



PRODUCT SPECIFICATION



LANGUAGE

JAPANESE
ENGLISH

【1. 適用範囲 SCOPE】

本仕様書は、_____ 殿 に納入する 0.3 mm ピッチ FPC用 コネクタ _____ について規定する。
This specification covers the 0.3mm PITCH FPC CONNECTOR series.

【2. 製品名称及び型番 PRODUCT NAME AND PART NUMBER】

製品名称 Product Name	製品型番 Part Number
ハウジング アッセンブリ Housing Assembly(Right Angle Type)	503425- ** 11
503425- ** 11テーピング梱包品 Embossed Tape Package For 503425-**11	503425- ** 91

** : 極数(図面参照)

CIRCUITS (Refer to the drawing)

【3. 定格 RATINGS】

項目 Item	規格 Standard	
最大許容電圧 Rated Voltage(MAXIMUM)	50V	[AC(実効値 rms)/DC]
最大許容電流 Rated Current (MAXIMUM)	0.2A	
使用温度範囲 ^{*1} Ambient Temperature Range	-40°C ~+85°C ^{*2*3}	
保管条件 Storage Condition	温度 Temperature	-10°C~+50°C
	湿度 Humidity	85%R.H.以下 (但し結露しないこと) 85%R.H. MAX. (No Condensation)
	期間 Terms	出荷後6ヶ月 (未開封の場合) For 6 months after shipped (Under packed)

* 1: 基板実装後の無通電状態は、使用温度範囲が適用されます。

Non-operating connectors after reflow must follow the operating temperature range condition.

* 2: 通電による温度上昇分を含む。

This includes the terminal temperature rise generated by conducting electricity.

* 3: 適合FPC(電線、ケーブル等)も本使用温度範囲を満足すること。

Applicable FPC (wires and cables) must also meet the specified temperature range.

REV.	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
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A	新規作成 RELEASED J2010-1970 '10/04/02 K.SATO						THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INC. AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION												
REV.	DESCRIPTION																		
DESIGN CONTROL J					STATUS			WRITTEN BY: K.SATO	CHECKED BY: H.SHIMOYAMA	APPROVED BY: K.MORIKAWA	DATE: YR/MO/DAY 2010/04/02								
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【4. 性能 PERFORMANCE】

4-1. 電気的性能 Electrical Performance

項目 Item		条件 Test Condition	規格 Requirement
4-1-1	接触抵抗 Contact Resistance	適合FPCを嵌合させ、開放電圧 20mV以下、短絡電流10mA以下にて測定する。 (JIS C5402 5.4) Mate applicable FPC, measure by dry circuit, 20mV MAXIMUM, 10mA MAXIMUM. (JIS C5402 5.4)	80 milliohm MAXIMUM
4-1-2	絶縁抵抗 Insulation Resistance	適合FPCを嵌合させ、隣接するターミナル間及びターミナル、アース間に、DC250Vを印加し測定する。 (JIS C5402 5.2/MIL-STD-202 試験法 302) Mate applicable FPC and apply 250V DC between adjacent terminal or ground. (JIS C5402 5.2/MIL-STD-202 Method 302)	50 megaohm MINIMUM
4-1-3	耐電圧 Dielectric Strength	適合FPCを嵌合させ、隣接するターミナル間及びターミナル、アース間に、AC250V(実効値)を1分間印加する。 (JIS C5402 5.1/MIL-STD-202 試験法 301) Mate applicable FPC, apply 250V AC (rms) for 1 minute between adjacent terminal or ground. (JIS C5402 5.1/MIL-STD-202 Method 301)	異状なきこと No Breakdown

4-2. 機械的性能 Mechanical Performance

項目 Item		条件 Test Condition	規格 Requirement
4-2-1	FPC保持力 FPC Retention Force	適合FPCを挿入し、アクチュエータを閉じた状態にてFPCを毎分25±3 mmの速さで嵌合軸方向に対して真っ直ぐ引き抜く。 Insert the FPC, close actuator, and pull the FPC at the speed rate of 25+3 /-3 mm per minute.	第7項参照 Refer to paragraph 7

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4-3. その他 Environmental Performance and Others

項目 Item		条件 Test Condition	規格 Requirement	
4-3-1	アクチュエータ 繰返し動作 Repeated Actuator Open /Close	1分間に10回以下の速さでFPCの挿入、アクチュエータの開閉、FPCの抜去の動作を10回繰り返す。 Insert FPC, close and open actuator, withdraw FPC to 10 cycles, at the speed rate of less than 10 cycles / minute.	接触抵抗 Contact Resistance	100 milliohm MAXIMUM
4-3-2	温度上昇 Temperature Rise	適合するFPCを嵌合させ、最大許容電流を通電し、コネクタの温度上昇分を測定する。 (UL 498) Mate applicable FPC and measure the temperature rise of contact when the maximum AC rated current is passed. (UL 498)	温度上昇 Temperature Rise	30 °C MAXIMUM
4-3-3	耐振動性 Vibration	DC1mA通電状態にて、嵌合軸を含む互いに垂直な3方向に掃引割合10~55~10Hz/分、半振幅0.75mmの振動を各2時間(計6時間)加える。 (JIS C60068-2-6/MIL-STD-202試験法 201) Mate applicable FPC and subject to the following vibration conditions, in each of 3 mutually perpendicular axes for 2 hours (total:6hours), passing DC 1mA during the test. Harf -Amplitude : 0.75mm Frequency : 10-55-10 Hz shall be traversed in 1 minute. (JIS C60068-2-6/MIL-STD-202, Method 201)	外観 Appearance	異状なきこと No Damage
			接触抵抗 Contact Resistance	100 milliohm MAXIMUM
			瞬断 Discontinuity	1.0 microsecond MAXIMUM
4-3-4	耐衝撃性 Mechanical Shock	DC1mA通電状態にて、嵌合軸を含む互いに垂直な6方向に、490m/s ² {50G}の衝撃を作用時間11millisecondで各3回加える。 (JIS C60068-2-27/MIL-STD-202 試験法 213) Mate applicable FPC and subject to the following shock conditions. 3 times of shocks shall be applied for each 6 directions along 3 mutually perpendicular axes, passing DC 1mA current during the test. (Total of 18 shocks) Test pulse : Half Sine Peak value : 490m/s ² {50G} Duration : 11 milliseconds (JIS C60068-2-27/MIL-STD-202 Method 213)	外観 Appearance	異状なきこと No Damage
			接触抵抗 Contact Resistance	100 milliohm MAXIMUM
			瞬断 Discontinuity	1.0 microsecond MAXIMUM

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項 目 Item		条 件 Test Condition	規 格 Requirement	
4-3-5	耐熱性 Heat Resistance	適合するFPC嵌合させ、85±2°Cの雰囲気中に96時間放置後取り出し、1~2時間室温に放置する。 (JIS C60068-2-2/MIL-STD-202 試験法 108) Mate applicable FPC and expose to 85+2/-2 degree C for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. (JIS C60068-2-2/MIL-STD-202 Method 108)	外 観 Appearance	異常なきこと No Damage
			接 触 抵 抗 Contact Resistance	100 milliohm MAXIMUM
4-3-6	耐寒性 Cold Resistance	適合するFPCを嵌合させ、-40±3°Cの雰囲気中に96時間放置後取り出し、1~2時間室温に放置する。 (JIS C60068-2-1) Mate applicable FPC and expose to -40+3/-3 degree C for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. (JIS C60068-2-1)	外 観 Appearance	異常なきこと No Damage
			接 触 抵 抗 Contact Resistance	100 milliohm MAXIMUM
4-3-7	耐湿性 Humidity	適合するFPCを嵌合させ、40±2°C、相対湿度90~95%の雰囲気中に96時間放置後、取り出し、1~2時間室温に放置する。 (JIS C680068-2-3/MIL-STD-202 試験法103) Mate applicable FPC and expose to 40+2/-2 degree C, relative humidity 90 to 95% for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. (JIS C60068-2-3/MIL-STD-202 Method 103)	外 観 Appearance	異常なきこと No Damage
			接 触 抵 抗 Contact Resistance	100 milliohm MAXIMUM
			耐 電 圧 Dielectric Strength	4-1-3項 満足のこと Must meet 4-1-3
			絶 縁 抵 抗 Insulation Resistance	20 megaohm MINIMUM

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項 目 Item		条 件 Test Condition	規 格 Requirement	
4-3-8	温度サイクル Temperature Cycling	<p>適合するFPCを嵌合させ、-55±3°Cに30分、+85±2°Cに30分、これを1サイクルとし、5サイクル繰り返す。但し、温度移行時間は、5分以内とする。試験後1~2時間室温に放置する。 (JIS C0025)</p> <p>Mate applicable FPC connectors and subject to the following conditions for 5 cycles. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. 1 cycle a) -55+3/-3 degree C 30 minutes b) +85+2/-2 degree C 30 minutes (Transit time shall be with in 5 minutes) (JIS C0025)</p>	外 観 Appearance	異状なきこと No Damage
			接 触 抵 抗 Contact Resistance	100 milliohm MAXIMUM
4-3-9	塩 水 噴 霧 Salt Spray	<p>適合するFPCを嵌合させ、35±2°Cにて、重量比5±1%の塩水を48時間噴霧し、試験後常温で水洗いした後、室温で乾燥させる。 (JIS C60068-2-11/MIL-STD-202 試験法101)</p> <p>Mate applicable FPC and expose to the following salt mist conditions. Upon completion of the exposure period, salt deposits shall be removed by a gentle wash or dip in running water, after which the specified measurements shall be performed. NaCl solution Concentration : 5+1/-1 % Spray time : 48 hours Ambient temperature : 35+2/-2 degree C (JIS C60068-2-11/MIL-STD-202 Method 101)</p>	外 観 Appearance	割れ、著しい 腐食等 異状なきこと No Damage
			接 触 抵 抗 Contact Resistance	100 milliohm MAXIMUM

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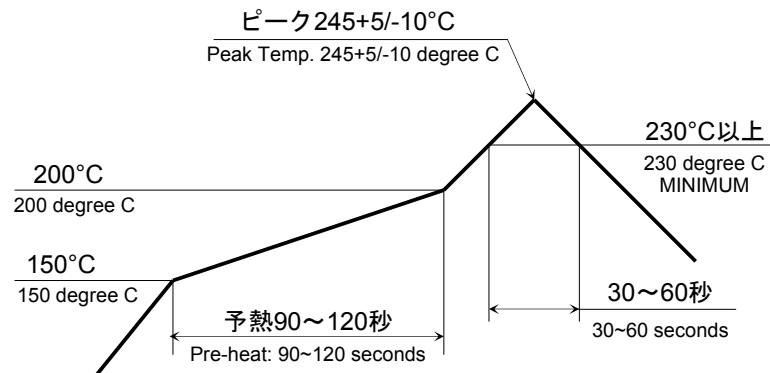
項 目 Item		条 件 Test Condition	規 格 Requirement	
4-3-10	亜硫酸ガス SO ₂ Gas	適合するFPCを嵌合させ、40±2°C、50±5ppmの亜硫酸ガス中に24時間放置する。 Mate applicable FPC exposed to 50+5/-5ppm SO ₂ gas at 40+2/-2 degree C for 24 hours.	接 触 抵 抗 Contact Resistance	100 milliohm MAXIMUM
4-3-11	耐アンモニア性 NH ₃ Gas	適合するFPCを嵌合させ、濃度28%のアンモニア水を入れた容器中に40分間放置する。 Mate applicable FPC exposed to NH ₃ gas evaporating from 28 % for 40 minutes.	接 触 抵 抗 Contact Resistance	100 milliohm MAXIMUM
4-3-12	半田付け性 Solderability	端子先端より0.2mm、金具先端より0.2mmの位置まで、245±5°Cの半田に3±0.5秒浸す。 Dip soldertails into the molten solder {held at 245+5/-5 degree C} up to 0.2mm from terminal tip or fitting nail tip for 3±0.5seconds.	濡 れ 性 Solder Wetting	浸漬面積の 95%以上 95% of immersed area must show no voids, pin holes
4-3-13	半田耐熱性 Resistance to Soldering- Heat	赤外線リフロー時 <u>Infrared Reflow Method</u> 第5項の推奨温度プロファイル条件にて、2回リフローを行う。 Refer to paragraph 5, two times.	外 観 Appearance	端子ガタ 割れ等 異状無きこと No Damage After Twice Reflow
		手半田時 <u>Soldering iron method</u> 端子先端、及び金具先端より0.2mmの位置まで、350±10°Cの半田ゴテにて5秒以下で加熱する。但し、異常な加圧のないこと。 Heating soldertails using a soldering iron at 350+10/-10 degree C within 0.2mm from the tip of the soldertails and fitting nail for 5 seconds or less. However, without too much pressure to the terminal pin and fitting nail.		

() : 参考規格
Reference Standard

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【5. 推奨温度プロファイル REFLOW CONDITION】



温度条件グラフ
TEMPERATURE CONDITION GRAPH

半田接合部の基板表面にて測定

(Temperature is measured at the soldering area on the surface of the print circuit board)

注記：本リフロー条件に関しては、温度プロファイル、半田ペースト、大気、N₂リフロー、基板などにより条件が異なりますので事前に実装評価(リフロー評価)を必ず実施願います。実装条件によっては、製品性能に影響を及ぼす場合があります。

NOTE: Please investigate the mounting condition (reflow soldering condition) on your own devices beforehand. The mounting conditions may change due to the soldering temperature, soldering paste, air reflow machine, Nitrogen reflow machine, and the type of printed circuit board. The different mounting conditions may have an influence on the product's performance.

各項目の評価サンプルは、第5項のリフロー条件にて実装しております。また、半田ペーストは、無鉛半田 (Sn-3Ag-0.5Cu)を使用しています。

The board samples of the specification test were reflowed under the reflow profile of paragraph 5.

Cream soldering paste : Sn-3Ag-0.5Cu

【6. 外観形状、寸法及び材質 PRODUCT SHAPE, DIMENSIONS AND MATERIALS】

図面参照 Refer to the drawing.

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【7. FPC保持力 FPC RETENTION FORCE】

厚みt=0.2 mmのFPCを使用した時のデータ値

This test date in case of used the FPC(t=0.2 mm)

極数 No of CIRCUIT	単位 UNIT	保持力(最小値) Retention Force (MINIMUM)	
		初回 1 st	10回 10 th
61	N {kgf}	9.2 {0.94}	6.1 {0.62}
75	N {kgf}	11.3 {1.15}	7.5 {0.77}

* FPCの仕様により保持力が影響を受ける為、規格を満たさない事があります。

There may be the case which the connector performance does not meet the above specification, because the different FPC manufacturers have their own unique specification.

【8. 環境指令への適合 COMPLIANCE WITH ENVIRONMENTAL DIRECTIVE】

ELV及びRoHS適合品

ELV and RoHS Compliant.

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【9. 注意事項 NOTES】

9-1

本製品の樹脂部に黒点、ウエルド部の線、多少の傷が確認される事がありますが、製品性能には影響ございません。

Although this product may have a small black mark, a weld line or a scratch on the housing, these will not have any influence on the product's performance.

9-2

本製品のネイルは錫めっきを使用しているため、外観に摺動痕がつく場合が御座いますが、製品性能に影響はありません。

Because we plate the fitting nails with Tin, there may be scratch marks on the surface. However, these scratches will have no influence on the product's performance.

9-3

成形品の色相に多少の違いを生じる場合がありますが、製品性能には影響ありません。

There may be slight differences in the housing coloring, but there will be no influence on the product's performance.

9-4

アクチュエータに潤滑剤が乾いた時に起こる白い部分が発生することがありますが、製品性能に影響ありません。

You may find the white dot on the actuator when the lubricant becomes dry, this will not affect the product's performance.

9-5

実装性能(平坦度)は、実装基板の反りの影響を含まないものと致します。基板の反りはコネクタ両端部を基準とし、コネクタ中央部にて Max0.02mmとして下さい。

The mounting specification for coplanarity does not include the influence of warpage of the printed circuit board. The warpage of the printed circuit board should be a maximum of 0.02mm if measuring from one connector edge to the other.

9-6

本製品の一般性能確認はリジット基板にて実施おります。フレキシブル基板等の特殊な基板へ実装する場合は、事前に実装確認等を行った上でご使用願います。

The product performance was tested using rigid printed circuit board. In case the product needs to be reflowed onto flexible circuit board, please conduct a reflow test on the flexible circuit board in advance.

9-7

フレキシブル基板に実装する場合は、基板の変形を防止するため、補強板をご使用願います。

Please add a stiffener on the flexible printed circuit (FPC) when you mount the connector onto FPC in order to prevent deformation of the FPC.

9-8

リフロー後、半田付け部に変色が見られることがありますが、製品性能に影響はありません。

Although there might be some discoloration seen on the soldering tail after reflow, this will not influence the product's performance.

9-9

半田実装部の未半田は、ターミナル脱落、ピン間ショート、ターミナル座屈、またコネクタの基板からの外れが懸念されます。従って全てのターミナルテール部及び、ネイル部に半田付けを行って下さい。

If you leave any soldering area on this product open, there may be the possibility of a missing terminal short circuiting between pins, terminal buckling or the potential for the connector to come off of the printed circuit board. Therefore, please solder all of the terminals and fitting nails on the printed circuit board.

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9-10

コネクタの性能を損なう恐れがある為、コネクタの洗浄は、行わないで下さい。
Please do not conduct any "washing process" on the connector because it may damage the product's function.

9-11

適合するFPCの導体部は、金めっき(ニッケル下地)品を使用願います。
Please make sure to use the appropriate FPC which has Gold plating (Nickel under plating) on the contact area.

9-12

量産前にご使用になるFPCとの相性確認を行った上で、ご使用をお願い致します。
Please check the compatibility between the connector and the FPC prior to moving to mass production.

9-13

コネクタにFPCを装着した状態で、FPCに過度の負荷が加わらないようにご注意頂き、御社基板のスペース上、コネクタに負担の掛かる位置への取り付けはしないで下さい。コネクタのロックが解除されたり、FPCの抜け、断線、破損や接触不良の原因になります。特に、連続的に加わる場合はFPCを固定するようにして下さい。また、基板に対して垂直上下方向の引張荷重(図1-1)、コンタクトピッチ方向のこじり荷重(図1-2)を与えない様にご注意願います。

Please pay special attention not to have any pulling force/tension on the FPC when it is inserted into the connector. This can cause; the actuator to be unlocked, the actuator to come off, cut the traces on the FPC, and/or damage the FPC. Please be especially careful to avoid placing the FPC in a location where it will have a constant force applied on the FPC. If necessary, please fix the FPC directly on the chassis. Also, please avoid pulling the FPC vertically (figure1-1) or twisting the FPC back and force horizontally (figure1-2) while it is inserted in the connector.

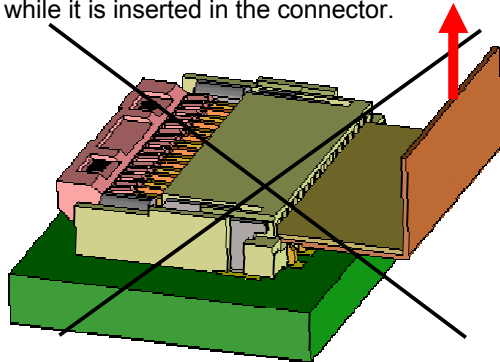


図1-1 過度な引張荷重
Figure1-1 Excessive improving load

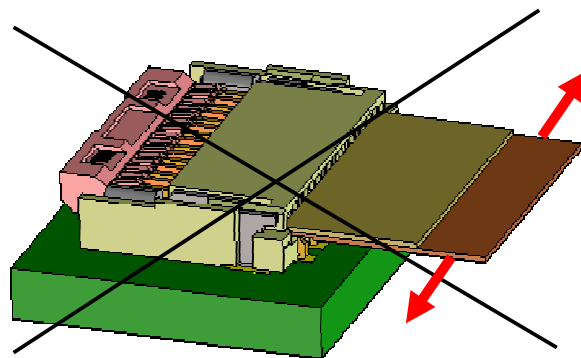


図1-2 過度なこじり荷重
Figure1-2 Excessive twisting load

9-14

本製品をご使用時に取り付けられた電線・プリント基板の共振や、機器の回転構造や可動部分の動作によりコネクタ嵌合部(接点部)が常に動いてしまう状態での御使用は避けて下さい。接触部の摺動磨耗等による接触不良の原因となります。従って、機器内で電線・プリント基板を固定し、共振を抑える等の処置をお願い致します。

Please do not use the connector in a condition where the wire, the printed circuit board, or the contact area is experiencing a sympathetic vibration of wires and printed circuit board, and constant movement of devices. This may cause a defect in the contact due to the contact area being worn down. Therefore, please fix wires and printed circuit board on the chassis, and reduces sympathetic vibration.

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9-15

基板実装前後に端子、補強金具に触らないでください。

Please do not touch the terminals and fitting nails before or after reflowing the connector onto the printed circuit board.

9-16

FPC挿入する際は、アクチュエータが完全に開いた状態で行い、FPCがハウジングに突き当たるまで挿入し、FPCの耳がコネクタ位置決め部に確実に収まっていることをご確認下さい。左右斜めの状態で挿入すると、ピッチずれによるショート不良になったり、角がターミナルに引っ掛かりターミナルの変形やFPC導体めくれに至るケースがあります。(尚、本製品は、FPC仮保持機構を有しているため、若干の挿入抵抗があります。)

When inserting the FPC into the connector, please ensure that the actuator is completely open during insertion. Please also ensure that the FPC is completely inserted until the end of the FPC touches the housing and that the FPC ear is positioned correctly. Diagonal insertion of the FPC into the connector can cause a short circuit due to the misaligned pitch. Diagonal insertion can also deform the terminal and/or damage the FPC contact area because the FPC edge may contact the terminal. (Because this connector has a tentative cable-hold feature which holds the FPC in place prior to actuation, it may feel like there is a small insertion force when inserting the FPC.)

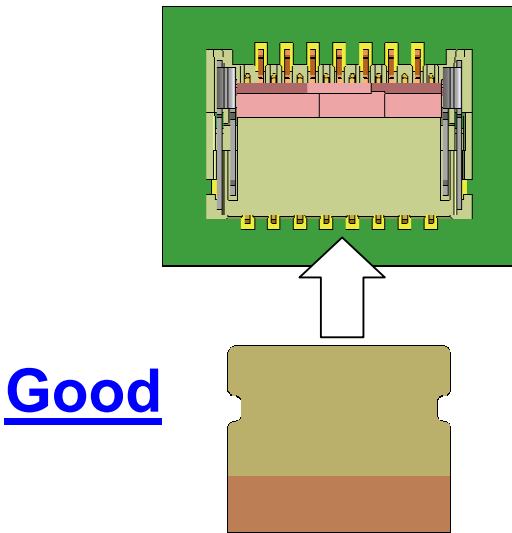


図2-1 水平挿入
Figure 2-1 Horizontal insertion

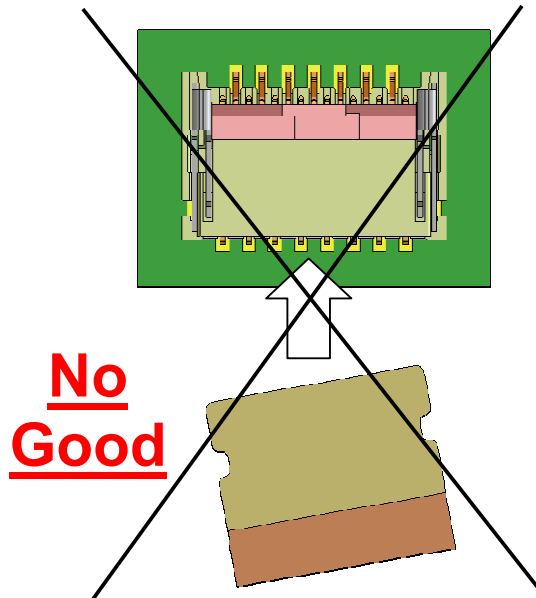


図2-2 斜め挿入
Figure 2-2 Diagonal insertion

9-17

アクチュエータの開閉は、コネクタを基板に実装しFPCを挿入した状態で行って下さい。

Please only open or close the actuator while the FPC is fully inserted.

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9-18

アクチュエータ操作時にはピンセット等の先端が鋭利な物は使用しないで下さい。コネクタの破損、半田付け部の損傷の原因になります。

When opening and closing the actuator, please do not use a sharp edged tool such as tweezers. This may cause to damage the connector or to the soldering area.

9-19

アクチュエータを開閉する際は、左右均等に力が加わるように中央部を回転させて丁寧に操作するように、お願いします(図3-1参照)。荷重が一点に集中するような片側に偏った位置での操作は行わないで下さい(図3-2参照)。コネクタの破損の原因になります。

When opening and closing the actuator, please gently pull the center of the actuator by applying an even force across the actuator and rotating carefully. (See Figure 3-1) Please do not apply a force only to one side of actuator because it may cause to damage the connector. (See Figure 3-2)

Good

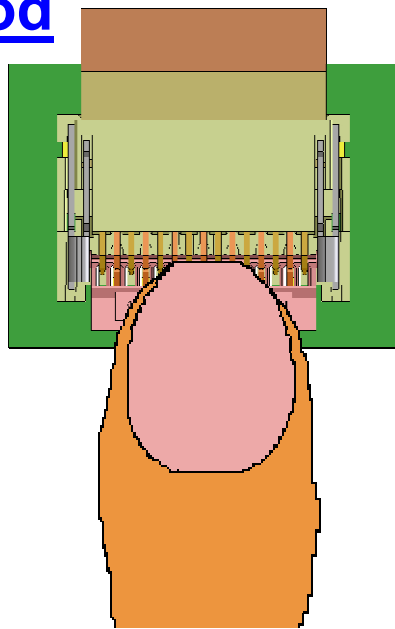


図3-1
Figure 3-1

**No
Good**

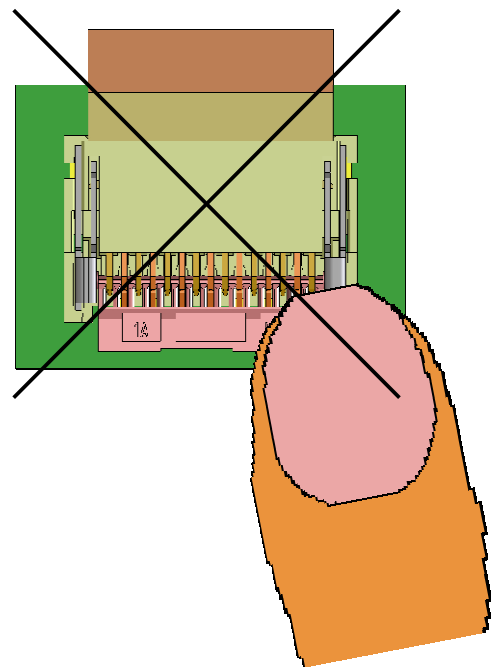


図3-2
Figure3-2

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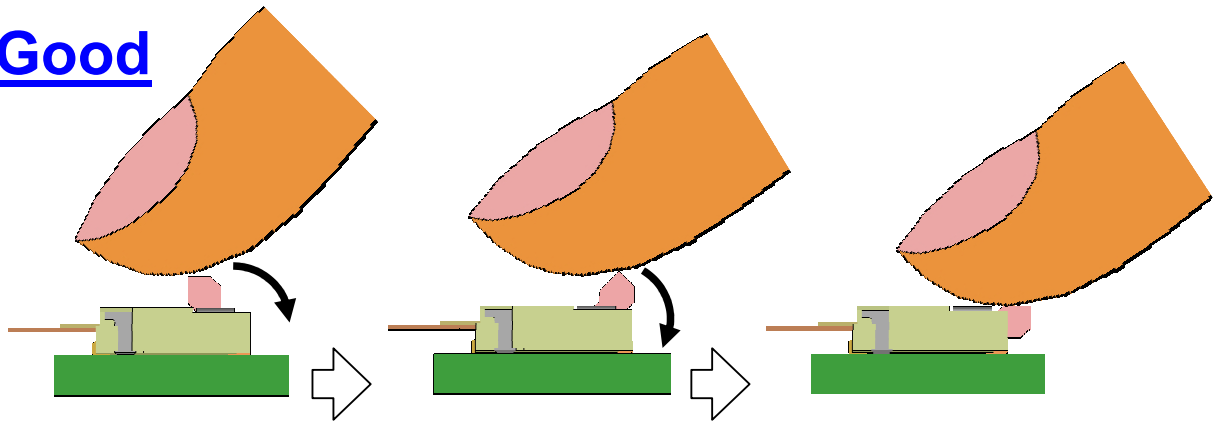


9-20

アクチュエータを閉じる際は、下図の様に回転する方向に軽く荷重が掛かる様に閉じて下さい。また、アクチュエータが外れる(押し出す)方向への負荷が加わらない様にご注意下さい。破損・外れの原因となります。

When closing the actuator, please press down on the actuator with soft pressure in the direction of the rotary axis as shown in the figure below. Please do not push the actuator closed from the direction that the FPC is inserted. This may cause damage or disengagement of the actuator.

Good



No Good

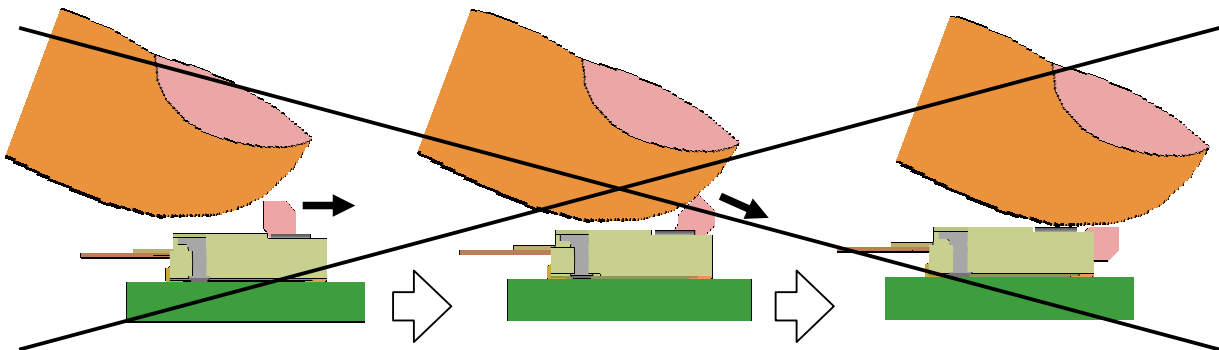


図4
Figure 4

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9-21

アクチュエータをロックした後は、アクチュエータが確実に閉じられたことを確認して下さい。
After locking the actuator, please confirm that the actuator was locked surely.

Good

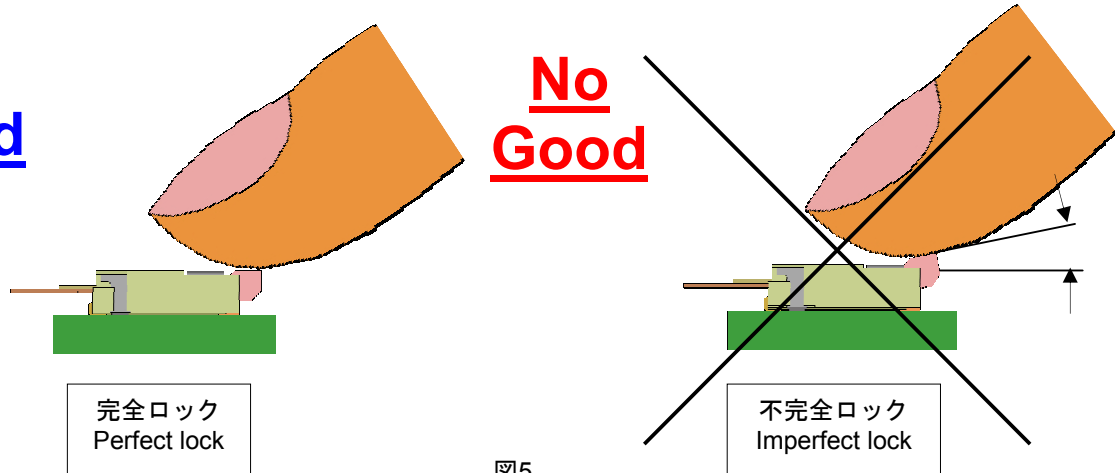


図5
Figure 5

9-22

アクチュエータを閉じた後は、下図(図6)のようにアクチュエータを確実にロックする為に表面を軽く押さえて下さい。
After the actuator is closed, please apply soft pressure to ensure that the actuator is completely locked (as shown in figure 6 below).

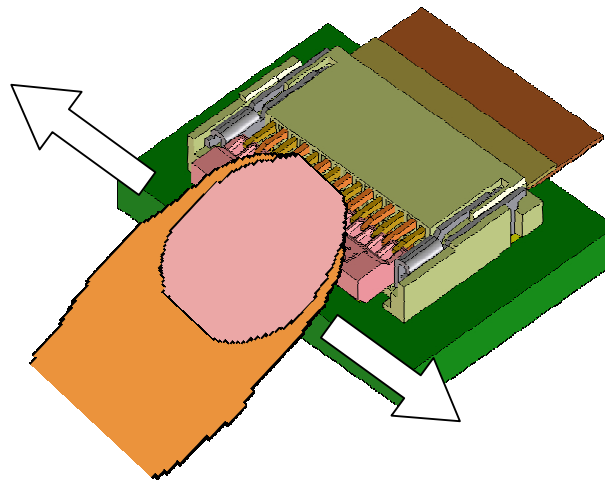


図6
Figure 6

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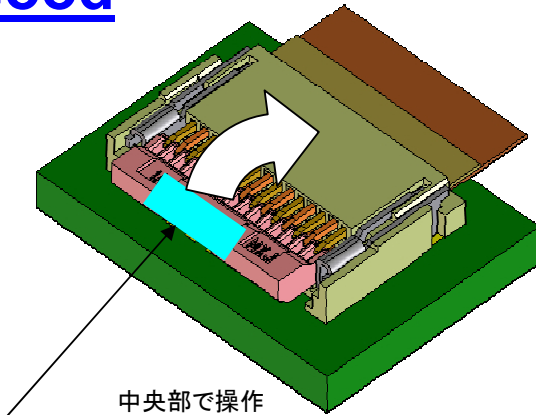


9-23

アクチュエータのロックを解除する際は、アクチュエータに均等な力が加わるように、上方向へ押し上げて下さい。押し上げの際には、中央部を跳ね上げるように操作願います。アクチュエータが回転運動をして開きます。また、アクチュエータが変形及び破壊する方向(開く方向)への過大な負荷を掛けない様にご注意下さい。破損・外れの原因となります。

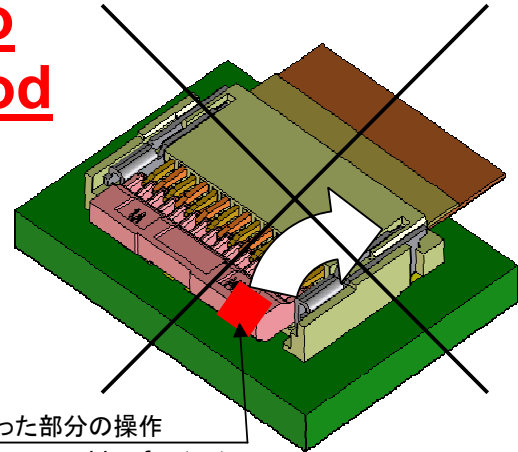
When unlocking the actuator, please pull up on the center of actuator in the direction of actuator rotation, which delivers even force to both edges of actuator. Please do not apply any force in any other direction as this may deform or damage the actuator.

Good



Apply Force at center of actuator

No Good



Force on one side of actuator

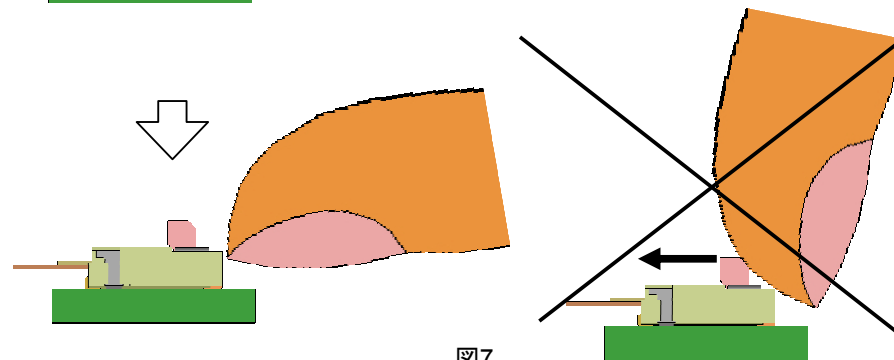
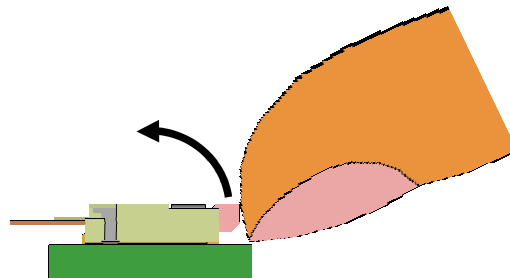


図7
Figure 7

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PRODUCT SPECIFICATION



LANGUAGE

JAPANESE
ENGLISH

9-24

FPCを抜く時は、アクチュエータが完全に開いた状態で行って下さい。万が一、アクチュエータが完全に開いていない状態でFPCを抜いた時は、コンタクト部に付着物が無いか確認の上、再装着願います。

When withdrawing the FPC, please make sure that the actuator is completely open. If the FPC is withdrawn without the actuator being fully open, please check to make sure that there is no debris on the contact area before inserting the FPC again.

9-25

実装後において半田ごてによる手修正を行う際は、必ず仕様書掲載の条件以内で行って下さい。条件を超えて実施した場合、端子の抜け、接点ギャップの変化、モールドの変形、溶融等、破損の原因になります。

When conducting manual repairs using a soldering iron, please follow the soldering conditions shown in the product specification. If the conditions in the product spec are not followed, it may cause the terminals to fall off, a change in the contact gap, a deformation of the housing, melting of the housing, and damage the connector.

9-26

半田こてによる手修正を行なう際、過度の半田やフラックスを使用しないで下さい。半田上がりやフラックス上がりにより接触、機能不良に至る場合があります。

When conducting manual repairs using a soldering iron, please do not use more solder and flux than needed. This may cause solder wicking and flux wicking issues, and it will eventually cause a contact defect and functional issues.

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