

# NOVASTACK® 35-HDP 12

A fully shielded, 1.2 mm mated height, 0.35 mm pitch, power contact-equipped, up to 40 Gbps per lane supporting board-to-board connector

**Product Specifications:**

|                |           |   |
|----------------|-----------|---|
| Board Pitch    |           | 0.35 mm   |
| Wiping Length  |           | Signal contact : 0.19 mm<br>Power contact : 0.27 mm |
| Mated Size     | Height    | 1.2 +/- 0.05 mm                                     |
|                | Width     | 4.86 + (0.35 x pin count / 2) mm                    |
|                | Depth     | 3.7 mm  |
| Current Rating | Signal    | 0.3 A/pin   |
|                | Power     | 4.5 A/pin x 4                                       |
| Pin Counts     | Range     | 10 to 80 (signal) + 4 (power)                       |
|                | Available | 22 + 4, 56 + 4, 62 + 4                              |

**Applicable Standards (Reference Only):**

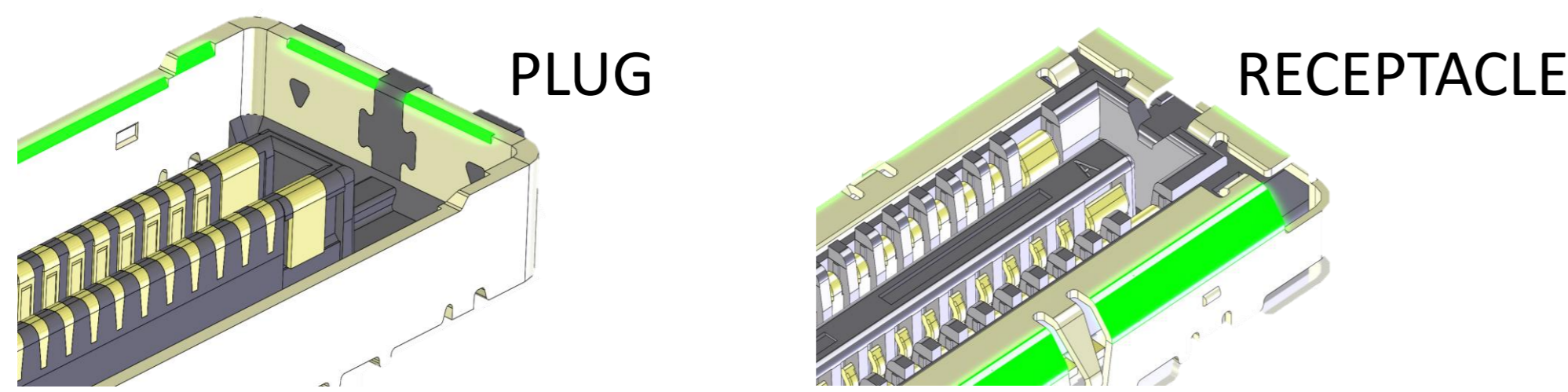
USB4 (20 Gbps/lane), USB 3.1 Gen 2 (10 Gbps), eDP HBR 3 (8.1 Gbps), eDP HBR 2 (5.4 Gbps), eDP (2.7 Gbps), HDMI 2.0 (6 Gbps), V-By-One HS 1.4 (4 Gbps), MiPi standards



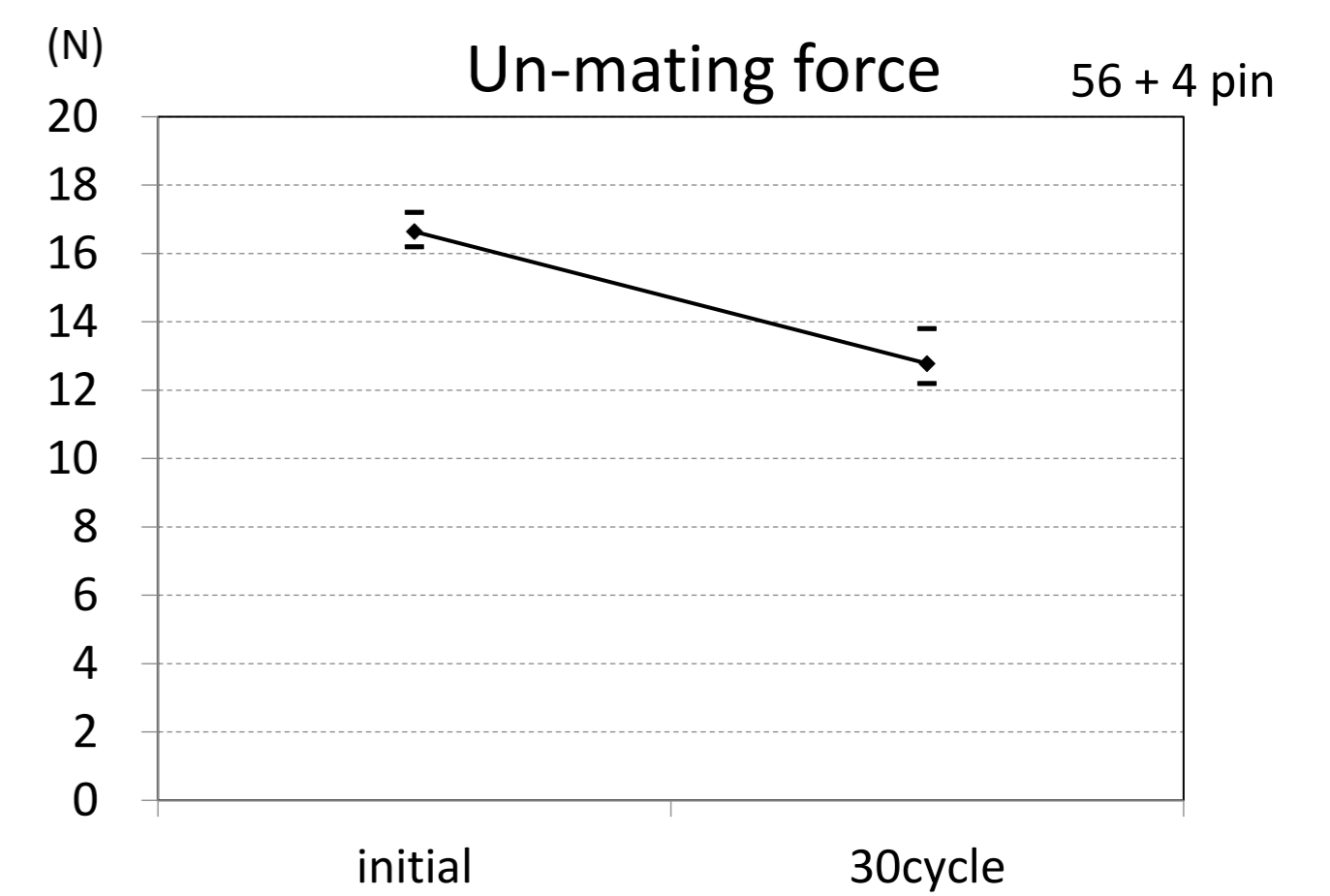
\* Please inquire for pin counts not listed or outside of the pin count range.

## 1.2 mm stack height design delivering excellent mating operability and connection reliability

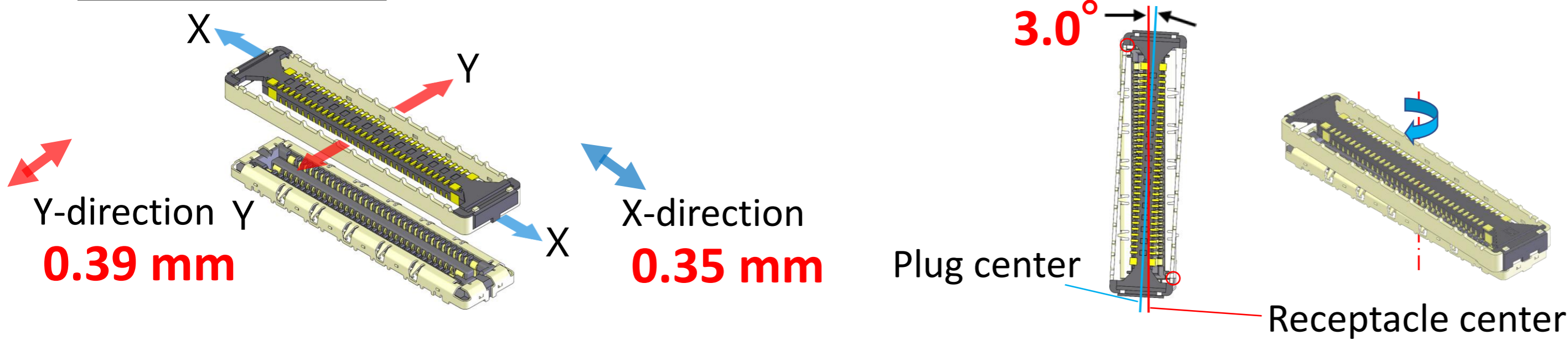
### Mating guide



### Un-mating force



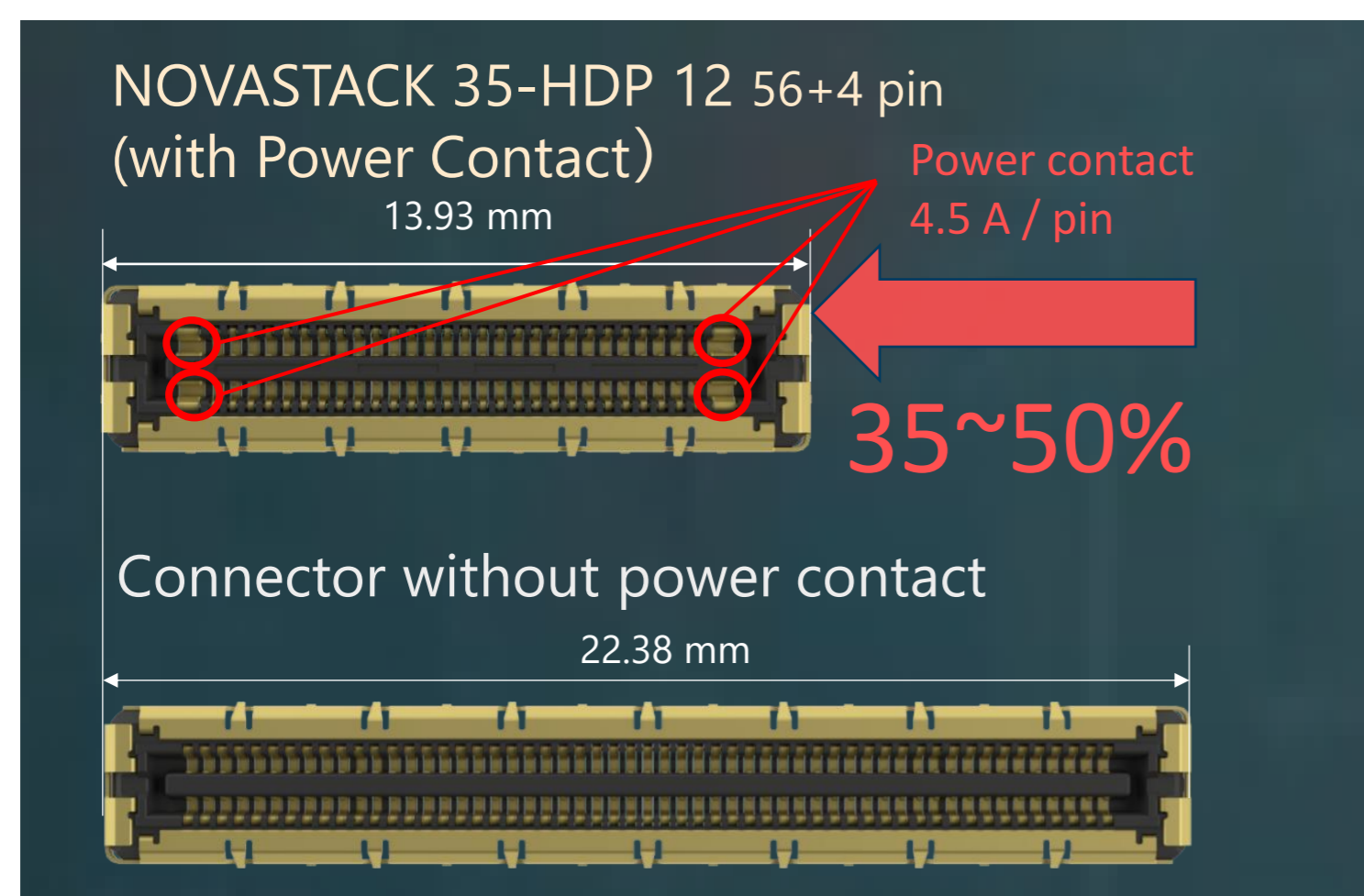
### Guide amount



## Compact connector design for high-density mounting, enabled by power contacts and ZenShield® shielding

By using power contacts, PCB space can be saved.\*

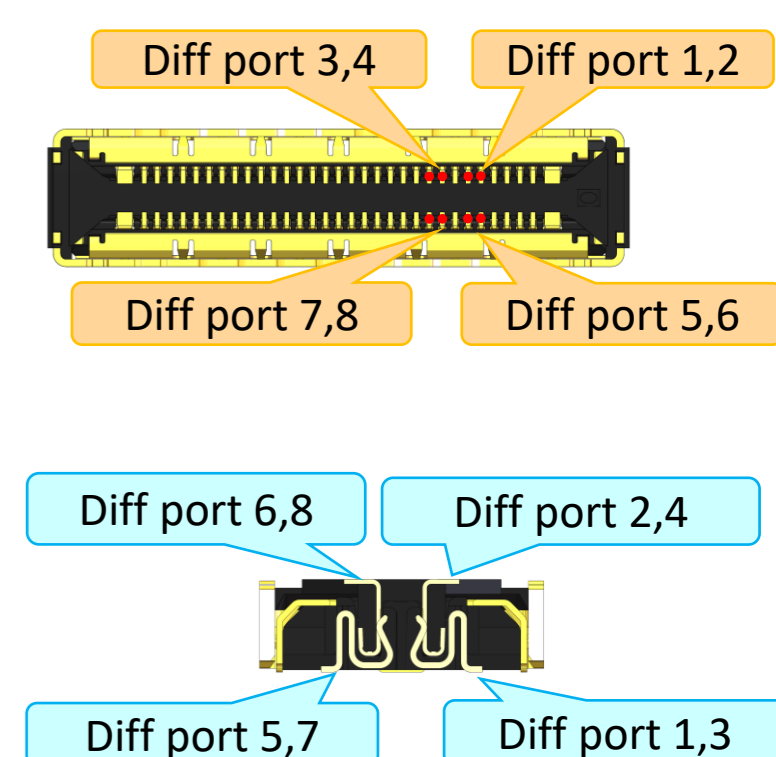
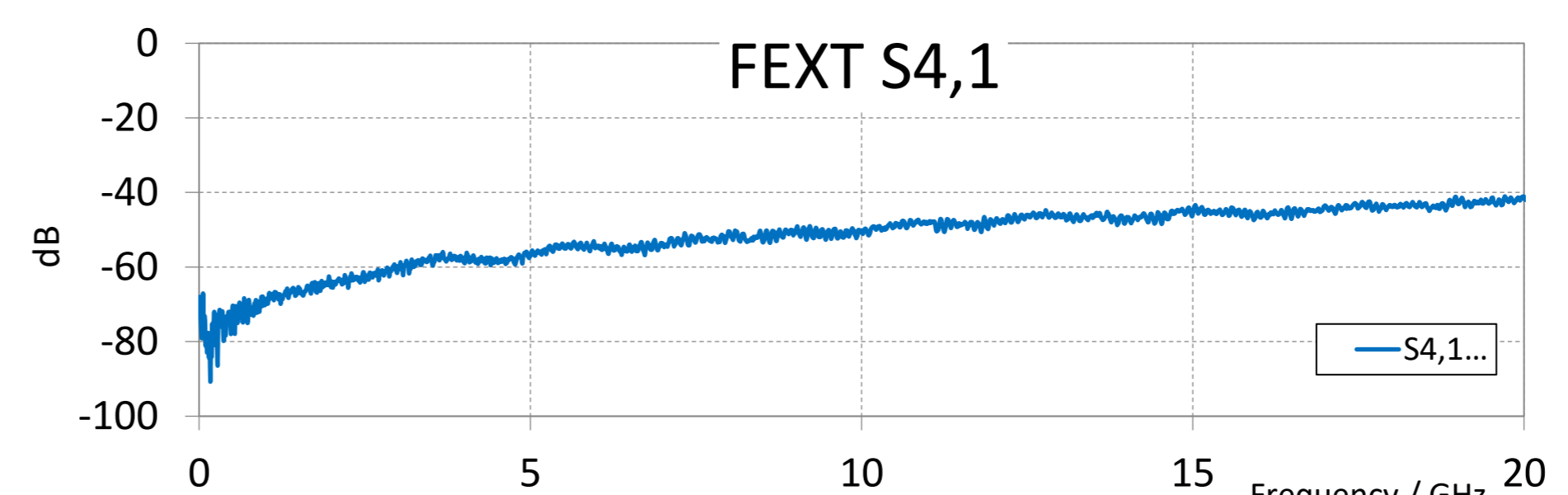
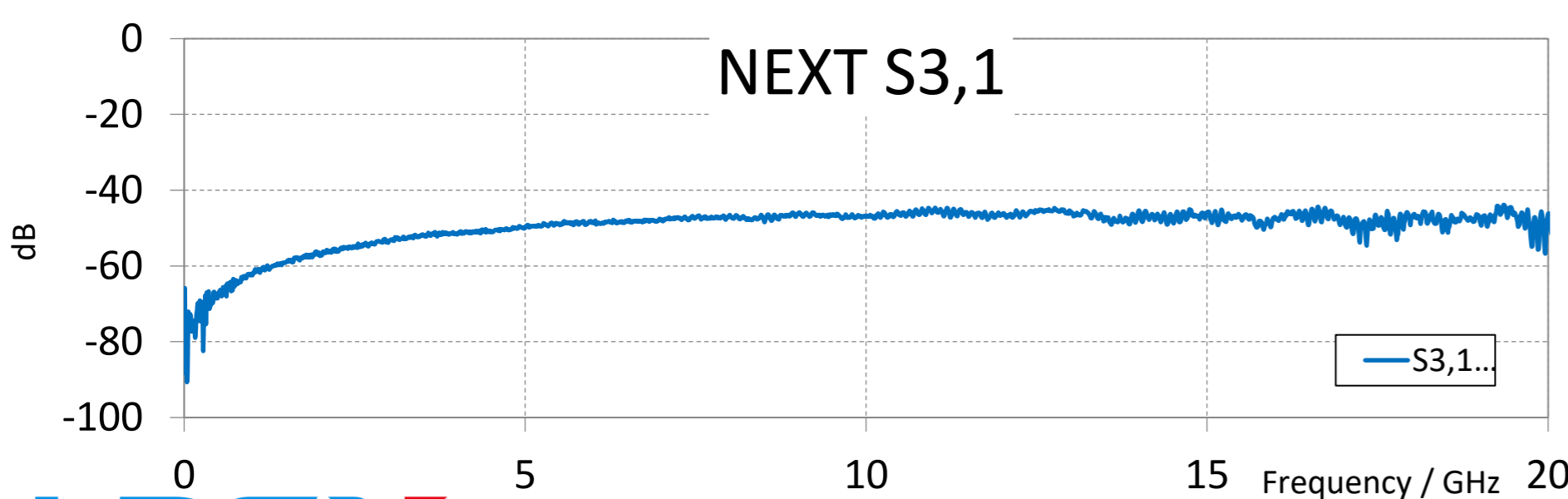
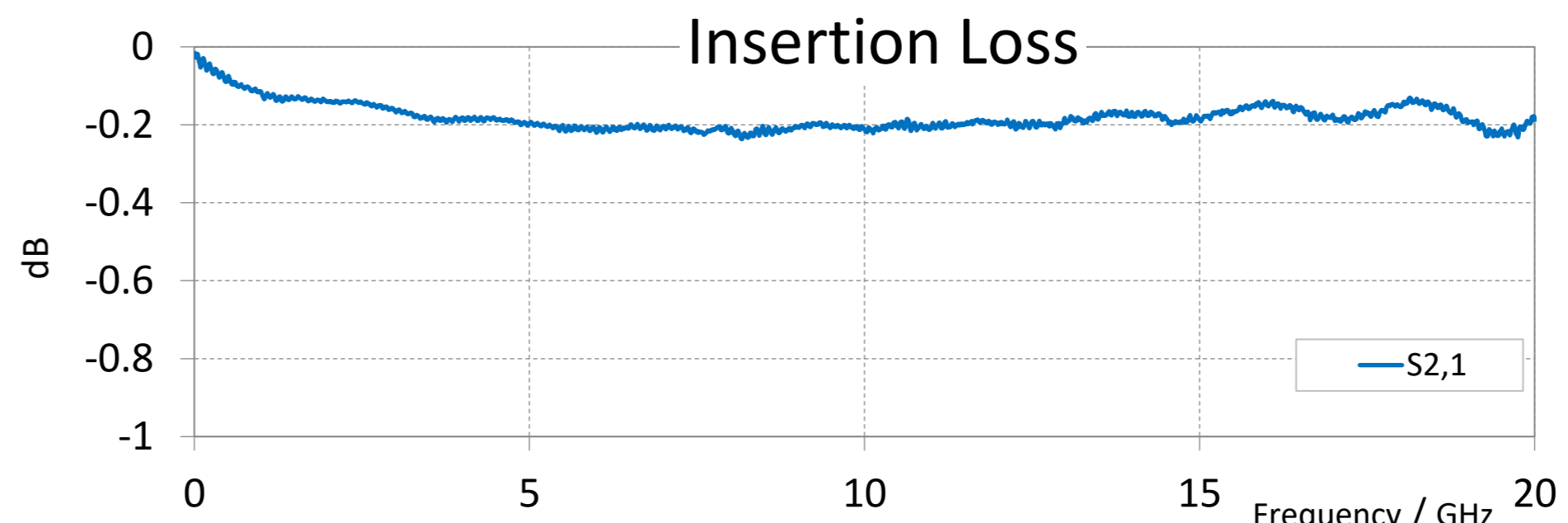
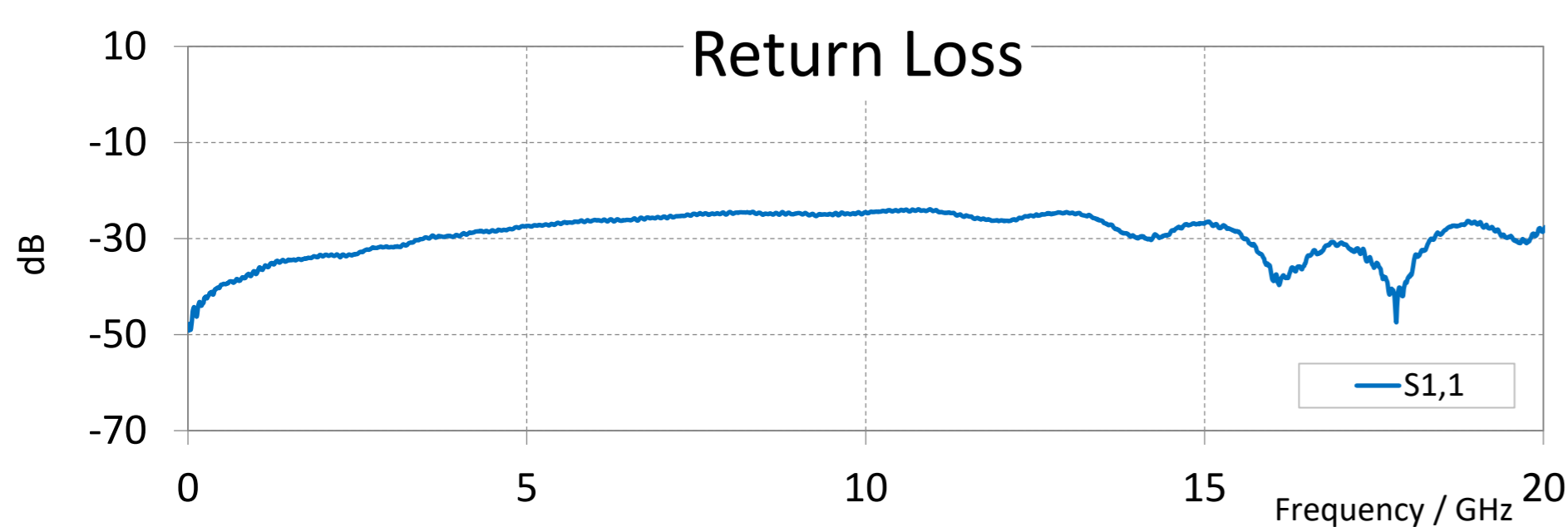
With ZenShield®, the connector can be placed near high-frequency equipment and antennas.



Comparison of connector sizes assuming 8A × 2 power transmission

\*The downsizing ratio varies depending on the number of positions.

## High-speed signal transmission performance supporting 40 Gbps per lane

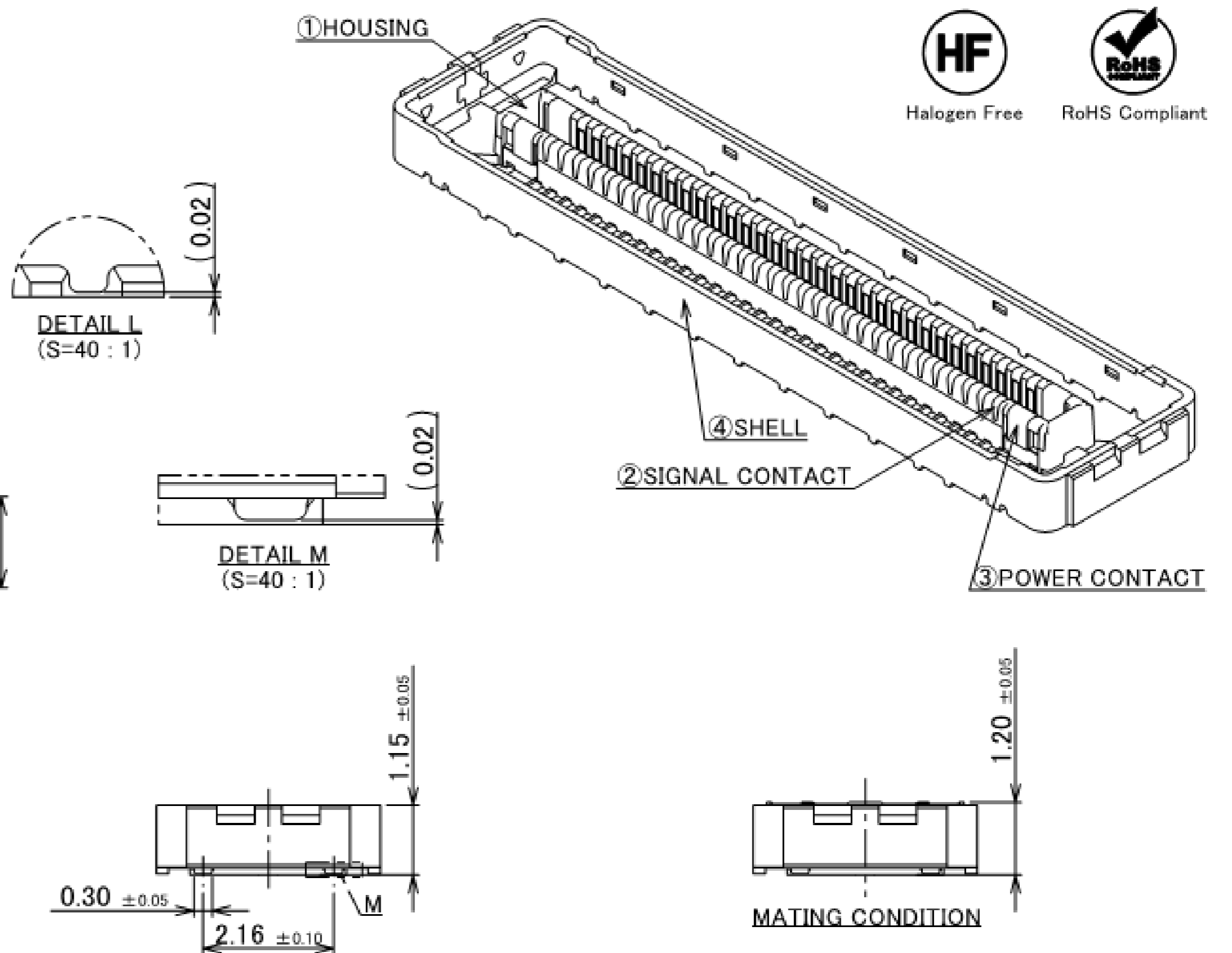
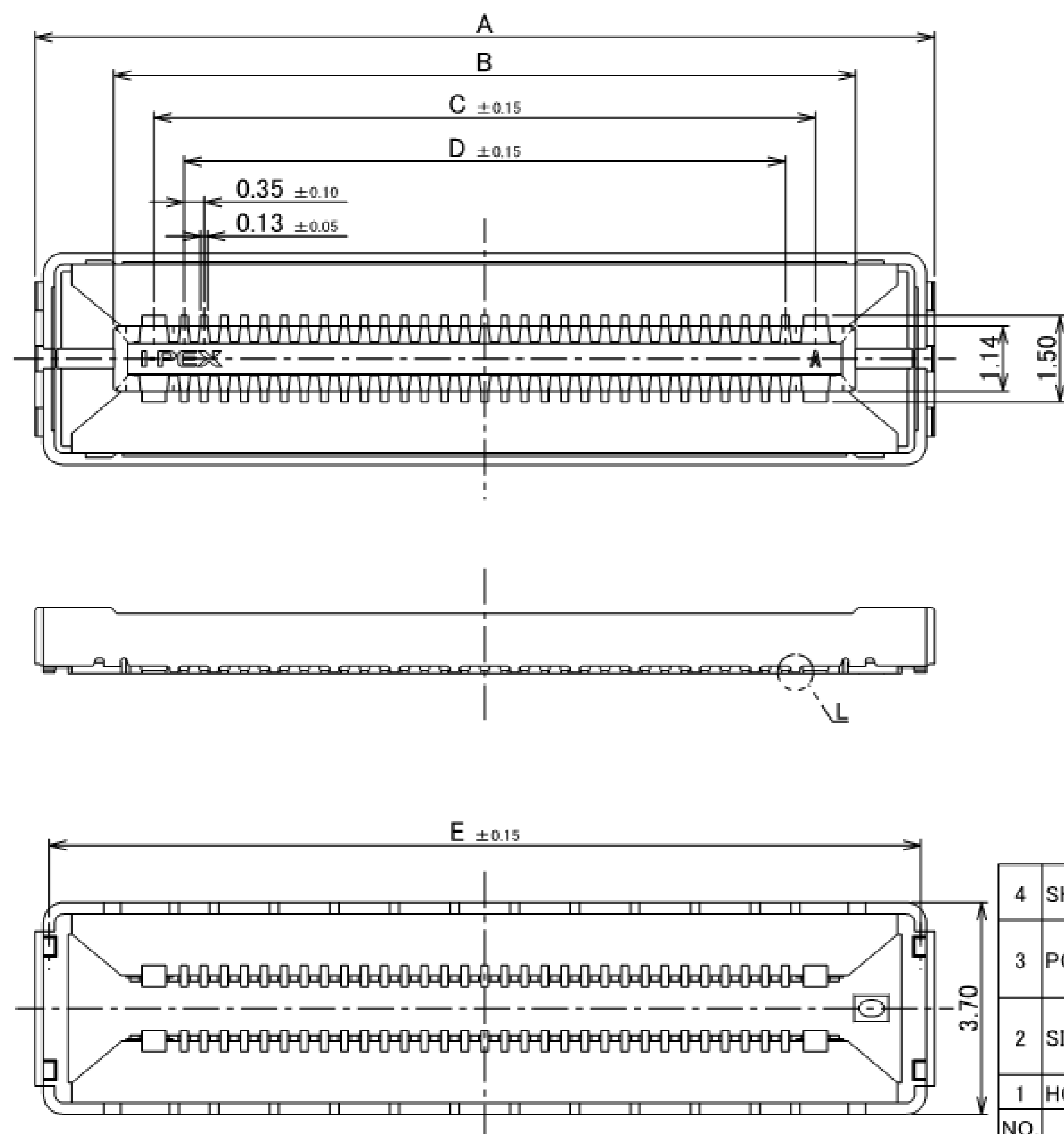


GSSGSSG  
GSSGSSG

# Component Parts Detail

## Plug Assembly

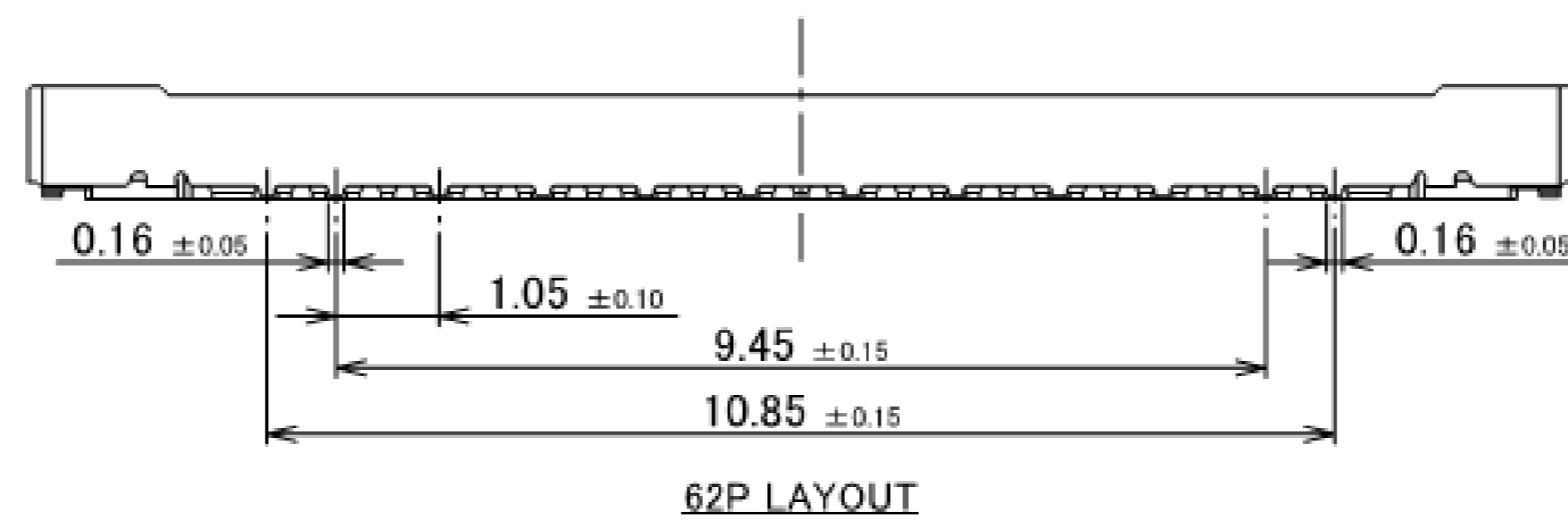
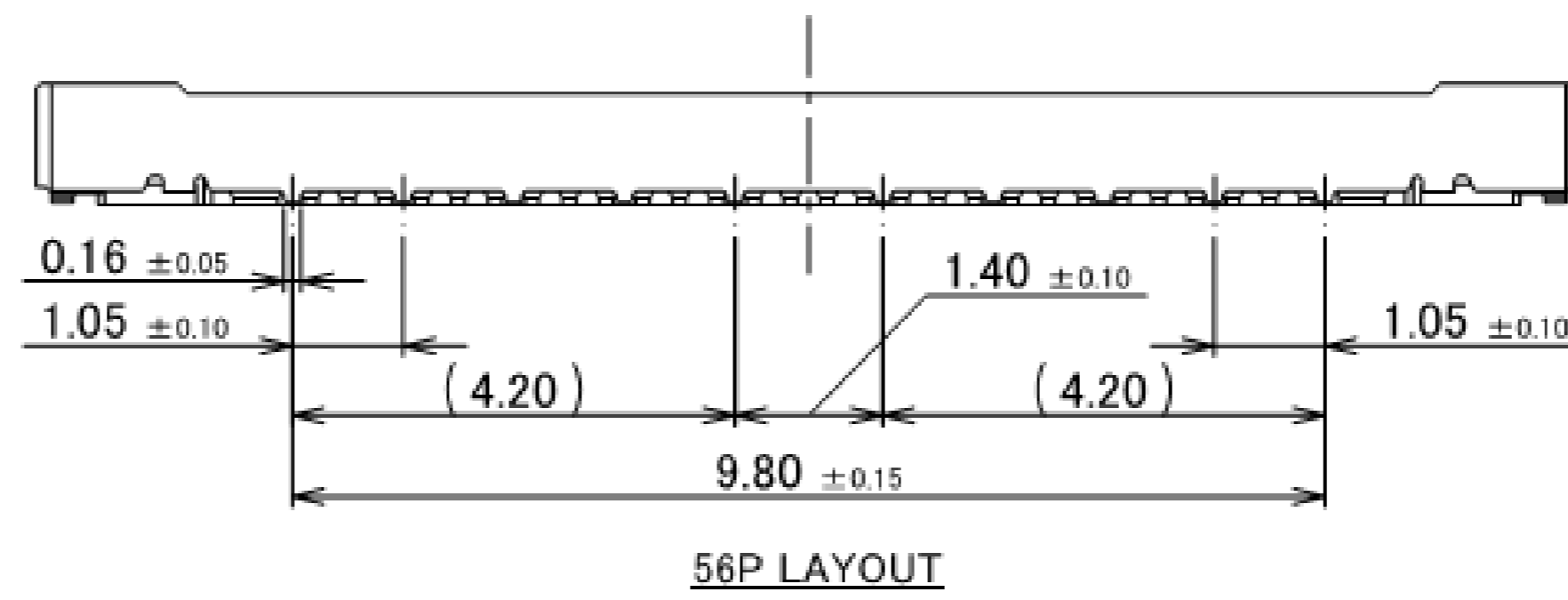
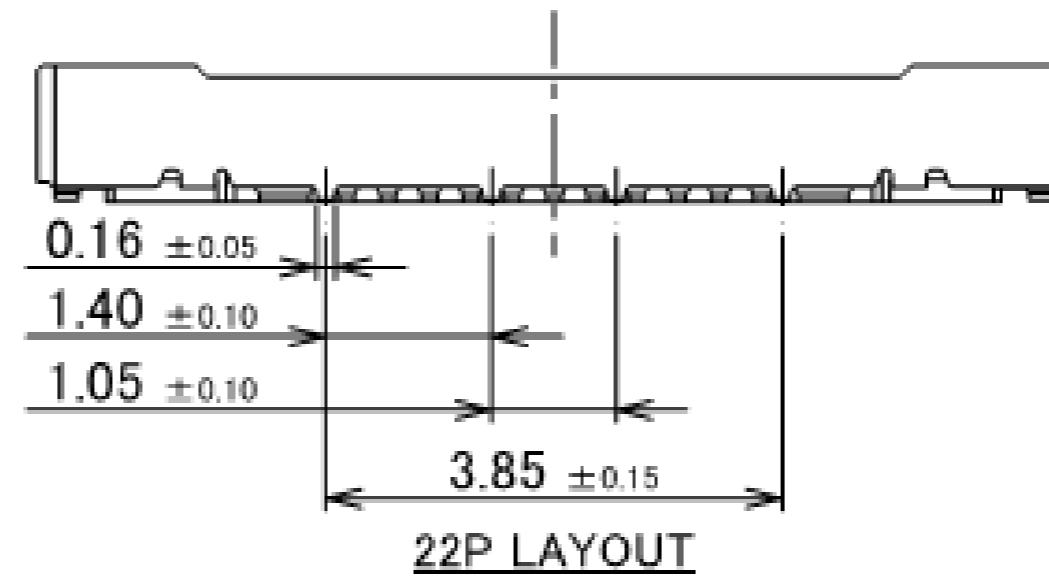
| RECOMMENDED PART No. |             | 21150-0**E-01 |       |       |       |       |       |
|----------------------|-------------|---------------|-------|-------|-------|-------|-------|
| PART No.             | SIGNAL POS. | POWER POS.    | A     | B     | C     | D     | E     |
| 21150-022E-01        | 22P         | 4P            | 8.71  | 5.96  | 4.55  | 3.50  | 8.22  |
| 21150-056E-01        | 56P         | 4P            | 14.66 | 11.91 | 10.50 | 9.45  | 14.17 |
| 21150-062E-01        | 62P         | 4P            | 15.71 | 12.96 | 11.55 | 10.50 | 15.22 |



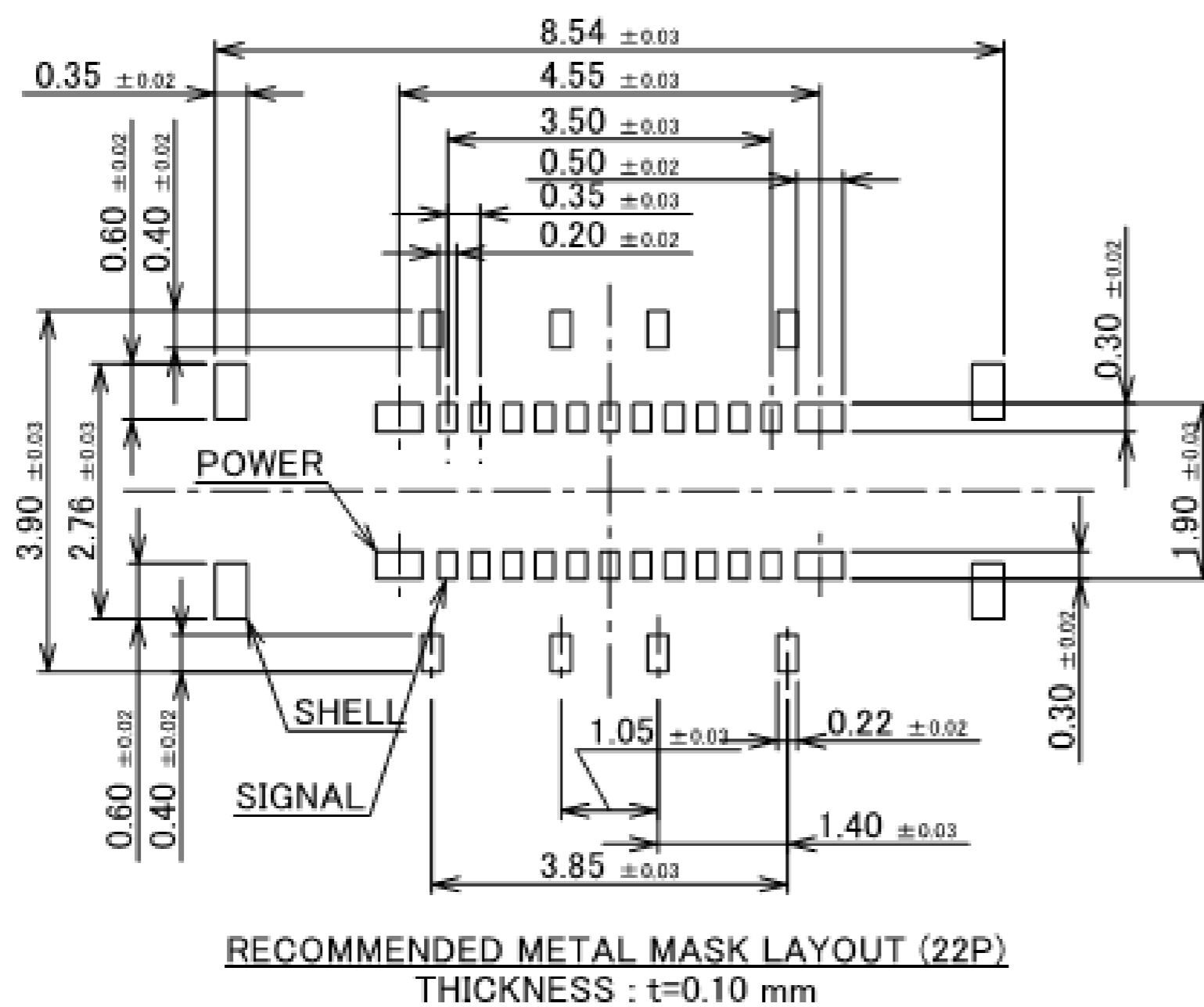
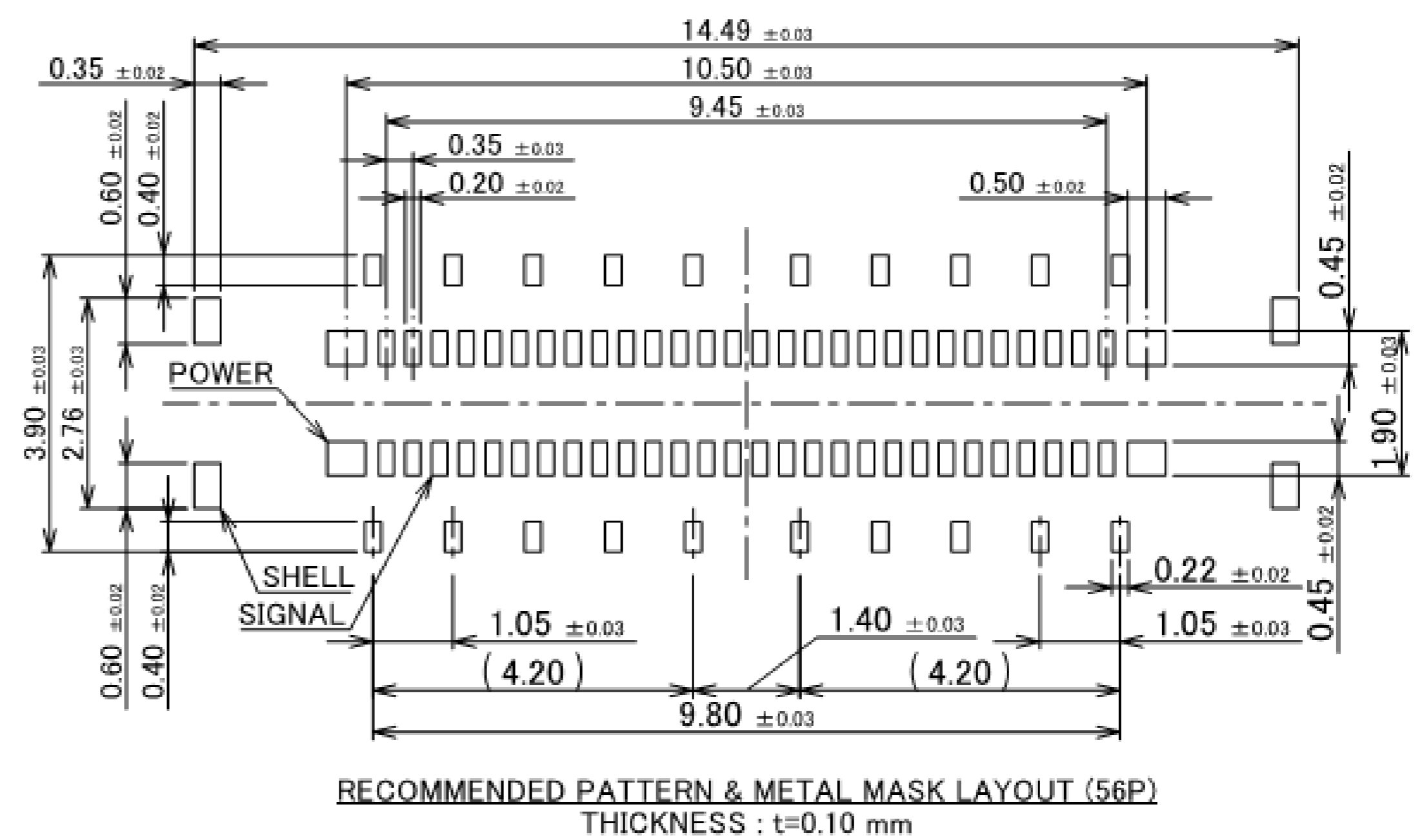
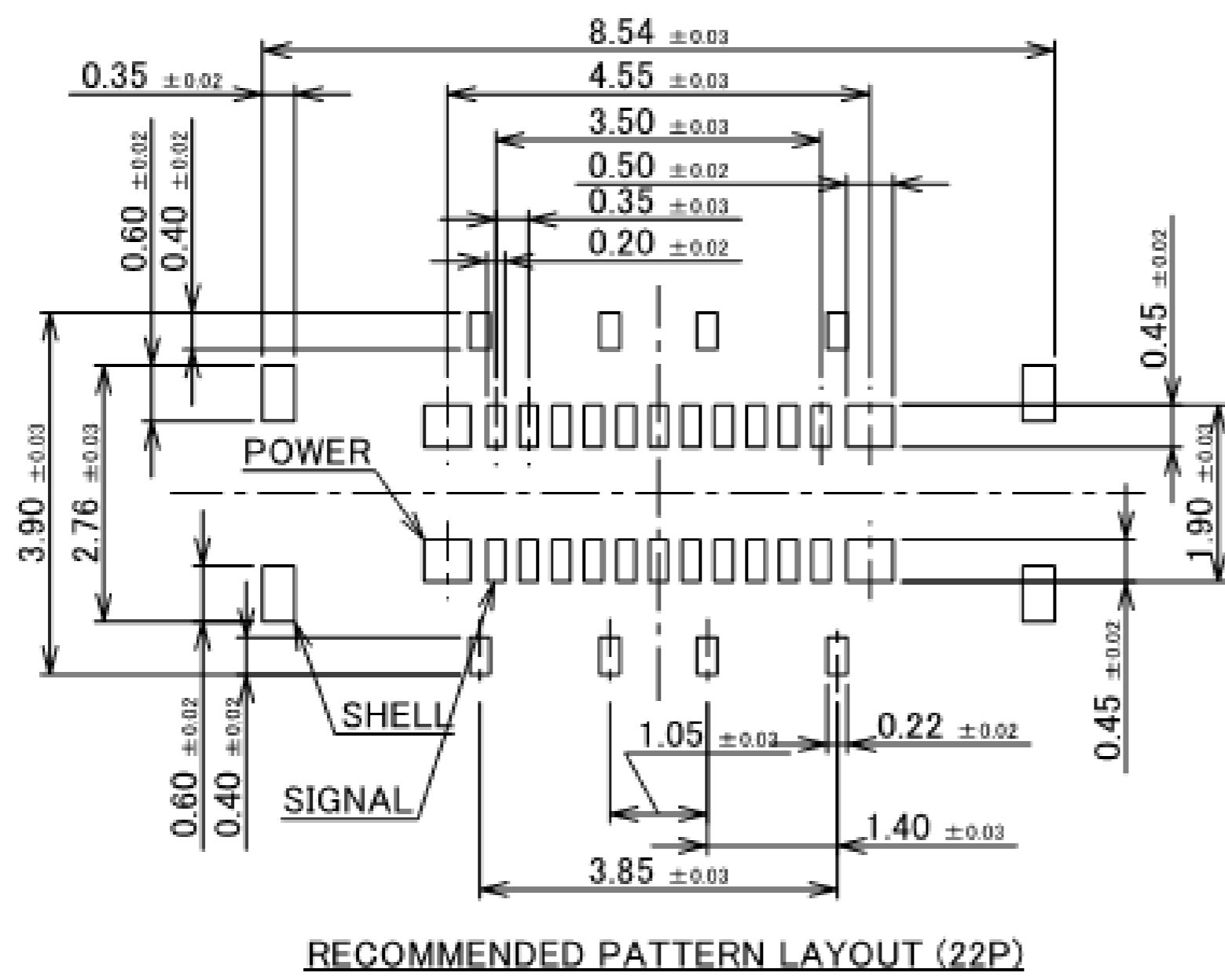
| NO. | DISCRIPTION    | MATERIAL     | FINISH , REMARKS   |
|-----|----------------|--------------|--|
| 4   | SHELL          | CORSON ALLOY | ALL OVER Ni 1.27 μm MIN.<br>Au 0.01 μm MIN. 0.025 μm MAX.                                  |
| 3   | POWER CONTACT  | CORSON ALLOY | ALL OVER Ni 1.27 μm MIN.<br>CONTACT PART Au 0.05 μm MIN.<br>SOLDERING PART Au 0.02 μm MIN. |
| 2   | SIGNAL CONTACT | CORSON ALLOY | ALL OVER Ni 1.27 μm MIN.<br>CONTACT PART Au 0.05 μm MIN.<br>SOLDERING PART Au 0.02 μm MIN. |
| 1   | HOUSING        | LCP          | UL94V-0, BLACK (PFAS FREE)   |

# Plug Assembly

| PART No.      | SIGNAL POS. | POWER POS. |
|---------------|-------------|------------|
| 21150-022E-01 | 22P         | 4P         |
| 21150-056E-01 | 56P         | 4P         |
| 21150-062E-01 | 62P         | 4P         |



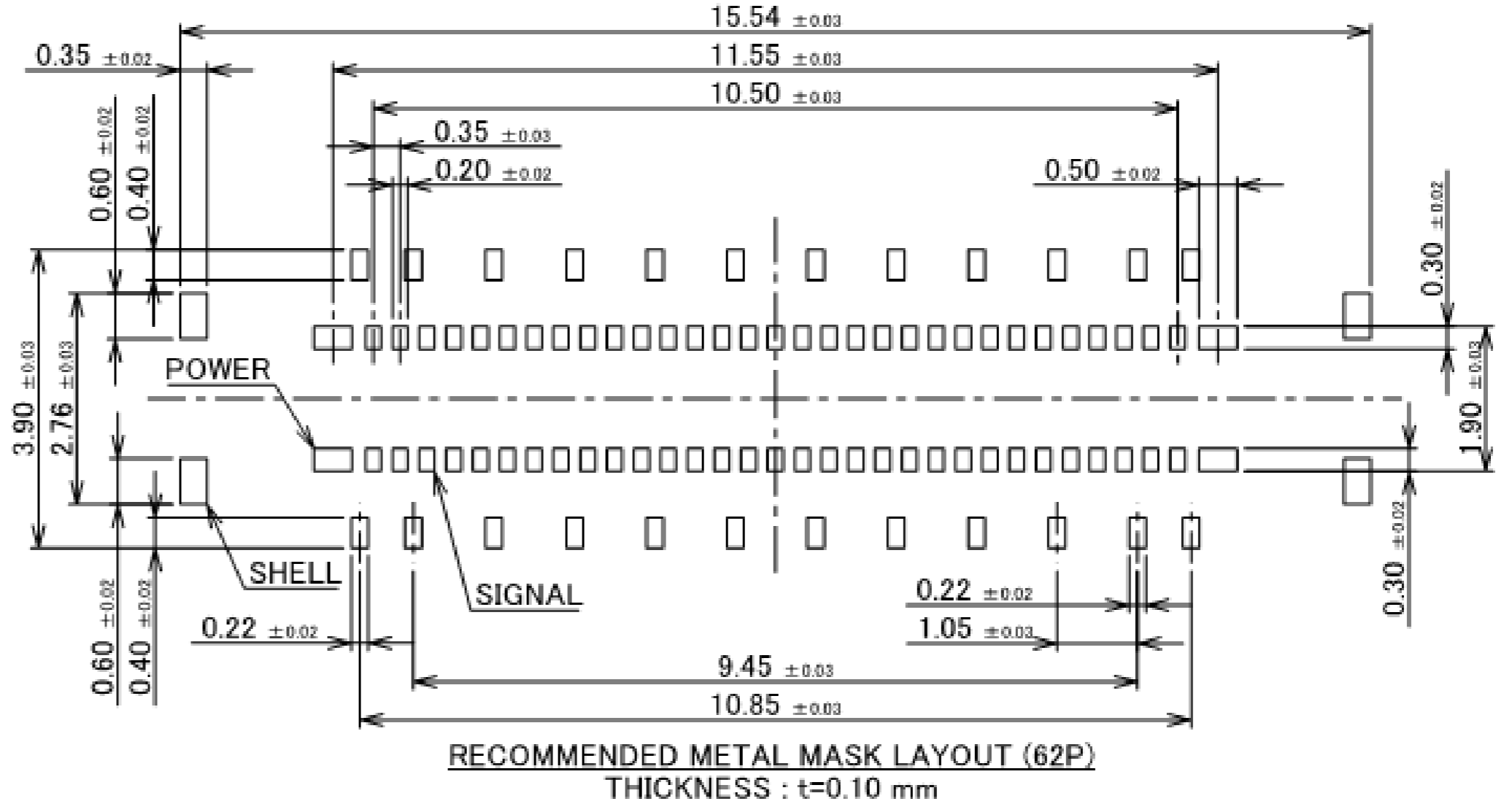
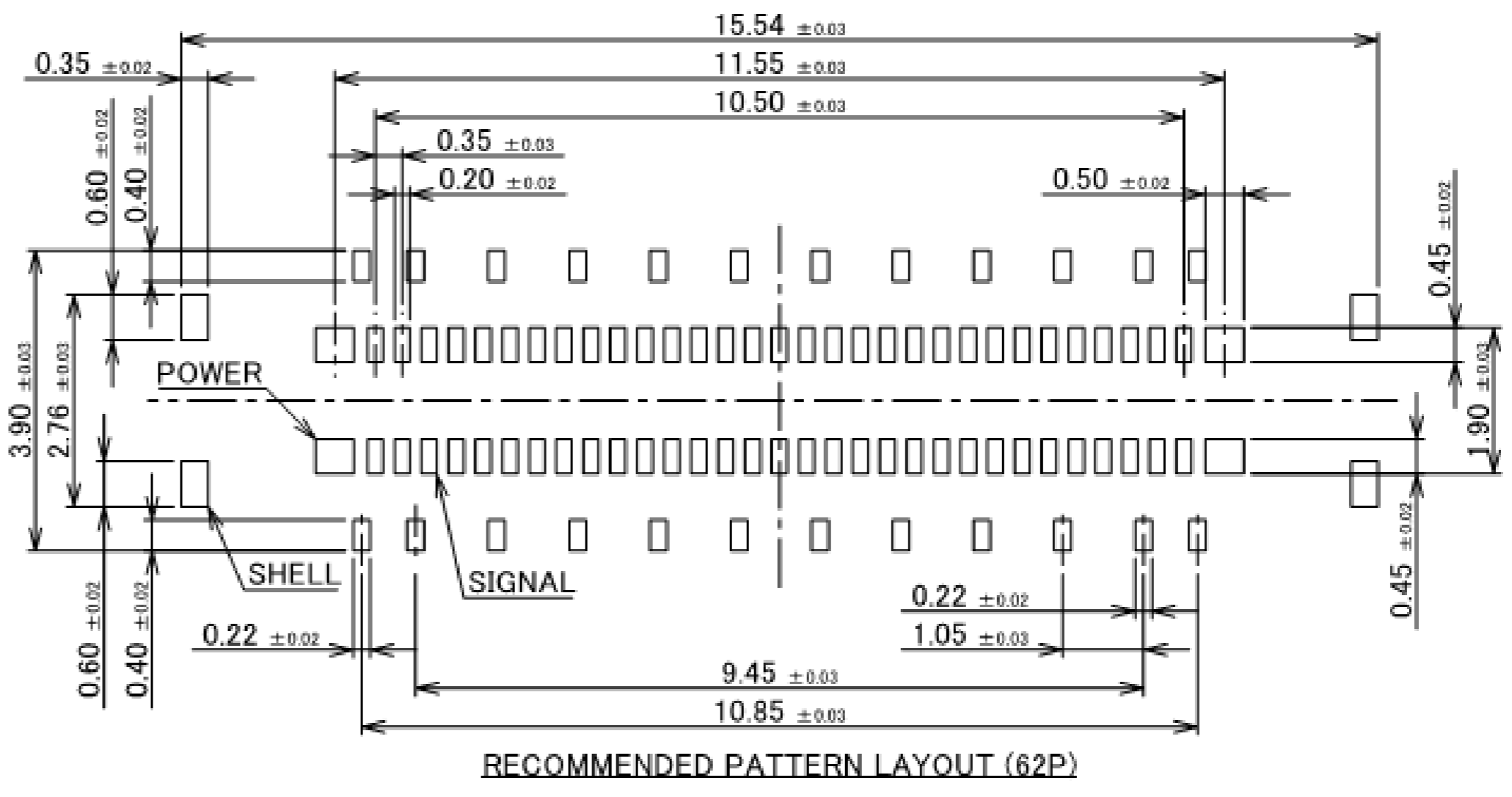
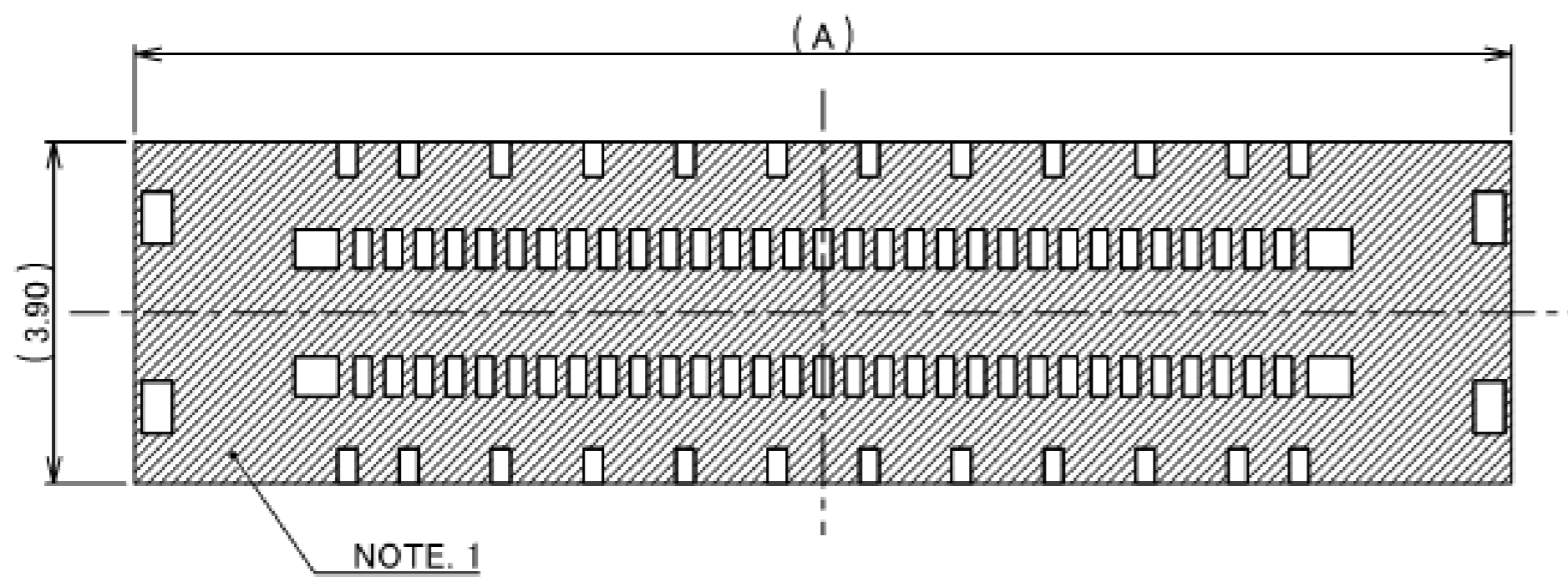
Rev.0



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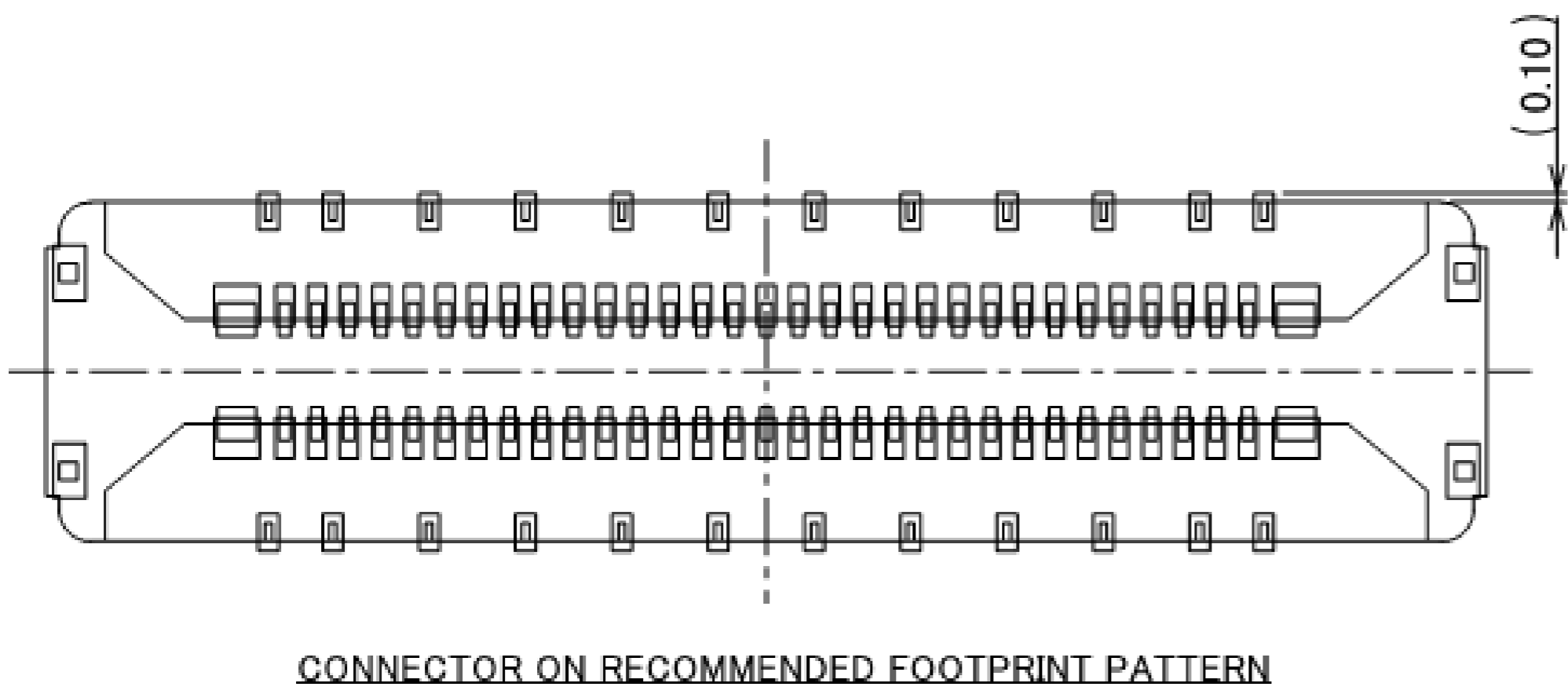
# Plug Assembly

| PART No.      | SIGNAL POS. | POWER POS. | A     |
|---------------|-------------|------------|-------|
| 21150-022E-01 | 22P         | 4P         | 8.74  |
| 21150-056E-01 | 56P         | 4P         | 14.69 |
| 21150-062E-01 | 62P         | 4P         | 15.74 |

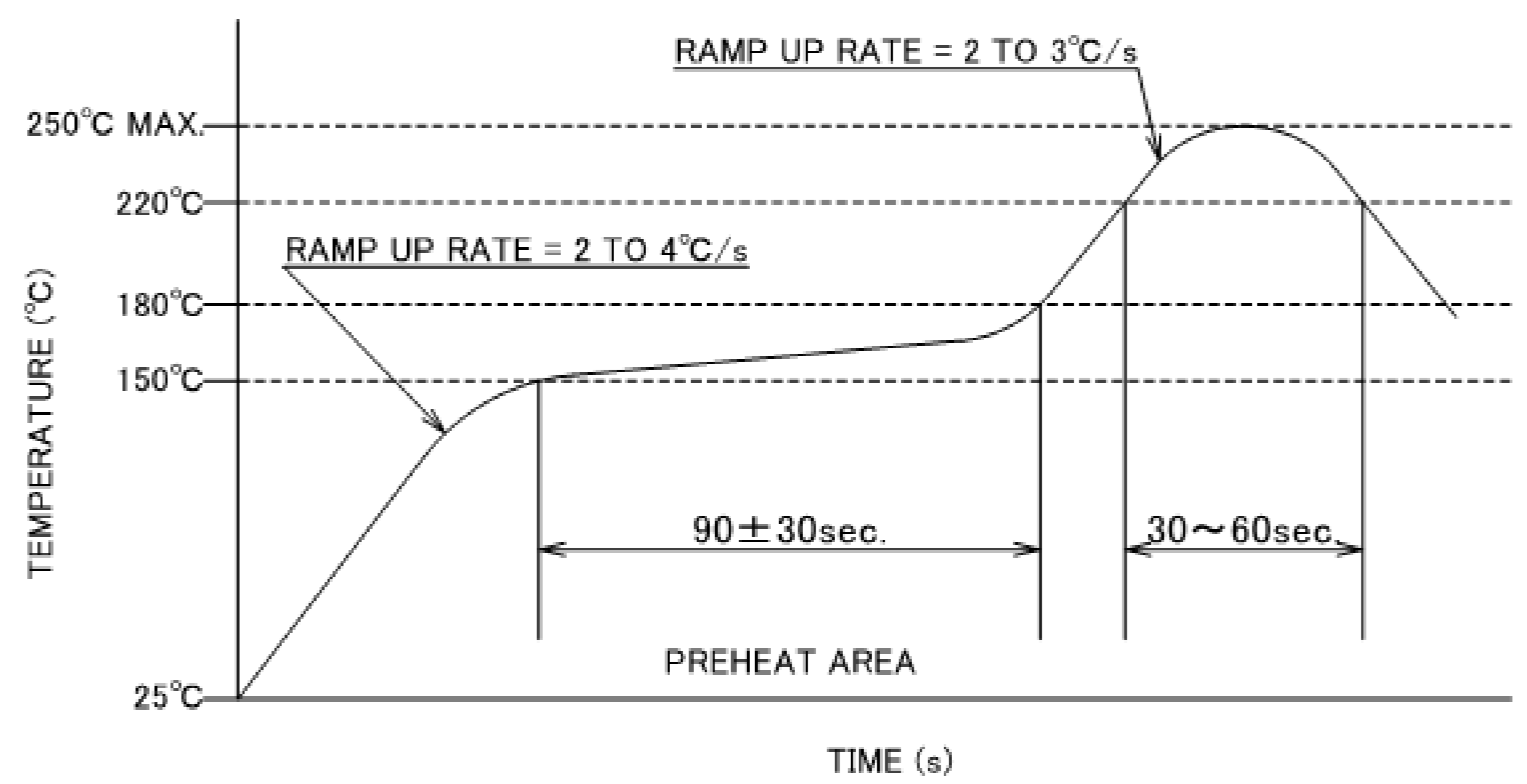


NOTES.  
1. THIS AREA CANNOT MOUNT ANOTHER COMPONENTS.

Rev.0



CONNECTOR ON RECOMMENDED FOOTPRINT PATTERN



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

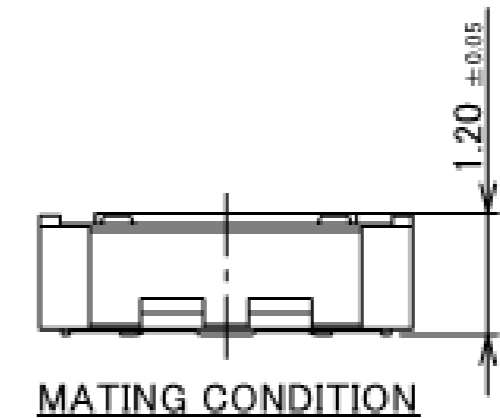
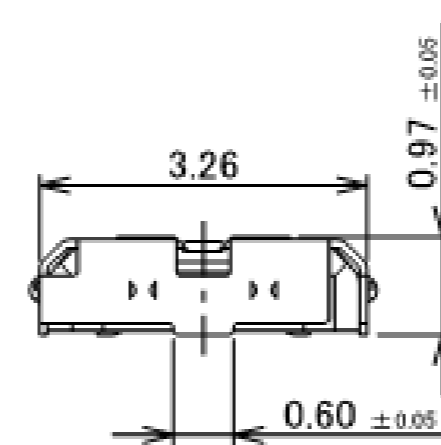
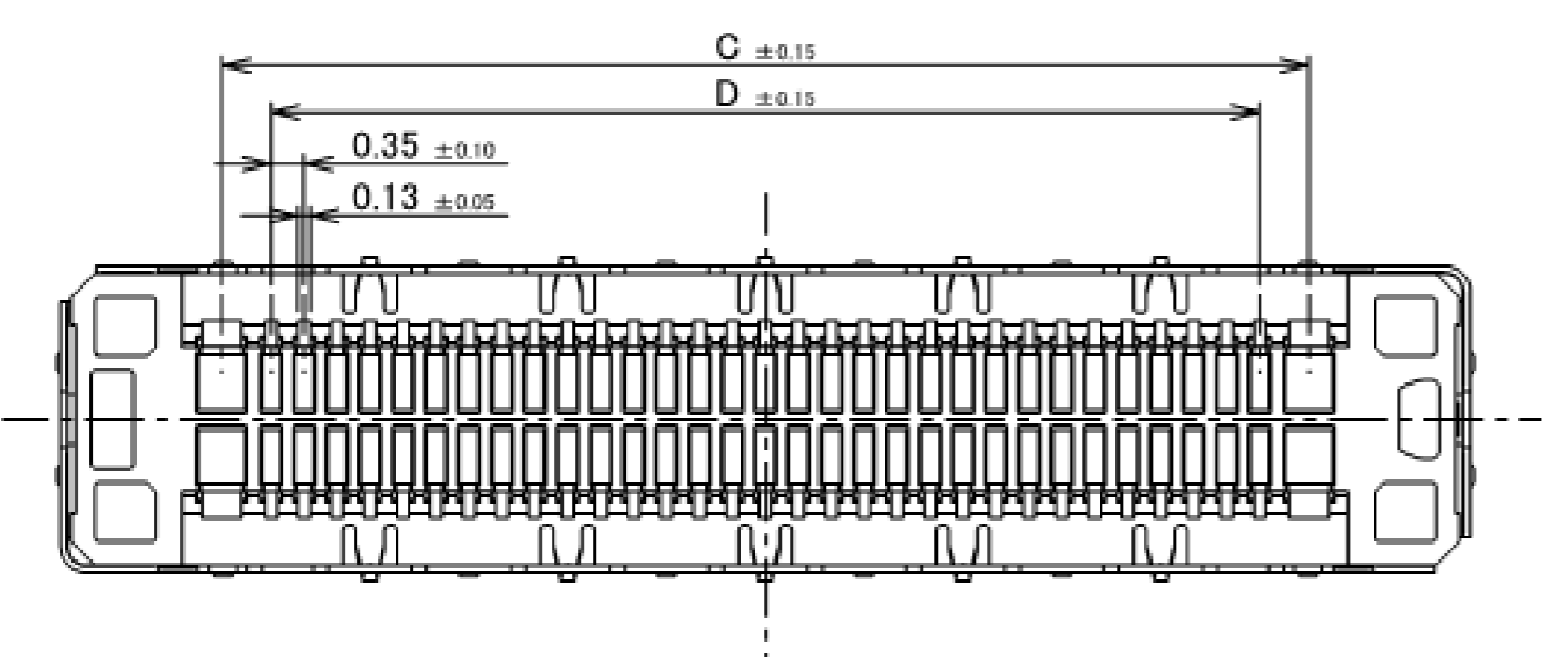
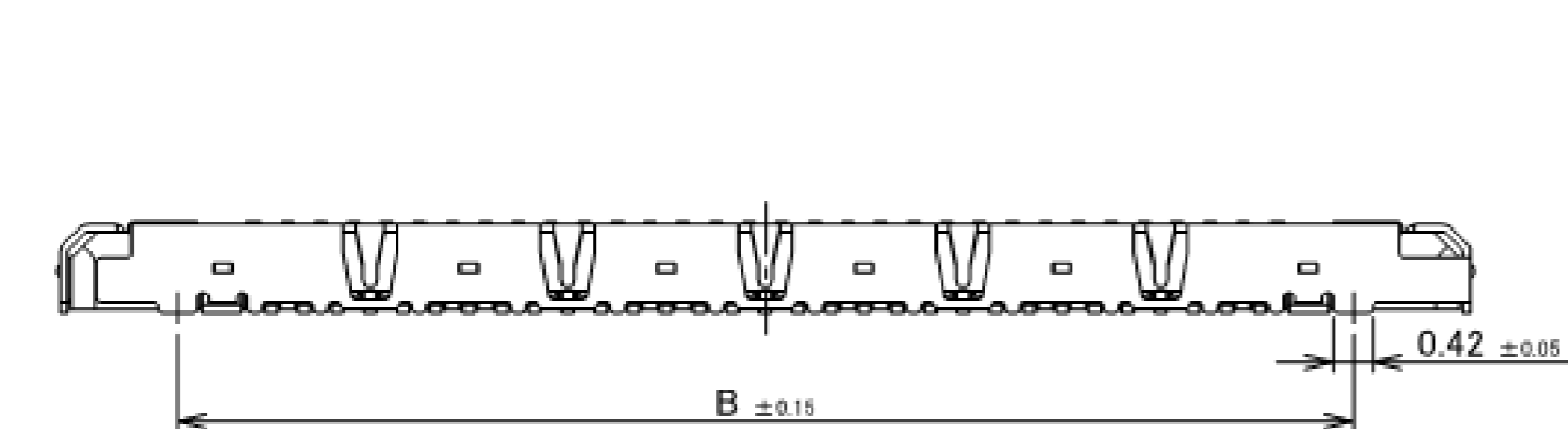
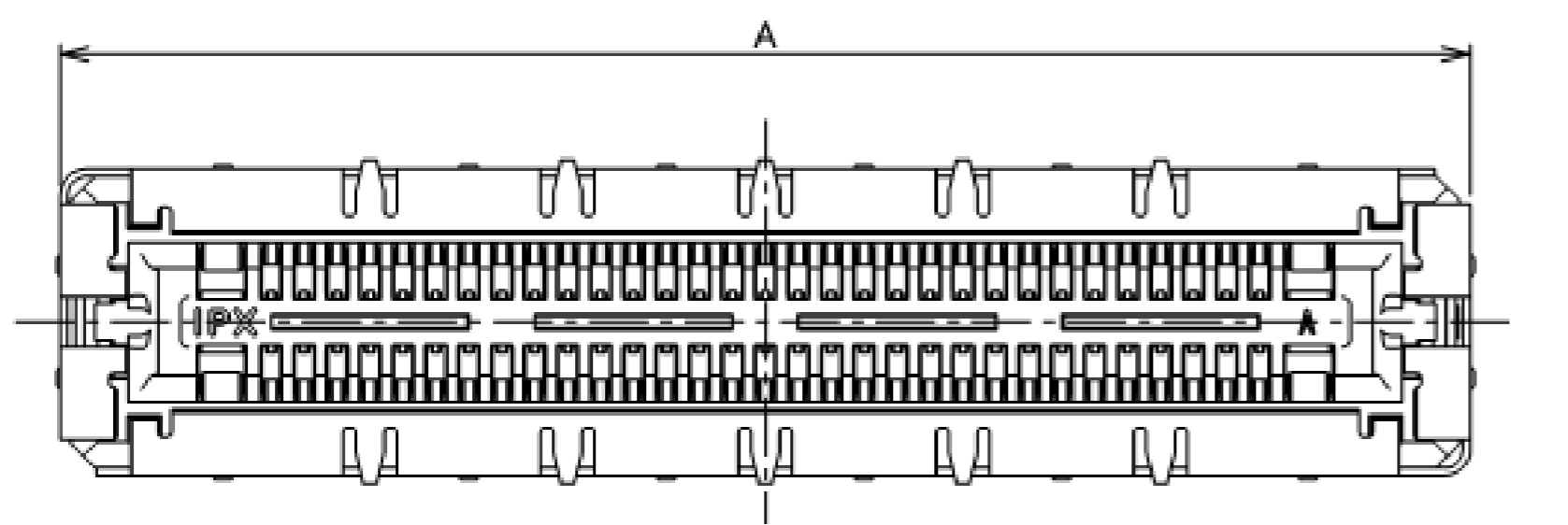
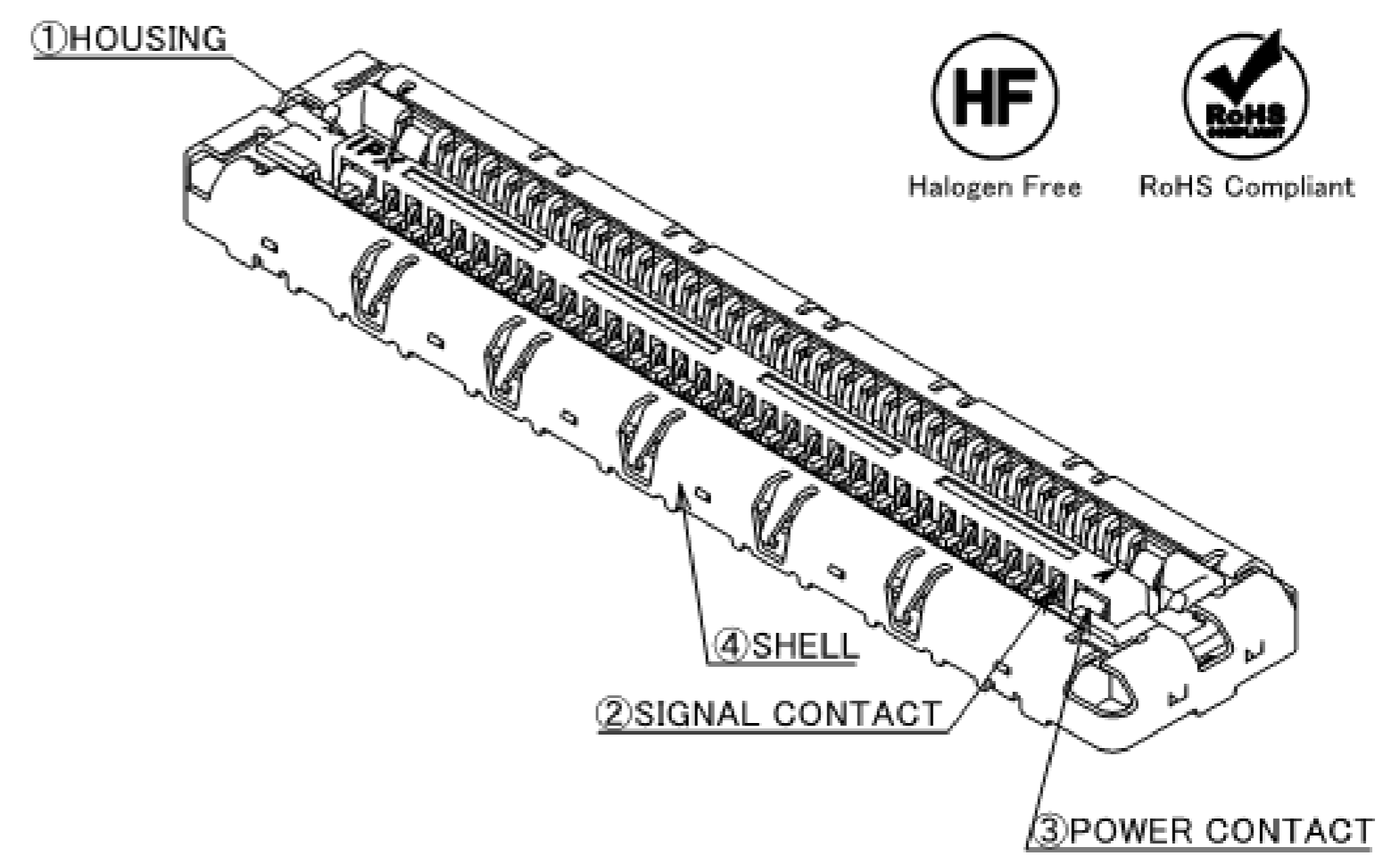
# Plug Assembly

| ITEMS                                   | SPECIFICATION   |
|---|---|
| APPLICABLE CONNECTOR PART No.           | 21151-0**E-01   |
| RATED VOLTAGE                           | 60V AC (PER CONTACT PIN)                                  |
| RATED AMPERAGE (FOR SIGNAL CONTACT)     | 0.3A AC/DC (PER CONTACT PIN)/ 12.0A AC/DC(TOTAL)          |
| RATED AMPERAGE (FOR POWER CONTACT)      | 4.5A AC/DC (PER CONTACT PIN)/ 18.0A AC/DC(TOTAL)          |
| OPERATING TEMPERATURE                   | 233 TO 358K(-40°C TO +85°C)                               |
| OPERATING HUMIDITY                      | 85% MAX.  |
| CONTACT RESISTANCE (FOR SIGNAL CONTACT) | INITIAL : 40mohm MAX. / AFTER TEST : $\Delta$ 40mohm MAX. |
| CONTACT RESISTANCE (FOR POWER CONTACT)  | INITIAL : 10mohm MAX. / AFTER TEST : $\Delta$ 10mohm MAX. |
| CONTACT RESISTANCE (FOR GROUND)         | INITIAL : 20mohm MAX. / AFTER TEST : $\Delta$ 20mohm MAX. |
| INSULATION RESISTANCE                   | INITIAL : 1,000Mohm MIN. / AFTER TEST : 500Mohm MIN.      |
| DIELECTRIC WITHSTANDING VOLTAGE         | AC250V 1min   |
| DURABILITY                              | 30 CYCLES   |
| MATING FORCE (INITIAL)                  | 22P: 32.0 N MAX.<br>56P: 60.0 N MAX.<br>62P: 70.0 N MAX.  |
| UNMATING FORCE (AFTER TEST)             | 22P: 3.2 N MIN.<br>56P: 6.0 N MIN.<br>62P: 7.0 N MIN.     |
| COPLANARITY                             | CONTACT AND POWER CONTACT: 0.08 MAX.<br>SHELL: 0.105 MAX. |
| PRODUCT SPECIFICATION                   | PRS-3005  |
| TEST REPORT                             | TR-26015  |
| PACKING STANDARD                        | PST-26017   |
| INSTRUCTION MANUAL                      | HIM-26010   |
| APPEARANCE CRITERIA No.                 | QLS-A***  |

Rev.0

# Receptacle Assembly

| RECOMMENDED PART No. |             | 21151-0**E-01 |       |       |       |       |
|----------------------|-------------|---------------|-------|-------|-------|-------|
| PART No.             | SIGNAL POS. | POWER POS.    | A     | B     | C     | D     |
| 21151-022E-01        | 22P         | 4P            | 7.98  | 5.49  | 4.55  | 3.50  |
| 21151-056E-01        | 56P         | 4P            | 13.93 | 11.44 | 10.50 | 9.45  |
| 21151-062E-01        | 62P         | 4P            | 14.98 | 12.49 | 11.55 | 10.50 |

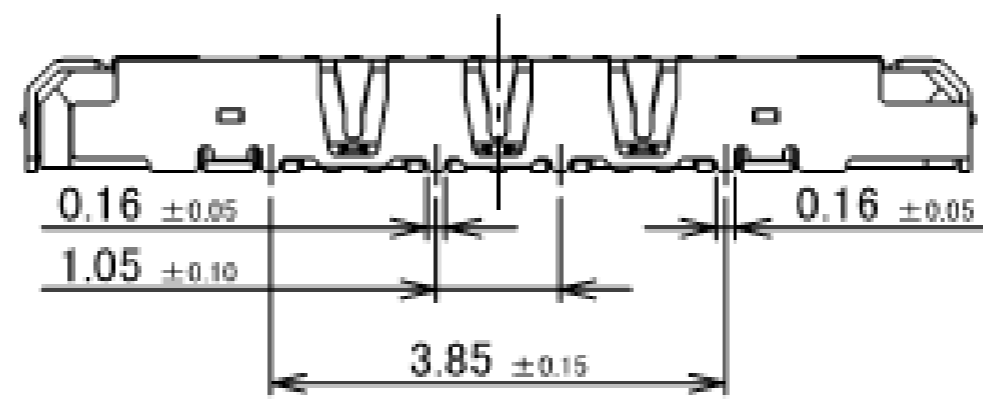


| NO. | DISCRIPTION    | MATERIAL     | FINISH , REMARKS  |
|-----|----------------|--------------|---|
| 4   | SHELL          | CORSON ALLOY | ALL OVER Ni 1.27 $\mu$ m MIN.<br>Au 0.01 $\mu$ m MIN. 0.025 $\mu$ m MAX.                                  |
| 3   | POWER CONTACT  | CORSON ALLOY | ALL OVER Ni 1.27 $\mu$ m MIN.<br>CONTACT PART Au 0.05 $\mu$ m MIN.<br>SOLDERING PART Au 0.02 $\mu$ m MIN. |
| 2   | SIGNAL CONTACT | CORSON ALLOY | ALL OVER Ni 1.27 $\mu$ m MIN.<br>CONTACT PART Au 0.05 $\mu$ m MIN.<br>SOLDERING PART Au 0.02 $\mu$ m MIN. |
| 1   | HOUSING        | LCP          | UL94V-0, BLACK (PFAS FREE)  |

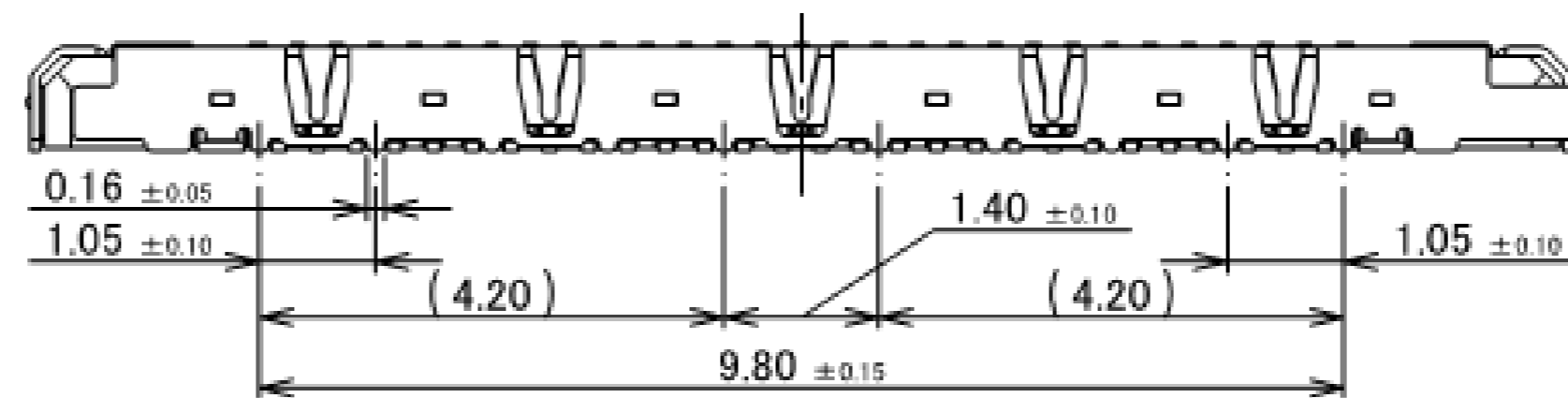
Rev.0

# Receptacle Assembly

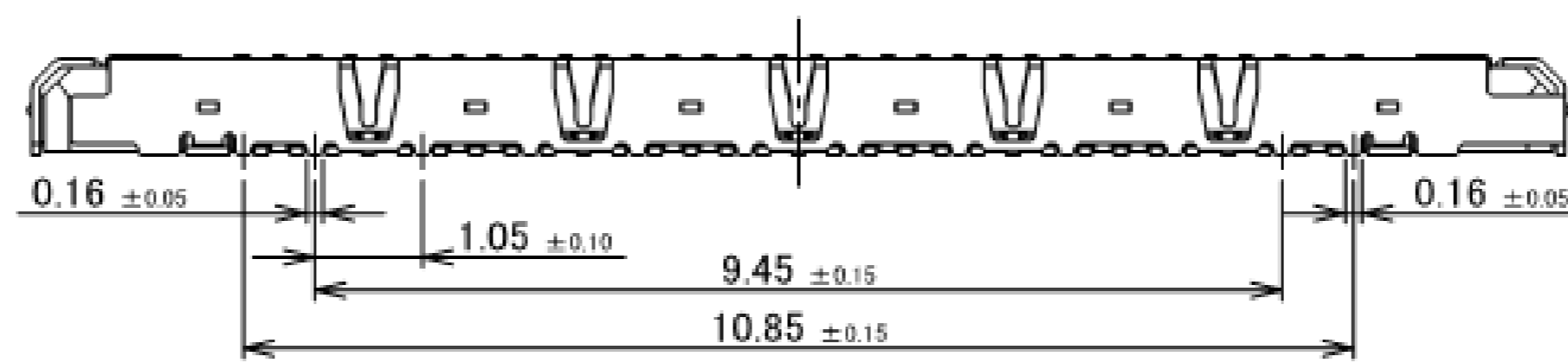
| PART No.      | SIGNAL POS. | POWER POS. |
|---------------|-------------|------------|
| 21151-022E-01 | 22P         | 4P         |
| 21151-056E-01 | 56P         | 4P         |
| 21151-062E-01 | 62P         | 4P         |



22P LAYOUT

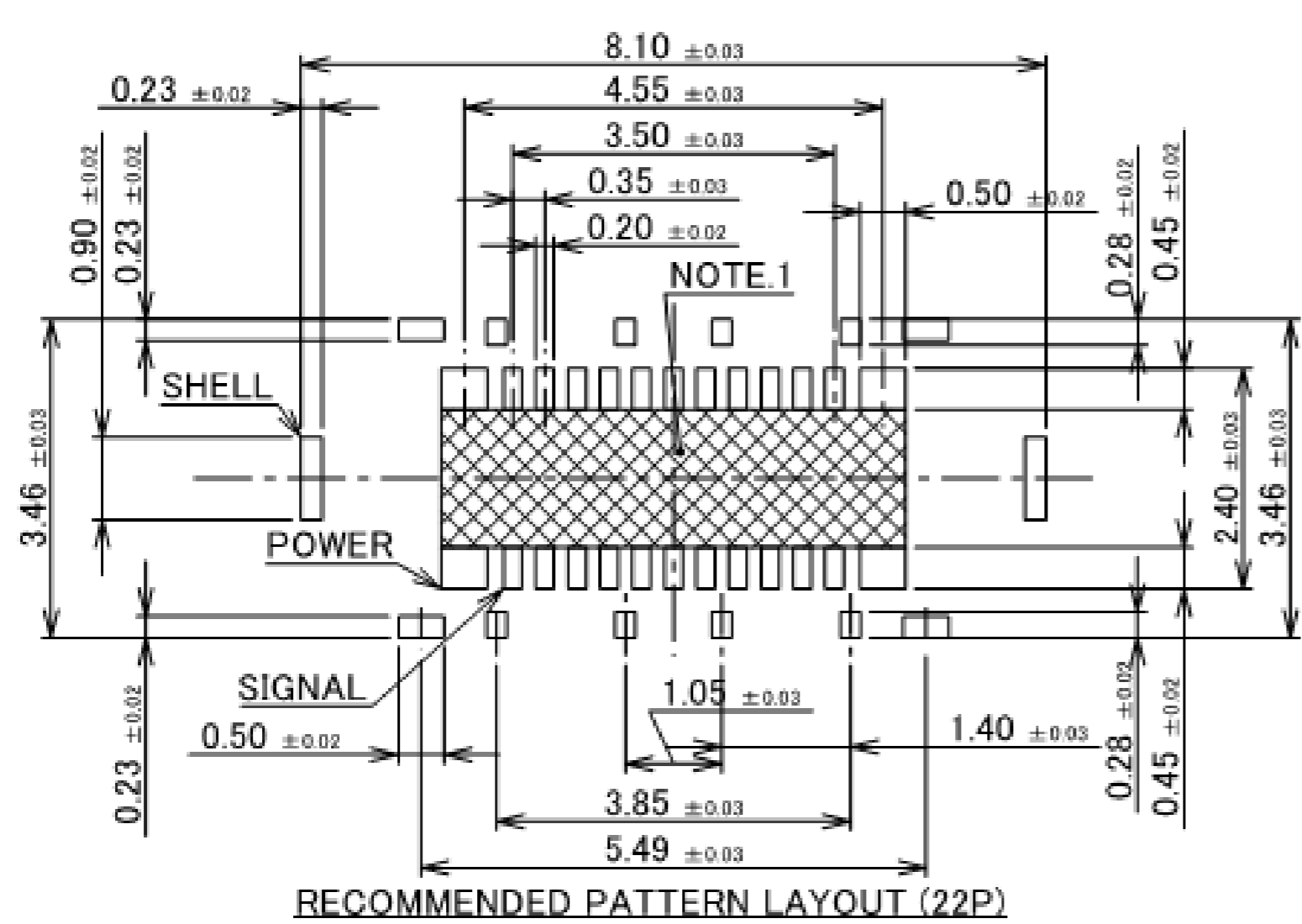


56P LAYOUT

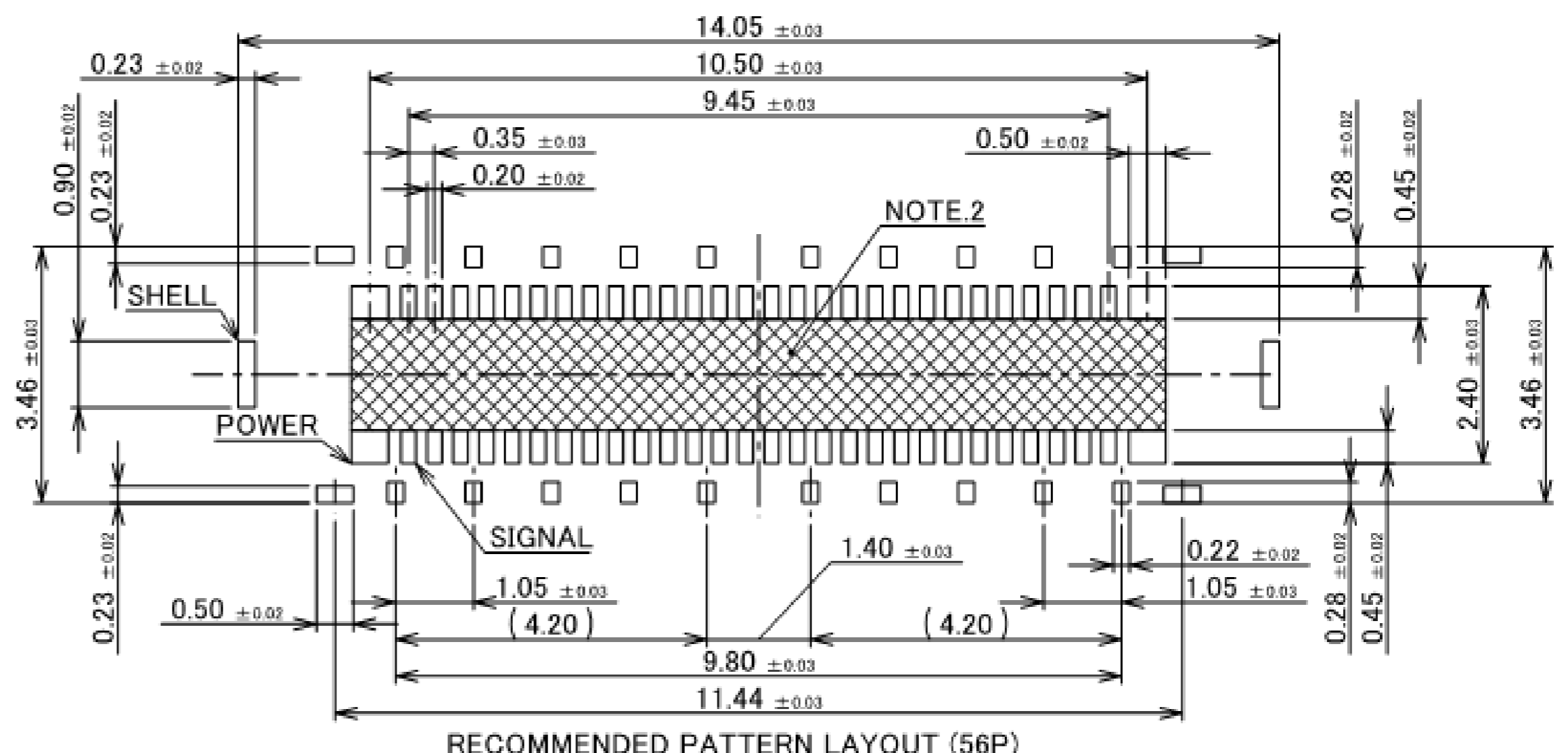


62P LAYOUT

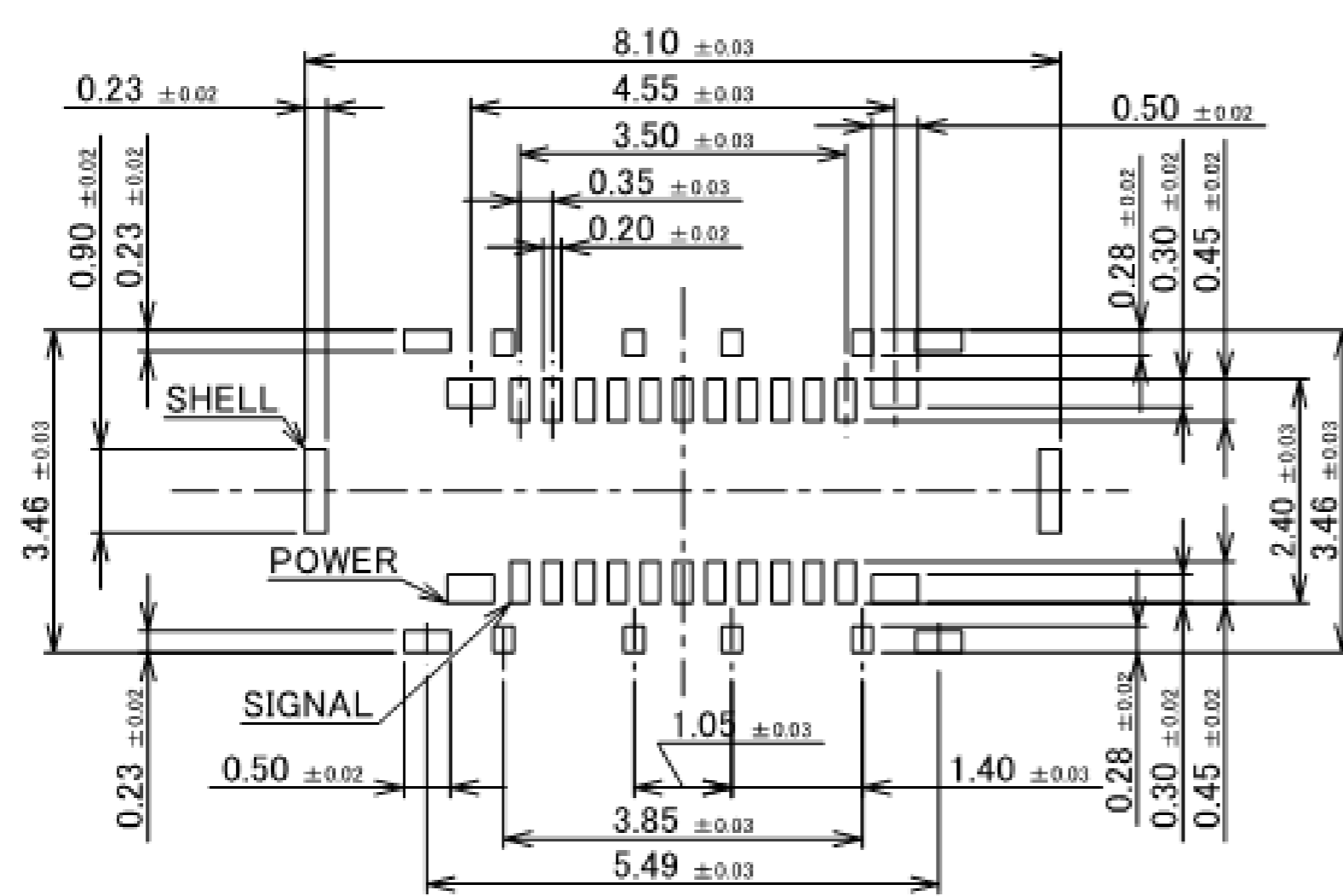
Rev.0



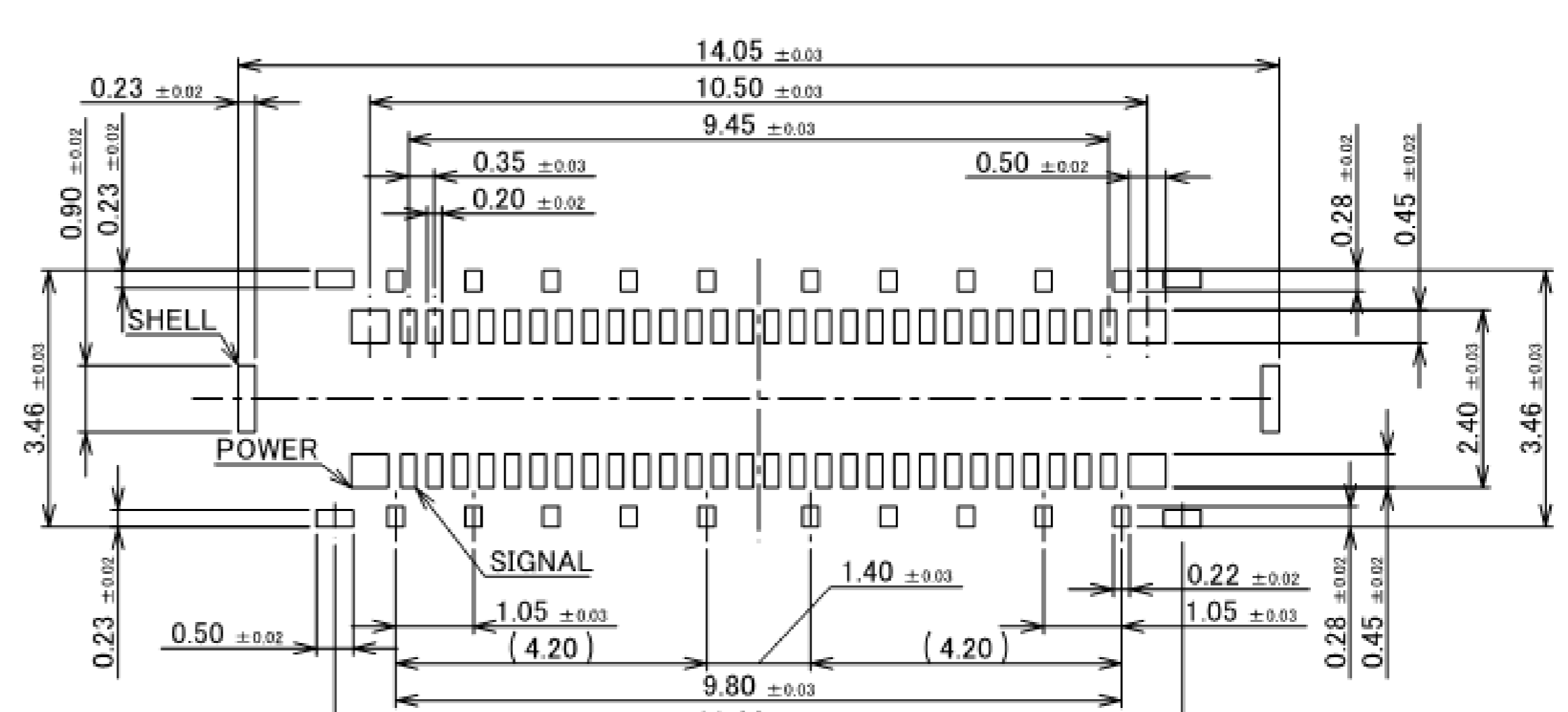
RECOMMENDED PATTERN LAYOUT (22P)



RECOMMENDED PATTERN LAYOUT (56P)



RECOMMENDED METAL MASK LAYOUT (22P)  
THICKNESS : t=0.10mm



RECOMMENDED METAL MASK LAYOUT (56P)  
THICKNESS : t=0.10mm

NOTES.

- SOLDER RESIST SHALL BE COATED IN CASE OF RUNNING TRACES ON THIS FOOT PRINT PATTERN PROHIBITION AREA.

Rev.0



## Receptacle Assembly

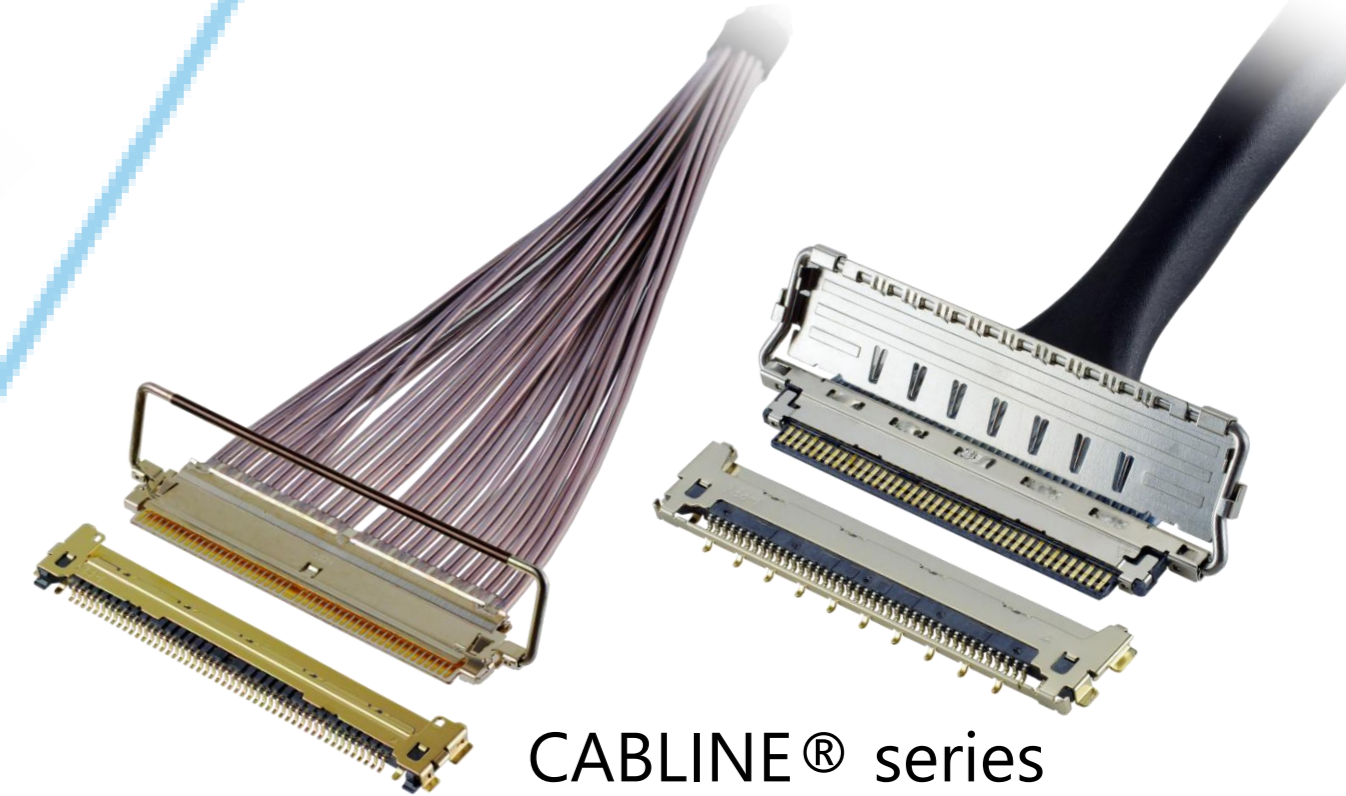
| ITEMS                                   | SPECIFICATION  |
|---|--|
| APPLICABLE CONNECTOR PART No.           | 21150-0**E-01  |
| RATED VOLTAGE                           | 60V AC (PER CONTACT PIN)                                     |
| RATED AMPERAGE (FOR SIGNAL CONTACT)     | 0.3A AC/DC (PER CONTACT PIN)/ 12.0A AC/DC(TOTAL)             |
| RATED AMPERAGE (FOR POWER CONTACT)      | 4.5A AC/DC (PER CONTACT PIN)/ 18.0A AC/DC(TOTAL)             |
| OPERATING TEMPERATURE                   | 233 TO 358K(-40°C TO +85°C)                                  |
| OPERATING HUMIDITY                      | 85% MAX.(NON-CONDENSING)                                     |
| CONTACT RESISTANCE (FOR SIGNAL CONTACT) | INITIAL : 40mohm MAX. / AFTER TEST : $\triangle$ 40mohm MAX. |
| CONTACT RESISTANCE (FOR POWER CONTACT)  | INITIAL : 10mohm MAX. / AFTER TEST : $\triangle$ 10mohm MAX. |
| CONTACT RESISTANCE (FOR GROUND)         | INITIAL : 20mohm MAX. / AFTER TEST : $\triangle$ 20mohm MAX. |
| INSULATION RESISTANCE                   | INITIAL : 1,000Mohm MIN. / AFTER TEST : 500Mohm MIN.         |
| DIELECTRIC WITHSTANDING VOLTAGE         | AC250V 1min  |
| DURABILITY                              | 30 CYCLES  |
| MATING FORCE (INITIAL)                  | 22P: 32.0 N MAX.<br>56P: 60.0 N MAX.<br>62P: 70.0 N MAX.     |
| UNMATING FORCE (AFTER TEST)             | 22P: 3.2 N MIN.<br>56P: 6.0 N MIN.<br>62P: 7.0 N MIN.        |
| COPLANARITY                             | 0.08 MAX.  |
| PRODUCT SPECIFICATION                   | PRS-3005   |
| TEST REPORT                             | TR-26015   |
| PACKING STANDARD                        | PST-26018  |
| INSTRUCTION MANUAL                      | HIM-26010  |
| APPEARANCE CRITERIA No.                 | QLS-A***   |

Rev.0

# Custom Connectors Available

## RF Connectors

MHF® series



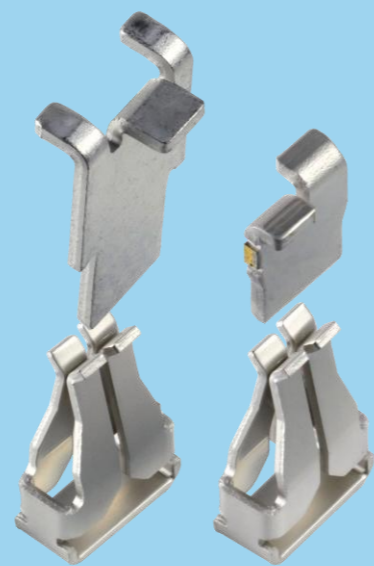
CABLINA® series

## Micro-Coaxial/Twinaxial Connectors

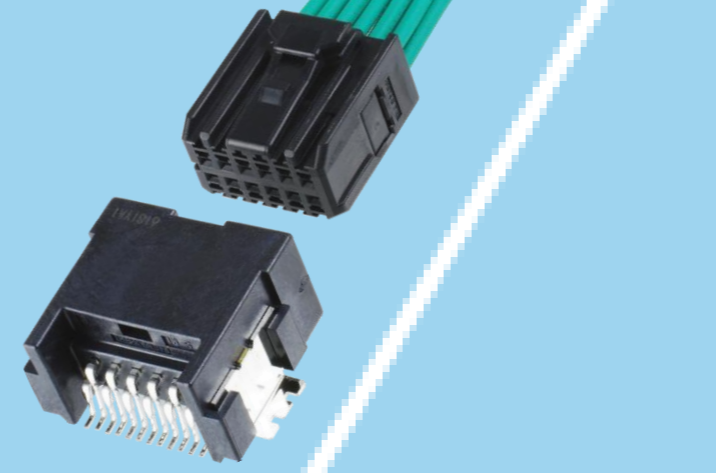


## Wire-to-Board Connectors/Terminals

AP series



ISH® series



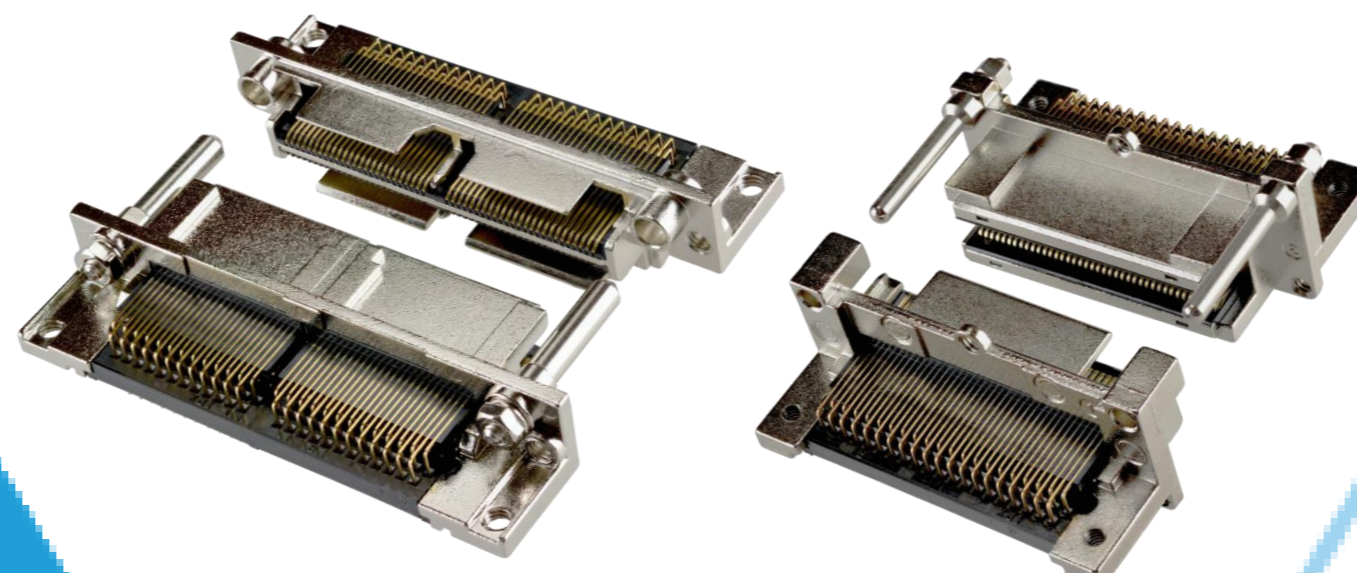
NOVASTACK® series



## 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)



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