



喬訊電子工業股份有限公司  
 CHYAO SHIUNN ELECTRONIC INDUSTRIAL LTD.  
 7FL., NO.17, LANE 3, SEC.1 CHUNG CHENG EAST RD.,  
 TAMSHUI, TAIPEI, TAIWAN, R.O.C.  
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Type Document	Product Specification	Revised /Edition	D
Date Issued	2010/03/15	Data Revised	2014/12/08
Subject : JS-23131BS-2 JS-24131BS-2 JS-23131BS-2H JS-24131BS-2H JS-2413 JS-2413-xxE JS-2313 Pitch : 4.50mm(Ø1.30mm) Wire to Wire Power Connector Series.			Issued By: Engineering Dept.

*This specification is referred to Pitch : 4.50 mm(Ø1.30mm) series wire to wire Power connector.*

本規格書內容係提供 4.50mm 間距(公端子外徑 1.30mm)系列產品相關參考，其用途為電線端相接於電線端動力電源連接器

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REV. (版本)	Revision Record (改版變更原因)	Date(日期)	ECN No
B	鹽水噴霧週期以電鍍方式區隔為 8 小時與48 小時	2011/05/27	EC2011-05-075
C	1.刪除硫化氫 2.修正(EIA-364) 參考規範 3.增列額定電壓 4.增訂3.5項Storage of Package 以及 3.6 項Floor Life 5.依據CSA C22.2 No.182.3 修訂6.2 項 Wire Pullout Force(Axial)	2014/04/24	EC2014-04-024
D	1.增訂嵌合面板適用厚度Applicable Panel Thickness: 0.8~2.0 mm 2.增訂8.6 項Cold耐寒試驗 3.增訂Thumb Latch Yield Strength2.94kgf/Min	2014/12/08	EC2014-12-008



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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)
Male Crimp Terminal ( With AWG #16~20 is applied )		JS-24131BS-2H
Male Crimp Terminal ( With AWG #20~26 is applied )		JS-24131BS-2X
Female Crimp Terminal ( With AWG #16~20 is applied )		JS-23131BS-2H
Female Crimp Terminal ( With AWG #20~26 is applied )		JS-23131BS-2X
Receptacle with Ear (插座 有耳)		JS-2413-XXE
Receptacle without Ear (插座 無耳)		JS-2413-XXX
Plug (插頭)		JS-2313-XX

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)
Crimp Terminal (铆壓端子)	JS-23131BS-2H ; JS-24131BS-2H	Phosphor Bronze	Stamping after tin plated (先電鍍後衝壓)
	JS-23131BS-2X ; JS-24131BS-2X	Brass	
Receptacle (插座)		Nylon 66	UL 94V-0
Plug (插頭)			

**3.0 Characteristic(產品特性):**

Item(項目)		Standard(標準規範)						
3.1	額定電流 Rated Current (Current Unit: Amp AC/DC)	Circuit	Wire Size (AWG UL1007)美國電線規格					
		極數	#16	#18	#20	#22	#24	#26
		2	10	6	5	4	4	3
		3	10	6	5	4	4	3
		4	10	6	5	4	4	3
		6	8	5	4	3	3	3
		9	6	4	3	3	2	2
		12	6	4	3	3	2	2
15	6	4	3	3	2	2		
3.2	額定電壓 Rated Voltage	300V 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. 25°C~+90°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 Wire 適用電線	(金屬導體之型號) Conductor Construction Size: AWG #16~#26						
		(電線絕緣體外徑)Insulation O.D. : AWG:16~20# 1.85~3.4mm / AWG:20~26# 1.3~2.7mm						



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3.5	Storage of Package 包裝未拆封之保存	Temperature and Humidity Condition 溫度濕度條件		Temperature 溫度 : -10°C~+40°C
		Term 保存期限	Housing	Percentage Humidity 相對濕度 : 70 % Max
			Crimp Terminal	2 Years
3.6	Floor Life 拆封後使用期限	Crimp Terminal		1 Year
				3 Months

Note: 嵌合面板適用厚度 Applicable Panel Thickness: 0.8~2.0 mm

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 Crimp Terminal JS-23131BS-2 / 2H		Male Crimp Terminal JS-24131BS-2 / 2H	
Receptacle With Ear JS-2413-XXE		Receptacle Without Ear JS-2413-XX	
Plug JS-2313-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 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. ( Excluding Thumb Latch 不包含活動卡榫結合力 ) 連接器兩端勘合, 以每一分鐘 25.4 ± 3mm 的速率, 作嵌入與拔出往返測試 (EIA/ECA 364-13D)	Refer to 9.1 Table1. 參照第 9.1 項 表格 1



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Item(項目)	Test Condition(測試條件)	Requirement(規格)
6.2 電線脫離铆壓端子 包覆之拔出力(軸向)	Pull out the cable from contact terminal at the speed rate of 25.4± 3 mm/minute 對端子所包覆電線，施以每一分鐘 25.4 ± 3 mm 速率之軸向拔出力 (CSA C22.2 No.182.3)	AWG#16 size wire 9.08kgf/Min.(89N 牛頓)
		AWG#18 size wire 9.08kgf/Min.(89N 牛頓)
		AWG#20 size wire 4.54kgf/Min.(44.5N 牛頓)
		AWG#22 size wire 3.63 kgf /Min.(35.60N 牛頓)
		AWG#24 size wire 2.73kgf/Min.(26.70N 牛頓)
		AWG#26 size wire 1.82kgf/Min.(17.80N 牛頓)
6.3 Crimp Terminal Retention Force ( in Receptacle or Plug) 插座或插頭與铆線端子 之間拔出力	Axial pullout force on the terminal in the receptacle or plug at the speed rate of 25.4 ± 3 mm per minute. 對於已經存在於插座或插頭當中铆線端子，施以每一分鐘 25.4± 3 mm 速率之軸向拔出力 (EIA 364-05)	單一接觸點 Per Contact 最小容許值 3.94kgf/Min.
6.4 Thumb Latch Yield Strength 卡榫降伏力	Mate connectors and pull apart until lock break . record the maximum force. 將連接器組裝之後 再行卸除直到卡榫降伏，並記錄其數據	最小容許值 2.94kgf/Min.

7.0 Electrical Performance(電氣性能) :

Item(項目)	Test Condition(測試條件)	Requirement(規格)
7.1 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) ( Does not include wire resistance 不包含電線阻抗 )	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 1000 megohms Min 最初容許值. 1000 兆歐姆
7.3 Withstanding Voltage 耐電壓	Apply 1500V 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 1500V 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 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 <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 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: <b>40 milliohms Max.</b> 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
8.3 Heat Aging 高溫老化試驗	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. 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 III . Method A) Temperature(溫度) : 90±2°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 : <b>40 milliohms Max. .</b> 經高溫老化試驗後接觸阻抗 : 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)
8.4	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 II . 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.          Relative Humidity(相對濕度) : 90%~95% (RH).          Period(週期) : 96 hours continuously. (持續 96 小時)</p>	<p>(After the test)          Contact Resistance:  <b>40 milliohms Max.</b>          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)          Insulation Resistance :  <b>500 Megohms Min.</b>          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:          (After the test)          Withstanding Voltage:  <b>1500V A/C for 1 minute</b></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, 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:  <b>-55°C+0/-3°C for 30 minutes. → Room Temp. 5 minutes</b>  <b>85°C+3/-0°C for 30 minutes. → Room Temp. 5 minutes</b>          Total Cycles: 5 Cycles. 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          同 8.4 章節</p>



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Item(項目)	Test Condition(測試條件)	Requirement(規格)
8.6 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 Condition D ; Condition 3 ) Temperature(溫度) : -40±3℃ 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 : <b>40 milliohms Max. .</b> 經耐寒試驗後接觸阻抗: 最大容許值. 40 毫歐姆
8.7 Salt Spray 鹽水噴霧	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。 Density(鹽水密度): 5 % in weight. Temperature(溫度): 35±2℃. Period(週期): 8 hours (EIA 364-26B Conditions B)	Initial Contact Resistance : 20 milliohms Max. 接觸阻抗最初容許值:20 毫歐姆 (After the test) Contact Resistance: <b>40 milliohms Max.</b> 經鹽水噴霧試驗後接觸阻抗: 最大容許值. 40 毫歐姆

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

## 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 30 <sup>TH</sup> 30 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 30 <sup>TH</sup> 30 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	2.50	0.40		0.25	09	5.00
03	3.00	0.60	0.45	12	6.00	4.10	2.50
04	3.50	1.00	0.60	15	7.00	5.00	3.60
06	4.00	1.40	0.80				

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:** Indiana Huang