



Type Document	Product Specification	Revised /Edition	J
Date Issued	2004/02/14	Data Revised	2015/08/31
Subject : JS-1191D-XX JS-1191U-XX JS-1191VR-XX JS-1191VR-XXM2 JS-1191V-XX JS-1191V-XXM2			Issued By: Engineering Dept.
Solder Nail Close Type Pitch 0.50mm SMT Series ZIF FPC/FFC Connector			

*This specification is referred to Solder Nail Close Type Pitch 0.50mm  
 SMT series (ZIF) FPC/FFC connector.*

本規格書內容係提供 0.50 mm 間距(全包覆式固定片) SMT 系列產品相關參考，  
 其用途為軟板 / 軟性排線 相接於電路板端(零插入力)連接器

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REV. (版次)	Revision Record (改版變更原因)	Date(日期)	ECN No.
C	由於產品外觀與尺寸上差異，故將規格書分割為兩份 JS-1191D,U,V Series 以及	2010/06/09	EC2009-06-001
D	1.增加Special Layout (特殊焊點排序) JS-1191VR-XX, JS-1191VR-XXM2 2.增加溫升測試規格 3.刪除硫化氫 4.修正(EIA-364) 參考規範	2011/09/26	EC2011-09-008
E	新增Gold Plated 鍍層規格	2012/03/06	EC2012-03-005
F	1.修改環境溫度範圍 2.修改 耐電壓 接觸阻抗 絕緣阻抗 3. 修改環境試驗後絕緣	2012/03/26	EC2012-03-013
G	原額定電流 Rated Current 0.4 A 修訂為 0.5 A	2013/04/08	EC2013-04-008
H	1.修訂 Solder Ability 附註 Tin Plated : 95% / Gold Plated : 75% 2.增訂(IPC/JEDEC J-STD-020D.1) 參考規範 3.增訂3.5項Storage of Package以及 3.6 項Floor Life	2013/12/24	EC2013-12-024
I	4.0 項 Specimen(樣本圖示) JS-1191U ; JS-1191D 錯誤更新	2014/03/26	EC2014-03-026
J	3.3 項 (操作使用溫度範圍) Operating Temp. : -25°C 修定為 -40°C	2015/08/31	EC2015-08-002



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<b>Solder Nail Close Type Pitch 0.50mm SMT Series ZIF FPC/FFC Connector</b>			

1.0 Product Name/Part Number & Drawing Number(產品名稱 / 產品型號及圖面型號):

Product Name(產品名稱)		Part Number(零件型號)	Drawing Number(圖面型號)	
ZIF FPC/FFC Connector	Side Entry ; Lower Contacts (臥式 ; 下接觸點)	JS-1191D-XXX / JS-1191D-XX(G)		
	Side Entry ; Upper Contacts (臥式 ; 上接觸點)	JS-1191U-XXX / JS-1191U-XX(G)		
	Top Entry (直立式)	Standard Layout (標準焊錫區佈局)	JS-1191VX-XXX / JS-1191VX-XX(G)	
		Special Layout (特殊焊錫區佈局)	JS-1191VR-XXX / JS-1191VR-XX(G)	
	Top Entry ; Wide Cover (直立式 上蓋加寬)	Standard Layout (標準焊錫區佈局)	JS-1191VX-XXM2X / JS-1191VX-XXM2(G)	
		Special Layout (特殊焊錫區佈局)	JS-1191VR-XXM2X / JS-1191VR-XXM2(G)	

Note: (xx) The number of the circuits

2.0 Construction/Dimensions/Material & Surface Finish(材質以及表面鍍層):

Part Number(零件名稱)	Material(材質)	Surface Finish(表面鍍層)
ZIF FPC/FFC Connector 零插入力 (軟板 / 軟性排線連接器)	Solder Nail (固定片)	Brass
	Contacts (導體)	Phos.Phor Bronze
		Gold Plated
	Actuator (制動蓋)	LCP
Base (膠座)	UL 94V-0	

3.0 Characteristic(產品特性):

Item(項目)	Standard(標準規範)
3.1 額定電流 Rated Current	0.5A AC/DC
3.2 額定電壓 Rated Voltage	50V AC/DC
3.3 Ambient Temperature Range 環境與操作溫度範圍	(操作使用溫度範圍) Operating Temp. : -40°C~+85°C ; 85% R.H. Max Including 30°C Terminal Temperature Rise at rated Current , (包括定額電流內, 端子所產生 30°C以下溫昇)
3.4 Applicable FPC/FFC Cable 適用 軟板 / 軟性排線	3.4.1 FPC/FFC Thickness : 0.30mm±0.03 mm 軟性排線厚度
	3.4.2 Circuit Poles : 4~60 電路極數
3.5 Storage of Package 包裝未拆封之保存	Temperature and Humidity Condition 溫濕度條件
	Temperature 溫度 : -10°C~+40°C Percentage Humidity 相對濕度 : 70 % Max
	Term 保存期限
	1 Year
3.6 Floor Life 拆封後使用期	Refer to 9.0 參照第 9.0 項 (IPC/JEDEC J-STD-020D.1 ; Table 5-1)



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4.0 Specimen(樣本圖示) :

Part Name / Part Number / Picture or Photograph 零件名稱 / 零件型號 / 樣本圖示			
Top Entry  JS-1191V-XX  JS-1191VR-XX		Top Entry  Wide Cover  JS-1191V-XXM2  JS-1191VR-XXM2	
Side Entry  Lower Contacts  JS-1191D-XX		Side Entry  Upper Contacts  JS-1191U-XX	

5.0 Applicable Standards(適用規範):

ANSI/EIA 364 ; EIA/ECA 364 Testing method for electrical connectors.

電子連接器，所適用之 ANSI/EIA 364 ; EIA/ECA 364 測試規範

6.0 Mechanical Performance(機械性能):

Item(項目)	Test Condition(測試條件)	Requirement(規格)
6.1 FPC/FFC Cable Retention Force 軟排線拔出力	Insert the actuator pull the FPC/FFC cable at the speed rate of 25.4 ± 3 mm per minute. 將合適的軟排線與連接器組合，並嵌入制動上蓋，然後以每一分鐘 25.4 ± 3 mm 速率，將軟排線自連接器當中脫離 (EIA/ECA 364-13D)	單一接觸點 Per Contact 拔出力最小容許值： Retention Force : 0.03 kg/f Min
6.2 Contact Pin Retention Force ( in Base )金屬導體與 膠座間拔出力	Axial pullout force on the contact pin in the base at the speed rate of 25.4 ± 3 mm per minute. 對於已經存在於膠座當中金屬導體，施以每一分鐘 25.4 ± 3 mm 速率之軸向拔出力 (EIA/ECA 364-29C)	單一接觸點 Per Contact 最小容許值 0.3kgf Min.

7.0 Electrical Performance(電氣性能) :

Item(項目)	Test Condition(測試條件)	Requirement(規格)
7.1 (Low -Signal Level) Contact Resistance (低階信號) 接觸阻抗	A maximum voltage of 20mV and a maximum current of 10mA are applied to the mate FPC connector. 將軟排線與連接器組合，於其兩端施以最大電壓 20mV 及最大電流 10mA (EIA/ECA 364-23C)	Contact Resistance: 40 milliohms Max. 最大容許值. 40m 歐姆



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Item(項目)	Test Condition(測試條件)	Requirement(規格)
7.2 Insulation Resistance 絕緣阻抗	Apply 500V D/C for 1 minute between adjacent contacts to measure the insulation resistance. (EIA 364-21C) 對相鄰兩接觸導體，於一分鐘時間內施予 500V D/C 電壓，並量測其間絕緣阻抗值	Insulation Resistance: <b>Initial 500 Megohms Min</b> 最初容許值. 500 M 歐姆
7.3 Withstanding Voltage 耐電壓	Apply <b>200V A/C (rms)</b> for 1 minute and the leakage current shall not exceed <b>0.5mA</b> to the adjacent terminal and ground of the mated FPC/FFC connector. (EIA 364-20C) 將軟排線嵌入連接器，於其相鄰兩導體末端各施以電壓 <b>200V A/C(實效值)</b> 時間 1 分鐘，且漏電流必須小於 <b>0.5mA(毫安培)</b>	No breakdown or flashover. 無損毀或者產生火花

8.0 Environmental Performance(環境性能) :

Item(項目)	Test Condition(測試條件)	Requirement(規格)
8.1 Temperature Rise (Via Current Cycling) 溫昇 (經由電流循環操作)	Mated FPC/FFC connector. measure the temperature rise of contact when the maximum rated current is passed 將軟排線嵌入連接器，通過最大容許電流 量測其導體溫度上昇值 (EIA 364-70B Conditions 1. Method 1)	Mate connectors <b>Temperature Rise:</b> <b>+30°C/Max.</b> 組合狀態下之連接器溫度上昇最大容許值 +30°C
8.2 Vibration 耐振動	A mated FPC/FFC connector shall be mounted on a printed Circuit board and subjected to a vibration test of the following conditions. During the test, test current continuity shall be checked. After the test, contact resistance shall be measured. 將軟排線嵌入連接器而後焊接於電路板作為試驗樣品,依照隨附如下規格要求,進行耐振動試驗，試驗過程中確認是否產生不連續電流(斷電)現象，並於試驗過後量測其接觸阻抗。 (EIA/ECA 364-28E-Condition 1) Frequency(頻率) : 10~55~10 Hz/minute. Amplitude (振幅) : 1.5 mm P-P Direction (方向) : 1. Axis of up and down.上下軸向(Y 軸) 2. Axis of right the left. 左右軸向(X 軸) 3. Axis of front and back.前後軸向(Z 軸) Period(週期) : 2 hours for each direction.(每個軸向持續 2 小時)	Initial Contact Resistance : 40 milliohms Max. 接觸阻抗最初容許值: 40m 歐姆 (After the test) Contact Resistance: <b>60 milliohms Max.</b> 經耐振動試驗後接觸阻抗 : 最大容許值 60m 歐姆  No discontinuity current is longer than 1 microsecond. 電流中斷現象， 時間不可多於 1 微秒



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Item(項目)	Test Condition(測試條件)	Requirement(規格)
8.3 Humidity (Steady State) 恆溫恆濕	<p>A mated FPC/FFC connector shall be placed in a humidity chamber of the following conditions. After the test, the contact resistance, the insulation resistance and the dielectric withstanding voltage shall be measured.            (EIA 364-31B Conditions III . Method A)</p> <p>將軟排線嵌入連接器放置於恆定溫度與濕度的空間，依照隨附如下規格要求，進行恆溫恆濕試驗，並於試驗過後量測其接觸阻抗、絕緣阻抗、以及耐電壓測試。</p> <p>Temperature(溫度) : 40±2°C.            Relative Humidity(相對濕度) : 90%~95% (RH).            Period(週期) : 96 hours continuously. (持續 96 小時)</p>	<p>Appearance : No Damage 外觀不可有異狀</p> <p>(After the test)            Contact Resistance:  <b>60 milliohms Max.</b>            經恆溫恆濕試驗後接觸阻抗：            最大容許值. 60m 歐姆</p> <p>(After the test)            Insulation Resistance :  <b>50 Megohms Min.</b>            經恆溫恆濕試驗後絕緣阻抗：            最小容許值. 50 M 歐姆</p> <p>經恆溫恆濕試驗後測耐電壓：            (After the test)            Withstanding Voltage:  <b>200V A/C for 1 minute</b></p>
8.4 Thermal Shock 冷熱衝擊	<p>A mated FPC/FFC connector shall be subjected to a thermal shock test of the following conditions. After the test, the contact resistance, the insulation resistance and the dielectric withstanding voltage shall be measured.            將軟排線嵌入連接器作為試驗樣品，依照隨附如下規格要求，進行冷熱衝擊試驗，並於試驗過後量測其接觸阻抗、絕緣阻抗、以及耐電壓測試。(EIA/ECA 364-32D Conditions I . Method A)</p> <p>One Cycle Consists Of:  <b>-55 +0/-3°C for 30 minutes. → Room Temp.5 minutes</b>  <b>85+3/-0°C for 30 minutes. → Room Temp.5 minutes</b></p> <p>Total Cycles: 5 Cycles.            以 -55+0/-3°C 溫度持續 30 分鐘，經室溫 5 分鐘，而後再以 85+3/-0°C 溫度持續 30 分鐘，再經室溫 5 分鐘，構成一次冷熱循環，總計循環次數 5 次。</p>	<p>Same as paragraph 8.3 同 8.3 章節</p>



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Item(項目)	Test Condition(測試條件)	Requirement(規格)
8.5 Heat Aging 高溫老化試驗	<p>A mated FPC/FFC connector shall be placed in a heat oven of the following conditions. After the test, contact resistance shall be measured. (EIA 364-17B Conditions III . Method A )</p> <p>將軟排線嵌入連接器放置於加熱烤箱當中，依照隨附如下規格要求，進行高溫老化試驗，並於試驗過後量測其接觸阻抗。</p> <p>Temperature(溫度): 85±2°C.</p> <p>Period(週期): 96 hours continuously.(持續 96 小時)</p>	<p>Initial Contact Resistance : 40 milliohms Max. 接觸阻抗最初容許值:40m 歐姆</p> <p>(After the test) Contact Resistance : 60 milliohms Max. . 經高溫老化試驗後接觸阻抗 : 最大容許值. 60m 歐姆</p>
8.6 Salt Spray 鹽水噴霧	<p>A mated FPC/FFC connector shall be subjected to a Salt Spray test of the following conditions. After the test , the specimen shall be washed with running water and dried naturally before the measurement of contact resistance.</p> <p>將軟排線嵌入連接器作為試驗樣品，依照隨附如下規格要求，進行鹽水噴霧試驗，試驗過後將樣品用清水沖洗並經過自然風乾，而後量測其接觸阻抗。(EIA 364-26B Conditions B)</p> <p>Density(鹽水密度): 5 % in weight.</p> <p>Temperature(溫度): 35±2°C. Period(週期): 48 hours</p>	<p>Initial Contact Resistance : 30 milliohms Max. 接觸阻抗最初容許值:30m 歐姆</p> <p>(After the test) Contact Resistance: 60 milliohms Max. 經鹽水噴霧試驗後接觸阻抗 : 最大容許值. 60m 歐姆</p>
8.7 Solder Ability 焊錫性	<p>Fluxed soldering section of header shall be dipped in solder of the following conditions. (EIA 364-52B)</p> <p>將連接器 pin 針基板嵌入端，接觸熱溶狀錫料，依照隨附如下規格要求，進行焊錫性試驗</p> <p>Solder Temperature (焊錫溫度) : 245 ± 5°C.</p> <p>Immersion Period (沉浸週期) : 3±0.5 Seconds (操作方式): 零件焊錫位置，距離導體以及固定片末端 0.1mm</p> <p>Method : 0.1mm from contact pin tip and solder nail tip</p>	<p>Solder entirely (Tin Plated : 95% / Gold Plated : 75%) of immersed area must show no voids or pinholes. 焊料覆蓋面積必須達到 (鍍錫 95% / 鍍金 75%)， 而且不能產生氣孔或空隙</p>



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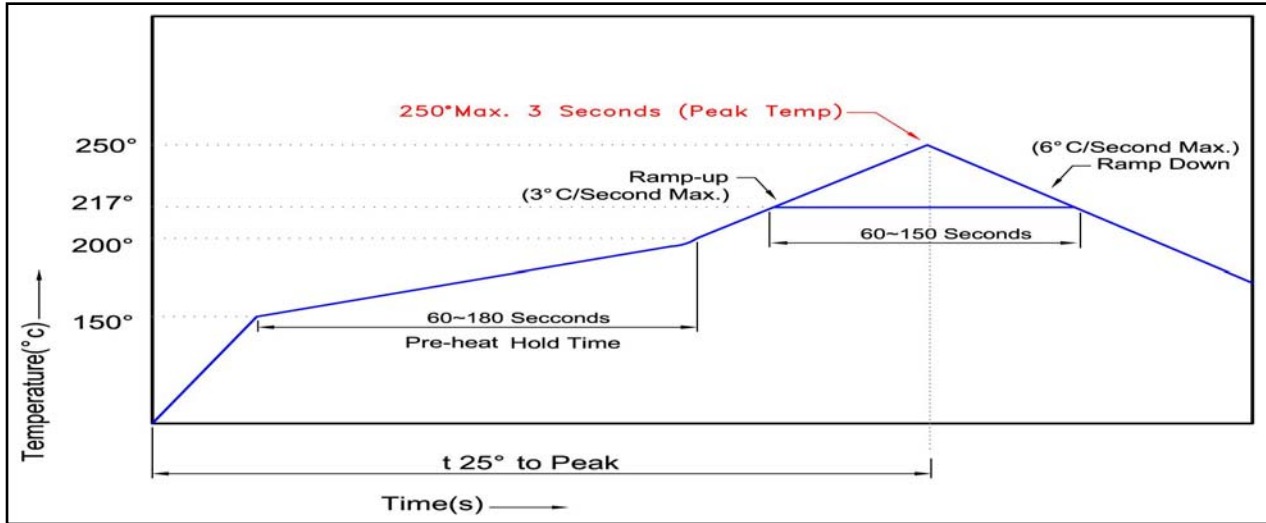
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Item(項目)	Test Condition(測試條件)	Requirement(規格)
8.8 Resistance To Soldering Heat 焊錫耐熱性	By reflow soldering 迴焊適用溫度範圍： Refer to Temperature Profile 請參考 8.8.1 溫度曲線圖 (IPC/JEDEC J-STD-020D.1) By soldering iron 手工烙鐵焊錫適用溫度範圍： 370~400± 5°C 3±0.5 Seconds. (操作方式)：零件焊錫位置，距離導體以及固定片末端 0.2mm Method : 0.2mm from contact pin tip and solder nail tip (EIA/ECA 364-56C Procedure 3. Conditions A)	No deformation or damage. 不可有變形或損壞

Notes : Flowing Mixed Gas (EIA 364-65A) shall be conduct by Customer request 混合流動氣體測試依照客戶需求

8.8.1 Temperature Profile(溫度曲線圖)：



9.0 Caution (注意事項) : Parts are made of LCP. Once the vacuum-packing unpacked, please keep parts in the environment of temperature < 30°C/ humidity < 60% RH, and send to re-flowing within 168 hours to prevent parts blistered or deformed during soldering.

此款產品使用LCP塑料，並採用真空包裝以減少吸濕受潮。真空包裝經拆封應避免曝露於溫度高於30°C，濕度高於 60% RH的環境中，並在拆封 168 小時內全數使用完畢，以防止後續迴焊製程產生起泡變形現象。

10.0 Remark(備註) : Any change or revision for the product specification will not be announced in advance.

Please contact our sales representative for the latest information.

有關規格書內容經變更或改版，如未能夠及時發佈與通知，煩請連絡我司業務人員以提供產品最新資訊

Reviewed: J.M.Chang Approved: Peter Chang Verified: Jeff Wu



<b>Date Issued</b>	<b>2012/5/09</b>	<b>Revised /Edition</b>	<b>A</b>
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<b>Title Subject</b>	<b>Pitch 0.5mm FPC/FFC Connector JS-1191D JS-1191U JS-1191V</b>		

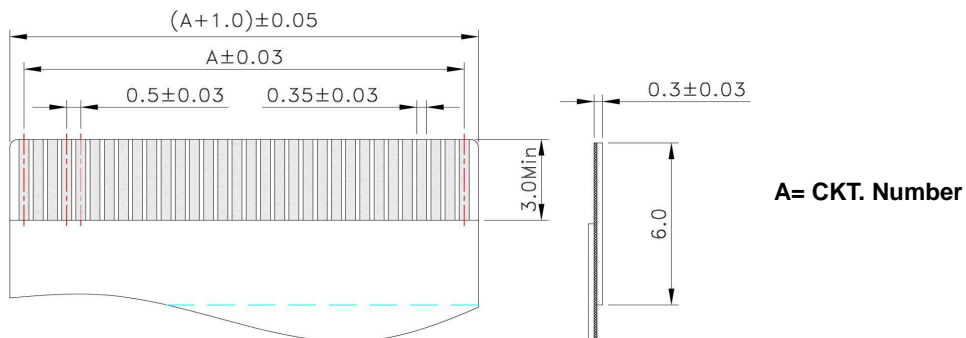
*This manual describes important and required points of handling about connector . Be sure to read this manual thoroughly before using connector.*

*此操作手冊係說明連接器使用時必須注意的重點事項，  
務必詳加閱讀內容之後，再行使用本產品*

**1. Applicable Flexible Flat Cable 軟性排線適用規格：**

Item	Rated Value(額定標準)
Applicable FFC	Conductor(導體材質): Tin-plated copper foil /Gold-plated copper foil (鍍錫銅箔 /鍍金銅箔)
	Conductor pitch(導體間距): 0.5mm
	Conductor width(導體寬度): 0.3mm
	Mating part thickness(嵌入組合區段之厚度): 0.3±0.03mm

- ※ Dimensions of FFC greatly affect to the contacting reliability with connector.  
軟排線的尺寸範圍，對於連接器導通可靠度極具影響。  
Conform the dimensions of FFC with those of applicable ones described in drawing.  
軟排線應符合圖面所示適當尺寸範圍。
- ※ Especially, narrow pitch connector has a high possibility to come off from contact point due to warpage, deformation, slant insertion, insufficient insertion and so on of FFC.  
軟排線彎折、外觀損壞、嵌入組合過度傾斜，或者嵌入組合未達定位，將導致接觸點異位導通失效，尤以小間距連接器特別容易發生。
- ※ In order to reduce these risks, manage that the important dimensions shall be satisfied with the given tolerances, considering the variations of those dimensions.  
尺寸變化易衍生使用時導通不良的風險，重點尺寸務必管控於公差要求之內，以有效減低風險。
- ※ Confirm the applicability of the connector with the FFC used, before use. Which applicability is not confirmed, might not be able to guarantee the performance.  
軟排線與連接器之間適用性與否，請於使用前先行確認。未經確認是否適用隨即使用，可能無法確保其功能可靠性。

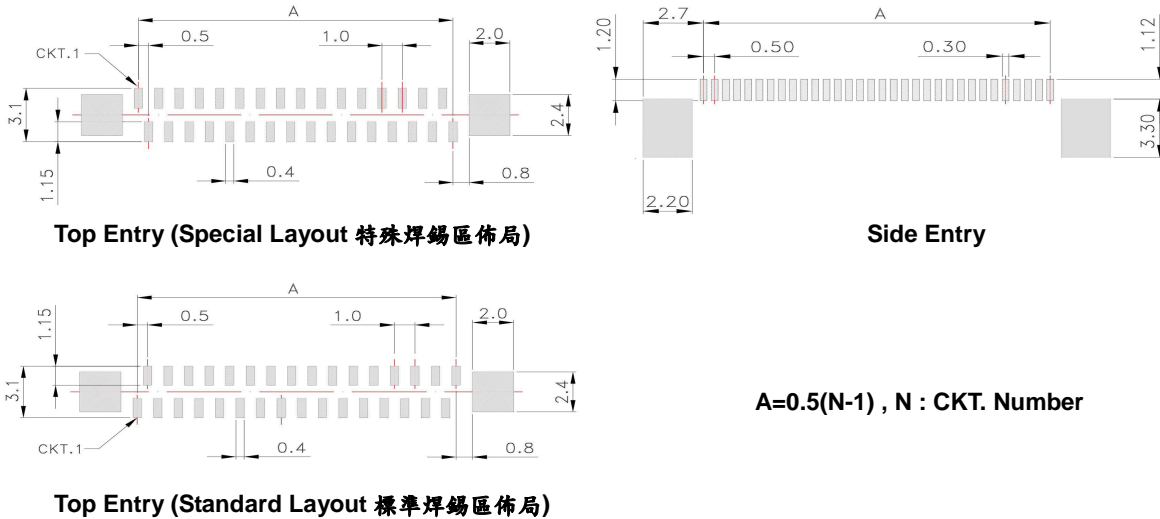






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**2. PC Board Pattern Layout 圖示電路焊錫區佈局:**



※ Minimize the war page as much as possible. The connector is straight within 0.1mm max. Make sure that the mounting area flatness can accept the connector terminals without causing any failure of the solder joints. (See Figure 2.1)  
 儘可能降低電路板彎曲。連接器平貼面容許公差為 0.10mm 以下。應確保黏著區域平整度，不至於引起連接器導體與鉚錫接點之間任何損傷。

※ When cutting the large PC board to the individual boards should not to damage the installed connector.  
 當面積較大電路板裁切分割的同時，應避免損壞已裝載於電路板上的連接器。

※ When screwing any component on the board should avoid any stresses to affect board deflections and the mounting areas of the connector.  
 當任何零件透過螺絲栓鎖方式裝載於電板路上的同時，應避免其產生應力造成電路板變形，因而影響連接器黏著區域平整度。

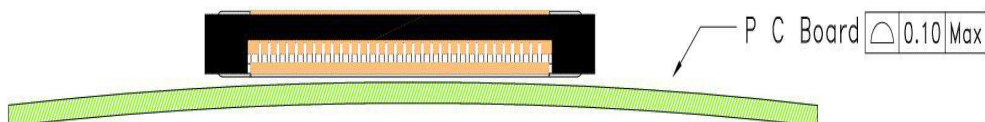


Figure 2.1



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### 3 Handling Precautions 使用表面黏著須知：

#### 3.1 Reflow Soldering Method 迴焊使用方法：

Soldering should be conducted at the temperature below the temperature profile shown in product Specification as item of "Resistance to soldering heat"

迴焊所適用溫度條件，參照規格書“焊錫耐熱性”項目中所示溫度曲線圖。

Though recommended reflow temperature condition varies depending on solder paste to be used, evaluate and find adequate condition before production.

迴焊建議溫度僅為參考，溫度條件的變化亦取決於錫膏的使用，視實際使用需求而作調整。

Depending on the soldering condition, solder and flux wicking may occur on this connector. Check no problem in customer soldering condition before the use.

錫膏毛細現象，攸關迴焊條件良窳，有可能造成連接器使用時溢錫、爬錫之發生。

迴焊所需具備之條件，應先確認無誤之後，再行使用本產品

Following configuration of metal mask is recommended for mounting operation；

表面黏著作業使用防焊層，其表面被覆方式參考如下

Blanking Part (開孔區域)： same area as pad area on PC board 與印刷電路板焊錫區域相同

Thickness(防焊被覆層厚度)： 0.10 to 0.15mm

When metal mask more than 0.15mm thickness is used, area of blanking part should be smaller than pad area on PC board, and amount of solder should be properly adjusted.

當防焊層被覆厚度超過 0.15mm，間接促成開孔區域加深，後續印刷錫膏總體積相對增加，必須藉由防焊層開孔面積縮小至焊錫區域以下，以控制錫膏印刷不致於過量。(See Figure 3.1)

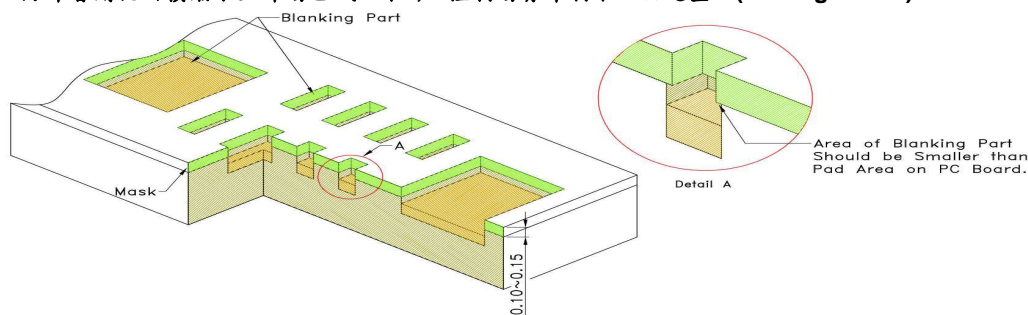


Figure 3.1

#### 3.2 Connector Placement 連接器定位

Machine placement of the connector is recommended due to the inherent difficulty of manually placing fine-pitch connectors. The top surface of the connector housing has a flat area in the center to facilitate vacuum pick-up and handling. To avoid damage, the connectors should be picked up directly out of the embossed-tape packaging by the pick-up device. The placement machine is used to position the connectors to minimize the possibilities of damage that could result from improper handling.

細間距連接器經由手工置件定位極富難度，建議以機械方式置件定位取代，機械方式置件定位，可降低因操作不當而導致連接器損壞的情形發生。連接器表面平坦處且位於整體中心位置，較易於真空取件作業。真空取件應以垂直起降方式，將零件由包裝載帶取出，並避免損壞連接器。

※Placement of the connectors may be done by hand; however, extreme caution must be used when handling connectors to prevent deformation and contamination of the solder tines and hold-downs.

某些情況下可能以手工置件定位，尤特別謹慎避免連接器沾污、以及過度施力損壞連接器金屬導體末端焊錫區域。



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### 3.3 Coplanarity 金屬導體與焊錫區域共面度：

Optimally, the connector contact solder tines should be centered on the PC board Pads. however, misregistration is permissible for some performance classifications.(See Figure 3.3)  
 連接器金屬導體安放之最佳位置應座落於印刷電路板各相對應腳位之焊錫區域之中心線，然而，對於有些效能特性之分類，可允許對位落差。

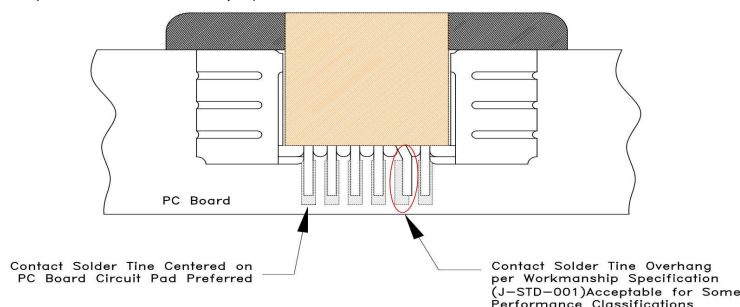


Figure 3.3

### 3.4 Solder Iron Method 手焊使用方法：

When soldering or re-soldering connector on PC board, below the temperature shown in product Specification as item of “Resistance to soldering heat”  
 電路板上連接器使用手工焊錫或者是重焊 所適用溫度條件，參照規格書“焊錫耐熱性”項目中所建議溫度。

Do not apply external force by pressing soldering iron tip on contact solder tail part.  
 切勿以過度的力量，將烙鐵尖端重壓導體末端焊錫區域。  
 If done, dismount and exchange connector. Do not reuse dismounted connector.  
 以手焊方式將連接器卸除並更換之，切勿重覆使用卸除之連接器。

## 4 FFC Inserting Operation 軟性排線嵌入操作：

### 4.1 Releasing Actuator 卸開制動蓋：

Release actuator straight with even force at both ends in the direction of the arrow.  
 (See Figure 4.1.1)均衡施力於制動蓋兩側，不偏不倚的朝箭頭所指方向將制動蓋卸開。

When releasing actuator, do not apply excessive force or release only one end of actuator, because such handling may lead to breakage of connector. (See Figure 4.1.2)  
 勿以過度的力量卸開制動蓋，或者以單邊施力卸開制動蓋，諸如此方式操作可能導致連接器損壞。

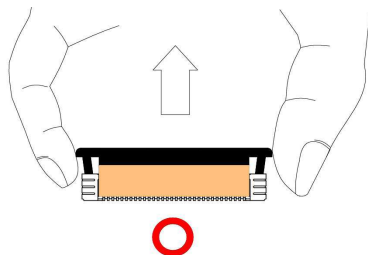


Figure 4.1.1

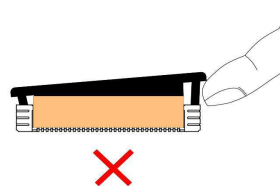


Figure 4.1.2



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#### 4.2 Inserting FFC into Connector 嵌入軟排線:

When FFC is inserted into connector, FFC may knock actuator of connector and actuator may be inserted together. In this case, FFC may have a possibility of insufficient inserting condition. In such a case when actuator is inserted together at FFC insertion, release actuator again and do it over to insert FFC into connector. (See Figure 4.2.1)  
嵌入軟排線的同時可能觸及制動蓋，使制動蓋隨軟排線嵌入，軟排線有可能因此嵌入未達定位，當此情況將制動蓋鬆脫之後，再嵌入軟排線。

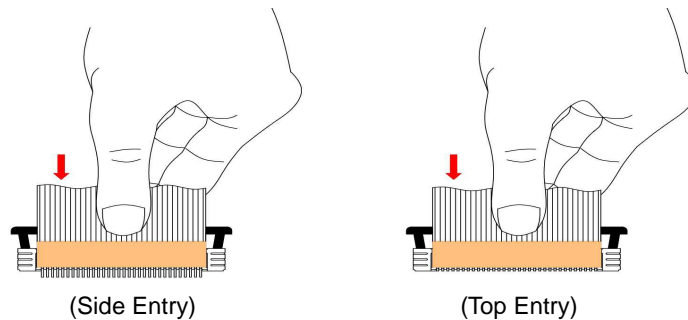


Figure 4.2.1

- ※ It is recommended inserting the FFC at an angle between  $16^{\circ}$  and  $22^{\circ}$  above the horizontal plane for upper contact connectors, for lower contact connectors, the insertion angle of the FFC should be between  $16^{\circ}$  and  $22^{\circ}$  below the horizontal plane (See Figure 4.2.2)  
使用臥式上接點連接器，建議軟排線嵌入角度，介於水平線以上  $16^{\circ}$  ~  $22^{\circ}$  之間。  
使用臥式下接點連接器，建議軟排線嵌入角度，介於水平線以下  $16^{\circ}$  ~  $22^{\circ}$  之間。

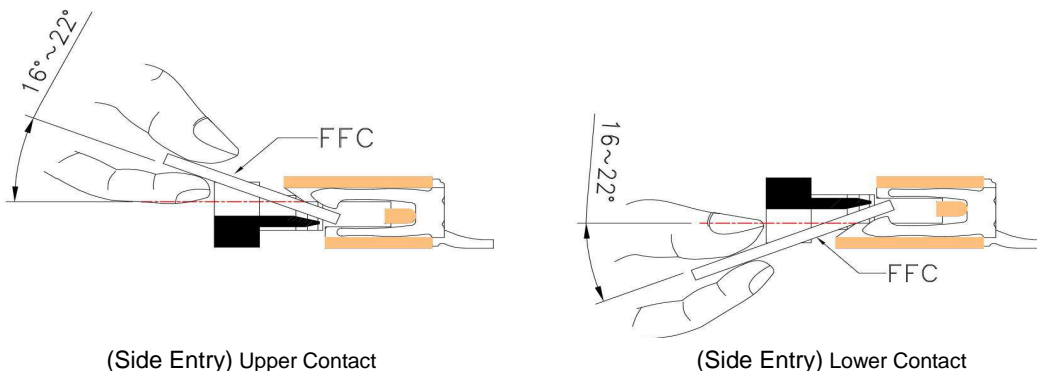


Figure 4.2.2

#### 4.3 Fitting Actuator 安裝制動蓋:

After checking that FFC is inserted up to backmost of connector, press the whole of actuator in connector straight with even force. (See Figure 4.3.1)  
確認軟排線嵌入位置是否到達連接器最底部，而後施以均衡力量，不偏不倚的將制動蓋壓入連接器。  
At this time, do not press in only one end of actuator, but press in both ends of actuator at once. (See Figure 4.3.2) 壓入制動蓋的當時，切勿以單邊施力，尚且於兩邊同時施力將制動蓋作一次性壓入。



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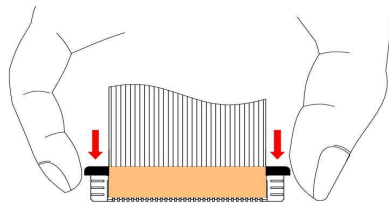


Figure 4.3.1

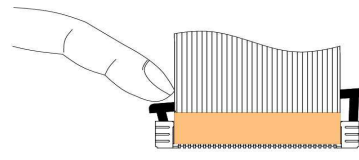


Figure 4.3.2

#### 4.4 Releasing FFC 卸開軟排線:

When releasing actuator, do not apply excessive force or do not pull out only one end of actuator at once but pull out the whole of actuator with even force, because such handling may lead to breakage of connector. (See Figure 4.4.1)

卸開制動蓋的當時，切勿施以過度力量，或者以單邊施力拔出制動蓋，諸如此方式操作可能導致連接器損壞，尚且於兩邊同時施力將制動蓋作一次性拔出。

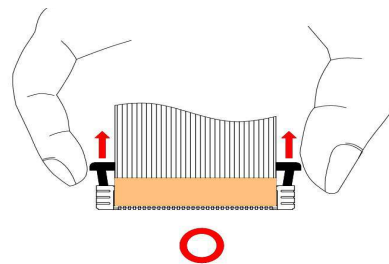
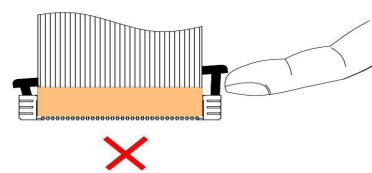


Figure 4.4.1

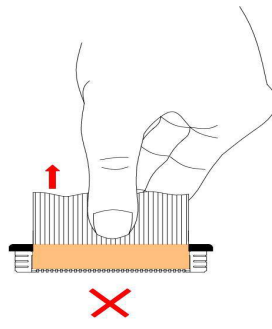
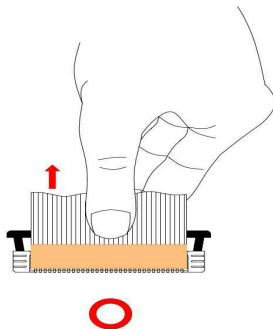


After releasing actuator, pull out FFC straight on the same axis.

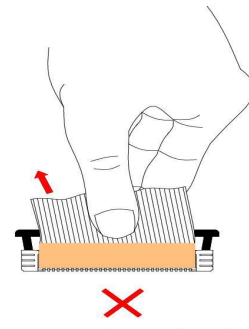
制動蓋卸開之後，循制動蓋相同軸向，將軟排線不偏不倚的拔出。

Do not pry FFC to pull out or pull out to lateral direction, because such handling may cause damage of FFC and breakage of connector. (See Figure 4.4.2)

切勿於制動蓋未經卸開之前，試圖直接拔出軟排線，或者以橫向拔出軟排線，諸如此方式操作可能導致軟排線以及連接器損壞。



Do Not Pry FPC to Pull Out



Pull Out to lateral Direction

Figure 4.4.2



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**4.5 Handling of FFC after mounting connector on PC Board:**

連接器於電路板裝載完成，後續軟板/軟排配置方式

When inserted FFC is handled, Provide sufficient FFC length so that force is not loaded to connector, because such loading may cause and discontinuity of connector.  
 (See Figure 4.5.1)

軟排線組裝當時的配置，應具備足夠的長度，以避免施力承載於連接器。

軟排線長度不足使連接器承載過度力量，諸如此情況可能導致連接器損傷斷裂。

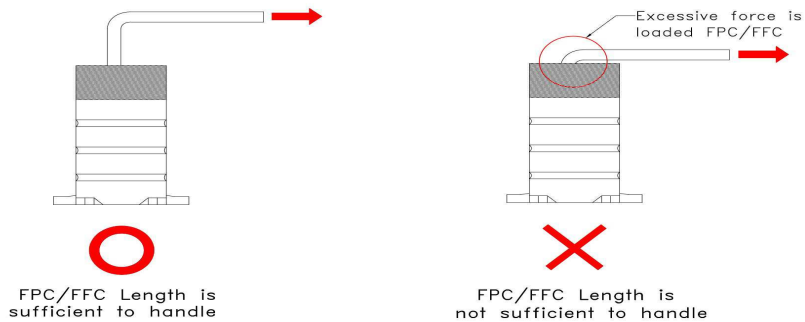


Figure 4.5.1

※ Forming processing is conducted to FFC not so as to load force to connector.  
 (See Figure 4.5.2)

軟排線經由定型加工，藉此達到導引分散的作用，以避免連接器承受過度力量。

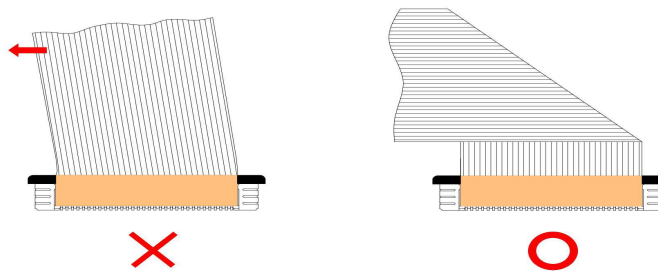


Figure 4.5.2

**Reviewed:** J.M.Chang    **Approved:** Peter Chang    **Verified:** Indiana Huang