

# CABLINE® -CA II

フルシールド、メカニカルロック付き、高速伝送対応、0.4mmピッチ、水平嵌合タイプ細線同軸コネクタ



**Product Specifications:**

Mating type	Horizontal	
Board Pitch (mm)	0.4	
Wiping Length (mm)	0.54	
Mated size (mm)	Height	1.1 max. with cover
	Width	Formula: 6.95 + (0.4*?p)
	Depth	6.2
Pin Counts	Range	Up to 60
	Available	20, 30, 40, 50

**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 (16 GT/s), eDP HBR 3 (8.1 Gbps)

\*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。  
\*CABLINE-CA II PLUS(wider space タイプ)で 60pの芯数もございます。

## ▶ ZenShield® フルシールドと多点グラウンド構造でEMI対策強化

一般的なコネクタ

ZenShield®コネクタ

Wi-Fi Antenna

高速伝送

アンテナ付近までコネクタ実装が可能に

下から見たコネクタ

○ はんだ付け接点部  
○ メカニカル接点部

## ▶ メカニカルロックバーによる半嵌合防止とプラグ抜け防止

Mate

Locked

干渉

プラグがレセプタクルに正常に嵌合されている場合にのみロックが可能

不完全嵌合

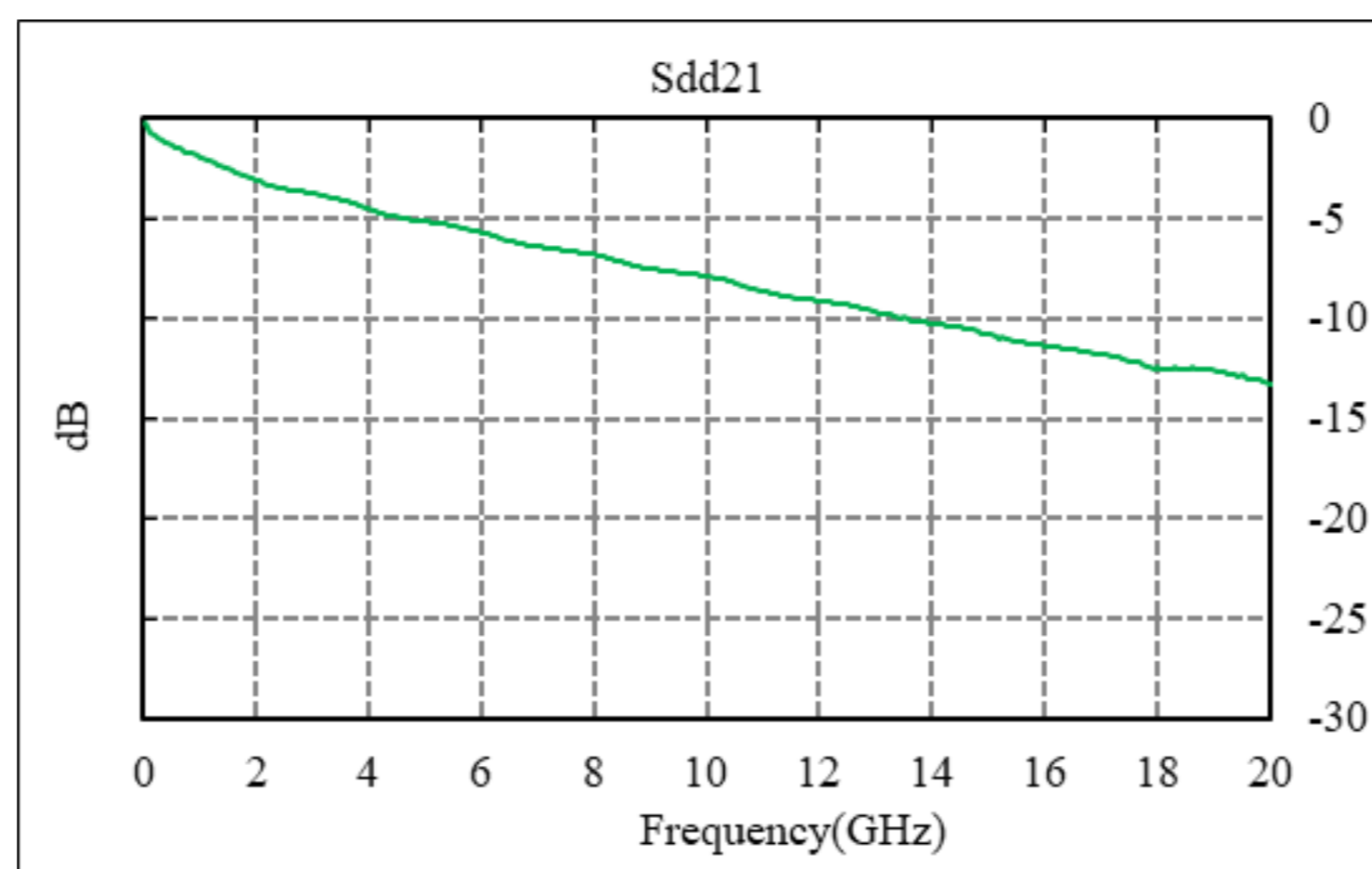
正常嵌合

## ▶ 優れた差動SI性能

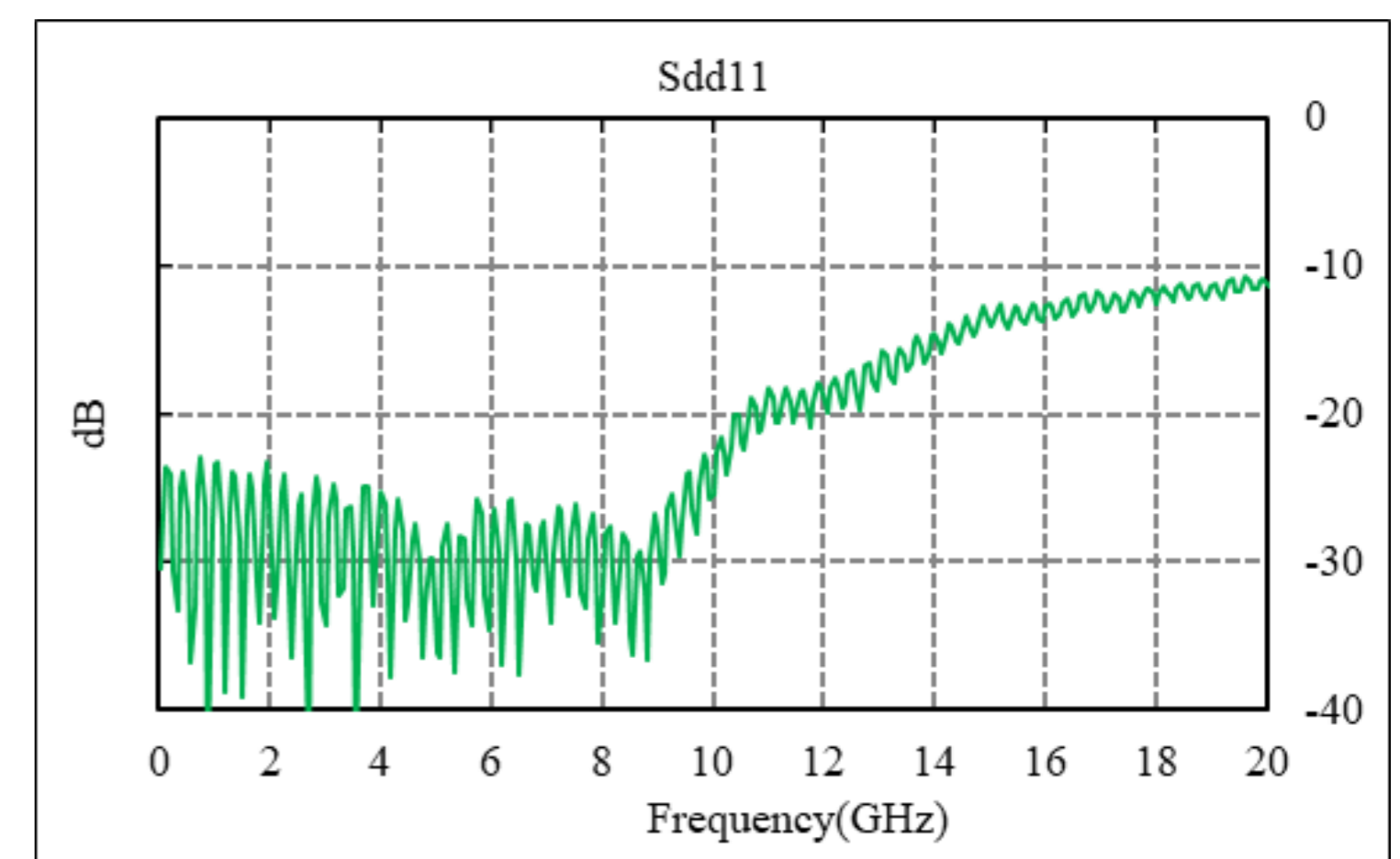
Test material:  
CABLINE-CA II harness (GND finger type)

Cable: Micro-coaxial AWG #38 45Ω

Cable Length: 320mm



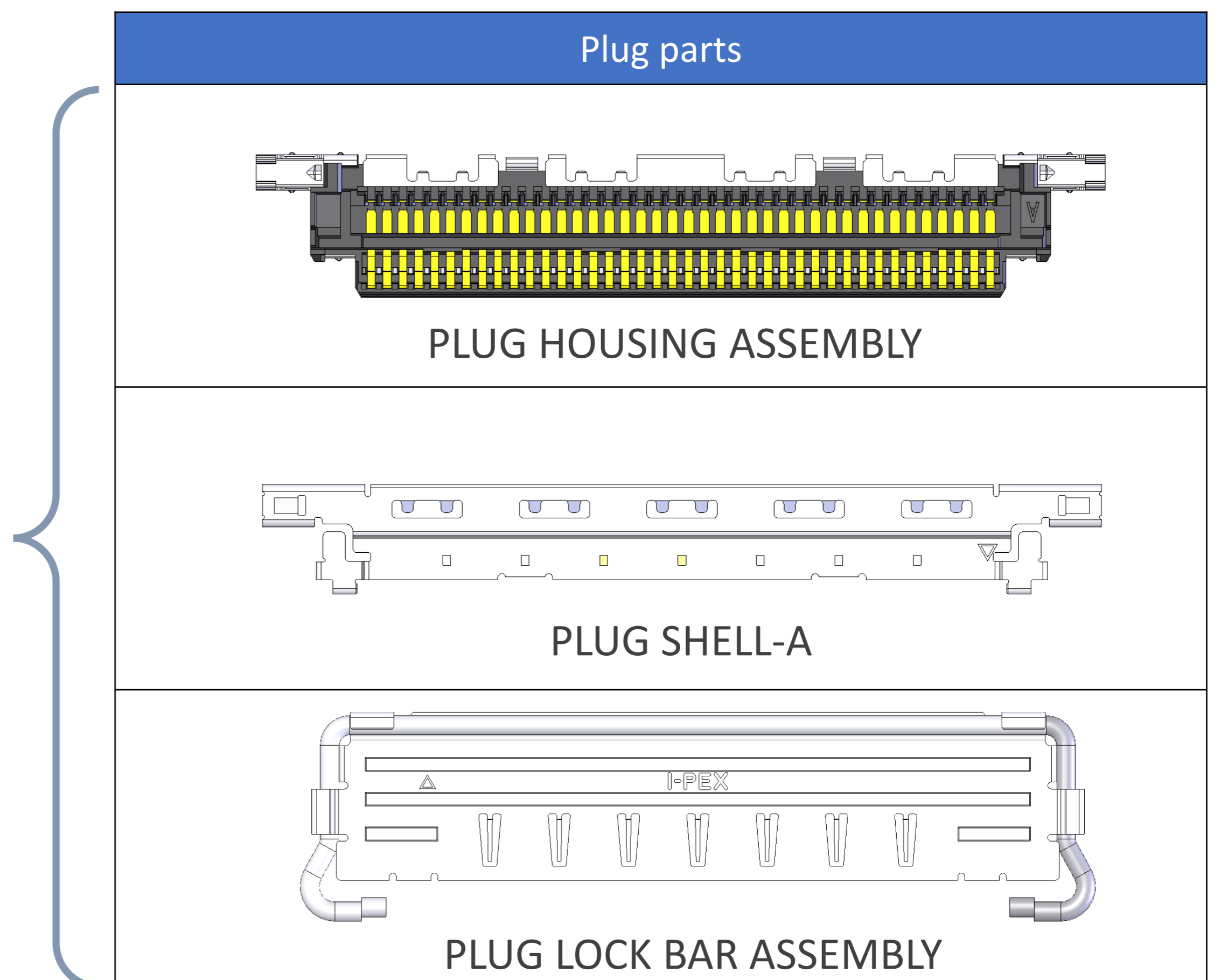
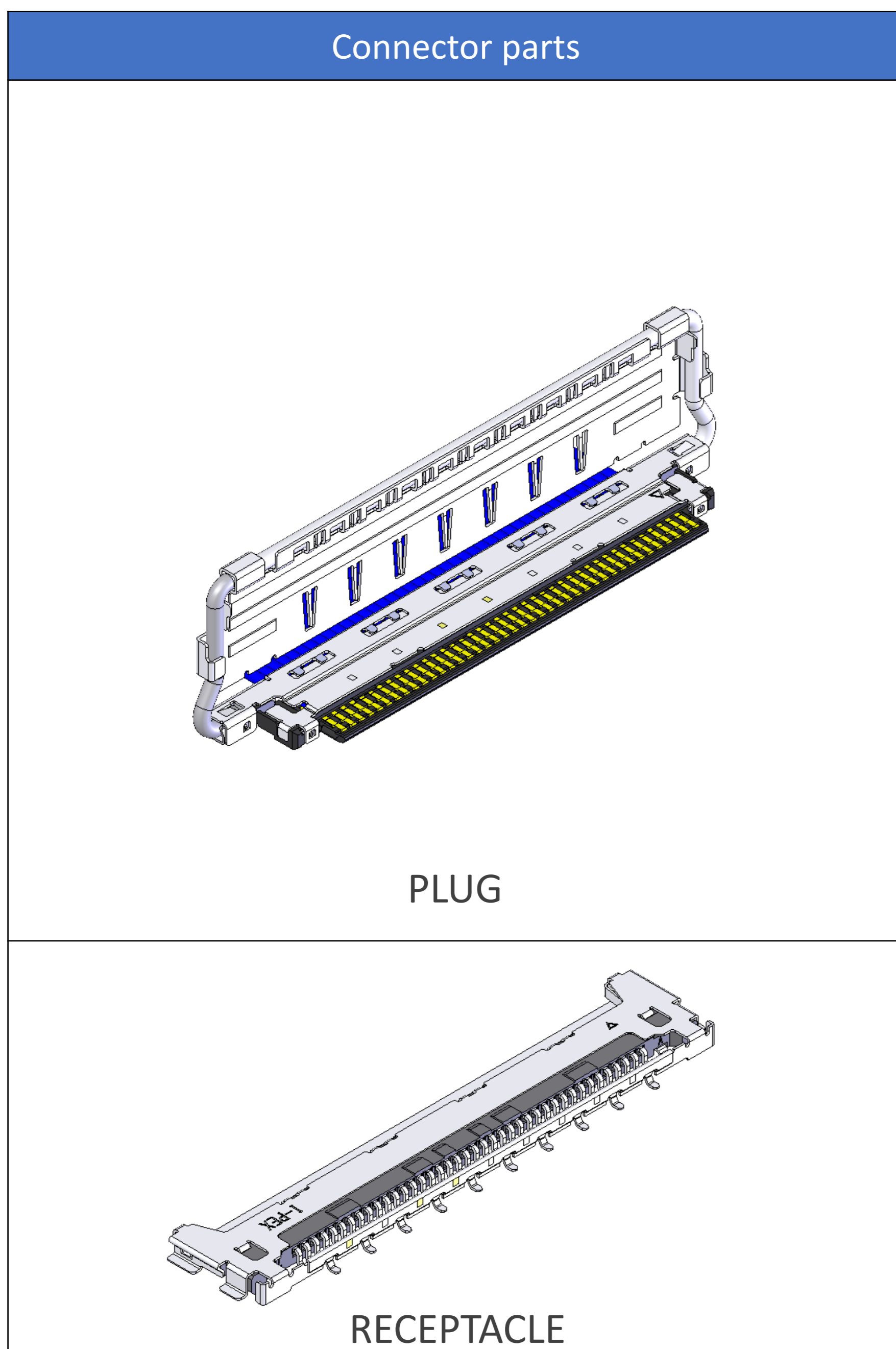
Insertion Loss



Return Loss

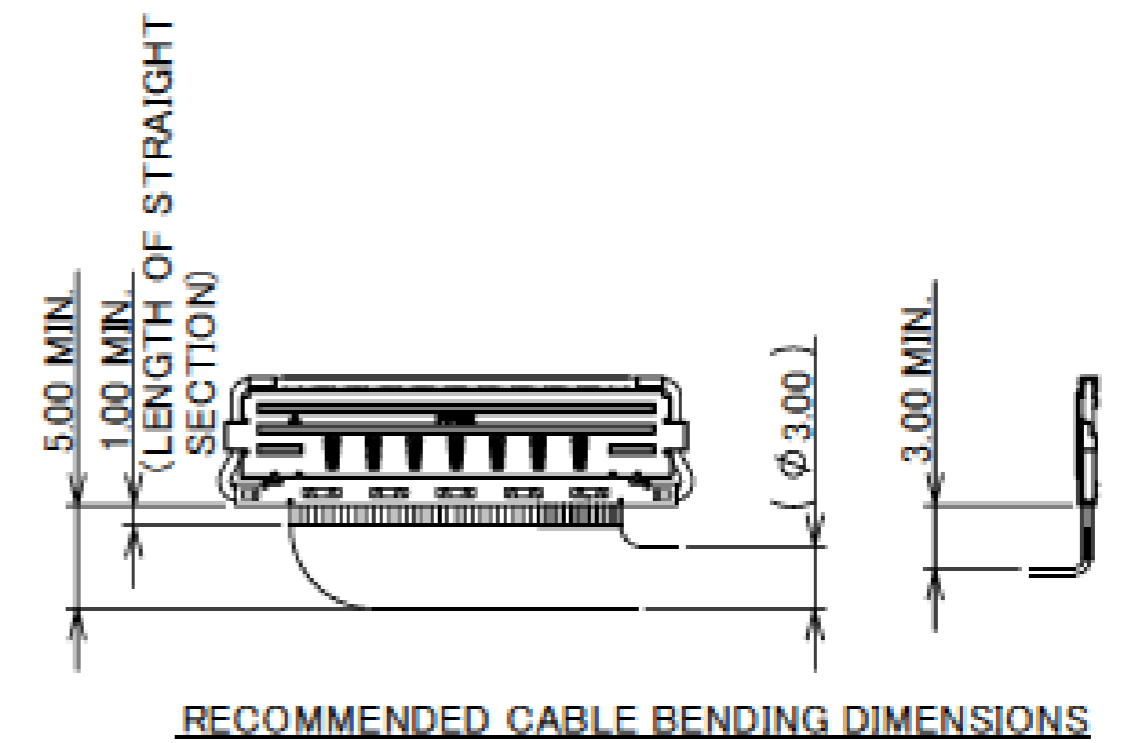
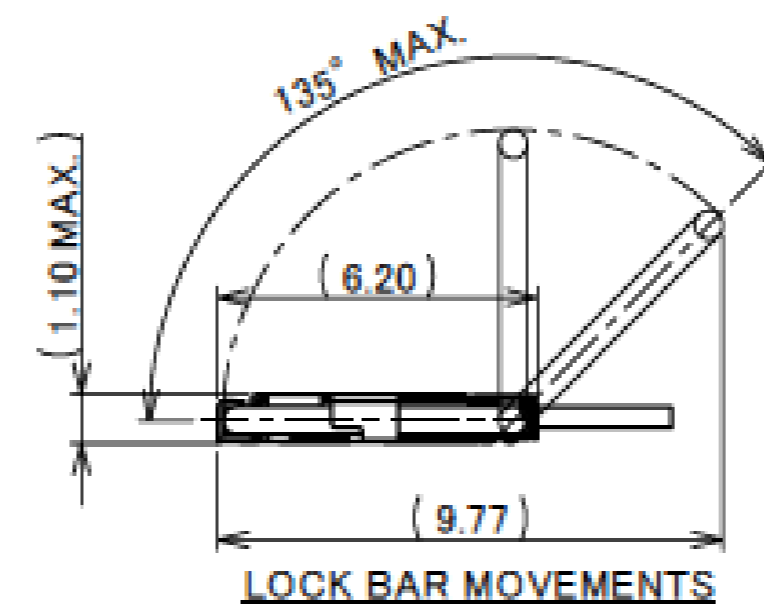
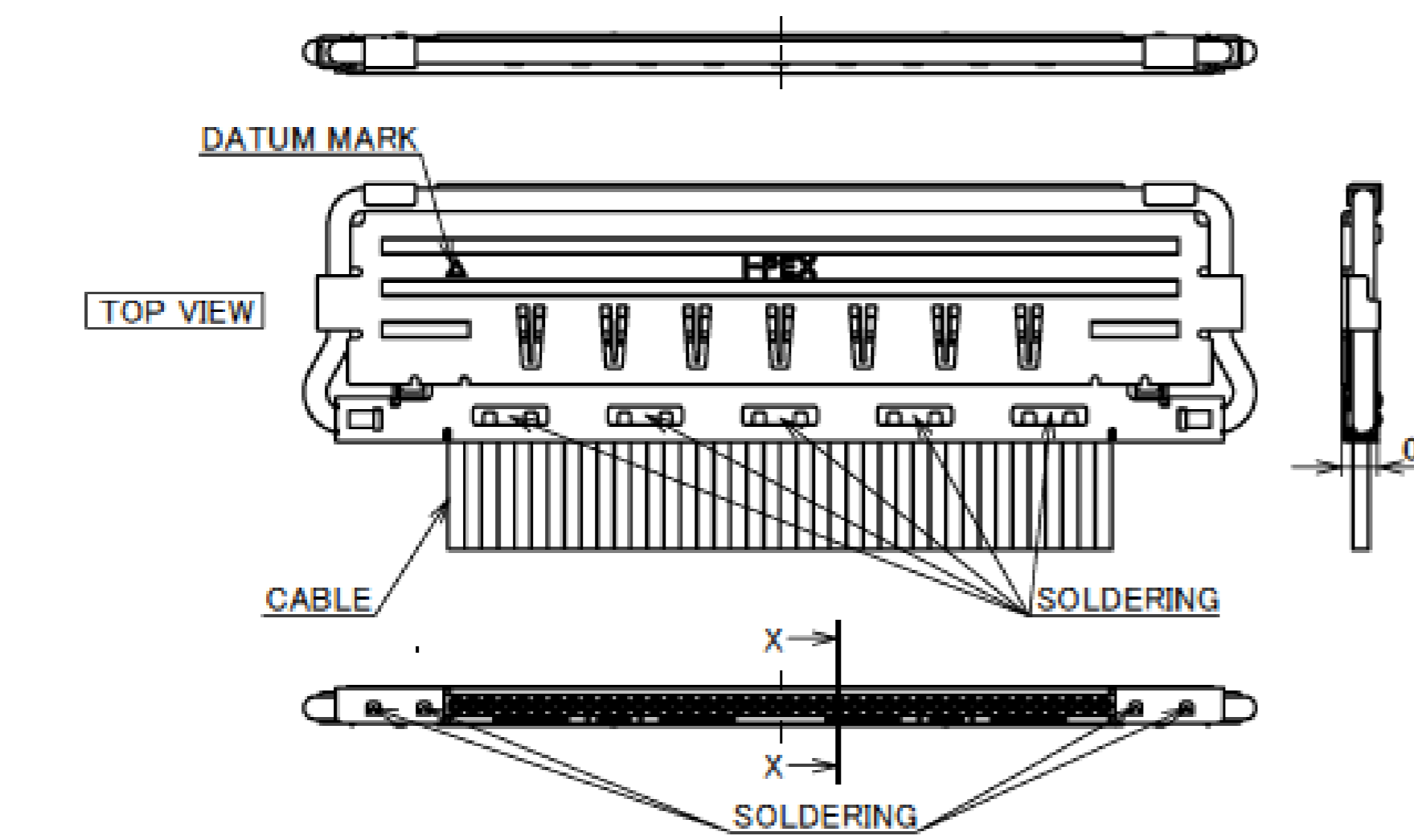
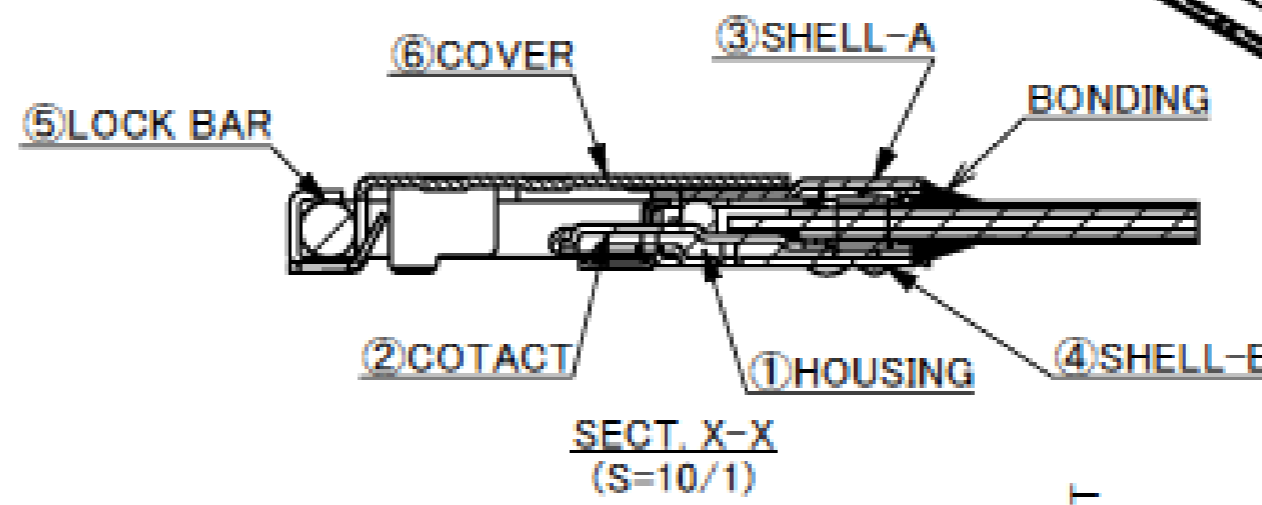
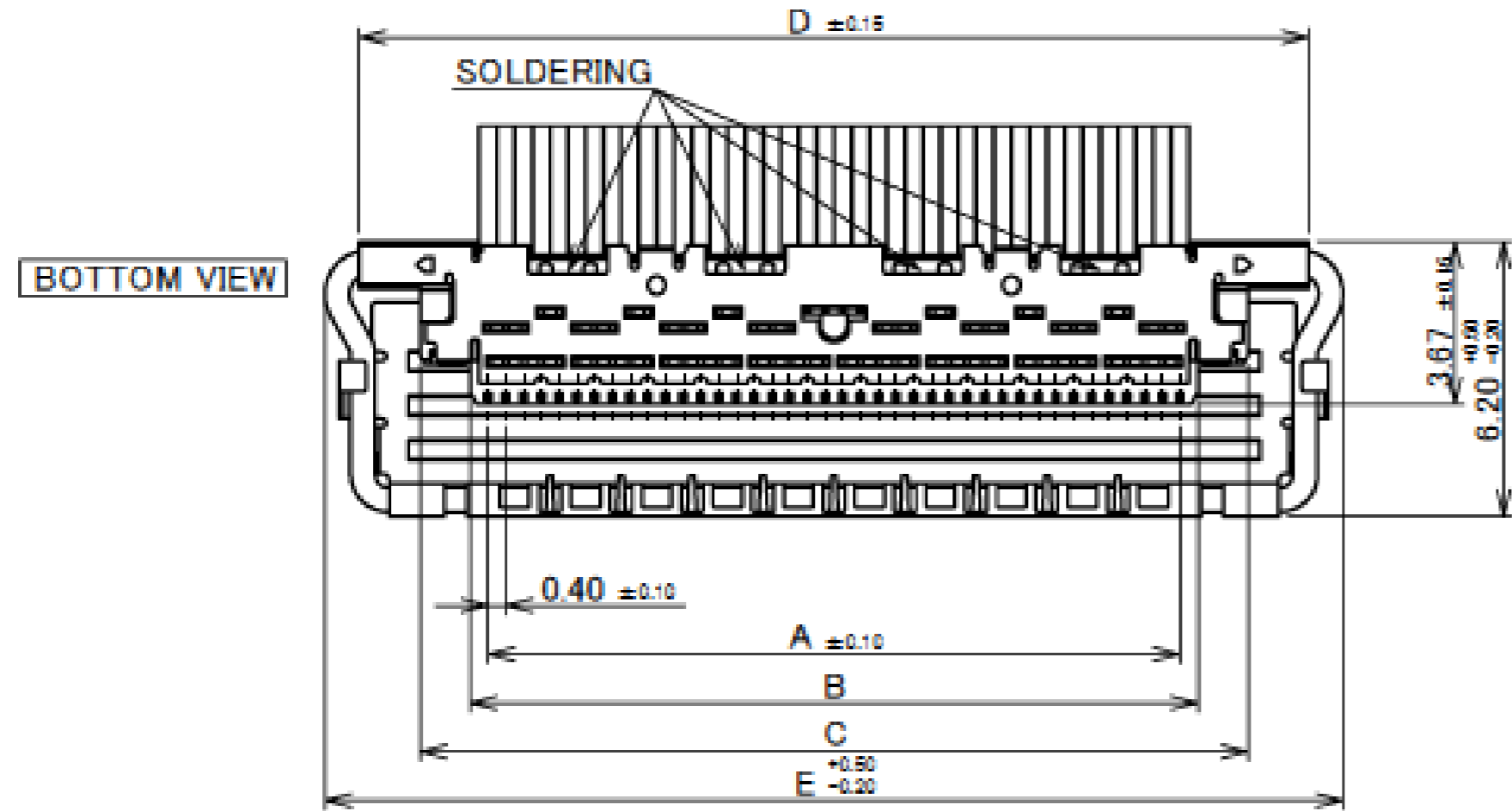
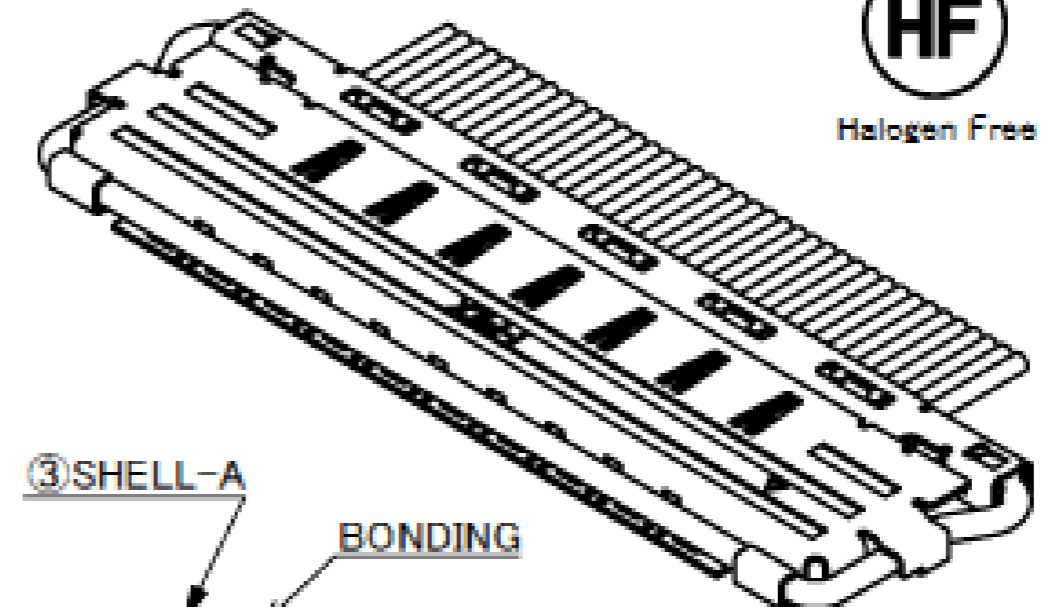
# Component Parts Details

## Component Parts



# Plug for Cable Assembly

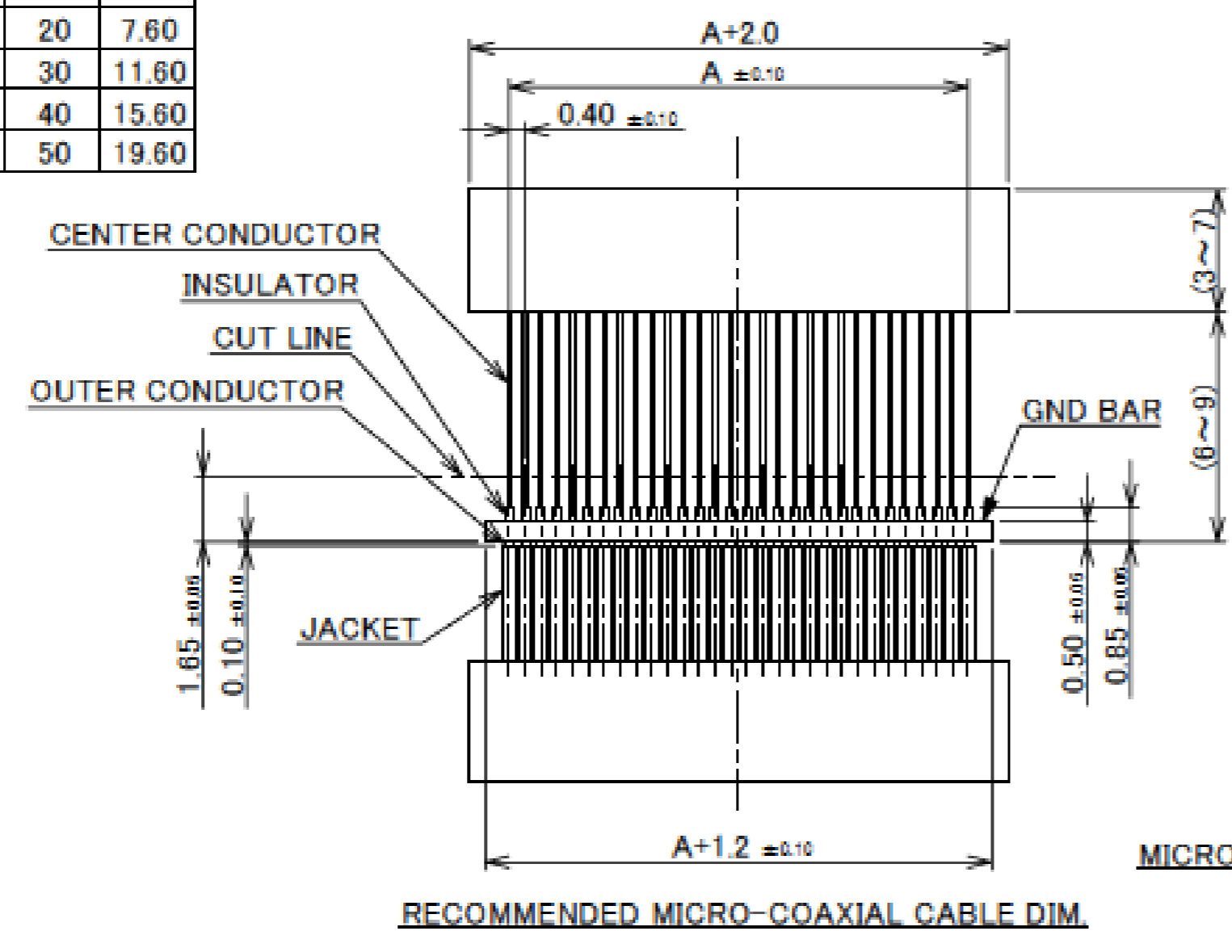
Recommended P/N		20679-0**T-01				
PART NO.	Pos.	A	B	C	D	E
20679-020T-01	20	7.60	8.40	10.66	13.40	14.95
20679-030T-01	30	11.60	12.40	14.66	17.40	18.95
20679-040T-01	40	15.60	16.40	18.66	21.40	22.95
20679-050T-01	50	19.60	20.40	22.66	25.40	26.95



NO.	DISCRIPTION	MATERIAL	FINISH . REMARKS
6	COVER	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μm MIN.
5	LOCK BAR	SUS	-
4	SHELL-B	PHOSPHOR BRONZE	PARTIAL Au 0.003 μm MIN. OVER Ni 1.00 μm MIN.
3	SHELL-A	PHOSPHOR BRONZE	PARTIAL Au 0.003 μm MIN. OVER Ni 1.00 μm MIN.
2	CONTACT	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μm MIN. CONTACT & SOLDERING AREA : Au 0.03 μm MIN.
1	HOUSING	LCP	UL94V-0 .BLACK

Rev.9

PART NO.	Pos.	A
20679-020T-01	20	7.60
20679-030T-01	30	11.60
20679-040T-01	40	15.60
20679-050T-01	50	19.60



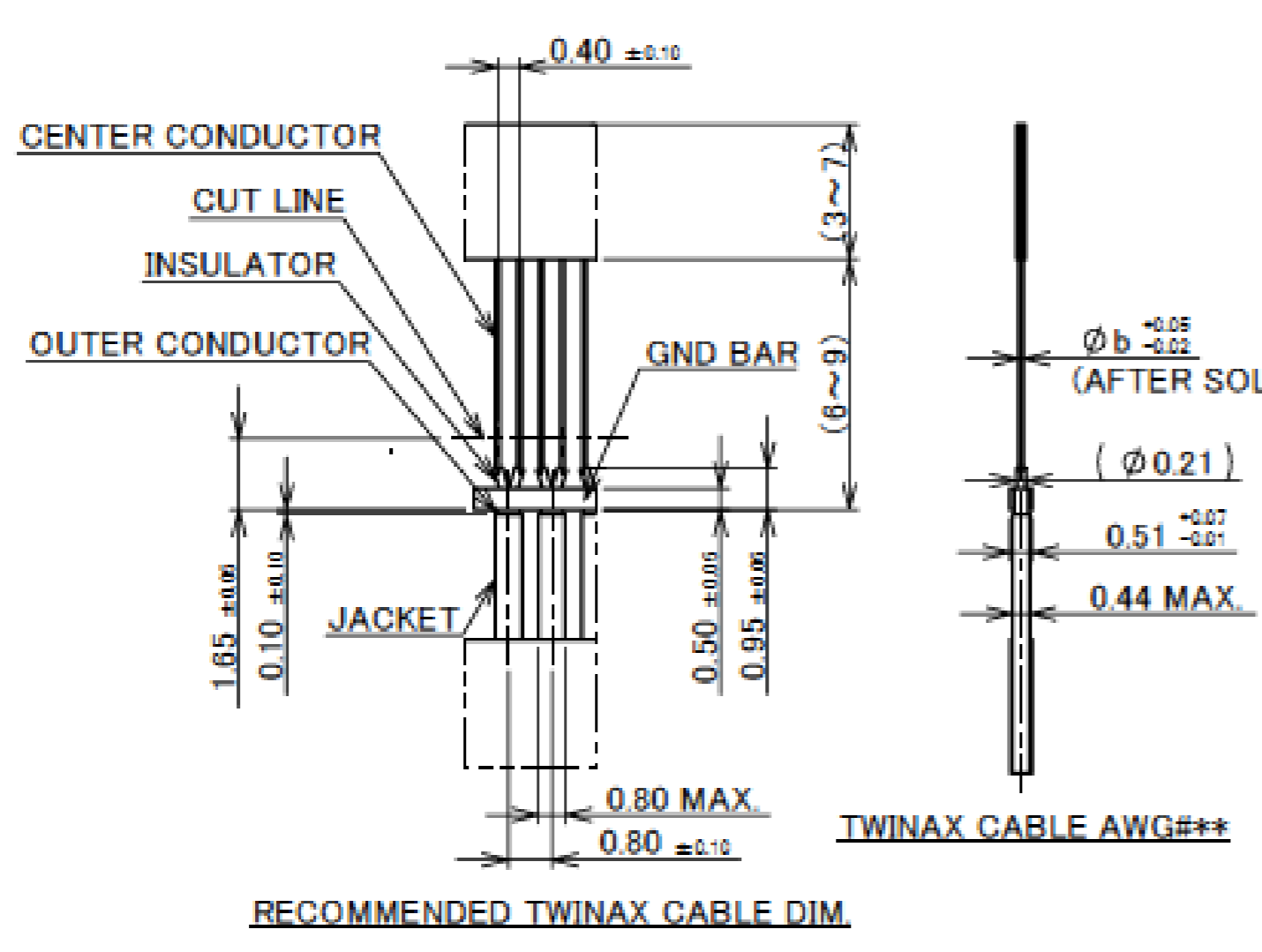
CHARACTERISTIC IMPEDANCE MATCHING MICRO-COAXIAL CABLE

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

CHARACTERISTIC IMPEDANCE UN-MATCHING MICRO-COAXIAL CABLE

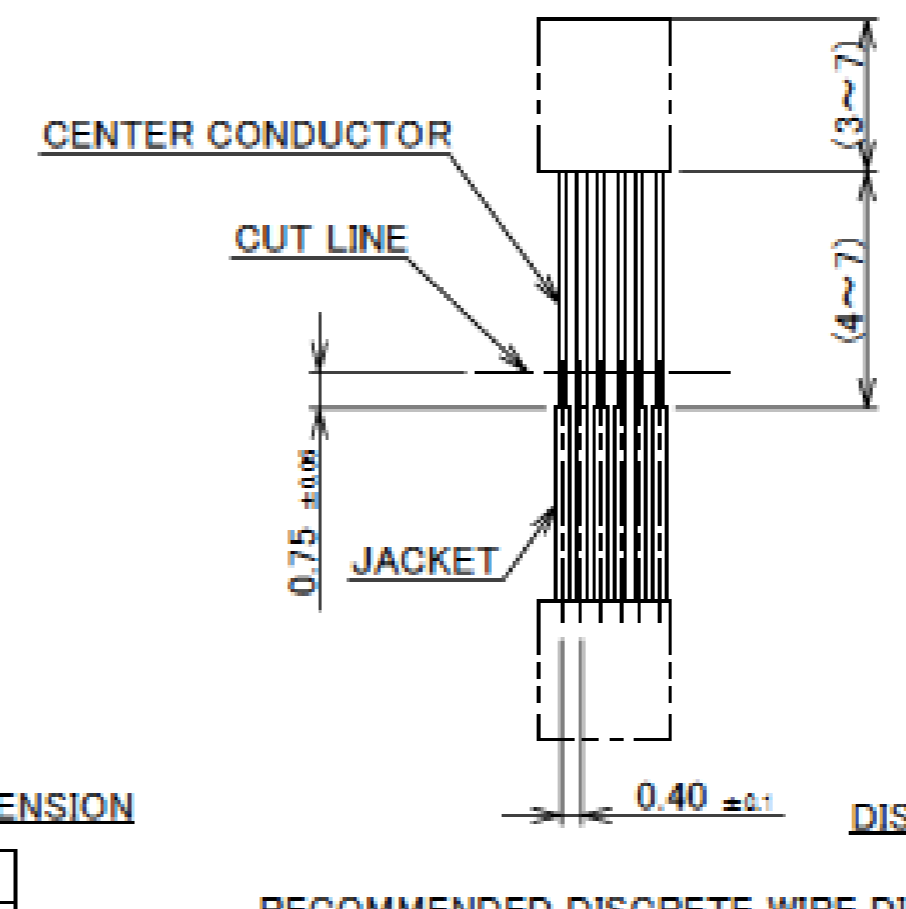
	a
#36	0.15

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

RECOMMENDED DISCRETE WIRE DIM.

Rev.9

# Plug for Cable Assembly

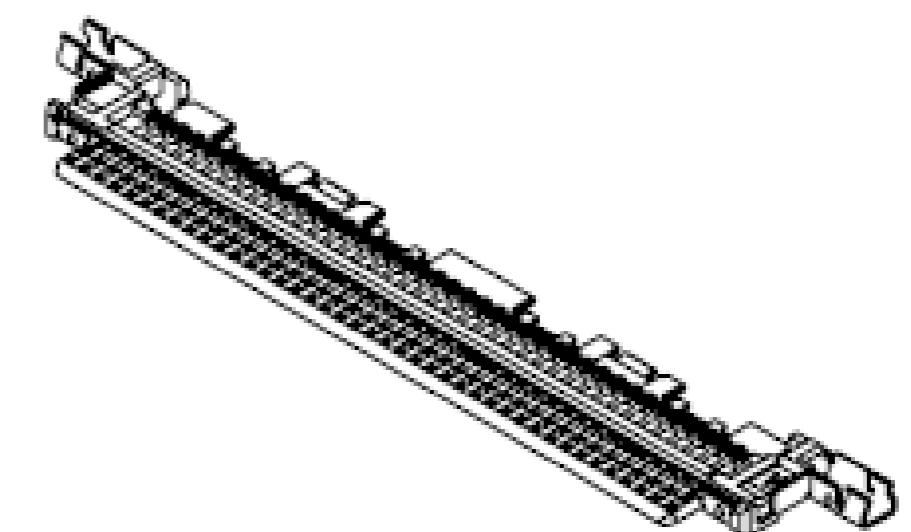
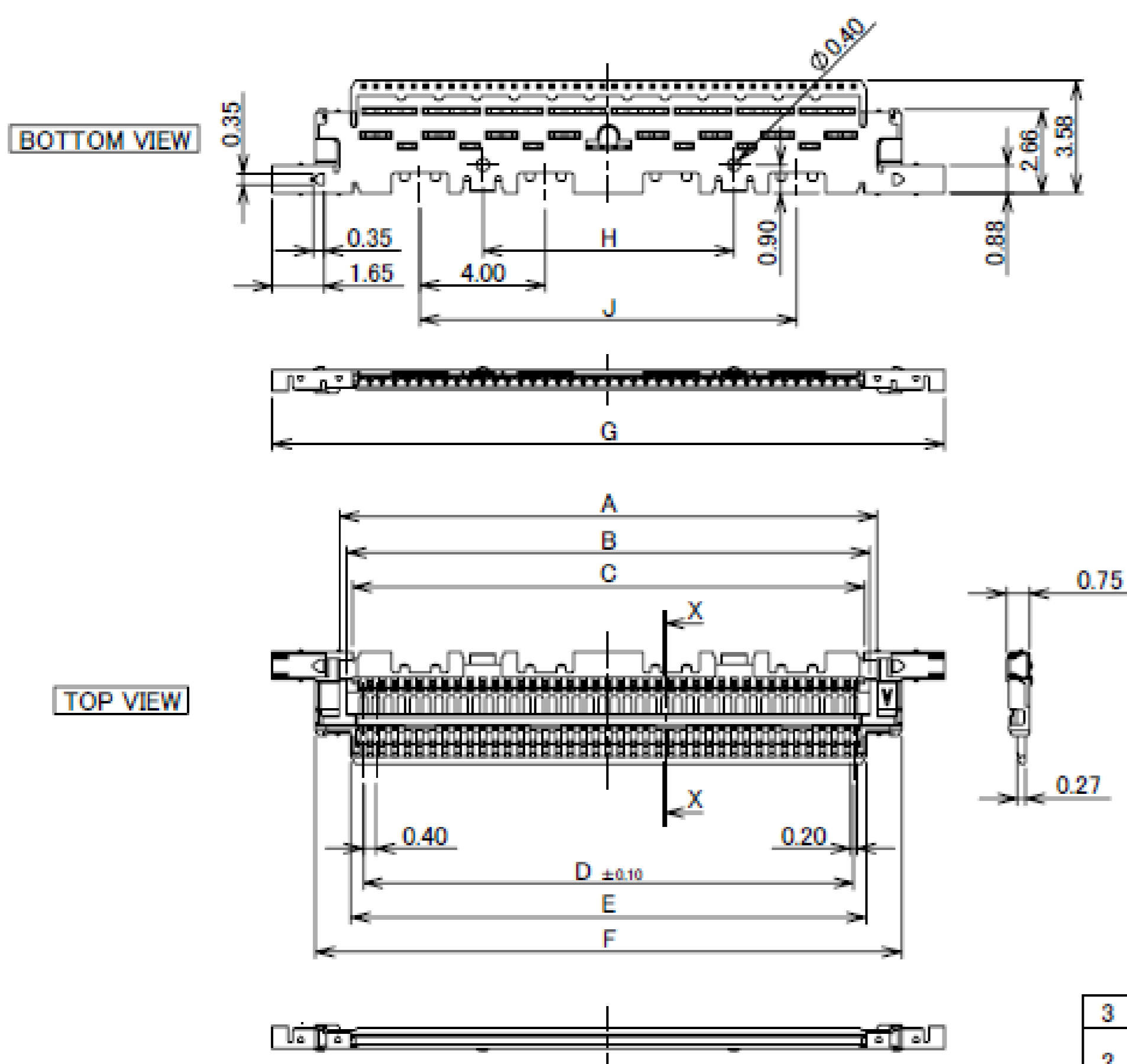
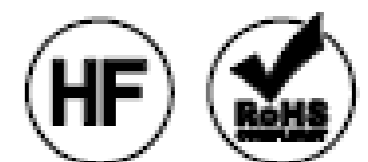
ITEMS	SPECIFICATION
APPLICABLE CABLE	MICRO-COAXIAL CABLE : AWG# 44 , 42 , 40 , 38 , 36 DISCRETE WIRE : AWG# 36 , 34 TWINAX CABLE : AWG# 40 , 42
RATING VOLTAGE	100V AC (PER CONTACT PIN)
RATING AMPERAGE (FOR CONTACT)	0.1A AC/DC [AWG#44] PER CONTACT PIN/UP TO 50 CONTACTS 0.24A AC/DC [AWG#42] PER CONTACT PIN/UP TO 50 CONTACTS 0.3A AC/DC [AWG#40] PER CONTACT PIN/UP TO 50 CONTACTS 0.5A AC/DC [AWG#38] PER CONTACT PIN/UP TO 18 CONTACTS 0.8A AC/DC [AWG#36] PER CONTACT PIN/UP TO 6 CONTACTS 1.0A AC/DC [AWG#34] PER CONTACT PIN/UP TO 6 CONTACTS ※TESTING BY A REAL MACHINE IS RECOMMENDED BECAUSE TEMPERATURE RISE MAY AFFECTED BY ACTUAL SITUATION
OPERATING TEMPERATURE	248~378K(-40°C~105°C)
OPERATING HUMIDITY	85% MAX.(NON-CONDENSING)
CONTACT RESISTANCE	INITIAL : 180mohm MAX.(AWG#34) / AFTER TEST : <math>\triangleleft</math>40mohm 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 : <math>\triangleleft</math>40mohm MAX.
INSULATION RESISTANCE	INITIAL : 1000Mohm MIN. / AFTER TEST : 500Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	AC250V 1min
DURABILITY	30 CYCLES
MATING FORCE (INITIAL / AFTER 30 CYCLES)	20P : 9.70N MAX. 30P : 14.55N MAX. 40P : 19.40N MAX. 50P : 24.25N MAX.
UN-MATING FORCE (INITIAL / AFTER 30 CYCLES)	20P : 2.0N MIN. 30P : 3.0N MIN. 40P : 4.0N MIN. 50P : 5.0N MIN.
CABLE RETENTION FORCE	20P : 9.80N MIN. 30P : 14.70N MIN. 40P : 19.60N MIN. 50P : 24.50N MIN.
PRODUCT SPECIFICATION	PRS-2163
TEST REPORT	TR-15103
INSTRUCTION MANUAL	HIM-15033
ASSEMBLY MANUAL	ASM-15005
APPEARANCE CRITERIA NO.	QLS-A***

Rev.9

# Plug Housing Assembly

## Recommended P/N 20680-0\*\*T-01

PART NO.	Pos.	A	B	C	D	E	F	G	H	J
20680-020T-01	20	9.10	8.65	8.30	7.60	8.40	10.66	13.40	-	5.00
20680-030T-01	30	13.10	12.65	12.30	11.60	12.40	14.66	17.40	4.00	8.00
20680-040T-01	40	17.10	16.65	16.30	15.60	16.40	18.66	21.40	8.00	12.00
20680-050T-01	50	21.10	20.65	20.30	19.60	20.40	22.66	25.40	12.00	16.00
20680-060T-01	60	25.10	24.65	24.30	23.60	24.40	26.66	29.40	16.00	20.00



### NOTES.

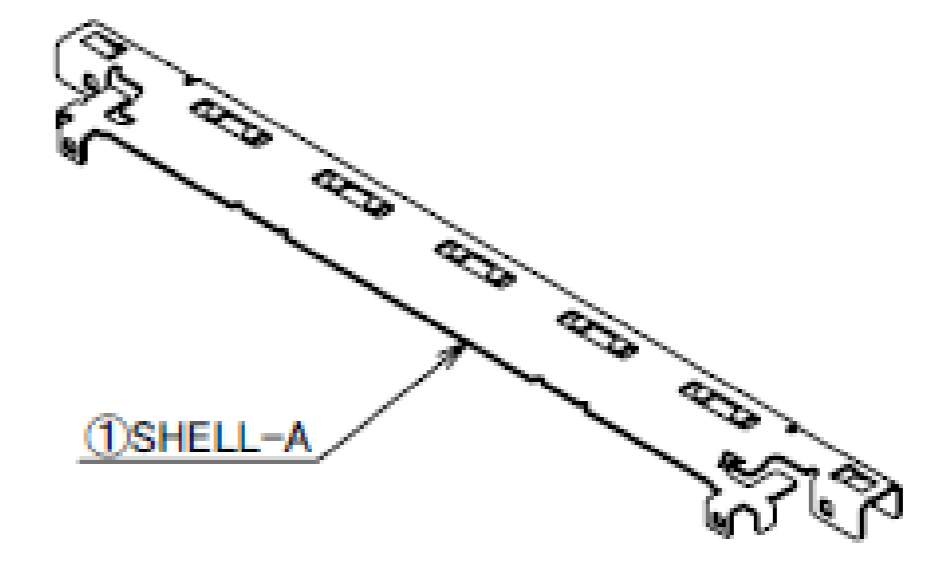
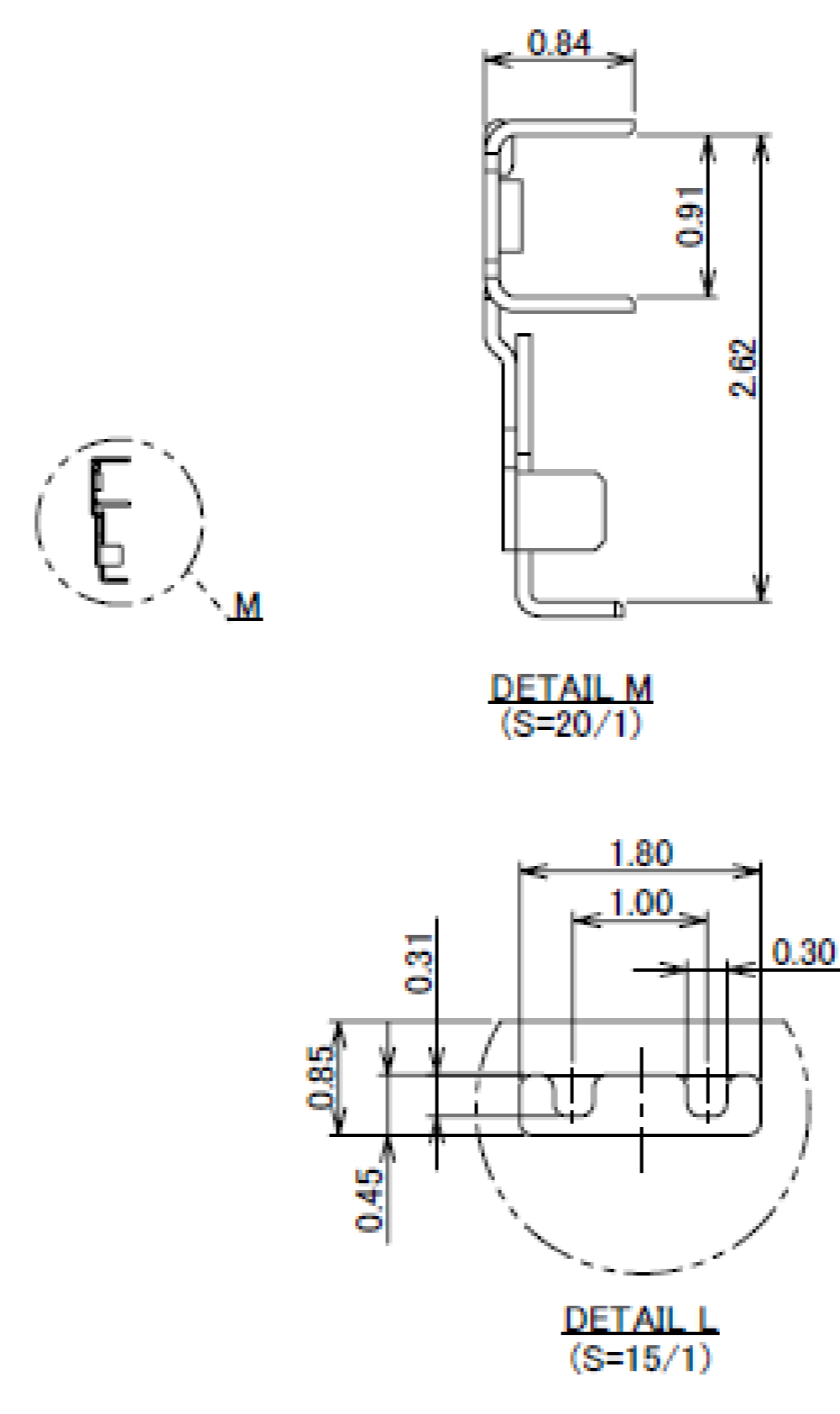
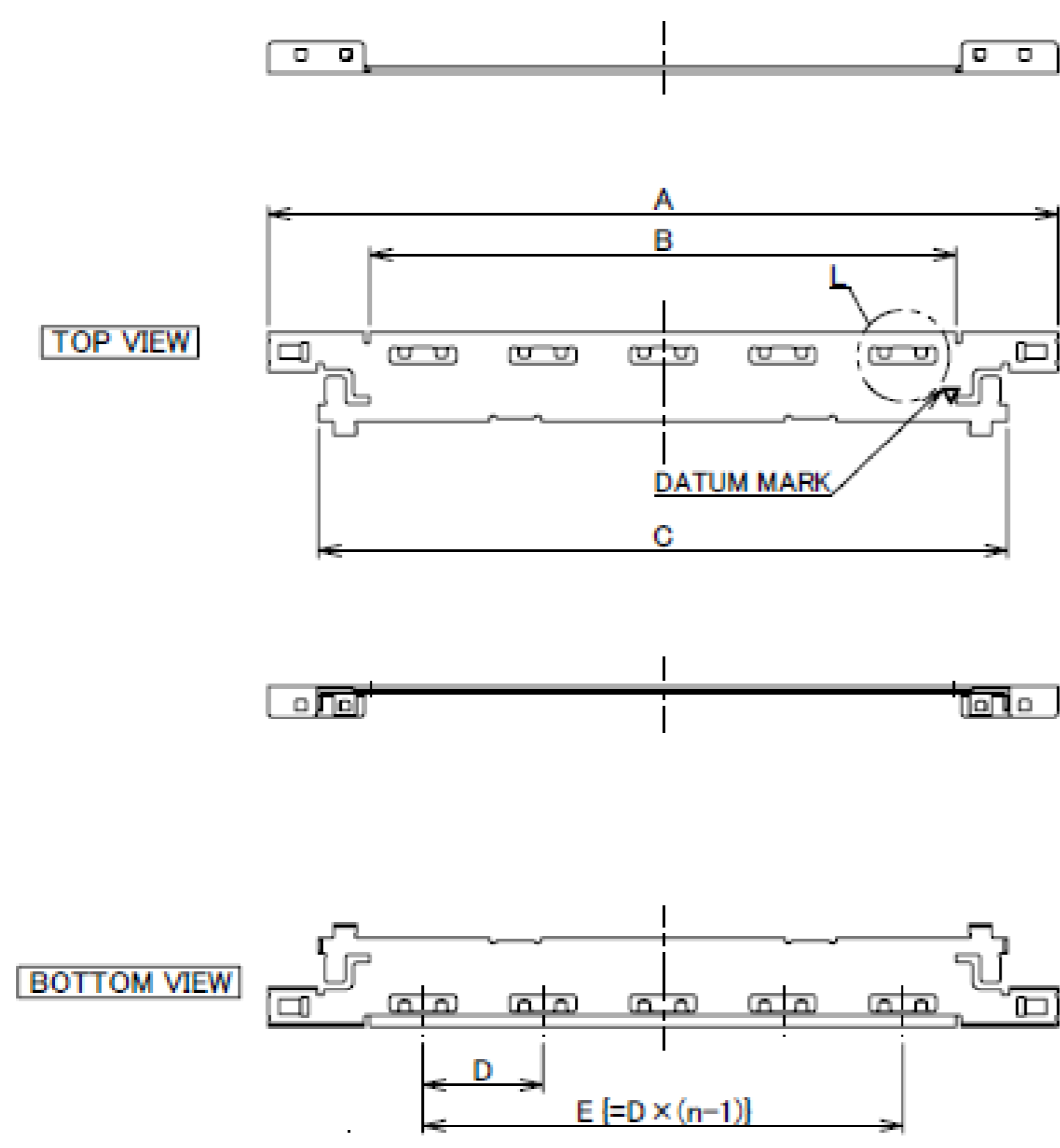
- THIS PART IS ASSEMBLED WITH SHELL A(P/N 3204-0\*\*1) AND LOCK BAR ASS'Y(P/N 20681-0\*\*T-01) AFTER SOLDERED THE CABLE, AND IT BECOMES P/N 20679-0\*\*T-01
- THIS PART IS ASSEMBLED WITH SHELL A(P/N 3204-0\*\*1) AND LOCK BAR ASS'Y(P/N 20789-0\*\*T-01) AFTER SOLDERED THE CABLE, AND IT BECOMES P/N 20788-0\*\*T-01

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	PHOSPHOR BRONZE	ALL OVER Ni 1.00 $\mu$ m MIN. CONTACT & SOLDERING AREA : Au 0.03 $\mu$ m MIN.
1	HOUSING	LCP	UL94V-0 ,BLACK

Rev.7

# Plug Shell-A

Recommended P/N		3204-0**1				
PART NO.	Pos.	A	B	C	D	E
3204-0201	20	13.40	7.88	10.66	2.50	5.00
3204-0301	30	17.40	11.88	14.66	3.00	9.00
3204-0401	40	21.40	15.88	18.66	3.25	13.00
3204-0501	50	25.40	19.88	22.66	3.40	17.00
3204-0601	60	29.40	23.88	26.66	4.00	20.00

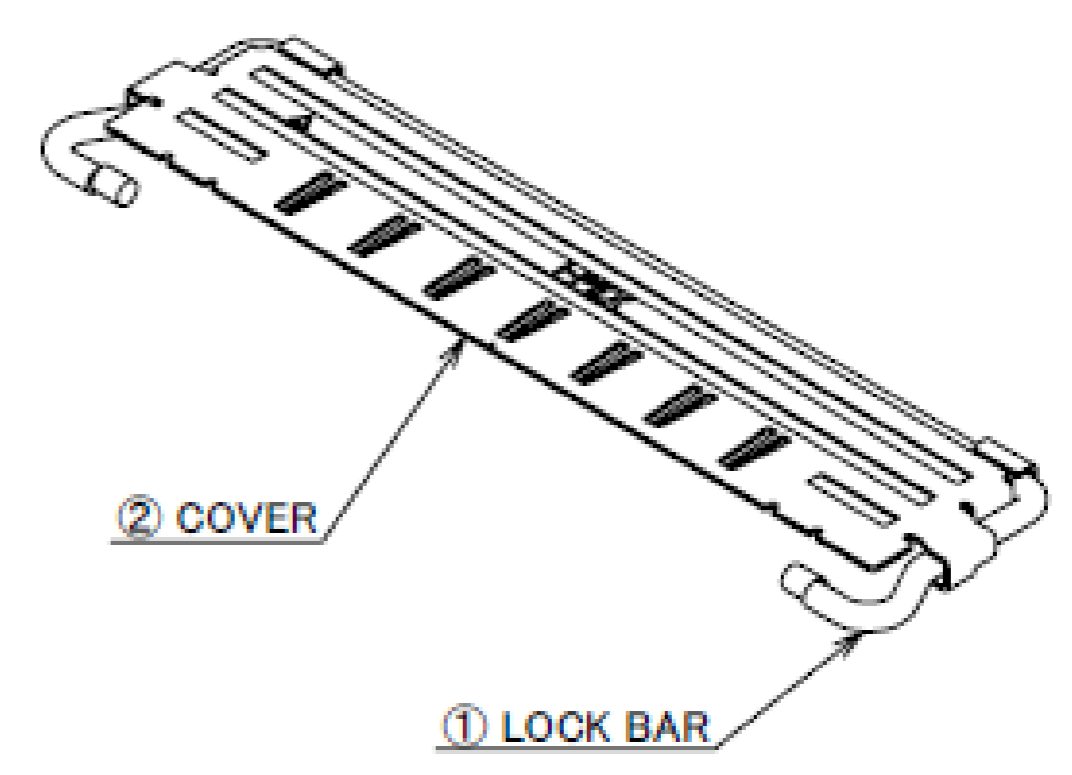
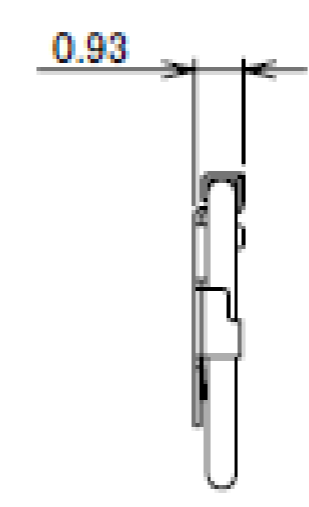
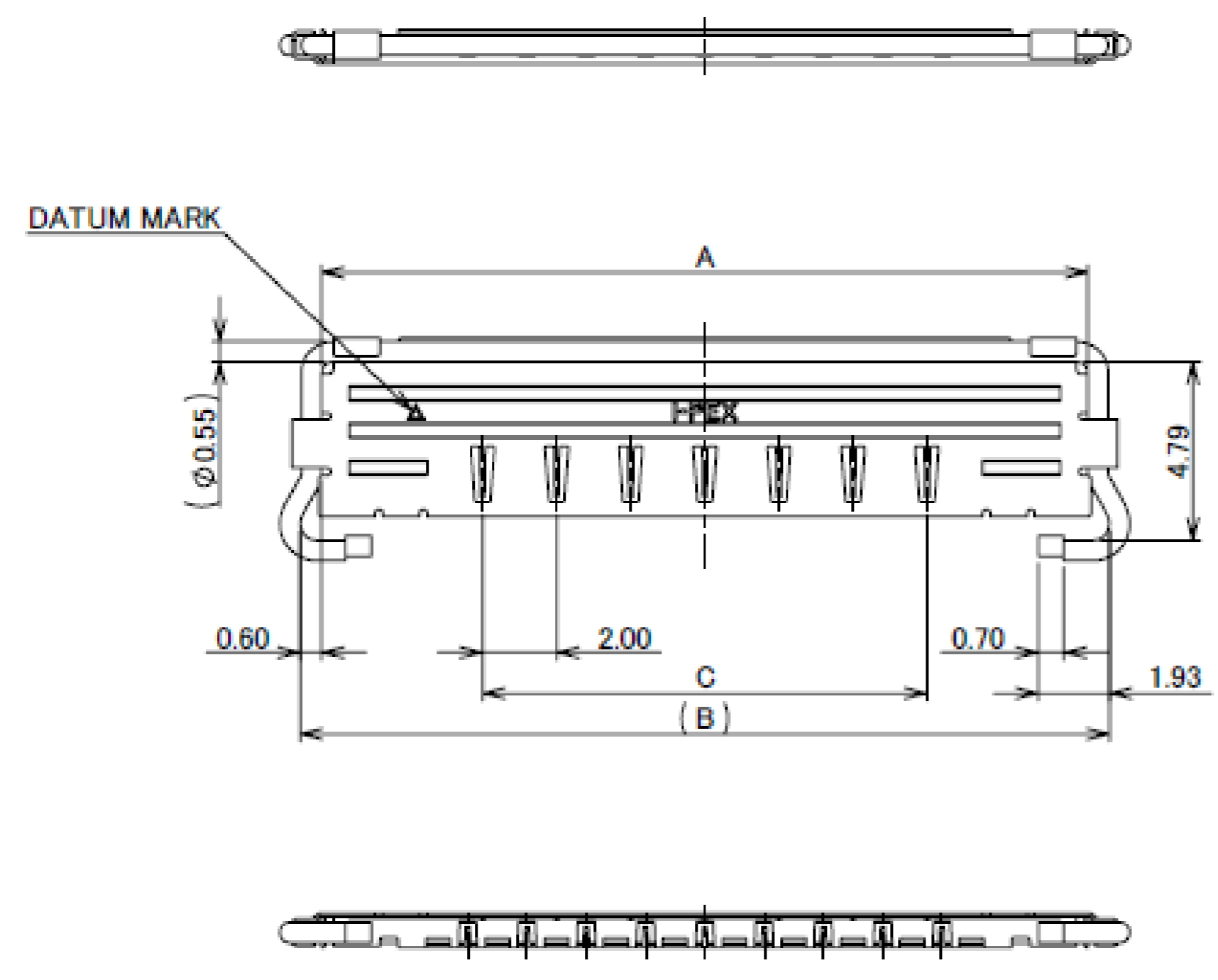


NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
1	SHELL-A	PHOSPHOR BRONZE	PARTIAL Au 0.003 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m MIN.

Rev.7

# Lock Bar Assembly

Recommended P/N		20681-0**T-01		
PART NO.	Pos.	A	B	C
20681-020T-01	20	12.65	13.85	4.00
20681-030T-01	30	16.65	17.85	8.00
20681-040T-01	40	20.65	21.85	12.00
20681-050T-01	50	24.65	25.85	16.00



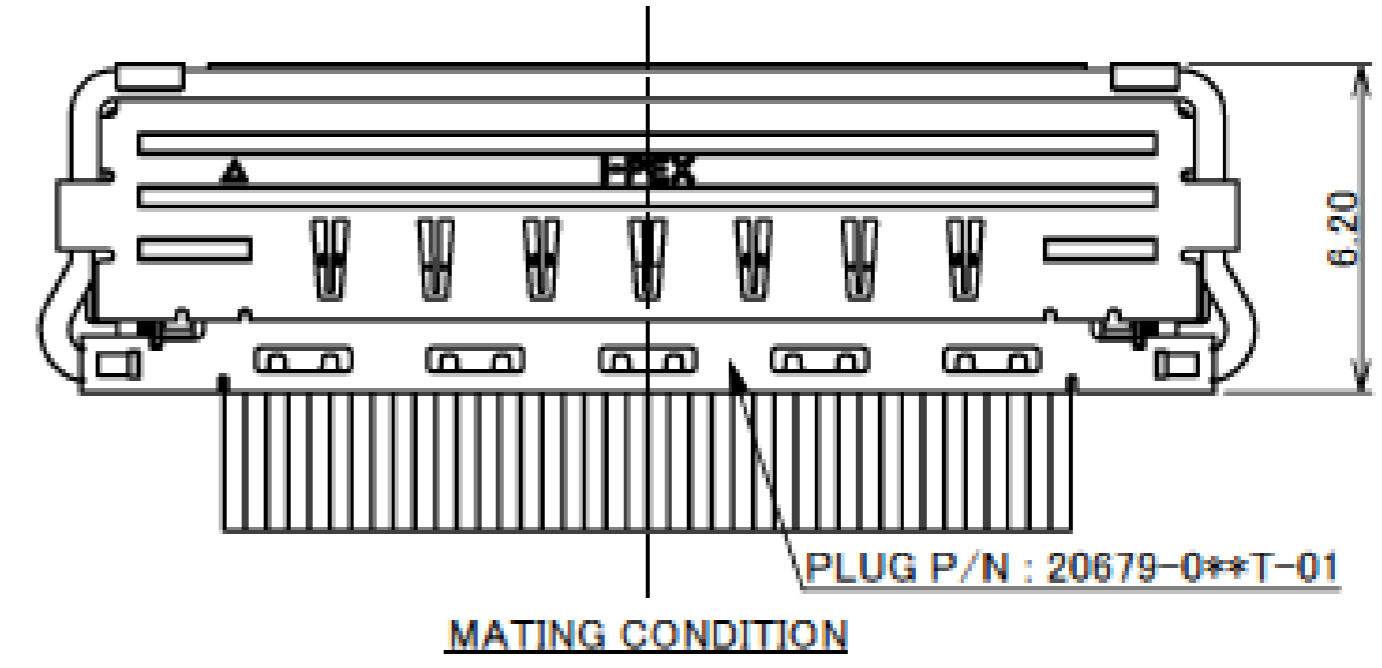
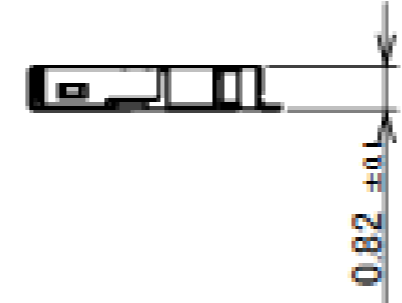
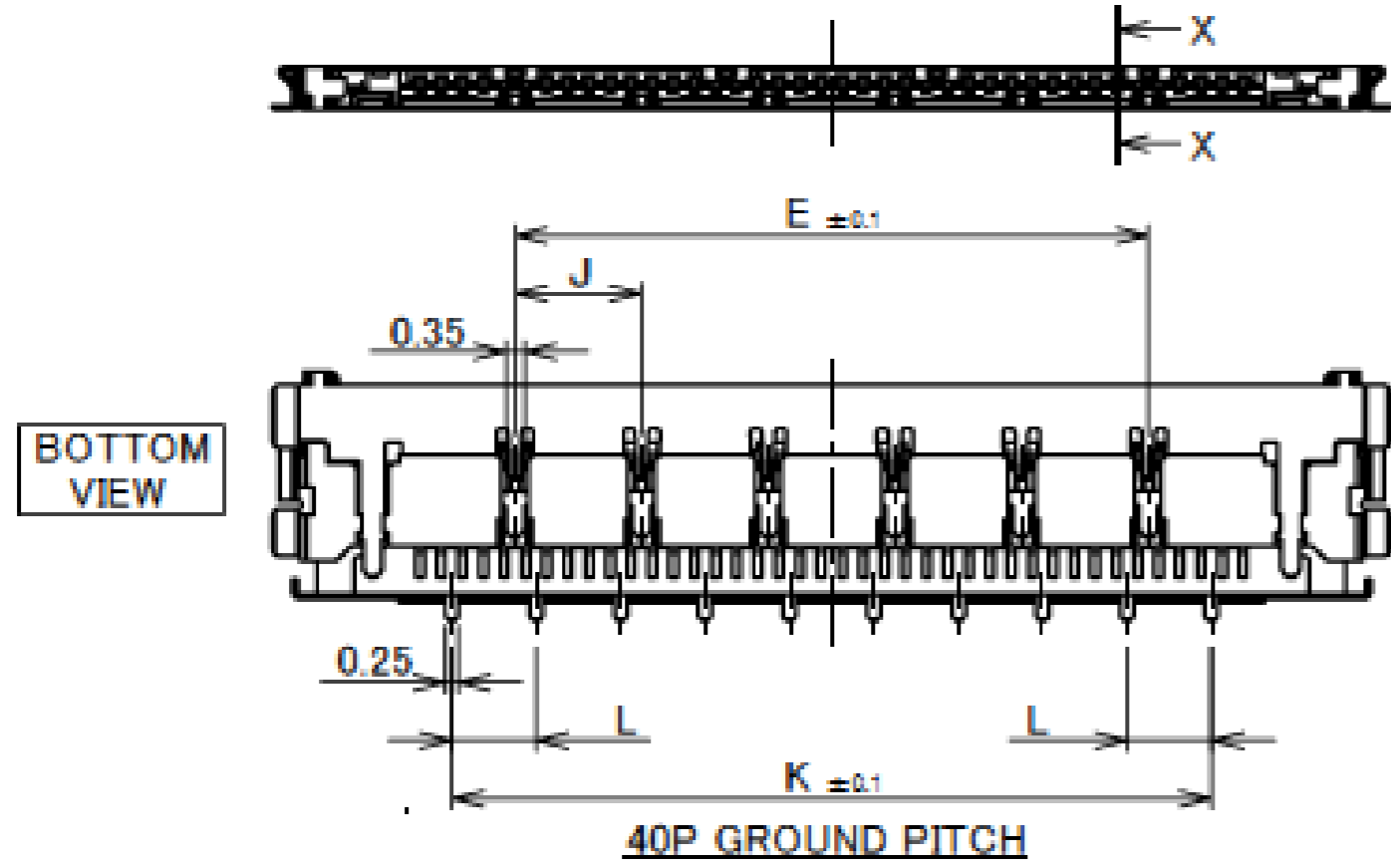
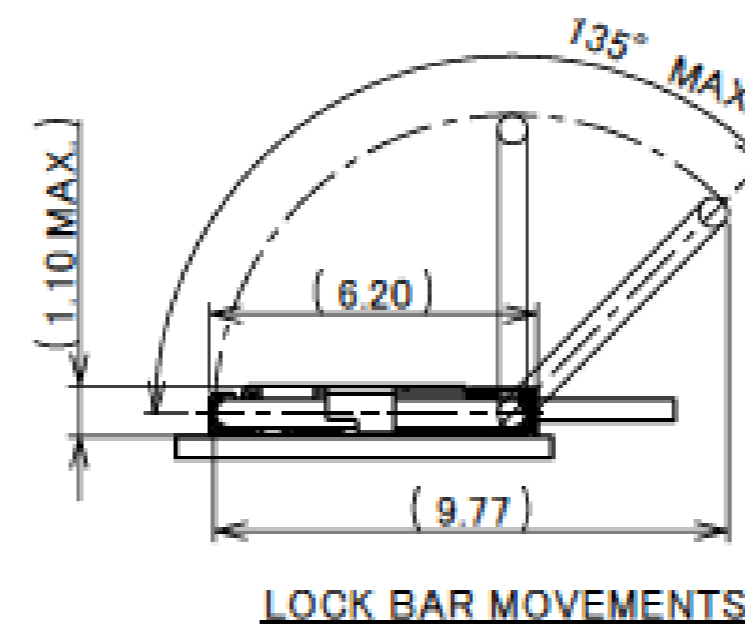
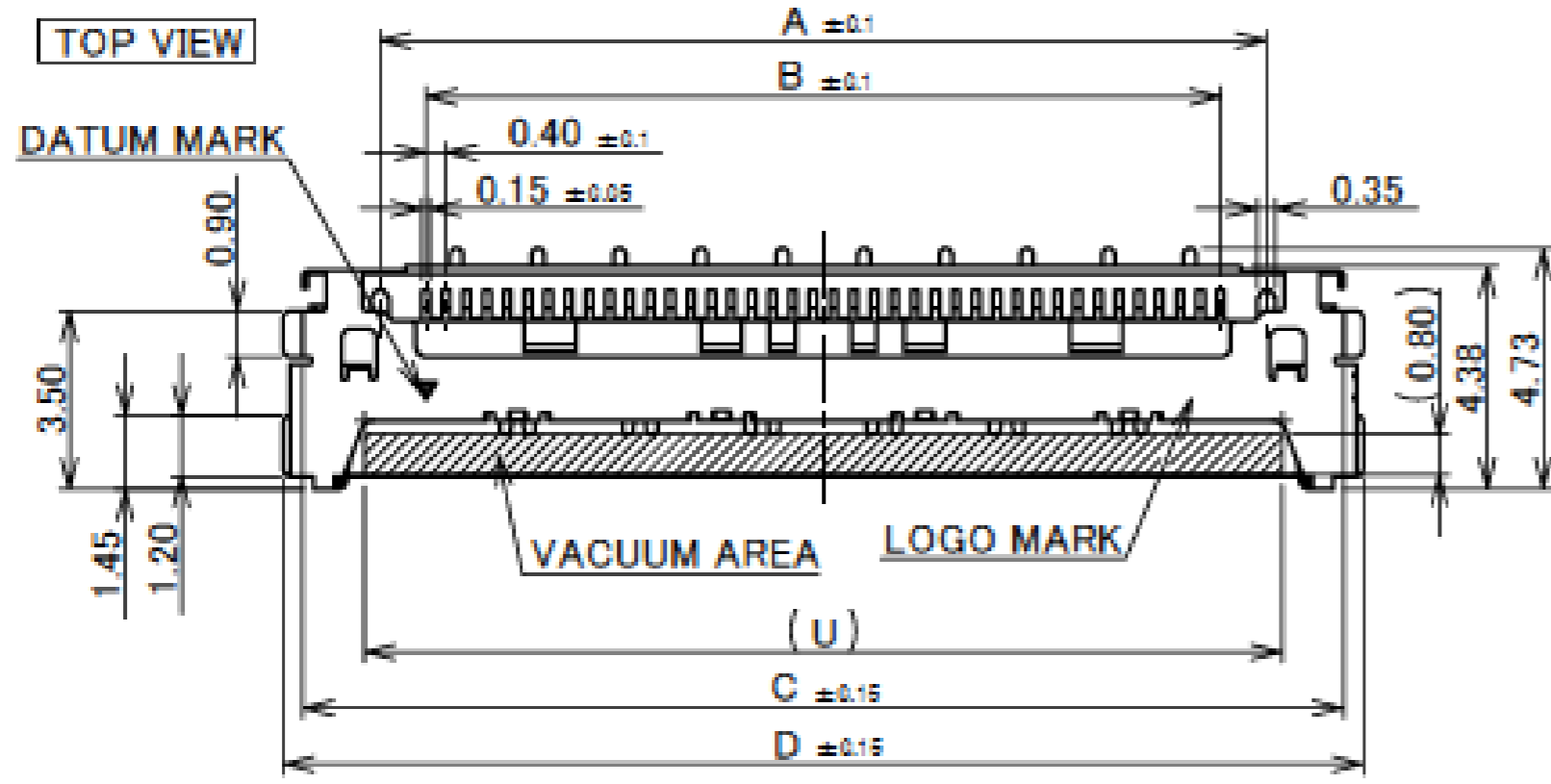
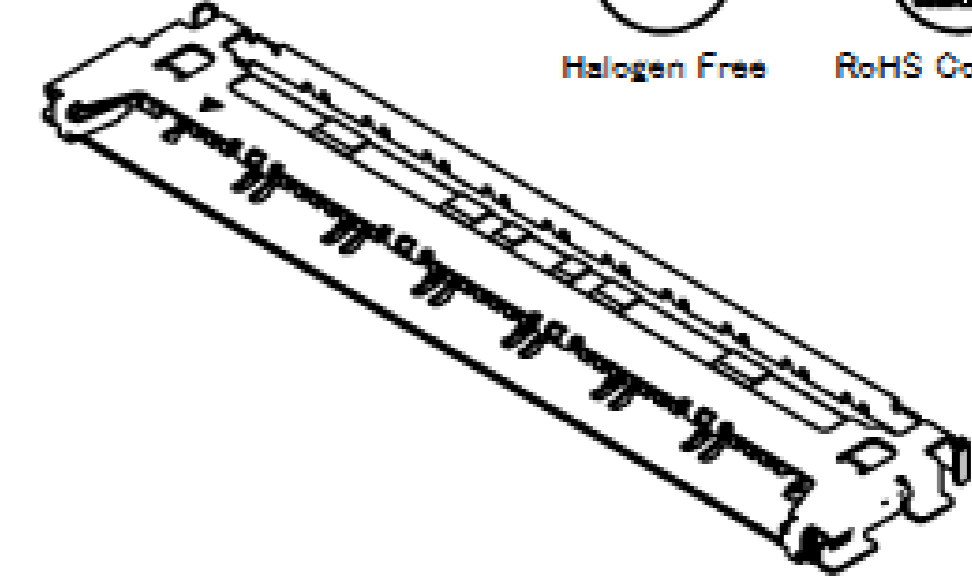
NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
2	COVER	PHOSPHOR BRONZE	ALL OVER Ni 1.00 $\mu$ m MIN.
1	LOCK BAR	SUS $\phi 0.55$	-

Rev.5

# Receptacle Assembly

Recommended P/N		20682-0**E-02									
PART NO.	Pos.	A	B	C	D	E	J	K	L	U	
20682-020E-02	20	9.40	7.60	12.43	13.20	4.80	2.40	5.60	2.00	10.01	
20682-030E-02	30	13.40	11.60	16.43	17.20	9.60	2.40	12.00	1.60	14.01	
20682-040E-02	40	17.40	15.60	20.43	21.20	12.00	2.40	14.40	1.60	18.01	
20682-050E-02	50	21.40	19.60	24.43	25.20	16.80	2.80	18.40	1.60	22.01	

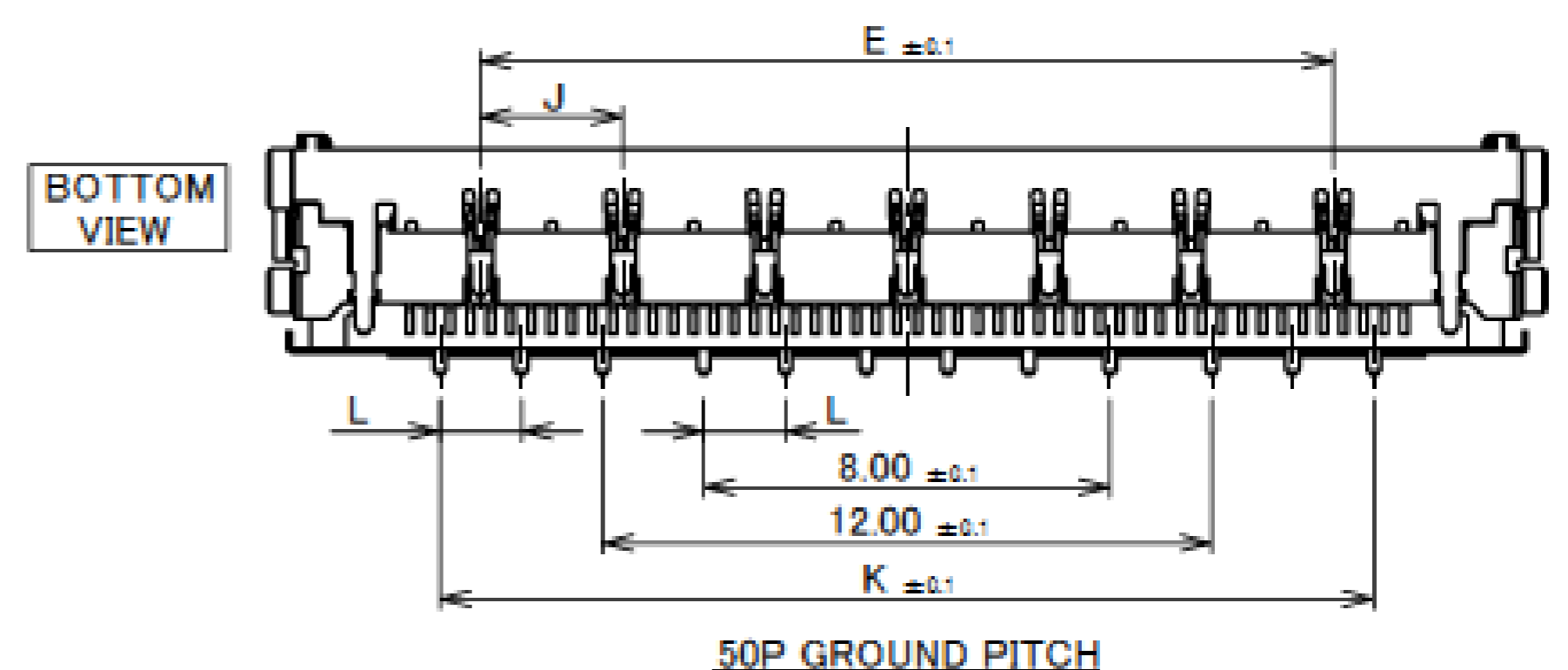
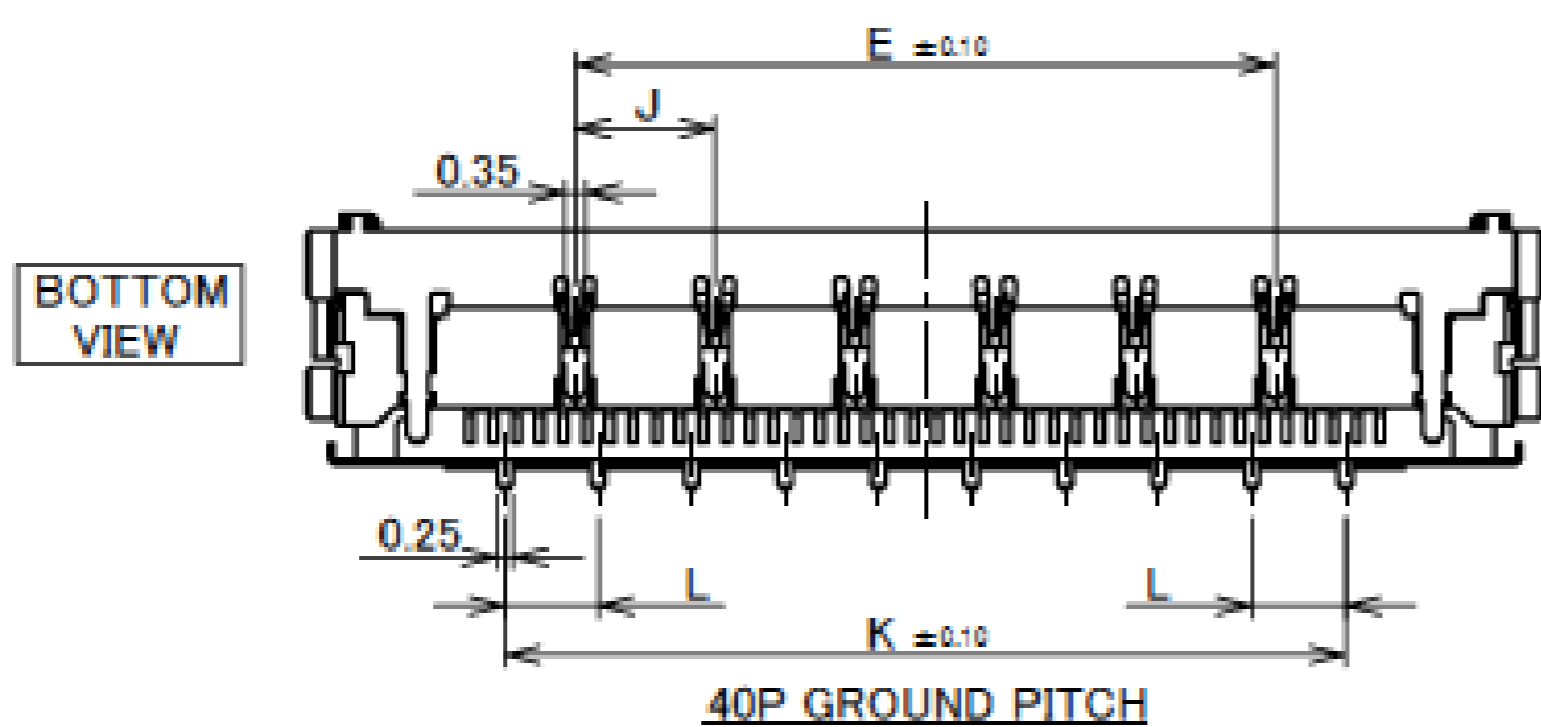
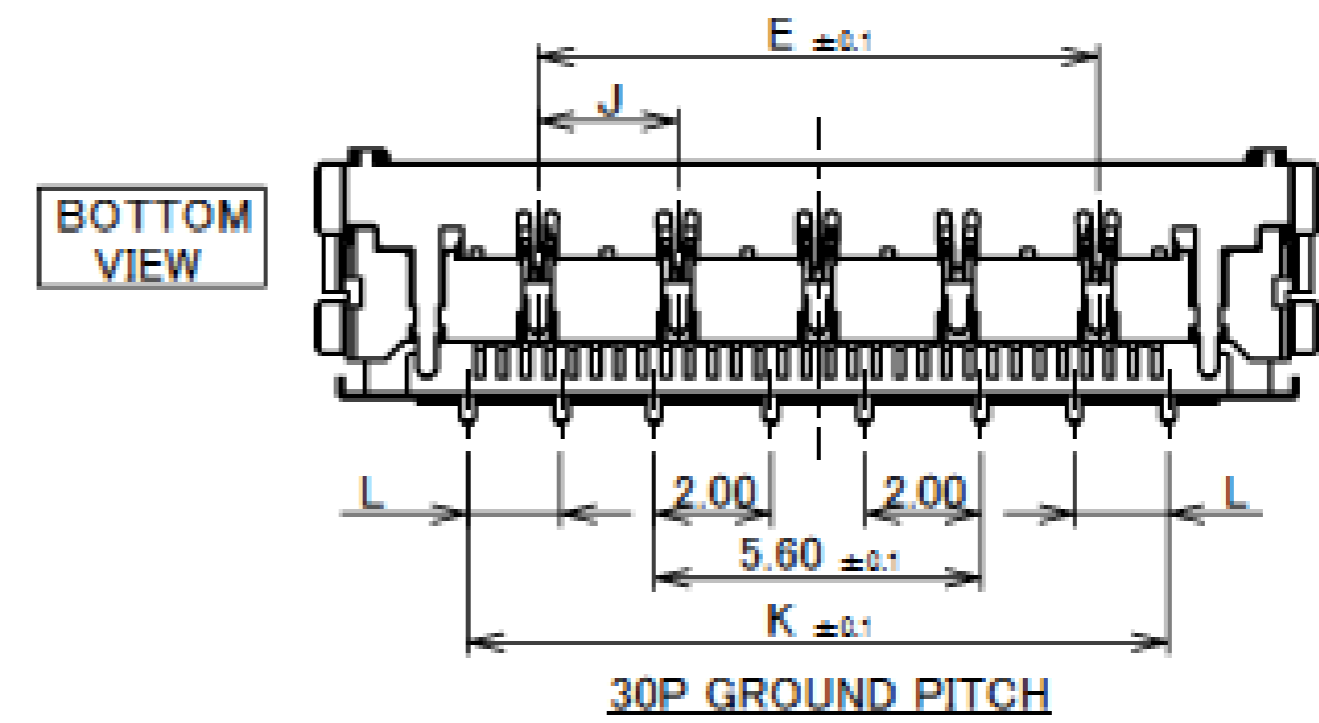
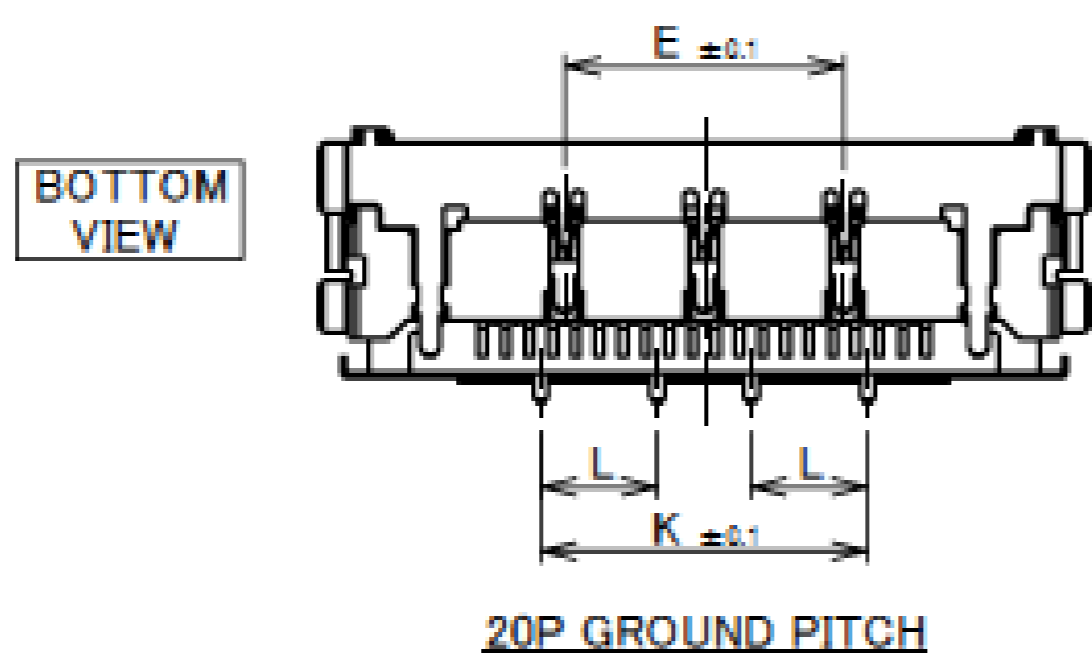
P/N : 20682-0\*\*E-02  
Pos.



NO.	DISCRPTION	MATERIAL	FINISH , REMARKS
3	SHELL	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μm MIN. SOLDERING AREA : Au 0.03 μm MIN.
2	CONTACT	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μm MIN. CONTACT & SOLDERING AREA : Au 0.03 μm MIN.
1	HOUSING	LCP	UL94V-0 .BLACK

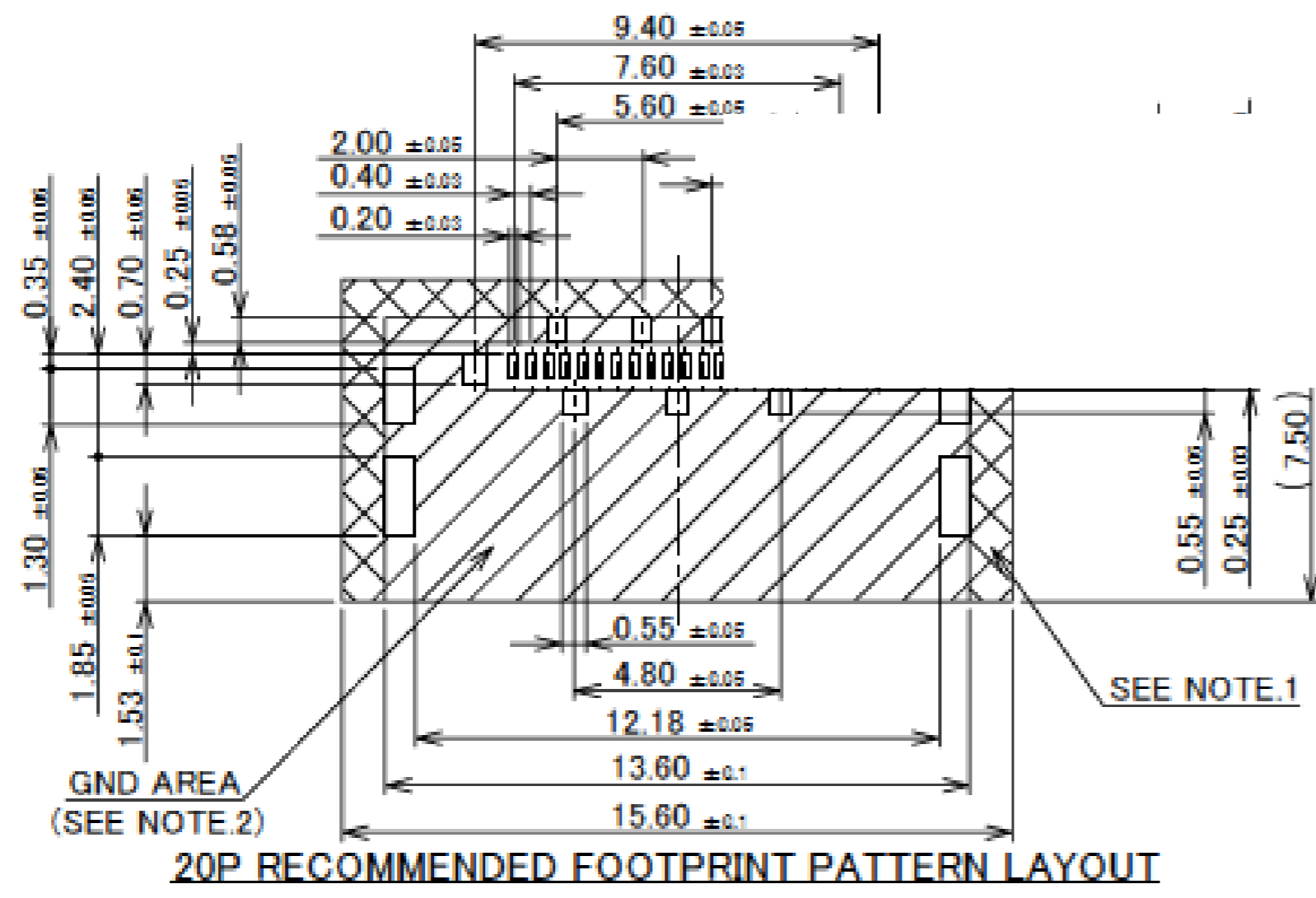
Rev.13

PART NO.	Pos.	E	J	K	L
20682-020E-02	20	4.80	2.40	5.60	2.00
20682-030E-02	30	9.60	2.40	12.00	1.60
20682-040E-02	40	12.00	2.40	14.40	1.60
20682-050E-02	50	16.80	2.80	18.40	1.60

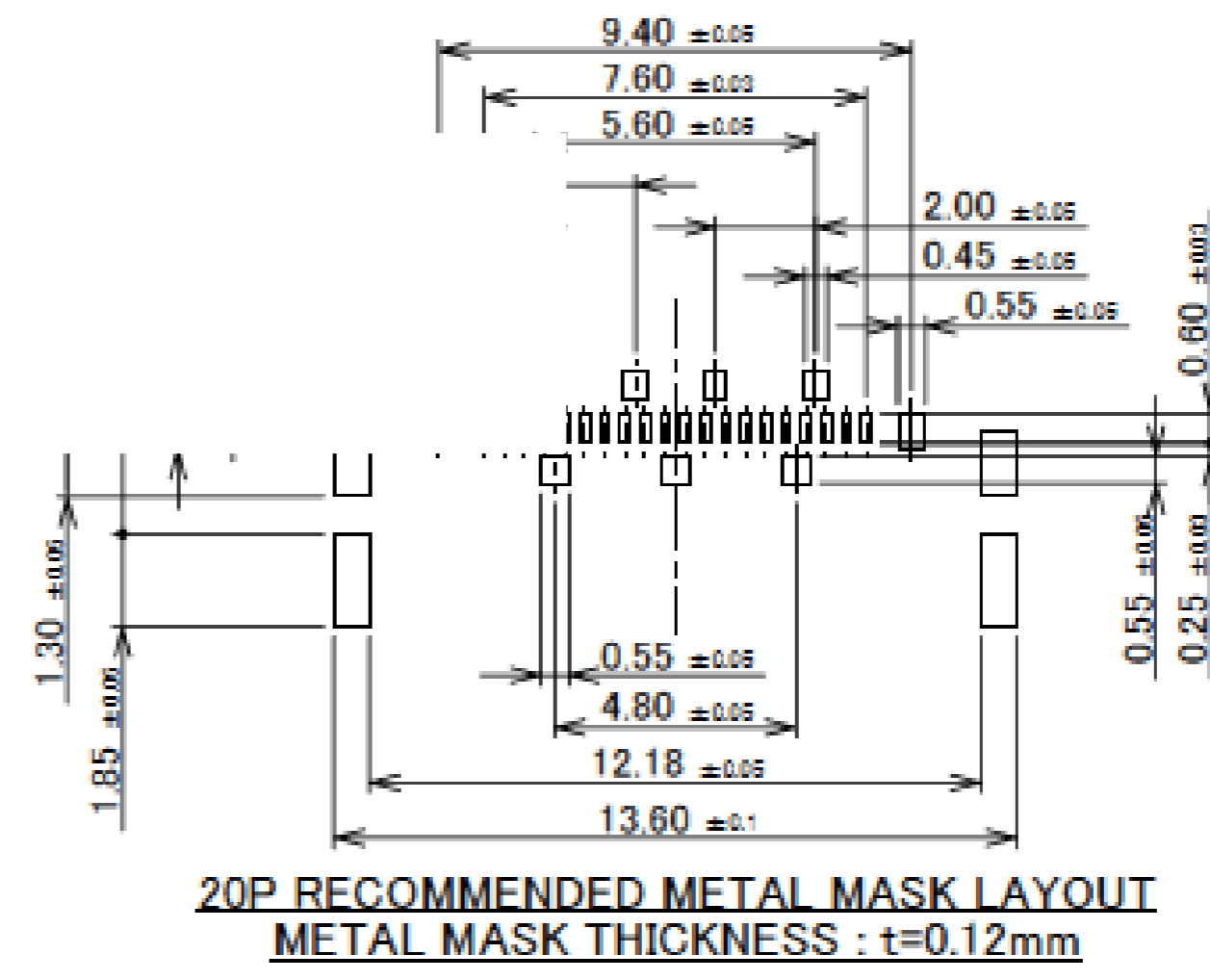


Rev.13

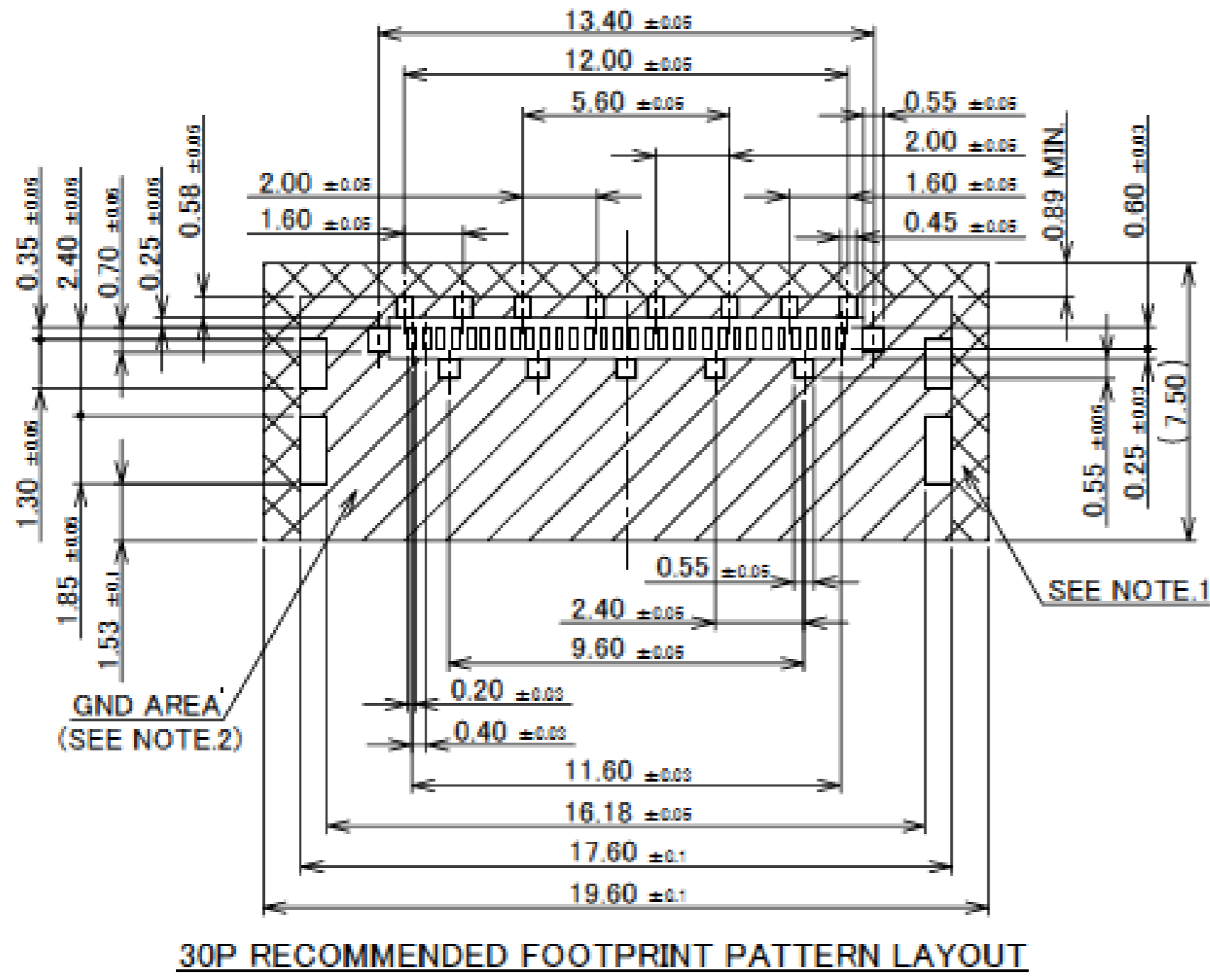
# Receptacle Assembly



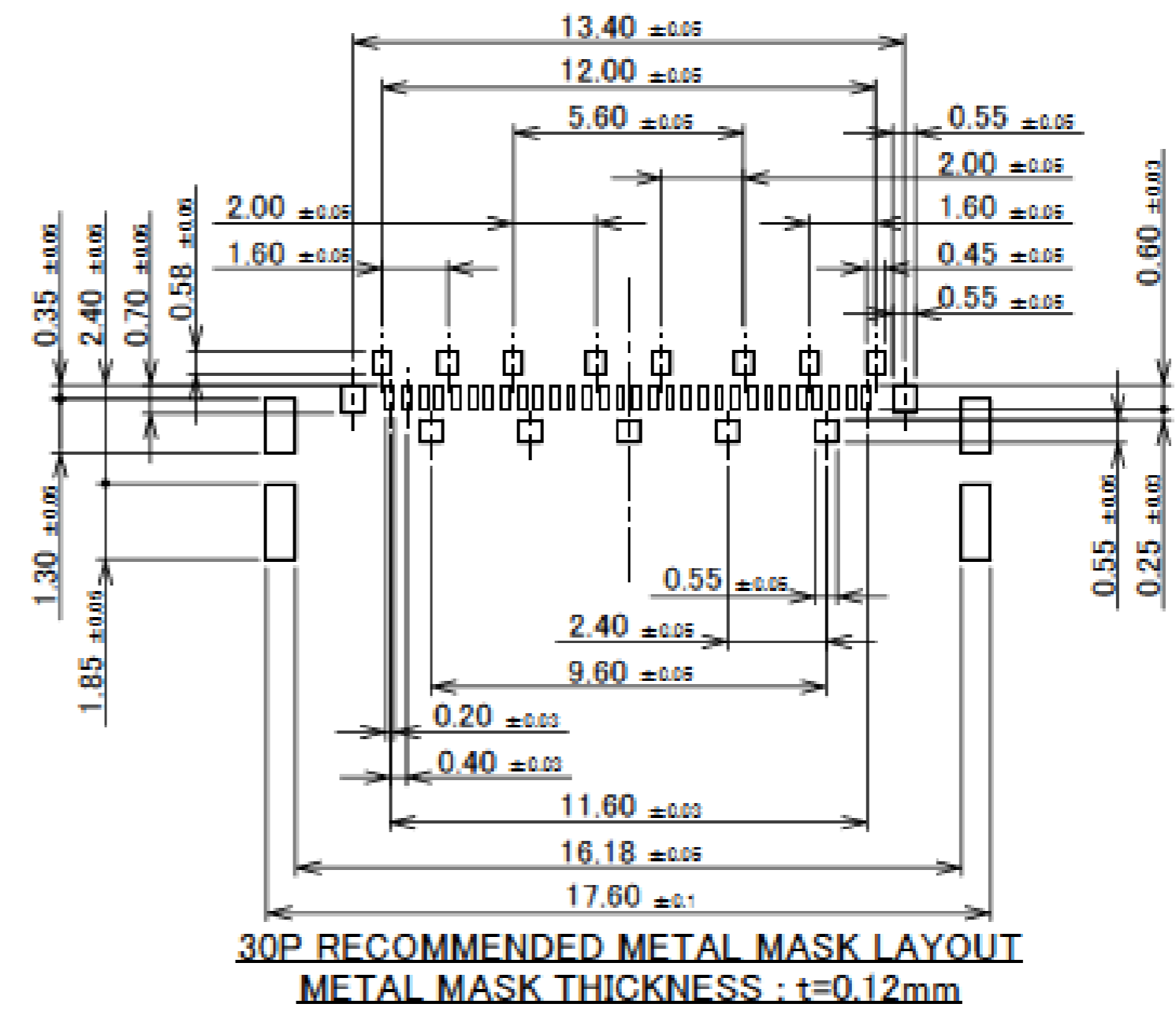
20P RECOMMENDED FOOTPRINT PATTERN LAYOUT



20P RECOMMENDED METAL MASK LAYOUT  
METAL MASK THICKNESS : t=0.12mm



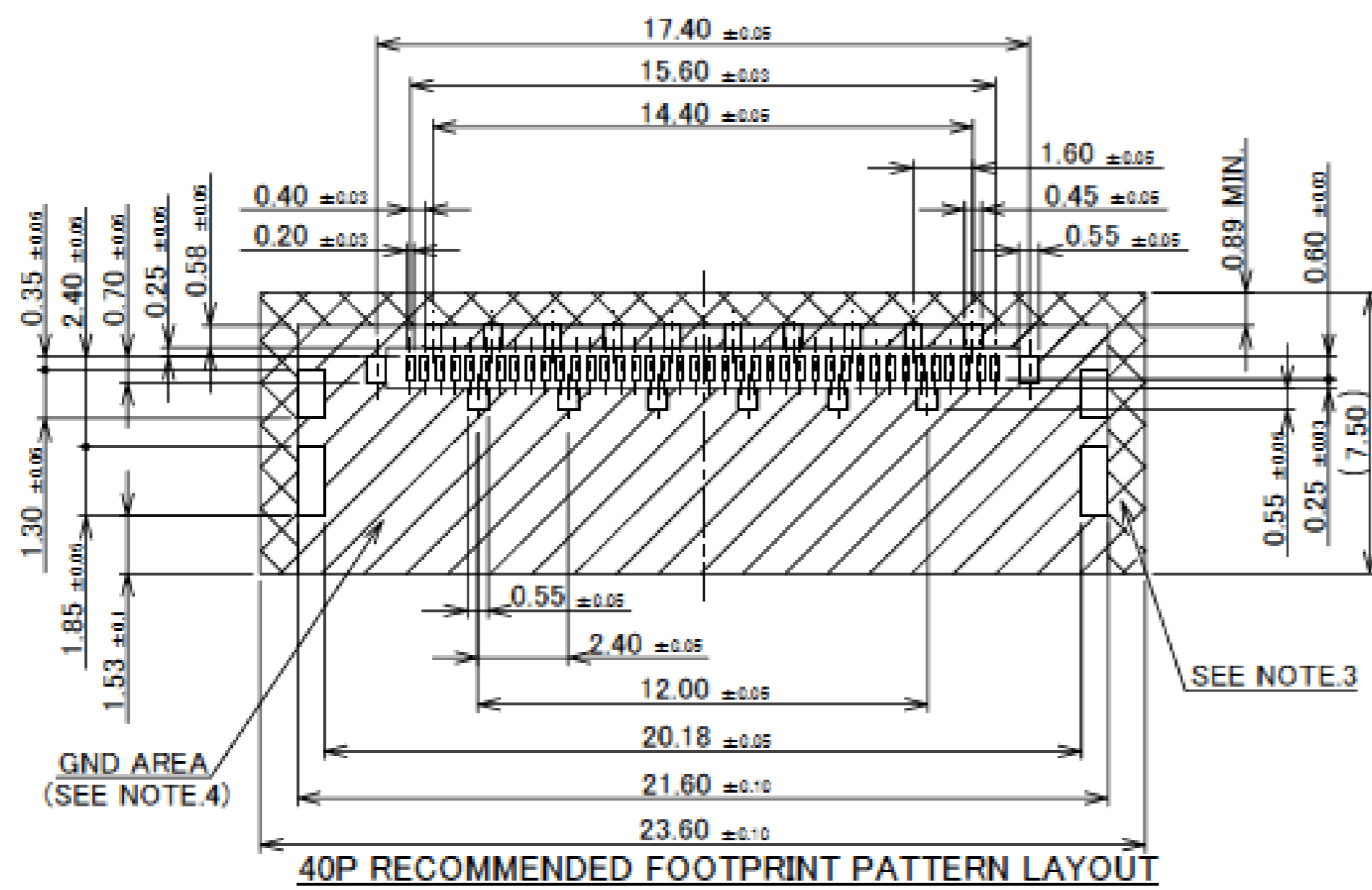
30P RECOMMENDED FOOTPRINT PATTERN LAYOUT



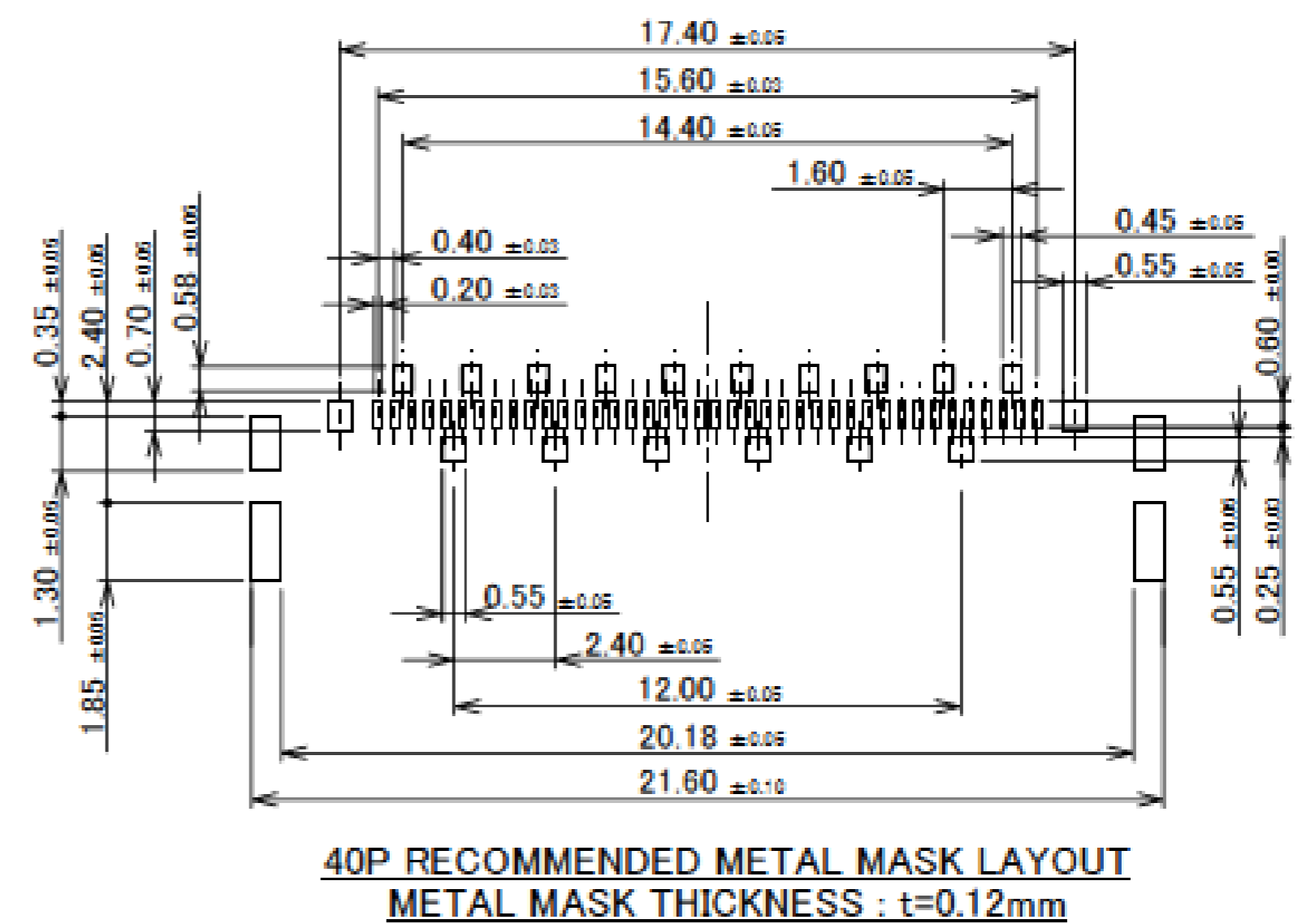
30P RECOMMENDED METAL MASK LAYOUT  
METAL MASK THICKNESS : t=0.12mm

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

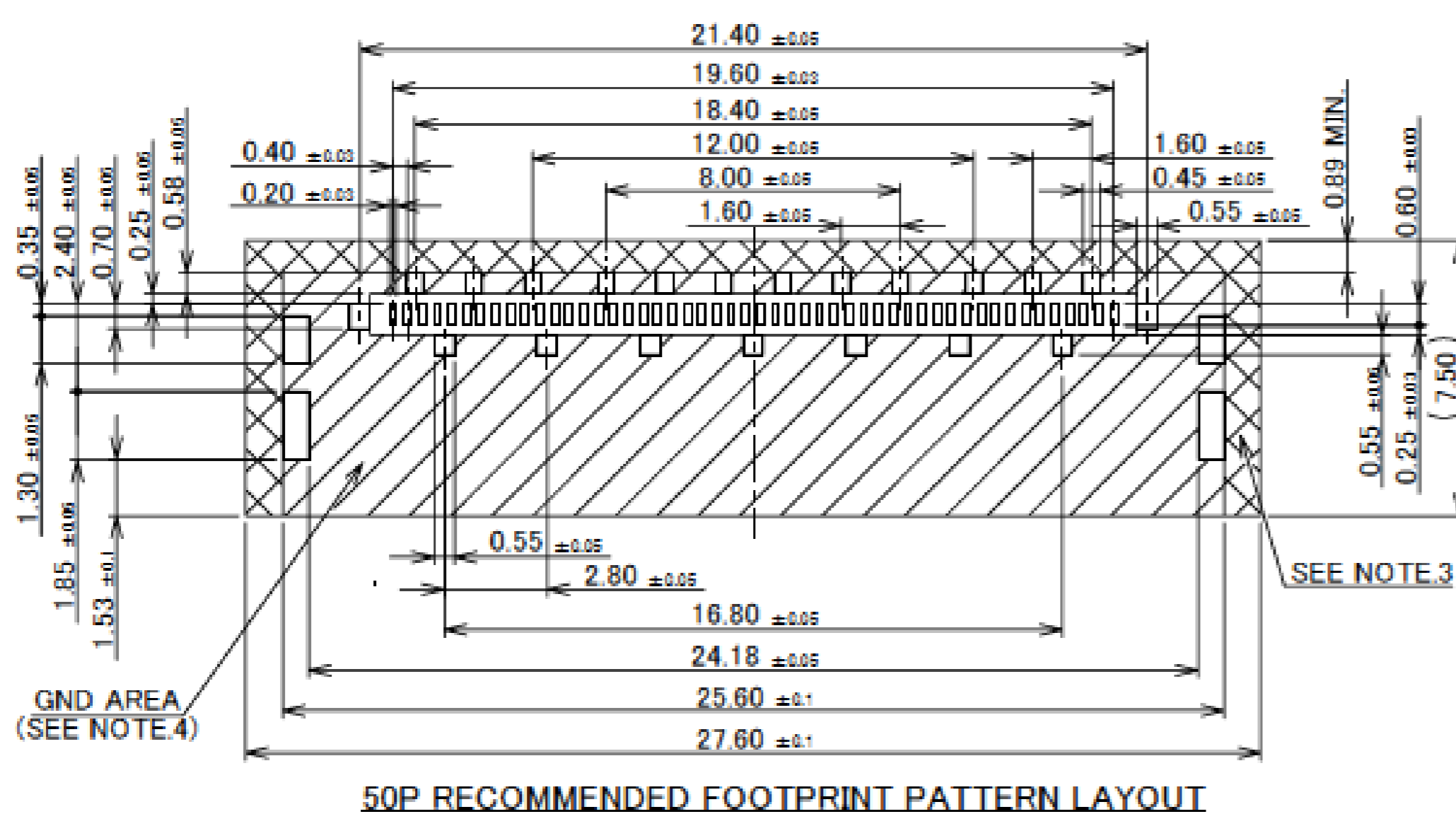
Rev.13



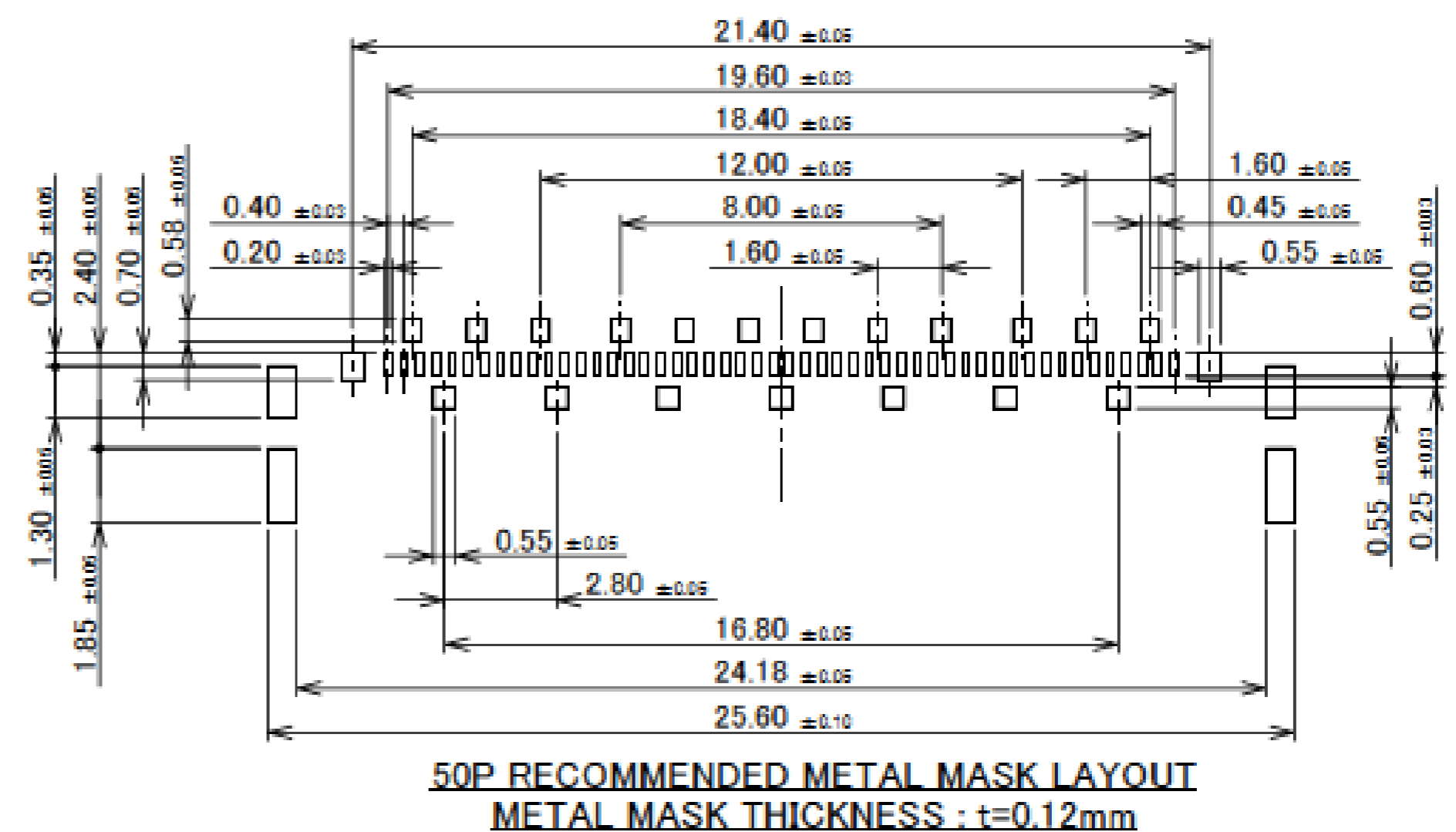
40P RECOMMENDED FOOTPRINT PATTERN LAYOUT



40P RECOMMENDED METAL MASK LAYOUT  
METAL MASK THICKNESS : t=0.12mm



50P RECOMMENDED FOOTPRINT PATTERN LAYOUT

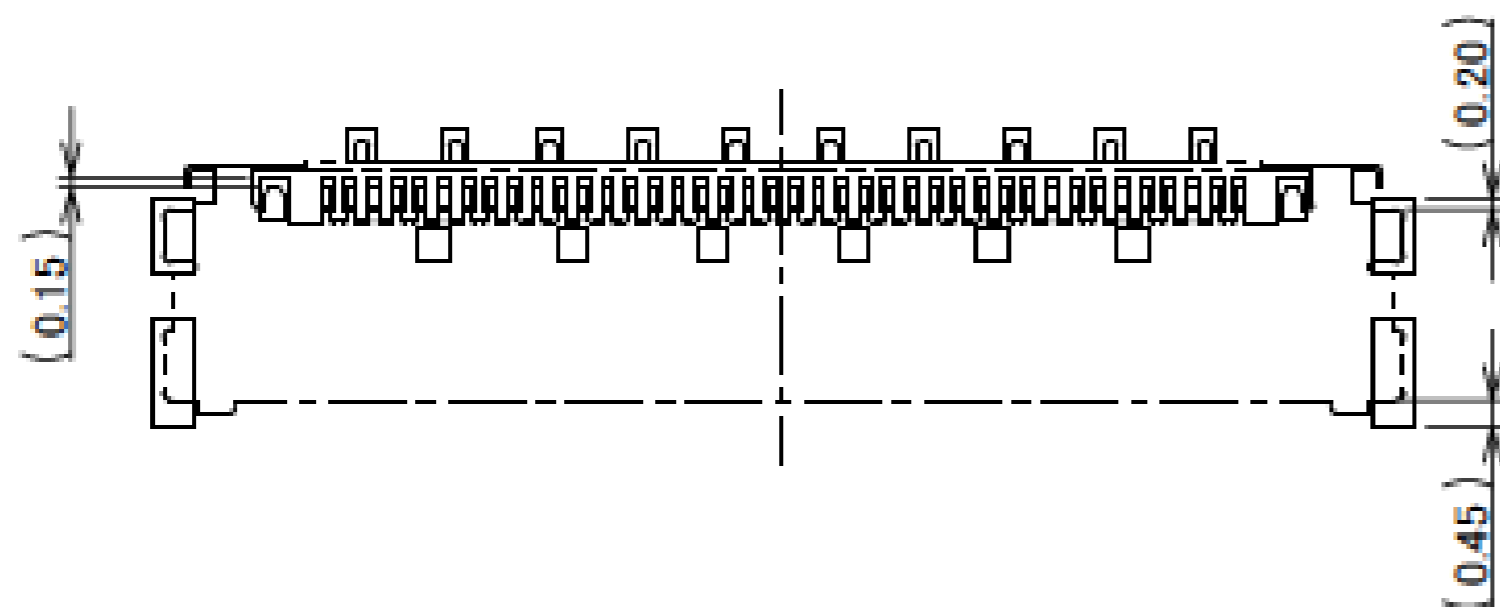


50P RECOMMENDED METAL MASK LAYOUT  
METAL MASK THICKNESS : t=0.12mm

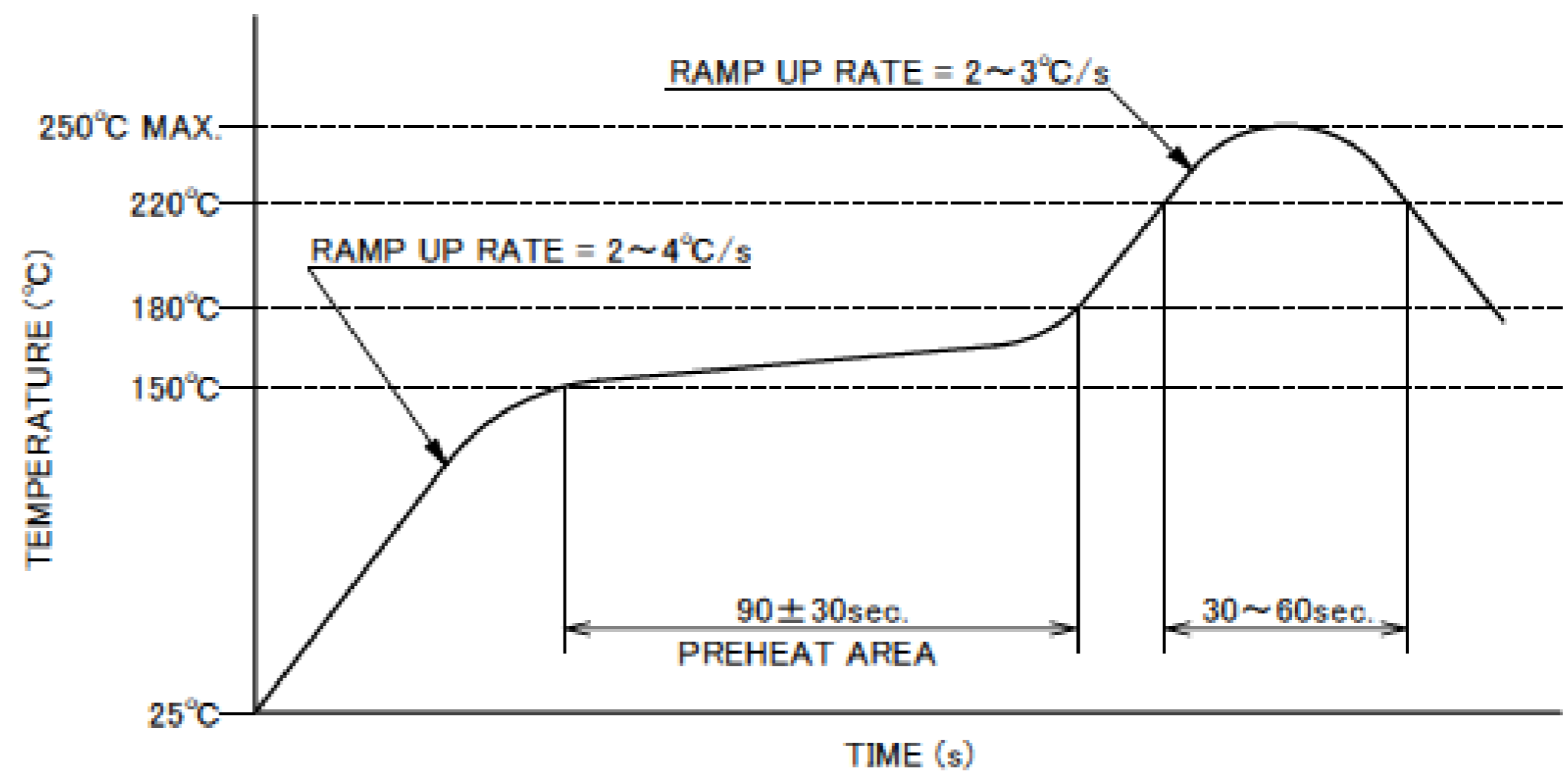
- NOTES:  
3. DO NOT MOUNT ANOTHER COMPONENT IN THIS AREA.  
4. SOLDER RESIST MUST BE APPLIED TO THIS AREA.

Rev.13

# Receptacle Assembly



CONNECTOR ON RECOMMENDED FOOTPRINT PATTERN



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

Rev.13

ITEMS	SPECIFICATION
APPLICABLE CABLE	MICRO-COAXIAL : 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)	0.1A AC/DC [AWG#44] PER CONTACT PIN/UP TO 50 CONTACTS 0.24A AC/DC [AWG#42] PER CONTACT PIN/UP TO 50 CONTACTS 0.3A AC/DC [AWG#40] PER CONTACT PIN/UP TO 50 CONTACTS 0.5A AC/DC [AWG#38] PER CONTACT PIN/UP TO 18 CONTACTS 0.8A AC/DC [AWG#36] PER CONTACT PIN/UP TO 6 CONTACTS 1.0A AC/DC [AWG#34] PER CONTACT PIN/UP TO 6 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-CONDENDING)
CONTACT RESISTANCE	INITIAL : 180mohm MAX.(AWG#34) / AFTER TEST : <math>\triangle</math>40mohm 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 : <math>\triangle</math>40mohm MAX.
INSULATION RESISTANCE	INITIAL : 1000Mohm MIN. / AFTER TEST : 500Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	AC250V 1min
DURABILITY	30 CYCLES
MATING FORCE (INITIAL / AFTER 30 CYCLES)	20P : 9.70N MAX. 30P : 14.55N MAX. 40P : 19.40N MAX. 50P : 24.25N MAX.
UN-MATING FORCE (INITIAL / AFTER 30 CYCLES)	20P : 2.0N MIN. 30P : 3.0N MIN. 40P : 4.0N MIN. 50P : 5.0N MIN.
CABLE RETENTION FORCE	20P : 9.70N MIN. 30P : 14.55N MIN. 40P : 19.40N MIN. 50P : 24.25N MIN.
COPLANARITY	0.10 MAX.
PRODUCT SPECIFICATION	PRS-2163
TEST REPORT	TR-15103
INSTRUCTION MANUAL	HIM-15033
PACKING STANDARD	PST-15027
APPEARANCE CRITERIA No.	QLS-A***

Rev.13



Board to Board



High-Density



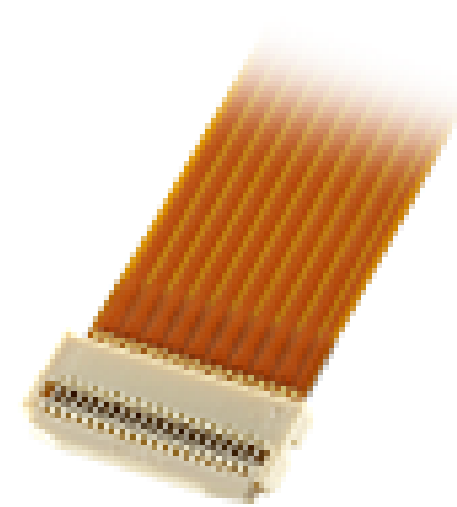
Autolocking FPC/FFC



High-Density



FPC/FFC



Micro-Coaxial / Discrete Cable



High-Speed



RF



High-Frequency



Optical Module



High-Speed



Effector



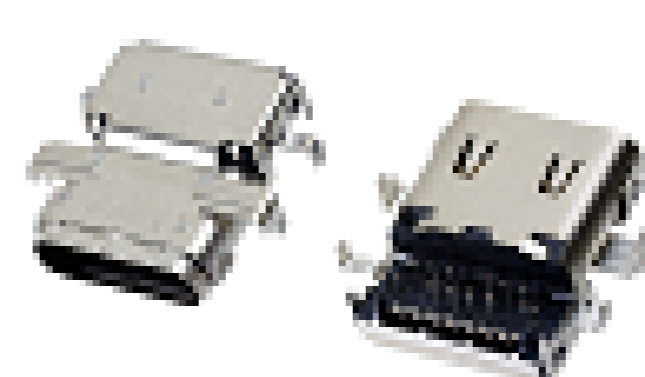
Power



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.