

# CABLINE® -CA II PLUS

Fully-shielded with mechanical lock, Suitable for high-data-rate transfer (32 Gbps/lane), 0.4 mm pitch, Horizontal mating type micro-coaxial connector

\*For higher data rate up to 64 Gbps PAM4, please review [CABLINE-CA IIP PLUS harness solution](#) that mates to current CABLINE-CA II PLUS receptacle (20790-060E-01/-02).

**Product Specifications:**

Mating type	Horizontal	
Board Pitch (mm)	0.4 mm	
Wiping Length (mm)	0.54 mm	
Mated size (mm)	Height	1.2 mm max. with cover
	Width	6.95 + (0.4 x pin count) mm
	Depth	6.7 mm
Pin Counts	Range	Up to 60
	Available	60

**Applicable Cable Size:**

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

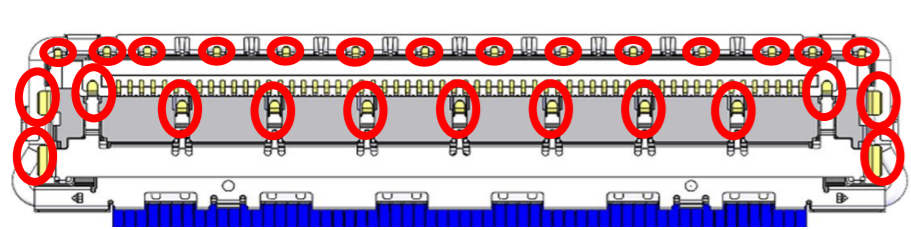
**Applicable Standards (Reference Only):**

32 Gbps/ Lane, USB4 Gen4 (40 Gbps/ Lane PAM3)  
Display Port UHBR20 (20 Gbps/Lane),

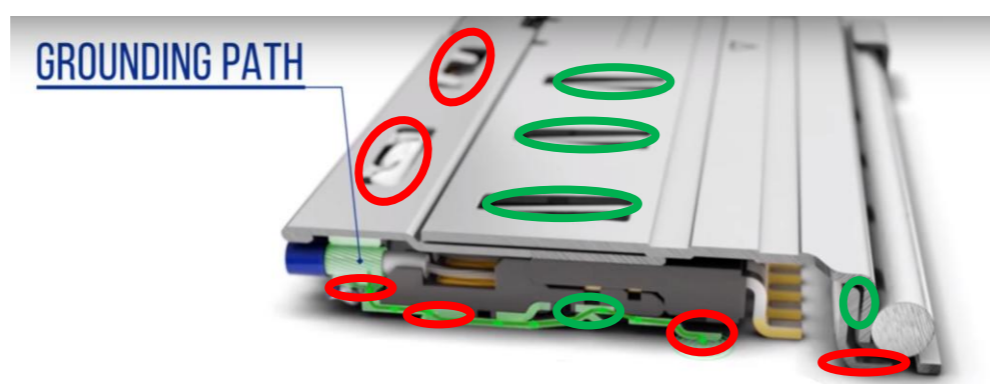


\* Please inquire for pin counts not listed or outside of the pin count range.  
\*20, 30, 40, 50 pin are also available with CABLINE® -CA II (narrow space type).

## ▶ ZenShield® fully-shielded with multi-point grounds is ideal for EMC solutions

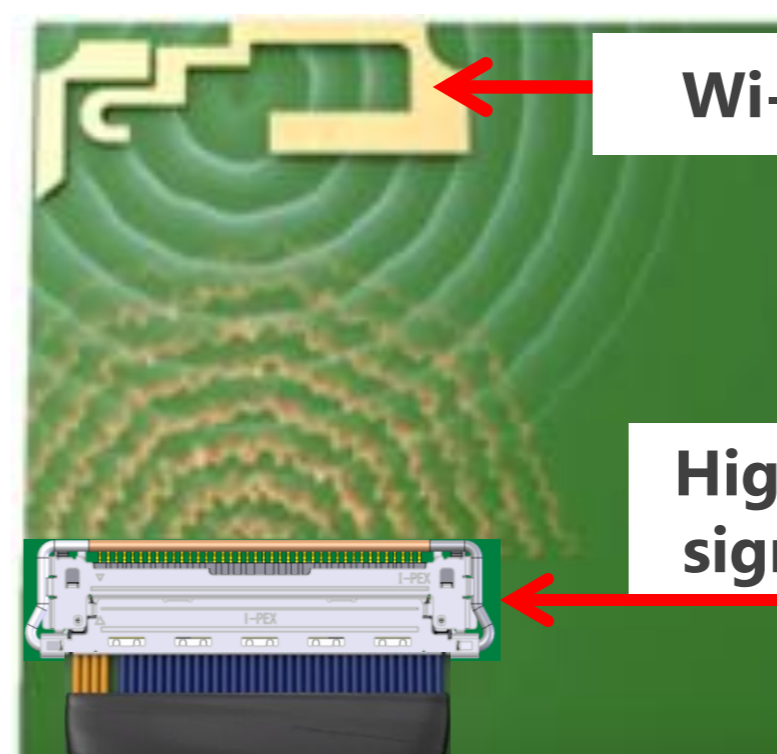


View From Back

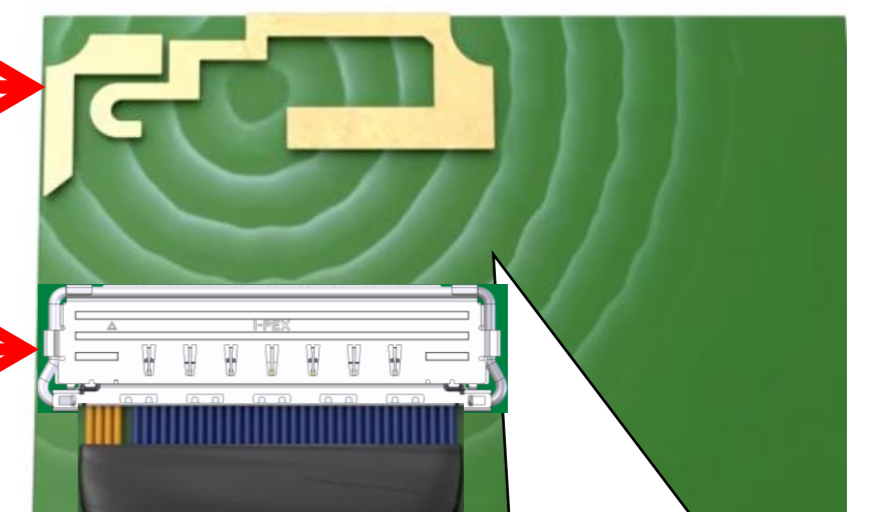


○ Soldered contacts  
○ Mechanical contacts

**General Connector**

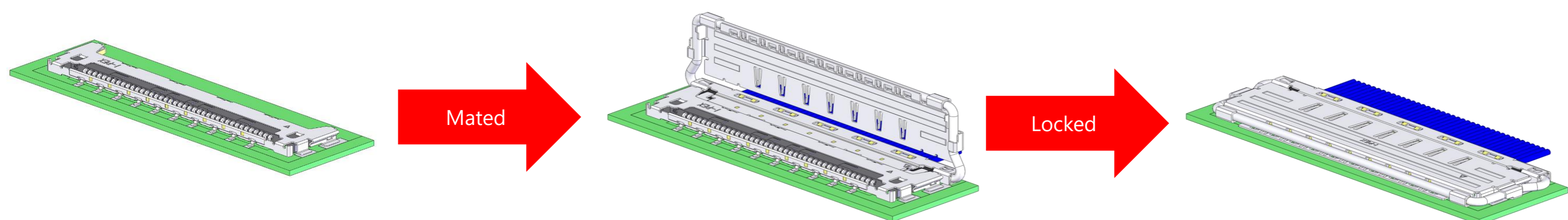


**ZenShield® Connector**



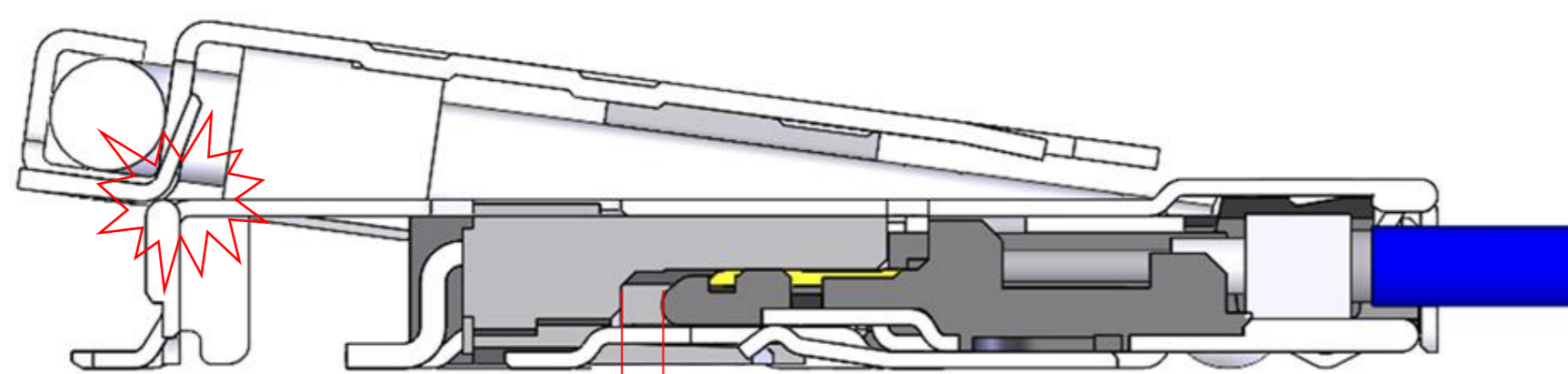
Connectors can be placed closer to antenna

## ▶ Mechanical locking cover prevents incomplete mating and back-out/unmating

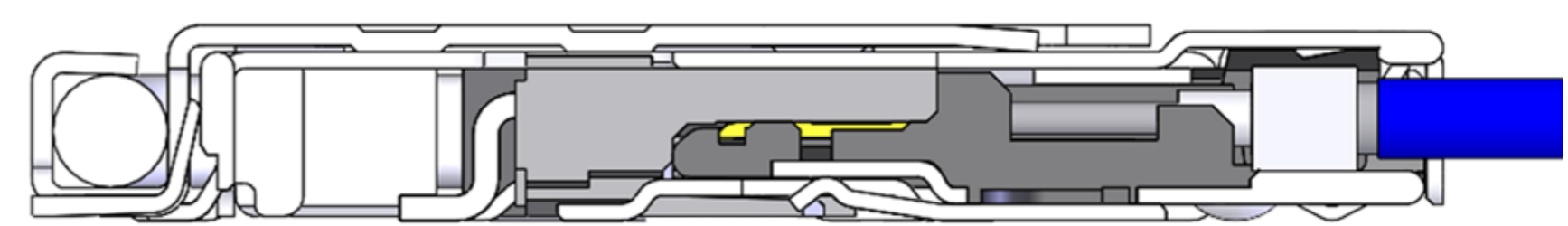


Unable to lock

can only be locked when mating is complete



incomplete mating



complete mating

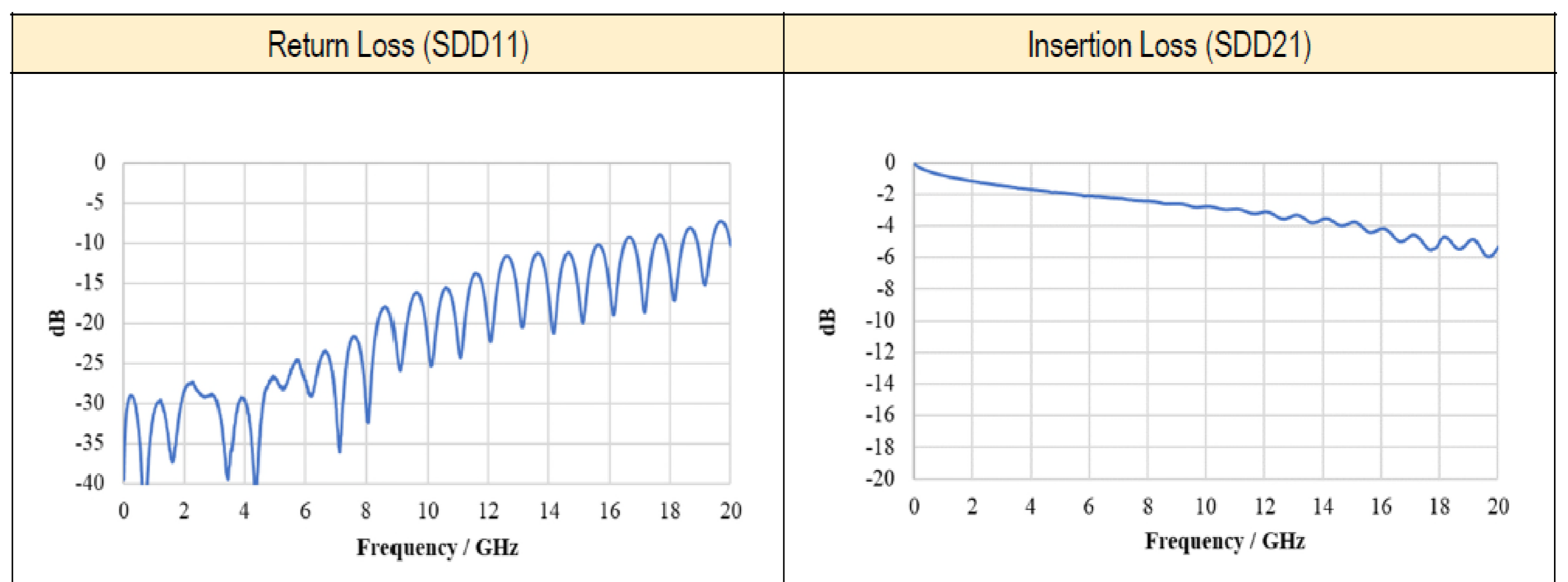
## ▶ High-data-rate transfer, ideal for 32 Gbps/lane applications

**Measurement results**

Connector: CABLINE-CA II 40 pin

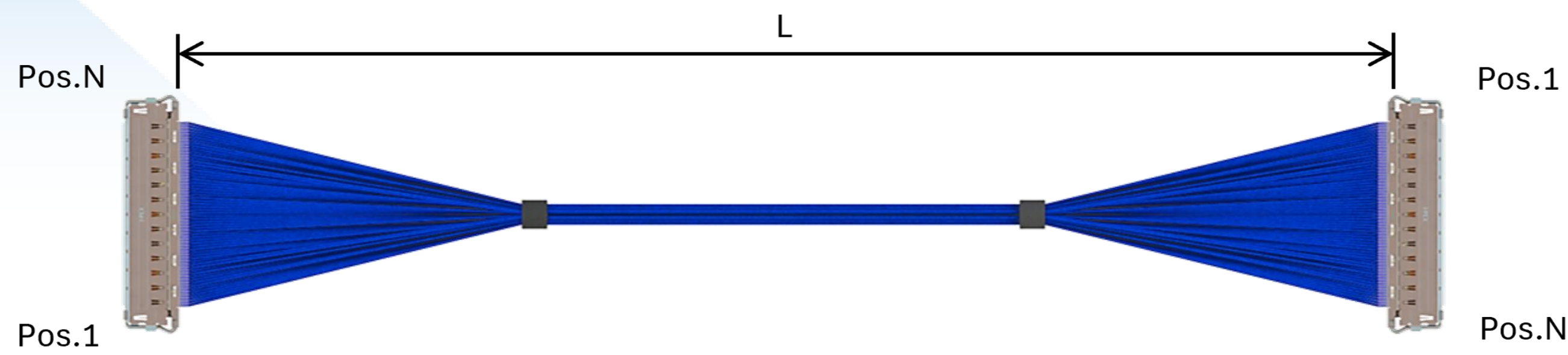
Cable: Micro-coaxial cable  
AWG 40, 45ohm , Length : 100 mm

Pin Assignment: GSSGSSG



# CABLINE<sup>®</sup> -CA II PLUS standard harness

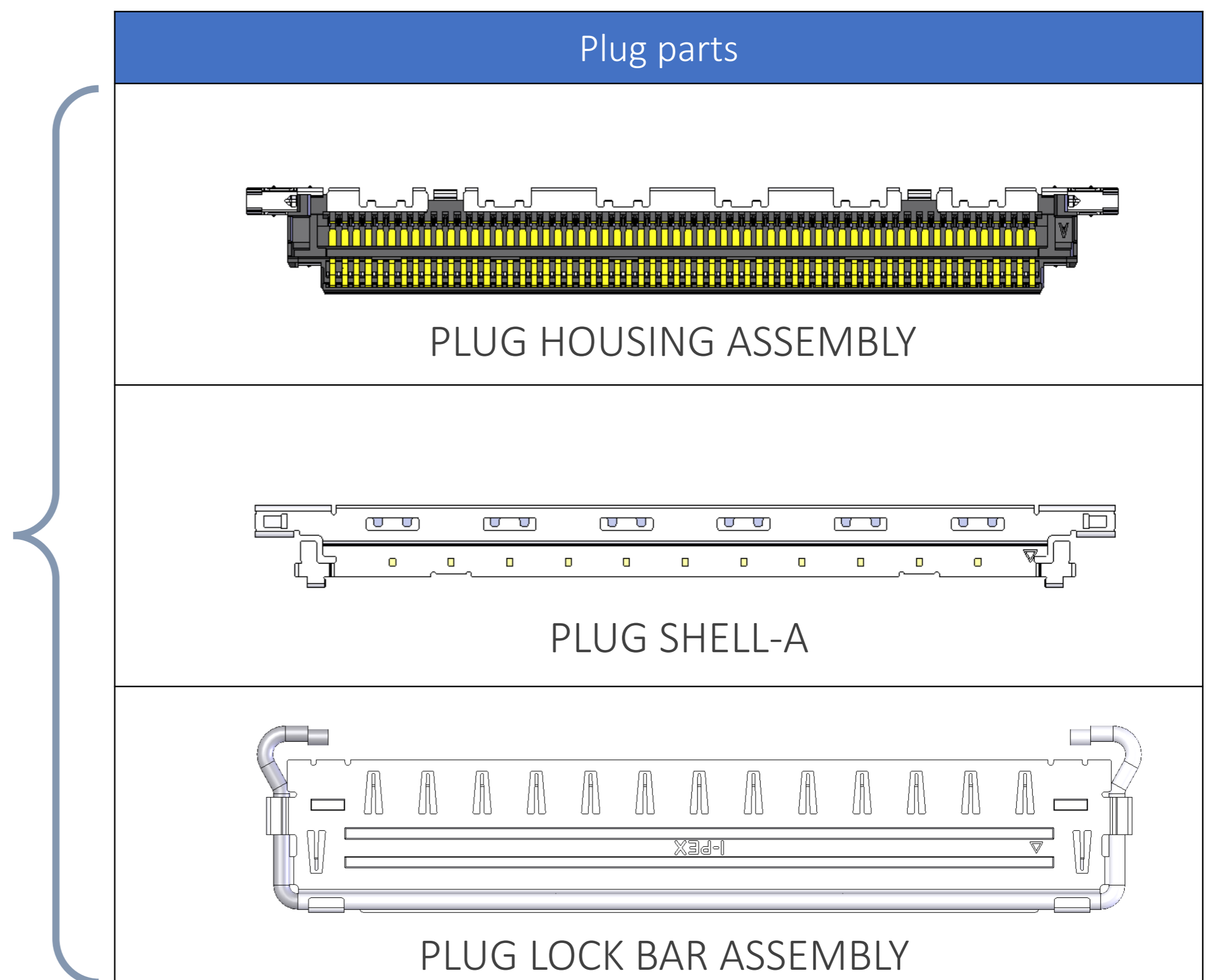
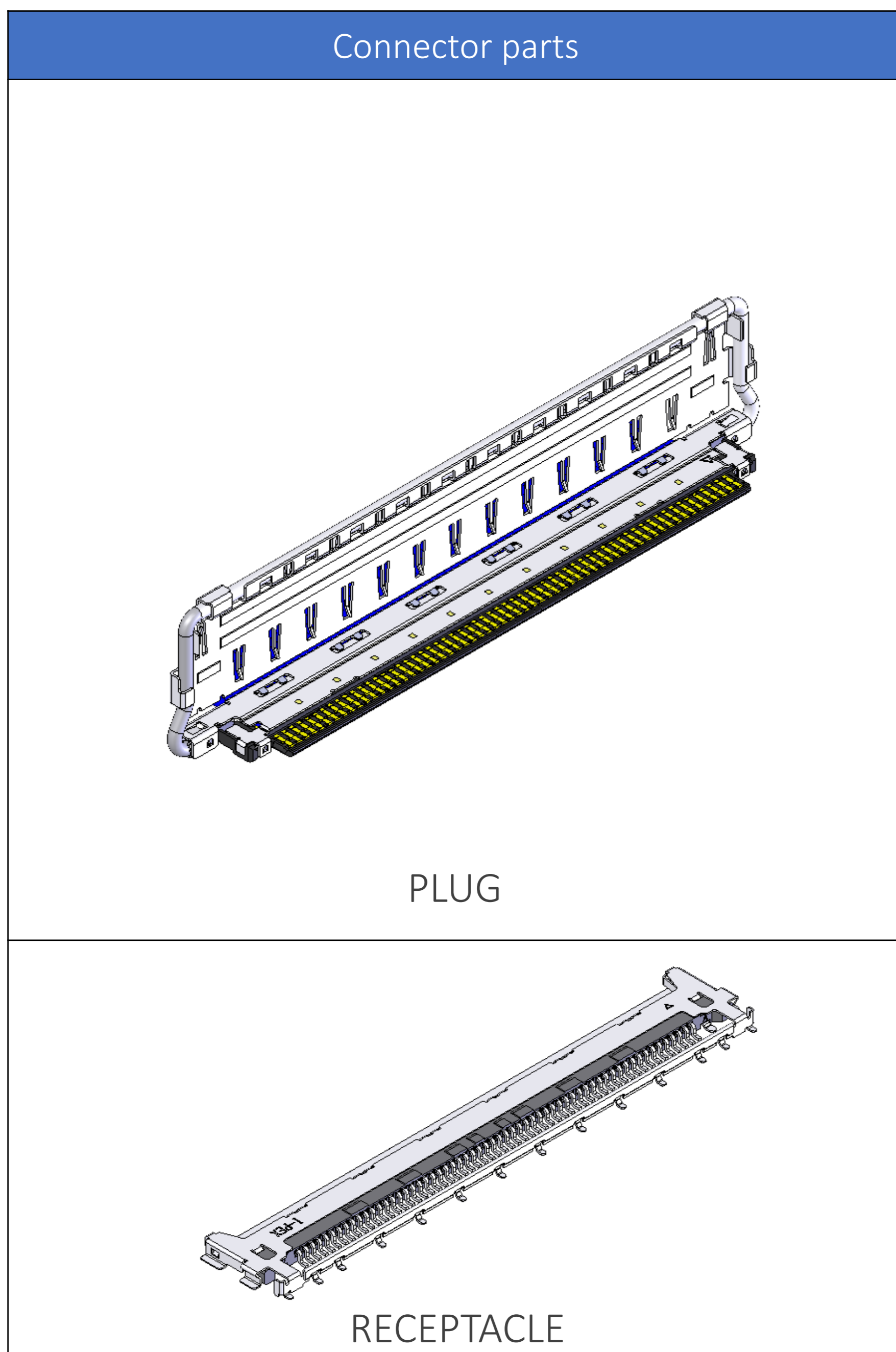
- ◆ Please click the part number to get its 2D drawing.
- ◆ Please be advised that if it becomes necessary to change the harness specifications, the part number will also need to be updated. The following part number is valid only when used with the harness specifications shown below.
- ◆ Please contact us via [Inquiry form](#) for other harness specifications.



Part Number Description	Part Number (Link to Drawing)	Sample available
CABLINE-CA II PLUS HARNESS L=200mm 60pin 1-N	<a href="#">81674-100B-02-D</a>	<a href="#">Buy from Digikey</a>

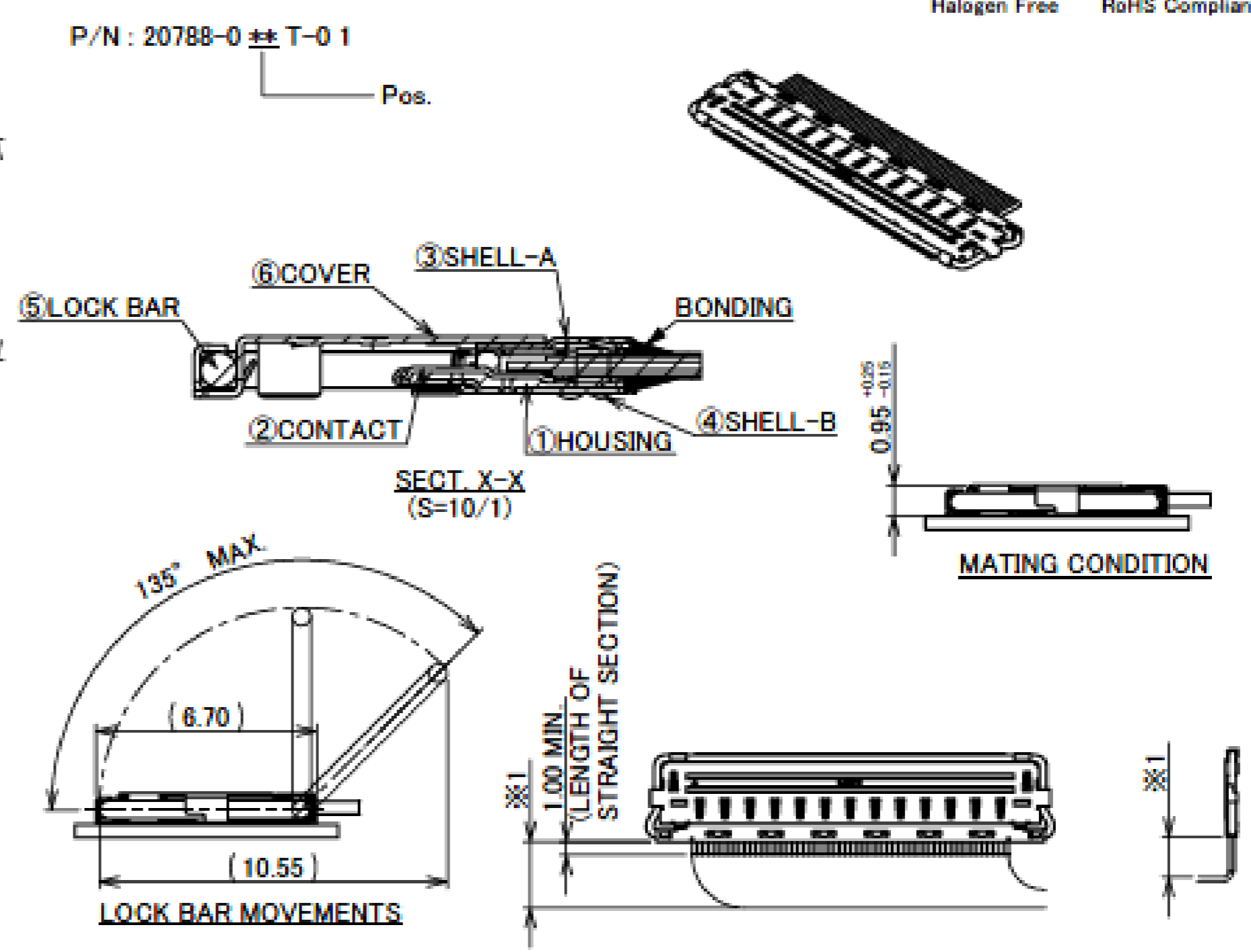
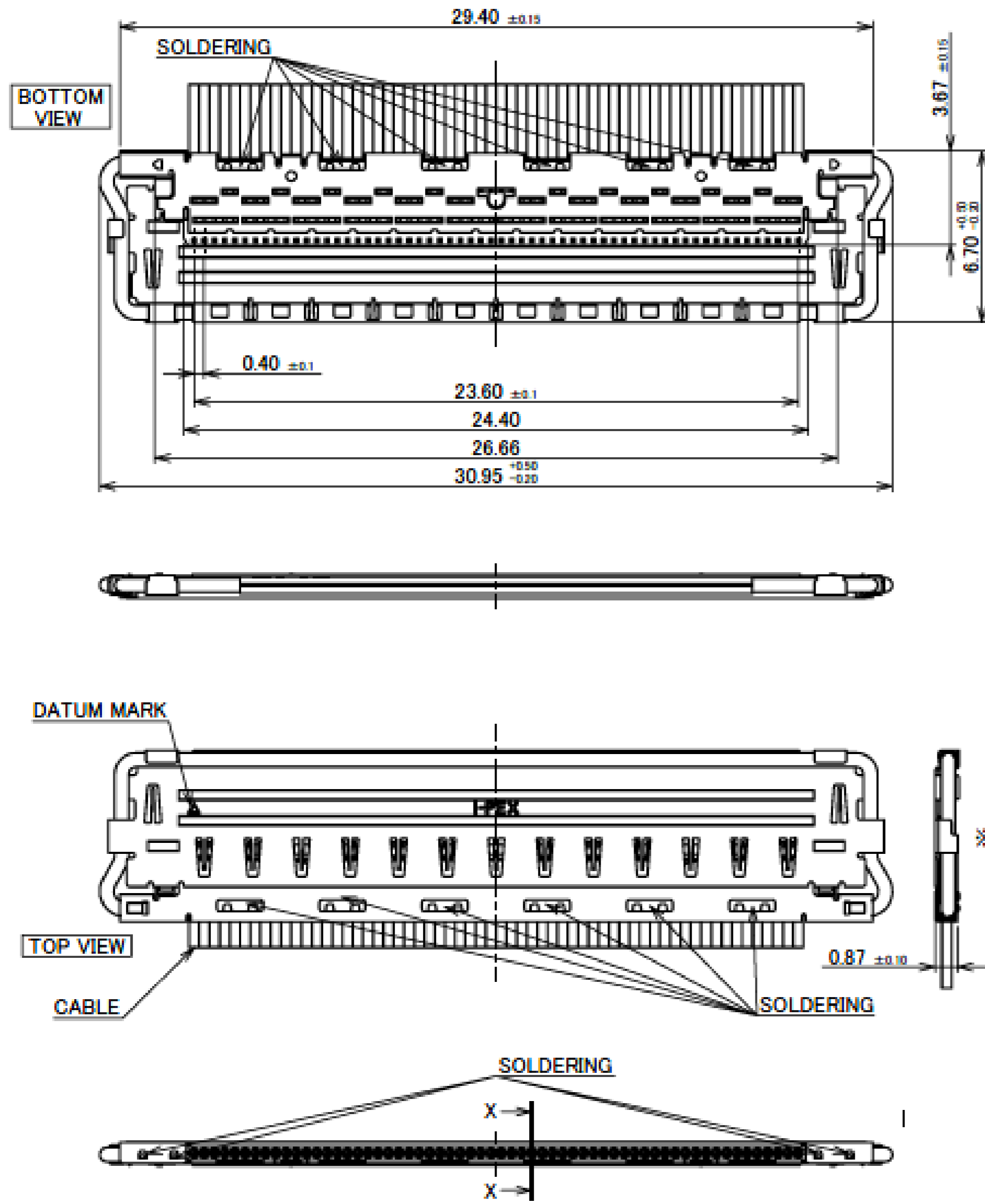
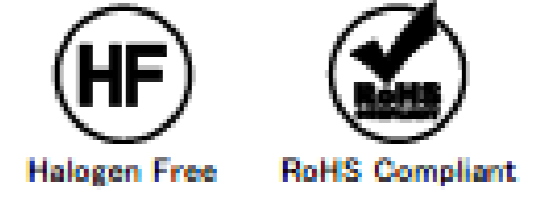
# Component Parts Details

## Component Parts



# Plug for Cable Assembly

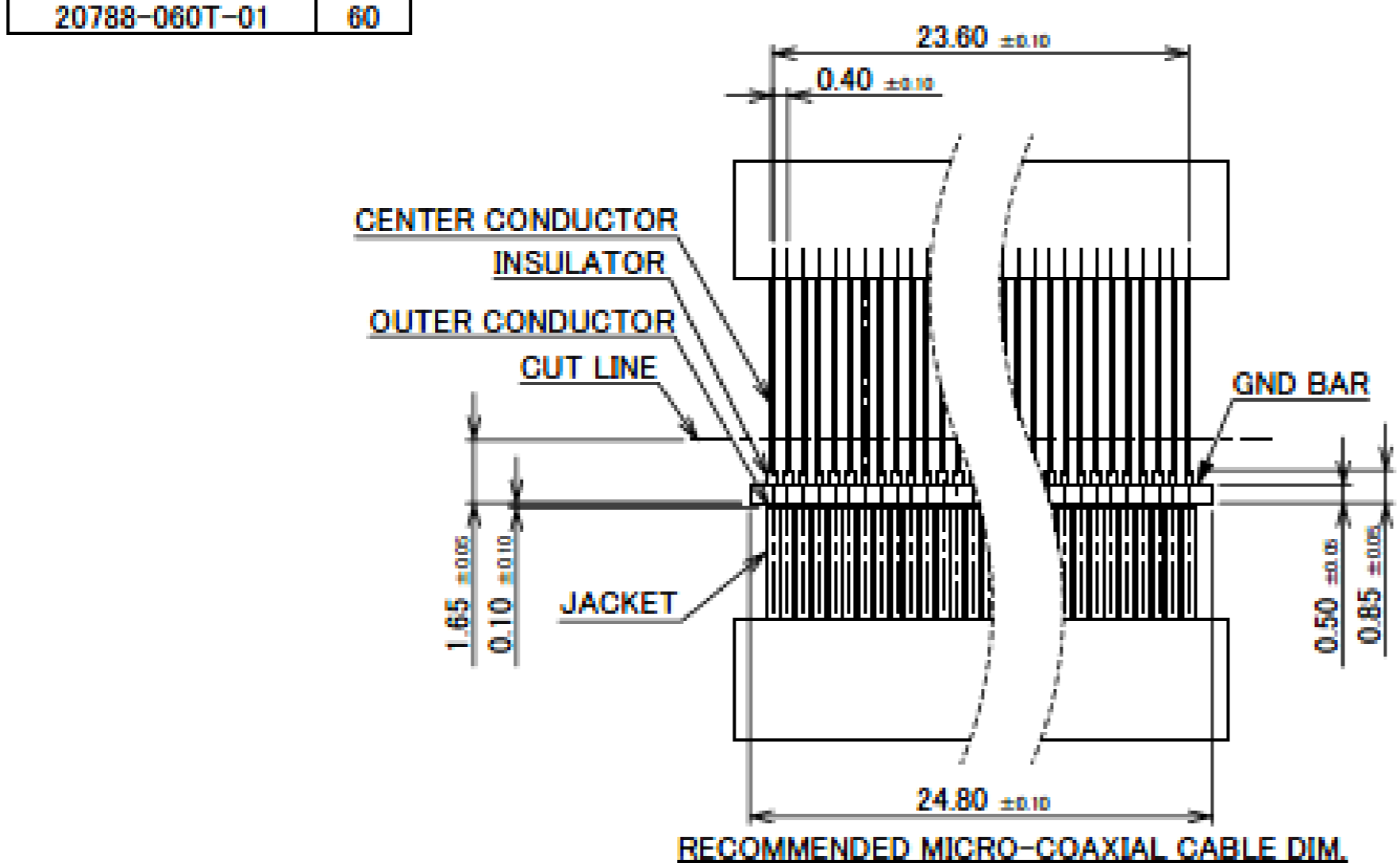
Recommended P/N		20788-0**T-01
PART NO.	Pos.	
20788-060T-01	60	



※1: THE BEND DIMENSIONS MAY VARY BASED ON THE SIZE AND QUANTITY OF CABLES. PLEASE CONFIRM THE MINIMUM BENDING RADIUS WITH I-PEX OR THE HARNESS MANUFACTURER.

NO.	DISCRIPTION	MATERIAL	FINISH, REMARKS
6	COVER	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μm MIN.
5	LOCK BAR	SUS φ 0.55	-
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

PART NO.	Pos.
20788-060T-01	60



### CHARACTERISTIC IMPEDANCE MATCHING MICRO-COAXIAL CABLE

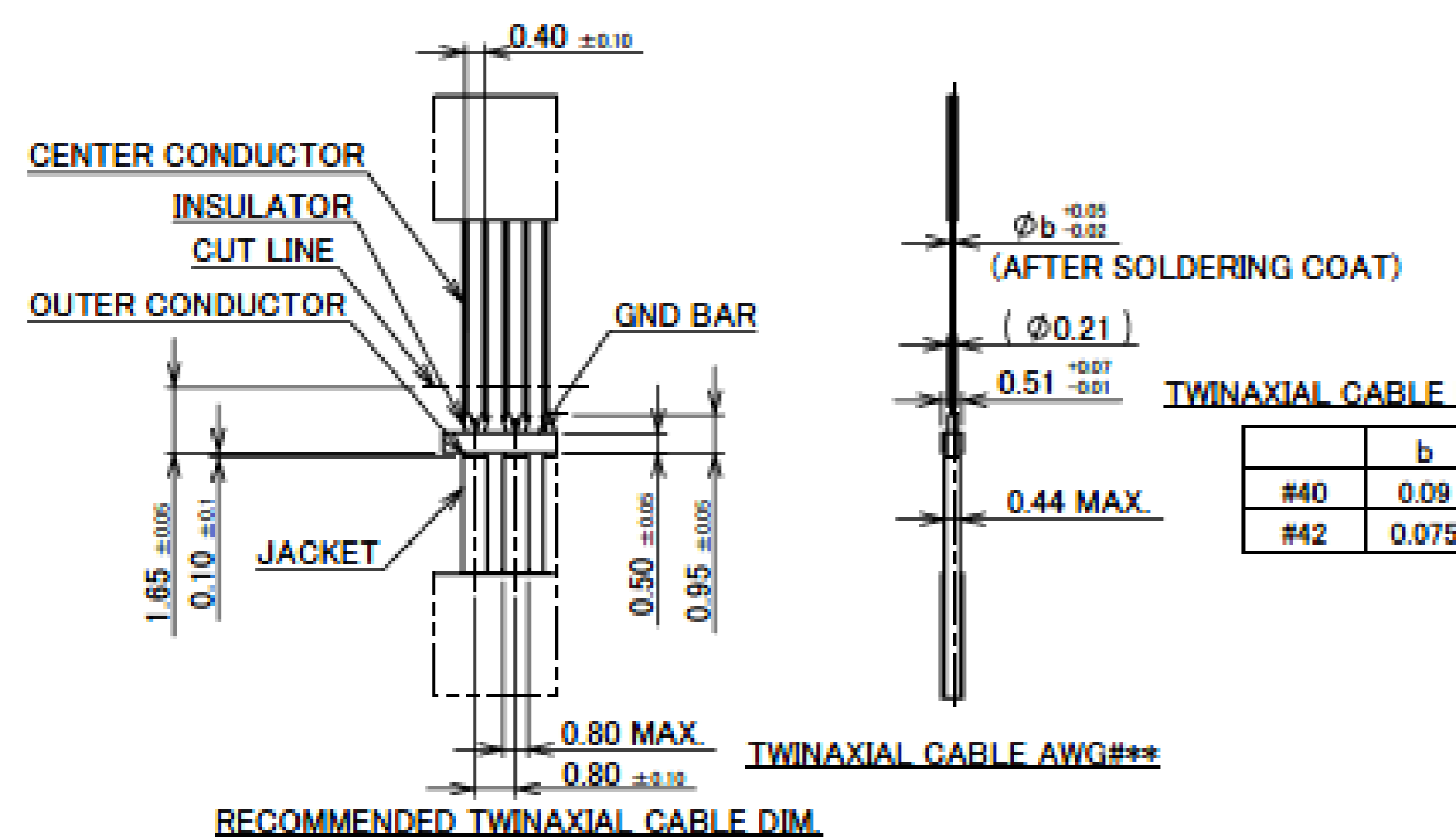
	a
#38	0.12
#40	0.09
#42	0.075
#44	0.063

### CHARACTERISTIC IMPEDANCE UN-MATCHING MICRO-COAXIAL CABLE

	a
#36	0.15

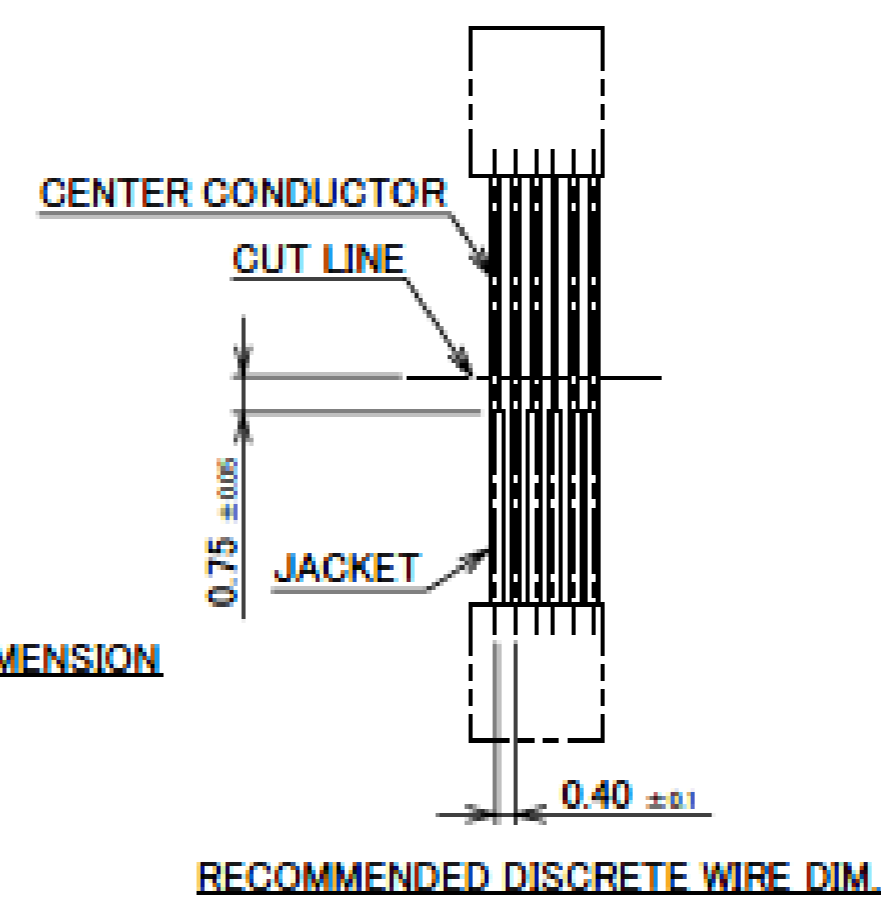
MICRO-COAXIAL CABLE #36 : NOT RECOMMENDED FOR HIGH SPEED SIGNAL TRANSFER

MICRO-COAXIAL CABLE AWG\*\*

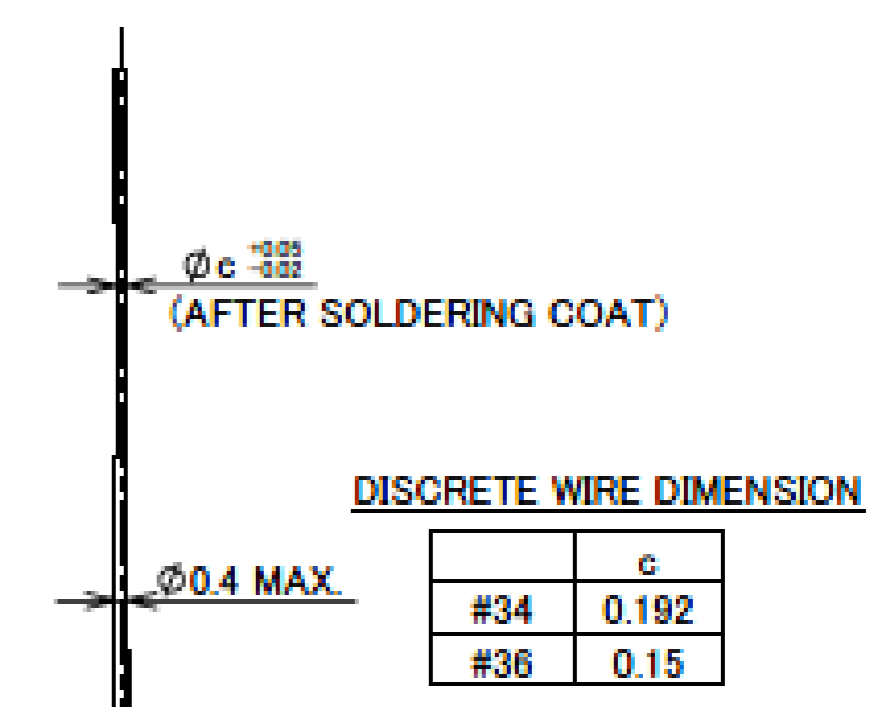


	b
#40	0.09
#42	0.075

RECOMMENDED TWINAXIAL CABLE DIM.



RECOMMENDED DISCRETE WIRE DIM.



DISCRETE WIRE AWG\*\*

	c
#34	0.192
#36	0.15

# Plug for Cable Assembly

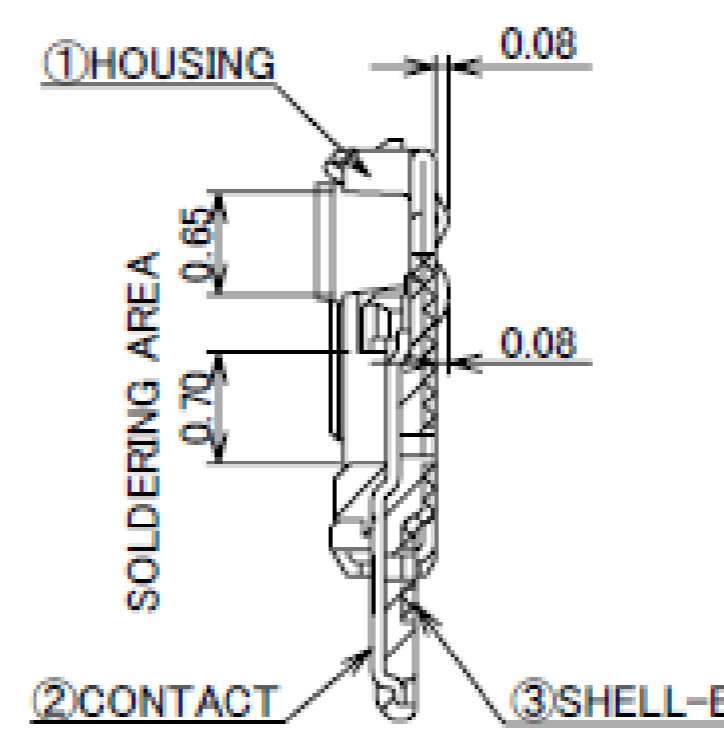
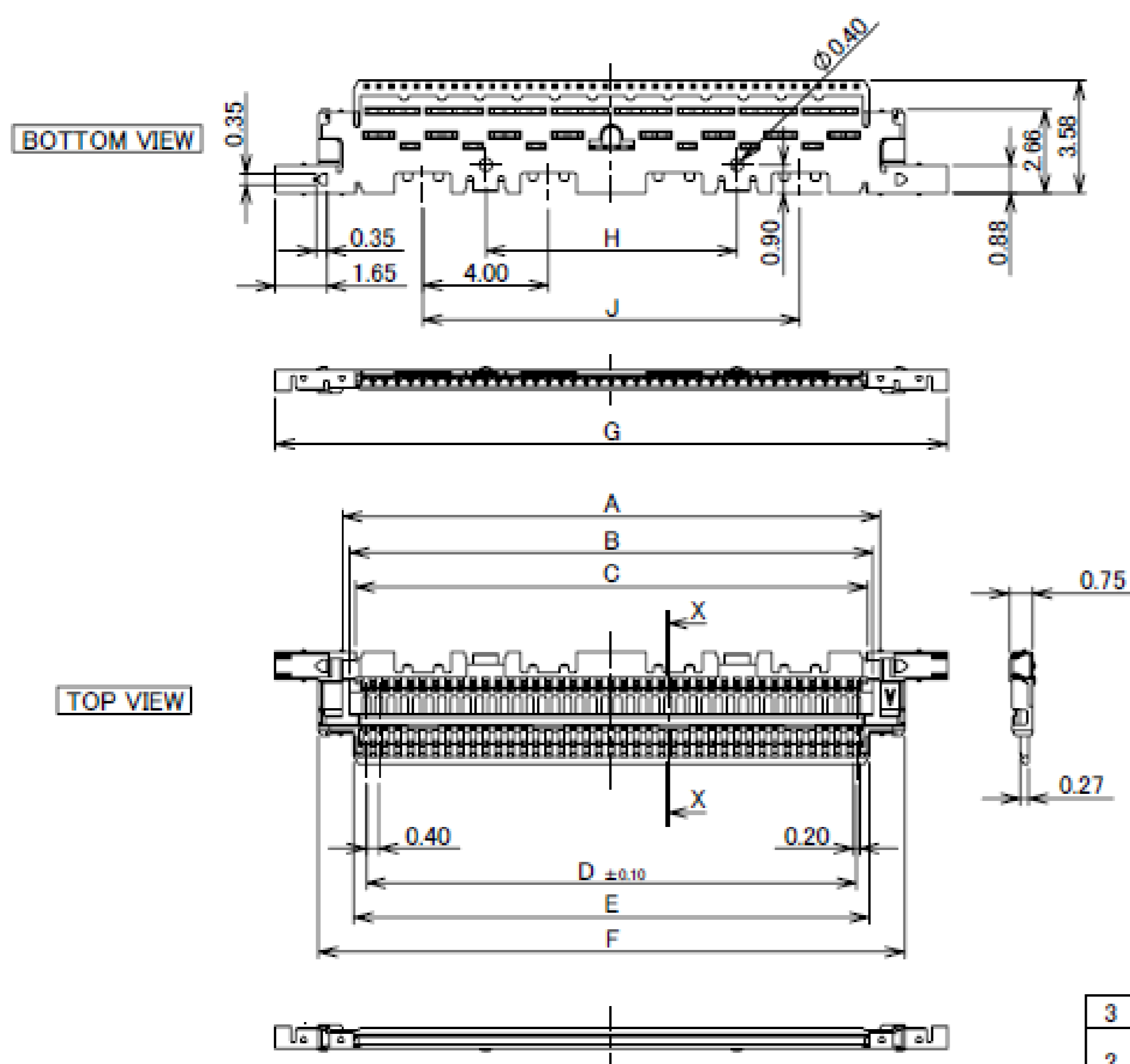
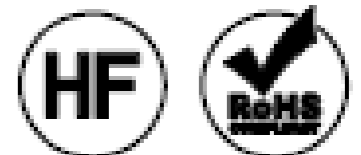
ITEMS	SPECIFICATION
APPLICABLE CABLE	MICRO-COAXIAL CABLE : AWG #44 , 42 , 40 , 38 , 36 DISCRETE WIRE : AWG #36 , 34 TWINAXIAL CABLE : AWG #40 , 42
RATED VOLTAGE	100V AC (PER CONTACT PIN) ※THIS IS THE RATED VOLTAGE OF THE CONNECTOR. PLEASE NOTE THAT THE RATED VOLTAGE MAY VARY IN THE HARNESS DEPENDING ON THE CABLES USED.
RATED AMPERAGE (FOR CONTACT)	0.1A AC/DC [AWG #44] PER CONTACT PIN / UP TO 60 CONTACTS 0.24A AC/DC [AWG #42] PER CONTACT PIN / UP TO 60 CONTACTS 0.3A AC/DC [AWG #40] PER CONTACT PIN / UP TO 60 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 REAL MACHINE IS RECOMMENDED BECAUSE TEMPERATURE RISE MAY AFFECTED BY ACTUAL SITUATION
OPERATING TEMPERATURE	248 TO 378K (-40°C TO 105°C)
OPERATING HUMIDITY	85% MAX.
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)	29.10N MAX.
UN-MATING FORCE (INITIAL / AFTER 30 CYCLES)	6.0N MIN.
CABLE RETENTION FORCE	29.40N MIN.
PRODUCT SPECIFICATION	PRS-2261
TEST REPORT	TR-16075, TR-23031
INSTRUCTION MANUAL	HIM-16028
ASSEMBLY MANUAL	ASM-16004
APPEARANCE CRITERIA NO.	QLS-A***

Rev.15

# 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.

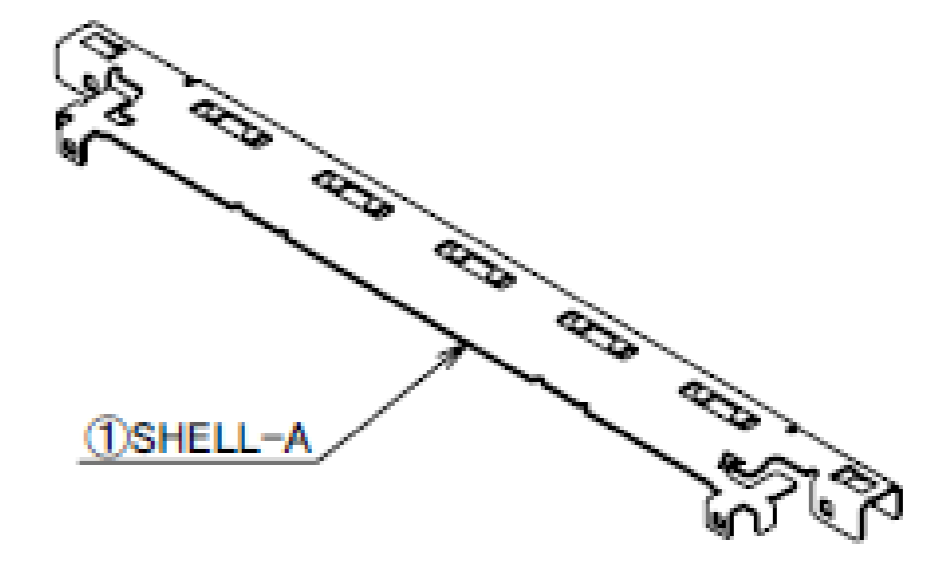
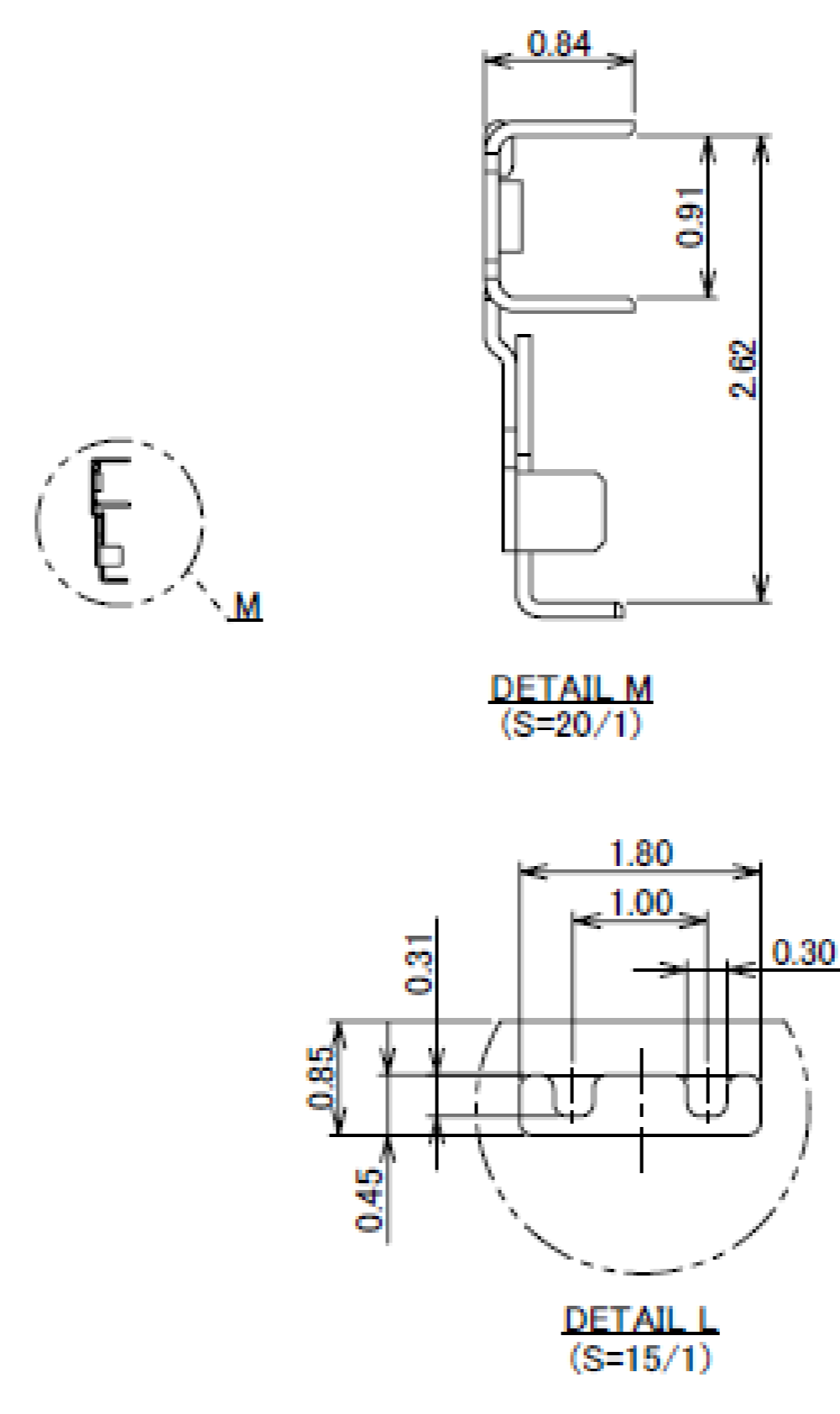
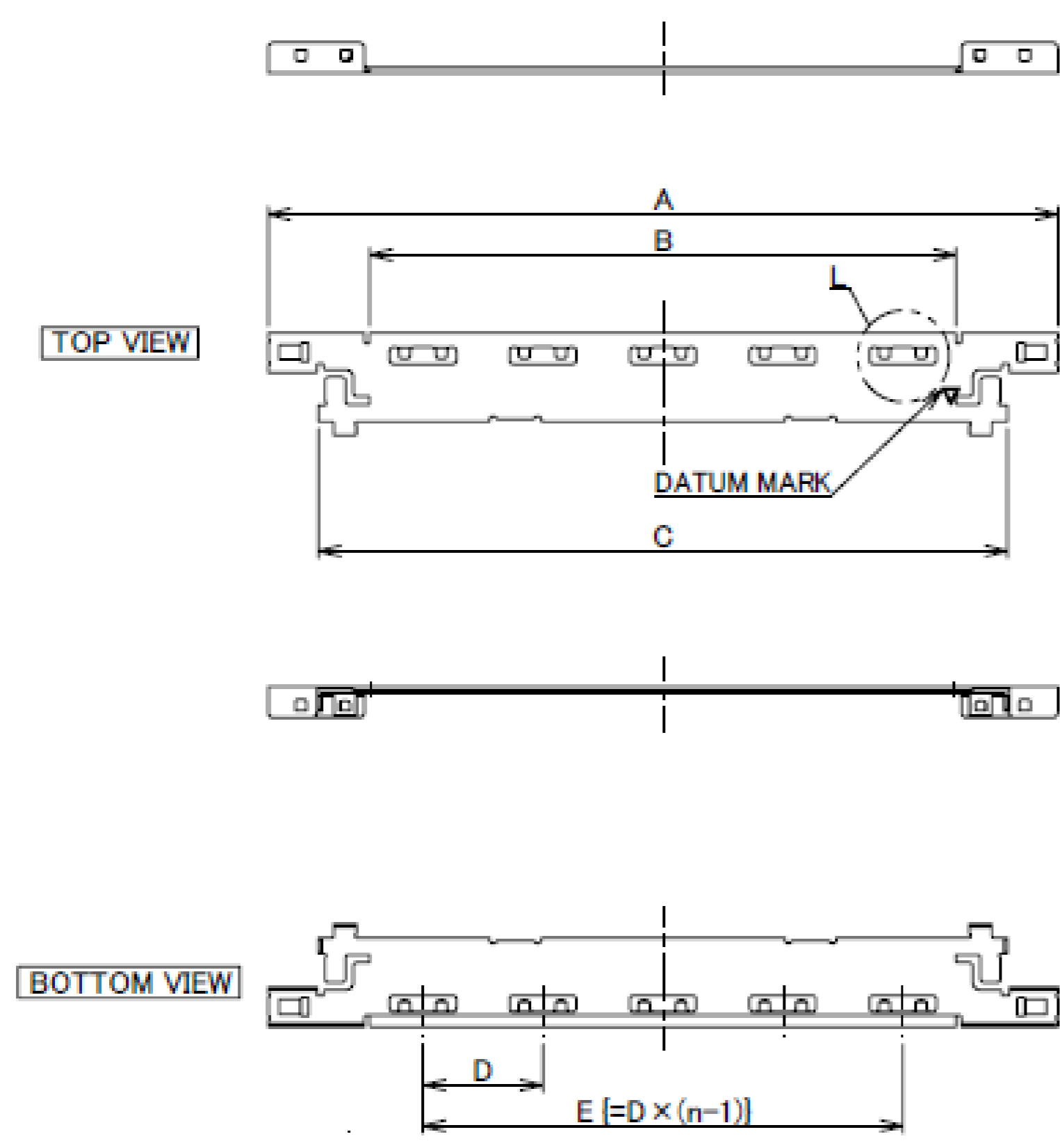
1. THIS PART IS ASSEMBLED WITH SHELL A(P/N 3204-0\*\*1) AND LOCK BAR ASS'Y(P/N 20681-0\*\*T-01) AFTER SOLDERED THE CABLE, AND IT BECOMES P/N 20679-0\*\*T-01
2. THIS PART IS ASSEMBLED WITH SHELL A(P/N 3204-0\*\*1) AND LOCK BAR ASS'Y(P/N 20789-0\*\*T-01) AFTER SOLDERED THE CABLE, AND IT BECOMES P/N 20788-0\*\*T-01

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

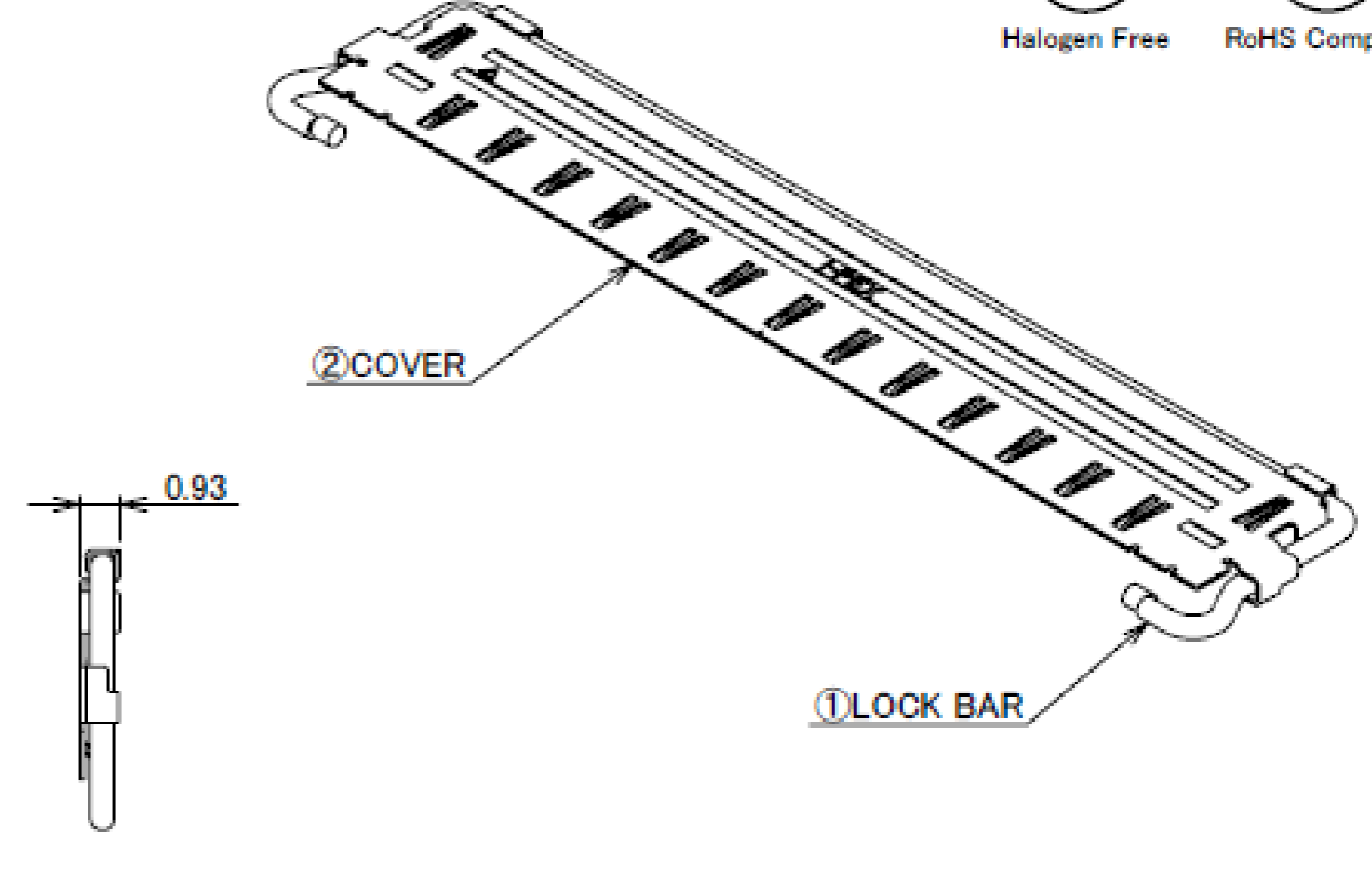
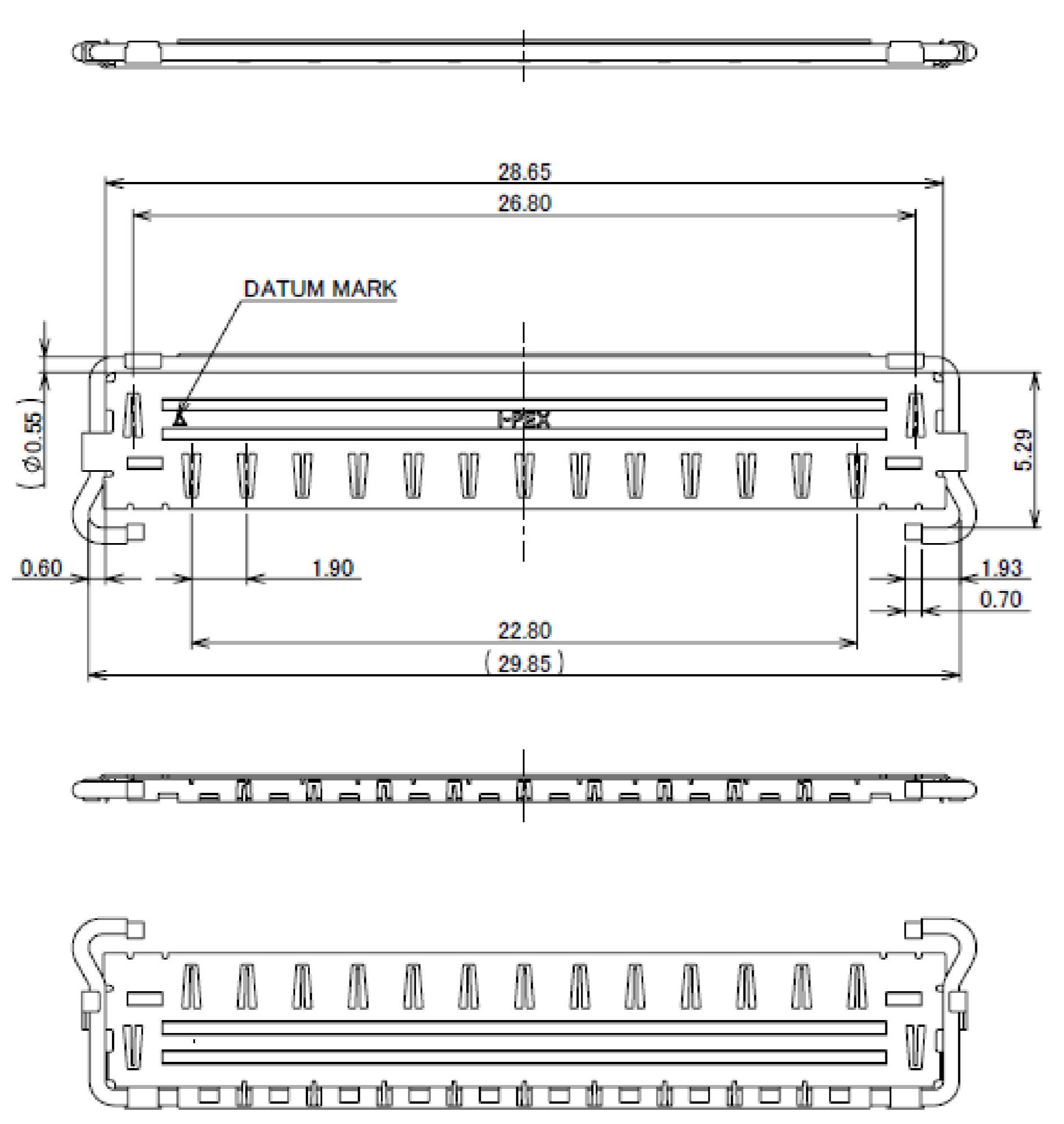


NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
1	SHELL-A	PHOSPHOR BRONZE	PARTIAL Au 0.003 μm MIN. OVER Ni 1.00 μm MIN.

Rev.7

# Lock Bar Assembly

Recommended P/N		20789-0**T-01	
PART NO.	Pos.		
20789-060T-01	60		

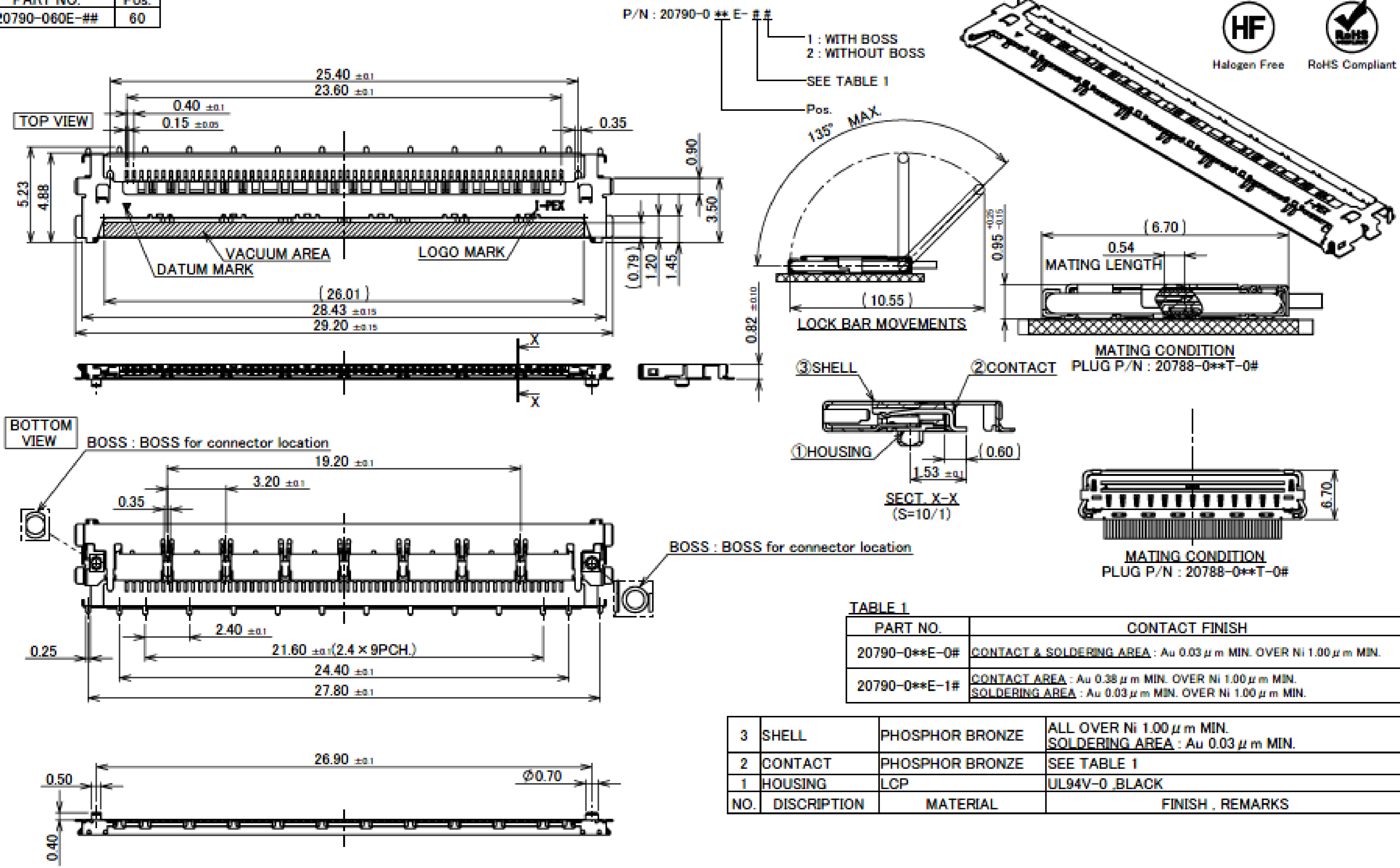


NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
2	COVER	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μm MIN.
1	LOCK BAR	SUS φ0.55	-

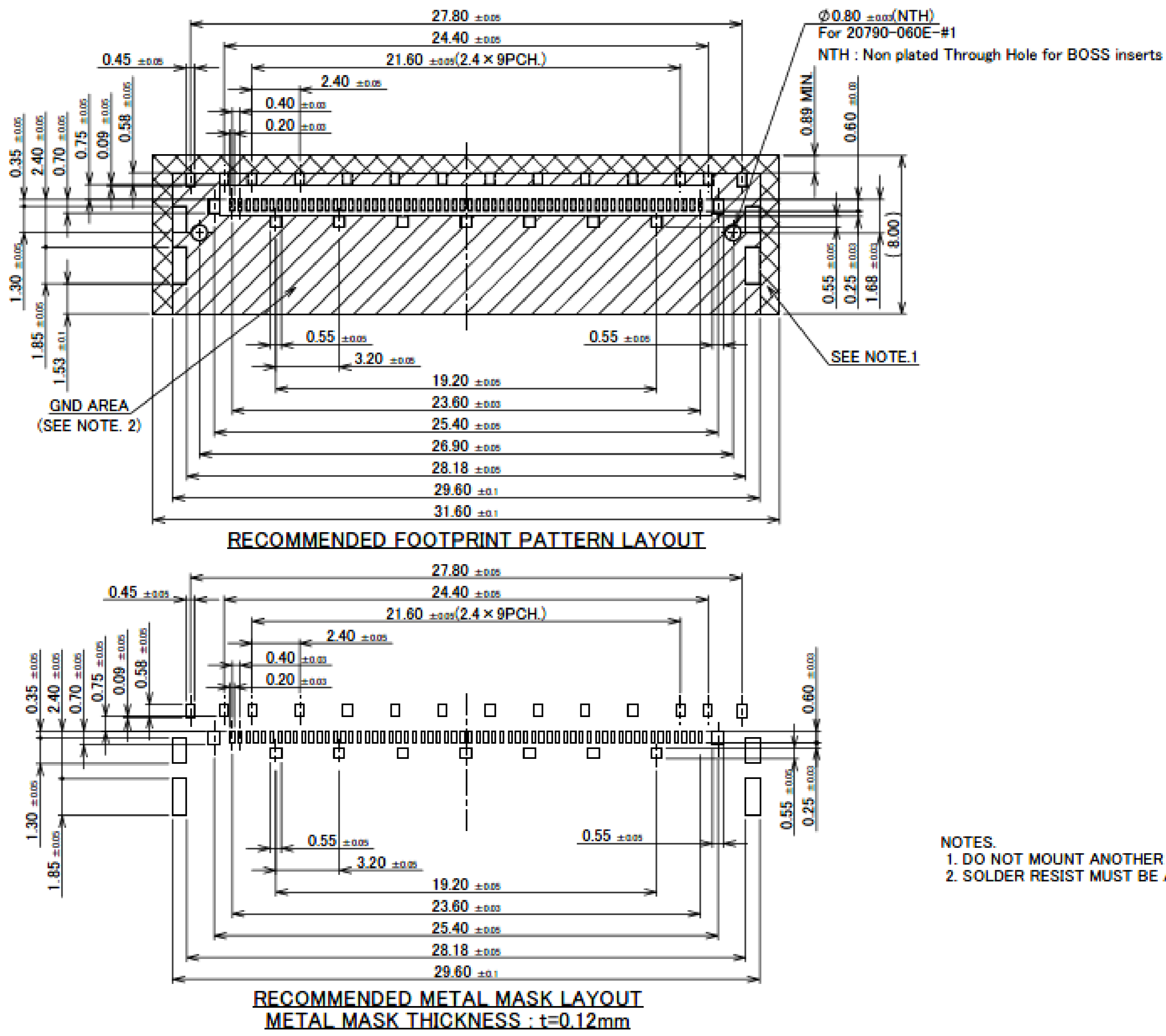
Rev.9

# Receptacle Assembly

Recommended P/N	20790-060E-02
PART NO.	Pos.
20790-060E-##	60

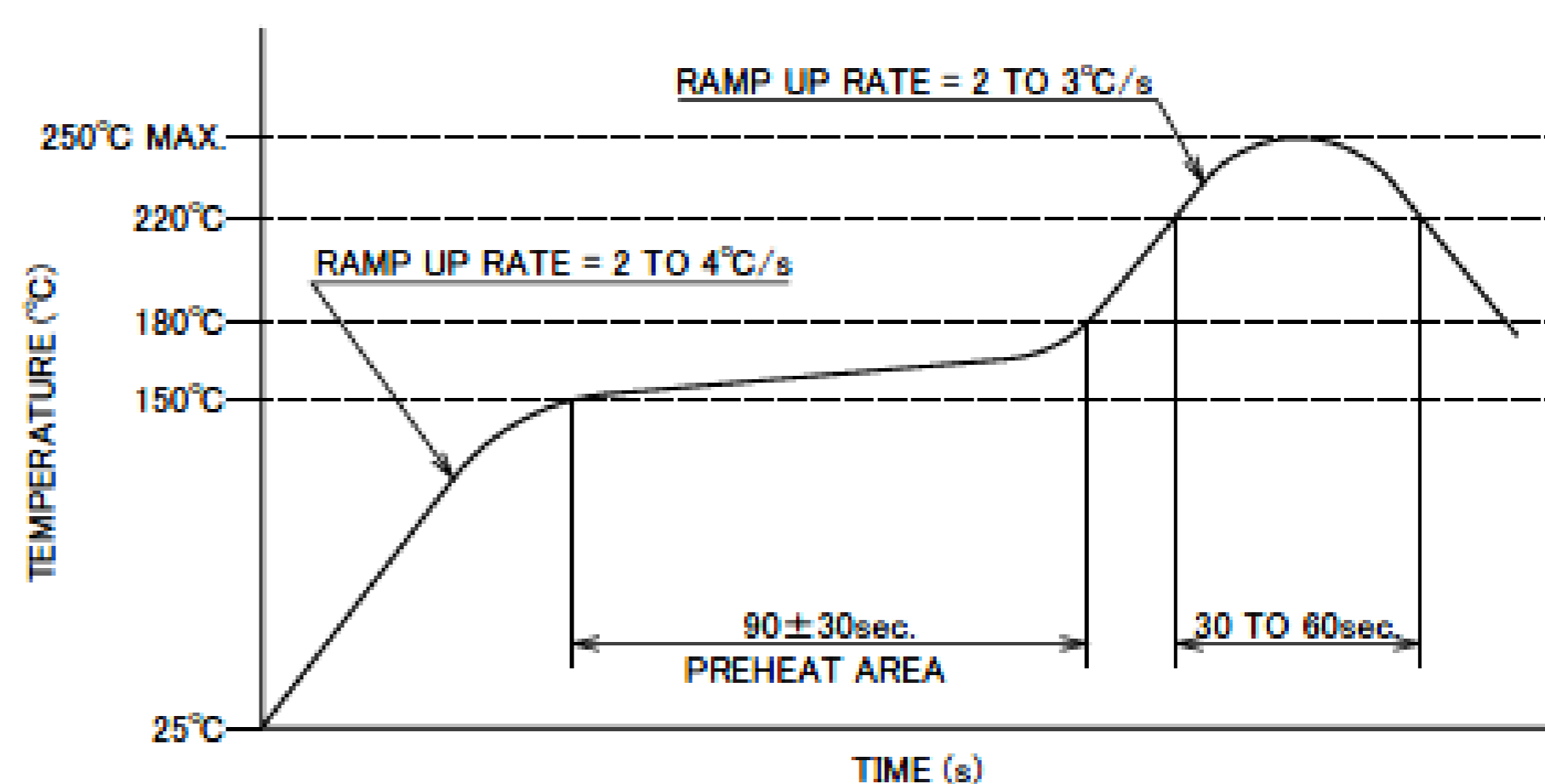
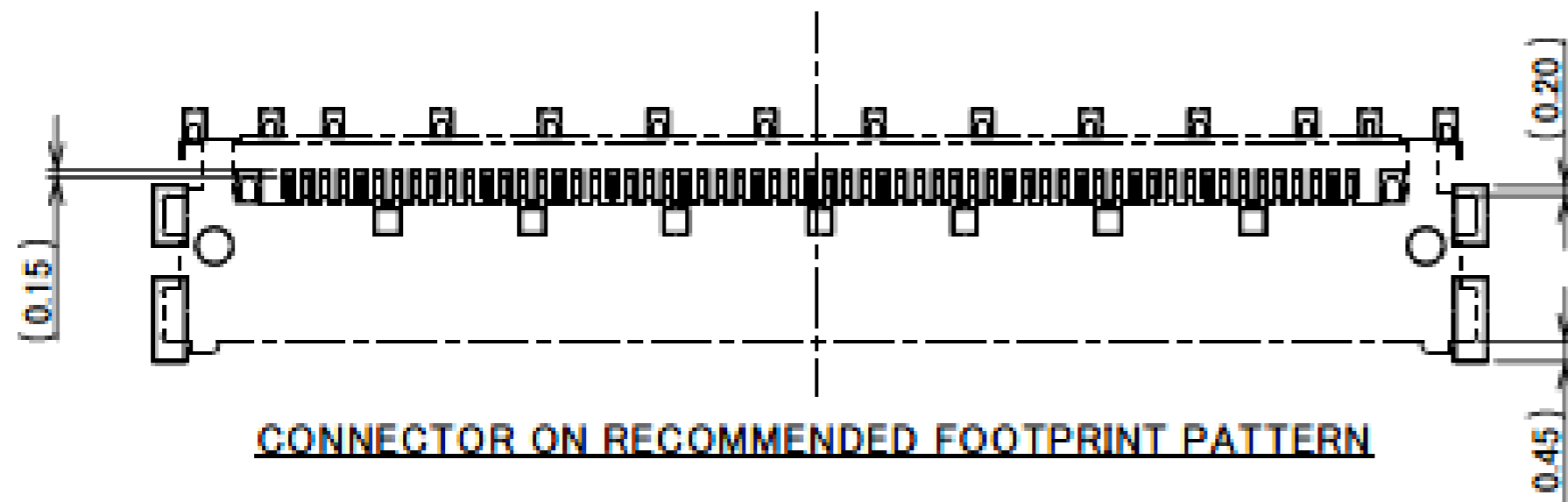


Rev.18



Rev.18

# Receptacle Assembly



Rev.18

FOR CABLINE-CA II PLUS PLUG CABLE ASSEMBLY (DWG. NO. 20788)

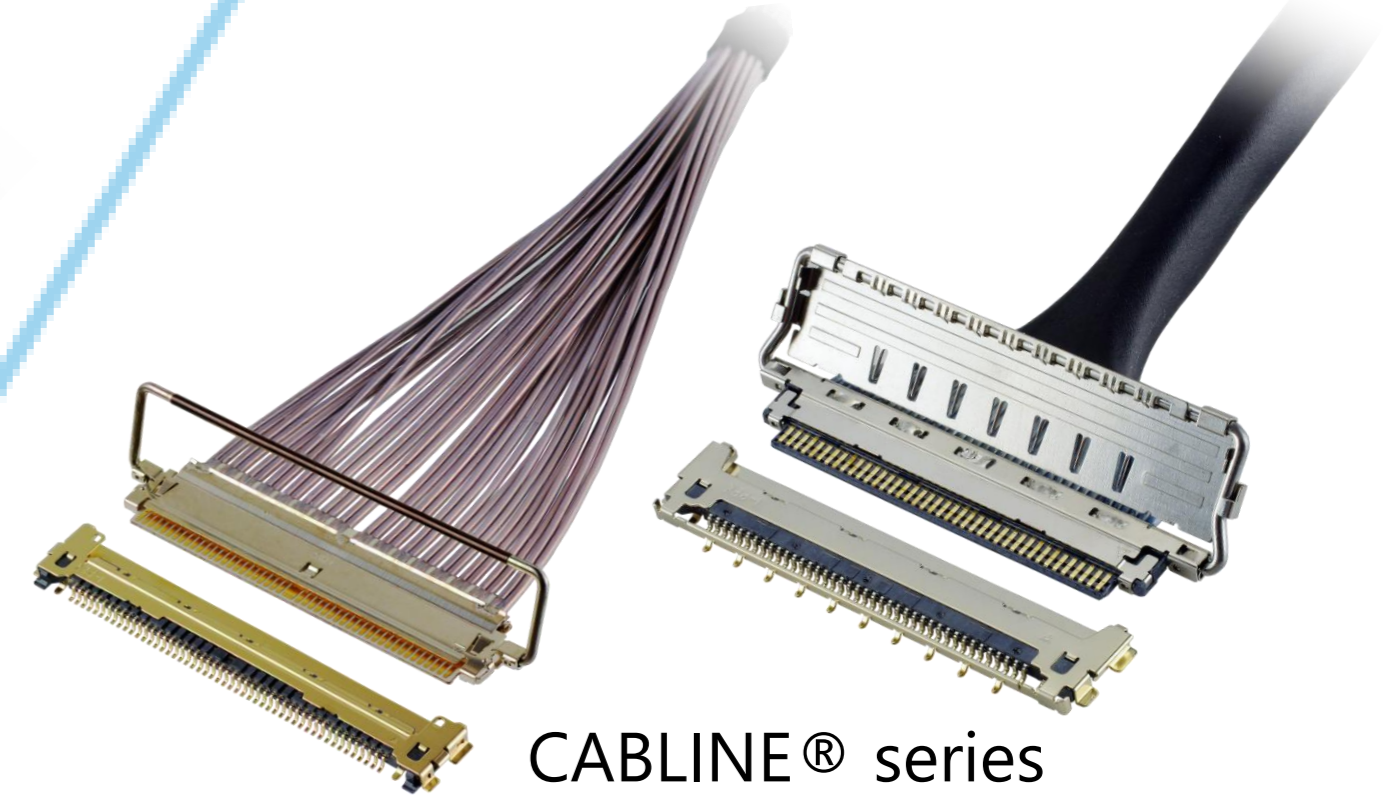
ITEMS	SPECIFICATION
APPLICABLE CABLE	MICRO-COAXIAL CABLE : AWG #44 , 42 , 40 , 38 , 36 DISCRETE WIRE : AWG #36 , 34 TWINAXIAL CABLE : AWG #40 , 42
RATED VOLTAGE	100V AC (PER CONTACT PIN) ※THIS IS THE RATED VOLTAGE OF THE CONNECTOR. PLEASE NOTE THAT THE RATED VOLTAGE MAY VARY IN THE HARNESS DEPENDING ON THE CABLES USED.
RATED AMPERAGE (FOR CONTACT)	0.1A AC/DC [AWG #44] PER CONTACT PIN/UP TO 60 CONTACTS 0.24A AC/DC [AWG #42] PER CONTACT PIN/UP TO 60 CONTACTS 0.3A AC/DC [AWG #40] PER CONTACT PIN/UP TO 60 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 REAL MACHINE IS RECOMMENDED BECAUSE TEMPERATURE RISE MAY AFFECTED BY ACTUAL SITUATION.
OPERATING TEMPERATURE	233 TO 378K (-40°C TO 105°C)
OPERATING HUMIDITY	85% MAX
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)	29.10N MAX.
UN-MATING FORCE (INITIAL / AFTER 30 CYCLES)	6.0N MIN.
CABLE RETENTION FORCE	29.40N MIN.
COPLANARITY	0.10 MAX.
PRODUCT SPECIFICATION	PRS-2261
TEST REPORT	TR-16075, TR-23031
INSTRUCTION MANUAL	HIM-16028
PACKING STANDARD	PST-16078
APPEARANCE CRITERIA NO.	QLS-A***

Rev.18

# Custom Connectors Available

## RF Connectors

MHF® series



CABLINE® series

## Micro-Coaxial/Twinaxial Connectors

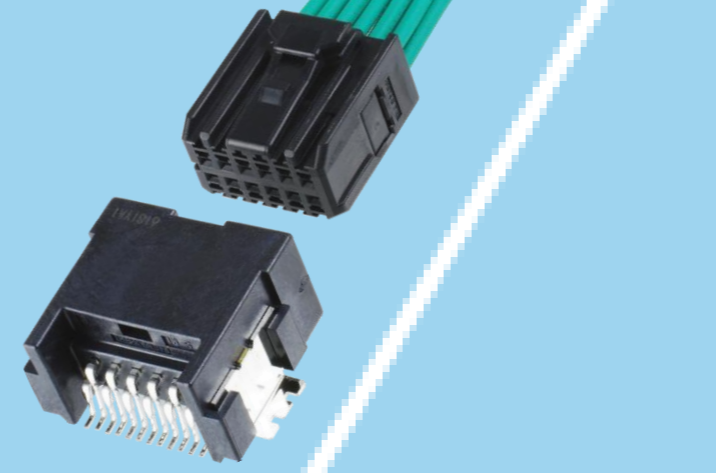


## Wire-to-Board Connectors/Terminals

AP series



ISH® series



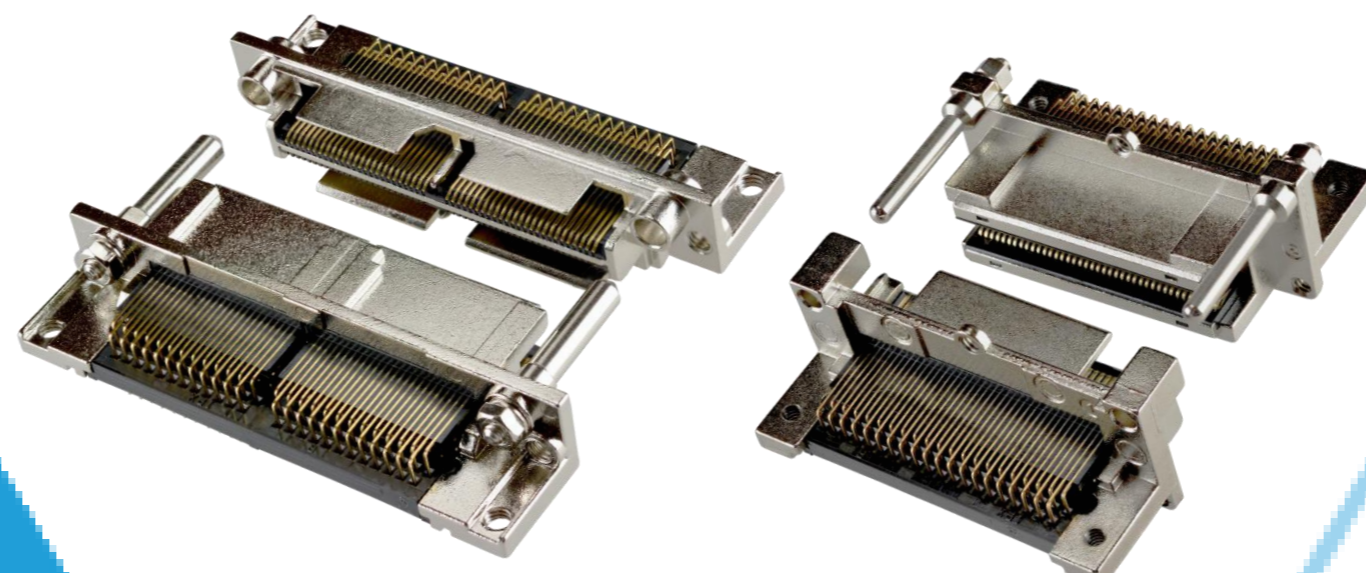
NOVASTACK® series



## Board-to-Board Connectors

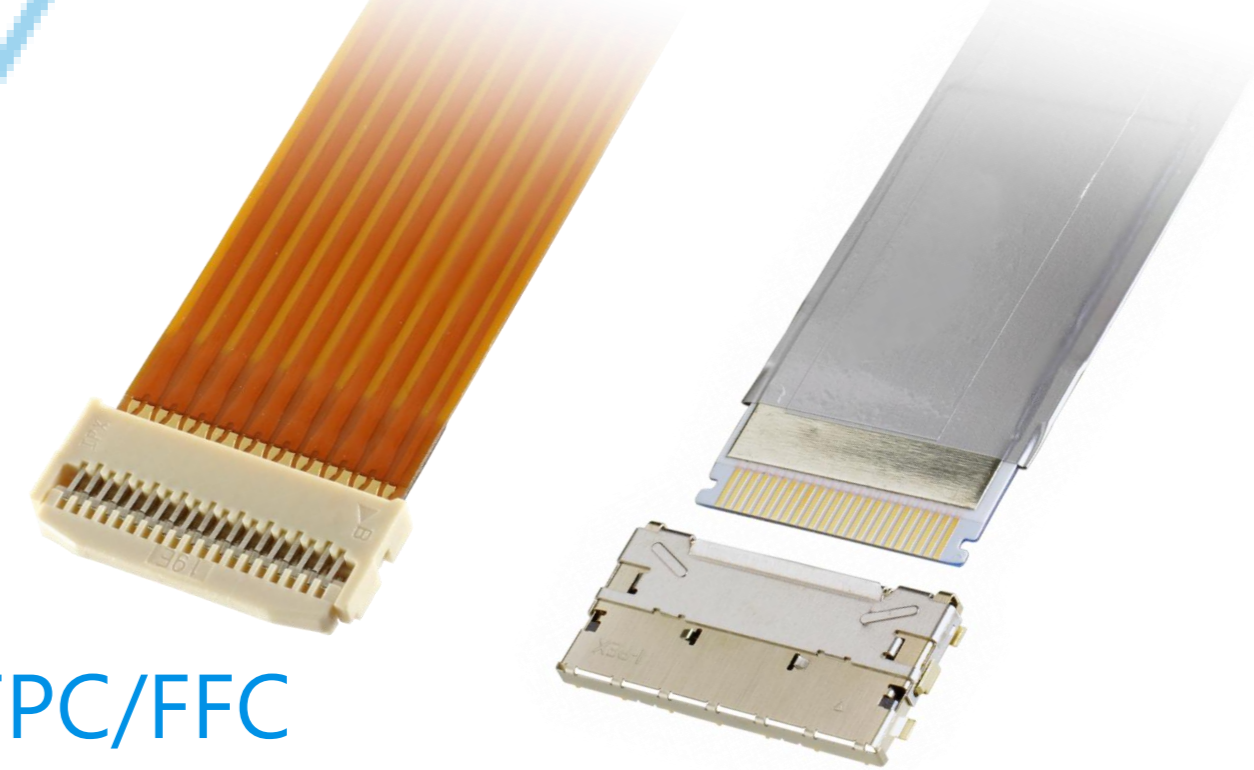


## I/O Connectors



MINIDOCK™ series

MINIFLEX® series EVAFLEX® series



## FPC/FFC Connectors



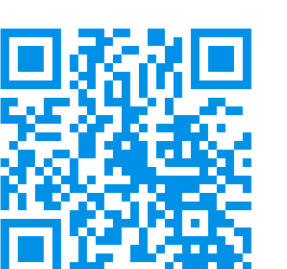
Inquiry



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Contact your sales representative or more detailed information.

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



# I-PEX

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