

# MHF<sup>®</sup> 5L

Improved electrical performance of 1.6 VSWR through 15 GHz, mated height of 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<br>(L=100 mm)       | Connector   | PLUG     | RECEPTACLE |
|                          | DC ~ 3 GHz  | 1.3 max. |            |
|                          | 3 ~ 6 GHz   | 1.4 max. |            |
|                          | 6 ~ 12 GHz  | 1.5 max. |            |
|                          | 12 ~ 15 GHz | 1.6 max. | 1.65 max.  |

**Applicable Cable Size:**

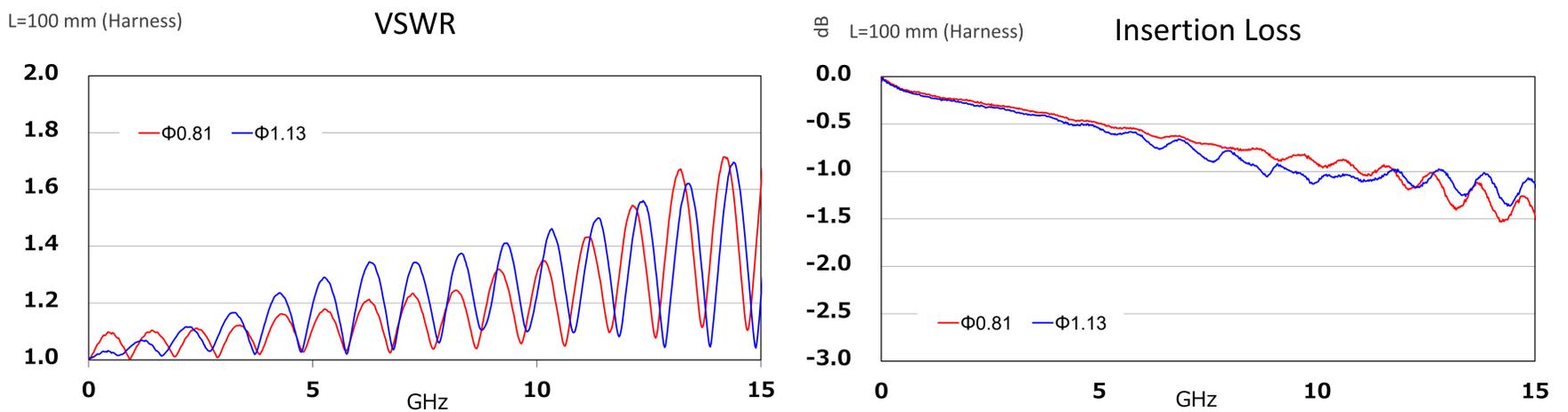
|                       |
|-----------------------|
| O.D. 1.13 mm / AWG 32 |
| O.D. 0.81 mm / AWG 33 |

**Applicable Standards (Reference Only):**

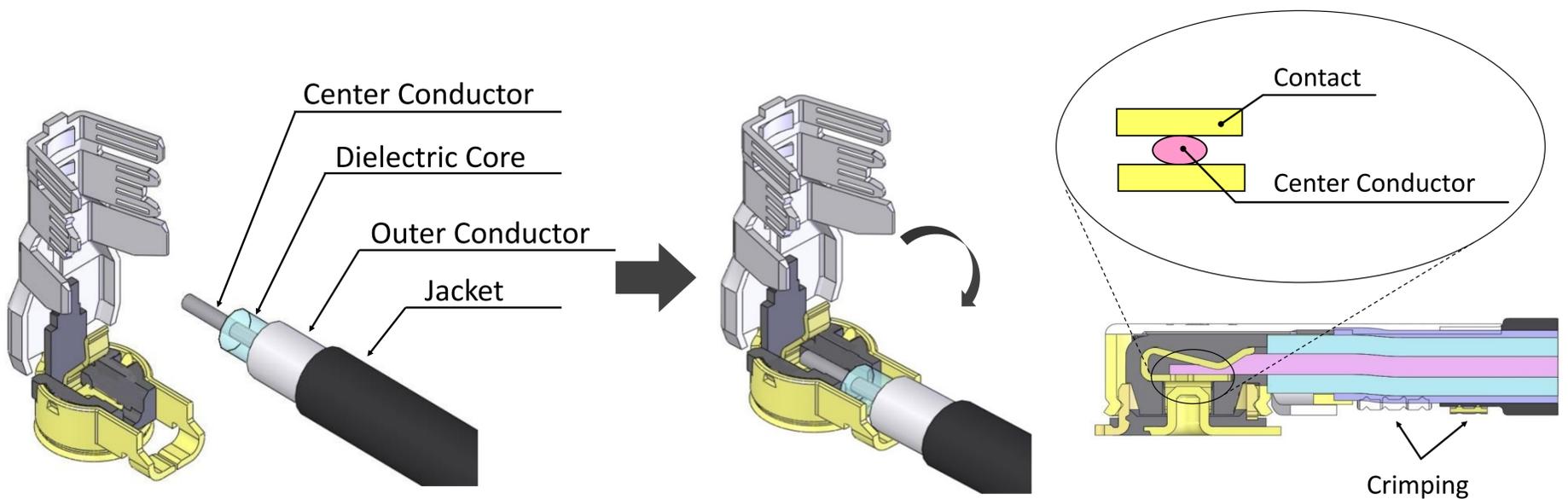
5G sub-6, Wi-Fi 6E, WiGig, LTE/LTE-Advanced, LPWA, Bluetooth, GPS



► **Small form factor with big performance through 15 GHz**



► **Solderless micro-coax termination technology "i-Fit<sup>®</sup>" provides consistent performance**



► **MHF<sup>®</sup> 5L plug available cable O.D. (AWG) : 1.13 mm (32), 0.81 mm (33)**

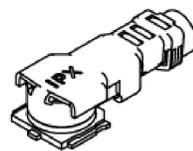
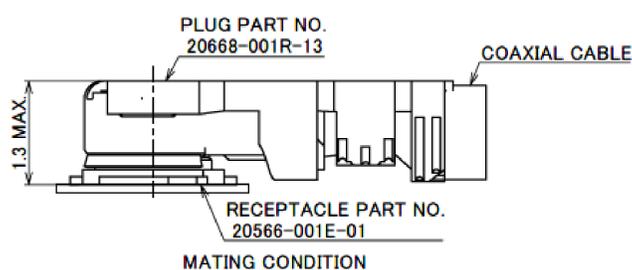
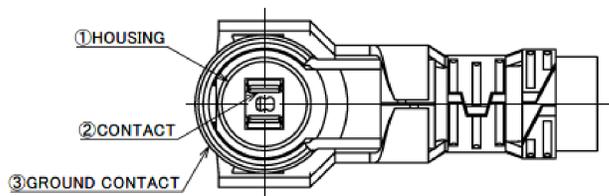
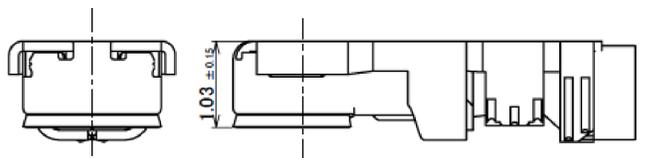
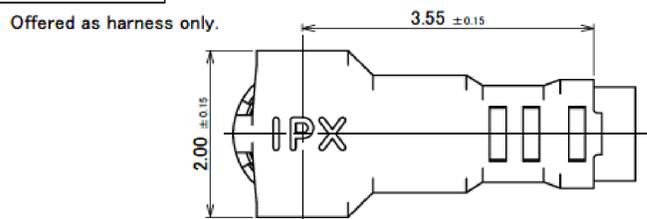
|  |                               |                     |
|--|-------------------------------|---------------------|
| Product name                           | MHF <sup>®</sup> 5            | MHF <sup>®</sup> 5L |
| Mating Height                          | 1.0 mm max.                   | 1.3 mm max.         |
| Coaxial 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

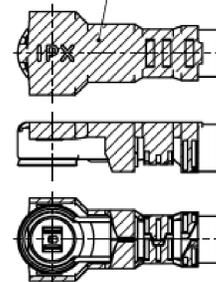
## MHF<sup>®</sup> 5L plug Ni top (1.13)

|                 |               |
|-----------------|---------------|
| Recommended P/N | 20668-001R-13 |
| PART No.        | 20668-001R-13 |

Offered as harness only.

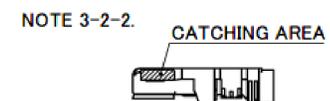
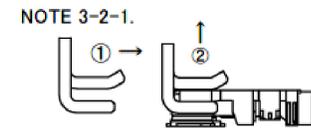
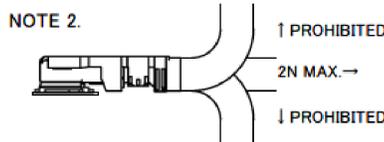


HATCHED AREA: Ni PLATING AREA



**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.



| 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)

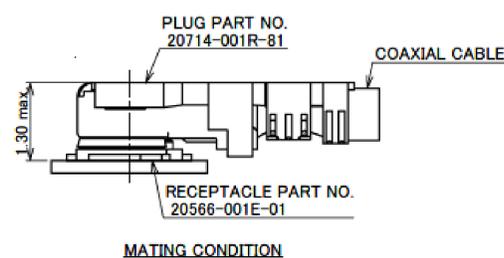
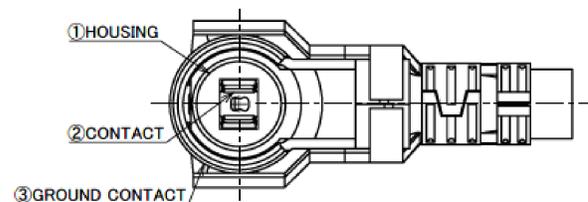
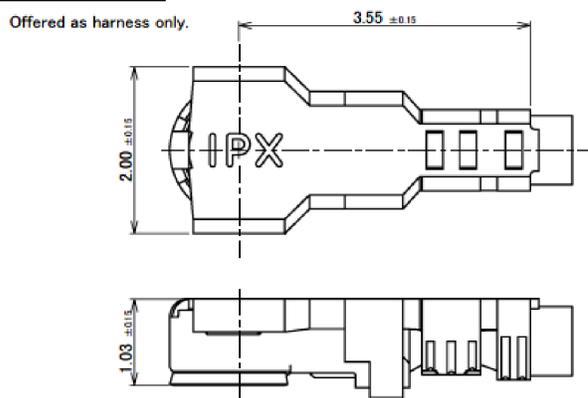
| ITEMS   | SPECIFICATION   |
|---|---|
| RECOMMENDED APPLICABLE CONNECTOR PART No.         | 20566-001E-01   |
| RATING VOLTAGE                                    | 60 V AC (R.M.S)   |
| RATING FREQUENCY                                  | DC~15 GHz   |
| OPERATING TEMPERATURE                             | 233~363K (-40°C~+90°C)  |
| VSWR (MATED WITH SMA ADAPTER PART No. 90543-0001) | 1.30 MAX. AT 0.1~3 GHz, 1.40 MAX. AT 3~6 GHz, 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.5

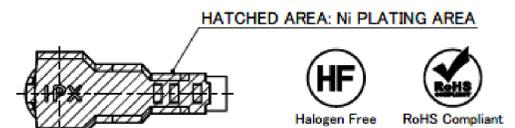
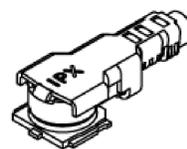
# MHF® 5L plug Ni top (0.81)

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

Offered as harness only.



MATING CONDITION

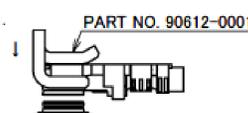


- NOTES.
- APPLICABLE CONNECTOR: 20566-001E-01
  - PERMISSIBLE LOAD OF CABLE AT MATING
  - MATING AND UNMATING INSTRUCTION
    - MATING  
MATE THE CONNECTOR VERTICALLY AS MUCH AS POSSIBLE, ADJUSTING THE MATING AXIS OF PLUG AND RECEPTACLE. DO NOT SLANT MATE.
    - UNMATING
      - IN CASE OF UNMATING 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.
      - 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 $\mu$ m MIN.<br>CONTACT PART Au 0.05 $\mu$ m MIN.<br>[Ni PLATING AREA] Ni ONLY |
| 2   | CONTACT        | PHOSPHOR BRONZE | ALL OVER Ni 1.00 $\mu$ m MIN.<br>CONTACT PART Au 0.05 $\mu$ m MIN.                              |
| 1   | HOUSING        | LCP             | UL94V-0, BLACK (GF 30%)   |

Rev.4

# MHF® 5L plug Ni top (0.81)

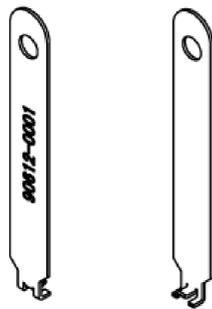
| ITEMS  | SPECIFICATION  |
|--|--|
| RECOMMENDED APPLICABLE CONNECTOR PART No.            | 20566-001E-01  |
| RATING VOLTAGE                                       | 60 V AC (R.M.S)  |
| RATING FREQUENCY                                     | DC ~ 15 GHz  |
| OPERATING TEMPERATURE                                | 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

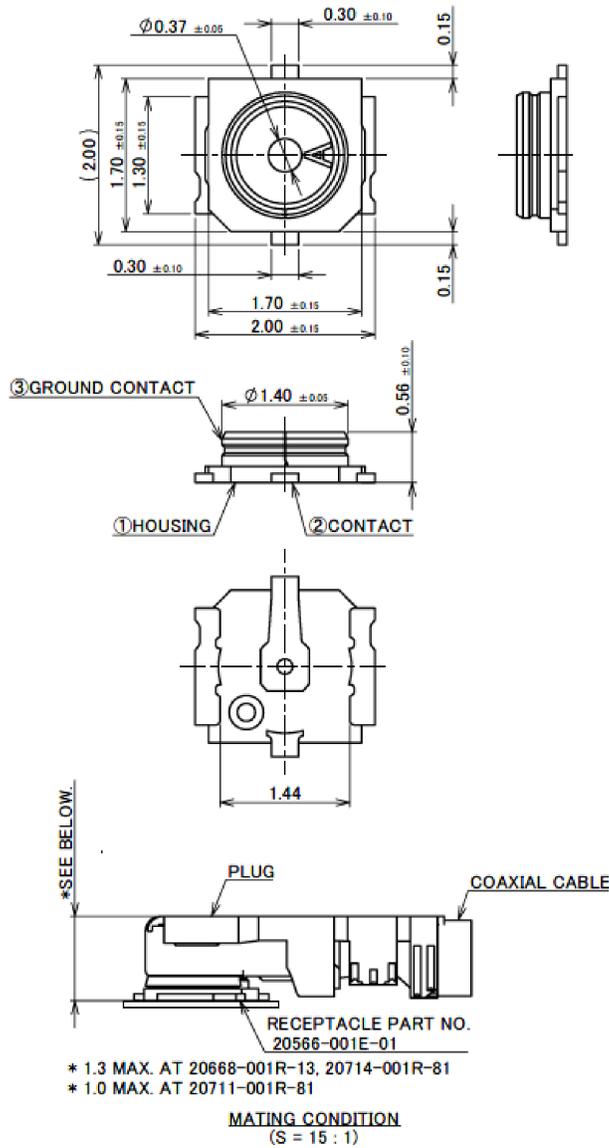


MHF 5 PUSHING TOOL  
PART NO. 90624-0001

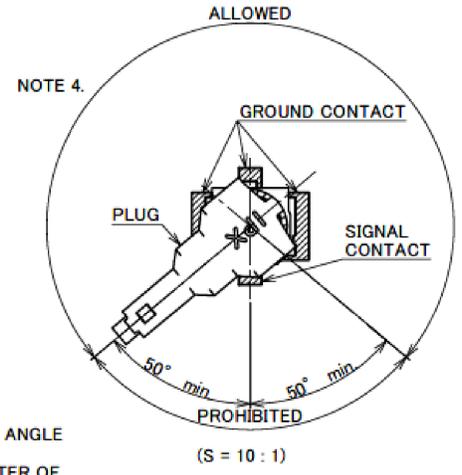
Rev.4

# 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.

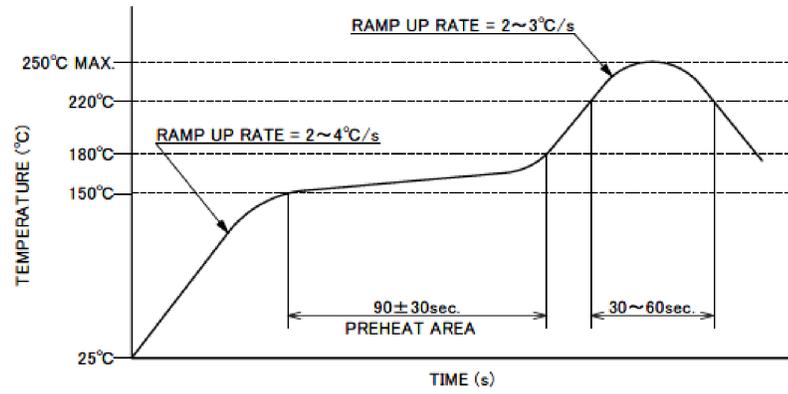
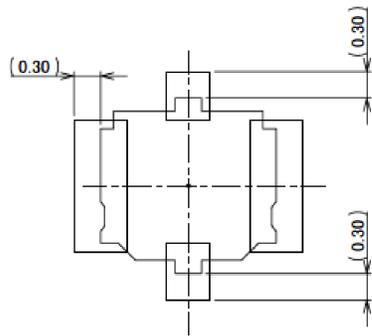
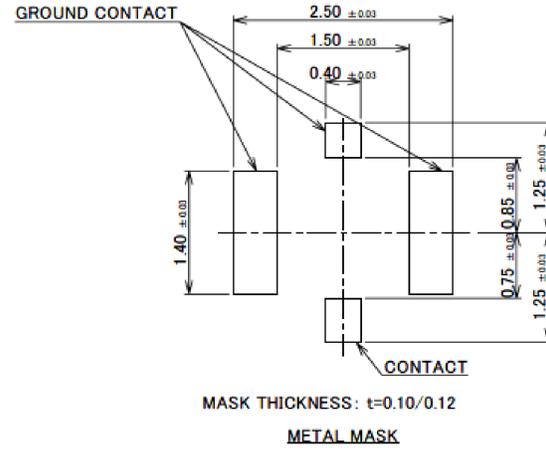
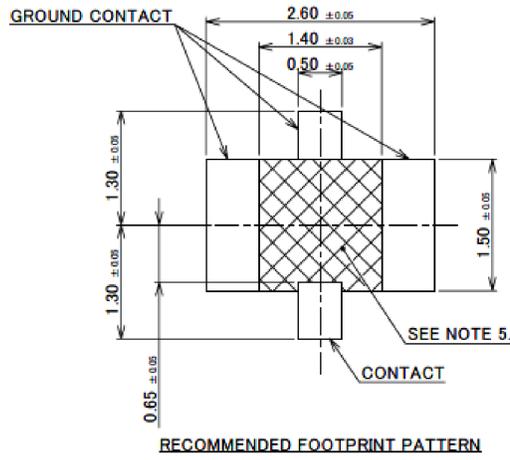


| NO. | DESCRIPTION    | MATERIAL        | FINISH, REMARKS   |
|-----|----------------|-----------------|---|
| 3   | GROUND CONTACT | PHOSPHOR BRONZE | ALL OVER Ni 1.00 $\mu$ m MIN.<br>CONTACT PART Au 0.01 $\mu$ m MIN.<br>UNDER PLATE Pd-Ni 0.02 $\mu$ m MIN.<br>SOLDERING PART Au 0.01 $\mu$ m MIN.<br>UNDER 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 (CABLE AWG#36 $\phi$ 0.81) | 20714-001R-81                          | 20711-001R-81 (CABLE AWG#36 $\phi$ 0.64) | 20615-001R-48 (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, 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. / 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. AFTER TEST: 3 N MIN.  | INITIAL: 4 N MIN. AFTER TEST: 2 N MIN.   | INITIAL: 5 N MIN. AFTER TEST: 3 N MIN. | INITIAL: 4 N MIN. AFTER TEST: 2 N MIN.   | INITIAL: 4 N MIN. 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

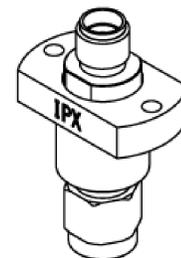
# Accessories for MHF<sup>®</sup> 5 Receptacle



MHF 5 SMA ADAPTER  
PART NO. 90543-0001

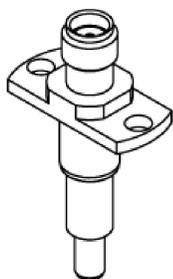


MHF 5 RECEPTACLE HIGH CYCLE ATTACHMENT  
PART NO. 90690-0001

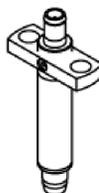


MHF SERIESE HIGH CYCLE ADAP BASE UNIT  
PART NO. 90684-0001

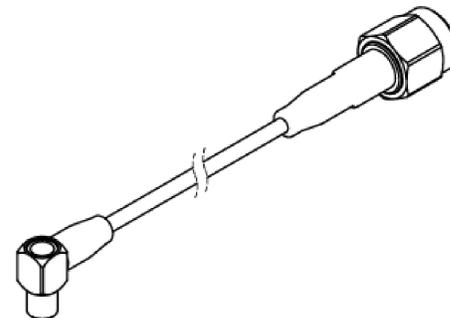
\* 90690-0001 AND 90684-0001 SHOULD BE USED TOGETHER.



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-\*\*\*\*

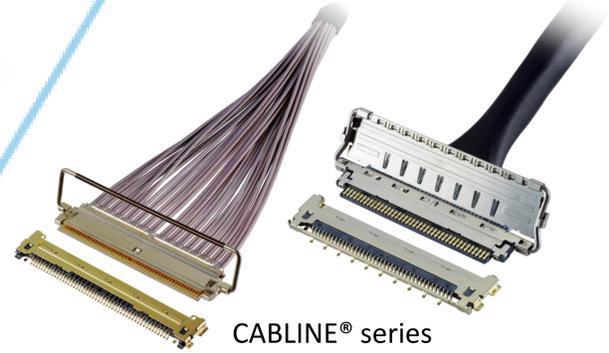
\* 90847-0001 AND 90577-\*\*\*\* SHOULD BE USED TOGETHER.

Rev.9

# Custom Connectors Available

 RF Connectors

MHF® series



CABLINE® series



Micro-coaxial/Twinax Connectors



Wire-to-Board Connectors/Terminals

AP series



ISH® series



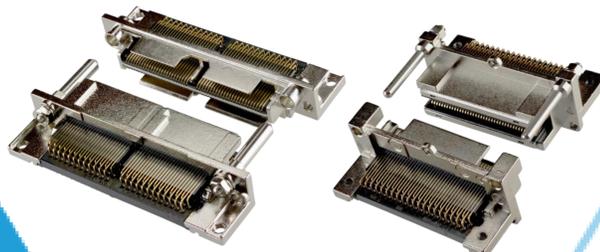
NOVASTACK® series



Board-to-Board Connectors



I/O Connectors



MINIDOCK™ series

MINIFLEX® series

EVAFLEX® series



FPC/FFC Connectors



Inquiry



I-PEX, MHF, CABLINE, NOVASTACK, ISH, IARPB, MINIFLEX, EVAFLEX, MINIDOCK and ZenShield are registered trademarks of I-PEX Inc. Please note that the contents in the catalog might be changed without prior notification. I-PEX Inc. assumes no responsibility for any inaccuracies or obligation to update information on these documents. Please be sure to read and understand the latest "Precautions for Use" and "Instruction Manual" before you use our products. We shall not be responsible for any defects, damages or troubles in case you use our products without following the precautions for use. Please feel free to contact our sales representatives when you use our products for any applications that require very high reliability and safety, or that relate to human life (ex. nuclear power control, aerospace, transportation, medical equipment, safety equipment etc.).

Contact your sales representative or more detailed information.

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



# I-PEX

© I-PEX Inc. 2025  
All rights reserved