



Type Document	Product Specification	Revised /Edition	E
Date Issued	2010/01/13	Data Revised	2015/02/24
Subject : JS-5017A-XXS JS-5017A-XXR JS-5018A-XXDR Pitch : 3.96mm Board to Board Power Connector Series.			Issued By: Engineering Dept.

This specification is referred to 3.96mm DIP series board to board Power connector.

本規格書內容係提供 3.96 mm DIP 系列產品相關參考，
其用途為電路板端相接於電路板端動力電源連接器

-INDEX-

- 1.0 Product Name/Part Number & Drawing Number.(產品名稱 / 產品型號及圖面型號)
- 2.0 Construction/Dimensions/Material & Surface Finish.(材質以及表面鍍層)
- 3.0 Characteristic.(產品特性)
- 4.0 Specimen.(樣本圖示)
- 5.0 Applicable Standards.(適用規範)
- 6.0 Mechanical Performance.(機械性能)
- 7.0 Electrical Performance.(電氣性能)
- 8.0 Environmental Performance.(環境性能)
- 9.0 Insertion Force & Withdrawal Force Requirement. (插入力與拔出力規格值)
- 10.0 Remark (備註).

REV. (版本)	Revision Record (改版變更原因)	Date(日期)	ECN No.
B	增列漏電流小於0.5mA偵測值	2011/05/27	ECN2011/05/074
C	1 增加耐久性 及溫升 2.刪除硫化氫 3.修正(EIA-364) 參考規範 4.增列額定電壓 5.增訂 Wave Peak Soldering In- Process Temperature Profile 6.修訂 Solder Ability 附註 Tin Plated : 95% / Gold Plated : 75% 7.增訂 3.4 項 Storage of Package 以及 3.5 項 Floor Life 8. 第 6.2 項 Contact Pin Retention Force 修訂為 2.0kgf/Min	2014/04/23	ECN2014/04/023
D	1. 6.1 項 Insertion Withdrawal & Force 增訂 16 Poles 2. 依據 Operating Temp 操作溫度，修訂 8.7 項 Thermal Aging，原 85±2℃ 變更 105±2℃，並增訂 8.4 項 Cold 耐寒試驗	2014/07/02	ECN2014/07/002
E	修訂8.10.1 項 Temperature Profile	2015/02/24	EC2015-02-024



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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):

Product Name(產品名稱)		Part Number(產品型號)	Drawing Number(圖面型號)
(Solid PCB Tail)	Top Entry (直立式)	JS-5017A-XXS	
Wafer	Side Entry (臥式)	JS-5017A-XXR	
(板對板) 基座板端連接器	Bottom Entry (臥式底部嵌合)	JS-5018A-XXDR	

Note: (xx) The number of the circuits.

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)
(Solid PCB Tail)	Contact Pin(導體)	Brass	Tin-Plated
Wafer	Base(膠座)	Nylon 66	UL 94V-2

3.0 Characteristic (產品特性):

Item(項目)		Standard(標準規範)	
3.1	額定電流 Rated Current	5 A AC/DC	
3.2	額定電壓 Rated Voltage	250 V 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. : -40℃~+105℃ ; 85% R.H. Max Including 30℃ Terminal Temperature Rise at rated Current , (包括定額電流內, 端子所產生 30℃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℃~+40℃ Percentage Humidity 相對濕度 : 70 % Max
		Term 保存期限	1 Year
3.5	Floor Life 拆封後使用期限	3 Months	

Note: 適用電路板厚度 Applicable Printed Circuit Board Thickness: 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			
Mate with : Header Straight JS-4003		Wafer Top Entry JS-5017A-XXS	
Mate with : Header Straight Double Base JS-4002		Wafer Side Entry JS-5017A-XXR	
Mate with : Header Right Angle JS-4003R		Wafer Bottom Entry JS-5018A-XXDR	

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	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. 連接器兩端黏合，以每一分鐘 $25.4 \pm$ 3 mm 的速率，作插入與拔出往返測試 (EIA/ECA 364-13D)	Refer to paragraph 9.0 參照第九項



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Item(項目)	Test Condition(測試條件)	Requirement(規格)
6.2 Contact Pin Retention Force (in Base) 金屬導體與膠座之間保持力 (JS-5017A ; 5018)	Axial pull out 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 ± 3mm 速率之軸向拔出力 (EIA 364-29C)	單一接觸點 Per Contact 最小容許值 2.0kgf/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. 對組合狀態下連接器，於其兩端施以最大測試電壓 20mV 以及最大測試電流 100mA (EIA/ECA 364-23C)	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. 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 (EIA 364-21C)	Insulation Resistance: Initial 1000megohms Min 最初容許值. 1000 兆歐姆
7.3 Withstanding Voltage 耐電壓	Apply 1500 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. 對組合狀態下連接器，於其相鄰兩導體末端施以電壓 1500 A/C (實效值) 時間 1 分鐘，且漏電流必須小於 0.5mA(毫安培) (EIA 364-20C)	No breakdown or Flash over. 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 Durability 耐久性	Mate Connectors up 25Cycles at a Maximun rate of 10 cycles Per minute prior to environmental test 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 25 次嵌入與拔出往返測試 (EIA/ECA 364-09C)	(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



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Item(項目)		Test Condition(測試條件)	Requirement(規格)
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 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 毫歐姆 No discontinuity current is longer than 1 microsecond. 電流中斷現象，時間不可多於 1 微秒
8.4	Cold 耐寒試驗 (Low Temperature)	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. 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。 (EIA 364-59A Conditions III . Method D) Temperature(溫度) : -40±3°C. Period(週期): 96 hours continuously . (持續 96 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. . 經耐寒試驗後接觸阻抗最大容許值. 40 毫歐姆



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Item(項目)	Test Condition(測試條件)	Requirement(規格)
8.5 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>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>(EIA 364-31B Conditions II. Method A)</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: 40milliohms Max. 經恆溫恆濕試驗後接觸阻抗 最大容許值. 40 毫歐姆</p> <p>(After the test)</p> <p>Insulation Resistance : 100Megohms Min. 經恆溫恆濕試驗後絕緣阻抗 最小容許值. 100 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: 1500V A/C for 1 minute</p>
8.6 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, 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>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 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 8.5 同 8.5 章節</p>



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Item(項目)	Test Condition(測試條件)	Requirement(規格)
8.7 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, the insulation resistance and the dielectric withstanding voltage shall be measured 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。(EIA 364-17B Conditions 4. Method A)</p> <p>Temperature(溫度): 105±2°C. 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 (After the test) Contact Resistance : 40 milliohms Max. . 經高溫老化試驗後接觸阻抗 最大容許值.40 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. 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 (After the test) Contact Resistance: 40 milliohms Max. 經鹽水噴霧試驗後接觸阻抗 最大容許值. 40 毫歐姆</p>
8.9 Solder Ability 焊錫性	<p>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, 接觸熱溶狀錫料, 依照隨附如下規格要求, 進行焊錫性試驗。(EIA 364-52B)</p> <p>Solder Temperature (焊錫溫度): 245 ± 5°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</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>



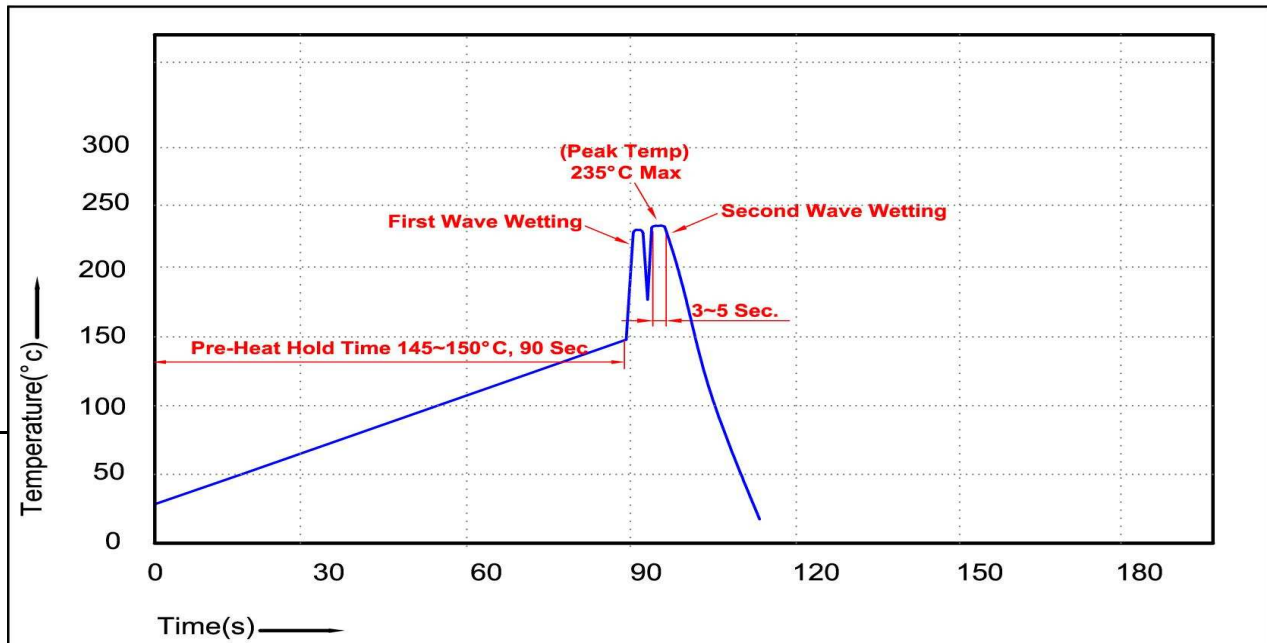
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8.10 Resistance to Soldering Heat 焊錫耐熱性	By Wave Soldering(波焊適用溫度範圍) : Refer to Temperature Profile 請參考 8.10.1 溫度曲線圖 by soldering iron 手工烙鐵焊錫適用溫度範圍 : 350 ± 5°C 3±0.5 Seconds. (操作方式) : 零件焊錫位置 , 距離導體末端 1.5mm Method : 1.5mm from contact pin tip (EIA/ECA 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) :

Wave Peak Soldering In- General Process 波焊一般制程





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9.0 Tables & Attachments

9.1 Table 1. Insertion Force (I.F.) & Withdrawal Force (W.F.) for user reference:

Unit : Kg/f

No. of Circuits 極數	AT INITIAL 首次嵌入與拔出(初始值)		AT 50 TH 50 次嵌入與拔出之後	No. of Circuits 極數	AT INITIAL 首次嵌入與拔出(初始值)		AT 50 TH 50 次嵌入與拔出之後
	I.F. (MAX) 嵌入力	W.F. (MIN) 拔出力	W.F. (MIN) 拔出力		I.F. (MAX) 嵌入力	W.F. (MIN) 拔出力	W.F. (MIN) 拔出力
	02	2.60	0.25		0.10	10	13.00
03	3.90	0.40	0.15	11	14.30	1.50	0.65
04	5.20	0.55	0.25	12	15.60	1.65	0.70
05	6.50	0.70	0.30	13	16.90	1.60	0.75
06	7.80	0.80	0.35	14	18.20	1.70	0.80
07	9.10	0.95	0.40	15	19.50	2.10	0.90
08	10.40	1.10	0.50	16	20.80	2.60	1.00
09	11.70	1.25	0.55				

10.0Remark(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