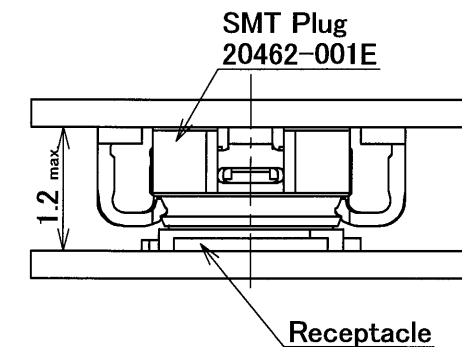
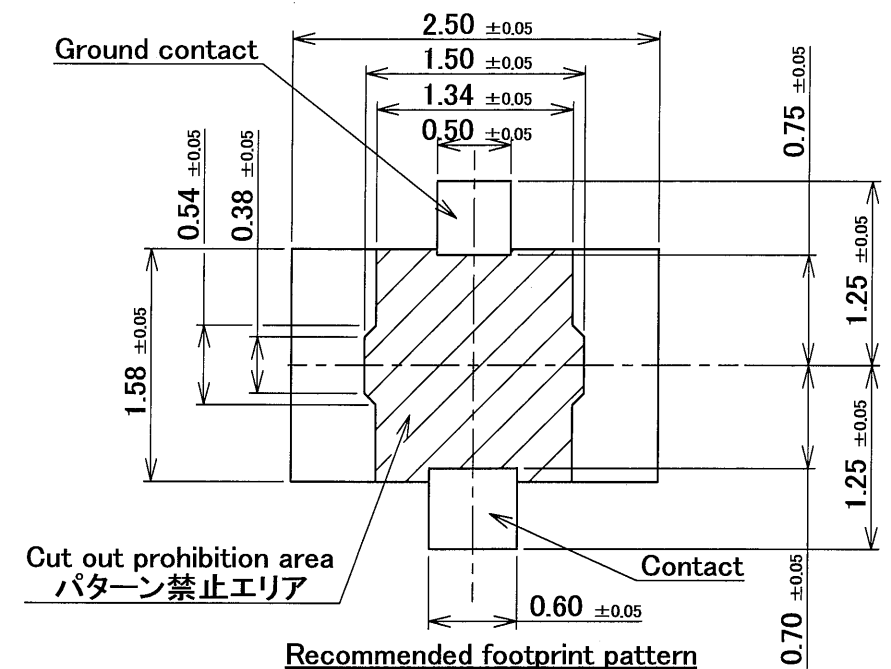
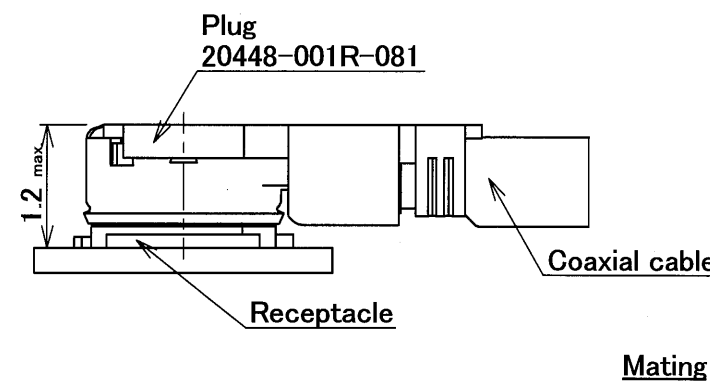
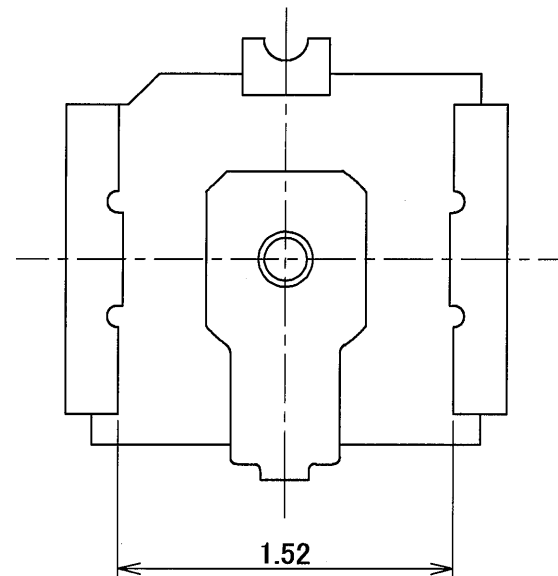
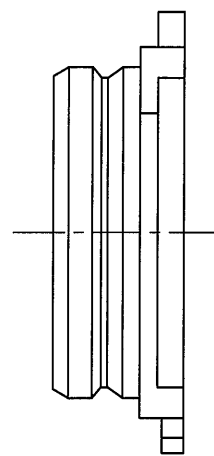
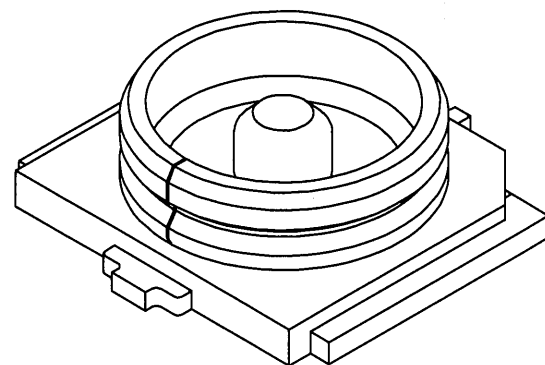
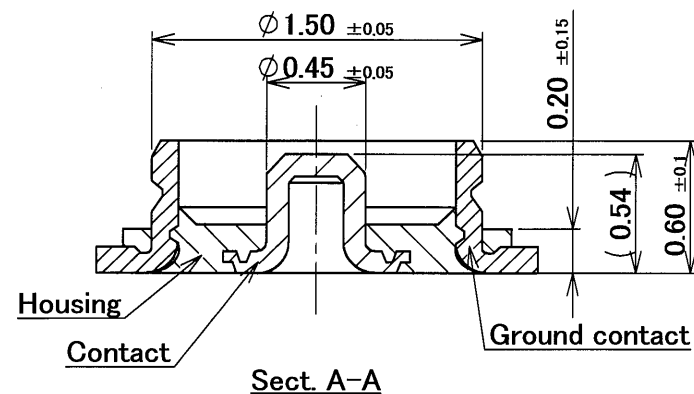
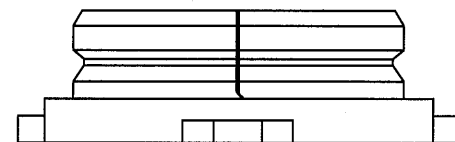
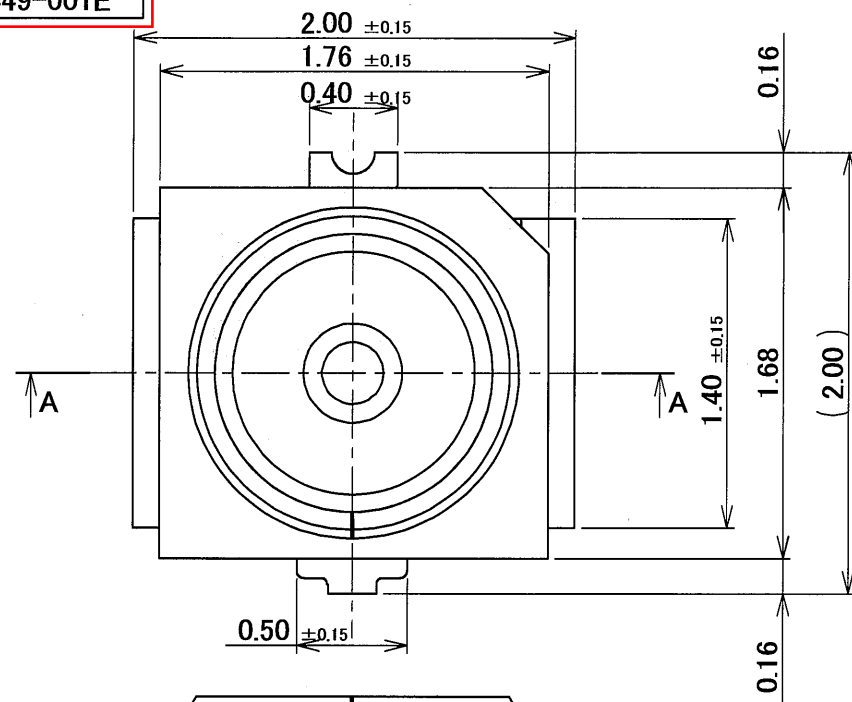


PART NO.  
20449-001E



#### Notes

##### 1. Material

- (1) Housing : LCP (GF=30%) black UL94-V-0
- (2) Contact : brass  
Au 0.05  $\mu$  m MIN. over Ni 1.27  $\mu$  m MIN.
- (3) Ground contact : phosphor bronze  
Au 0.03  $\mu$  m MIN. OVER Ni 1.27  $\mu$  m MIN.

##### 2. Coplanarity : 0.1mm MAX

##### 3. Packing : emboss tape

##### 4. Mating partner part No.

20448-001R-081, 20462-001E

##### 5. This is "Pb-free" connector

##### 6. RoHS compliant

#### Notes

##### 1. 材料

- (1) ハウジング: LCP (GF=30%) 黒 UL94-V-0
- (2) コンタクト: 黄銅  
Au 0.05  $\mu$  m MIN. over Ni 1.27  $\mu$  m MIN.
- (3) グランドコンタクト: りん青銅  
Au 0.03  $\mu$  m MIN. OVER Ni 1.27  $\mu$  m MIN.

##### 2. コプラナリティ: 0.1mm MAX

##### 3. 梱包: エンボステープ

##### 4. 嵌合相手 part No.

20448-001R-081, 20462-001E

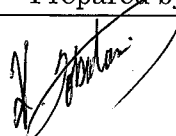
##### 5. 本コネクタは"Pb-free"である

##### 6. RoHS指令を満足している

| GENERAL TOLERANCE |      |
|-------------------|------|
| 6 MAX.            | ±0.2 |
| 6 OVER MAX. 30    | ±0.3 |
| 30 OVER MAX. 120  | ±0.5 |
| ANGLE             | ±2°  |

|     |        |     |            |     |                            |  |                    |  |                                                                                        |  |         |      |          |       |      |
|-----|--------|-----|------------|-----|----------------------------|--|--------------------|--|----------------------------------------------------------------------------------------|--|---------|------|----------|-------|------|
|     |        |     |            |     | DESIGN'D BY<br>K.Ohbayashi |  | DATE<br>Nov/12/'07 |  | <div>I-PEX</div> <div>Interconnect<br/>and Packaging Electronics<br/>TOKYO,JAPAN</div> |  |         |      |          |       |      |
|     |        |     |            |     | CHK'D BY                   |  | DATE               |  |                                                                                        |  |         |      |          |       |      |
| 1   | Z08315 | K.O | Jul/08/08  | EK  | APP'D BY                   |  | DATE/UNIT          |  | TITLE<br>MHF4 Connector receptacle                                                     |  | General |      |          |       |      |
| 0   | Z07593 | K.O | Nov/12/'07 |     | E.Kawabe                   |  | Nov/13/'07         |  |                                                                                        |  |         |      |          |       |      |
| REV | ECN    | BY  | DATE       | APP | REV.RECORD                 |  | CUSTOMER COPY      |  | PROJECTION                                                                             |  | SCALE   | UNIT | DWG. No. | SHEET | REV. |
|     |        |     |            |     | SERIES No.                 |  | 2814               |  |                                                                                        |  | 20:1    | mm   | 20449    | 1/1   | 1    |

**PRODUCT SPECIFICATION****製品規格****MHF4 SMT PLUG****No. PRS-1404**

|      |        |     |            |      | Prepared by                                                                                        | Reviewed by               | Approved by                                                                                         |
|------|--------|-----|------------|------|----------------------------------------------------------------------------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------|
| 0    | S07294 | K.Y | Dec./14/07 |      | <br>Dec. 14/07 | T. Takano<br>Dec. 14/2007 | <br>Dec. 18/07 |
| REV. | ECN    | DR. | DATE       | APP. | REVISION RECORD                                                                                    |                           |                                                                                                     |

|                               |               |          |
|-------------------------------|---------------|----------|
| DOCUMENT CLASSIFICATION       | TITLE         | No.      |
| Product Specification<br>製品規格 | MHF4 SMT PLUG | PRS-1404 |

1. 序言/Scope  
MHF4 SMT PLUG は嵌合高さ最大 1.2mm の基板対基板コネクタです。  
MHF4 SMT PLUG is SMT type Board to Board connector, Mating height 1.2mm MAX.

2. 目的/Objectives  
本規格は MHF4 SMT PLUG の性能と試験条件について規定する。  
This specification covers the requirements for product performance and test methods of MHF4 SMT PLUG.

3. 定格/Ratings  
電圧/Rated voltage ... AC 60Vr.m.s.  
公称特性インピーダンス/Nominal characteristic impedance ... 50 ohm  
周波数/Frequency ... DC~6GHz  
電圧定在波比/VSWR ... 1.3MAX.(DC~3GHz), 1.5MAX.(3~6GHz)  
使用温度範囲/Service Temperature ... 233K~363K(-40℃~90℃)

4. 製品名/Product Name  
Part Number  
P/N: 20462-001E(MHF4 SMT PLUG)  
Applicable connector  
P/N: 20449-001E(MHF4 Receptacle)

5. 構成、材料及び仕上げ/Construction, Material and Finish

5-1. プラスチック部品/Plastic Components  
ハウジング/Housing ... LCP, UL94V-0, Black

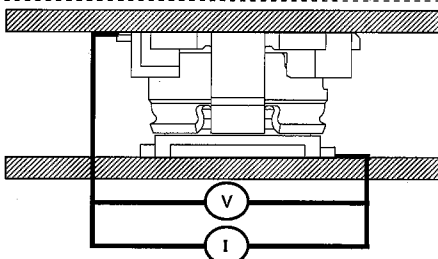
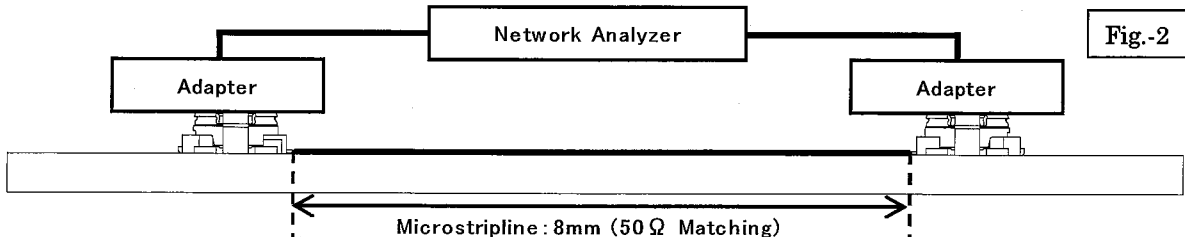
5-2. 金属部品/Metallic Components  
(1)中心コンタクト/Inner Contact ... りん青銅/Phosphor Bronze  
(a)メッキ/Plating ... Au over Pd + Ni  
(2)外部コンタクト/Ground Contact ... りん青銅/Phosphor Bronze  
(a)メッキ/Plating ... Au over Pd + Ni

6. 試験及び性能/Test and Performance

試験条件/Test Condition  
本試験の初期状態とは、出荷時の状態のことである。  
特に指定のない限り、測定と試験は、MIL-STD-202G に基づき以下の条件で行う。  
The initial condition in this test means the condition before shipment.  
Unless otherwise specified, all tests and measurements should be performed under the following conditions in accordance with MIL-STD-202G.  
温度/Temperature ... 288K~308K(15℃~35℃)  
気圧/Pressure ... 866hPa~1066hPa(650mmHg~800 mmHg)  
相対湿度/Relative Humidity ... 50±2%R.H.

|                                      |                      |                 |
|--------------------------------------|----------------------|-----------------|
| DOCUMENT CLASSIFICATION              | TITLE                | No.             |
| <b>Product Specification</b><br>製品規格 | <b>MHF4 SMT PLUG</b> | <b>PRS-1404</b> |

## 6-1. 電気的性能 / Electrical Performance

| No | 項目 / Items                      | 試験条件 / Test Conditions                                                                                                                                                                                                                                                                                                    | 規格 / Specifications                                                                                                                                        |
|----|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | 接触抵抗                            | テスト基板にリセプタクルコネクタを半田付けし、プラグコネクタを嵌合させ、Fig.-1 のように4端子法にて下記の条件にて測定する。<br>MIL-STD-202G 試験法 307 に準拠。<br>開放電圧 : 20mV MAX.<br>試験電流 : 10mA MAX.                                                                                                                                                                                    | 中心コンタクト<br>初期 : 20mΩ MAX.<br>試験後 : Δ R 20mΩ MAX.<br>外部コンタクト<br>初期 : 20mΩ MAX.<br>試験後 : Δ R 20mΩ MAX.                                                       |
|    | Contact Resistance              | Solder the receptacle connector to the test board and mate the plug connector together, then, measure the contact resistance as shown in Fig.1 by the four terminal method. Apply the low level condition in accordance with MIL-STD-202G, Method 307.<br>Open circuit voltage : 20mV MAX.<br>Circuit current : 10mA MAX. | <u>Inner contact</u><br>Initial : 20mΩ MAX.<br>After testing : Δ R20mΩ MAX.<br><u>Ground contact</u><br>Initial : 20mΩ MAX.<br>After testing : Δ R20mΩ MAX |
|    |                                 |                                                                                                                                                                                                                                        | Fig.-1                                                                                                                                                     |
| 2. | 絶縁抵抗                            | リセプタクル及びプラグコネクタを嵌合させた状態で、中心導体と外部導体の間に DC100V を印加し、測定する。<br>MIL-STD-202G 試験法 302 に準拠。                                                                                                                                                                                                                                      | 初期 : 500MΩ MIN.<br>試験後 : 100MΩ MIN.                                                                                                                        |
|    | Insulation Resistance           | Mate the plug and receptacle connector together, then, apply DC 100 V between the inner contact and the ground contact in accordance with MIL-STD-202G, Method 302.                                                                                                                                                       | Initial : 500MΩ MIN.<br>After testing : 100MΩ MIN.                                                                                                         |
| 3. | 耐電圧                             | リセプタクル及びプラグコネクタを嵌合させた状態で、中心導体と外部導体の間に AC200V(実効値)を一分間印加する。MIL-STD-202G 試験法 301 に準拠。                                                                                                                                                                                                                                       | 沿面放電、空中放電、絶縁破壊等の異常無きこと。                                                                                                                                    |
|    | Dielectric Withstanding Voltage | Mate the receptacle and plug connector together, then, apply AC 200 V rms between the inner contact and the ground contact for a minute in accordance with MIL-STD-202G, Method 301.                                                                                                                                      | No creeping discharge, no flashover, and no insulator breakdown                                                                                            |
| 4. | 電圧定在波比挿入損失                      | ネットワークアナライザーにて Fig.-2 のように電圧定在波比、挿入損失を測定する。<br>周波数 : VSWR 100M~6GHz, 挿入損失 3GHz                                                                                                                                                                                                                                            | <u>VSWR</u><br>1.3MAX.at 0.1~3GHz<br>1.5MAX.at 3~6GHz                                                                                                      |
|    | VSWR Insertion Loss             | Measure the VSWR and insertion loss as shown in Fig.-2 by the network analyzer.<br>Frequency : VSWR 100M~6GHz<br>Insertion Loss 3GHz                                                                                                                                                                                      | <u>Insertion Loss</u><br>-0.65dB MIN. at 3GHz                                                                                                              |
|    |                                 |                                                                                                                                                                                                                                       | Fig.-2                                                                                                                                                     |

|                               |               |          |
|-------------------------------|---------------|----------|
| DOCUMENT CLASSIFICATION       | TITLE         | No.      |
| Product Specification<br>製品規格 | MHF4 SMT PLUG | PRS-1404 |

## 6-2. 機械的性能/Mechanical Performance

| No | 項目 / Items                       | 試験条件 / Test Conditions                                                                                                                                                                                                                                                                                                                                                         | 規格 / Specifications                                                                                                                                                   |
|----|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | 挿抜力                              | テスト基板にリセプタクルコネクタを半田付けする。その後、試料を挿抜試験機に取り付け、嵌合軸と平行に毎分25±3mm の速度で挿入する。                                                                                                                                                                                                                                                                                                            | 挿入力/Mating force<br>初期/Initial : 30N MAX.<br>30 回後/After 30 : 15N MAX.<br>抜去力/Un-Mating force<br>初期/Initial : 4N MIN.<br>30 回後/After30 : 2N MIN.                      |
|    | Mating Force and Un-mating Force | Solder the receptacle connector to the test board and mate the plug connector, then, measure the mating and un-mating force at speed 25±3mm/minutes in parallel with the mating axis the push-pull machine.                                                                                                                                                                    |                                                                                                                                                                       |
| 2. | 耐久性                              | 挿抜試験機を用いて、テスト基板に半田付けしたリセプタクルコネクタとプラグコネクタを嵌合軸と平行に毎分25±3mm の速度で 30 回挿抜を繰り返す。                                                                                                                                                                                                                                                                                                     | [接触抵抗]<br>6.1.1 を満足する事。<br>[外観]<br>異常無き事。                                                                                                                             |
|    | Durability                       | Mate and un-mate the receptacle connector (soldered to the test board) and plug connector 30 cycles at speed 25±3mm/minutes in parallel with the mating axis by the push-pull machine.                                                                                                                                                                                         | [Contact Resistance]<br>Shall meet 6.1.1.<br>[Appearance]<br>No abnormality                                                                                           |
| 3. | 耐振動性                             | DC100mA の電流を流しながら、嵌合状態のコネクタに下記の振動を加える。<br>周波数 : 30Hz → 100Hz → 30Hz / 約 20 分間<br>片振幅、加速度 : 1.5mm or 59m/s <sup>2</sup> (6G)<br>方向、サイクル : 3 つの互いに直角な方向に<br>各 2 時間、計 6 時間                                                                                                                                                                                                        | [接触抵抗]<br>6.1.1 を満足する事。<br>[瞬断]<br>試験中、1μs を超える電氣的瞬断の無き事。<br>[外観]<br>異常無き事。                                                                                           |
|    | Vibration                        | Apply the following vibration to the mating connector. During the testing, run 100mA DC to check electrical discontinuity.<br>Frequency: 30Hz → 100Hz → 30Hz / approx 20minutes.<br>Half amplitude,<br>Peak value of acceleration: 1.5mm or 59m/s <sup>2</sup> (6G)<br>Directions , cycle: 3 mutually perpendicular direction, 2 hours for each direction, a total of 6 hours. | [Contact Resistance]<br>Shall meet 6.1.1.<br>[Electrical discontinuity]<br>No electrical discontinuity grater than 1μs shall occur.<br>[Appearance]<br>No abnormality |
| 4. | 耐衝撃性                             | DC100mA の電流を流しながら、嵌合状態のコネクタに下記の衝撃を加える。<br>最大加速度 : 735m/s <sup>2</sup> (75G)<br>標準持続時間 : 11msec.<br>波形 : 半波正弦波<br>方向 : 直交する 6 方向、各 3 回                                                                                                                                                                                                                                          | [接触抵抗]<br>6.1.1 を満足する事。<br>[瞬断]<br>試験中、1μs を超える電氣的瞬断の無き事。<br>[外観]<br>異常無き事。                                                                                           |
|    | Shock                            | Apply the following shock to the mating connector. During the testing, run 100mA DC to check electrical discontinuity.<br>Peak value of acceleration : 735m/s <sup>2</sup> (75G)<br>Duration : 11msec<br>Wave Form : half sinusoidal<br>Directions , cycle: 6 mutually perpendicular direction , 3 cycles about each direction                                                 | [Contact Resistance]<br>Shall meet 6.1.1.<br>[Electrical discontinuity]<br>No electrical discontinuity grater than 1μs shall occur.<br>[Appearance]<br>No abnormality |

|                                             |                      |                 |
|---------------------------------------------|----------------------|-----------------|
| DOCUMENT CLASSIFICATION                     | TITLE                | No.             |
| <b>Product Specification</b><br><b>製品規格</b> | <b>MHF4 SMT PLUG</b> | <b>PRS-1404</b> |

**6-3. 耐環境性能 / Environmental Performance**

| No | 項目 / Items                 | 試験条件 / Test Conditions                                                                                                                                                                                                                            | 規格 / Specifications                                                                                                                                                                      |
|----|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | 湿度 (定常状態)                  | 嵌合状態のコネクタを以下の条件に暴露する。<br>MIL-STD-202G 試験法 103 試験条件 B に準拠。<br>温度 : 313±2K (40±2℃)<br>湿度 : 90~95%RH<br>期間 : 96 時間                                                                                                                                   | [接触抵抗] 6.1.1 を満足する事。<br>[絶縁抵抗] 6.1.2 を満足する事。<br>[耐電圧] 6.1.3 を満足する事。<br>[外観] 異常無き事。                                                                                                       |
|    | Humidity<br>(Steady State) | Apply the following environment to the mating<br>connector in accordance with MIL-STD-202G, Method<br>103, Condition B.<br>Temperature : 313±2K (40±2℃)<br>Humidity : 90~95%RH<br>Duration : 96 hours                                             | [Contact Resistance]<br>Shall meet 6.1.1.<br>[Insulation Resistance]<br>Shall meet 6.1.2.<br>[Dielectric Withstanding<br>Voltage]<br>Shall meet 6.1.3.<br>[Appearance]<br>No abnormality |
| 2. | 湿度<br>(サイクリング)             | 嵌合状態のコネクタを以下の条件に暴露する。<br>MIL-STD-202G 試験法 106E に準拠。<br>温度 : 298~338K (25~65℃)<br>湿度 : 90~95%RH<br>期間 : 10 サイクル (240 時間)                                                                                                                           | [接触抵抗] 6.1.1 を満足する事。<br>[絶縁抵抗] 6.1.2 を満足する事。<br>[耐電圧] 6.1.3 を満足する事。<br>[外観] 異常無き事。                                                                                                       |
|    | Humidity<br>(Cycling)      | Apply the following environment to the mating<br>connector in accordance with MIL-STD-202G, Method<br>106E.<br>Temperature : 298~338K (25~65℃)<br>Humidity : 90~95%RH<br>Duration: 10cycles (240 hours)                                           | [Contact Resistance]<br>Shall meet 6.1.1.<br>[Insulation Resistance]<br>Shall meet 6.1.2.<br>[Dielectric Withstanding<br>Voltage]<br>Shall meet 6.1.3.<br>[Appearance]<br>No abnormality |
| 3. | 熱衝撃                        | 嵌合状態のコネクタを以下の条件に暴露する。<br>MIL-STD-202G 試験法 107G 試験条件 A に準拠。<br>温度 : 218K(-55℃) : 30 分→358K(85℃) : 30 分<br>移動時間 : 5 分以下<br>回数 : 5 サイクル                                                                                                              | [接触抵抗] 6.1.1 を満足する事。<br>[絶縁抵抗] 6.1.2 を満足する事。<br>[耐電圧] 6.1.3 を満足する事。<br>[外観] 異常無き事。                                                                                                       |
|    | Thermal Shock              | Apply the following environment to the mating<br>connector in accordance with MIL-STD-202G, Method<br>107G, Condition A.<br>Temperature : 218K(-55℃) : 30min.<br>→ 358K(85℃) : 30min.<br>Transition time : 5min. MAX.<br>No. of cycles : 5 cycles | [Contact Resistance]<br>Shall meet 6.1.1.<br>[Insulation Resistance]<br>Shall meet 6.1.2.<br>[Dielectric Withstanding<br>Voltage]<br>Shall meet 6.1.3.<br>[Appearance]<br>No abnormality |

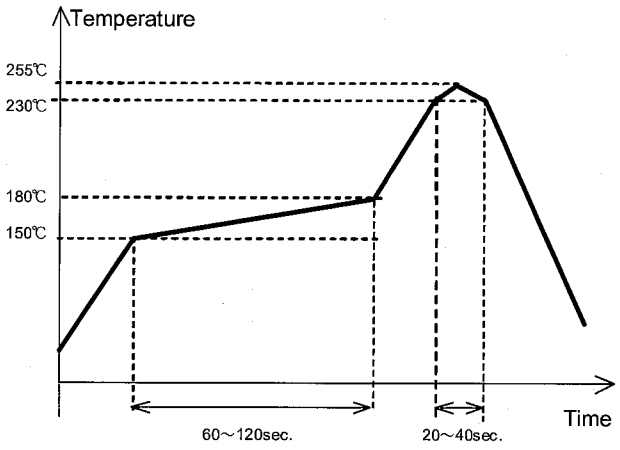
|                                      |                      |                 |
|--------------------------------------|----------------------|-----------------|
| DOCUMENT CLASSIFICATION              | TITLE                | No.             |
| <b>Product Specification</b><br>製品規格 | <b>MHF4 SMT PLUG</b> | <b>PRS-1404</b> |

## 6-3. 耐環境性能 / Environmental Performance

| No | 項目 / Items            | 試験条件 / Test Conditions                                                                                                                                                                                                                                                                 | 規格 / Specifications                                                         |
|----|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 4. | 高温寿命                  | 嵌合状態のコネクタを以下の条件に暴露する。<br>MIL-STD-202G 試験法 108A 試験条件 A に準拠。<br>温度 : $358\pm 2\text{K}$ ( $85\pm 2^\circ\text{C}$ )<br>期間 : 96 時間                                                                                                                                                        | [接触抵抗]<br>6.1.1 を満足する事。<br>[外観]<br>異常無き事。                                   |
|    | High Temperature Life | Apply the following environment to the mating connector in accordance with MIL-STD-202G, Method 108A, Condition A.<br>Temperature : $358\pm 2\text{K}$ ( $85\pm 2^\circ\text{C}$ )<br>Duration : 96 hours                                                                              | [Contact Resistance]<br>Shall meet 6.1.1.<br>[Appearance]<br>No abnormality |
| 5. | 硫化水素ガス                | 嵌合状態のコネクタを以下の条件に暴露する。<br>温度 : $313\pm 2\text{K}$ ( $40\pm 2^\circ\text{C}$ )<br>相対湿度 : $80\pm 5\%\text{RH}$<br>ガス : $\text{H}_2\text{S}$ $3\pm 1\text{ppm}$<br>期間 : 48 時間                                                                                                              | [接触抵抗]<br>6.1.1 を満足する事。<br>[外観]<br>異常無き事。                                   |
|    | H <sub>2</sub> S Gas  | Apply the following environment to the mating connector.<br>Temperature : $313\pm 2\text{K}$ ( $40\pm 2^\circ\text{C}$ )<br>Relative Humidity : $80\pm 5\%\text{RH}$<br>Gas : $\text{H}_2\text{S}$ $3\pm 1\text{ppm}$<br>Duration : 48 hours                                           | [Contact Resistance]<br>Shall meet 6.1.1.<br>[Appearance]<br>No abnormality |
| 6. | 塩水噴霧                  | 嵌合状態のコネクタを以下の条件に暴露する。<br>MIL-STD-202G 試験法 101E 試験条件 B に準拠。<br>温度 : $308\pm 2\text{K}$ ( $35\pm 2^\circ\text{C}$ )<br>相対湿度 : $95\sim 98\%\text{RH}$<br>塩水濃度 : $5\pm 1\%$ 重量比<br>期間 : 48 時間                                                                                              | [接触抵抗]<br>6.1.1 を満足する事。<br>[外観]<br>異常無き事。                                   |
|    | Salt Water Spray      | Apply the following environment to the mating connector.<br>MIL-STD-202G, Method 101E, Condition B.<br>Temperature : $308\pm 2\text{K}$ ( $35\pm 2^\circ\text{C}$ )<br>Relative Humidity : $95\sim 98\%\text{RH}$<br>Salt water density : $5\pm 1\%$ (by weight)<br>Duration: 48 hours | [Contact Resistance]<br>Shall meet 6.1.1.<br>[Appearance]<br>No abnormality |

|                                             |                      |                 |
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## 6-4. その他 (Others)

| No | 項目 / Items                                 | 試験条件 / Test Conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 規格 / Specifications                                                                                                  |
|----|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| 1. | 半田付け性                                      | 端子の半田付け部を $518 \pm 5K$ ( $245 \pm 5^\circ C$ ) の半田槽内に $5 \pm 0.5$ 秒間浸す。フラックスは、RMA 型を使用し、5~10 秒間浸漬するものとする。                                                                                                                                                                                                                                                                                                                                                                                                                  | 浸した面積の 95% 以上に半田が付着し、かつピンホール空隙が 1 箇所集中せず、5% 以下である事。                                                                  |
|    | Solder ability                             | Dip the soldering point of the contacts in the solder bath at $518 \pm 5K$ ( $245 \pm 5^\circ C$ ) for $5 \pm 0.5$ seconds after immersing the time in the flux of RMA type for 5 to 10 seconds.                                                                                                                                                                                                                                                                                                                           | More than 95% of the dipped surface becomes wet and the pinhole that should not gather at one point is less than 5%. |
| 2. | 半田耐熱性 (Reflow)                             | 温度プロファイル : Fig-3<br>リフロー回数は 2 回                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 機能を損なう変形及び欠陥の無い事。                                                                                                    |
|    | Soldering Heat Resistance (Reflow)         | Reflow temperature profile. : Fig.-3<br>The number of reflow is 2 times.                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Abnormality adversely affecting the performance should not occur.                                                    |
|    |                                            |  <p>Figure 3 is a reflow temperature profile graph. The vertical axis is labeled 'Temperature' and has markings at 150°C, 180°C, 230°C, and 255°C. The horizontal axis is labeled 'Time'. The profile shows a heating curve that starts at 150°C, rises to 180°C (labeled 60~120sec), then rises to 230°C (labeled 20~40sec), and finally reaches 255°C before cooling down. A dashed line indicates the peak temperature of 255°C.</p> |                                                                                                                      |
|    | 半田耐熱性 (手半田)                                | コネクタの半田付け部を温度 $623K$ ( $350^\circ C$ ) の半田ごてで 5 秒間半田付けする。                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 機能を損なう変形及び欠陥の無い事。                                                                                                    |
|    | Soldering Heat Resistance (Hand Soldering) | Solder the soldering point of the contacts by the soldering iron at $623K$ ( $350^\circ C$ ) for 5 seconds.                                                                                                                                                                                                                                                                                                                                                                                                                | Abnormality adversely affecting the performance should not occur.                                                    |



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## 7. 試験順序と試料数 / Test Sequence and Sample Quantity

表 1 (Table-1)

| 試験項目 / Test Item                       | グループ / Group |    |     |     |     |     |     |     |     |     |     |    |    |
|----------------------------------------|--------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|
|                                        | A            | B  | C   | D   | E   | F   | G   | H   | J   | K   | L   | M  | N  |
| 接触抵抗<br>Contact Resistance             |              |    | 1,3 | 1,3 | 1,3 | 1,5 | 1,5 | 1,5 | 1,3 | 1,3 | 1,3 |    |    |
| 絶縁抵抗<br>Insulation Resistance          |              |    |     |     |     | 2,6 | 2,6 | 2,6 |     |     |     |    |    |
| 耐電圧<br>Dielectric Withstanding Voltage |              |    |     |     |     | 3,7 | 3,7 | 3,7 |     |     |     |    |    |
| 電圧定在波比、挿入損失<br>VSWR, Insertion Loss    | 1            |    |     |     |     |     |     |     |     |     |     |    |    |
| 挿抜力<br>Mating & Un-mating Force        |              | 1  |     |     |     |     |     |     |     |     |     |    |    |
| 耐久性<br>Durability                      |              |    | 2   |     |     |     |     |     |     |     |     |    |    |
| 耐振動性<br>Vibration                      |              |    |     | 2   |     |     |     |     |     |     |     |    |    |
| 耐衝撃性<br>Shock                          |              |    |     |     | 2   |     |     |     |     |     |     |    |    |
| 湿度 (定常状態)<br>Humidity (Steady State)   |              |    |     |     |     | 4   |     |     |     |     |     |    |    |
| 湿度 (サイクリング)<br>Humidity (Cycling)      |              |    |     |     |     |     | 4   |     |     |     |     |    |    |
| 熱衝撃<br>Thermal Shock                   |              |    |     |     |     |     |     | 4   |     |     |     |    |    |
| 高温寿命<br>High Temperature Life          |              |    |     |     |     |     |     |     | 2   |     |     |    |    |
| 硫化水素ガス<br>H2S Gas                      |              |    |     |     |     |     |     |     |     | 2   |     |    |    |
| 塩水噴霧<br>Salt Water Spray               |              |    |     |     |     |     |     |     |     |     | 2   |    |    |
| 半田付け性<br>Solder Ability                |              |    |     |     |     |     |     |     |     |     |     | 1  |    |
| 半田耐熱性<br>Soldering Heat Resistance     |              |    |     |     |     |     |     |     |     |     |     |    | 1  |
| 試料数<br>Sample QTY.                     | 5            | 10 | 10  | 10  | 10  | 10  | 10  | 10  | 10  | 10  | 10  | 10 | 10 |

※グループ表中の番号は、試験順序を示す。

※Numbers in "Group" mean test sequence.

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#### 8. 注意事項／CAUTION

##### ○Connector insert instruction

- ・ プラグコネクタは必ず基板と垂直に挿入して下さい。(図 4)
- ・ Plug connector must be inserted vertically to P.C.B. surface.(Fig.-4)

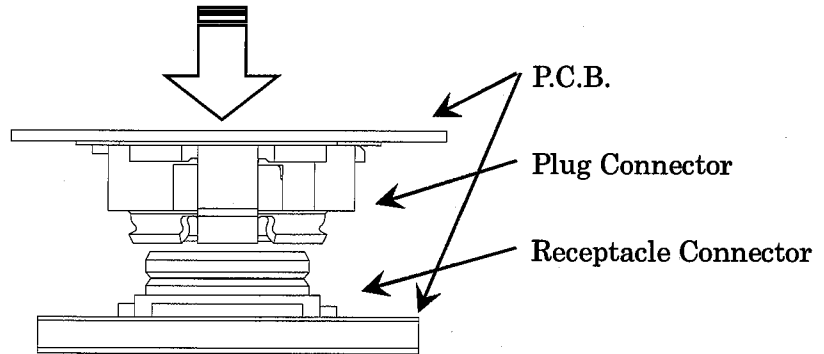


図 4 (Fig.-4)

- ・ プラグコネクタ挿入時、挿入許容角度は  $5^{\circ}$  Max.です。(図 5)  
コネクタをセットした時に許容角度を超えた状態でプラグコネクタを強く押し込まないで下さい。
- ・ Acceptable insertion angle of the plug connector is  $5^{\circ}$  Max.. (Fig.-5)  
Do not press the plug connector too strongly if the insertion angle exceeds the acceptable range.

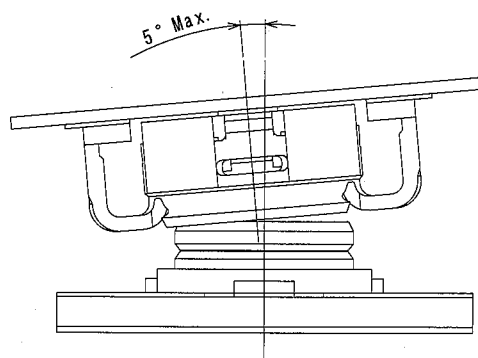


図 5 (Fig.-5)

|                                      |                      |                 |
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## ○Connector withdraw instruction

- ・コネクタを抜去する際、コネクタは JIG 等で基板面に対して垂直に引き上げて下さい。(図 6)
- ・ When withdrawing the connector, the plug connector on P.C.B. must be lifted vertically from P.C.B. surface with Pulling JIG or other way. (Fig.-6)

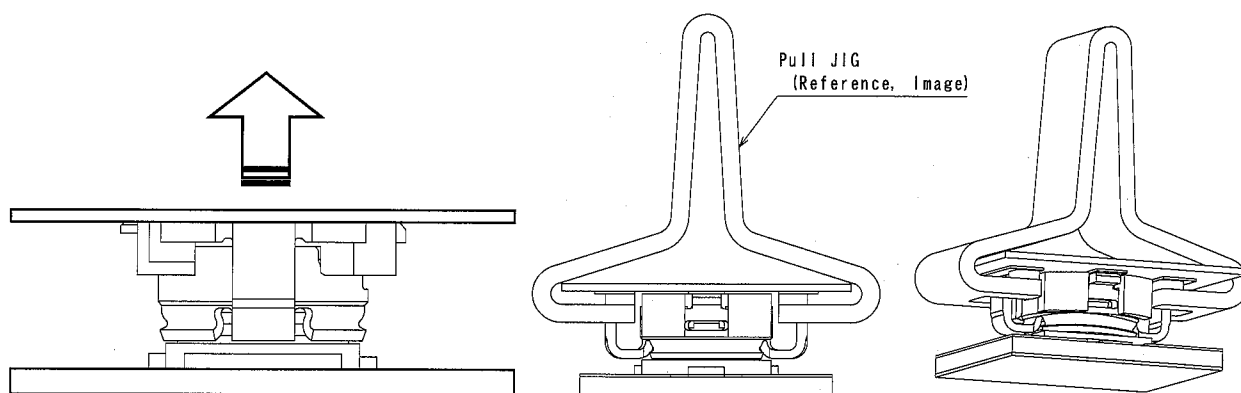


図 6 (Fig.-6)

- ・コネクタを抜去する際、P.C.B.や F.P.C.の端部を引き上げることは禁止です。(図 7)
- ・プラグコネクタ抜去時、抜去許容角度は 3° Max.です。(図 8)
- ・ When withdrawing the connector on P.C.B.,  
lifting up the edge of the P.C.B. or F.P.C. is prohibited.(Fig.-7)
- ・ Acceptable withdraw angle of the plug connector is 3° Max.. (Fig.-8)

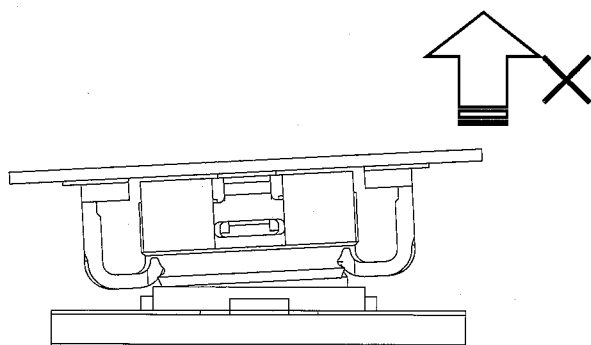


図 7 (Fig.-7)

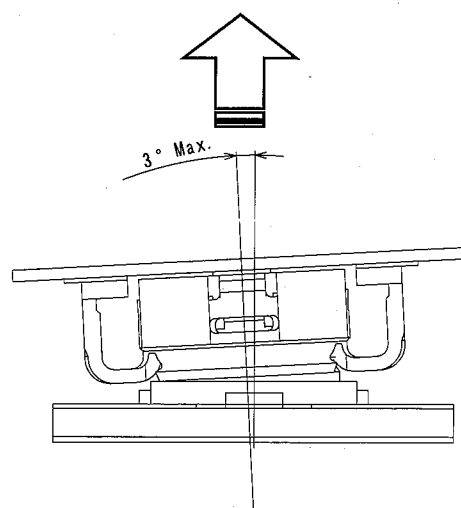


図 8 (Fig.-8)

|                                      |                      |                 |
|--------------------------------------|----------------------|-----------------|
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- ・ F.P.C.を引っ張り上げ、プラグコネクタを抜去しないで下さい。(図9)
- ・ Do not pull up the F.P.C. to withdraw the plug connector. (Fig.-9)

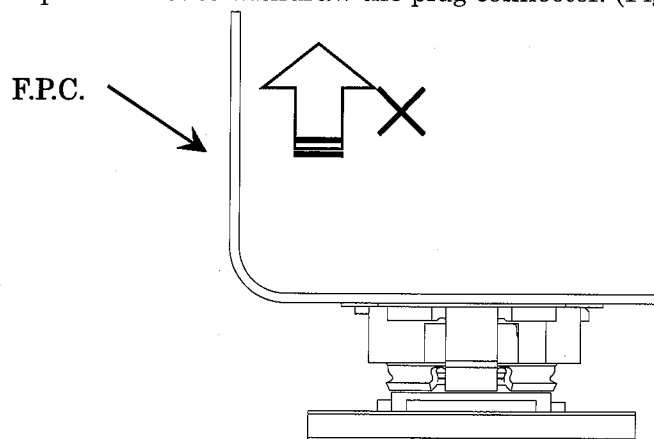


図 9 (Fig.-9)

- ・ 矢印方向に常に力が加わるような F.P.C.の引き回しを行うと、嵌合外れやコネクタの破損等の恐れがありますので、ご注意願います。(図 10)
- ・ Continuous force of the direction shown in black arrow can damage connectors or cause the coming off from receptacle connector. Please be careful NOT to apply such force. (Fig.-10)

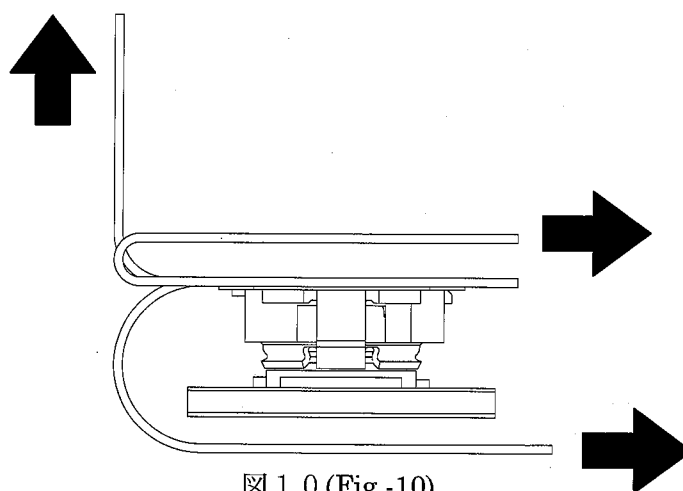


図 1 0 (Fig.-10)

- ・ 嵌合状態のコネクタ抜け止め荷重は、1.96N Max.でコネクタ底部全体を押えて下さい。(図 1 1)
- ・ To prevent the coming off of mated plug connector,  
press the whole connector bottom area by press load 1.96N Max.. (Fig.-11)

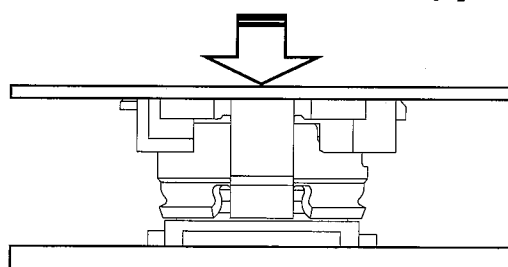


図 1 1 (Fig.-11)