

# MHF<sup>®</sup> 5L

15 GHzまで対応の伝送特性に優れたコネクタ (VSWR 1.6 max. @ 15 GHz)、嵌合高さ1.3 mm max.

**Product Specifications:**

|                          |             |           |
|--------------------------|-------------|-----------|
| Mated Height (mm max.)   | 1.3         |           |
| Rece. SMT Size (mm)      | 2.0 x 2.0   |           |
| Applicable Frequency     | DC ~ 15 GHz |           |
| Characteristic Impedance | 50 ohm      |           |
| VSWR (L=100 mm)          | DC~3 GHz    | 1.30 max. |
|                          | 3~6 GHz     | 1.40 max. |
|                          | 6~9 GHz     | 1.50 max. |
|                          | 9~12 GHz    | 1.50 max. |
|                          | 12~15 GHz   | 1.60 max. |

**Applicable Cable Size:**

|                       |
|-----------------------|
| O.D. 1.13 mm / AWG 32 |
| O.D. 0.81 mm / AWG 33 |

**Applicable Standards (Reference Only):**

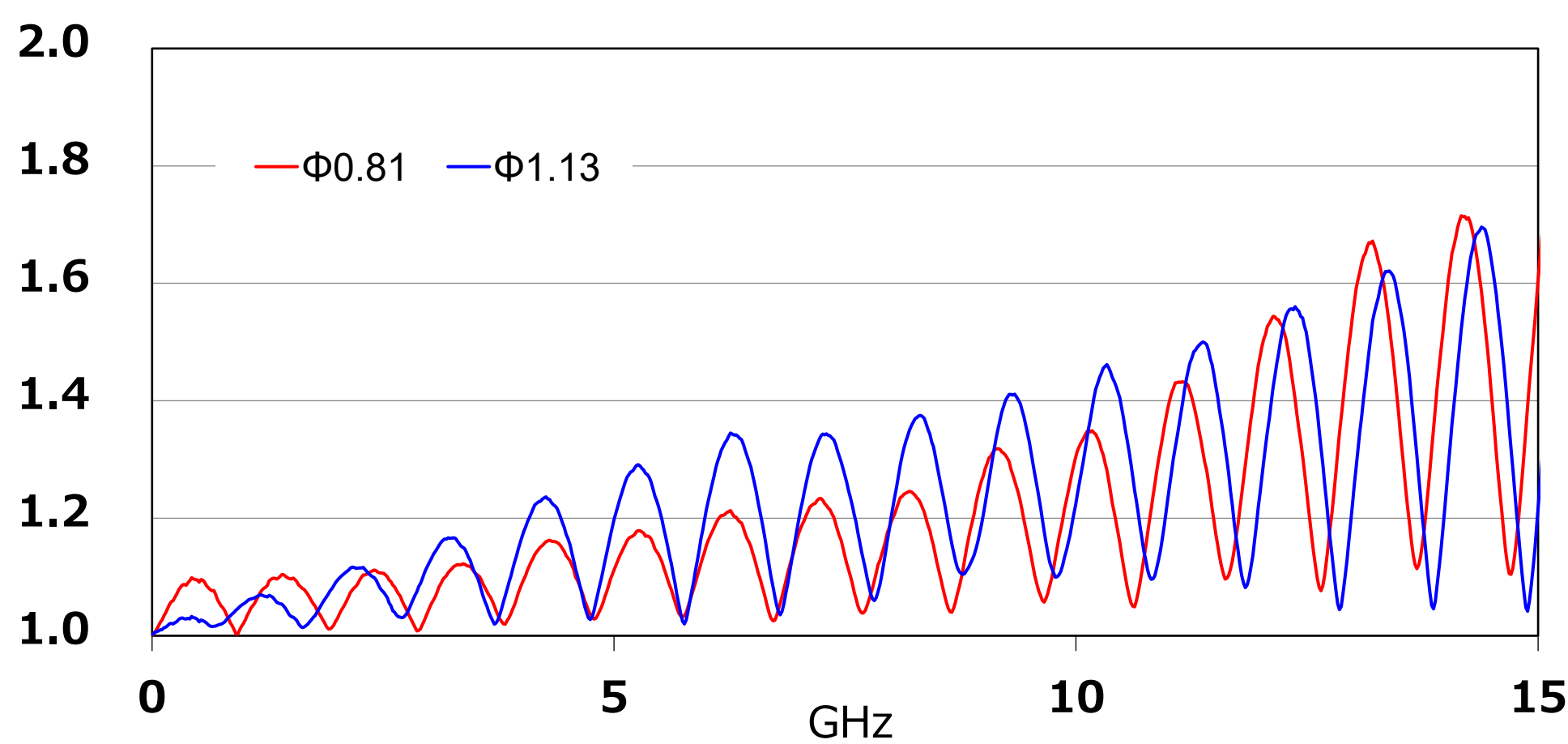
5G sub-6, Wi-Fi 6E, WiGig, LTE/LTE-Advanced, LPWA, Bluetooth, GPS



▶ 最小限の製品サイズで、~15 GHzにおいて優れたパフォーマンスを実現

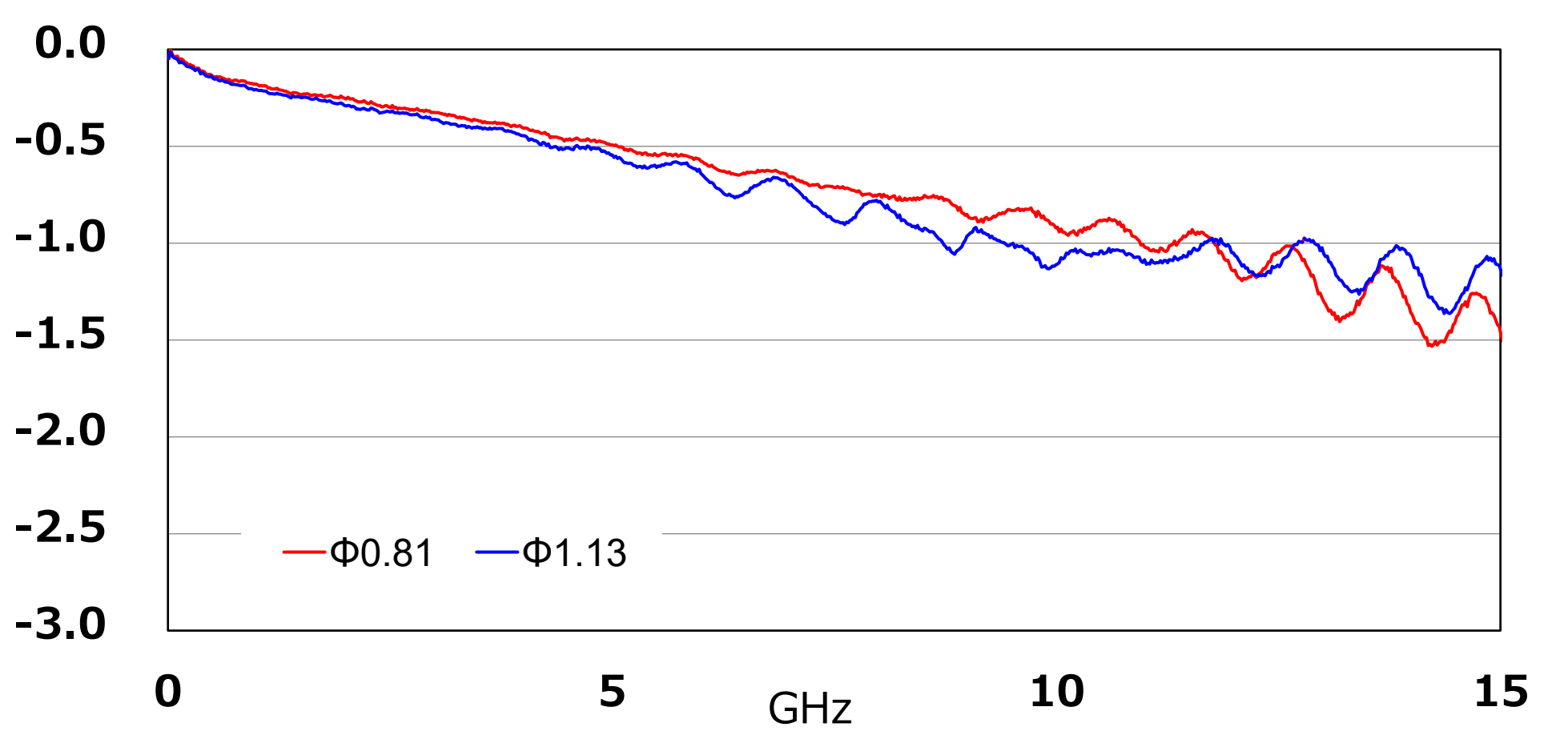
L=100 mm (Harness)

VSWR

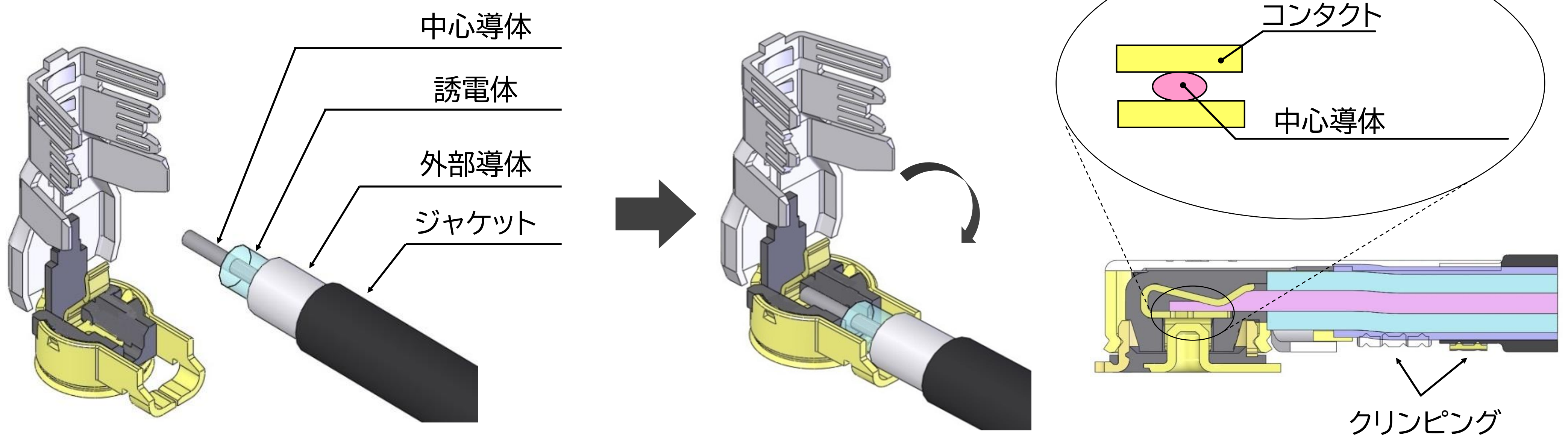


dB L=100 mm (Harness)

Insertion Loss



▶ 信頼性の高い無半田結線技術 “i-Fit<sup>®</sup>” テクノロジーにより、安定した性能のハーネス提供



▶ 対応ケーブル : 1.13 mm(32), 0.81 mm(33)

| Product name                        | MHF <sup>®</sup> 5            | MHF <sup>®</sup> 5L |
|-------------------------------------|-------------------------------|---------------------|
| Mating Height                       | 1.0 mm max.                   | 1.3 mm max.         |
| Coax O.D.<br>(Center Conductor AWG) | 1.13 mm (AWG#32)              | ●                   |
|                                     | 0.81 mm (AWG#33)              | ●                   |
|                                     | 0.81 mm (AWG#36)              | ●                   |
|                                     | 0.64 mm (AWG#36)              | ●                   |
|                                     | 0.48 mm (AWG#38)              | ●                   |
| Receptacle                          | MHF <sup>®</sup> 5 receptacle |                     |

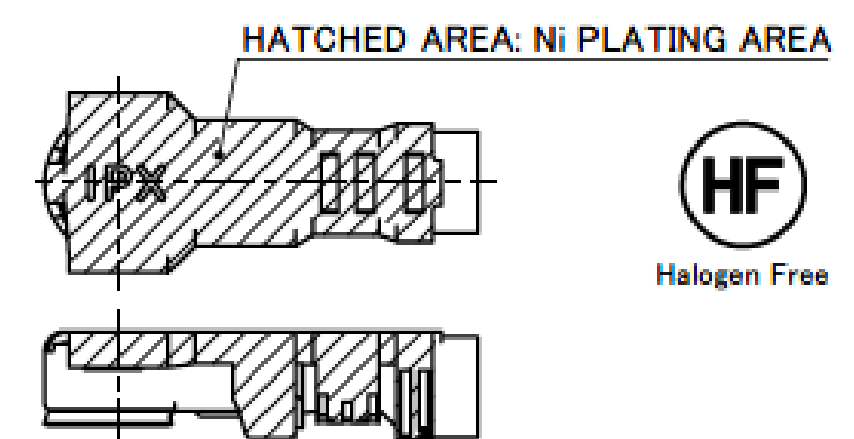
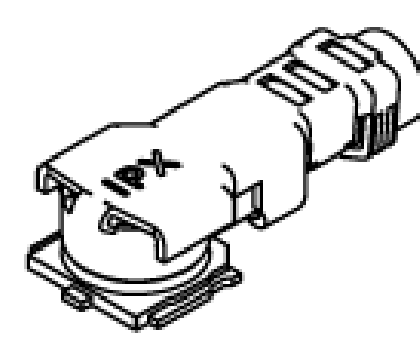
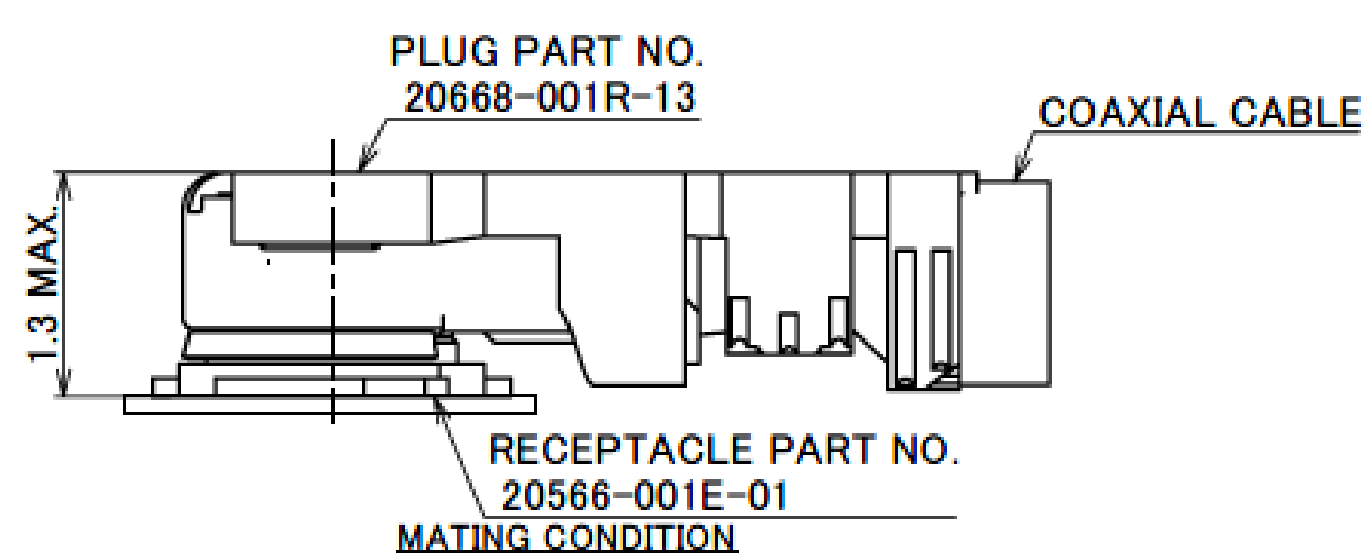
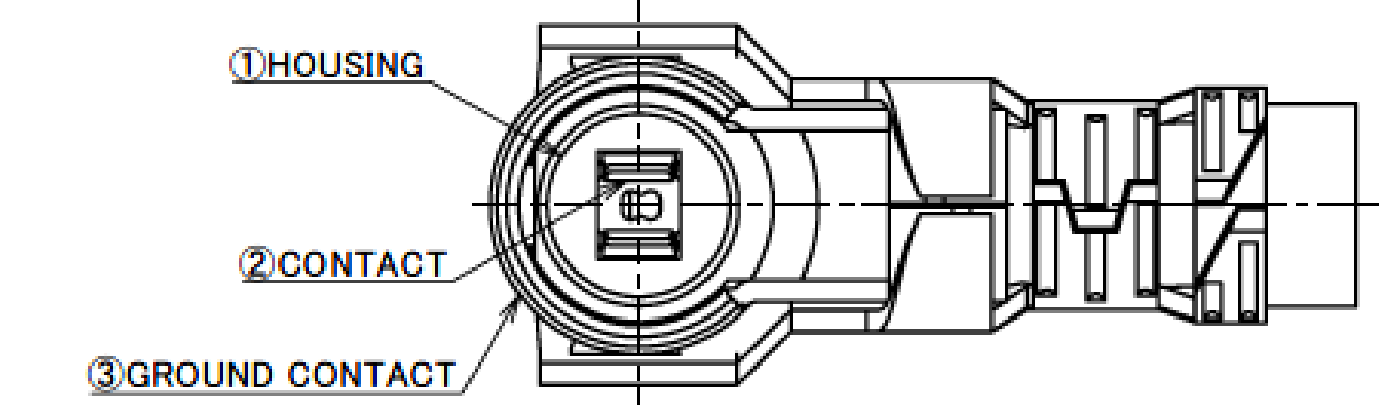
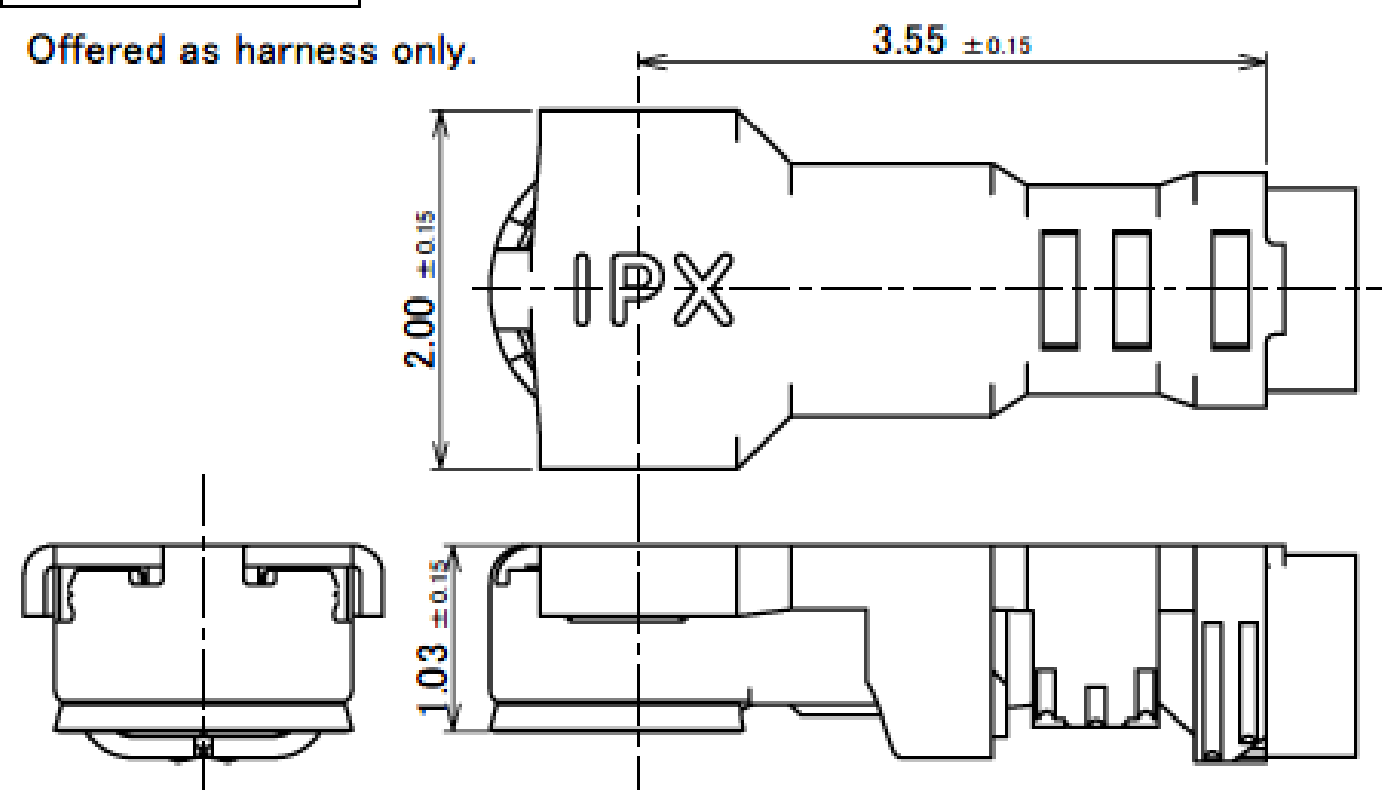
# Component Parts Details

## MHF<sup>®</sup> 5L plug Ni top (1.13)

Recommended P/N 20668-001R-13

PART No.  
20668-001R-13

Offered as harness only.



HATCHED AREA: Ni PLATING AREA



Halogen Free RoHS Compliant

### NOTES.

1. APPLICABLE CONNECTOR: 20566-001E-01
2. PERMISSIBLE LOAD OF CABLE AT MATING
3. MATING AND UNMATING INSTRUCTION

#### 3-1. MATING

MATE THE CONNECTOR VERTICALLY AS MUCH AS POSSIBLE, ADJUSTING THE MATING AXIS OF PLUG AND RECEPTACLE. DO NOT SLANT MATE.

#### 3-2. UNMATING

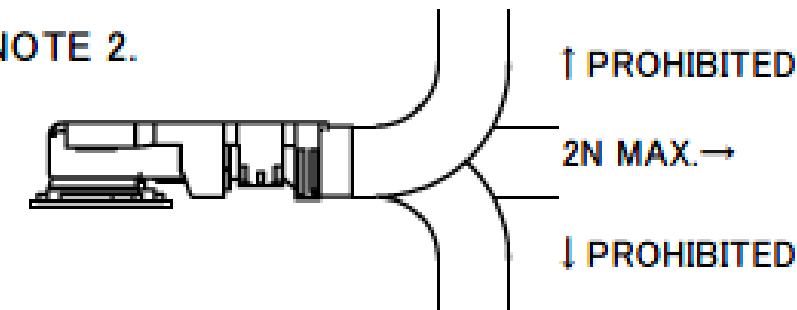
3-2-1. IN CASE OF UNMATING BY PULLING TOOL (PART NO. 90612-0001)

USE THE PULLING TOOL AS THE FOLLOWING DRAWING, AND PULL PLUG TO VERTICAL DIRECTION AS DIRECTLY AS POSSIBLE.

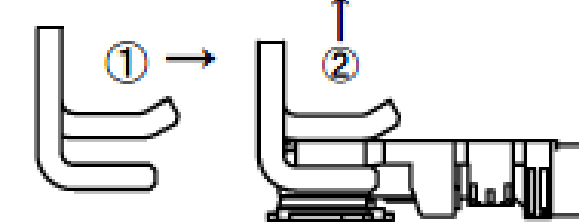
3-2-2. IN CASE OF UNMATING DIRECTLY BY HAND

CATCH THE CATCHING AREA OF PLUG, AND PULL PLUG TO VERTICAL DIRECTION AS DIRECTLY AS POSSIBLE.

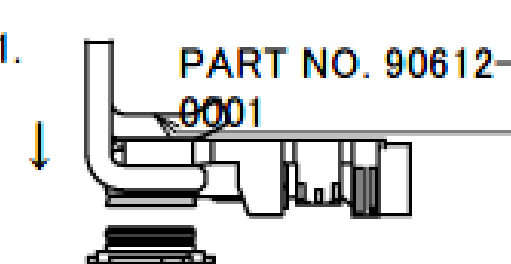
#### NOTE 2.



#### NOTE 3-2-1.



#### NOTE 3-1.



#### NOTE 3-2-2.



| NO. | DESCRIPTION    | MATERIAL        | FINISH, REMARKS   |
|-----|----------------|-----------------|---|
| 3   | GROUND CONTACT | PHOSPHOR BRONZE | ALL OVER Ni 1.00 μm MIN.<br>CONTACT PART Au 0.05 μm MIN.<br>[Ni PLATING AREA] Ni ONLY |
| 2   | CONTACT        | PHOSPHOR BRONZE | ALL OVER Ni 1.00 μm MIN.<br>CONTACT PART Au 0.05 μm MIN.                              |
| 1   | HOUSING        | LCP             | UL94V-0, BLACK (GF 30%)   |



# MHF® 5L plug Ni top (1.13)

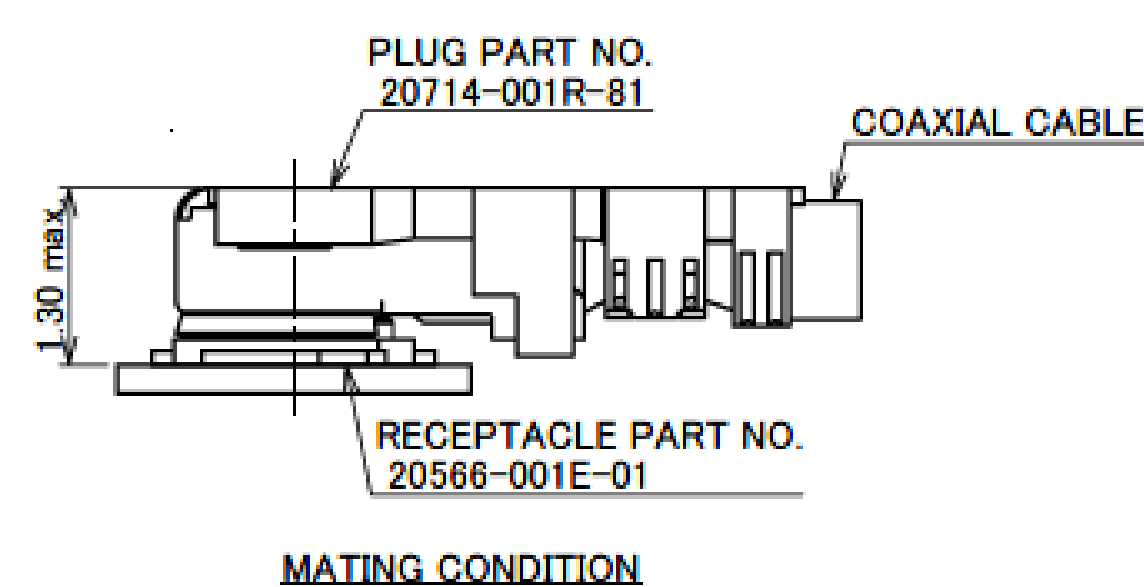
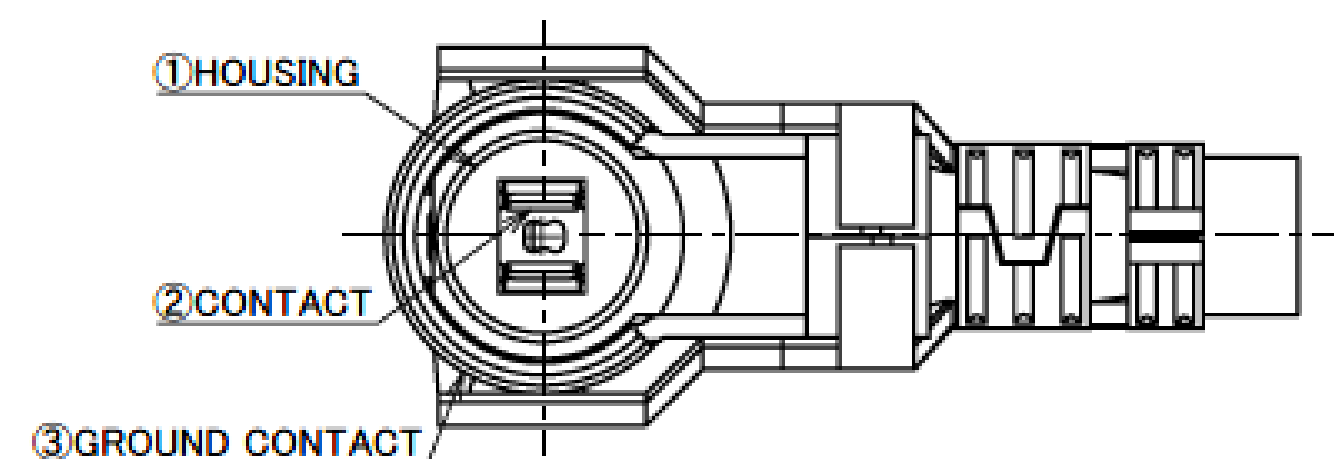
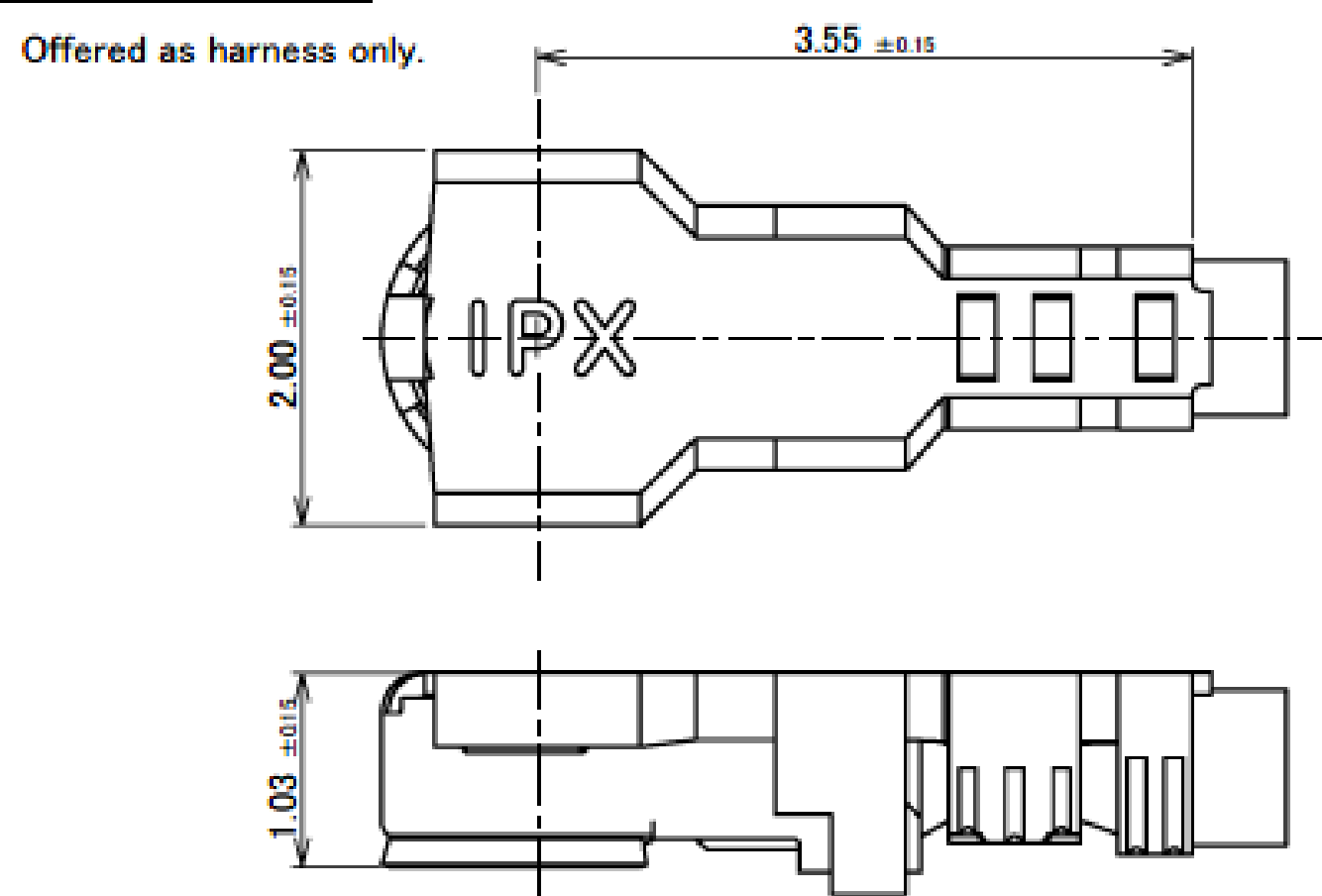
| ITEMS  | SPECIFICATION  |
|--|--|
| RECOMMENDED APPLICABLE CONNECTOR PART No.            | 20566-001E-01  |
| RATING VOLTAGE                                       | 60 V AC (R.M.S)  |
| RATING FREQUENCY                                     | DC~15 GHz  |
| OPERATING TEMPERATURE                                | 233~363K (-40°C~+90°C)   |
| VSWR<br>(MATED WITH SMA ADAPTER PART No. 90543-0001) | 1.30 MAX. AT 0.1~3 GHz, 1.40 MAX. AT 3~6 GHz,<br>1.50 MAX. AT 6~12 GHz, 1.60 MAX. AT 12~15 GHz |
| MAIN CONTACT RESISTANCE                              | INITIAL: 20 mohm MAX. / AFTER TEST: $\Delta$ R 20 mohm MAX.                                    |
| GROUND CONTACT RESISTANCE                            | INITIAL: 20 mohm MAX. / AFTER TEST: $\Delta$ R 100 mohm MAX.                                   |
| INSULATION RESISTANCE                                | INITIAL: 500 Mohm MIN. / AFTER TEST: 100 Mohm MIN.   |
| DIELECTRIC WITHSTANDING VOLTAGE                      | 200 V AC, 1 MINUTE   |
| DURABILITY   | 30 CYCLES  |
| UNMATING FORCE (INITIAL / AFTER TEST)                | INITIAL: 5 N MIN. / AFTER TEST: 3 N MIN.   |
| CRIMP STRENGTH                                       | 10 N MIN.  |
| PRODUCT SPECIFICATION                                | PRS-2192   |
| TEST REPORT  | TR-16003   |
| INSTRUCTION MANUAL                                   | HIM-16014  |
| APPEARANCE CRITERIA No.                              | QLS-A***   |

Rev.4

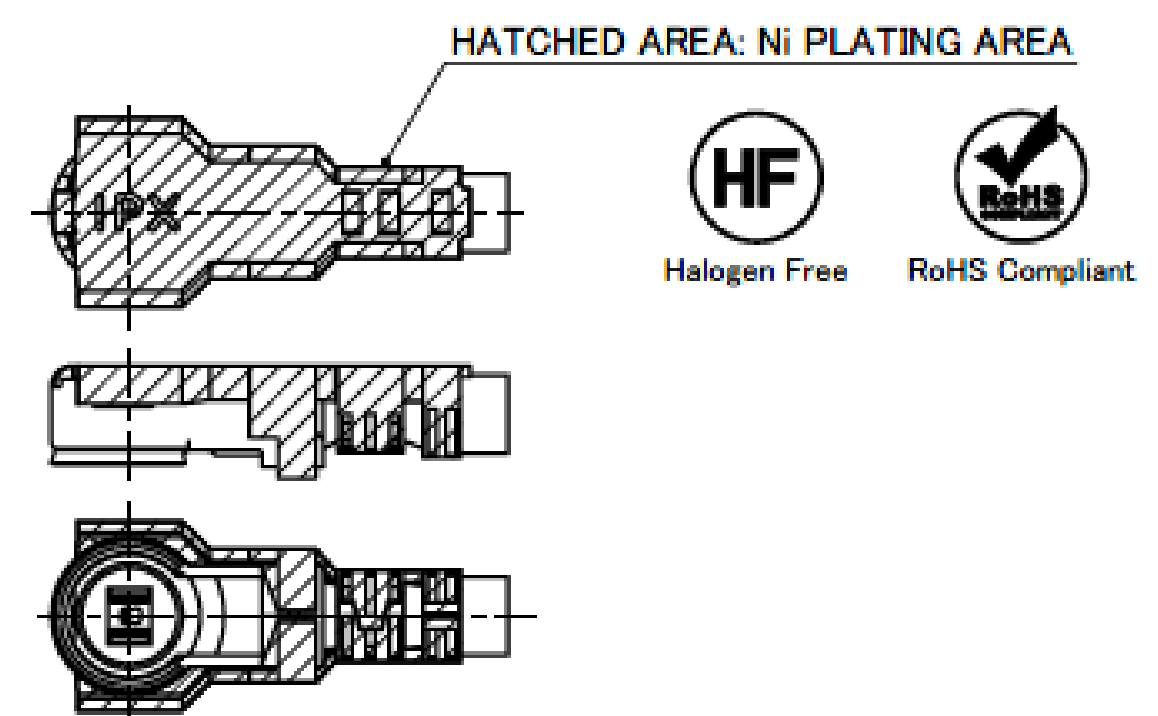
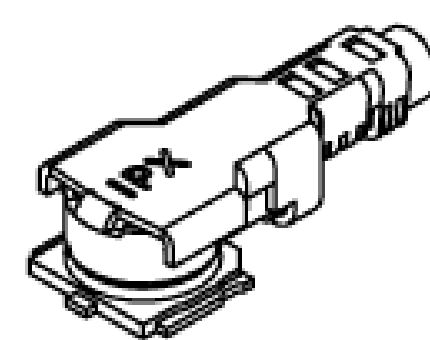
# MHF® 5L plug Ni top (0.81)

|                 |               |
|-----------------|---------------|
| Recommended P/N | 20714-001R-81 |
| PART No.        | 20714-001R-81 |

Offered as harness only.



MATING CONDITION



NOTES.

1. APPLICABLE CONNECTOR: 20566-001E-01
2. PERMISSIBLE LOAD OF CABLE AT MATING
3. MATING AND UNMATING INSTRUCTION

3-1. MATING

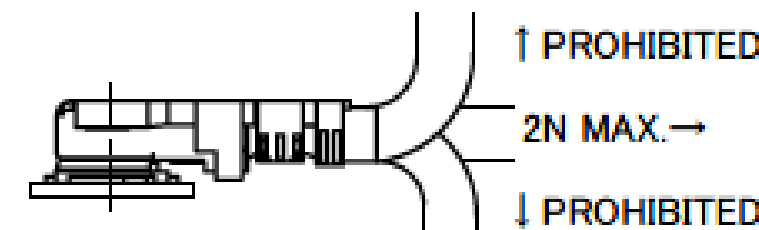
MATE THE CONNECTOR VERTICALLY AS MUCH AS POSSIBLE, ADJUSTING THE MATING AXIS OF PLUG AND RECEPTACLE. DO NOT SLANT MATE.

3-2. UNMATING

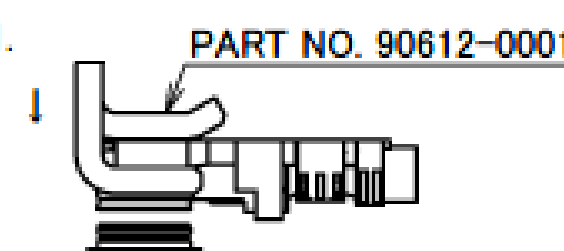
3-2-1. IN CASE OF UNMATING BY PULLING TOOL (PART NO. 90612-0001) USE THE PULLING TOOL AS THE FOLLOWING DRAWING, AND PULL PLUG TO VERTICAL DIRECTION AS DIRECTLY AS POSSIBLE.

3-2-2. IN CASE OF UNMATING DIRECTLY BY HAND CATCH THE CATCHING AREA OF PLUG, AND PULL PLUG TO VERTICAL DIRECTION AS DIRECTLY AS POSSIBLE.

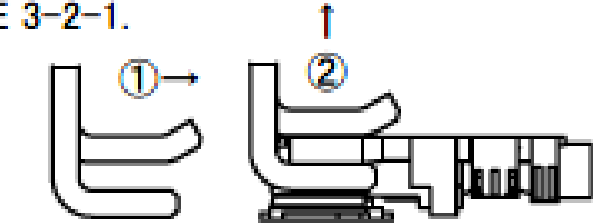
NOTE 2.



NOTE 3-1.



NOTE 3-2-1.



NOTE 3-2-2.



| NO. | DESCRIPTION    | MATERIAL        | FINISH, REMARKS   |
|-----|----------------|-----------------|---|
| 3   | GROUND CONTACT | PHOSPHOR BRONZE | ALL OVER Ni 1.00 μm MIN.<br>CONTACT PART Au 0.05 μm MIN.<br>[Ni PLATING AREA] Ni ONLY |
| 2   | CONTACT        | PHOSPHOR BRONZE | ALL OVER Ni 1.00 μm MIN.<br>CONTACT PART Au 0.05 μm MIN.                              |
| 1   | HOUSING        | LCP             | UL94V-0, BLACK (GF 30%)   |

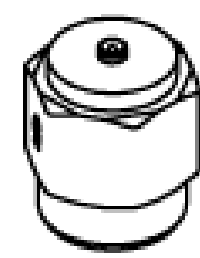
Rev.4

# MHF® 5L plug Ni top (0.81)

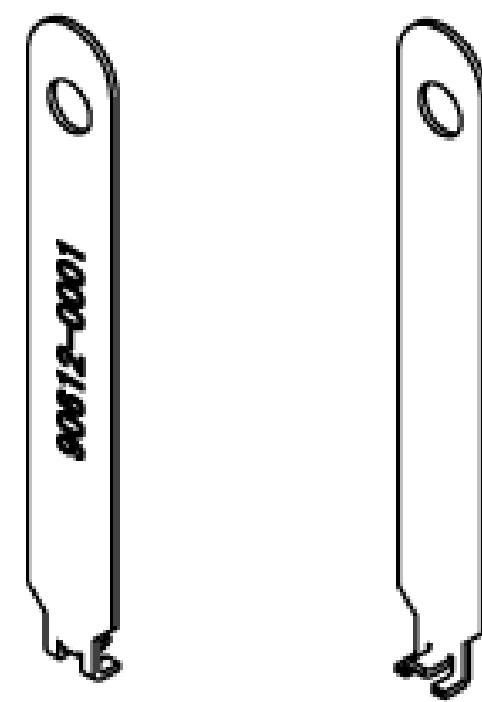
| ITEMS  | SPECIFICATION  |
|--|--|
| RECOMMENDED APPLICABLE CONNECTOR PART No.            | 20566-001E-01  |
| RATING VOLTAGE                                       | 60 V AC (R.M.S)  |
| RATING FREQUENCY                                     | DC ~ 15 GHz  |
| OPERATING TEMPERATURE                                | 233 ~ 363 K (-40°C ~ +90°C)  |
| VSWR<br>(MATED WITH SMA ADAPTER PART No. 90543-0001) | 1.30 MAX. AT 0.1 ~ 3 GHz, 1.40 MAX. AT 3 ~ 6 GHz,<br>1.50 MAX. AT 6 ~ 12 GHz, 1.60 MAX. AT 12 ~ 15 GHz |
| MAIN CONTACT RESISTANCE                              | INITIAL: 20 mohm MAX. / AFTER TEST: $\Delta$ R 20 mohm MAX.  |
| GROUND CONTACT RESISTANCE                            | INITIAL: 20 mohm MAX. / AFTER TEST: $\Delta$ R 100 mohm MAX.   |
| INSULATION RESISTANCE                                | INITIAL: 500 Mohm MIN. / AFTER TEST: 100 Mohm MIN.   |
| DIELECTRIC WITHSTANDING VOLTAGE                      | 200 V AC, 1 MINUTE   |
| DURABILITY   | 30 CYCLES  |
| UNMATING FORCE (INITIAL / AFTER TEST)                | INITIAL: 5 N MIN. / AFTER TEST: 3 N MIN.   |
| CRIMP STRENGTH                                       | 10 N MIN.  |
| PRODUCT SPECIFICATION                                | PRS-2236   |
| TEST REPORT  | TR-16049   |
| INSTRUCTION MANUAL                                   | HIM-16014  |
| APPEARANCE CRITERIA No.                              | QLS-A***   |

Rev.4

## Accessories for MHF® 5L plug Ni top

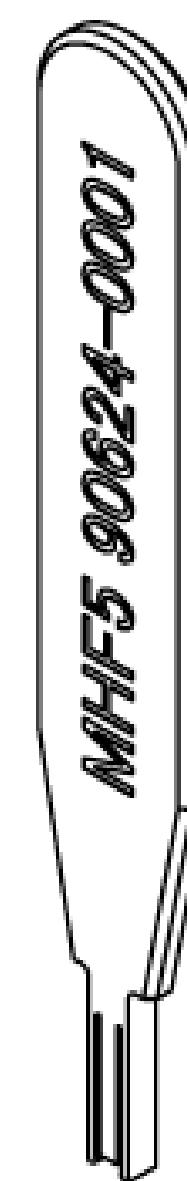


SMA ADAPTOR FOR MHF 5 PLUG  
PART NO. 90543-0001



FRONT SIDE      BACK SIDE

MHF 5 PUSHING AND PULLING TOOL  
PART NO. 90612-0001

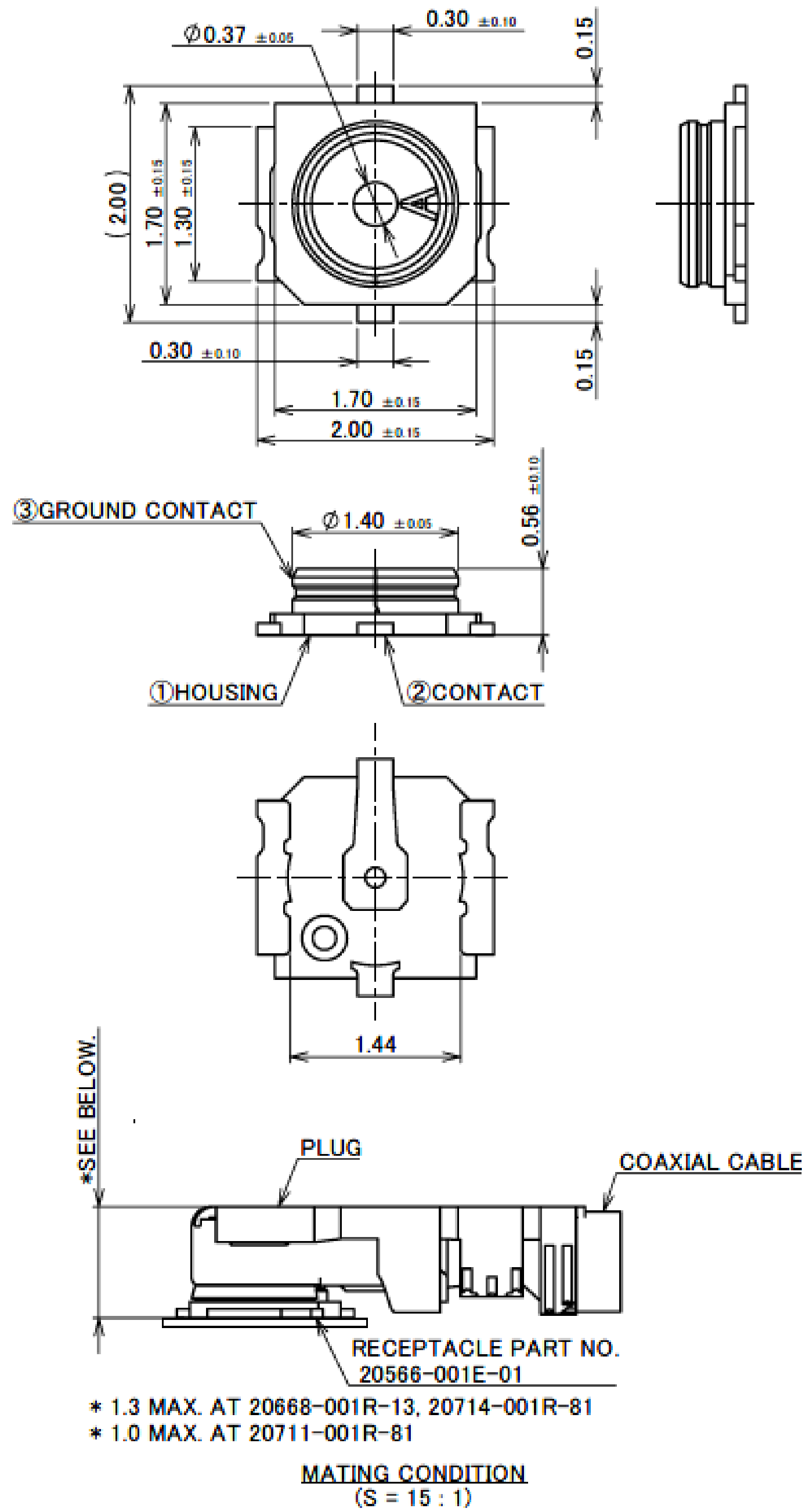


MHF 5 PUSHING TOOL  
PART NO. 90624-0001

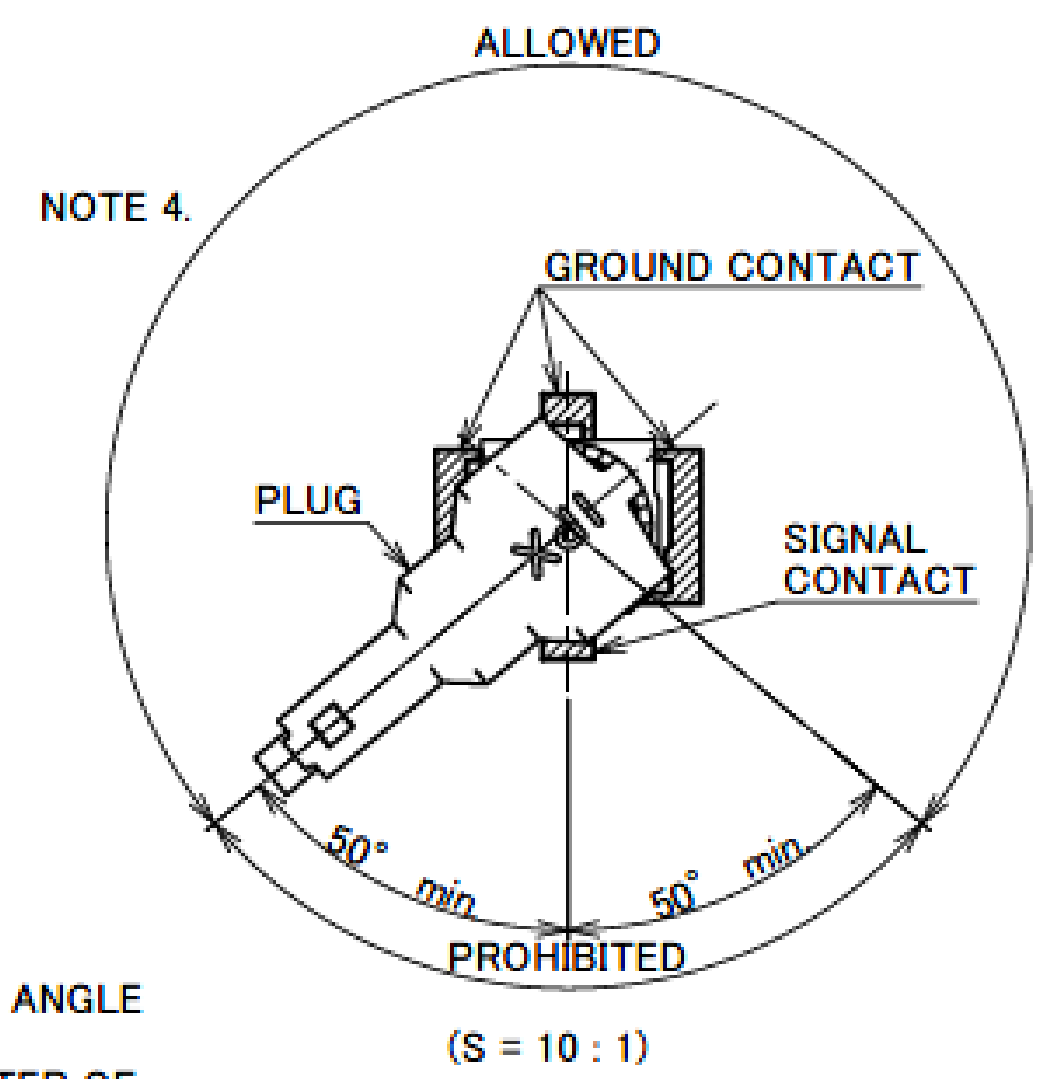
Rev.4

# MHF<sup>®</sup> 5 Receptacle

|                 |               |
|-----------------|---------------|
| Recommended P/N | 20566-001E-01 |
| PART NO.        | 20566-001E-01 |



- NOTES
1. APPLICABLE CONNECTOR  
20567-001R-81  
20615-00\*R-48  
20668-001R-13  
20669-001R-81  
20711-001R-81  
20714-001R-81
  2. COPLANARITY: 0.1mm MAX.
  3. THIS IS "Pb-FREE" CONNECTOR.
  4. PRECAUTIONS FOR CABLE POSITION  
[PART NO. 20567-001R-81, 20615-00\*R-48]  
THE PLUG SHALL NOT BE PLACED WITHIN 50 DEGREES ANGLE FROM CENTER OF THE SIGNAL CONTACT.  
TILT THE PLUG AT LEAST 50 DEGREES FROM THE CENTER OF A SIGNAL CONTACT.

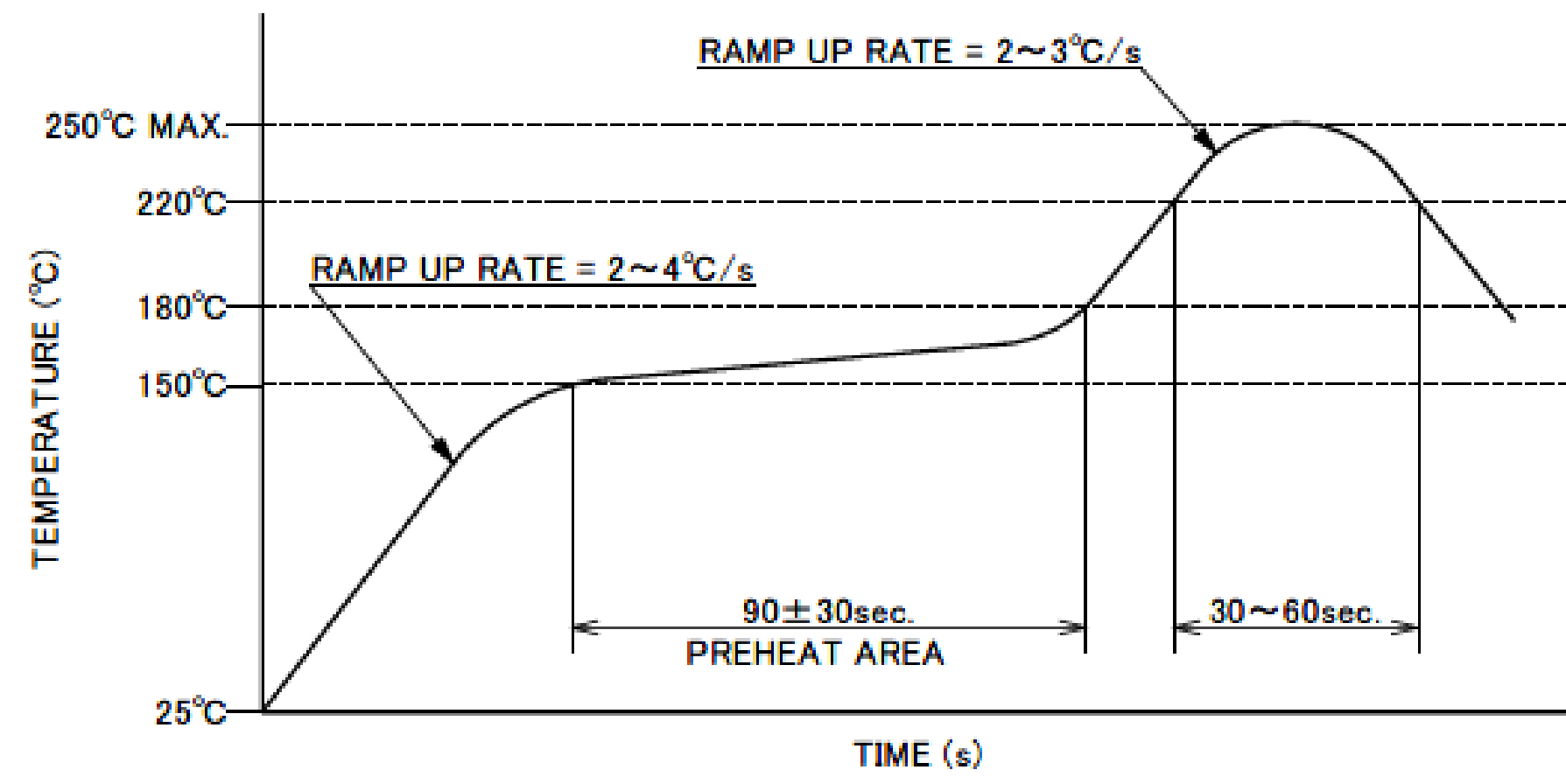
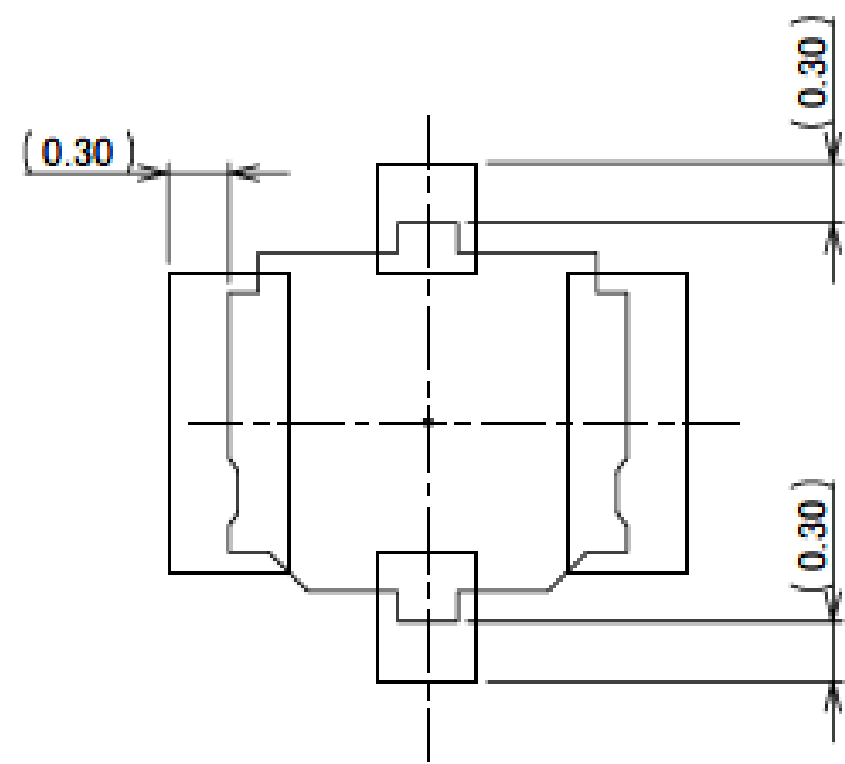
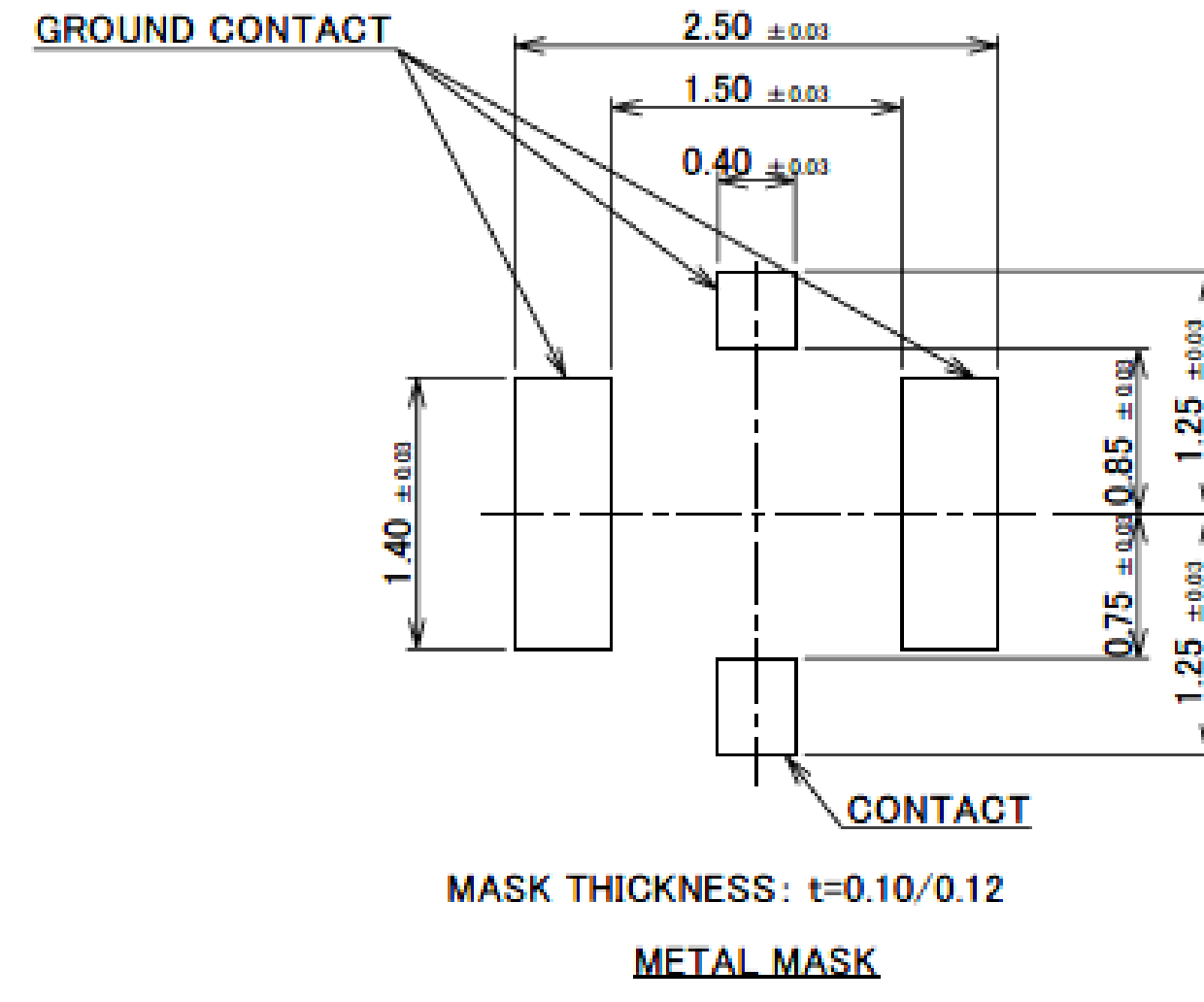
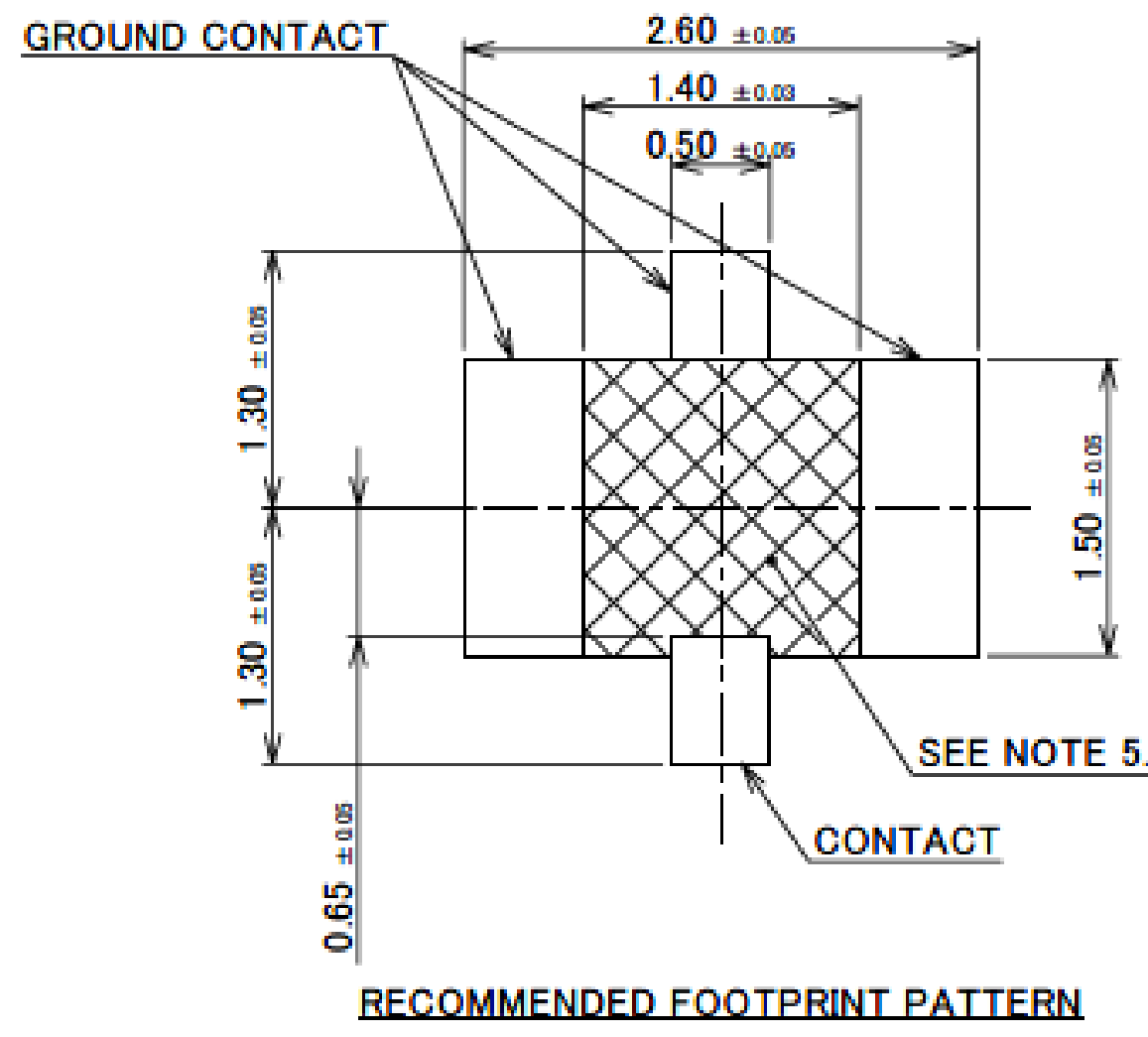


| NO. | DESCRIPTION    | MATERIAL        | FINISH, REMARKS   |
|-----|----------------|-----------------|---|
| 3   | GROUND CONTACT | PHOSPHOR BRONZE | ALL OVER Ni 1.00 $\mu$ m MIN.<br>CONTACT PART Au 0.01 $\mu$ m MIN.<br>UNDER PLATE Pd-Ni 0.02 $\mu$ m MIN.<br>SOLDERING PART Au 0.01 $\mu$ m MIN.<br>UNDER PLATE Pd-Ni 0.02 $\mu$ m MIN. |
| 2   | CONTACT        | BRASS           | ALL OVER Ni 1.00 $\mu$ m MIN.<br>CONTACT PART Au 0.1 $\mu$ m MIN.<br>SOLDERING PART Au 0.03 $\mu$ m MIN.  |
| 1   | HOUSING        | LCP             | UL94V-0, BLACK  |

Rev.9

| ITEMS   | SPECIFICATION  |   |   |   |  |
|---|--|---|---|---|--|
| RECOMMENDED APPLICABLE CONNECTOR PART No.         | 20668-001R-13  | 20711-001R-81<br>(CABLE AWG#36 $\phi$ 0.81) | 20714-001R-81                             | 20711-001R-81<br>(CABLE AWG#36 $\phi$ 0.64) | 20615-001R-48<br>(ALL Au PLATING TYPE)                         |
| RATING VOLTAGE                                    | 60 V AC (R.M.S)  |   |   |   |  |
| RATING FREQUENCY                                  | DC~15 GHz  |   |   |   |  |
| OPERATING TEMPERATURE                             | 233~363 K (-40°C~+90°C)  |   |   |   |  |
| VSWR (MATED WITH SMA ADAPTER PART No. 90543-0001) | 1.30 MAX. AT 0.1~3 GHz, 1.40 MAX. AT 3~6 GHz,<br>1.50 MAX. AT 6~12 GHz, 1.65 MAX. AT 12~15 GHz |   |   |   |  |
| MAIN CONTACT RESISTANCE                           | INITIAL: 20 mohm MAX. / AFTER TEST: $\Delta$ R 20 mohm MAX.                                    |   |   |   |  |
| GROUND CONTACT RESISTANCE                         | INITIAL: 20 mohm MAX. / AFTER TEST: $\Delta$ R 100 mohm MAX.                                   |   |   |   | INITIAL: 20 mohm MAX. /<br>AFTER TEST: $\Delta$ R 20 mohm MAX. |
| INSULATION RESISTANCE                             | INITIAL: 500 Mohm MIN. / AFTER TEST: 100 Mohm MIN.   |   |   |   |  |
| DIELECTRIC WITHSTANDING VOLTAGE                   | 200 V AC, 1 MINUTE   |   |   |   |  |
| DURABILITY  | 30 CYCLES  |   |   |   |  |
| UNMATING FORCE (INITIAL / AFTER TEST)             | INITIAL: 5 N MIN.<br>AFTER TEST: 3 N MIN.  | INITIAL: 4 N MIN.<br>AFTER TEST: 2 N MIN.   | INITIAL: 5 N MIN.<br>AFTER TEST: 3 N MIN. | INITIAL: 4 N MIN.<br>AFTER TEST: 2 N MIN.   | INITIAL: 4 N MIN.<br>AFTER TEST: 2 N MIN.                      |
| PRODUCT SPECIFICATION                             | PRS-2192   | PRS-2108                                    | PRS-2236                                  | PRS-2109                                    | PRS-1939   |
| TEST REPORT                                       | TR-16003   | TR-15062                                    | TR-16049                                  | TR-15063                                    | TR-14026   |
| PACKING STANDARD                                  | PST-12036  |   |   |   |  |
| INSTRUCTION MANUAL                                | HIM-16014  | HIM-16013                                   | HIM-16014                                 | HIM-16013                                   | HIM-13003  |
| APPEARANCE CRITERIA No.                           | QLS-A***   |   |   |   |  |

# MHF<sup>®</sup> 5 Receptacle



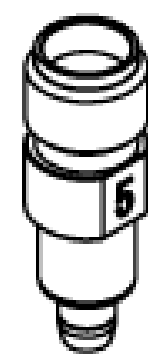
NOTES.  
5. NO GROUND, SIGNAL, AND RESIST IN THIS AREA.

Rev.9

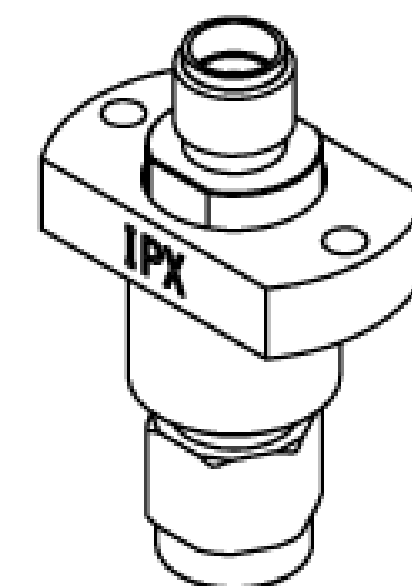
# Accessories for MHF<sup>®</sup> 5 Receptacle



**MHF 5 SMA ADAPTER**  
PART NO. 90543-0001

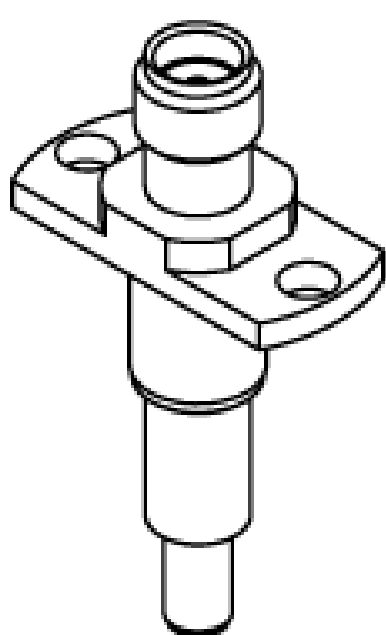


**MHF 5 RECEPTACLE HIGH CYCLE ATTACHMENT**  
PART NO. 90690-0001

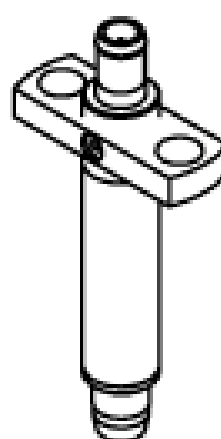


**MHF SERIESE HIGH CYCLE ADAP BASE UNIT**  
PART NO. 90684-0001

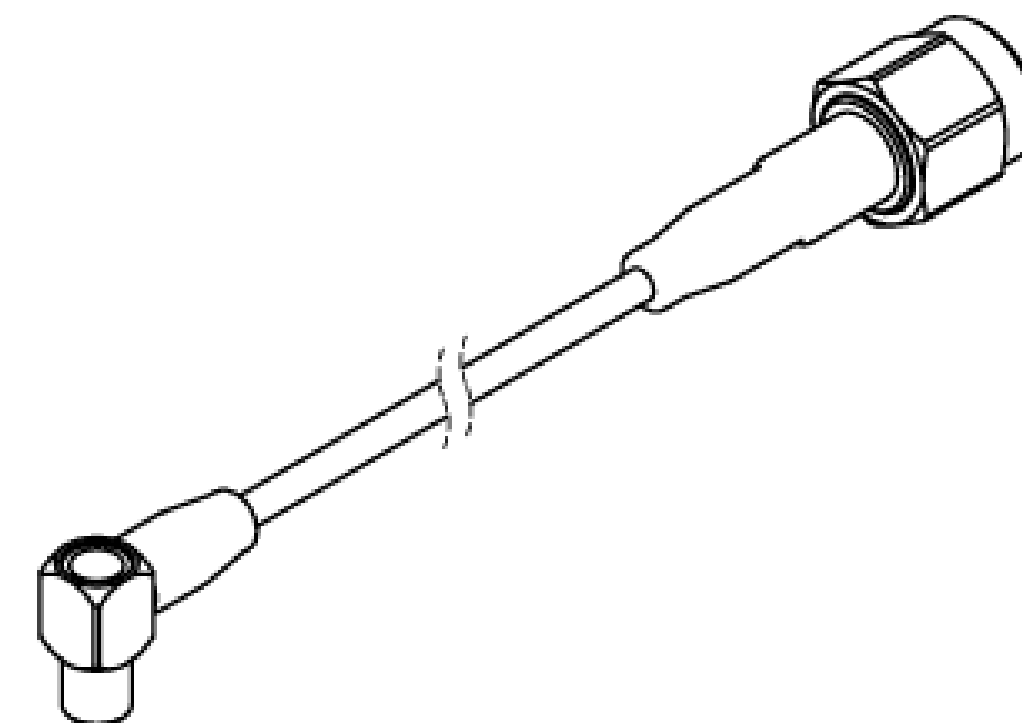
\* 90690-0001 AND 90684-0001 SHOULD BE USED TOGETHER.



**MHF 5 RECEPTACLE HIGH CYCLE SMA ADAPTER**  
PART NO. 90793-0001



**MHF 5 RECEPTACLE HIGH CYCLE N45 C ADAPTER**  
PART NO. 90847-0001



**MHF SERIES N45 C TO SMA ADAPTER CABLE**  
PART NO. 90577-\*\*\*\*

\* 90847-0001 AND 90577-\*\*\*\* SHOULD BE USED TOGETHER.

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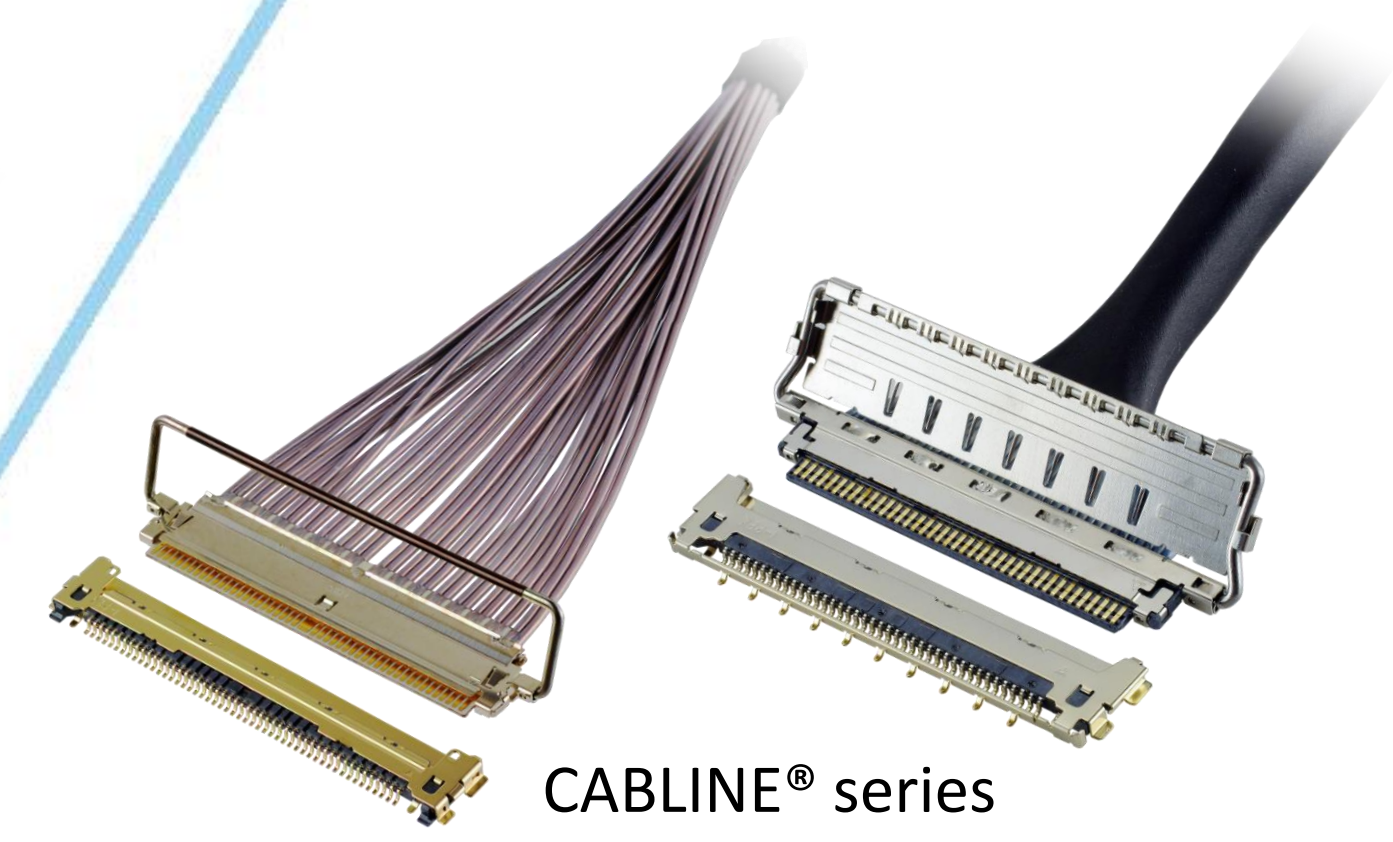
# Custom Products Available

## RF Connector

MHF® series



## Micro-coaxial/Twinax/Discrete Wire Connector



CABLINE® series

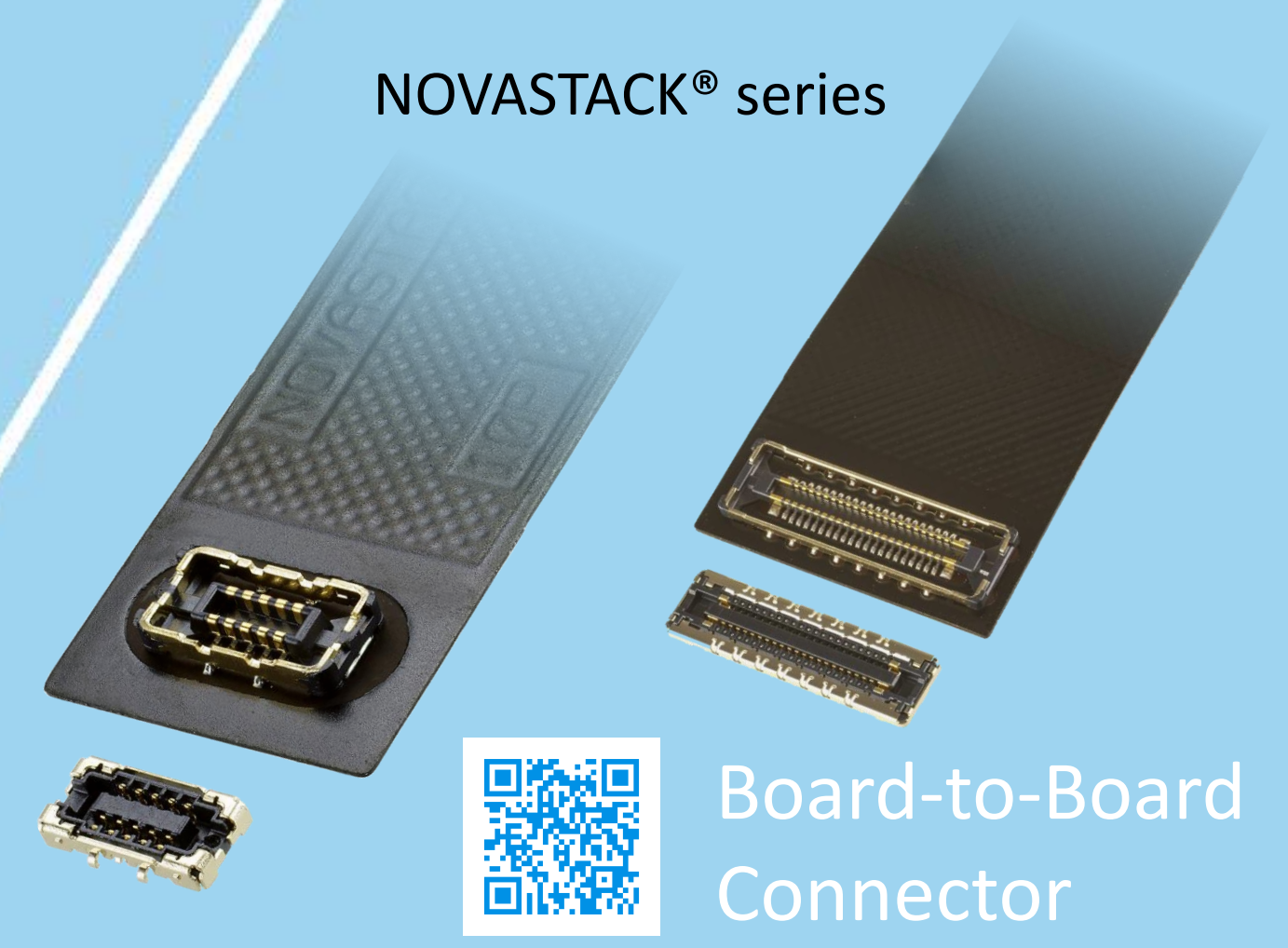


## Optical Module

LIGHTPASS® series



NOVASTACK® series



## Board-to-Board Connector



## Power Connector/Terminal

AP series

ISH® series



MINIFLEX® series

EVAFLEX® series



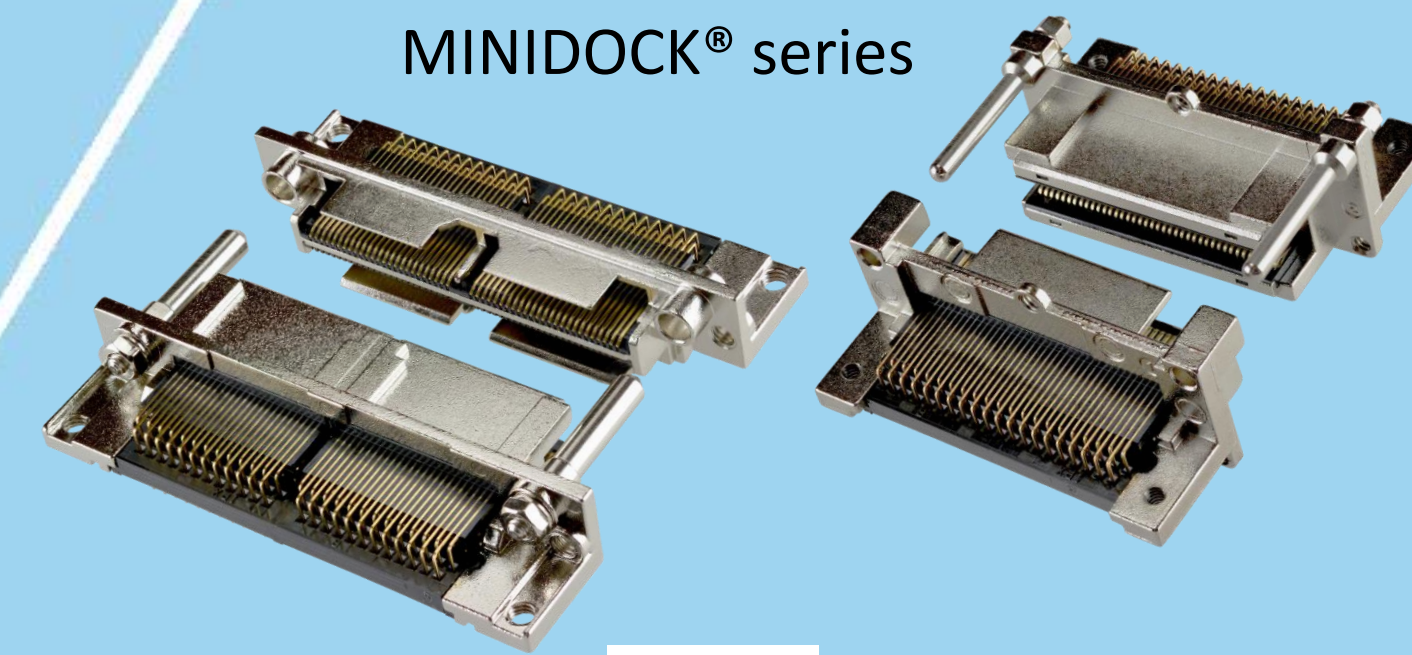
## FPC FFC Connector



Inquiry



MINIDOCK® series



## I/O Connector

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