

# CABLINE® V

Narrow depth & width with friction lock, USB 3.1 (5 Gbps/lane), Durable to contamination, 0.4 mm pitch, Horizontal mating type micro-coaxial connector



**Product Specifications:**

|                    |           |                            |
|--------------------|-----------|----------------------------|
| Mating type        |           | Horizontal                 |
| Board Pitch (mm)   |           | 0.4                        |
| Wiping Length (mm) |           | 0.71                       |
| Mated size (mm)    | Height    | 1.15 Max                   |
|                    | Width     | Formula: 4.8 + (0.4*?p)    |
|                    | Depth     | 5.65                       |
| Pin Counts         | Range     | Up to 40                   |
|                    | Available | 10, 15, 20, 25, 30, 35, 40 |

**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                    |
| Discrete (AWG)                 | #36 or smaller         |

**Applicable Standards (Reference Only):**

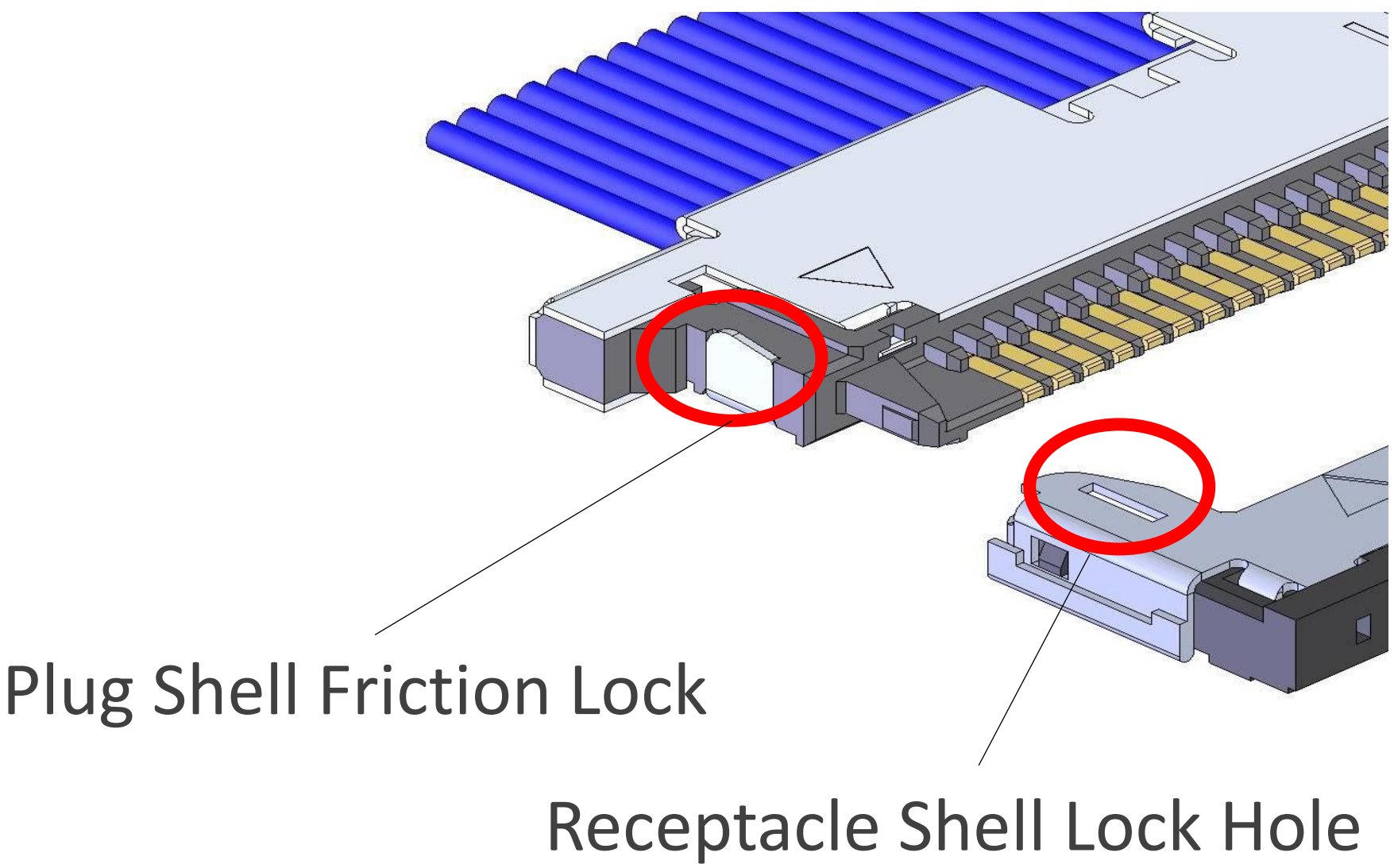
USB 3.1 Gen 1 (5 Gbps) V-By-One HS 1.4 (4 Gbps)  
eDP (2.7 Gbps) MiPi standards

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

► **Narrow depth & width with friction lock**

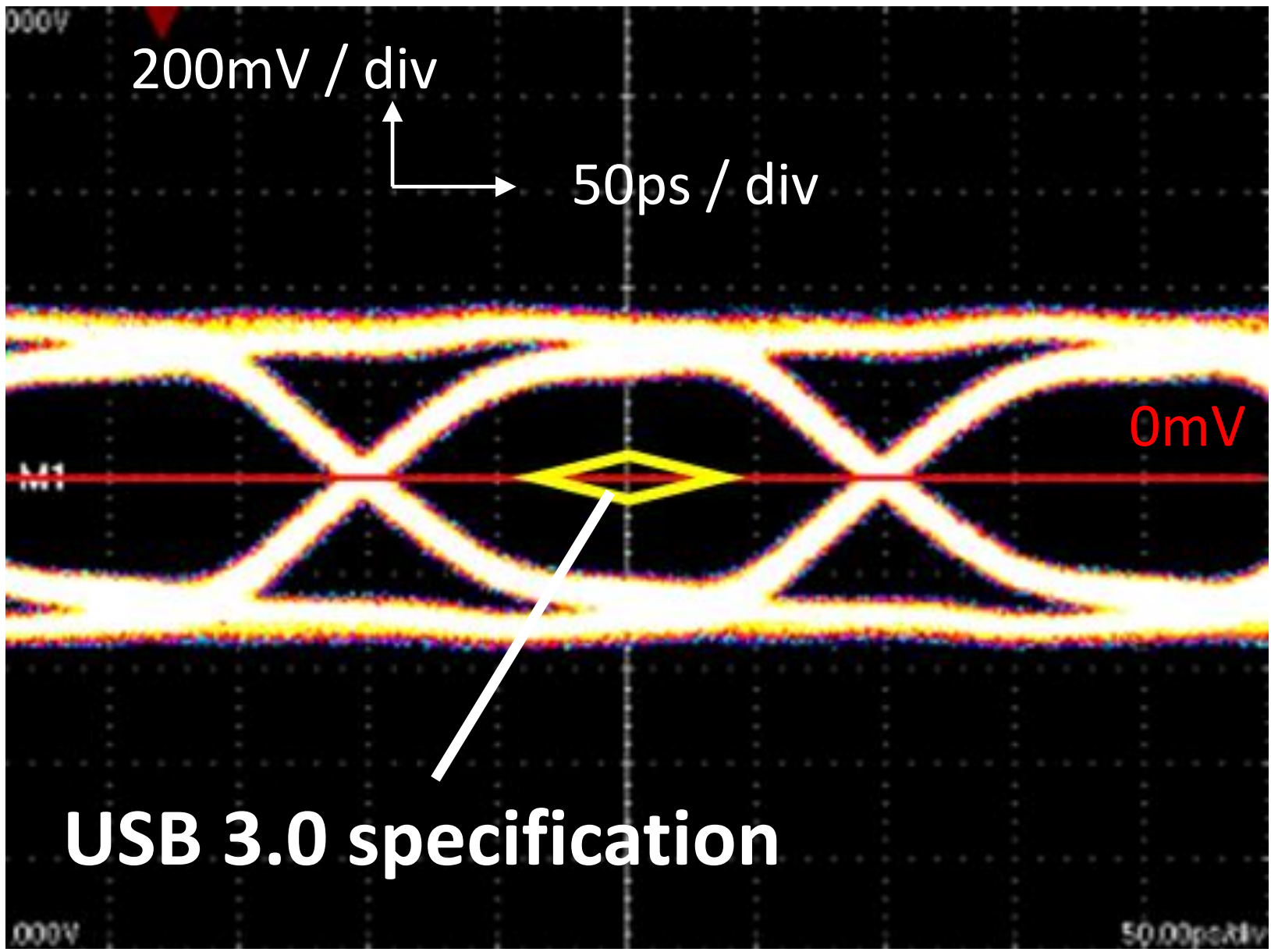
|            |                |
|------------|----------------|
| Width (mm) | 4.8 + (0.4*?p) |
| Depth (mm) | 5.65           |

| CABLINE V 35p Retention Force |     |
|-------------------------------|-----|
| With Friction Lock Type       | 12N |
| Without Friction Lock Type    | 8N  |

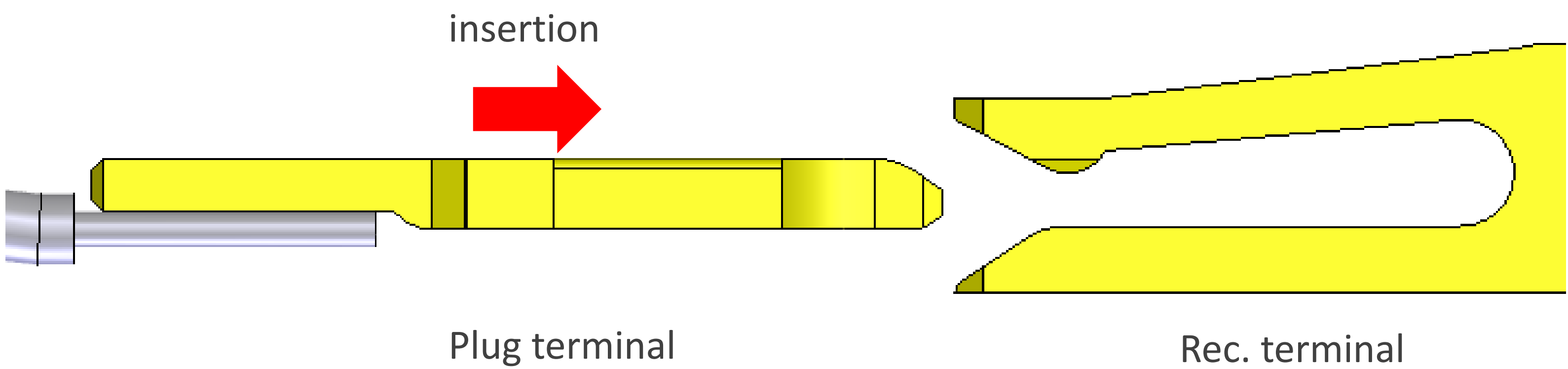


► **High-data-rate transfer, ideal for USB 3.1 (5 Gbps/lane) applications**

Eye pattern (Differential)  
Bit rate : 5 Gbps  
Rise time : 60ps (10-90%)  
Input voltage : 800mVp-p  
\*Please contact I-PEX for more test details.



► **Tuning fork design terminal, excellent wiping power and durable to contamination**



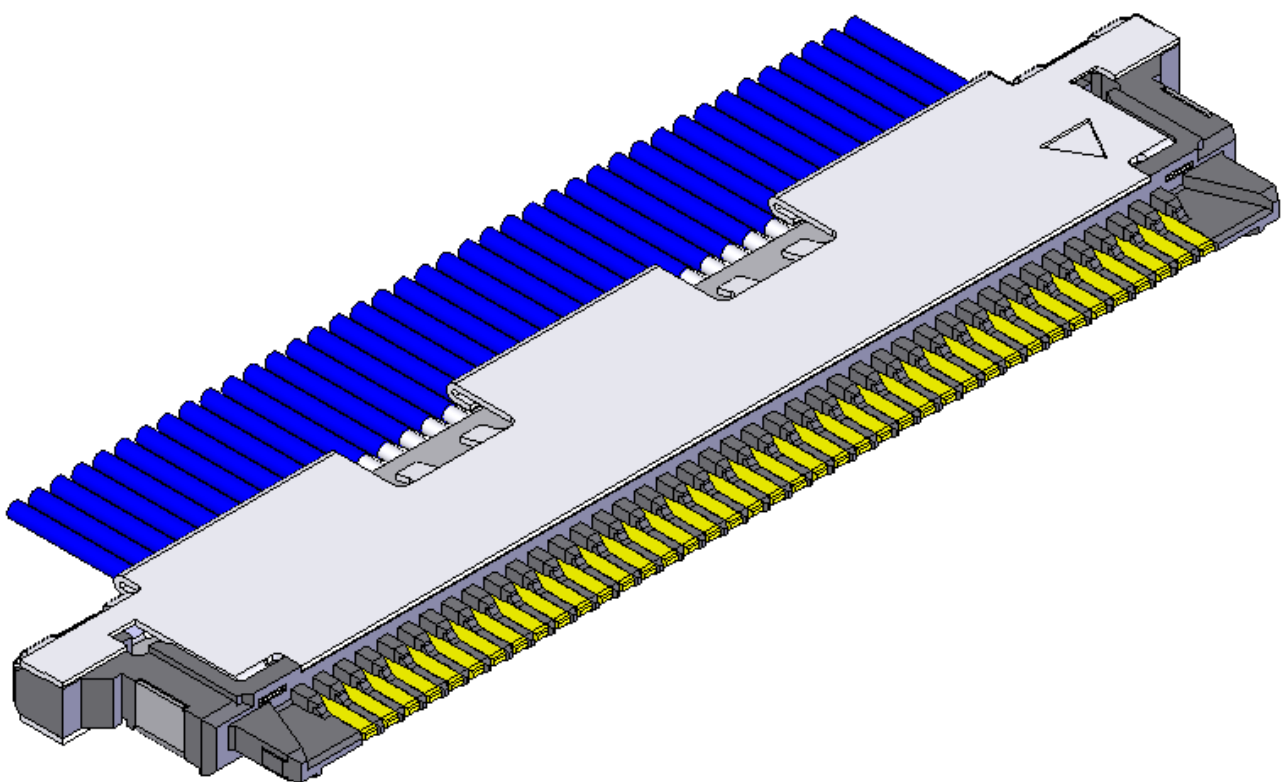
Contamination would be wiped off during insertion



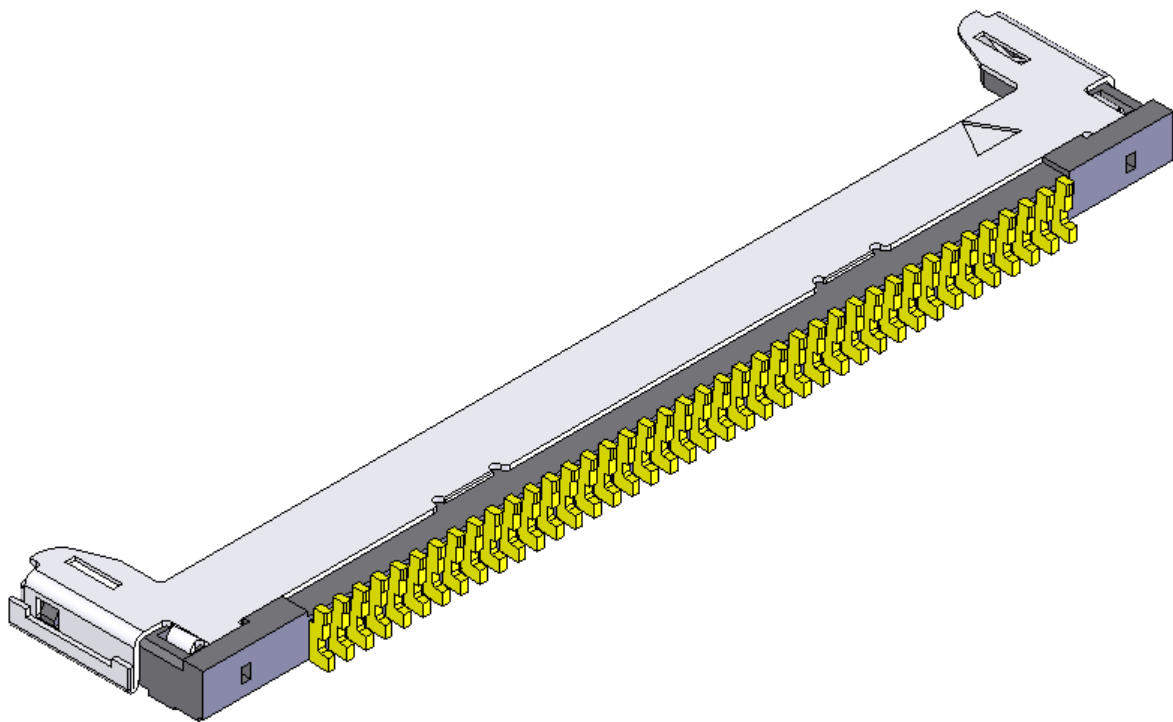
# Component Parts Details

## Component Parts

Connector parts

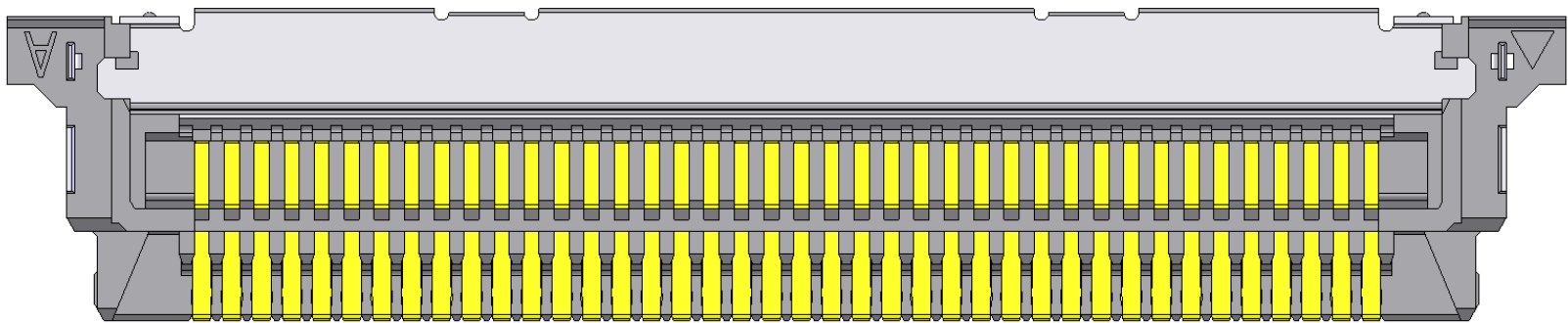


PLUG

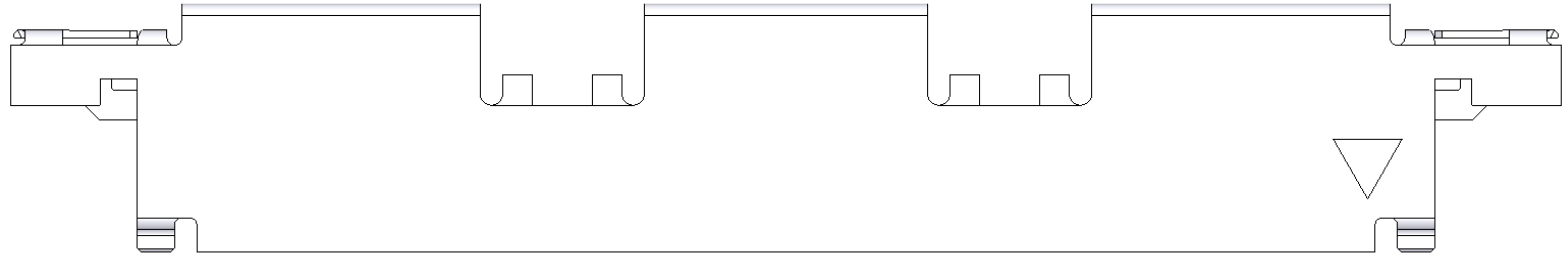


RECEPTACLE

Plug parts



PLUG HOUSING ASSEMBLY

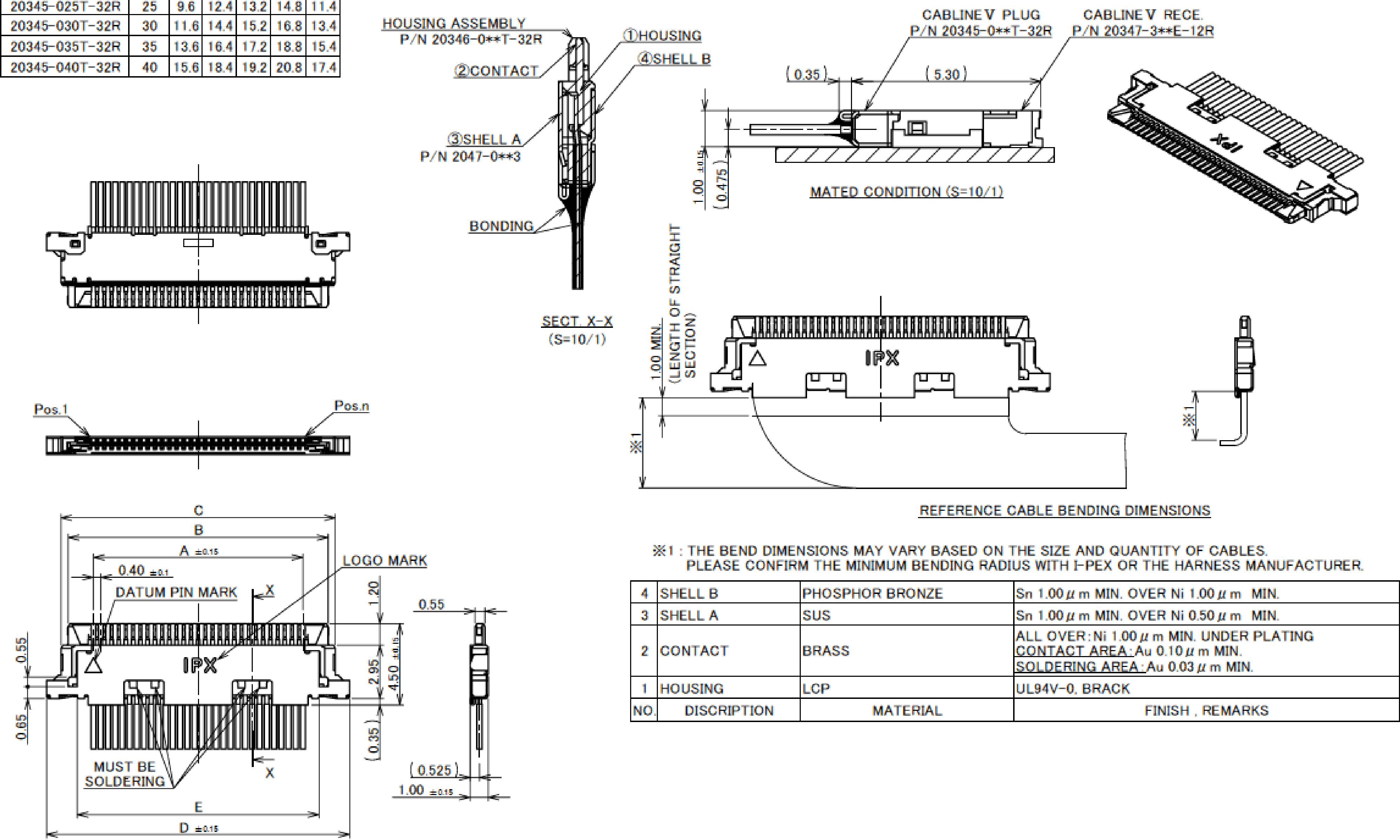


PLUG SHELL-A



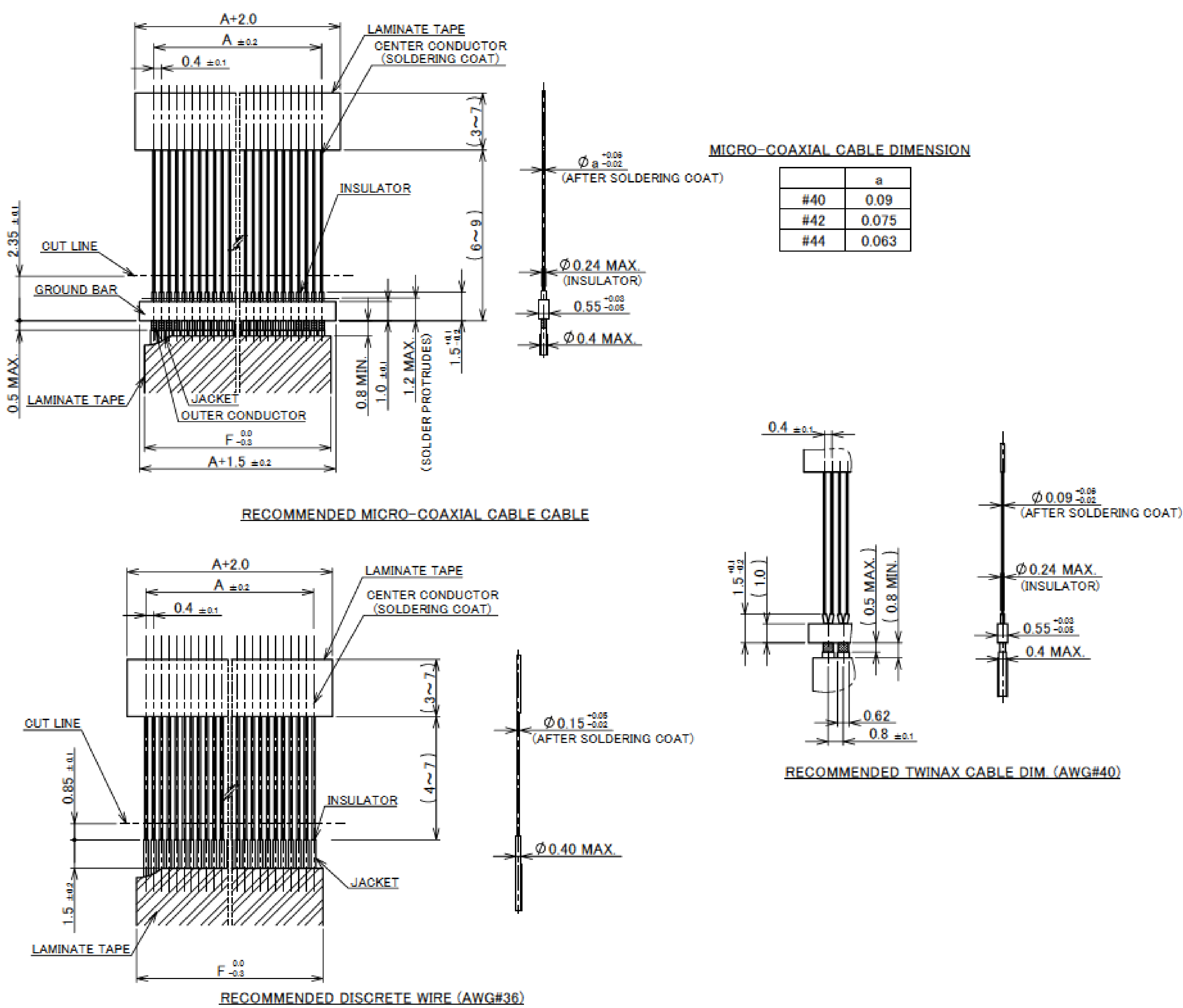
Plug for Cable Assembly

| Recommended P/N |      | 20345-0**T-32R |      |      |      |      |
|-----------------|------|----------------|------|------|------|------|
| PART NO.        | POS. | A              | B    | C    | D    | E    |
| 20345-010T-32R  | 10   | 3.6            | 6.4  | 7.2  | 8.8  | 5.4  |
| 20345-015T-32R  | 15   | 5.6            | 8.4  | 9.2  | 10.8 | 7.4  |
| 20345-020T-32R  | 20   | 7.6            | 10.4 | 11.2 | 12.8 | 9.4  |
| 20345-025T-32R  | 25   | 9.6            | 12.4 | 13.2 | 14.8 | 11.4 |
| 20345-030T-32R  | 30   | 11.6           | 14.4 | 15.2 | 16.8 | 13.4 |
| 20345-035T-32R  | 35   | 13.6           | 16.4 | 17.2 | 18.8 | 15.4 |
| 20345-040T-32R  | 40   | 15.6           | 18.4 | 19.2 | 20.8 | 17.4 |



Rev.30

| PART NO.       | POS. | A    | F    |
|----------------|------|------|------|
| 20345-010T-32R | 10   | 3.6  | 4.6  |
| 20345-015T-32R | 15   | 5.6  | 6.6  |
| 20345-020T-32R | 20   | 7.6  | 8.6  |
| 20345-025T-32R | 25   | 9.6  | 10.6 |
| 20345-030T-32R | 30   | 11.6 | 12.6 |
| 20345-035T-32R | 35   | 13.6 | 14.6 |
| 20345-040T-32R | 40   | 15.6 | 16.6 |



Rev.30



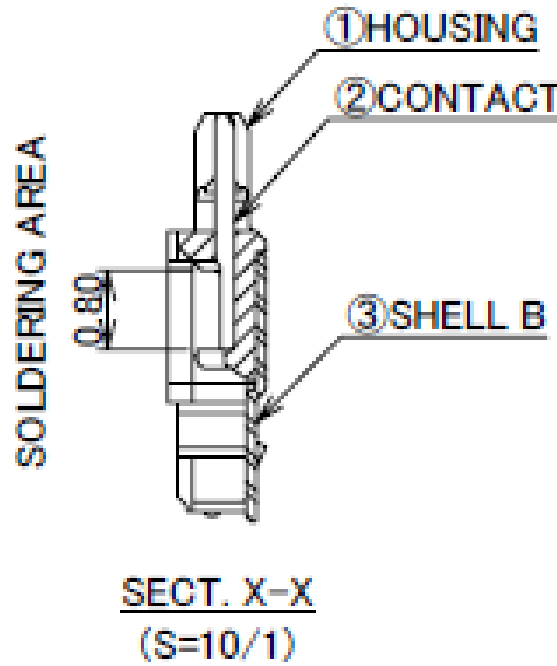
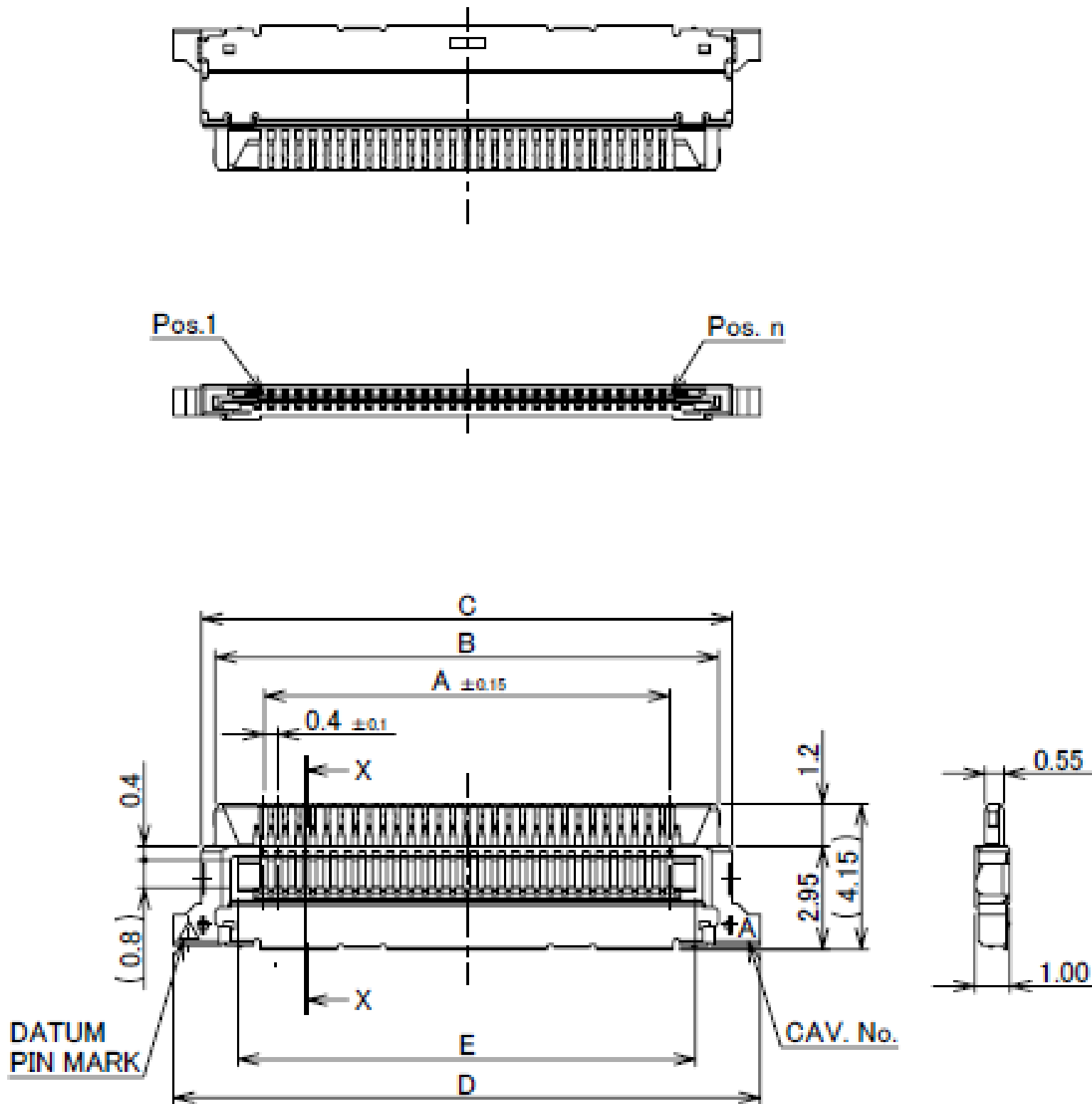
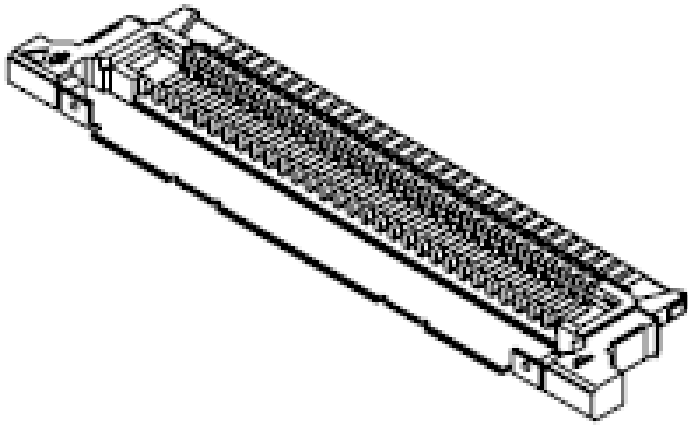
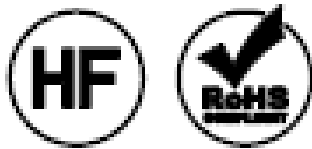
Plug for Cable Assembly

| ITEMS                                 | SPECIFICATION                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| APPLICABLE CABLE                      | MICRO-COAXIAL CABLE : AWG# 44,42,40<br>DISCRETE WIRE : AWG# 36<br>TWINAX CABLE : AWG# 40                                                                                                                                                                                                                                                                     |
| RATING VOLTAGE                        | 100V AC (PER CONTACT PIN)<br>※THIS IS THE RATED VOLTAGE OF THE CONNECTOR.<br>PLEASE NOTE THAT THE RATED VOLTAGE MAY VARY IN THE HARNESS<br>DEPENDING ON THE CABLES USED.                                                                                                                                                                                     |
| RATING AMPERAGE (FOR CONTACT)         | 0.1A AC/DC [AWG#44] (PER CONTACT PIN / UP TO 40 CONTACTS)<br>0.24A AC/DC [AWG#42] (PER CONTACT PIN / UP TO 40 CONTACTS)<br>0.3A AC/DC [AWG#40] (PER CONTACT PIN / UP TO 40 CONTACTS)<br>0.8A AC/DC [AWG#36] (PER CONTACT PIN / UP TO 12 CONTACTS)<br>※TESTING BY A REAL MACHINE IS RECOMMENDED BECAUSE<br>TEMPERATURE RISE MAY AFFECTED BY ACTUAL SITUATION. |
| OPERATING TEMPERATURE                 | 233~358K(-40°C~+85°C)                                                                                                                                                                                                                                                                                                                                        |
| OPERATING HUMIDITY                    | 85% MAX.(NON-CONDENSING)                                                                                                                                                                                                                                                                                                                                     |
| CONTACT RESISTANCE                    | INITIAL : 235mohm MAX.(AWG#36) / AFTER TEST : ≦40mohm MAX.<br>560mohm MAX.(AWG#40)<br>650mohm MAX.(AWG#42)<br>1040mohm MAX.(AWG#44)                                                                                                                                                                                                                          |
| GROUND SHELL RESISTANCE               | INITIAL : 50mohm MAX. / AFTER TEST : ≦40mohm MAX.                                                                                                                                                                                                                                                                                                            |
| INSULATION RESISTANCE                 | INITIAL : 1000Mohm MIN. / AFTER TEST : 500Mohm MIN.                                                                                                                                                                                                                                                                                                          |
| DIELECTRIC WITHSTANDING VOLTAGE       | AC250V 1min                                                                                                                                                                                                                                                                                                                                                  |
| DURABILITY                            | 30 CYCLES                                                                                                                                                                                                                                                                                                                                                    |
| MATING FORCE (INITIAL / AFTER TEST)   | 10P : 20.0N MAX. 15P : 22.5N MAX.<br>20P : 25.0N MAX. 25P : 27.5N MAX.<br>30P : 30.0N MAX. 35P : 32.5N MAX.<br>40P : 35.0N MAX.                                                                                                                                                                                                                              |
| UNMATING FORCE (INITIAL / AFTER TEST) | 10P : 4.0N MIN. 15P : 5.0N MIN.<br>20P : 5.5N MIN. 25P : 6.0N MIN.<br>30P : 7.0N MIN. 35P : 8.0N MIN.<br>40P : 8.5N MIN.                                                                                                                                                                                                                                     |
| CABLE RETENTION FORCE                 | 10P : 4.90N MIN. 15P : 7.35N MIN.<br>20P : 9.80N MIN. 25P : 12.25N MIN.<br>30P : 14.70N MIN. 35P : 17.15N MIN.<br>40P : 19.60N MIN.                                                                                                                                                                                                                          |
| PRODUCT SPECIFICATION                 | P/N : 20345-0**T-32R *** PRS-1461                                                                                                                                                                                                                                                                                                                            |
| TEST REPORT                           | P/N : 20345-0**T-32R *** TR-08068                                                                                                                                                                                                                                                                                                                            |
| INSTRUCTION MANUAL                    | HIM-03005                                                                                                                                                                                                                                                                                                                                                    |
| ASSEMBLY MANUAL                       | ASM-03002                                                                                                                                                                                                                                                                                                                                                    |
| APPEARANCE CRITERIA NO.               | QLS-A***                                                                                                                                                                                                                                                                                                                                                     |

Rev.30

Plug Housing Assembly

| Recommended P/N |      | 20346-0**T-32R |      |      |      |      |
|-----------------|------|----------------|------|------|------|------|
| PART NO.        | POS. | A              | B    | C    | D    | E    |
| 20346-010T-32R  | 10   | 3.6            | 6.4  | 7.2  | 8.8  | 5.1  |
| 20346-015T-32R  | 15   | 5.6            | 8.4  | 9.2  | 10.8 | 7.1  |
| 20346-020T-32R  | 20   | 7.6            | 10.4 | 11.2 | 12.8 | 9.1  |
| 20346-025T-32R  | 25   | 9.6            | 12.4 | 13.2 | 14.8 | 11.1 |
| 20346-030T-32R  | 30   | 11.6           | 14.4 | 15.2 | 16.8 | 13.1 |
| 20346-035T-32R  | 35   | 13.6           | 16.4 | 17.2 | 18.8 | 15.1 |
| 20346-040T-32R  | 40   | 15.6           | 18.4 | 19.2 | 20.8 | 17.1 |



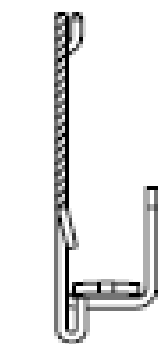
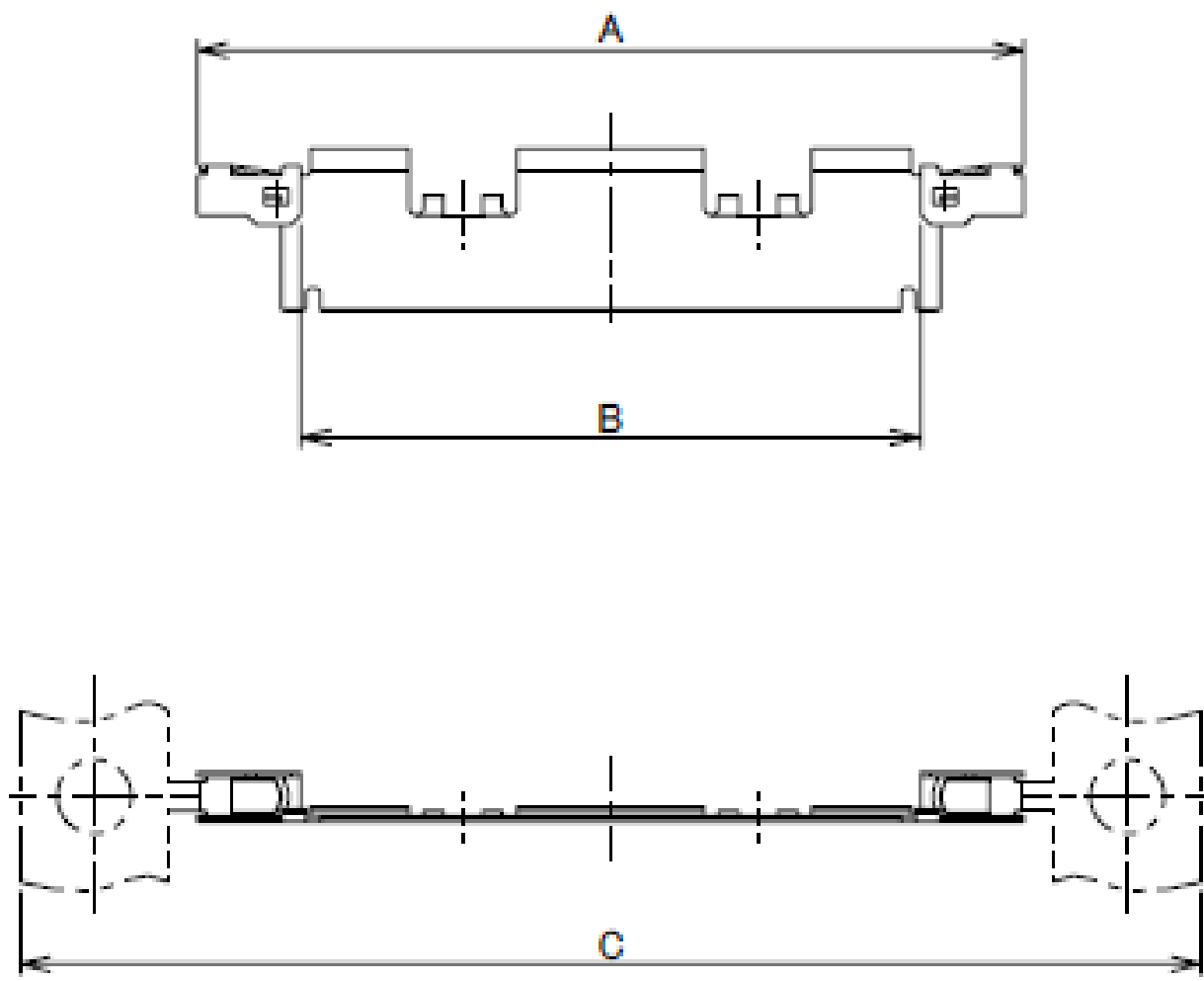
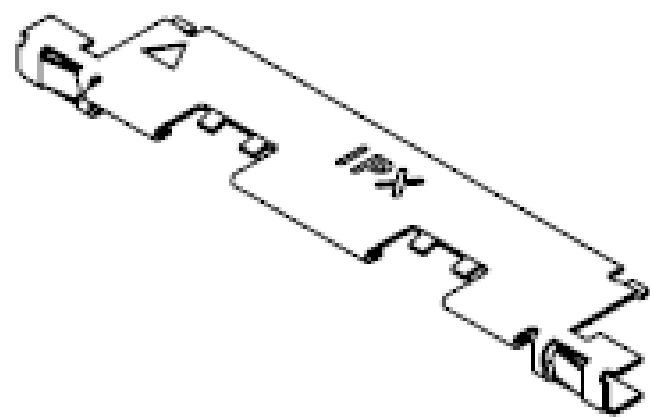
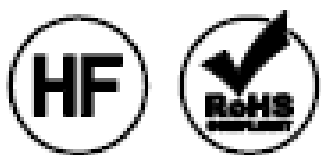
|     |             |                 |                                                                                                             |
|-----|-------------|-----------------|-------------------------------------------------------------------------------------------------------------|
| 3   | SHELL B     | PHOSPHOR BRONZE | Sn 1.00 μm OVER Ni 1.00 μm MIN.                                                                             |
| 2   | CONTACT     | BRASS           | ALL OVER: Ni 1.00 μm MIN. UNDER PLATING<br>CONTACT AREA: Au 0.10 μm MIN.<br>SOLDERING AREA: Au 0.03 μm MIN. |
| 1   | HOUSING     | LCP             | UL94V-0, BRACK                                                                                              |
| NO. | DISCRIPTION | MATERIAL        | FINISH , REMARKS                                                                                            |

Rev.22

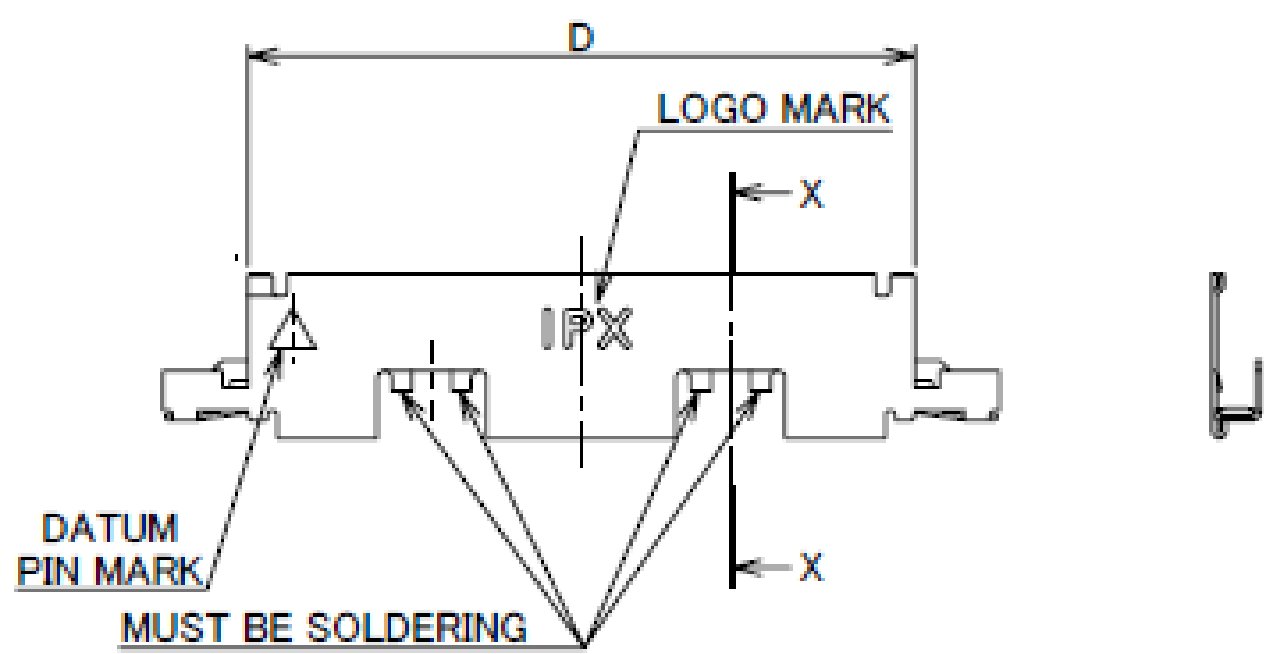


Plug Shell-A

| Recommended P/N |      | 2047-0**3 |      |      |  |
|-----------------|------|-----------|------|------|--|
| PART NO.        | A    | B         | C    | D    |  |
| 2047-0103       | 8.8  | 4.6       | 19.5 | 5.4  |  |
| 2047-0153       | 10.8 | 6.6       | 19.5 | 7.4  |  |
| 2047-0203       | 12.8 | 8.6       | 19.5 | 9.4  |  |
| 2047-0253       | 14.8 | 10.6      | 27.5 | 11.4 |  |
| 2047-0303       | 16.8 | 12.6      | 27.5 | 13.4 |  |
| 2047-0353       | 18.8 | 14.6      | 27.5 | 15.4 |  |
| 2047-0403       | 20.8 | 16.6      | 27.5 | 17.4 |  |



SECT. X-X  
(S=10/1)

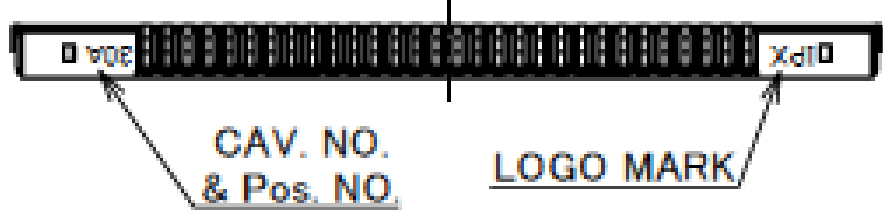
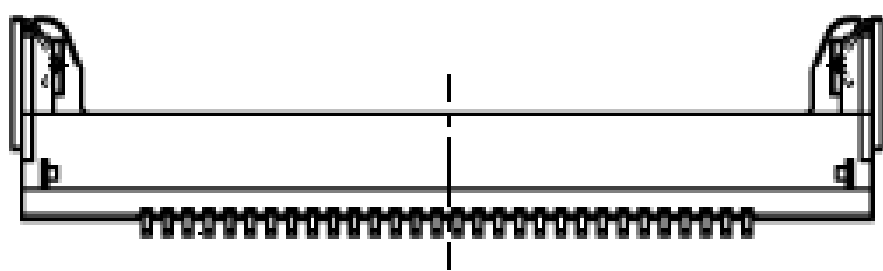
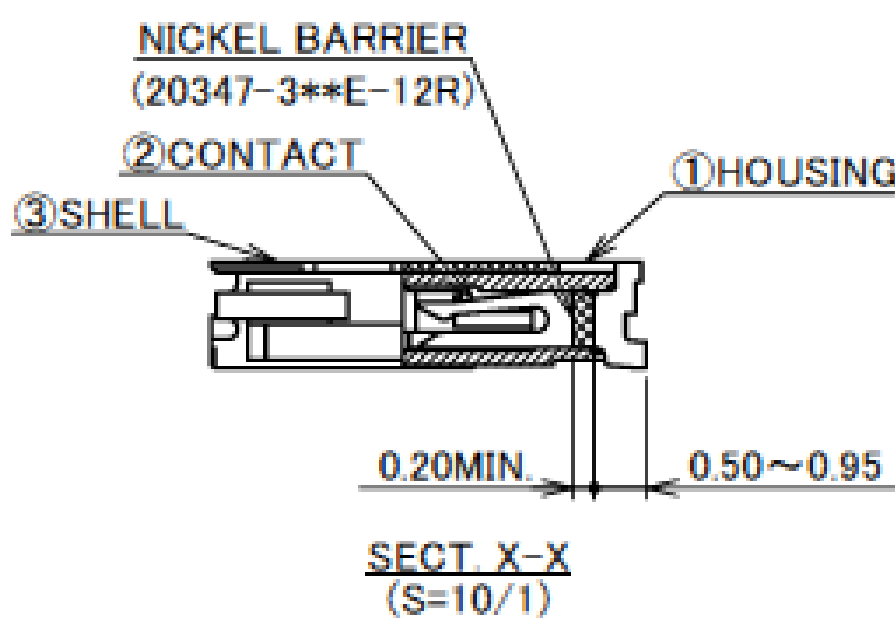
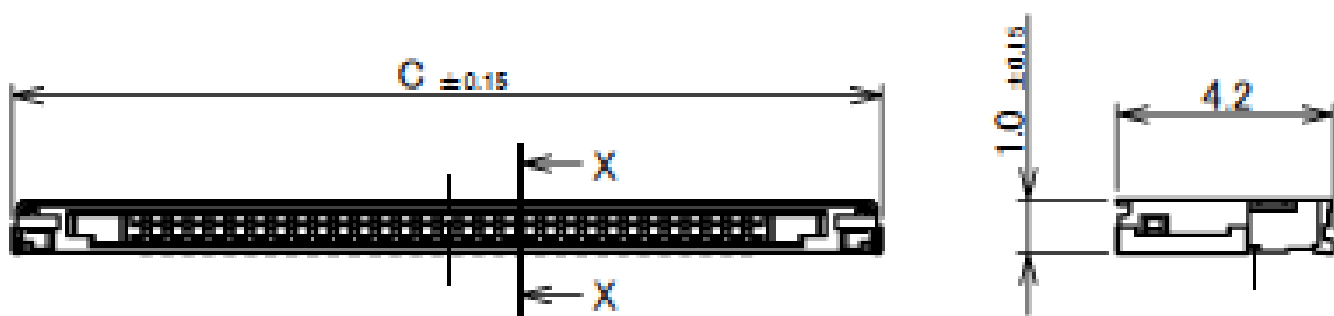
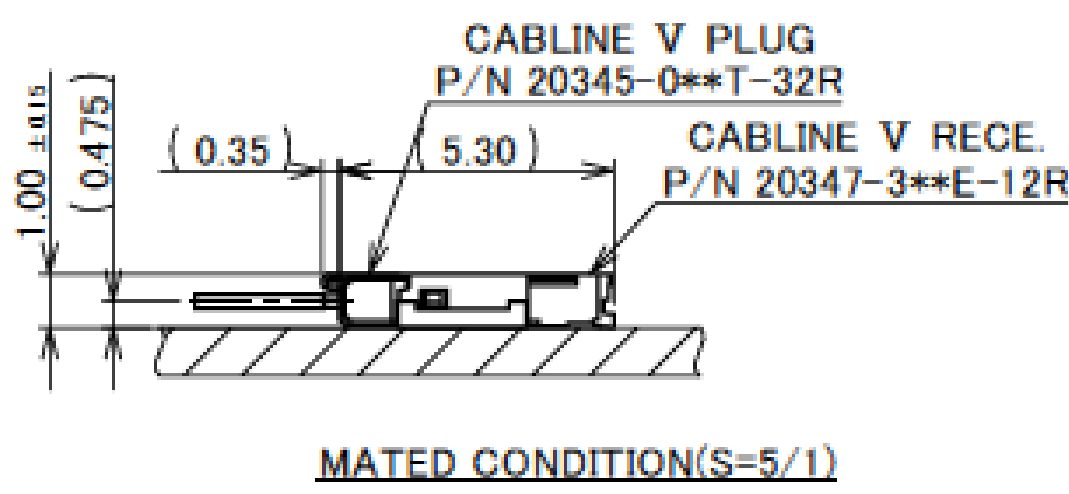
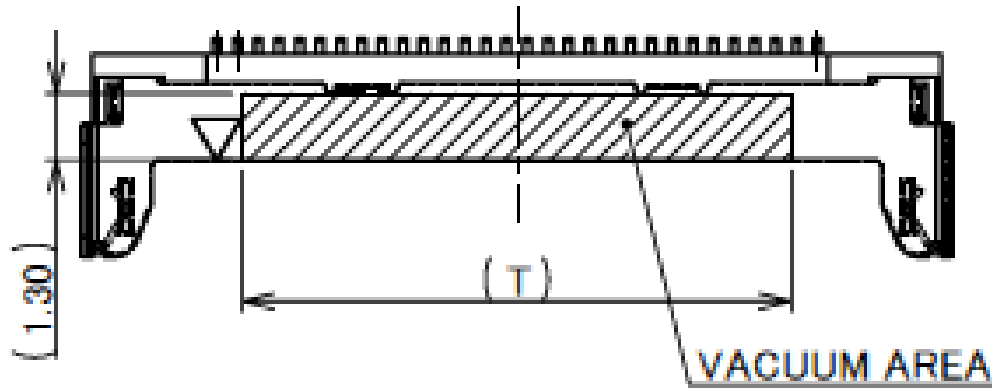
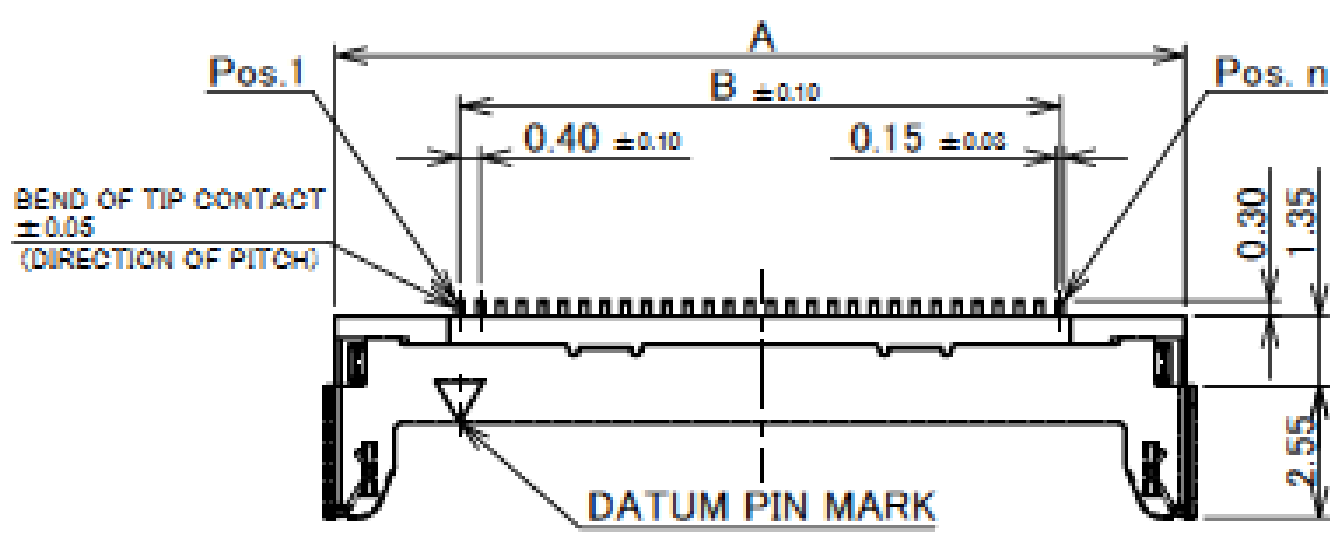


|     |             |          |                                                |
|-----|-------------|----------|------------------------------------------------|
| 1   | SHELL A     | SUS      | Sn 1.00 $\mu$ m MIN. OVER Ni 0.50 $\mu$ m MIN. |
| NO. | DISCRIPTION | MATERIAL | FINISH , REMARKS                               |

Rev.21

Receptacle Assembly

| Recommended P/N |      | 20347-3**E-12R |       |       |       |  |
|-----------------|------|----------------|-------|-------|-------|--|
| PART NO.        | POS. | A              | B     | C     | T     |  |
| 20347-310E-12R  | 10   | 8.40           | 3.60  | 8.80  | 2.60  |  |
| 20347-315E-12R  | 15   | 10.40          | 5.60  | 10.80 | 4.60  |  |
| 20347-320E-12R  | 20   | 12.40          | 7.60  | 12.80 | 6.60  |  |
| 20347-325E-12R  | 25   | 14.40          | 9.60  | 14.80 | 8.60  |  |
| 20347-330E-12R  | 30   | 16.40          | 11.60 | 16.80 | 10.60 |  |
| 20347-335E-12R  | 35   | 18.40          | 13.60 | 18.80 | 12.60 |  |
| 20347-340E-12R  | 40   | 20.40          | 15.60 | 20.80 | 14.60 |  |



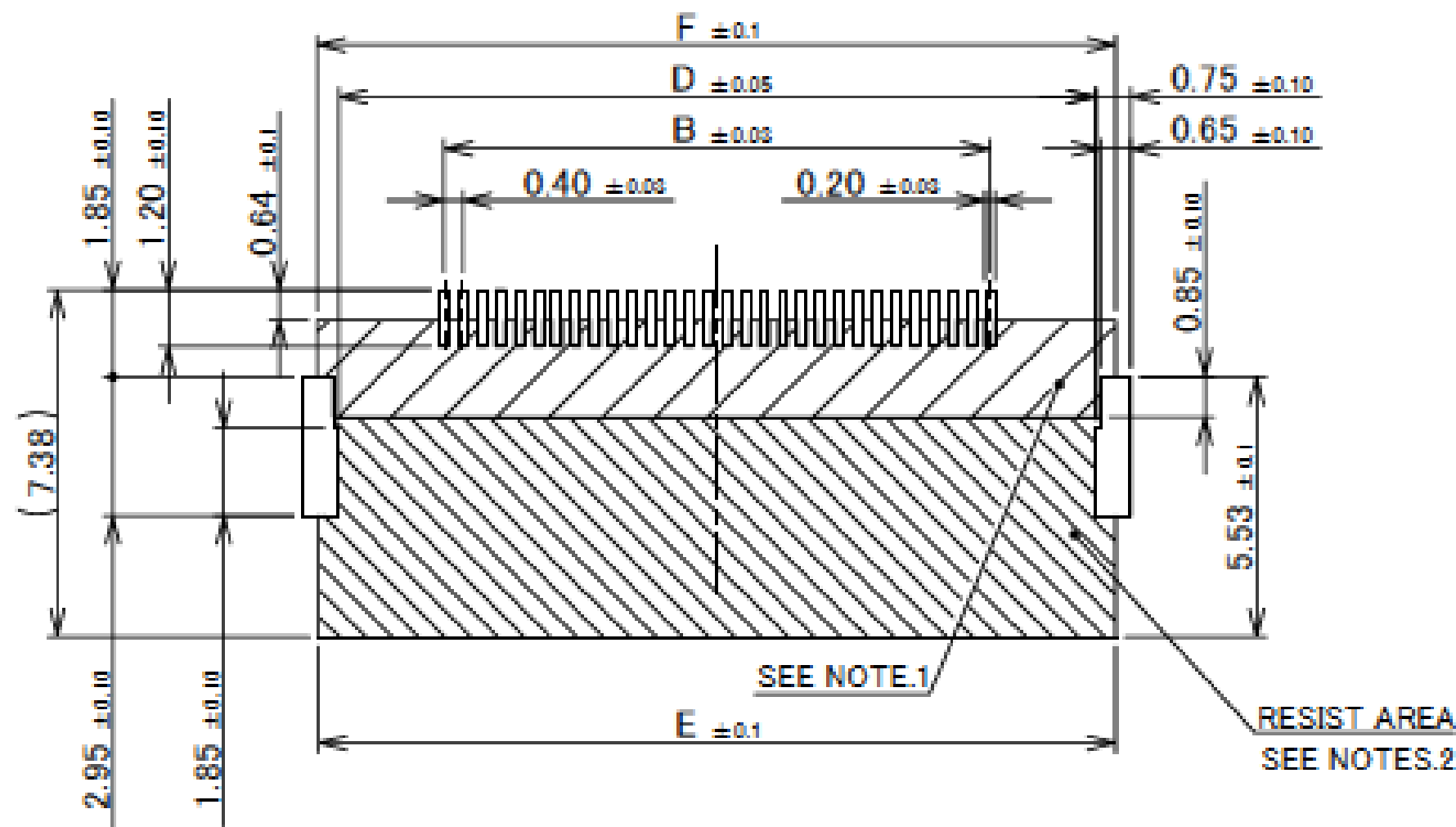
|     |             |                 |                                                                                                                            |
|-----|-------------|-----------------|----------------------------------------------------------------------------------------------------------------------------|
| 3   | SHELL       | PHOSPHOR BRONZE | Sn 1.00 $\mu$ m MIN. OVER Ni 1.00 $\mu$ m MIN.                                                                             |
| 2   | CONTACT     | PHOSPHOR BRONZE | ALL OVER: Ni 1.00 $\mu$ m MIN. UNDER PLATING<br>CONTACT AREA: Au 0.10 $\mu$ m MIN.<br>SOLDERING AREA: Au 0.03 $\mu$ m MIN. |
| 1   | HOUSING     | LCP             | UL94V-0, BRACK                                                                                                             |
| NO. | DISCRIPTION | MATERIAL        | FINISH , REMARKS                                                                                                           |

Rev.37



Receptacle Assembly

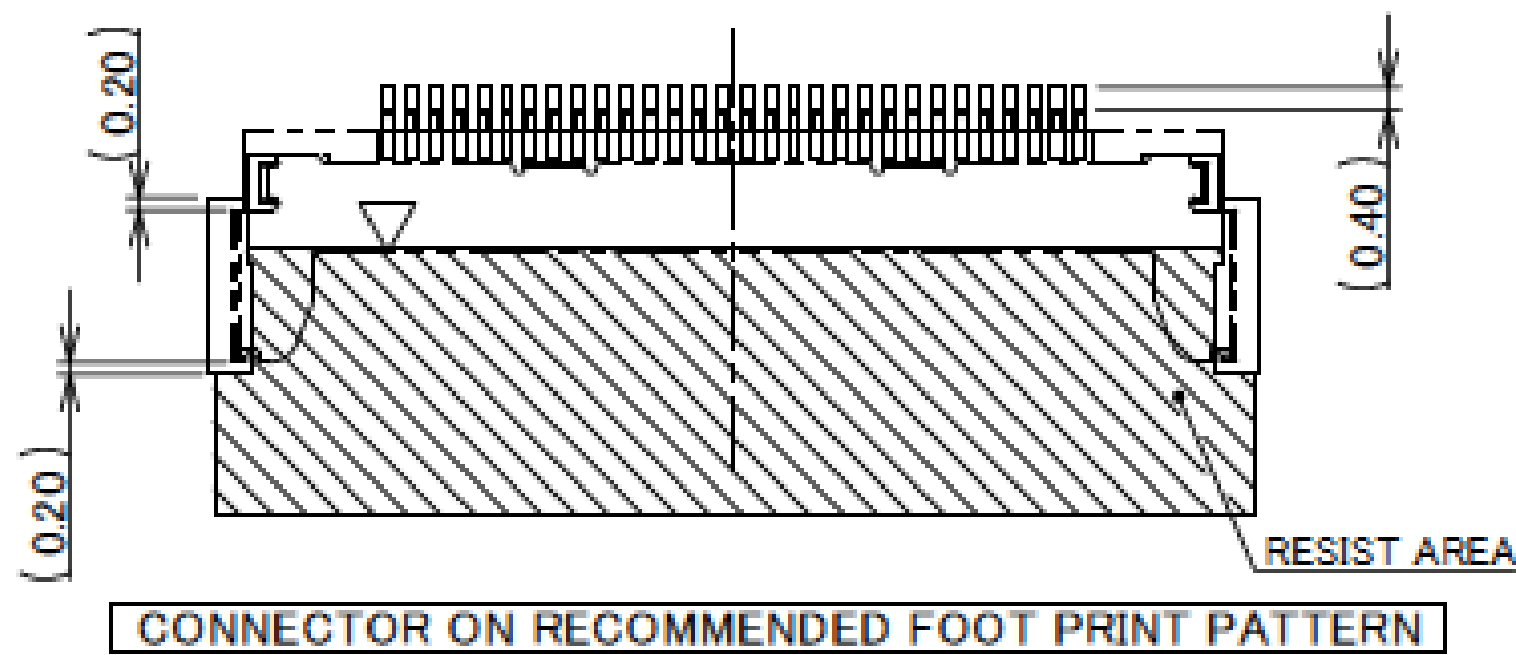
| PART NO.       | POS. | B     | D     | E     | F     |
|----------------|------|-------|-------|-------|-------|
| 20347-310E-12R | 10   | 3.60  | 8.10  | 9.94  | 8.97  |
| 20347-315E-12R | 15   | 5.60  | 10.10 | 10.94 | 10.97 |
| 20347-320E-12R | 20   | 7.60  | 12.10 | 12.94 | 12.97 |
| 20347-325E-12R | 25   | 9.60  | 14.10 | 14.94 | 14.97 |
| 20347-330E-12R | 30   | 11.60 | 16.10 | 16.94 | 16.97 |
| 20347-335E-12R | 35   | 13.60 | 18.10 | 18.94 | 18.97 |
| 20347-340E-12R | 40   | 15.60 | 20.10 | 20.94 | 20.97 |



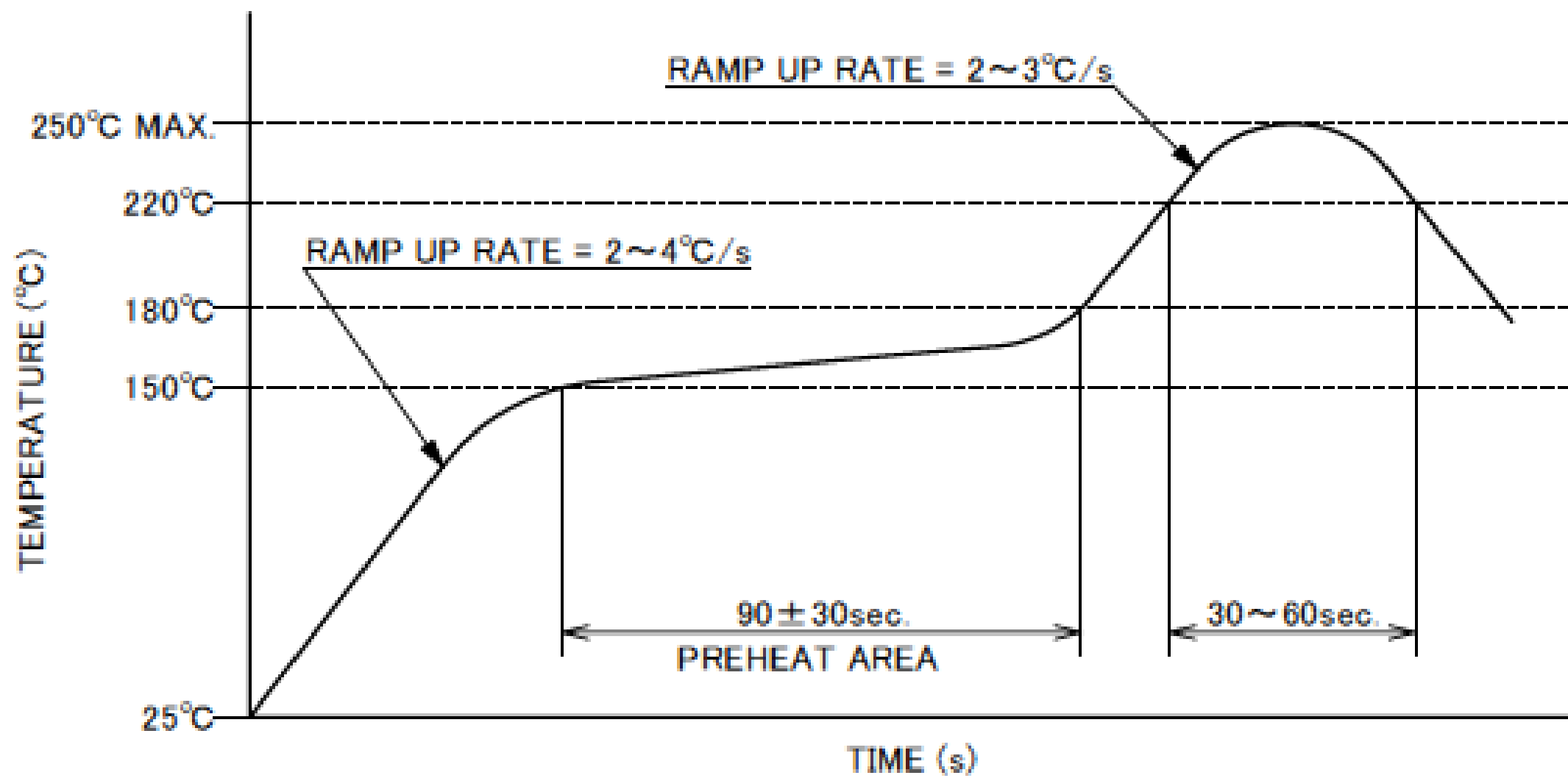
RECOMMENDED FOOT PRINT PATTERN & METALMASK LAYOUT  
RECOMMENDED METALMASK THICKNESS :  $t=0.12$

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

Rev.37



CONNECTOR ON RECOMMENDED FOOT PRINT PATTERN



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

Rev.37



Receptacle Assembly

| ITEMS                                 | SPECIFICATION                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| APPLICABLE CABLE                      | MICRO-COAXIAL CABLE : AWG# 44,42,40<br>DISCRETE WIRE : AWG# 36<br>TWINAX : AWG# 40                                                                                                                                                                                                                                                                   |
| RATING VOLTAGE                        | 100V AC (PER CONTACT PIN)                                                                                                                                                                                                                                                                                                                            |
| RATING AMPERAGE (FOR CONTACT)         | 0.1A AC/DC [AWG#44] PER CONTACT PIN / UP TO 40 CONTACTS<br>0.24A AC/DC [AWG#42] PER CONTACT PIN / UP TO 40 CONTACTS<br>0.3A AC/DC [AWG#40] PER CONTACT PIN / UP TO 40 CONTACTS<br>0.8A AC/DC [AWG#36] PER CONTACT PIN / UP TO 12 CONTACTS<br>※TESTING BY A REAL MACHINE IS RECOMMENDED BECAUSE<br>TEMPERATURE RISE MAY AFFECTED BY ACTUAL SITUATION. |
| OPERATING TEMPERATURE                 | 233~358K(-40℃~+85℃)                                                                                                                                                                                                                                                                                                                                  |
| OPERATING HUMIDITY                    | 85% MAX.(NON-CONDENSING)                                                                                                                                                                                                                                                                                                                             |
| CONTACT RESISTANCE                    | INITIAL : 235mohm MAX.(AWG#36) / AFTER TEST : ≦140mohm MAX.<br>560mohm MAX.(AWG#40)<br>650mohm MAX.(AWG#42)<br>1040mohm 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)   | 10P : 20.0N MAX.<br>15P : 22.5N MAX.<br>20P : 25.0N MAX.<br>25P : 27.5N MAX.<br>30P : 30.0N MAX.<br>35P : 32.5N MAX.<br>40P : 35.0N MAX.                                                                                                                                                                                                             |
| UNMATING FORCE (INITIAL / AFTER TEST) | 10P : 4.0N MIN.<br>15P : 5.0N MIN.<br>20P : 5.5N MIN.<br>25P : 6.0N MIN.<br>30P : 7.0N MIN.<br>35P : 8.0N MIN.<br>40P : 8.5N MIN.                                                                                                                                                                                                                    |
| CABLE RETENTION FORCE                 | 10P : 4.90N MIN.<br>15P : 7.35N MIN.<br>20P : 9.80N MIN.<br>25P : 12.25N MIN.<br>30P : 14.70N MIN.<br>35P : 17.15N MIN.<br>40P : 19.60N MIN.                                                                                                                                                                                                         |
| COPLANARITY                           | 0.10 MAX.                                                                                                                                                                                                                                                                                                                                            |
| PRODUCT SPECIFICATION                 | P/N 20347-3**E-12R : PRS-1461                                                                                                                                                                                                                                                                                                                        |
| TEST REPORT                           | P/N 20347-3**E-12R : TR-08068                                                                                                                                                                                                                                                                                                                        |
| PACKING STANDARD                      | 300-308                                                                                                                                                                                                                                                                                                                                              |
| INSTRUCTION MANUAL                    | HIM-03005                                                                                                                                                                                                                                                                                                                                            |
| ASSEMBLY MANUAL                       | ASM-03002                                                                                                                                                                                                                                                                                                                                            |
| APPEARANCE CRITERIA NO.               | QLS-A**                                                                                                                                                                                                                                                                                                                                              |



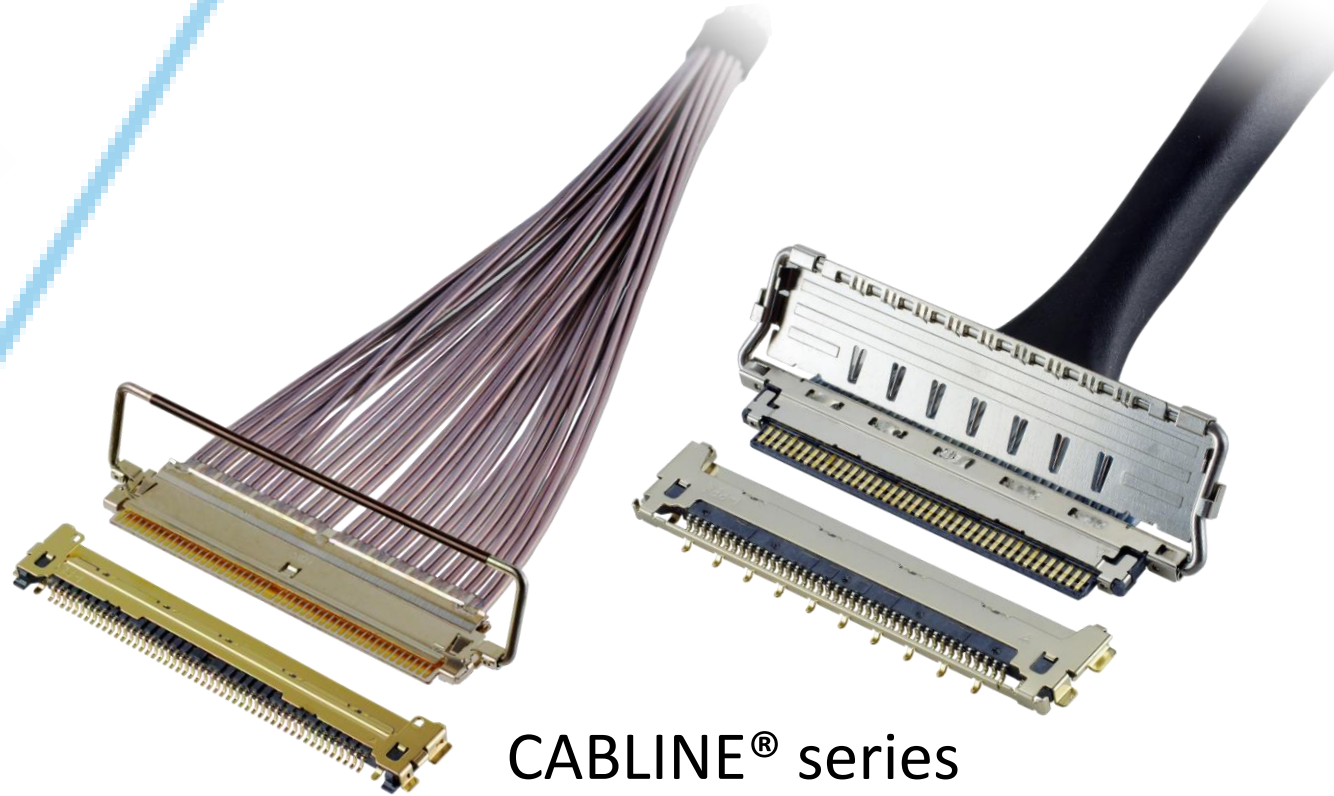
# Custom Connectors Available

 RF  
Connectors

MHF® series



CABLINE® series

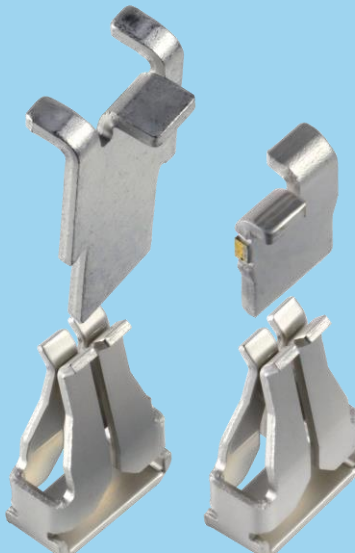


 Micro-Coaxial/Twinax  
Connectors



Wire-to-Board  
Connectors/  
Terminals

AP series



ISH® series



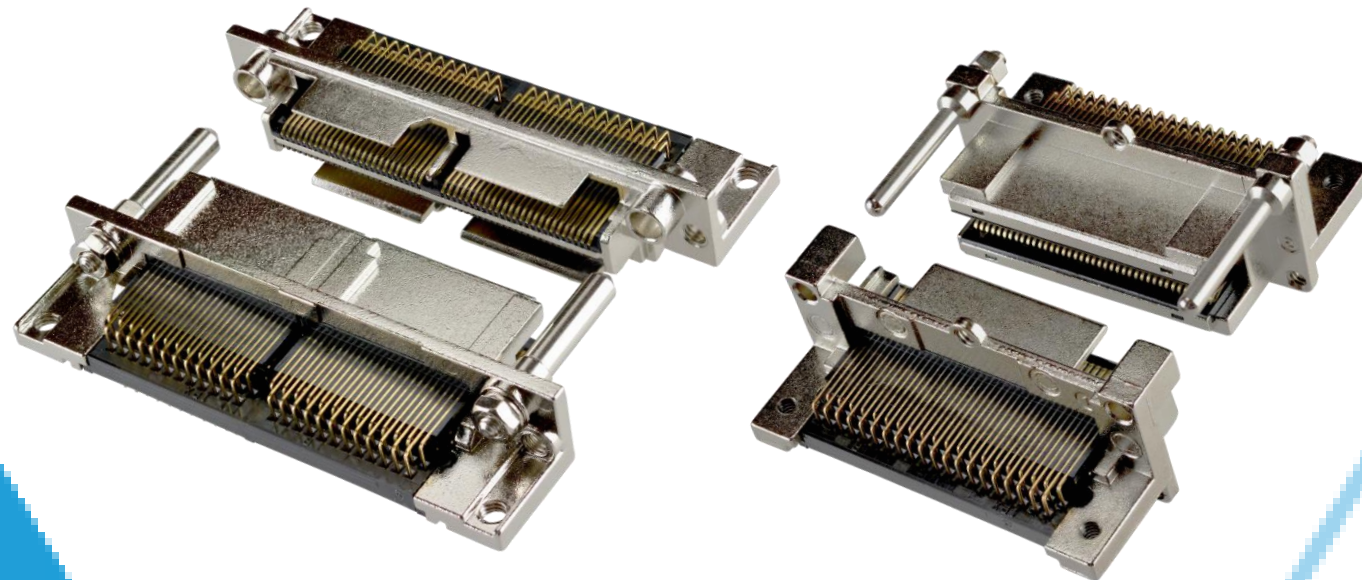
NOVASTACK® series



Board-to-Board  
Connectors



I/O  
Connectors



MINIDOCK™ series

MINIFLEX® series

EVAFLEX® series



FPC/FFC  
Connectors



Inquiry



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