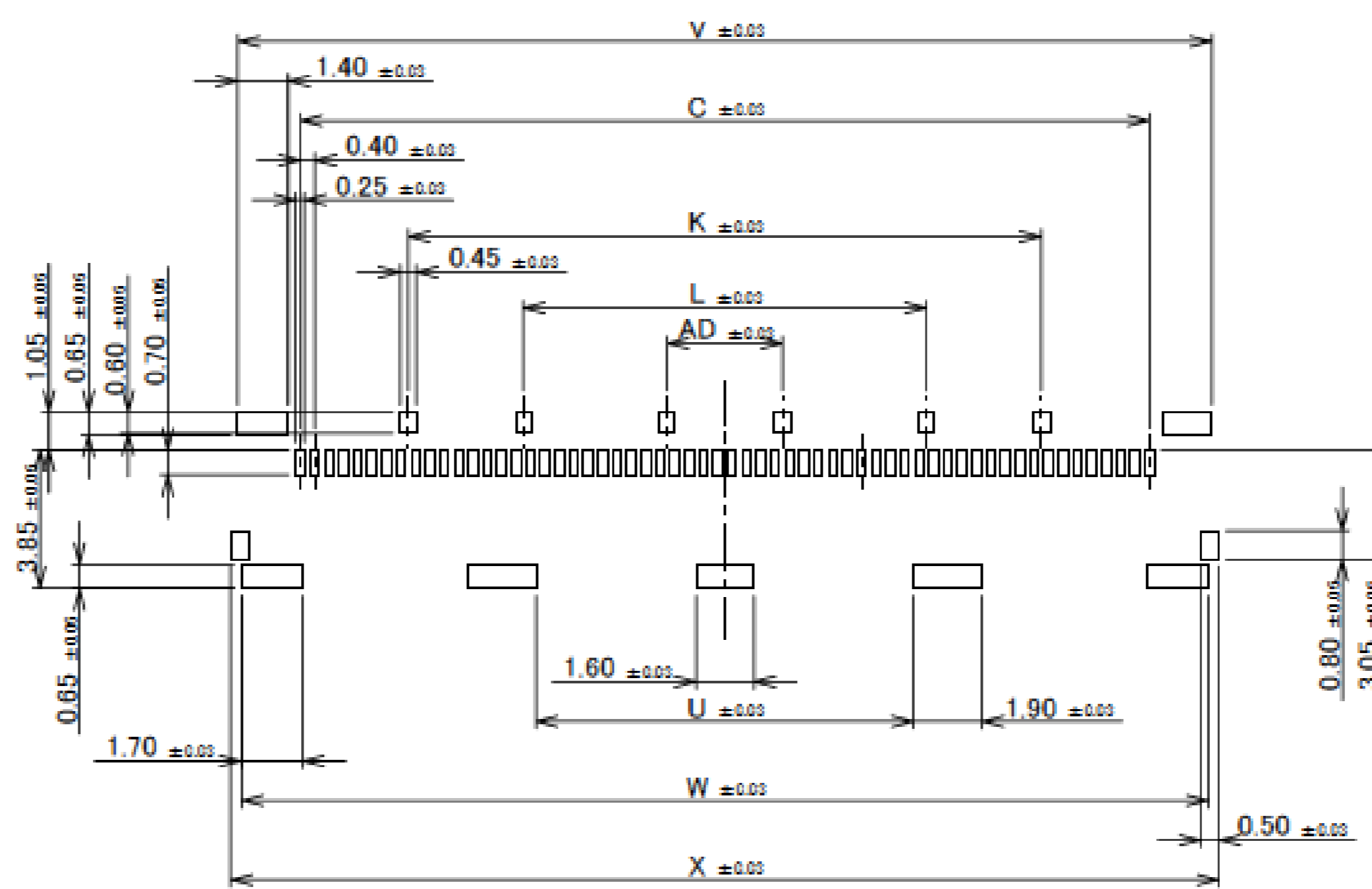


02 TYPE 40P RECOMMENDED METAL MASK LAYOUT (S = 5 : 1)  
※ METAL MASK THICKNESS : t = 0.12

Rev.12

PART No.	Pos.	C	K	L	U	V	W	X	AD
20879-030E-02	30	11.60	4.00	-	6.89	15.07	14.89	15.47	-
20879-040E-02	40	15.60	8.00	4.00	6.50	19.07	18.89	19.47	-
20879-060E-02	60	23.60	17.60	11.20	10.50	27.07	26.89	27.47	3.20

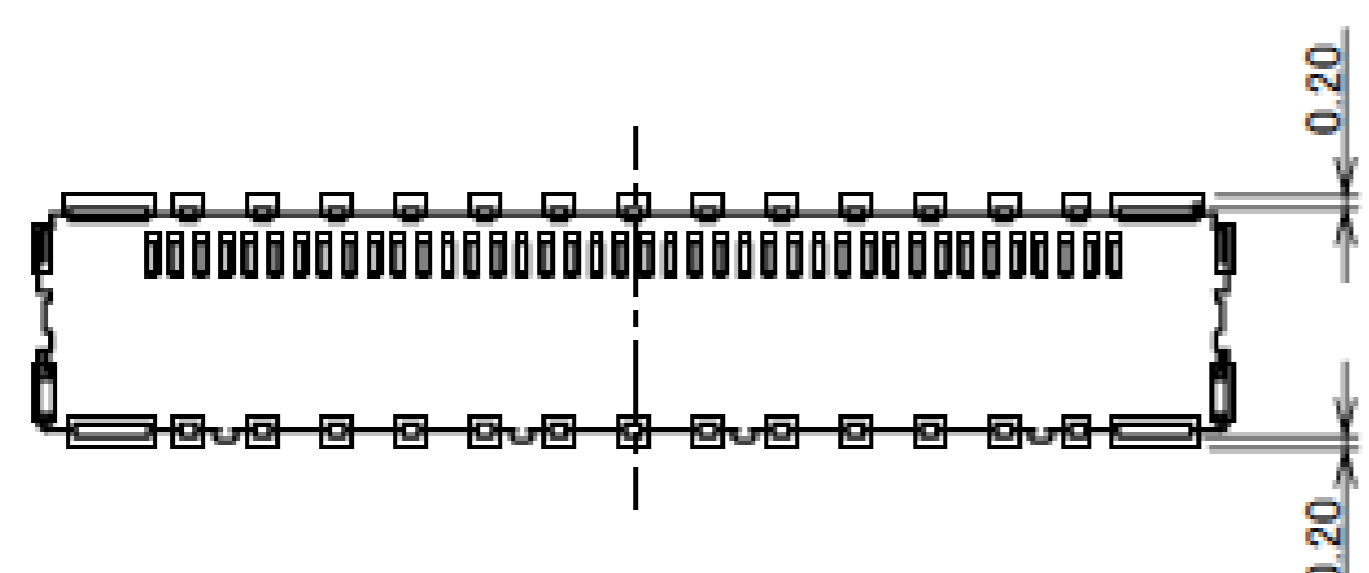
02 TYPE



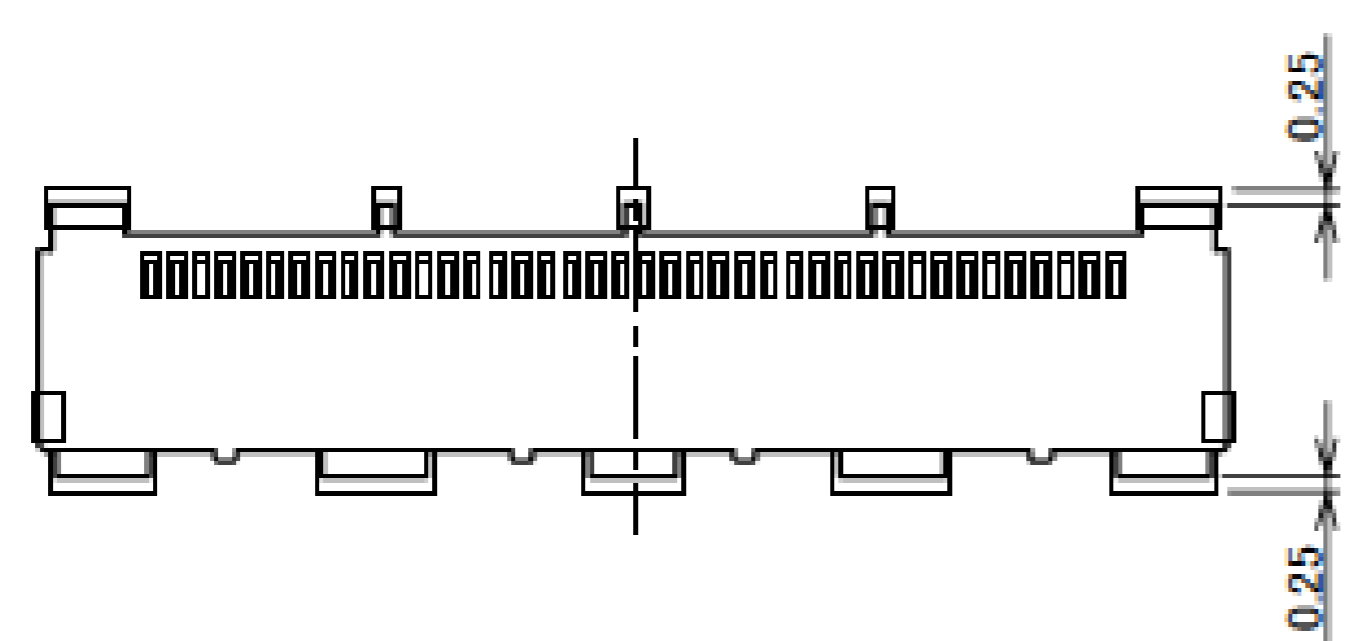
02 TYPE 60P RECOMMENDED METAL MASK LAYOUT (S = 5 : 1)  
※ METAL MASK THICKNESS : t = 0.12

Rev.12

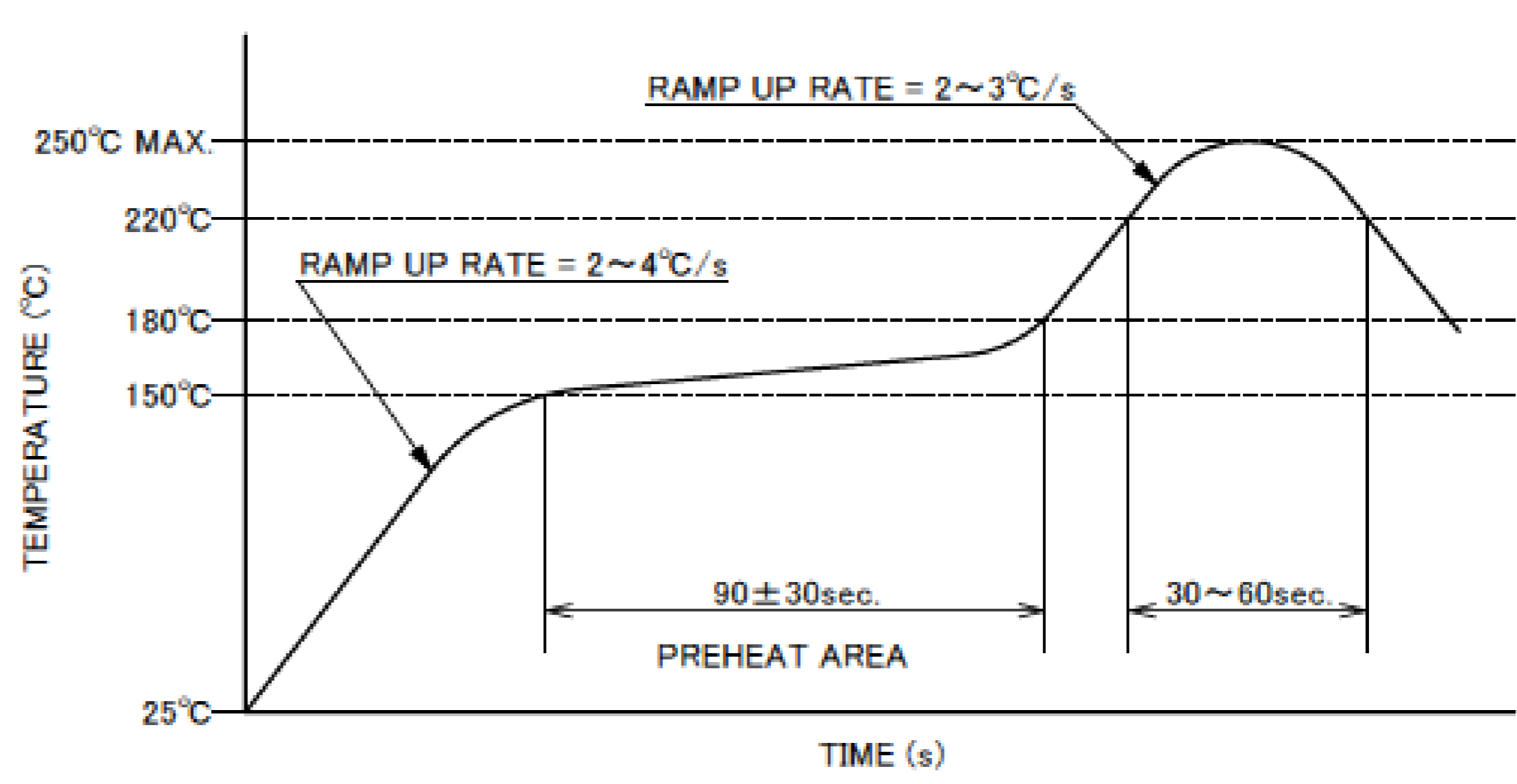
# Receptacle Assembly



CONNECTOR ON RECOMMENDED FOOTPRINT PATTERN  
※01 TYPE



CONNECTOR ON RECOMMENDED FOOTPRINT PATTERN  
※02 TYPE



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

Rev.12

ITEMS	SPECIFICATION
APPLICABLE CABLE	MICRO-COAXIAL CABLE : AWG# 44 , 42 , 40 , 38 , 36 DISCRETE WIRE : AWG# 36 , 34 TWINAX CABLE : AWG# 40 , 42
RATING VOLTAGE	100V AC (PER CONTACT PIN)
RATING AMPERAGE (FOR CONTACT)	0.15A AC/DC [AWG#44] PER CONTACT PIN/UP TO 60 CONTACTS 0.24A AC/DC [AWG#42] PER CONTACT PIN/UP TO 49 CONTACTS 0.3A AC/DC [AWG#40] PER CONTACT PIN/UP TO 38 CONTACTS 0.5A AC/DC [AWG#38] PER CONTACT PIN/UP TO 19 CONTACTS 0.8A AC/DC [AWG#36] PER CONTACT PIN/UP TO 12 CONTACTS 1.0A AC/DC [AWG#34] PER CONTACT PIN/UP TO 10 CONTACTS ※TESTING BY A REAL MACHINE IS RECOMMENDED BECAUSE TEMPERATURE RISE MAY AFFECTED BY ACTUAL SITUATION.
OPERATING TEMPERATURE	233~378K(-40°C~+105°C)
OPERATING HUMIDITY	85% MAX.(NON-CONDENSING)
CONTACT RESISTANCE	INITIAL : 180mohm MAX.(AWG#34) / AFTER TEST : ≦140mohm MAX. 275mohm MAX.(AWG#36) 360mohm MAX.(AWG#38) 600mohm MAX.(AWG#40) 700mohm MAX.(AWG#42) 1080mohm MAX.(AWG#44)
GROUND SHELL RESISTANCE	INITIAL : 50mohm MAX. / AFTER TEST : ≦140mohm MAX.
INSULATION RESISTANCE	INITIAL : 1000Mohm MIN. / AFTER TEST : 500Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	AC250V 1min
DURABILITY	30 CYCLES
MATING FORCE (INITIAL / AFTER TEST)	30P : 34.00N MAX. 60P : 52.00N MAX. 40P : 40.00N MAX.
UNMATING FORCE (INITIAL / AFTER TEST)	30P : 3.0N MIN. 60P : 6.0N MAX. 40P : 4.0N MIN.
CABLE RETENTION FORCE	30P : 14.70N MIN. 60P : 29.40N MAX. 40P : 19.60N MIN.
COPLANARITY	0.10 MAX.
PRODUCT SPECIFICATION	PRS-2514
TEST REPORT	TR-18067 (PLUG:20877-0**T-0#, RECEPTACLE:20879-0**E-01) TR-18088 (PLUG:20877-0**T-0#, RECEPTACLE:20879-0**E-02) TR-24001 (PLUG:20877-0**T-0#, RECEPTACLE:20879-0**E-11) TR-24002 (PLUG:20877-0**T-1#, RECEPTACLE:20879-0**E-01) TR-24003 (PLUG:20877-0**T-1#, RECEPTACLE:20879-0**E-02) TR-24004 (PLUG:20877-0**T-1#, RECEPTACLE:20879-0**E-11)
PACKING STANDARD	PST-18043
INSTRUCTION MANUAL	HIM-18033
APPEARANCE CRITERIA No.	QLS-A***

Rev.12

Board to Board



High-Density



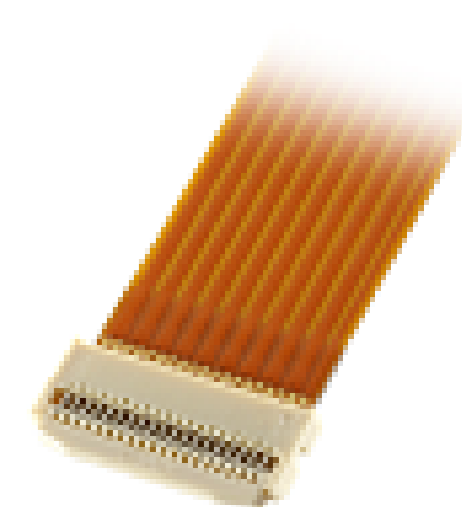
Autolocking FPC/FFC



High-Density



FPC/FFC



Micro-Coaxial / Discrete Cable



High-Speed



RF



High-Frequency



Optical Module



High-Speed



Effector



Power



High-Power



I/O (Input/Output)



Quick charge



Inquiry



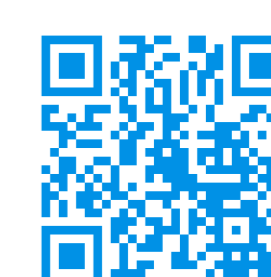
Custom Connectors Available



I-PEX, MHF, CABLINE, NOVASTACK, EVAFLEX, MINIFLEX, ISH, IARPB, IASLP, ESTORQ, ISFIT, i-Fit and ZenShield are registered trademarks of I-PEX Inc. Please note that the contents in the catalog might be changed without prior notification. I-PEX Inc. assumes no responsibility for any inaccuracies or obligation to update Information on these documents. Please be sure to read and understand the latest "Precautions for Use" and "Instruction Manual" before you use our products. We shall not be responsible for any defects, damages or troubles in case you use our products without following the precautions for use. Please feel free to contact our sales representatives when you use our products for any applications that require very high reliability and safety, or that relate to human life (ex. nuclear power control, aerospace, transportation, medical equipment, safety equipment etc.).

Contact your sales representative or more detailed information.

[www.i-pex.com](http://www.i-pex.com)



I-PEX

© I-PEX Inc. 2022  
All rights reserved.