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|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------|-------------------|
| NUMBER<br><b>GS-20-056</b>                                                                                                       | TYPE<br><b>APPLICATION SPECIFICATION</b> |  |                   |
| TITLE<br><b>0.5mmピッチ FPC 用 SMT タイプコネクタ「10051922(VLL)シリーズ」<br/>0.5mm pitch SMT type connector for FPC " 10051922 (VLL)Series"</b> |                                          | PAGE<br>1 of 9                                                                      | REVISION<br>C     |
|                                                                                                                                  |                                          | AUTHORIZED BY<br>N.Sasame                                                           | DATE<br>2010-6-23 |
|                                                                                                                                  |                                          | CLASSIFICATION<br><b>UNRESTRICTED</b>                                               |                   |

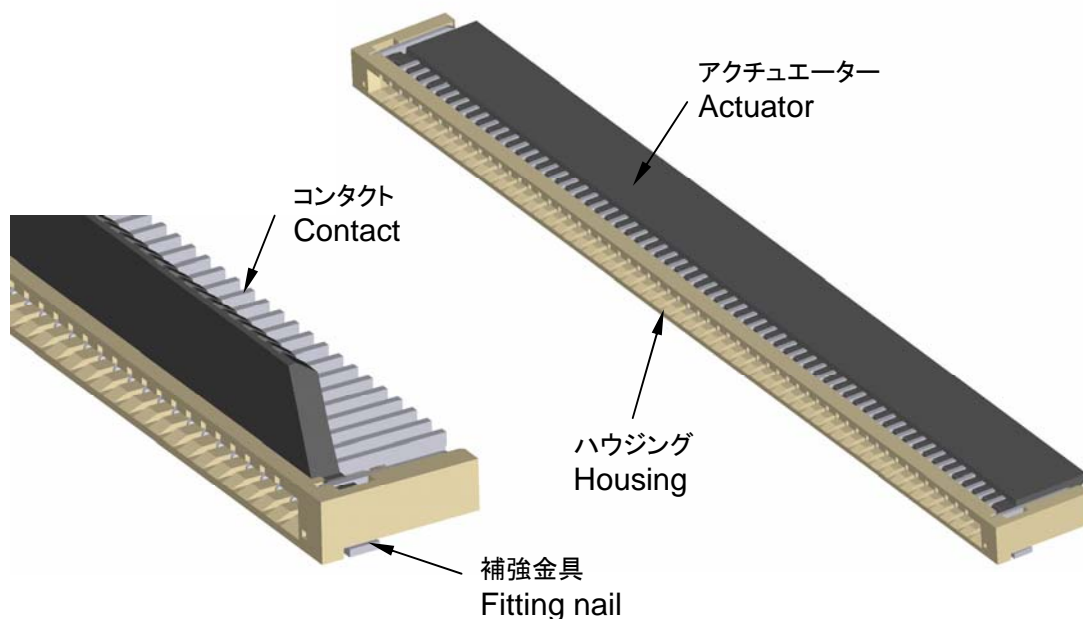
1. **概要**  
1. **Scope**

本規格は、弊社コネクタ 0.5mmピッチ FPC 用 SMT タイプコネクタ「10051922(VLL)シリーズ」をご使用頂く上で、重要且つ必要な項目についてまとめたものです。  
本コネクタをご使用の際には、本規格を必ず一読頂けます様、お願い致します。  
This standard summarizes the important items for using the 0.5mm pitch connector for FPC " 10051922 (VLL)Series". Before this connector is used, please be sure to look through these specifications.

2. **適用製品**  
2. **Application product**

| 品 名                                                            | P/N                  |
|----------------------------------------------------------------|----------------------|
| 0.5mm pitch SMT type connector for FPC " 10051922(VLL) Series" | 10051922- **10E(H)LF |
| 0.5mmピッチFPC用SMTタイプコネクタ「10051922(VLL)シリーズ」                      |                      |


3. **各部名称**  
3. **Each part name**



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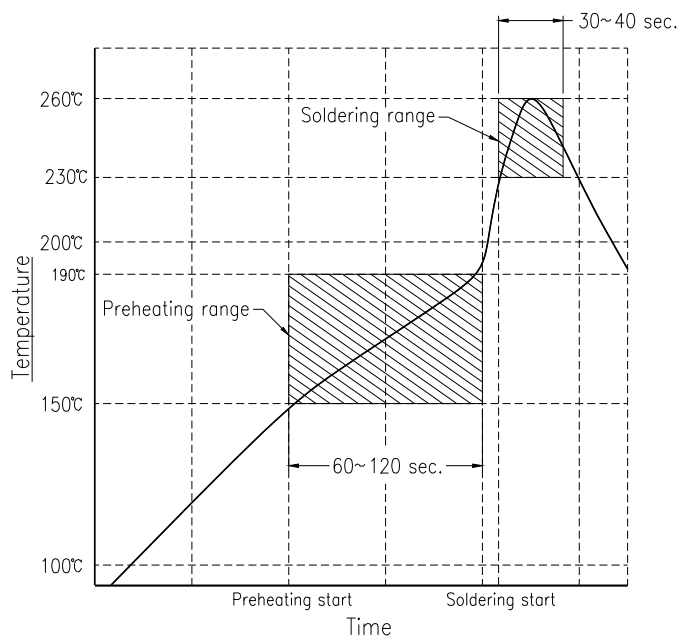
4. 推奨基板パターン及び適用導体(FPC)  
4. Recommendation PCB pattern and Application conductor (FPC)

弊社発行の適用製品図面を参照願います。  
Refer to each drawings.

5. 基板への搭載方法  
5. Mounting method to PCB

本コネクタは、自動実装・表面実装対応の形態を採用しておりますので、自動実装機により基板へ搭載し、以下の弊社推奨条件にてリフローはんだ付けを行って頂ける事をお勧め致します。

This connector has adopted the form of automatic mounting and the surface mount match. Therefore, please mount the connector to PCB with the automatic mounting machine. Then, please perform reflow soldering by the following our company recommendation conditions.




推奨リフロー温度プロファイル  
Recommendation reflow temperature profile

| Item       | ※Temperature [°C]              | Time [sec.] |
|------------|--------------------------------|-------------|
| Preheating | 150~190                        | 60~120      |
| Soldering  | 230MIN. (Peak temperature 260) | 30~40       |

※Temperature shows connector surface temperature.

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注意点: クリームはんだは、フラックスやはんだ自体がコネクタ内部に進入しない様、適量を塗布して下さい。  
これらが多量にコネクタ内部へ進入した場合、コネクタ機能低下及び不具合の原因となります。

Notes : Cream solder should apply the proper quantity so that neither the flux nor solder advances into the core of connector. When these advance inside the connector so much, it becomes the cause of the connector performance fall and fault.

## 6. FPC 挿入操作方法

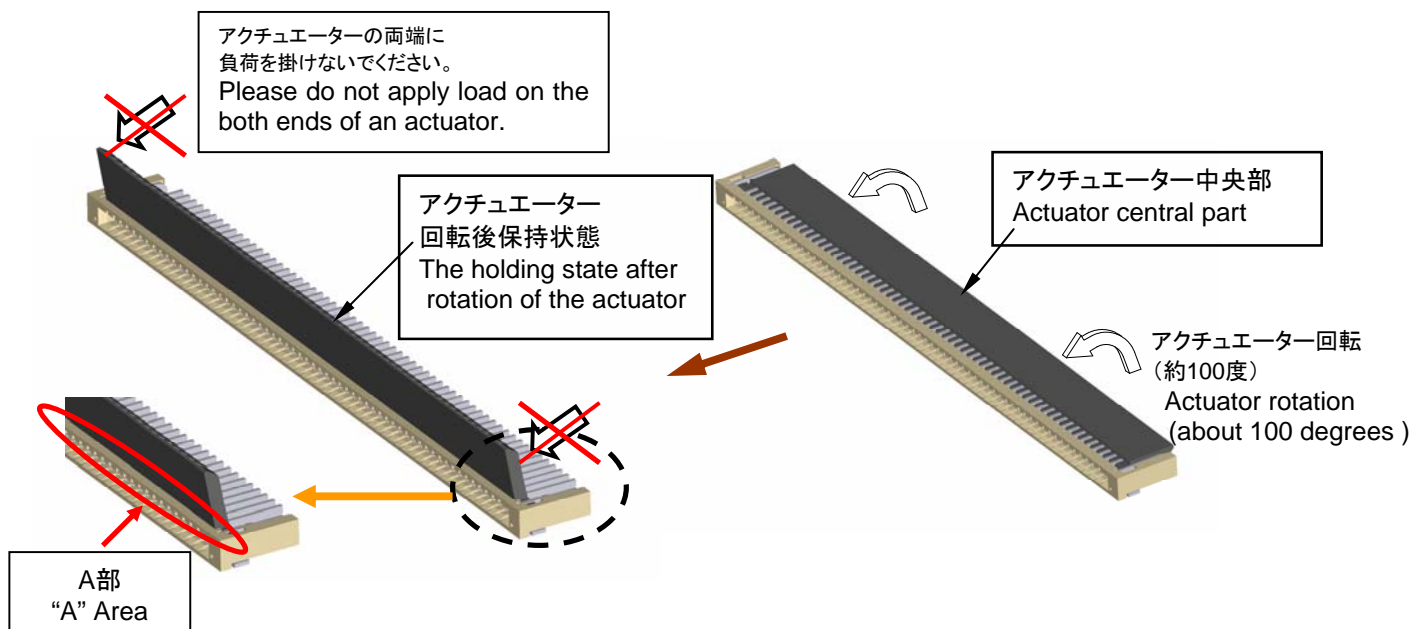
### 6. FPC insertion operation method

#### 6.1. アクチュエーターオープン

アクチュエーターの中央部に指を掛け、下図の矢印の方向に約 100 度回転させて、アクチュエーターが保持されたことを確認してください。このときアクチュエーターの両端に指を掛けないようにしてください。

#### 6.1. Actuator opening

Please hang finger on the central part of the actuator, rotate about 100 degrees to the arrow direction of the following figure, and confirm that the actuator holds. Please do not put a finger on the both ends of an actuator at this time.




注意点: 操作時に A 部(ハウジング開口部の上部)を手で触ったり、引っ掛けたりした場合、アクチュエーターを 100 度以上回転させた場合(アクチュエーター開状態で 3N 以上の荷重をかけた場合) アクチュエーターをねじったり、斜め方向に無理な操作を行った場合はコネクタの破損につながる場合がありますのでご注意ください。

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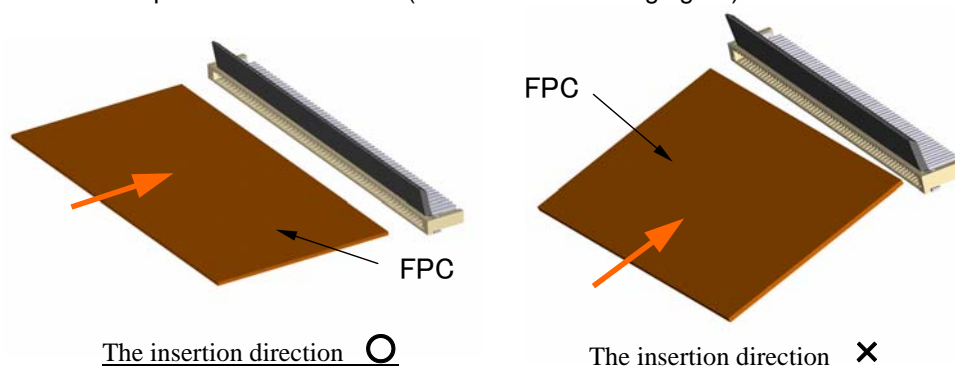
Notes: Please keep in mind that it may lead to breakage of a connector when the "A" area (upper part of a housing opening) is touched by hand, or is put a finger at the time of operation and an actuator is rotated 100 degrees or more (after the actuator had opened when the load more than 3N is applied), an actuator is twisted, or operation with the direction of slant impossible for is performed.

### 6.2. FPC の挿入

FPC の導体を下側(基板側)にして FPC の補強版を手で支え、下図の通りの方向から真っ直ぐコネクタの奥に突き当たるまで挿入して下さい。

### 6.2. Insertion of FPC

Where the conductor of FPC is turned to the bottom side (PCB side), please insert straightly until it collides in the inner part of the connector. (Refer to the following figure)



注意点: FPC が傾いた状態で挿入した場合、隣接パターンにて短絡の恐れがありますので、出来る限り FPC は真っ直ぐの姿勢にてコネクタへ挿入願います。

Notes: If FPC is inserted aslant to the connector, the short circuit may occur.

### 6.3. アクチュエーターロック

FPC がコネクタの奥に真っ直ぐ当たっていることを確認した後、6.1.と逆の方法でアクチュエーターを約 100 度回転させてロックして下さい。

尚、アクチュエーターオープン時の FPC の挿入状態は、下図の通りコネクタ上面より目視にて確認することが可能です。

### 6.3. Actuator lock

Please check that FPC is the normal position and rotate the actuator about 100 degrees.

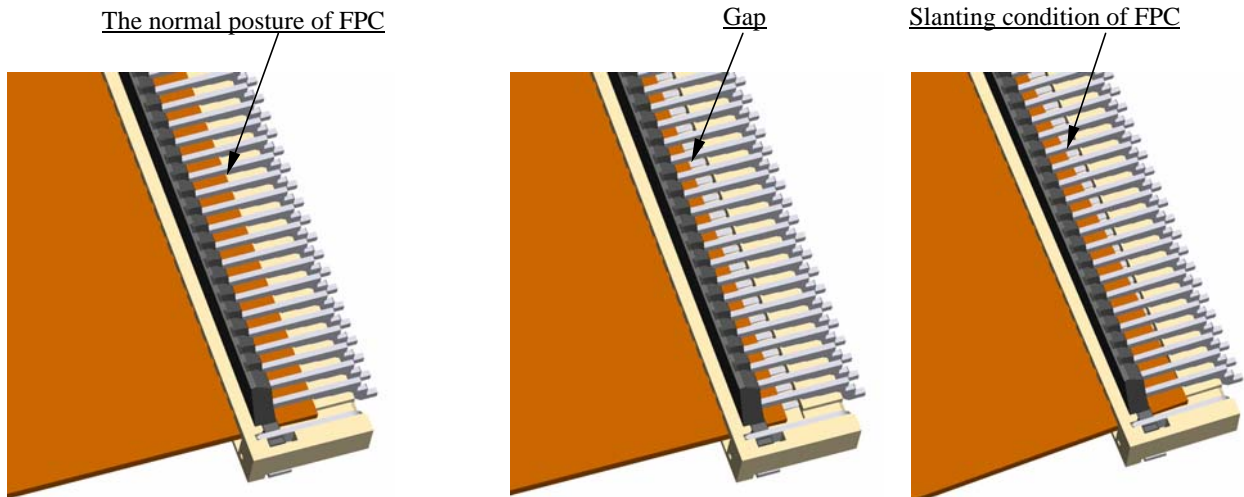
In addition, in the actuator open condition, the insertion condition of FPC can check visually from the connector upper side. (Refer to the following figure)

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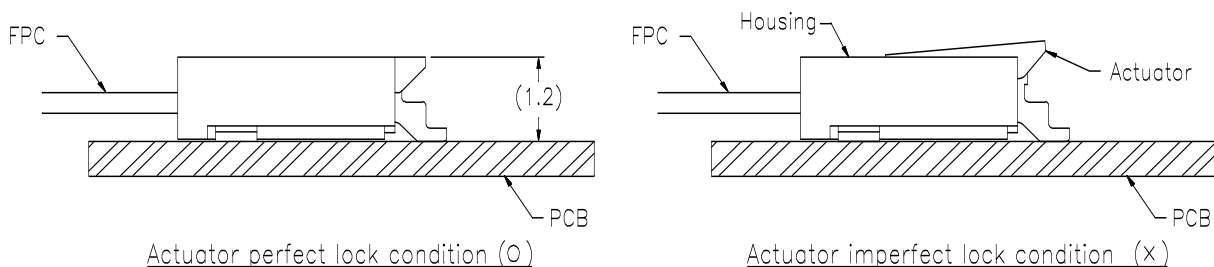


Perfect insertion condition of FPC (O)

Imperfect insertion condition of FPC (X)

注意点: FPC が傾いた状態でアクチュエーターをロックした場合、隣接パターンにて短絡の恐れがありますので、FPC が正常姿勢の時にロックして下さい。  
又、アクチュエーターの完全ロック状態は、ハウジングとアクチュエーターの面が同じ高さになりますので、完全ロックの目安として下さい。(下図参照)  
不完全なロック状態の場合、コネクタ性能低下につながりますのでご注意下さい。


Notes : If the actuator is locked while FPC has been slanting, there is possibility of the short circuit.  
Therefore, when FPC is the normal posture, please lock actuator.  
Moreover, since the field of housing and actuator is the same height, the perfect lock condition of actuator should follow it as the guide of perfect lock. (Refer to the following figure)  
In the case of imperfect lock condition, keep in mind that it leads to the connector performance fall.



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## 7. FPC 抜去操作方法

### 7. FPC extraction operation method

#### 7.1. アクチュエーターオープン

6.1.項と同様にアクチュエーターの中央部に指を掛け、約 100 度回転させて、アクチュエーターが保持されたことを確認してください。

#### 7.1. Actuator opening

Please hang finger on the central part of the actuator, rotate it about 100 degrees, and confirm that the actuator holds. (The same method as 6.1.)

注意点: 操作時に A 部(ハウジング開口部の上部)を手で触ったり、引っ掛けたりした場合、アクチュエーターを 100 度以上回転させた場合(アクチュエーター開状態で 3N 以上の荷重をかけた場合)アクチュエーターをねじったり、斜め方向に無理な操作を行った場合はコネクタの破損につながる可能性がありますのでご注意ください。

Notes: Please keep in mind that it may lead to breakage of a connector when the "A" area (upper part of a housing opening) is touched by hand, or is put a finger at the time of operation and an actuator is rotated 100 degrees or more (after the actuator had opened when the load more than 3N is applied), an actuator is twisted, or operation with the direction of slant impossible for is performed.

#### 7.2. FPC の抜去

#### 7.2. Extraction of FPC

アクチュエーターが完全にオープン状態(約 100 度回転状態)であることを確認した後、6.2.項とは逆に FPC を真っ直ぐ抜去して下さい。

When actuator is in perfect open condition, please extract FPC straightly by operation contrary to 6.2.

注意点: FPC を斜め方向及びねじりながら抜去した場合、コネクタの破損、変形、性能低下の原因となりますのでご注意ください。

又、アクチュエーターが完全にオープンしていない状態で FPC を抜去すると、FPC 導体の損傷や接触性能低下につながりますのでご注意ください。

Notes : The direction of slant, and when FPC is extracted twisting, it becomes the cause of breakage, deformation, and performance fall of the connector. Moreover, if FPC is extracted in the condition that the actuator does not open completely, it will become damage on the FPC conductor, and contact performance fall.

## 8. その他取扱い時の注意事項


### 8. Other handling notes

8.1. FPC 挿入後、FPC を各方向(上下左右、FPC 挿入/抜去方向)に過度な力で引っ張った場合や、FPC を過度にねじった場合は、コネクタ破損、変形、接触不具合、性能低下などが発生する場合があります。挿入後の FPC には、出来る限り負荷が掛からない状態で操作及び固定して下さい。

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- 8.1. When FPC is pulled by power excessive in each direction or it twists too much after FPC insertion, connector breakage, deformation, contact fault, performance fall, etc. may occur. Therefore, please operate and fix after insertion of FPC not to apply load to it.
- 8.2. コネクタへ負荷が加わり続けた場合は、はんだ付け部のクラック、コネクタ破損、変形、接触不具合、性能低下などが発生する場合があります。  
実装後のコネクタは、出来る限り負荷が加わらない状態で固定して下さい。
- 8.2. When load continues being applied to the connector, the crack of soldering area, connector breakage, deformation, contact fault, performance fall, etc. may occur.  
Therefore, please fix the connector after mount so that load is not applied.
- 8.3 FPC を挿入した状態ではんだ付けを行わないで下さい。
- 8.3. Please do not solder with the condition of having inserted FPC.
- 8.4. コネクタ内部には適用導体以外を挿入しないで下さい。
- 8.4. Please do not insert in connector except the application conductor.
- 8.5. 基板実装前のコネクタ単体へ、適用導体の挿入などコネクタに負荷の掛かる操作を行った場合、コネクタの破損、変形、接触不具合、性能低下などの原因となりますのでご注意願います。
- 8.5. When operation which requires load to the connector which is not mounted is performed, it becomes causes, such as breakage, deformation, contact fault, and performance fall of the connector.  
(Insertion of the application conductor etc.)
- 8.6. はんだ付け修正を手はんだ付けにて行う場合、はんだこて先をコネクタ絶縁体へ直接当てないで下さい。又、こて先温度は 350℃、加熱時間は 3 秒を目安に作業を行って下さい。  
尚、上記作業時に糸はんだなどを追加で使用する場合は、コネクタ内部へはんだ及びフラックスが進入しない様、十分ご注意願います。
- 8.6. The soldering correction by manual soldering should not apply the soldering iron point directly to the connector insulator. Moreover, the correction should work in the soldering iron point temperature of 350 degrees C, and heating time for 3 seconds. When using thread solder etc. for correction, solder and the flux should not make it advance into the connector.

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## 9. コネクタ保管時の取扱い

### 9. Handling in storage of the connector

9.1. ほこり、油、水などがかった場合、接触性能に影響しますので、これらから避けて下さい。

9.1. Since contact performance is influenced when dust, oil, water, etc. are poured on the connector, please avoid from these.

9.2. 直射日光に当たった場合、梱包資材(エンボステープなど)の変形、コネクタの変色、接触性能への影響、はんだ付け性能への影響がありますので、これを避けて下さい。

9.2. Since it has the influence on the deformation of packing materials, discoloration of the connector, contact performance, and soldering performance when the connector receives direct rays, please avoid this.

9.3. 高温高湿下で長期保管した場合、コネクタ性能へ影響致しますので、以下の弊社推奨条件にてコネクタを保管して下さい。

尚、下記条件外で保管された場合は、ご使用になられる前にコネクタの性能をご確認頂き、特に問題が無いと判断される場合は、そのままご使用されても問題ありません。

(上記の場合、出来る限り弊社へご相談されることをお勧め致します。)

#### <推奨保管条件>

温度 : 30°C以下

湿度 : 75%RH 以下

期間 : 3ヶ月以内

9.3. Recommendation conditions.

In addition, when kept out of the following condition, please confirm the performance of the connector before use. (In that case, please consult to our company as much as possible.)

#### <Recommendation storage conditions>

Temperature : 30 degrees C MAX.


Humidity : 75%RH MAX.

Period : Less than three months

—以上—

—End—



|                                                                                                                                  |                                          |                                                                                     |                   |
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REVISION RECORD

| REV | PAGE | REVISION    | ECR #     | DATE      |
|-----|------|-------------|-----------|-----------|
| A   | ALL  | RELEASED    | J 05-0332 | 6/7/'05   |
| B   | ALL  | LOGO CHANGE | J 07-0018 | 1/12/'07  |
| C   | ALL  | REVISED     | J10-0171  | 2010/6/23 |

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