

# CABLINE®-CA II PLUS

Fully-shielded with mechanical lock, High-data-rate transfer, 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                      |
| Wiping Length (mm) |           | 0.54                     |
| Mated size (mm)    | Height    | 1.2 max. with cover      |
|                    | Width     | Formula: 6.95 + (0.4*?p) |
|                    | Depth     | 6.7                      |
| Pin Counts         | Range     | Up to 60                 |
|                    | Available | 60                       |

## Applicable Cable Size:

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

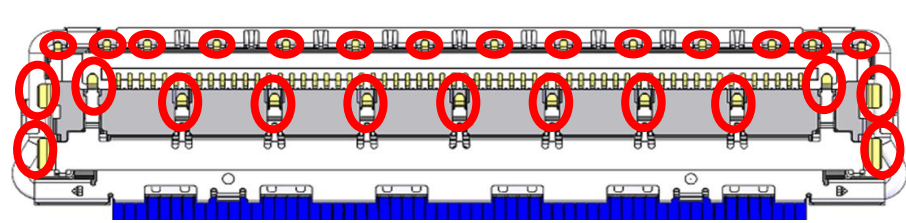
## Applicable Standards (Reference Only):

USB4 Gen3/Thunderbolt 4 (20 Gbps/lane), PCIe® Gen 4 (16 GT/s), eDP HBR 3 (8.1 Gbps)

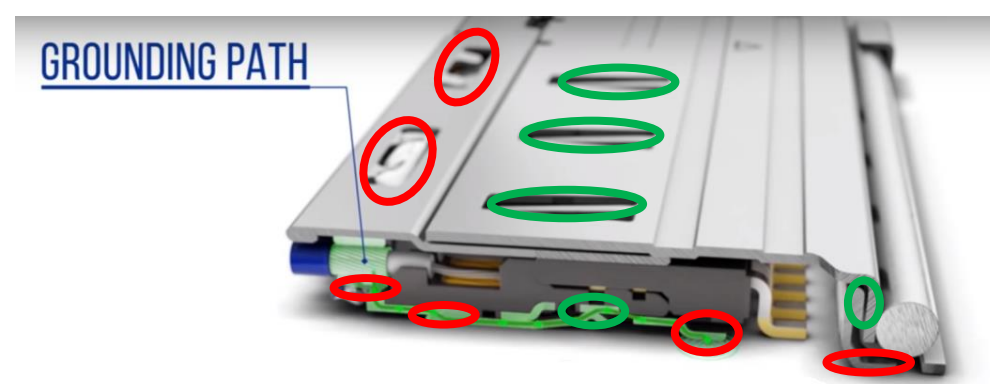
\* Please inquire for pin counts not listed or outside of the pin count range.  
\*20, 30, 40, 50p are also available with CABLINE®-CA II (narrow space type).



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

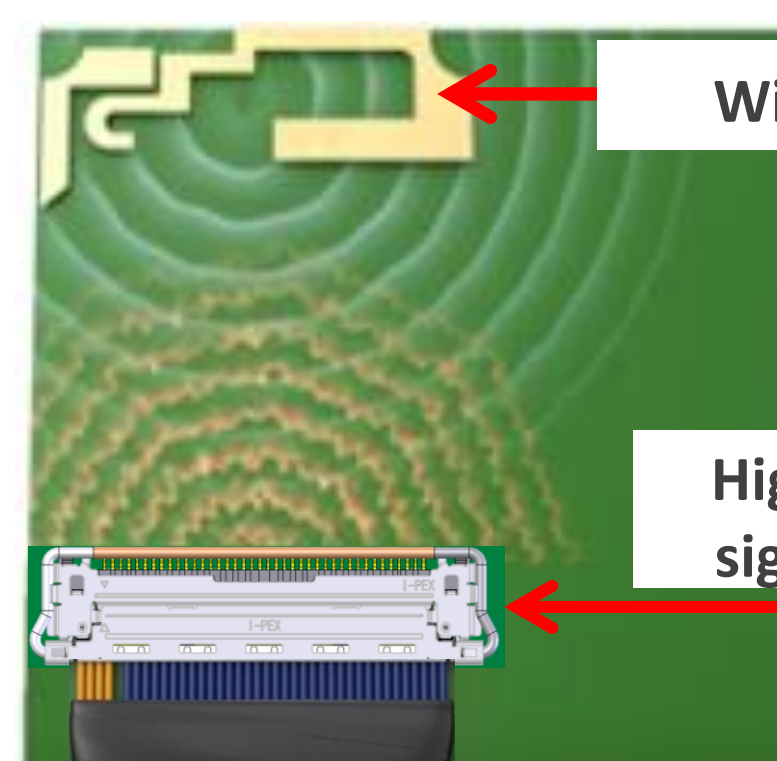


View From Back

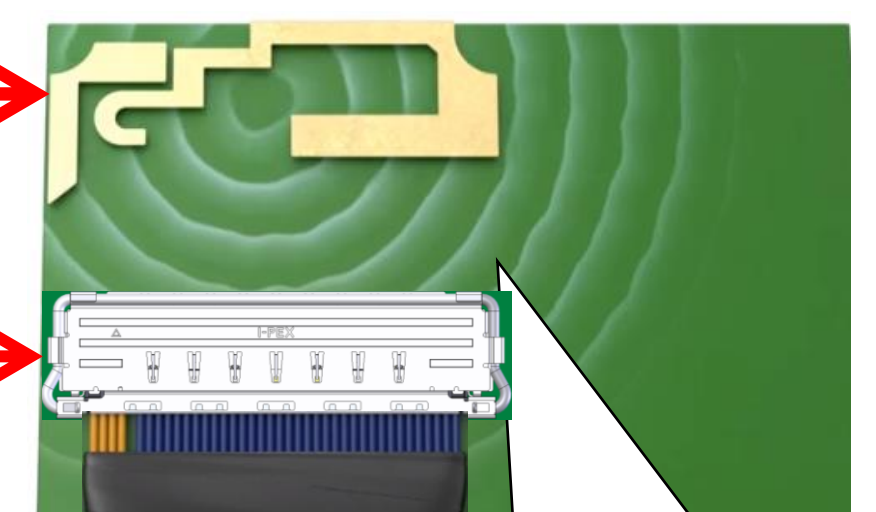


○ Soldered contacts  
○ Mechanical contacts

## General Connector

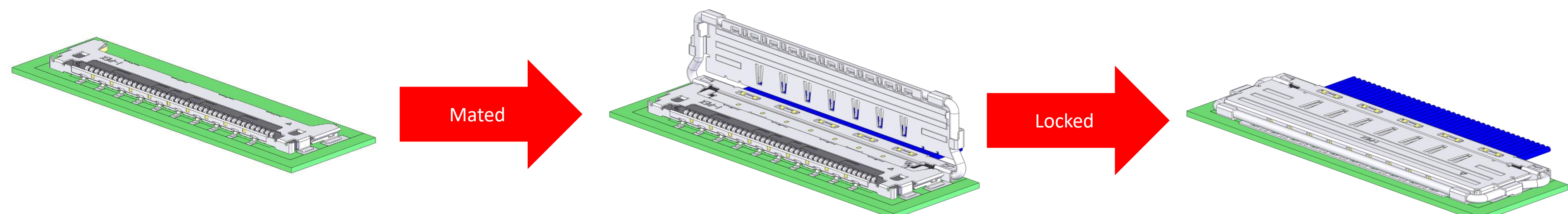


## ZenShield® Connector



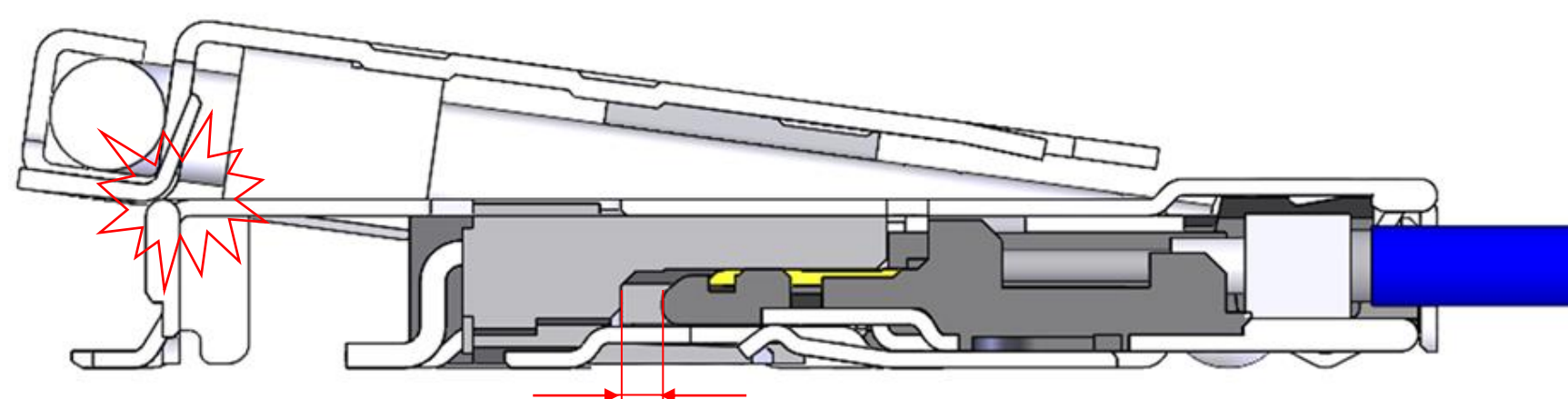
Connectors can be placed closer to antenna

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

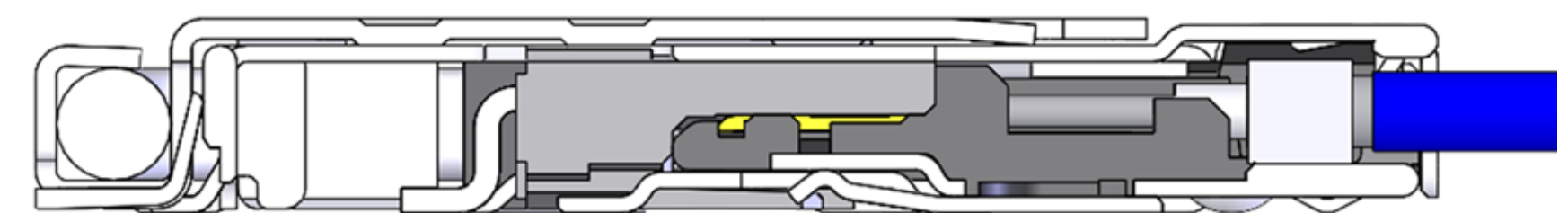


Unable to lock

can only be locked when mating is complete



incomplete mating



complete mating

## ► Wider space for vias on PCB (for Non-Via-In-Pad type PCB trace design)

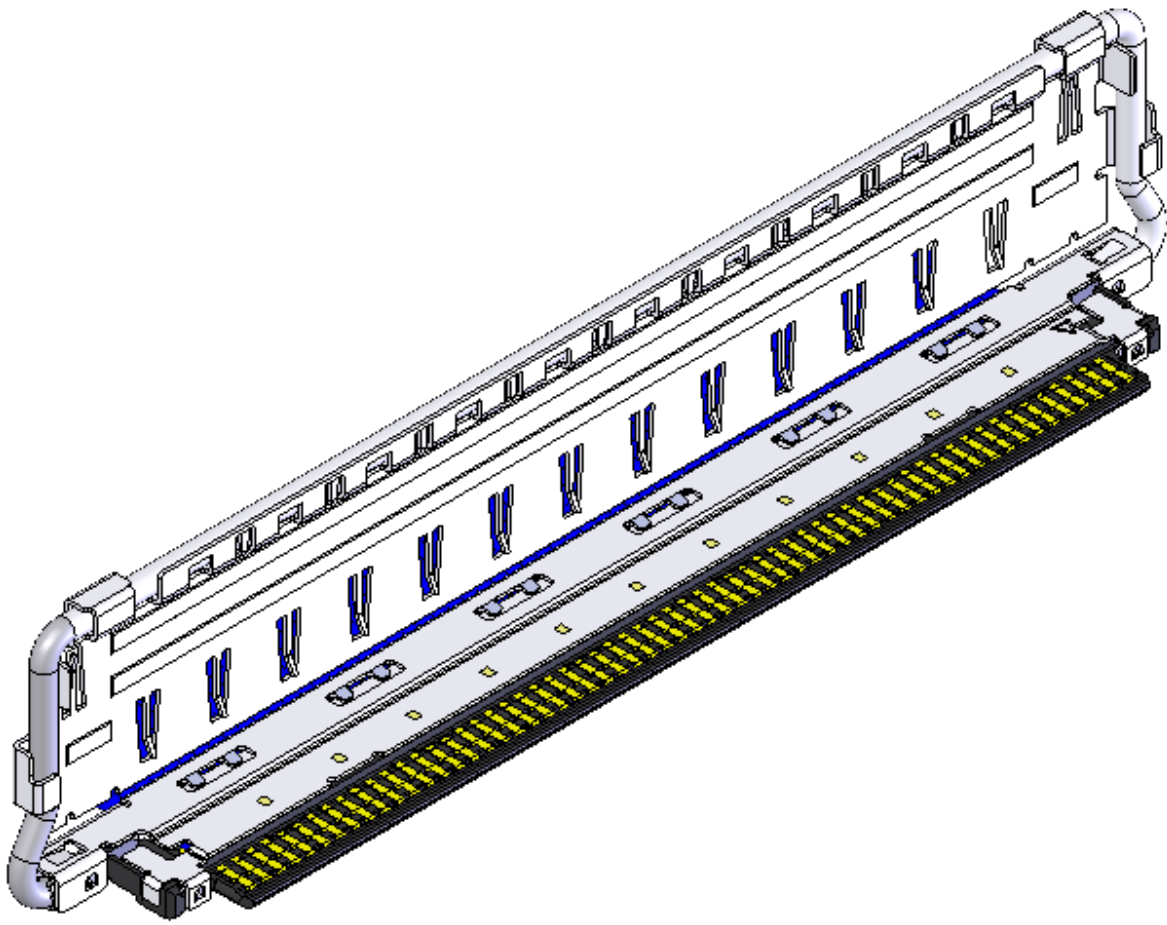
| CABLINE®-CA II (Narrow Space Type) 40p  | CABLINE®-CA II PLUS (Wider Space Type) 60p  |
|---|---|
| <p>0.25 +/- 0.05 mm</p> <p>Ground<br/>Signal<br/>Ground<br/>Via<br/>Contact Pad<br/>PCB</p> | <p>0.75 +/- 0.05 mm</p> <p>Wider space for via design</p> <p>Ground<br/>Signal<br/>Ground<br/>Via<br/>Contact Pad<br/>PCB</p> |



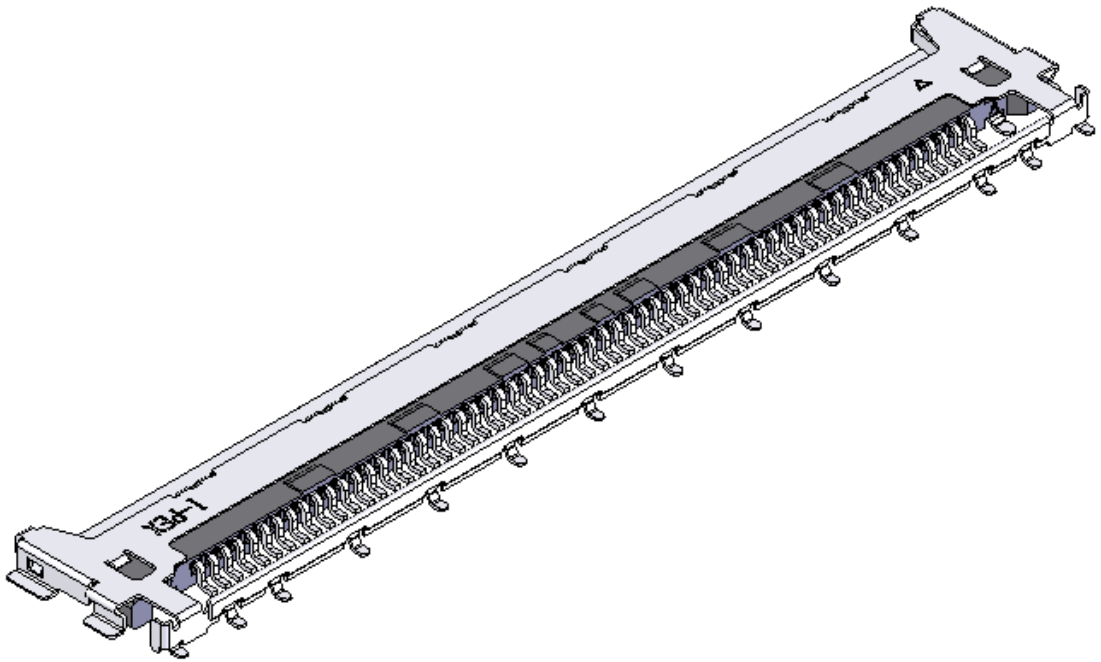
# Component Parts Details

## Component Parts

Connector parts

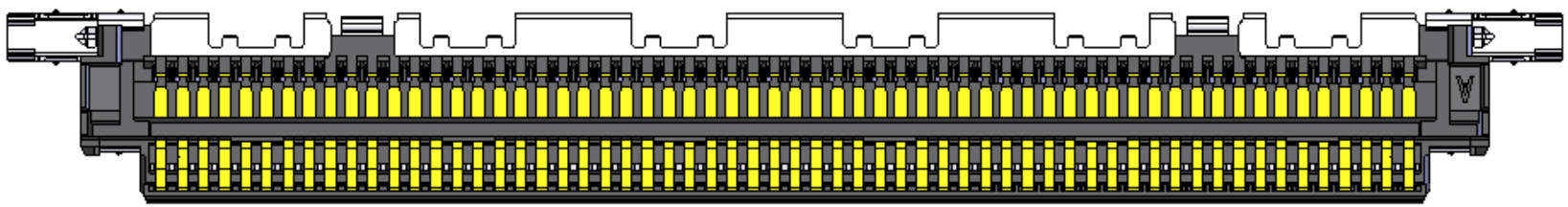


PLUG

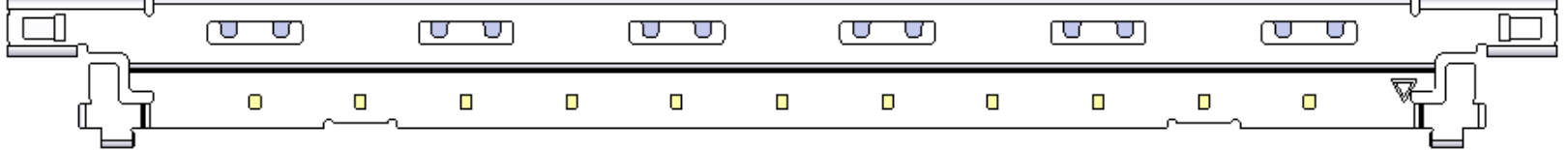


RECEPTACLE

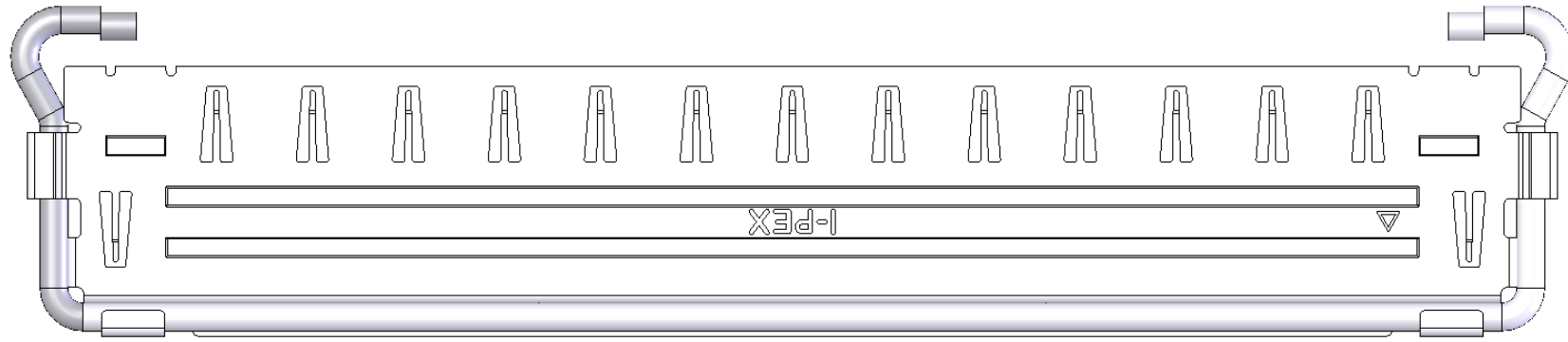
Plug parts



PLUG HOUSING ASSEMBLY



PLUG SHELL-A



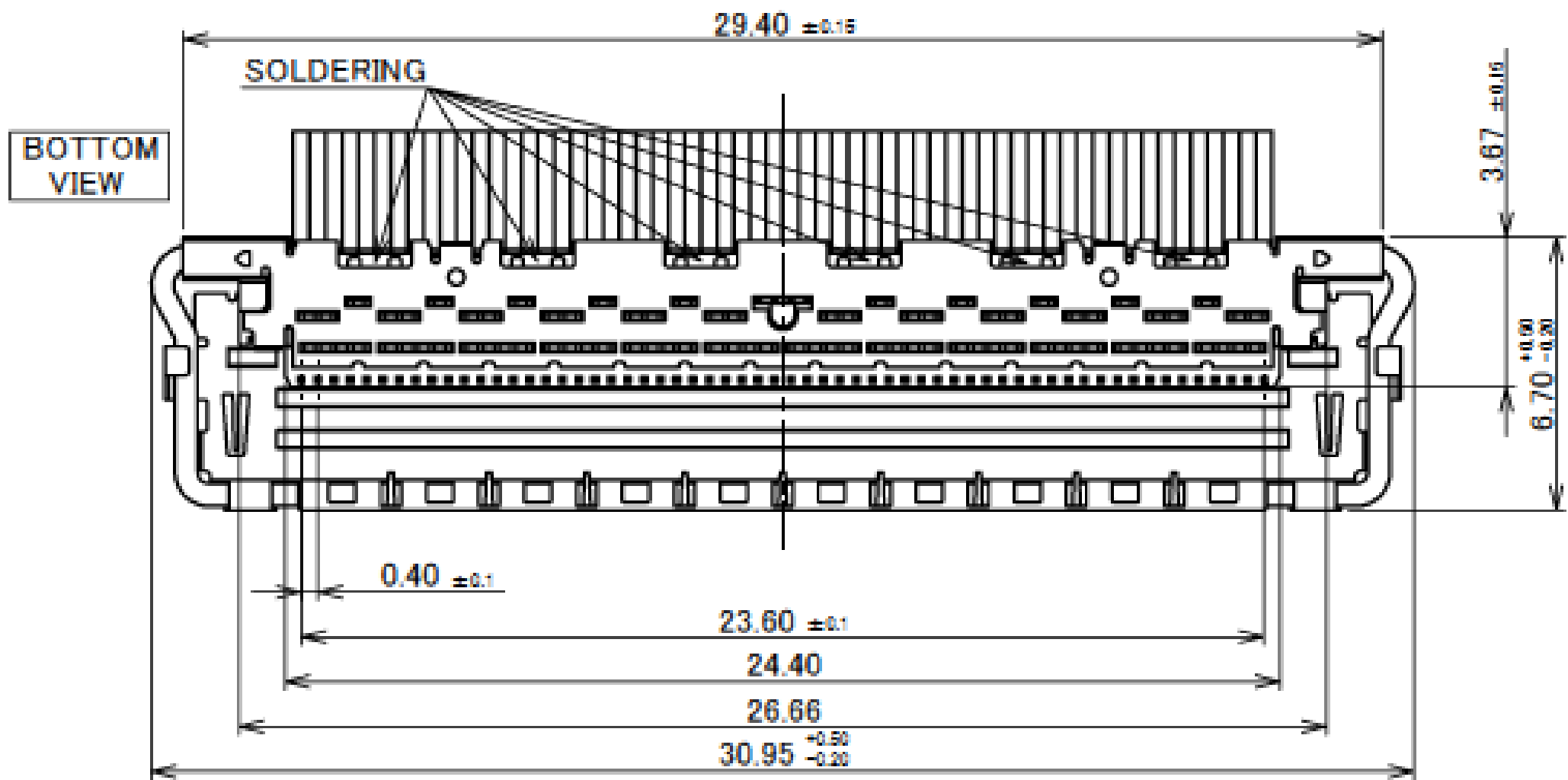
PLUG LOCK BAR ASSEMBLY

Plug for Cable Assembly

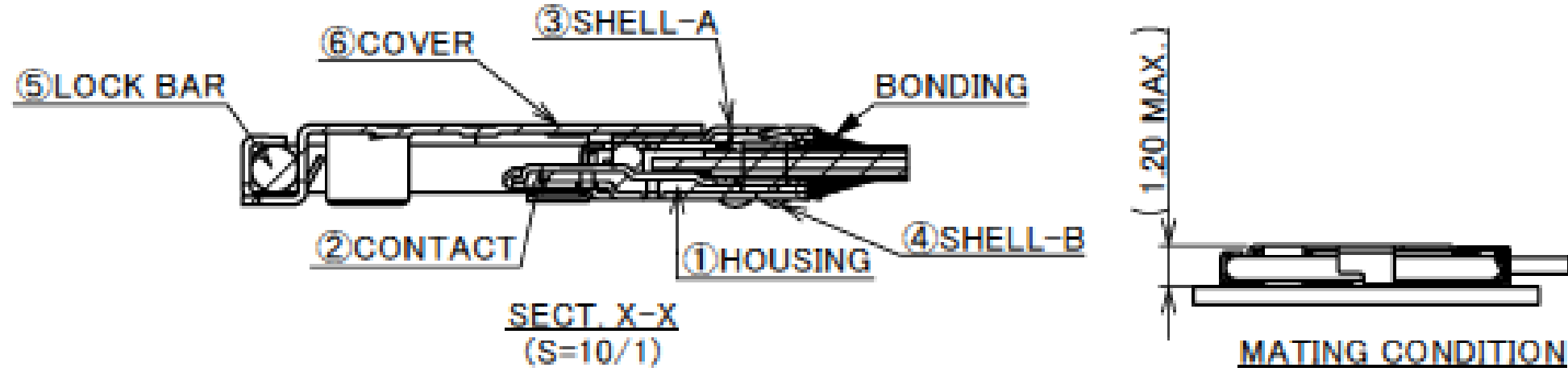
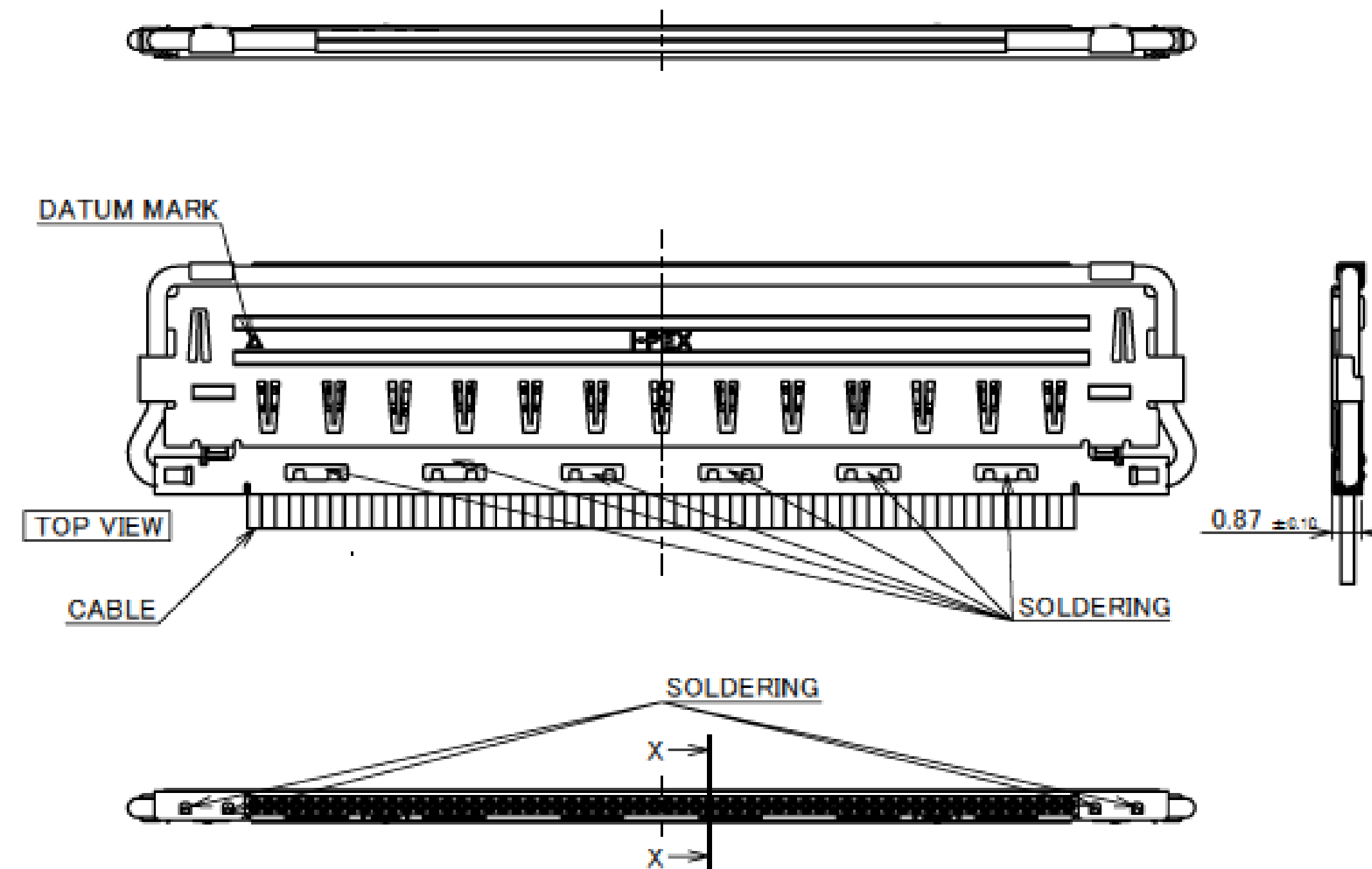
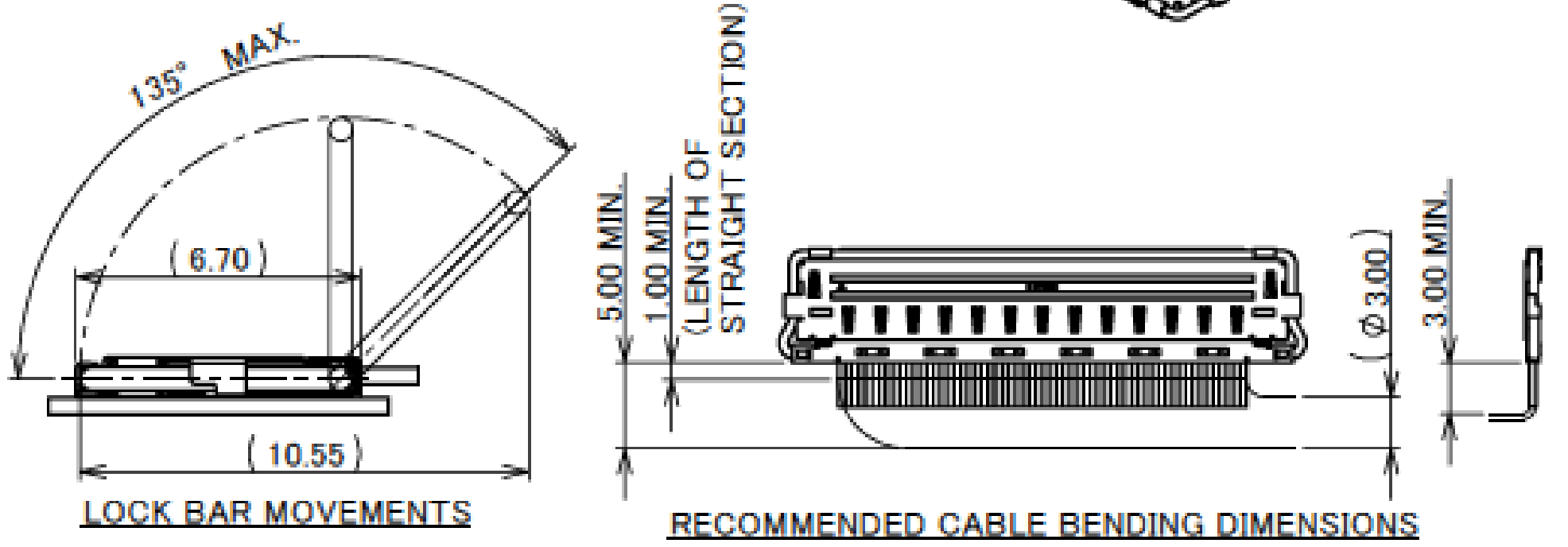
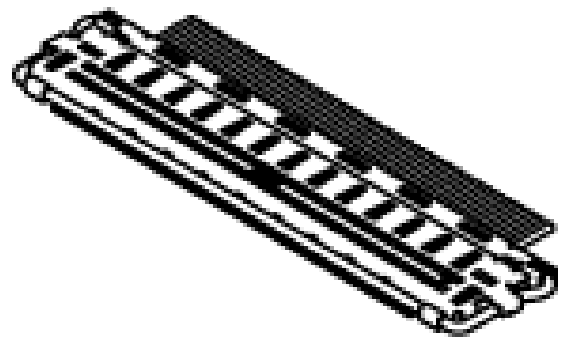
| Recommended P/N |      |
|-----------------|------|
| 20788-0**T-01   |      |
| PART NO.        | Pos. |
| 20788-060T-01   | 60   |



Halogen Free    RoHS Compliant



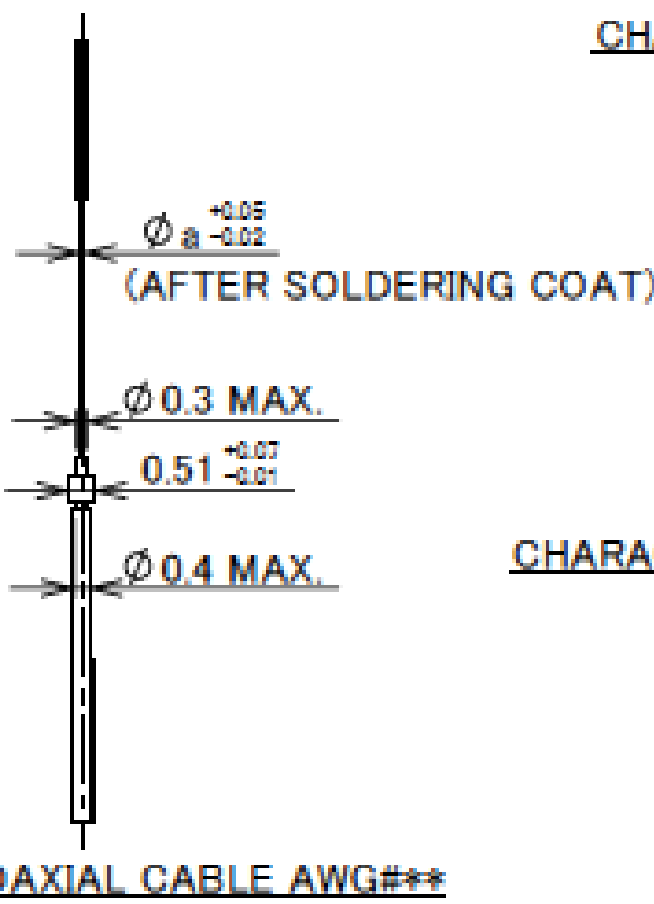
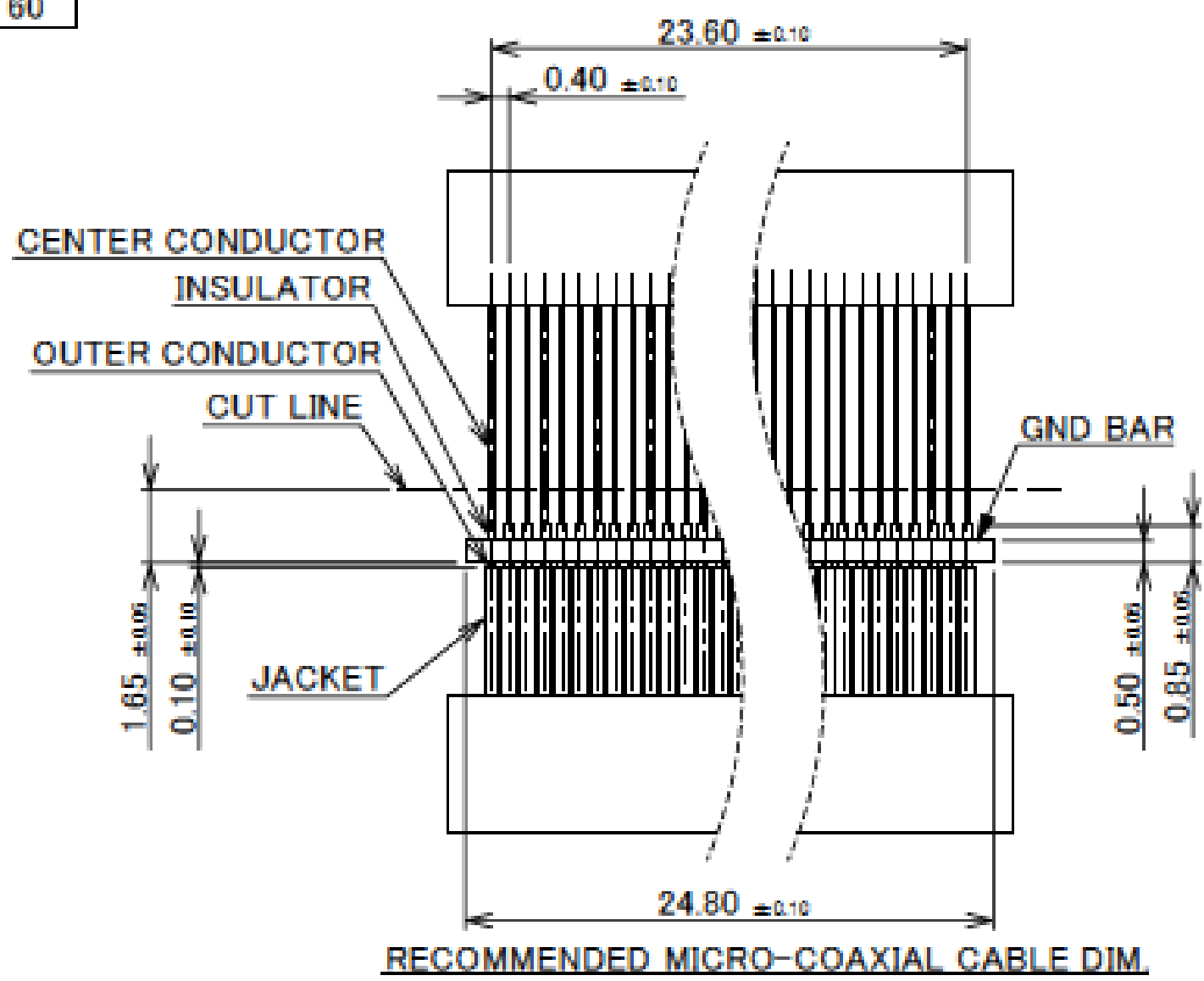
P/N : 20788-0 \*\* T-0 1  
Pos.



| NO. | DISCRIPTION | MATERIAL        | FINISH , REMARKS   |
|-----|-------------|-----------------|--|
| 6   | COVER       | PHOSPHOR BRONZE | ALL OVER Ni 1.00 $\mu$ m MIN.  |
| 5   | LOCK BAR    | SUS $\phi$ 0.55 | -  |
| 4   | SHELL-B     | PHOSPHOR BRONZE | PARTIAL Au 0.003 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m MIN.                          |
| 3   | SHELL-A     | 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.<br>CONTACT & SOLDERING AREA : Au 0.03 $\mu$ m MIN. |
| 1   | HOUSING     | LCP             | UL94V-0 ,BLACK   |

Rev.11

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



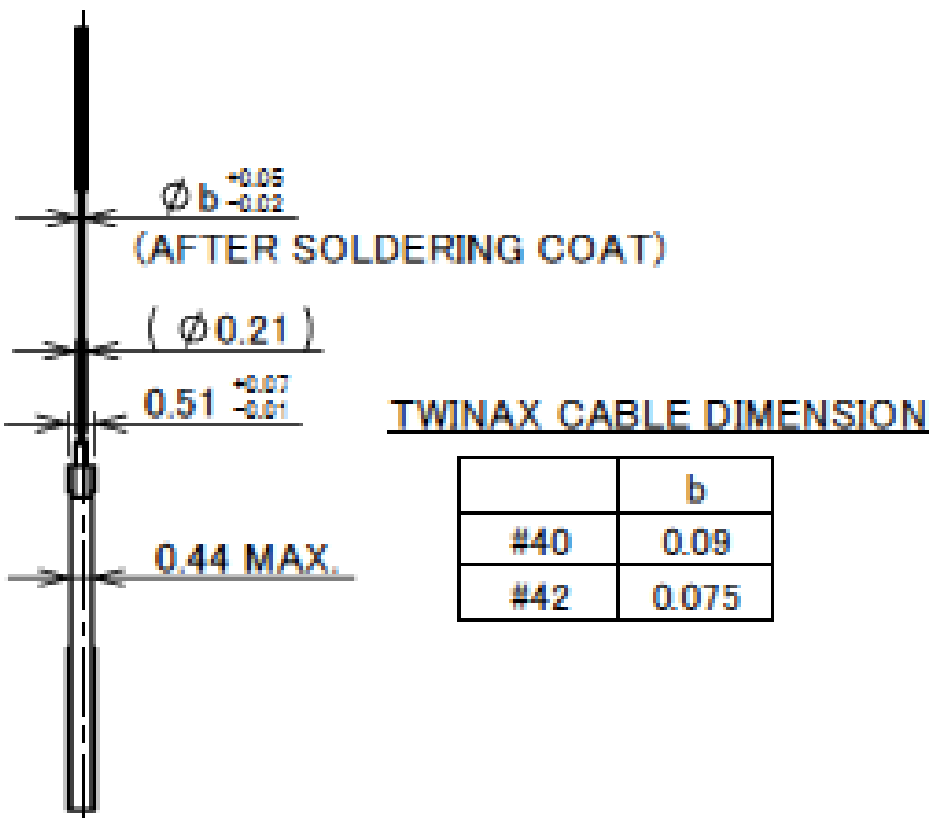
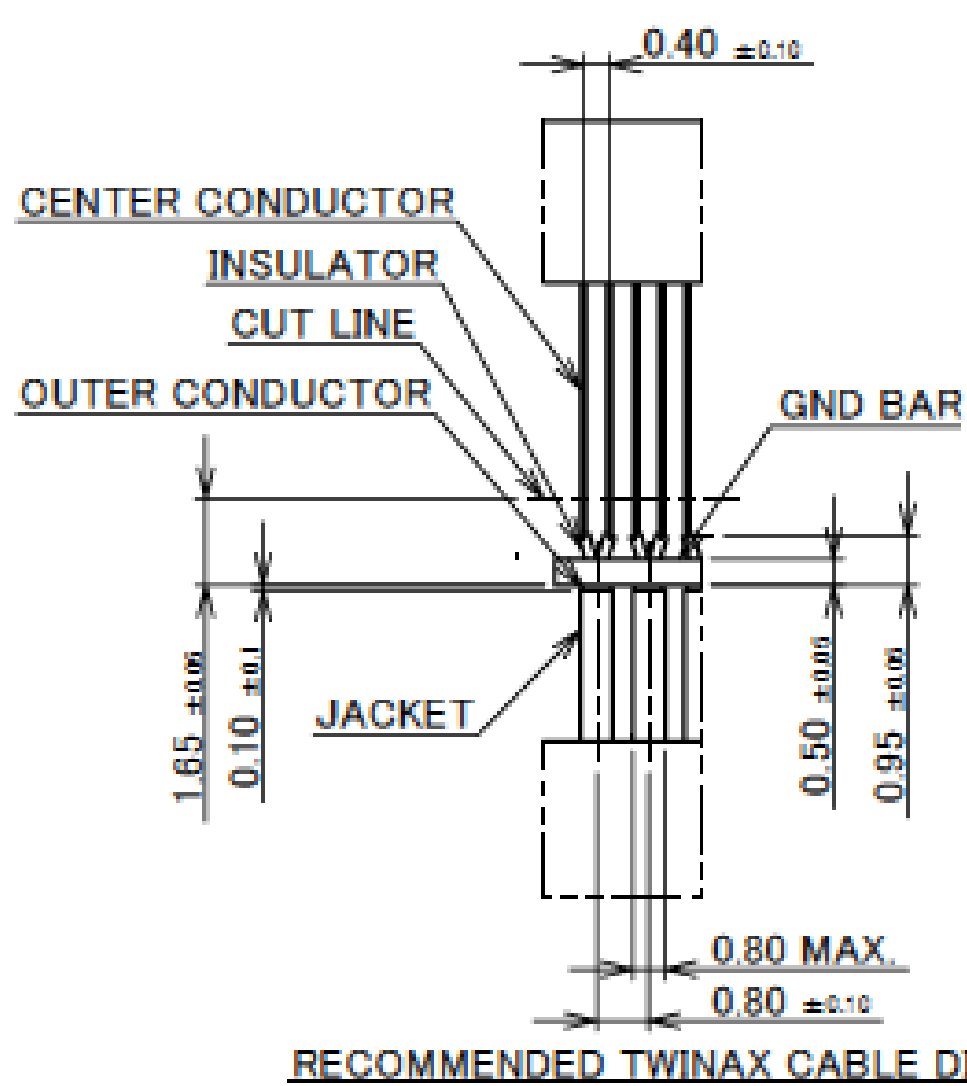
CHARACTERISTIC IMPEDANCE MATCHING MICRO-COAXIAL CABLE

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

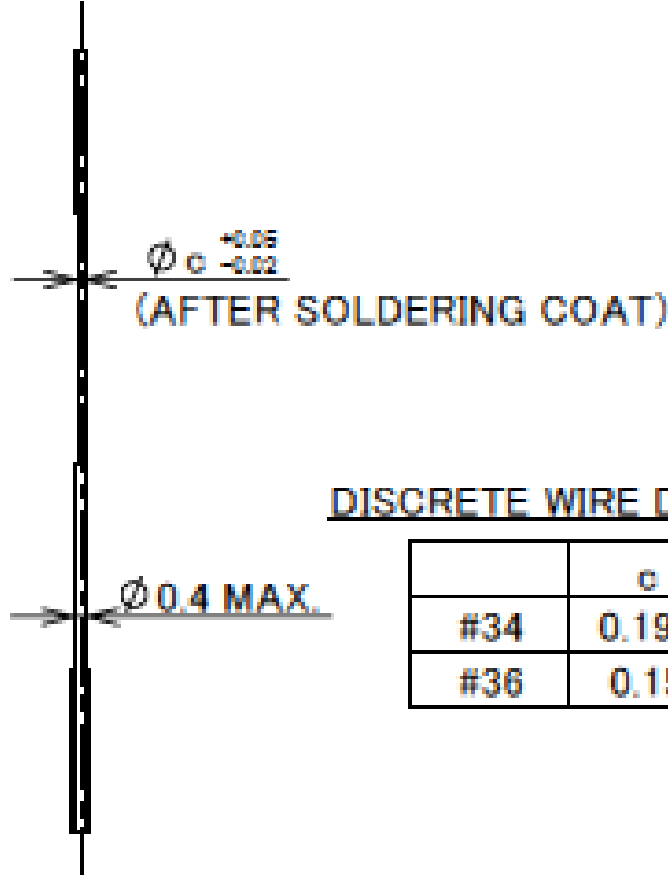
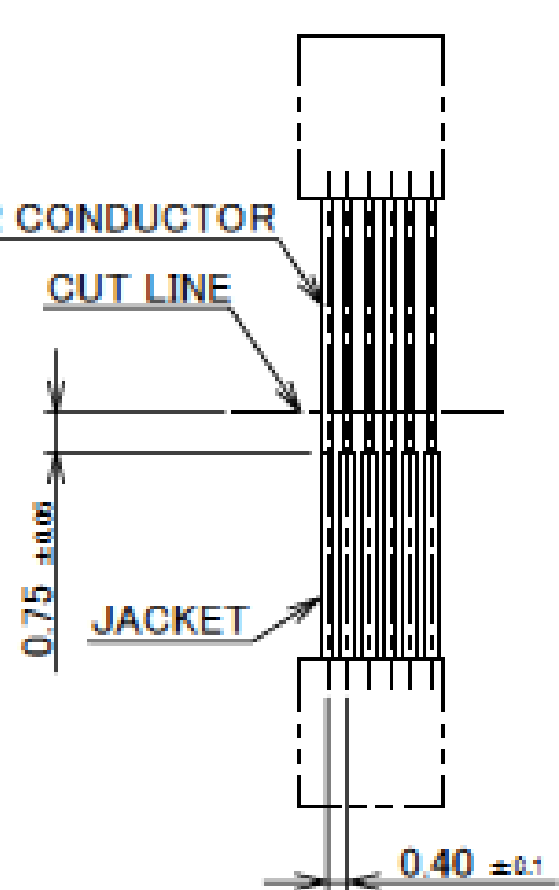
CHARACTERISTIC IMPEDANCE UN-MATCHING MICRO-COAXIAL CABLE

|     | a    |
|-----|------|
| #36 | 0.15 |

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



|     | b     |
|-----|-------|
| #40 | 0.09  |
| #42 | 0.075 |



DISCRETE WIRE DIMENSION

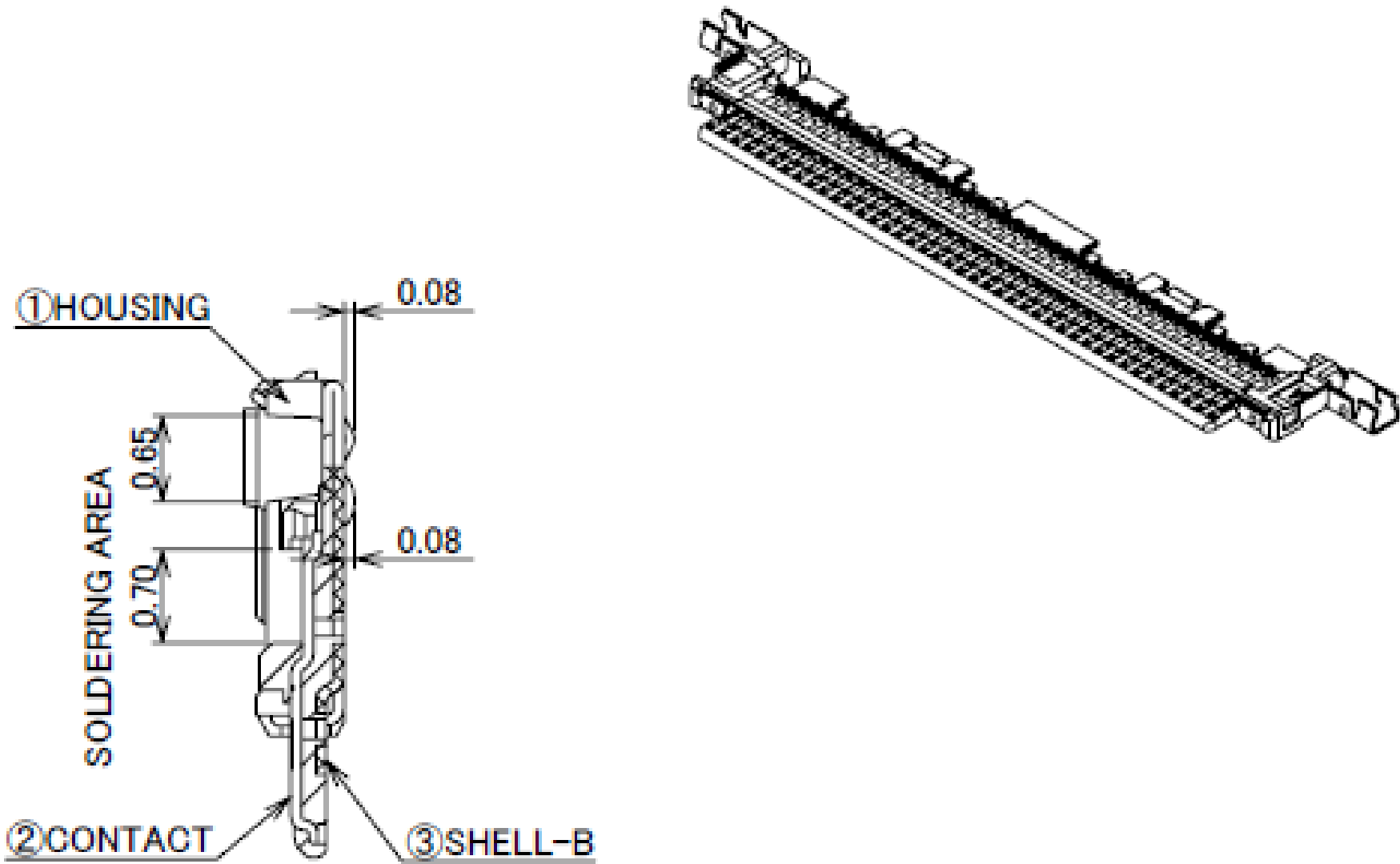
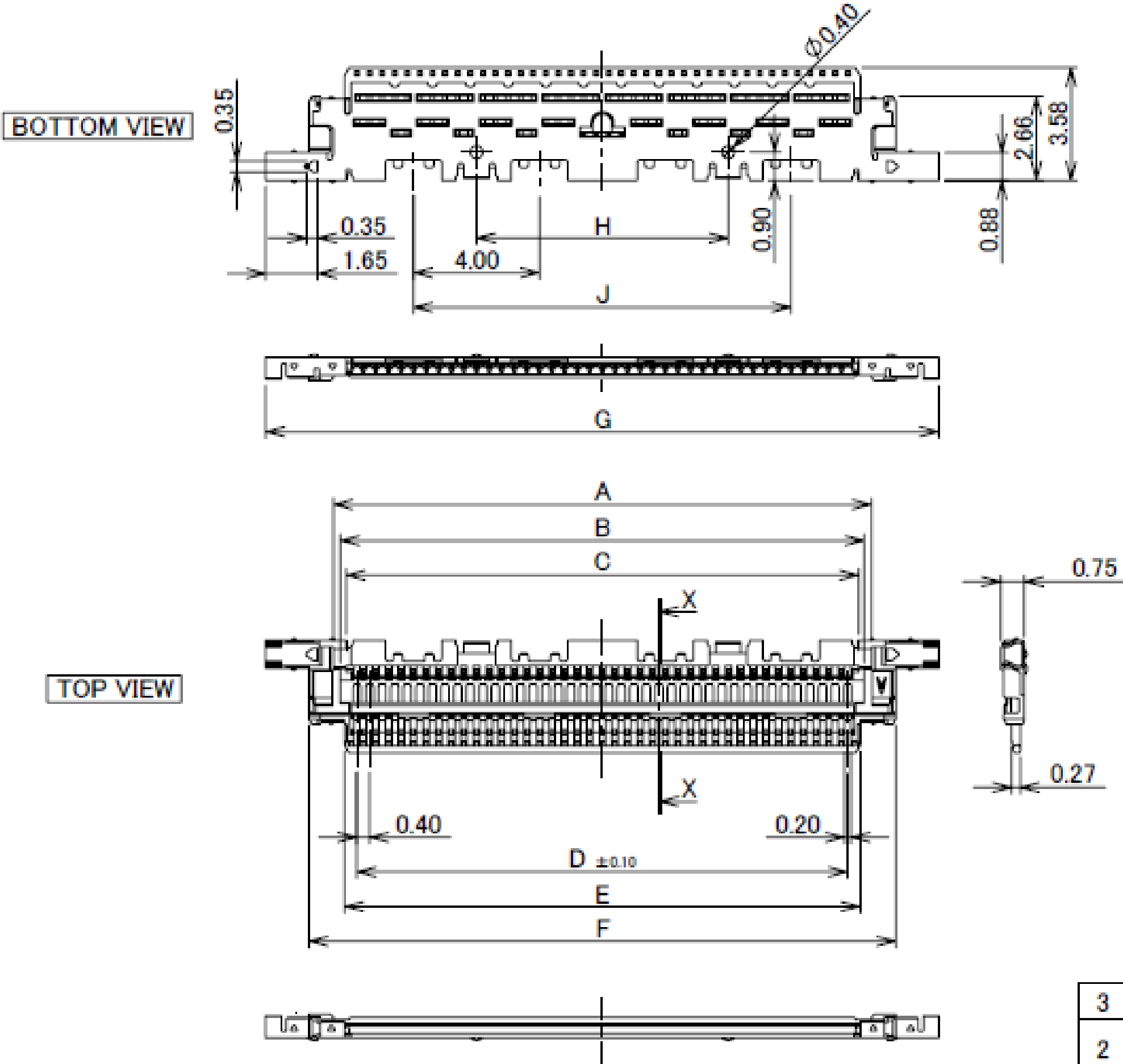
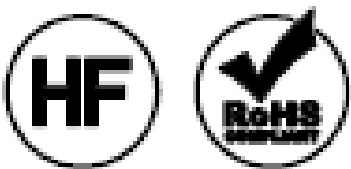
|     | c     |
|-----|-------|
| #34 | 0.192 |
| #36 | 0.15  |

Rev.11

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

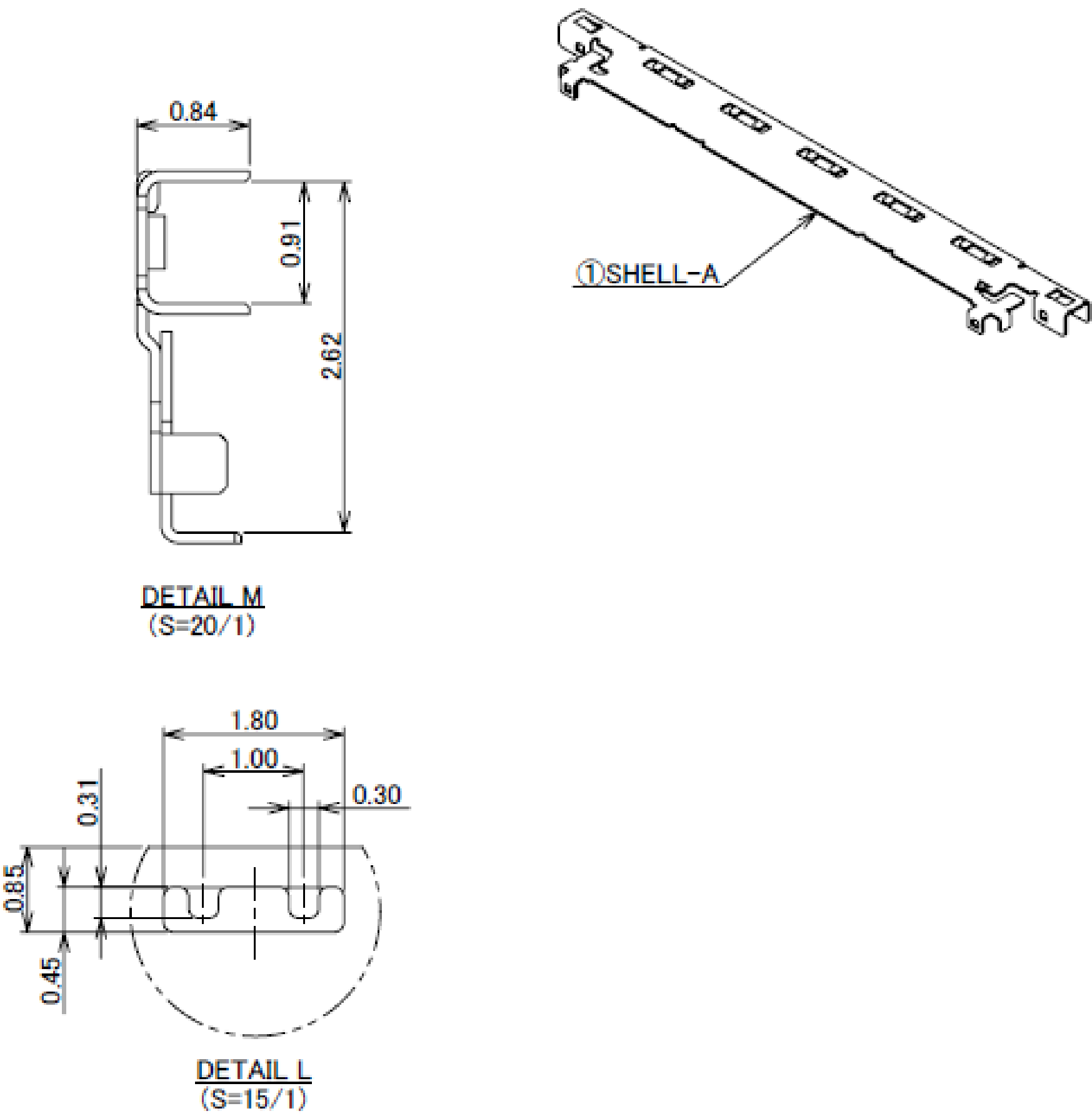
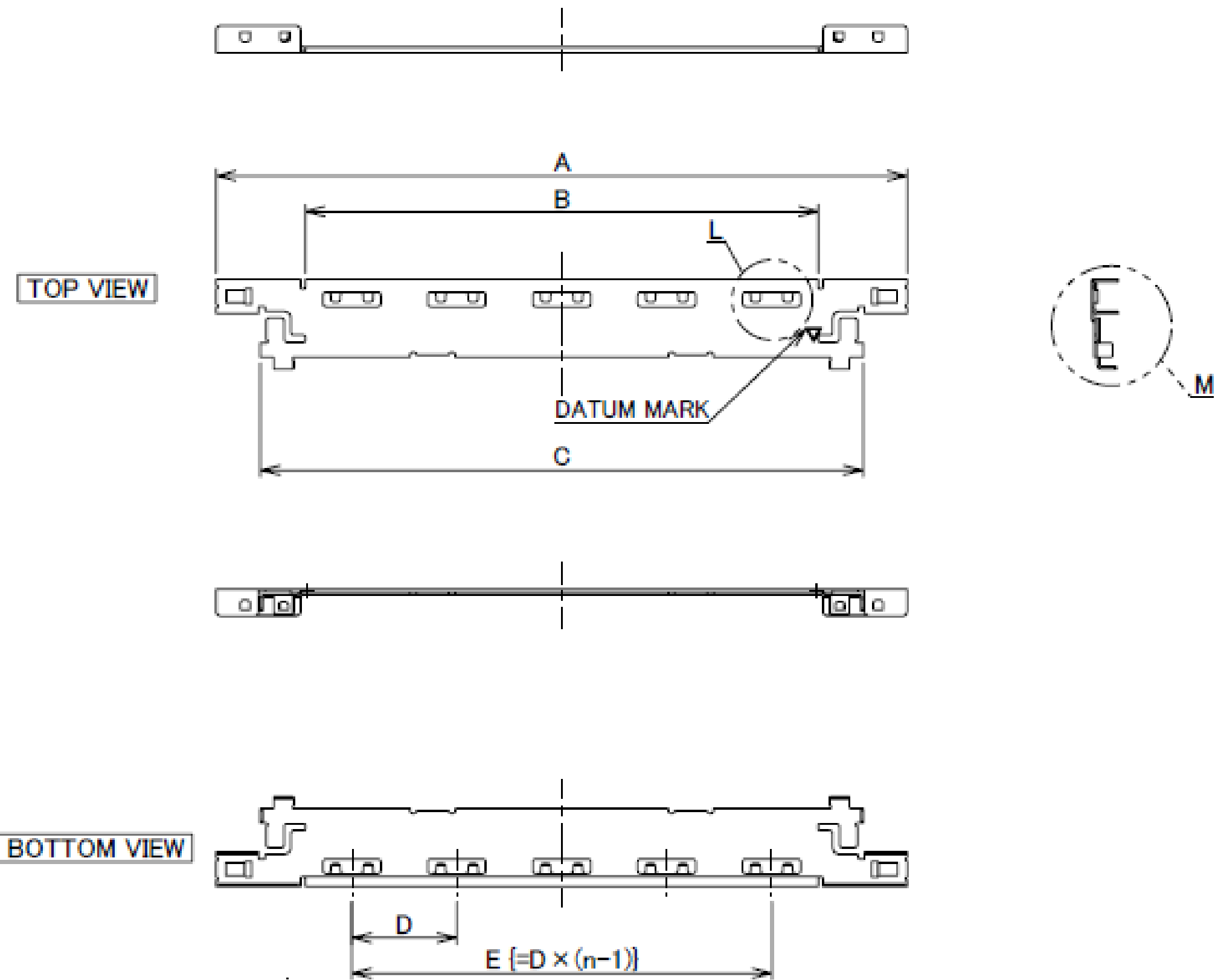
|     |             |                 |  |
|-----|-------------|-----------------|--|
| 3   | SHELL-B     | PHOSPHOR BRONZE | PARTIAL Au 0.003 μ m MIN. OVER Ni 1.00 μ m MIN.                          |
| 2   | CONTACT     | PHOSPHOR BRONZE | ALL OVER Ni 1.00 μ m MIN.<br>CONTACT & SOLDERING AREA : Au 0.03 μ m MIN. |
| 1   | HOUSING     | LCP             | UL94V-0 ,BLACK   |
| NO. | DISCRIPTION | MATERIAL        | FINISH , REMARKS   |

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 |

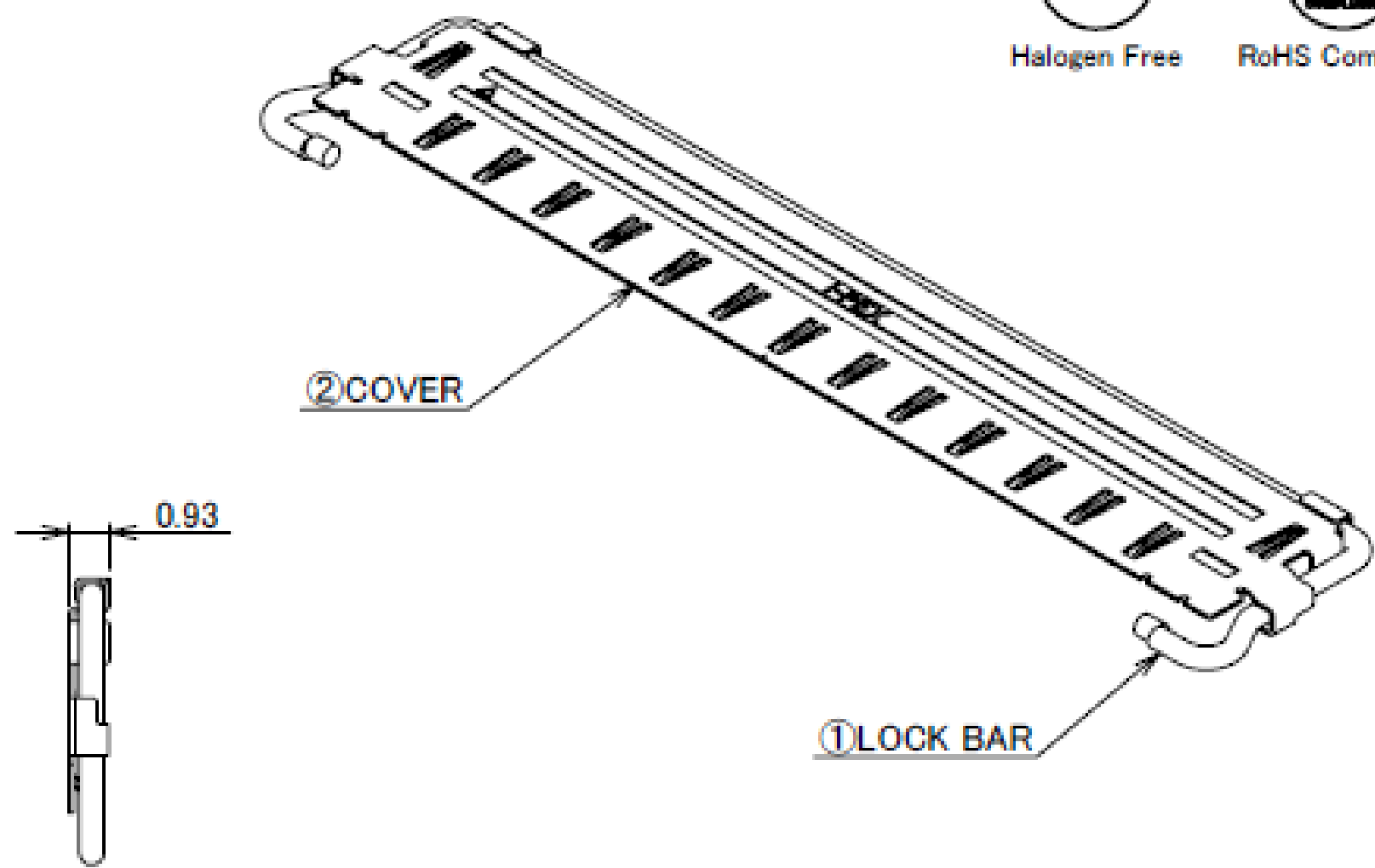
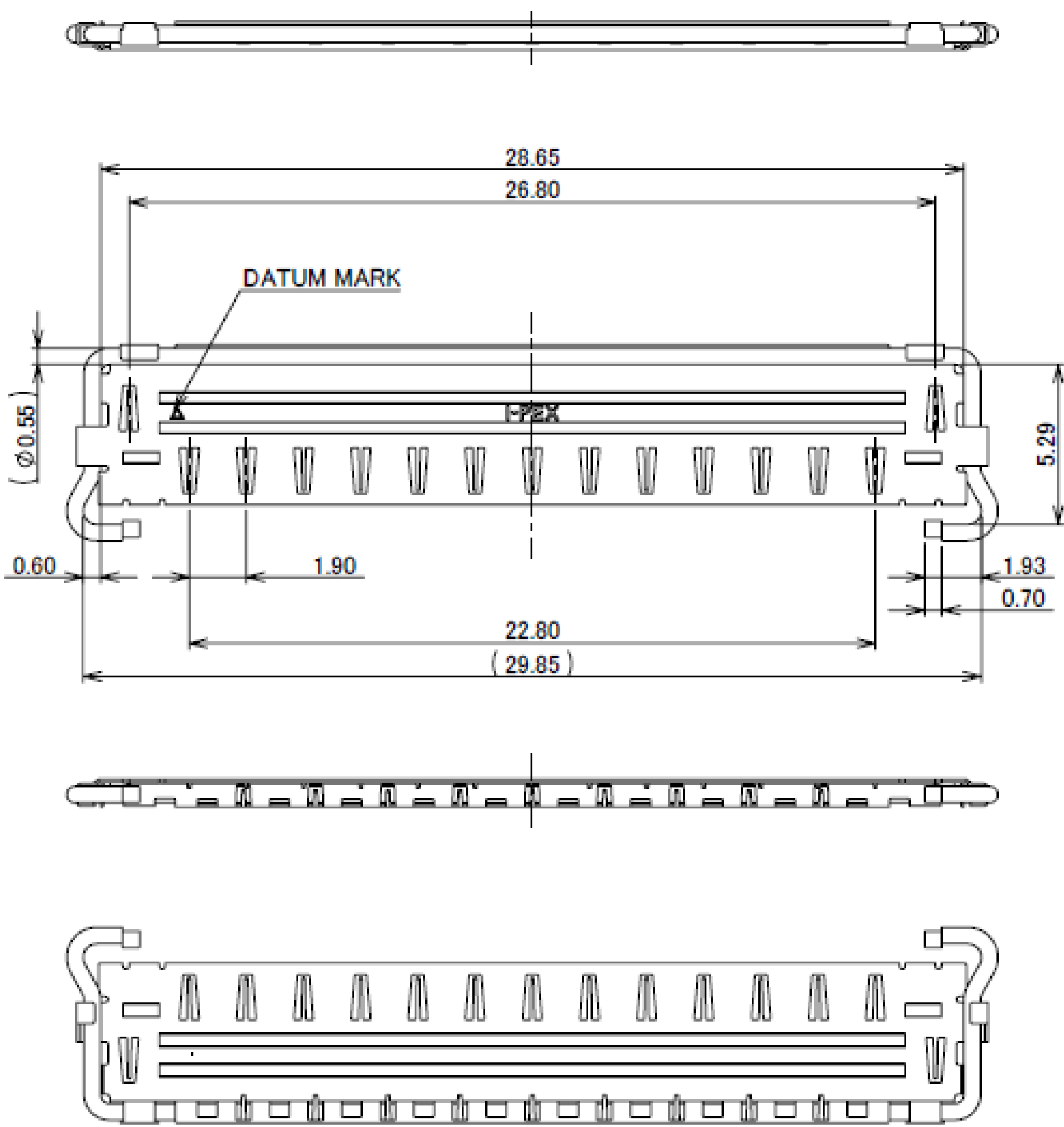
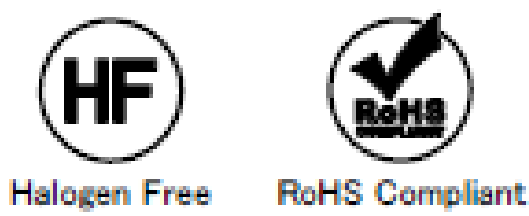


|     |             |                 |   |
|-----|-------------|-----------------|---|
| 1   | SHELL-A     | PHOSPHOR BRONZE | PARTIAL Au 0.003 μ m MIN. OVER Ni 1.00 μ m MIN. |
| NO. | DISCRIPTION | MATERIAL        | FINISH , REMARKS                                |

Rev.7

Lock Bar Assembly

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

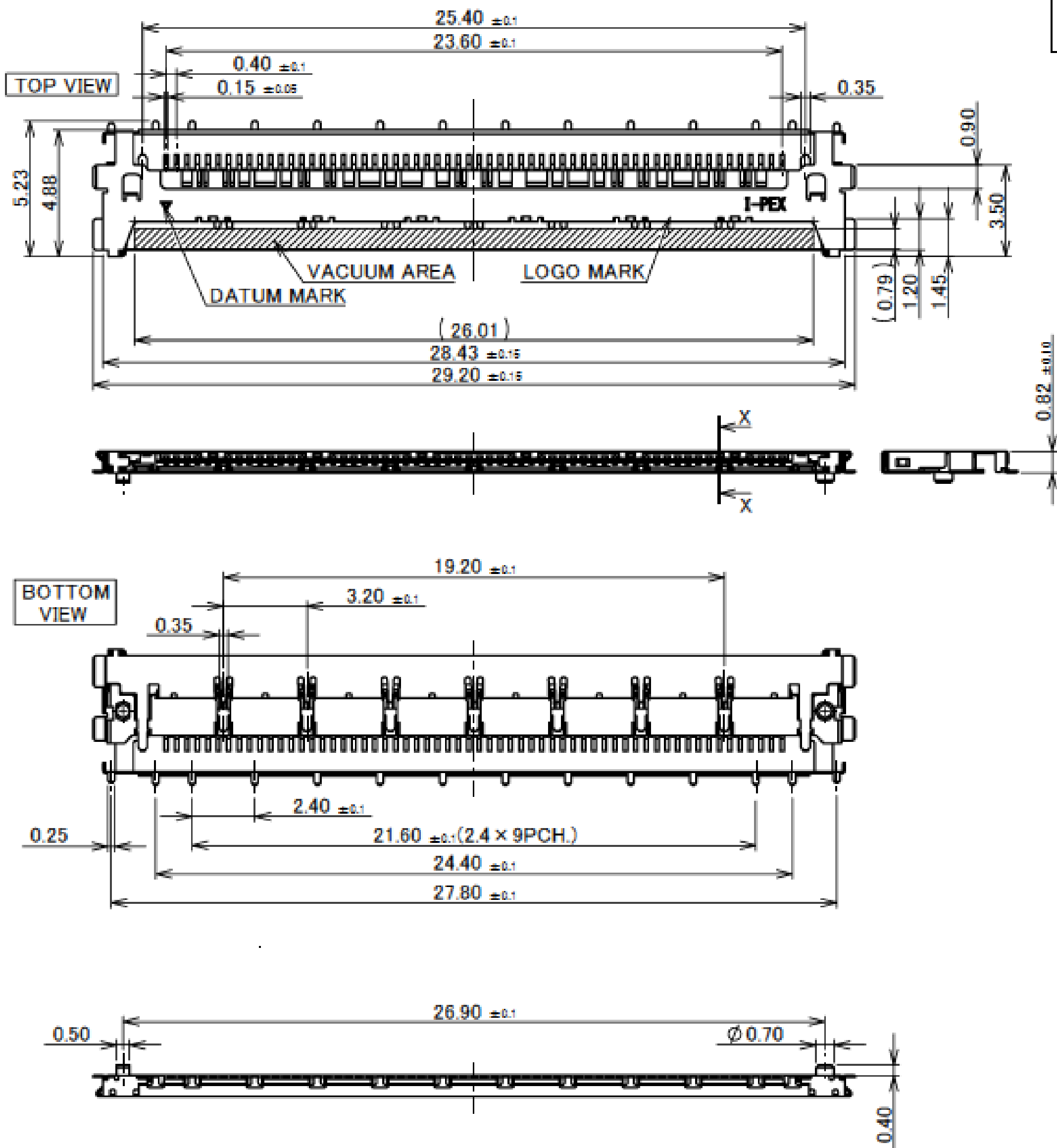


| 2   | COVER       | PHOSPHOR BRONZE | ALL OVER Ni 1.00 μm MIN. |
|-----|-------------|-----------------|--------------------------|
| 1   | LOCK BAR    | SUS φ0.55       | -                        |
| NO. | DISCRIPTION | MATERIAL        | FINISH , REMARKS         |

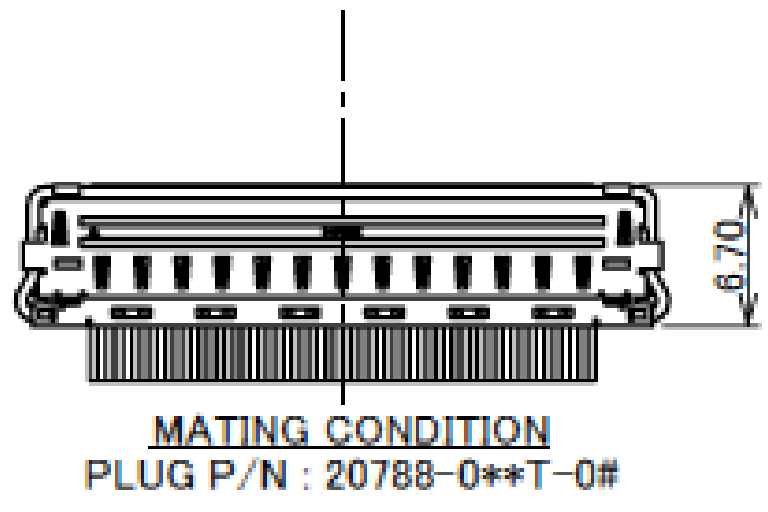
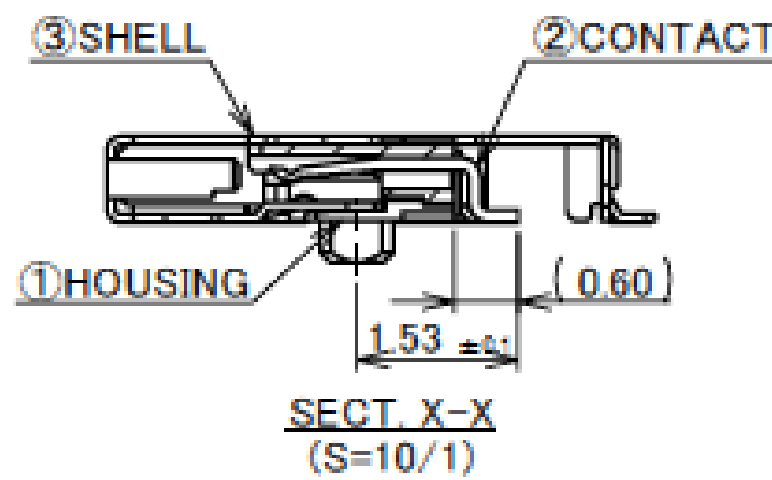
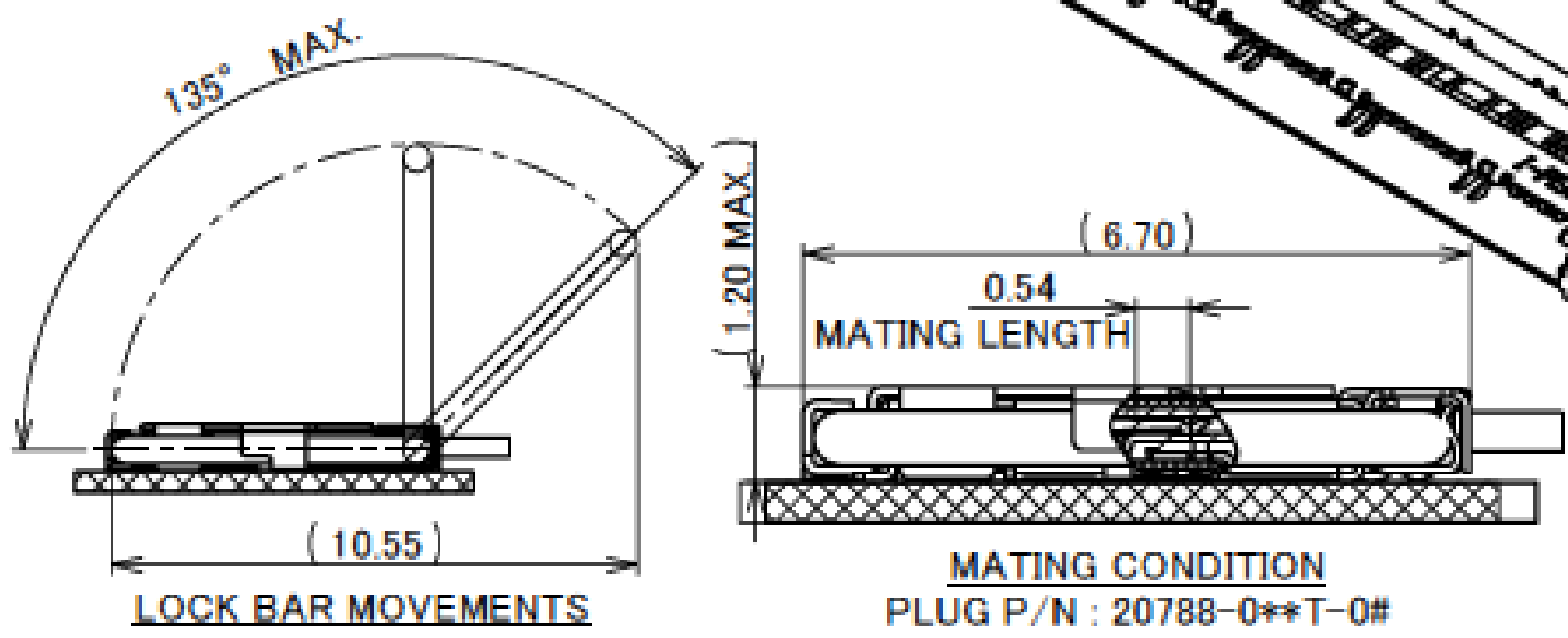
Rev.9

Receptacle Assembly

| Recommended P/N |      | 20790-0**E-02 |
|-----------------|------|---------------|
| PART NO.        | Pos. |               |
| 20790-060E-##   | 60   |               |



P/N : 20790-0 \*\* E- ##  
1 : WITH BOSS  
2 : WITHOUT BOSS  
SEE TABLE 1  
Pos.

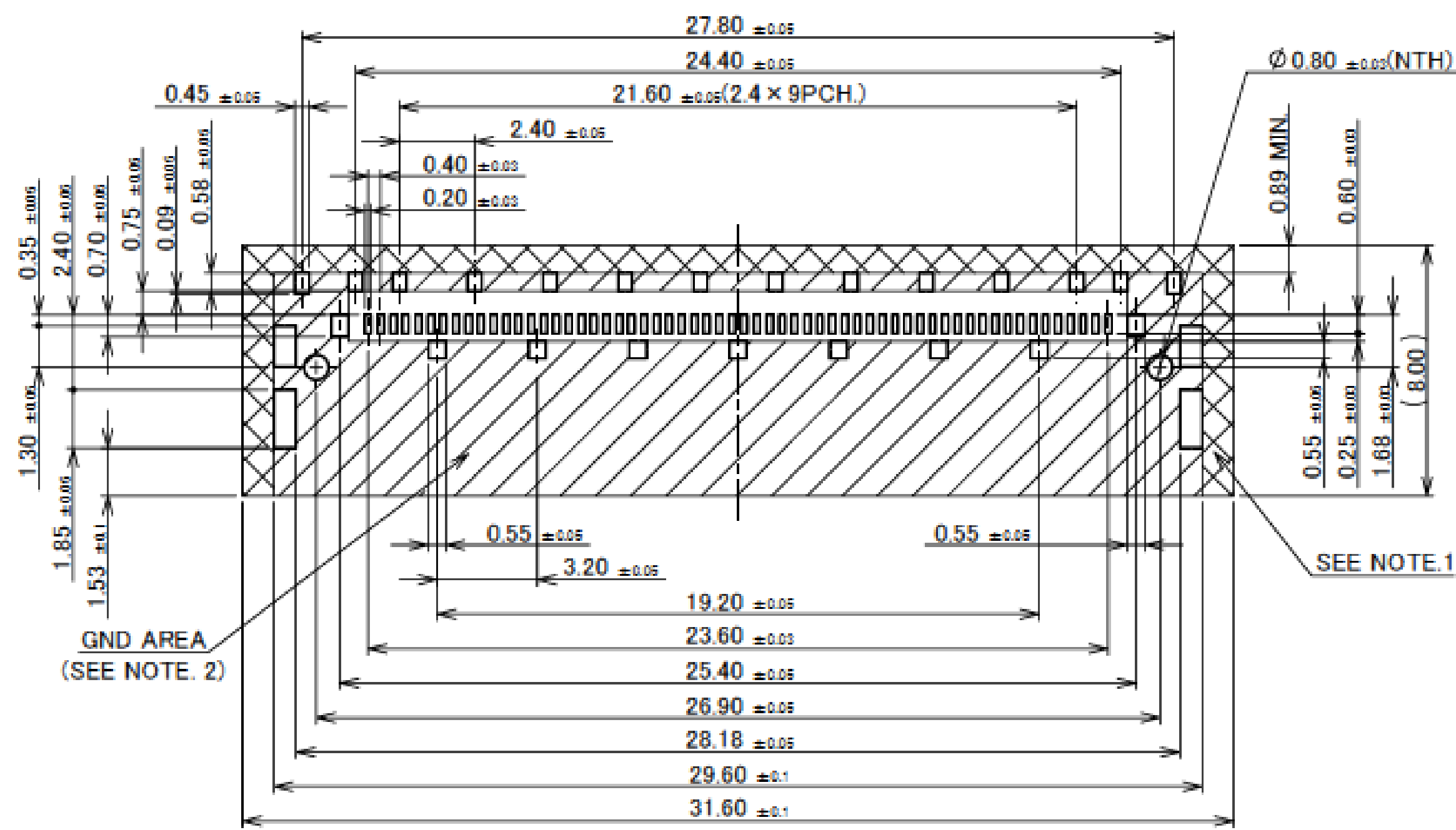


| PART NO.      | CONTACT FINISH   |
|---------------|--|
| 20790-0**E-0# | CONTACT & SOLDERING AREA : Au 0.03 μm MIN. OVER Ni 1.00 μm MIN.  |
| 20790-0**E-1# | CONTACT AREA : Au 0.38 μm MIN. OVER Ni 1.00 μm MIN.<br>SOLDERING AREA : Au 0.03 μm MIN. OVER Ni 1.00 μm MIN. |

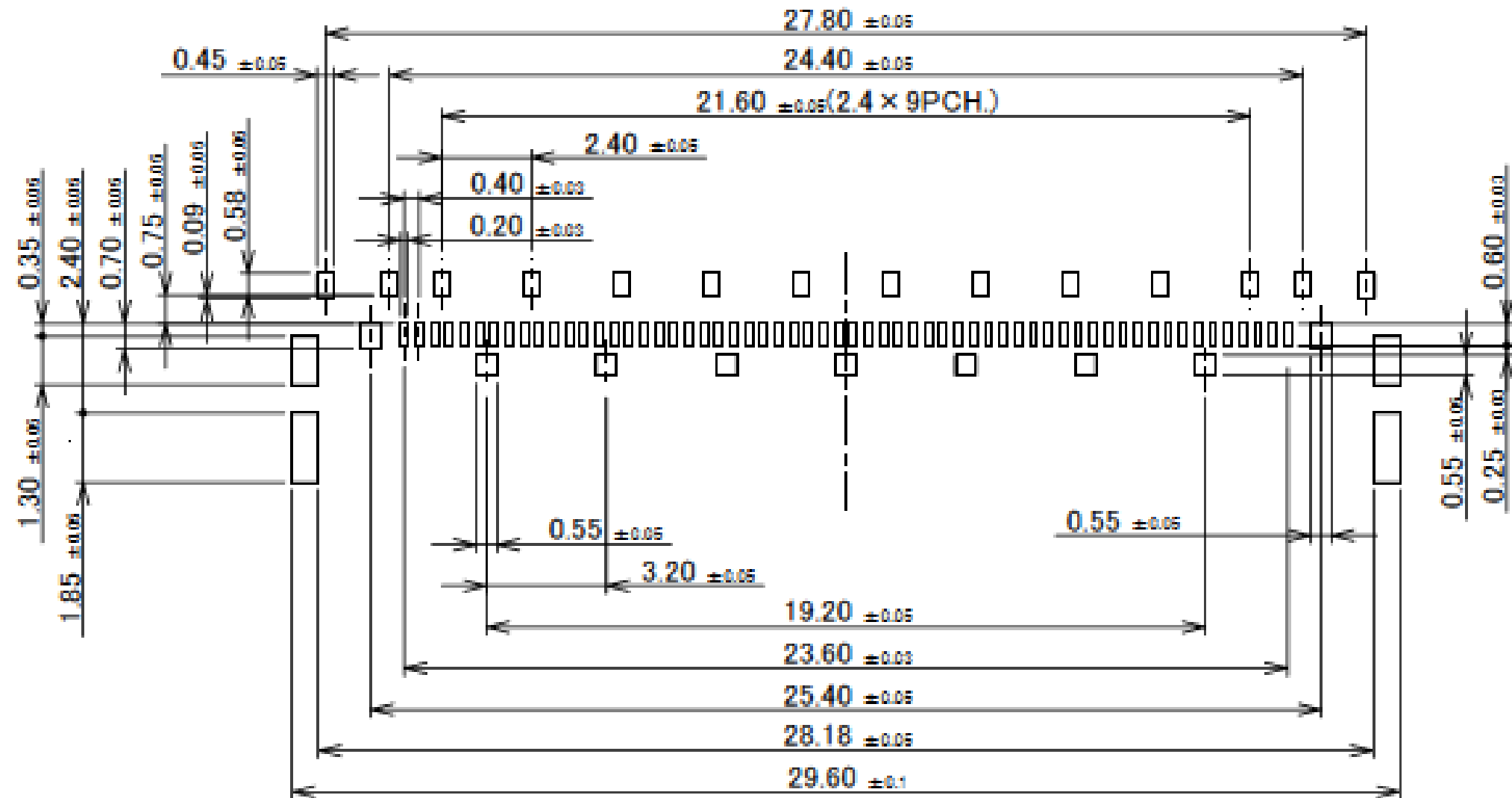
| 3   | SHELL       | PHOSPHOR BRONZE | ALL OVER Ni 1.00 μm MIN.<br>SOLDERING AREA : Au 0.03 μm MIN. |
|-----|-------------|-----------------|--|
| 2   | CONTACT     | PHOSPHOR BRONZE | SEE TABLE 1  |
| 1   | HOUSING     | LCP             | UL94V-0 .BLACK   |
| NO. | DISCRIPTION | MATERIAL        | FINISH , REMARKS   |

Rev.13

Receptacle Assembly



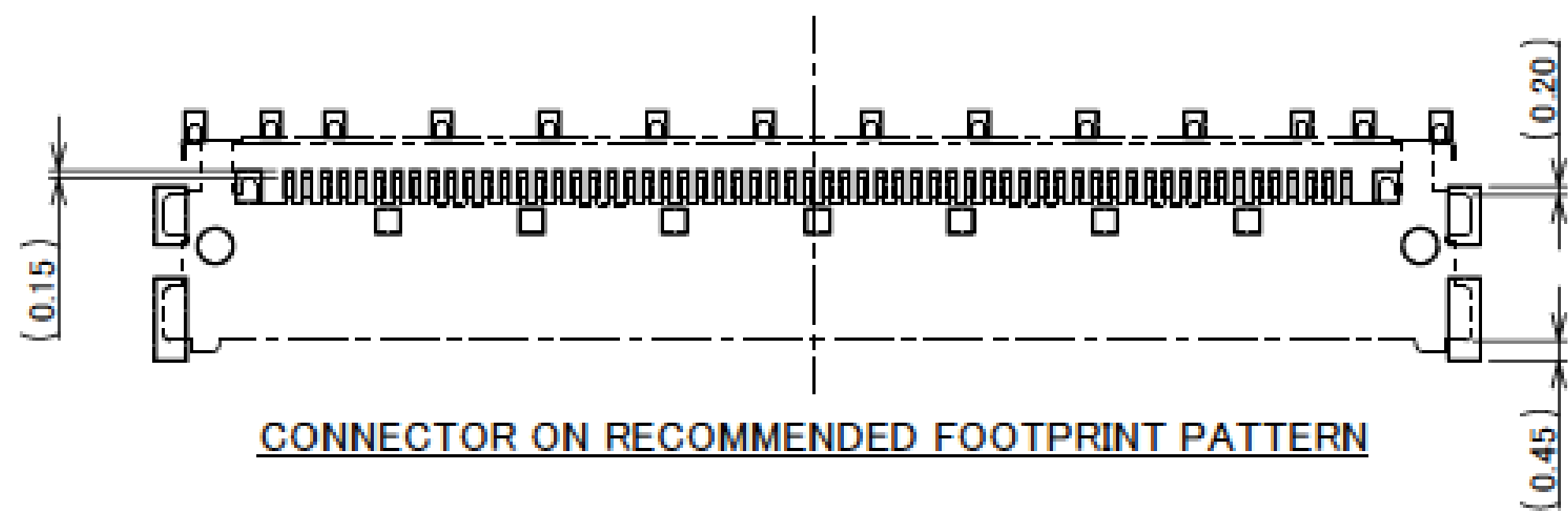
RECOMMENDED FOOTPRINT PATTERN LAYOUT



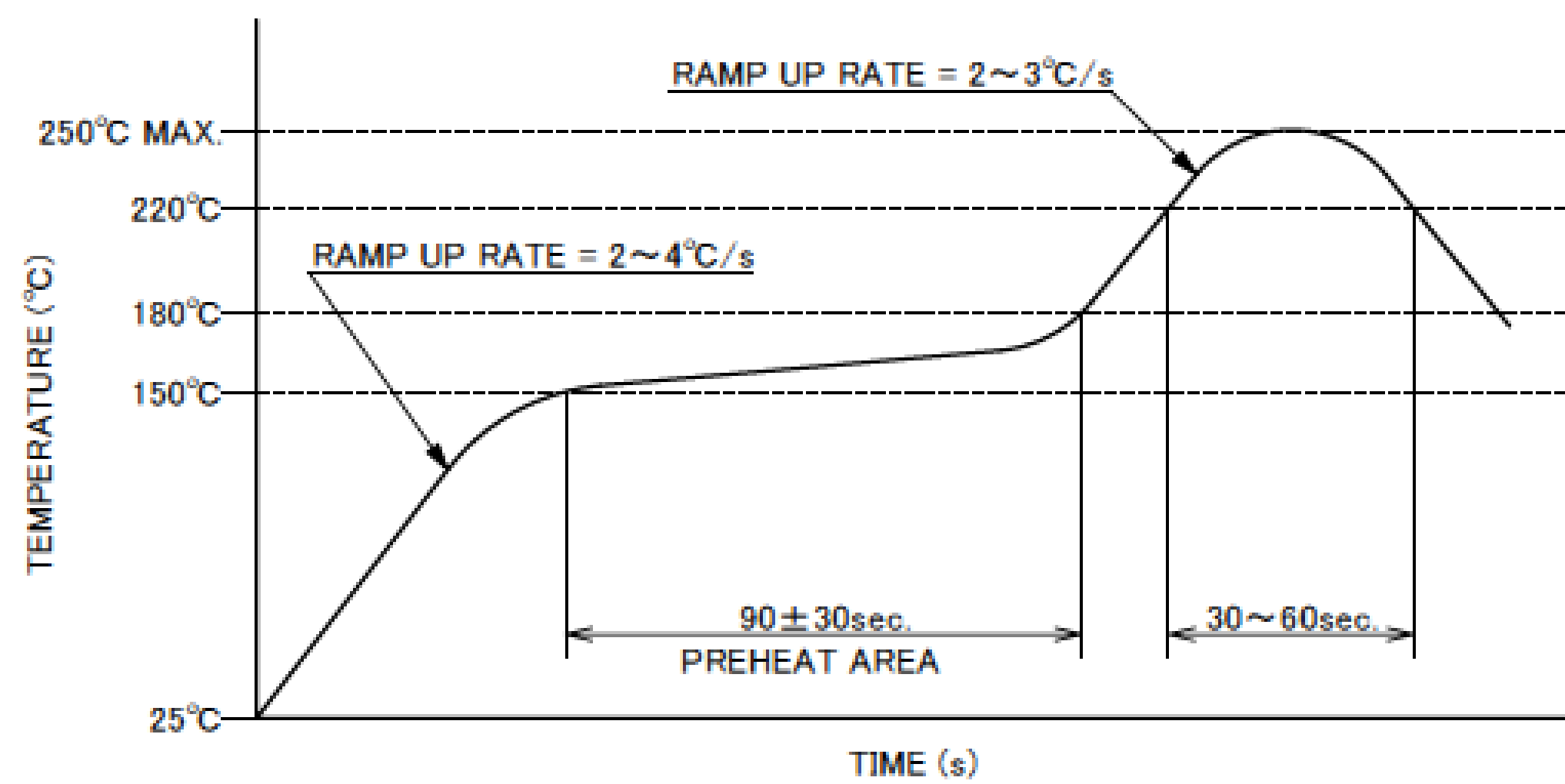
RECOMMENDED METAL MASK LAYOUT  
METAL MASK THICKNESS : t=0.12mm

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

Rev.13



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 CABLE : AWG# 44 , 42 , 40 , 38 , 36<br>DISCRETE WIRE : AWG# 36 , 34<br>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 60 CONTACTS<br>0.24A AC/DC [AWG#42] PER CONTACT PIN / UP TO 60 CONTACTS<br>0.3A AC/DC [AWG#40] PER CONTACT PIN / UP TO 60 CONTACTS<br>0.5A AC/DC [AWG#38] PER CONTACT PIN / UP TO 18 CONTACTS<br>0.8A AC/DC [AWG#36] PER CONTACT PIN / UP TO 6 CONTACTS<br>1.0A AC/DC [AWG#34] PER CONTACT PIN / UP TO 6 CONTACTS<br>※TESTING BY REAL MACHINE IS RECOMMENDED BECAUSE TEMPERATURE RISE<br>MAY AFFECTED BY ACTUAL SITUATION |
| OPERATING TEMPERATURE                       | 248~378K(-40℃~105℃)   |
| OPERATING HUMIDITY                          | 85% MAX.(NON-CONDENDING)  |
| CONTACT RESISTANCE                          | INITIAL : 180mohm MAX.(AWG#34) / AFTER TEST : $\triangle$ 40mohm MAX.<br>275mohm MAX.(AWG#36)<br>360mohm MAX.(AWG#38)<br>600mohm MAX.(AWG#40)<br>700mohm MAX.(AWG#42)<br>1080mohm MAX.(AWG#44)  |
| GROUND SHELL RESISTANCE                     | INITIAL : 50mohm MAX. / AFTER TEST : $\triangle$ 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***  |



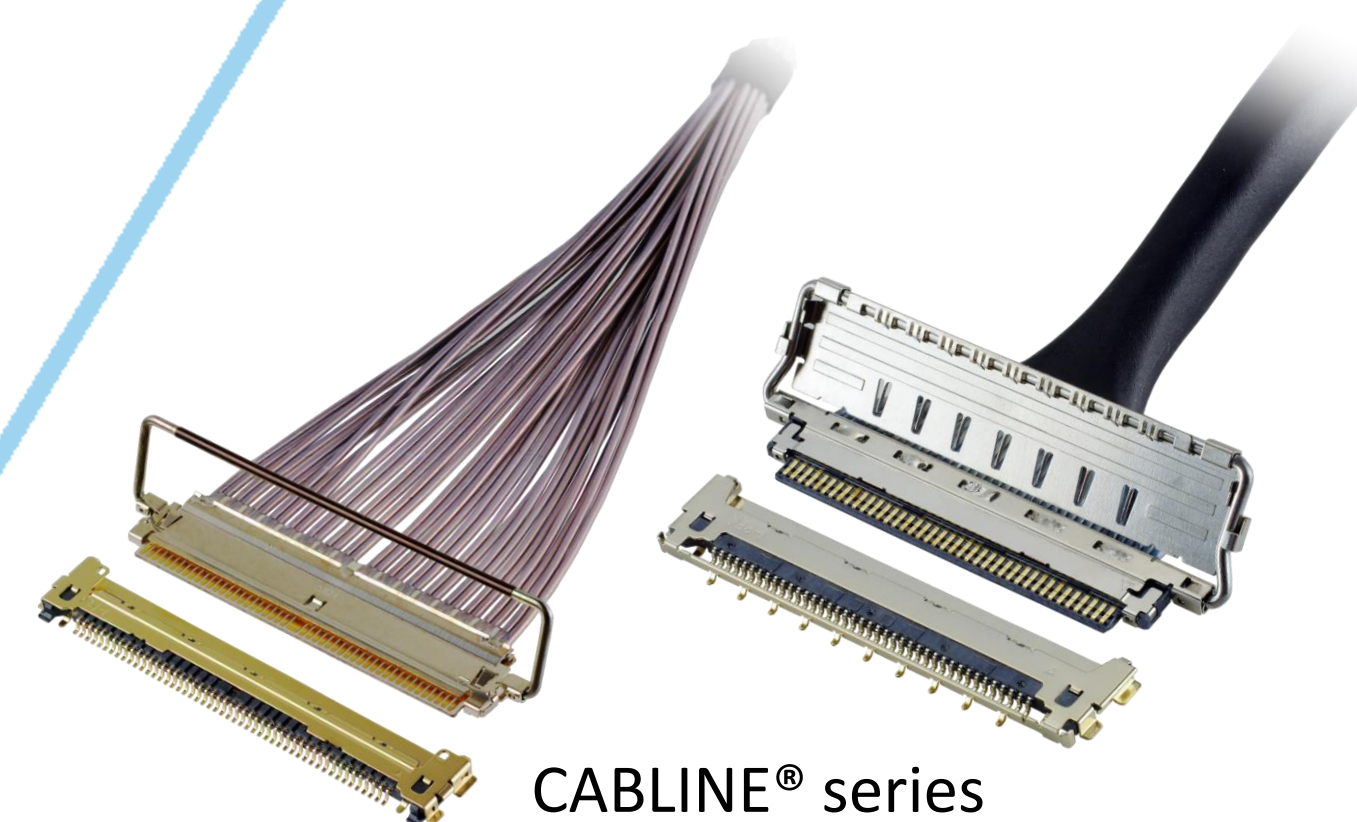
# Custom Connectors Available

## RF Connector

MHF® series



## Micro-coaxial/Twinax/Discrete Wire Connector



## Optical Module

LIGHTPASS® series



NOVASTACK® series



## Board-to-Board Connector



## Power Connector/Terminal

AP series

ISH® series

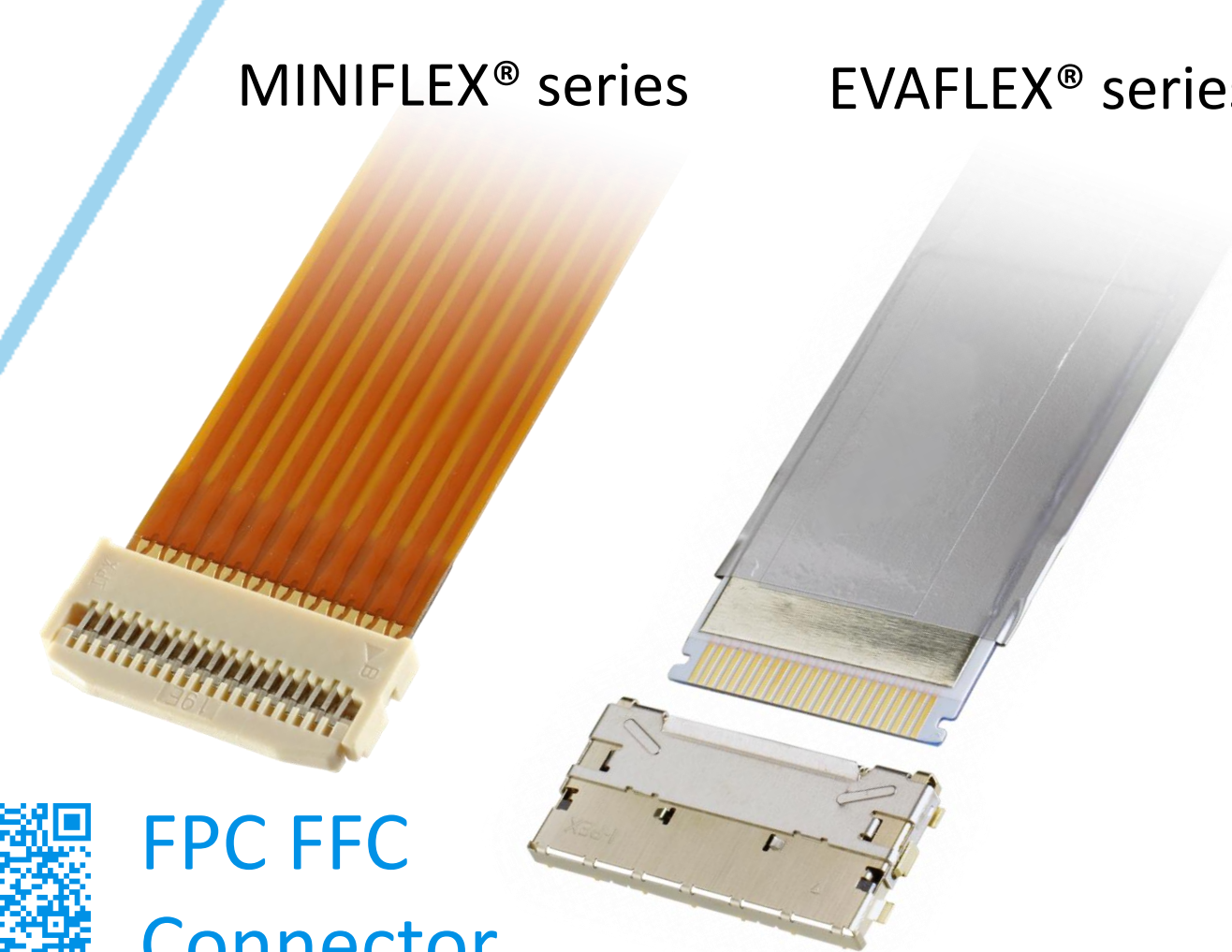


MINIFLEX® series

EVAFLEX® series



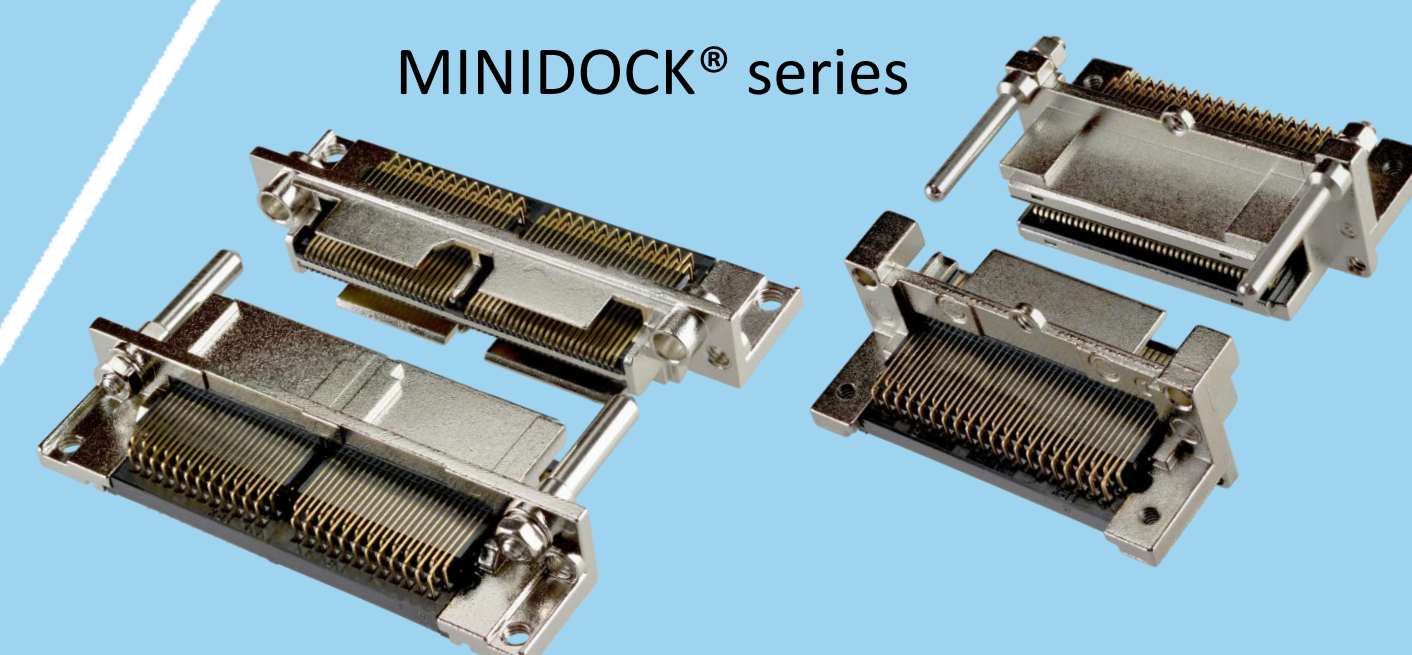
## FPC FFC Connector



Inquiry



MINIDOCK® series

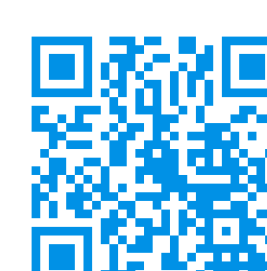


## I/O Connector

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Contact your sales representative or more detailed information.

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