



Type Document	Product Specification	Revised /Edition	H
Date Issued	2005/02/28	Data Revised	2014/09/18
Subject: JS-1165SXDYG JS1165RXDYG JS1166SXDYG JS1166RXDYG JS-1106 JS-1107 JS-1109 JS-1110 Pitch: 2.54mm Female Header Series Board to Board Connector			Issued By: Engineering Dept.

This specification is referred to 2.54 mm female header series board to board connector.

本規格書內容係提供 2.54 mm 排針母座系列產品相關參考，其用途為電路板端相接於電路板端連接器

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REV.(版本)	Revision Record (改版變更原因)	Date(日期)	ECN No
H	1.修訂8.10.1 項 Temperature Profile / 2增訂8.7 項Cold耐寒試驗	2014/09/18	EC2014-09-018



喬訊電子工業股份有限公司

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1.0 Product Name/Part Number & Drawing Number(產品名稱 / 產品型號及圖面型號): Note: (xx) The number of the circuits.

Product Name(產品名稱)		Part Number(零件型號)	Drawing Number(圖面型號)
Female Header (排針母座)	Single Row (單排)	Straight(直立式)	JS-1165SXXDXG-XX(6T) / JS-1165SXXDXG-XXXX
		Right Angle(臥式)	JS-1165RXDXG-XX(6T) / JS-1165RXDXG-XXXX
	Double Row (雙排)	Straight(直立式)	JS-1166SXXDXG-XX(6T) / JS-1166SXXDXG-XXXX
		Right Angle(臥式)	JS-1166RXDXG-XX(6T) / JS-1166RXDXG-XXXX
Pin Header (排針)	Single Row (單排)	Straight(直立式)	JS-1109-XX(6T) / JS-1109-XXXX
		Right Angle(臥式)	JS-1110-XX(6T) / JS-1110-XXXX
	Double Row (雙排)	Straight(直立式)	JS-1106-XXx2(6T) / JS-1106-XXx2XX
		Right Angle(臥式)	JS-1107-XXx2(6T) / JS-1107-XXx2XX

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

Part Name(零件名稱)	Material(材質)	Surface Finish(表面鍍層)
Female Header (排針母座)	Contact Pin(導體)	Brass
	Base(膠座)	Nylon 6T PBT
Pin Header (排針)	Square Pin(方型導體)	Brass
	Base(膠座)	Nylon 6T PBT

3.0 Characteristic(產品特性):

Item(項目)	Standard(標準規範)
3.1 額定電流 Rated Current	3A AC/DC
3.2 額定電壓 Rated Voltage	125V AC/DC
3.3 Ambient Temperature Range 環境與操作溫度範圍	(操作使用溫度與濕度範圍) Operating Temp.: Insulator Nylon 6T : -40~+105 ; 85% R.H. Max /Insulator PBT : -25~+85 ; 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 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
3.5 Floor Life 拆封後使用期限	Term 保存期限 1 Year
	3 Months

Note: 適用電路板厚度 Applicable Printed Circuit Board Thickness: 0.8~1.6 mm



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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			
Female Header Double Row Right Angle JS-1166RXDYG		Pin Header Double Row Right Angle JS-1107	
Female Header Double Row Straight JS-1166SXDYG		Pin Header Double Row Straight JS-1106	
Female Header Single Row Straight JS-1165SXDYG		Pin Header Single Row Straight JS-1109	
Female Header Single Row Right Angle JS-1165RXDYG		Pin Header Single Row Right Angle JS-1110	

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



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6.0 Mechanical Performance(機械性能):

Item(項目)	Test Condition(測試條件)	Requirement (規格)
6.1 Insertion & Withdrawal Force 插入力與拔出力	Insert and withdrawal with connectors at the speed rate of 25.4 ±3 mm /minute. (EIA/ECA 364-13D) 排母與排針兩端動合，以每一分鐘 25.4 mm ±3 的速率，作插入與拔出往返測試	單一接觸點 Per Contact 插入力最大容許值： Insertion Force : 0.8kg/f Max 拔出力最小容許值： Withdrawal Force: 0.03kg/f Min
6.2 Contact Retention Force(in Base) Female Header 導體與排母膠座之間 拔出力	Axial pullout force on the contact in the base at the speed rate of 25.4 ±3 mm /minute. (EIA/ECA 364-29C) 對於已經存在於膠座當中導體，施以每一分鐘 25.4 ±3 mm 速率之軸向拔出	單一接觸點 Per Contact 最小容許值 0.8kgf/Min.
6.3 Square Pin Retention Force(in Base) Pin Header 方型導體與膠座之間 保持力	Axial pullout force on the square pin in the base at the speed rate of 25.4 ±3 mm per minute. (EIA/ECA 364-29C) 對於已經存在於膠座當中方型導體，施以每一分鐘 25.4 ±3mm 速率之軸向拔出	單一接觸點 Per Contact 最小容許值 0.8kgf/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 100mA are applied to the mate connector. (EIA/ECA 364-23C) 對組合狀態下連接器，於其兩端施以最大電壓 20mV 以及最大電流 100mA	Contact Resistance: 20 milliohms Max. 最大容許值. 20 毫歐姆
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: Initial 1000 Megohms Min 最初容許值. 1000 兆歐姆
7.3 Withstanding Voltage 耐電壓	Apply 1000V A/C (rms) for 1 minute and the leakage current shall not exceed 0.5mA to the adjacent terminal and ground of the mate connectors. (EIA 364-20C) 對組合狀態下連接器，於其相鄰兩導體末端各施以電壓 1000V A/C (實效值) 時間 1 分鐘，且漏電流必須小於 0.5mA (毫安培)	No breakdown or flashover. 無損毀或者產生火花



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8.0 Environmental Performance(環境性能) :

Item(項目)	Test Condition(測試條件)	Requirement(規格)
8.1 Durability 耐久性	Mate Connectors up 50 Cycles at a Maximun rate of 10 cycles Per minute prior to environmental test (EIA/ECA 364-09C) 以組合狀態下連接器且未經環境測試，依每分鐘內進行 10 次嵌入與拔出之最大速率，連續 50 次嵌入與拔出往返測試	(After the test) Contact resistance : 40 mΩ Max 經耐久性試驗後接觸阻抗： 最大容許值. 40 毫歐姆
8.2 Temperature Rise (Via Current Cycling) 溫度上昇 (經由電流循環操作)	Mate connector . measure the temperature rise of contact when the maximum rated current is passed 以組合狀態下連接器，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 Temperature Rise: +30°C/Max. 組合狀態下之連接器溫度 上昇最大容許值+30°C
8.3 Vibration 耐振動	A mated 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. 以組合狀態下連接器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 I) 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. (每一個軸向持續 2 小時)	Initial Contact Resistance : 20 milliohms Max. 接觸阻抗最初容許值: 20 毫歐姆 (After the test) Contact Resistance: 40 milliohms Max. 經耐振動試驗後接觸阻抗： 最大容許值 40 兆歐姆 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)
8.4	Humidity (Steady State) 恆溫恆濕	<p>A mated connector shall be placed in a humidity chamber of the following conditions. After the test, leave the specimen at room temperature for 1~2 hours before the contact resistance, the insulation resistance and the dielectric withstanding voltage shall be measured.</p> <p>(EIA 364-31B Conditions III . Method A)</p> <p>以組合狀態下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, 經試驗過後將樣品置於室溫 1~2 小時, 再量測其接觸阻抗、絕緣阻抗、以及耐電壓測試。</p> <p>Temperature(溫度): 40±2°C.</p> <p>Relative Humidity(相對濕度): 90%~95% (RH).</p> <p>Period(週期): 96 hours continuously. (持續 96 小時)</p>	<p>(After the test)</p> <p>Contact Resistance:</p> <p>30 milliohms Max.</p> <p>經恆溫恆濕試驗後接觸阻抗： 最大容許值. 30 毫歐姆</p>
			<p>(After the test)</p> <p>Insulation Resistance :</p> <p>500 Megohms Min.</p> <p>經恆溫恆濕試驗後絕緣阻抗： 最小容許值. 500 兆歐姆</p>
			<p>經恆溫恆濕試驗後耐電壓：</p> <p>(After the test)</p> <p>Withstanding Voltage:</p> <p>1000V A/C for 1 minute</p>
8.5	Thermal Shock 冷熱衝擊	<p>A mated connector shall be subjected to a thermal shock test of the following conditions. After the test, eave the specimen at room temperature for 1~2 hours before the contact resistance, the insulation resistance and the dielectric withstanding voltage shall be measured.</p> <p>以組合狀態下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, 經試驗過後將樣品置於室溫 1~2 小時, 再量測其接觸阻抗、絕緣阻抗、以及耐電壓測試。</p> <p>(EIA/ECA 364-32D Conditions I . Method A)</p> <p>One Cycle Consists Of:</p> <p>-55°C+0/-3°C for 30 minutes. → Room Temp. 5 minutes</p> <p>85°C+3/-0°C for 30 minutes. → Room Temp. 5 minutes</p> <p>Total Cycles: 5 Cycles.</p> <p>以-55°C+0/-3°C溫度持續 30 分鐘, 經室溫 5 分鐘, 而後再以 85°C+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 8.4</p> <p>同 8.4 章節</p>



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Item(項目)	Test Condition(測試條件)	Requirement(規格)
8.6 Thermal Aging 高溫老化試驗	<p>A mated connector shall be placed in a heat oven of the following conditions. After the test, leave the specimen at room temperature for 1~2 hours before the contact resistance shall be measured.</p> <p>(EIA 364-17B Conditions 3 or 4 . Method A)</p> <p>以組合狀態下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, 經試驗過後將樣品置於室溫 1~2 小時, 再量測其接觸阻抗。</p> <p>Temperature(溫度): 85±2°C (For PBT) 105±2°C (For Nylon 6T)</p> <p>Period(週期): 96 hours continuously . (持續 96 小時)</p>	<p>Initial Contact Resistance : 20 milliohms Max. 接觸阻抗最初容許值:20 毫歐姆</p> <p>(After the test) Contact Resistance : 30 milliohms Max. . 經高溫老化試驗後接觸阻抗 : 最大容許值. 30 毫歐姆</p>
8.7 Cold 耐寒試驗 (Low Temperature)	<p>A mated connector shall be placed in a cold chamber of the following conditions. After the test, leave the specimen at room temperature for 1~2 hours before the contact resistance shall be measured.</p> <p>(EIA 364-59A Condition D ; Condition 3 or 4)</p> <p>以組合狀態下連接器放置於低溫空間內, 依照隨附如下規格要求, 進行耐寒試驗, 經試驗過後將樣品置於室溫 1~2 小時, 再量測其接觸阻抗。</p> <p>Temperature(溫度): -25±3°C .(For PBT) -40±3°C (For Nylon 6T)</p> <p>Period(週期): 96 hours continuously . (持續 96 小時)</p>	<p>Initial Contact Resistance : 20 milliohms Max. 接觸阻抗最初容許值:20 毫歐姆</p> <p>(After the test) Contact Resistance : 30 milliohms Max. . 經耐寒試驗後接觸阻抗 : 最大容許值. 30 毫歐姆</p>
8.8 Salt Spray 鹽水噴霧	<p>A mated 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>以組合狀態下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. Temperature(溫度): 35±2°C. Period(週期): 48 hours</p>	<p>Initial Contact Resistance : 20 milliohms Max. 接觸阻抗最初容許值:20 毫歐姆</p> <p>(After the test) Contact Resistance: 30 milliohms Max. 經鹽水噴霧試驗後接觸阻抗 : 最大容許值. 30 毫歐姆</p>



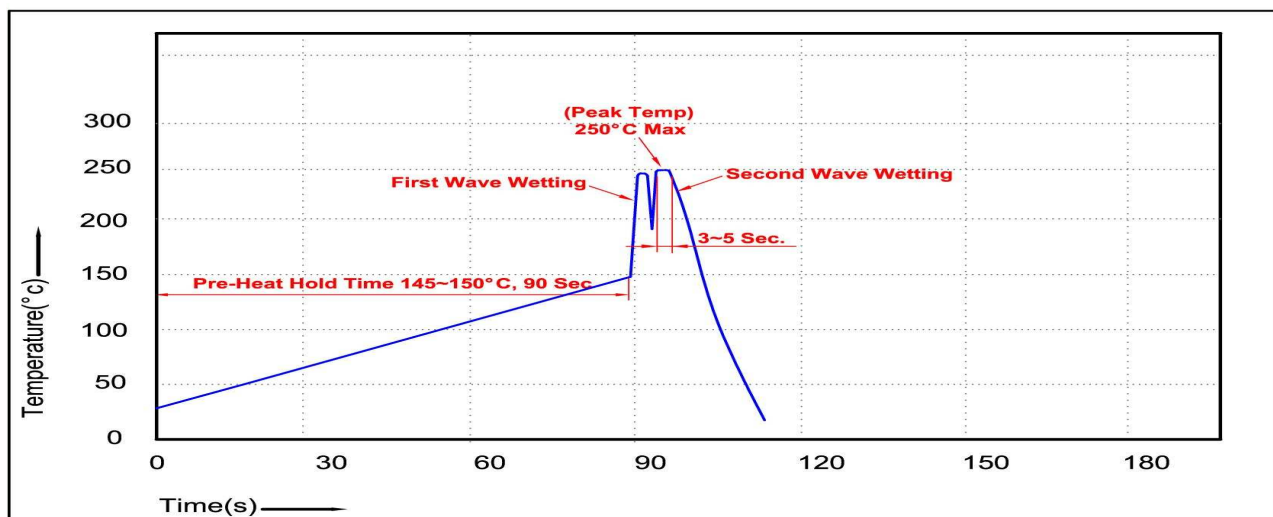
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Item(項目)	Test Condition(測試條件)	Requirement(規格)
8.9 Solder Ability 焊錫性	Fluxed soldering section of header shall be dipped in solder of the following conditions. 將連接器 pin 針基板嵌入端，接觸熟溶狀錫料，依照隨附如下規格要求，進行焊錫性試驗 Solder Temperature (焊錫溫度) : $245 \pm 5^{\circ}\text{C}$. Immersion Period (沉浸週期) : 3 ± 0.5 Seconds (操作方式) : 零件焊錫位置，距離導體末端 1.5mm Method : 1.5mm from contact pin tip (EIA 364-52B)	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
8.10 Resistance to Soldering Heat 焊錫耐熱性	Resistance to Wave soldering heat when using Nylon 6T 使用 Nylon 6T 塑料，能夠承受波峰焊耐熱範圍： Refer to Temperature Profile 請參考 8.10.1.1 溫度曲線圖 Resistance to Wave soldering heat when using PBT 使用 PBT 塑料，能夠承受波峰焊耐熱範圍： Refer to Temperature Profile 請參考 8.10.1.2 溫度曲線圖 by soldering iron 手工烙鐵焊錫適用溫度範圍： $350 \pm 5^{\circ}\text{C}$ 5 ± 0.5 Seconds. (操作方式) : 零件焊錫位置，距離導體末端 1.5mm Method : 1.5mm from contact pin 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

8.10.1 Temperature Profile(溫度曲線圖) :

8.10.1.1 Wave Peak Soldering In- General Process 波峰焊一般制程





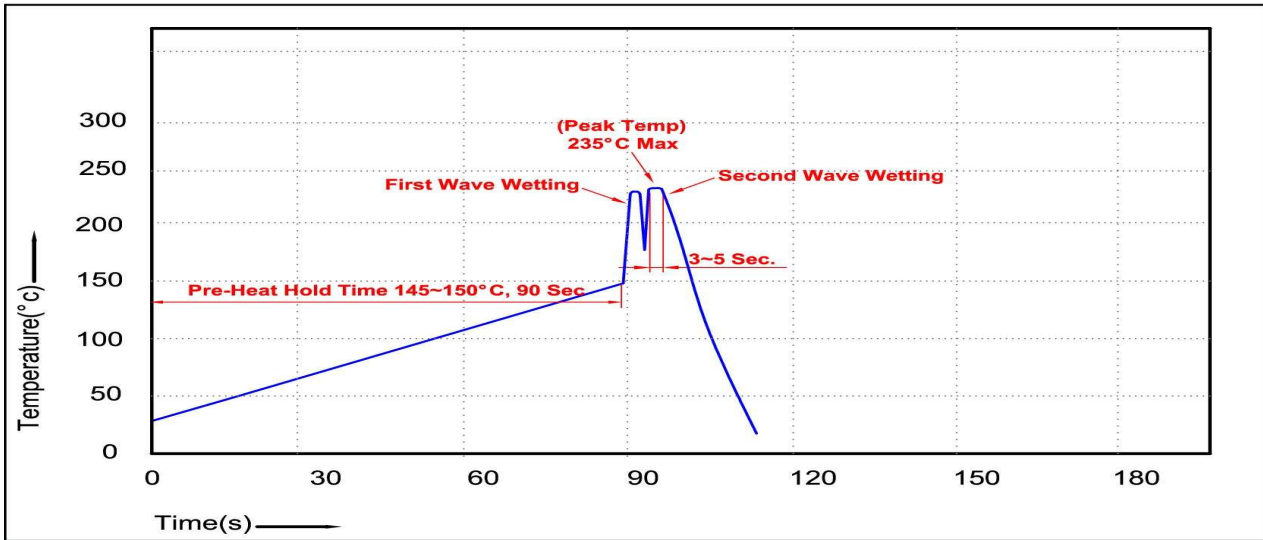
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8.10.1.2 Wave Peak Soldering In- General Process 波峰焊一般制程



9.0 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:** Indiana Huang



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Title of Document	HANDLING MANUAL		Issued By: Engineering Dept.
Title Subject	Pitch 2.54mm Female Header Board to Board Connector JS-1165SD1G JS-1165RD1G JS-1166SD1G JS-1166RD1G		

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*

Handing Precautions For Solder Iron 使用電烙鐵手焊預防事項

- ※ 此款排針母座(JS-1165;JS-1166)之設計由於考量端子組裝之便利性，因此在板端(PCB)貼合面採開放式結構以利端子組裝。
Owing to the convenience of terminals assembly, JS-1165; JS-1166 female type series are applying the open-insertion structure in the bonding surface of PCB. (See Figure 1)

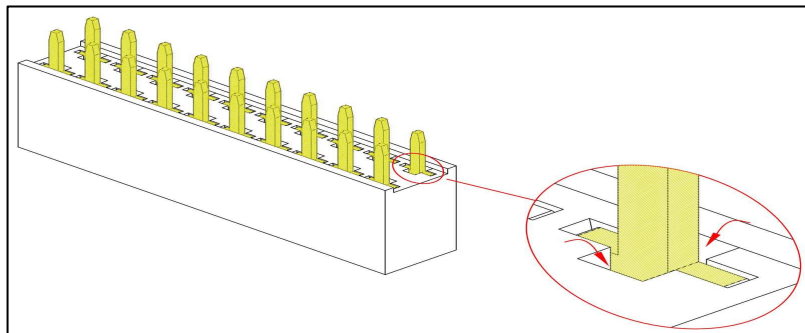


Figure 1

- ※ 由於手焊方式必須將 PCB 反轉 180 度，連接器開放式結構亦隨之改變為朝上。當焊接過程其中部份熱融錫液會穿過 PCB 板孔進入開放式結構當中，最後在連接器內腔形成錫珠且附著於金屬導體。此現象之發生尤以直立式連接器(JS-1165SD1G ; JS-1166SD1G)愈形明顯。
PCB should be put upside down to apply a hand soldering. (The bonding surface is upside.) When soldering, the solder will flow through the PCB board then go into the open-insertion structure of the connector. Finally, fluid solder becomes solid and attaches to the metal pin of a connector. (See Figure 2)

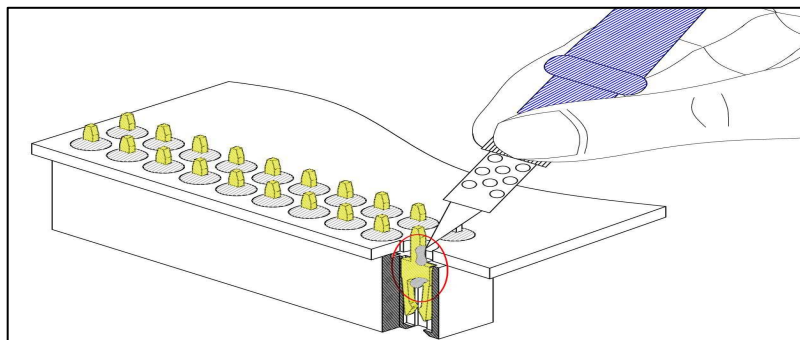


Figure 2



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※ 當板對板連接器兩端搭配組合，排針母座殘留內腔的錫珠會影響電氣性能，甚至可能因嵌入困難而無法進行組合。

鑒於上述可能發生之現象，建議制程採行的方式以波峰焊為主，手焊方式僅適用於補焊或者必要時卸除連接器之用。

When board to board connectors are mated, the solid solder inside the insertion structure of a female connector will affect the electric properties of the connectors. The solder obstacle will even cause the unmated problem.

To avoid above problems, Wave soldering is recommended during the production. Hand soldering is only suggested to be applied in repairing or desoldering. (See Figure 3)

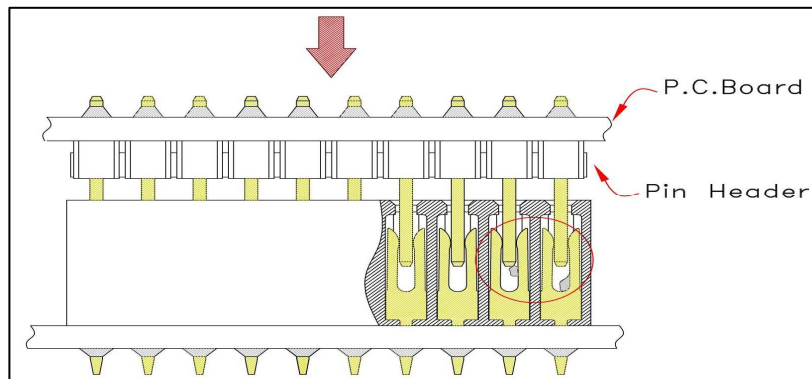


Figure 3

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