



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.,
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Type Document	Product Specification	Revised /Edition	C
Date Issued	2011/06/07	Data Revised	2014/04/24
Subject : JS-2420-TL / TH / TLP / THP JS-2421-TL / TH / TLP / THP JS-2420 JS-2421 JS-2420S JS-2421S Pitch : 4.20 mm Wire to Wire Connector Series.			Issued By: Engineering Dept.

This specification is referred to Pitch : 4.20 mm series wire to wire connector.

本規格書內容係提供 Pitch : 4.20mm 系列產品相關參考，
其用途為電線端相接於電線端連接器

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REV. (版本)	Revision Record (改版變更原因)	Date(日期)	ECN No
B	1.鹽水噴霧週期以電鍍方式區隔為 8 小時與48 小時 2.刪除硫化氫 3.修正(EIA-364) 參考規範 4. 增列額定電壓 5. 增列AWG與電流對照表 6. 增加料號 JS-2420-TLP , JS-2420-THP , JS-2421-TLP , JS-2421-THP , JS-2420S , JS-2421S	2012/07/05	EC2012-07-003
C	1.增訂3.5項Storage of Package以及 3.6 項Floor Life	2014/04/24	EC2014-04-024



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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): Note: (xx) The number of the circuits.

Product Name(產品名稱)		Part Number(產品型號)	Drawing Number(圖面型號)
Female Crimp Terminal (母端子)		JS-2420-TLX / JS-2420-TLP (With AWG #20~24 is applied)	
		JS-2420-THX / JS-2420-THP (With AWG #16~20 is applied)	
Male Crimp Terminal (公端子)		JS-2421-TLX / JS-2421-TLP (With AWG #20~24 is applied)	
		JS-2421-THX / JS-2421-THP (With AWG #16~20 is applied)	
Receptacle	Dual Row		JS-2421X-XX
	Single Row		JS-2421S-XX
Plug	Dual Row		JS-2420X-XX
	Single Row		JS-2420S-XX

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 (鍍壓端子)	Brass	Stamping after tin plated (先電鍍後衝壓)
		Stamping before tin plated (先衝壓後電鍍)
Receptacle (插頭)	Nylon 66	UL 94V-0
Plug (插座)		

3.0 Characteristic(產品特性):

Item(項目)		Standard(標準規範)						
3.1	額定電流 Rated Current	Conductor Size	AWG	16#	18#	20#	22#	24#
			Area(mm ²)	1.31 mm ²	0.865 mm ²	0.534 mm ²	0.342 mm ²	0.220 mm ²
		Amp AC/DC	10 A	7 A	5 A	3 A	2 A	
3.2	額定電壓 Rated Voltage	600 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. : -25°C~+105°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	3.4.1	(金屬導體之型號) Conductor Construction Size: AWG #16~#24					
		3.4.2	(電線絕緣材質外徑) Wire Insulation O.D.: 1.70mm~3.10mm (AWG#16~#20)					
			(電線絕緣材質外徑) Wire Insulation O.D.: 1.40mm~2.60mm (AWG#20~#24)					
		3.4.3	(鑲嵌面板厚度) Panel Thickness : 0.4~2.0mm					
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	Housing		2 Years			
			Crimp Terminal		1 Year			
3.6	Floor Life 拆封後使用期限	Crimp Terminal			3 Months			



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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			
Male Crimp Terminal JS-2421-TL / TH JS-2421-TLP / THP		Female Crimp Terminal JS-2420-TL / TH JS-2420-TLP / THP	
Receptacle Dual Row JS-2421		Plug Dual Row JS-2420	
Receptacle Single Row JS-2421S		Plug Single Row JS-2420S	

5.0 Applicable Standards(適用規範):

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

電子連接器，所適用之 ANSI/EIA 364 ; ANSI/EIA/ECA364 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 插座與插頭之間嵌入 力與拔出力	Insert and withdrawal with connectors at the speed rate of 25.4 ± 3mm/minute. 插座與插頭兩端磨合，以每一分鐘 25.4 ± 3 mm 的速率，作嵌入與拔出往返測試 (EIA/ECA 364-13D) (Excluding Thumb Latch 不包含按壓式卡榫結合力)	Refer to 9.0 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 Wire Pullout Force(Axial) 電線脫離端子包覆之拔出力(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 (EIA 364-08B)	AWG#16 size wire 12.0kgf/Min.(117.6N 牛頓)
		AWG#18 size wire 8.0kgf/Min.(78.4N 牛頓)
		AWG#20 size wire 6.5kgf/Min.(63.7N 牛頓)
		AWG#22 size wire 4.5kgf/Min.(44.1N 牛頓)
		AWG#24 size wire 3.0kgf/Min.(29.4N 牛頓)
6.3 Crimp Terminal Retention Force (in Receptacle or Plug) 插座或插頭與線端端子間拔出力	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座或插頭與線端端子間是插頭當中線端端子，施以每一分鐘 25.4 ± 3 mm 速率之軸向拔出力	單一接觸點 Per Contact 最小容許值 3.0kgf/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) (Does not include wire resistance 不包含電線阻抗)	Contact Resistance: 20 milliohms Max. 最大容許值. 20m 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. 1000M 歐姆
7.3 Withstanding Voltage 耐電壓	Apply 2200V 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各施以電壓 2200V 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 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



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8.0 Environmental Performance(環境性能) :

Item(項目)	Test Condition(測試條件)	Requirement(規格)
8.2 Vibration 耐振動	<p>A mated connector shall be mounted on a printed Circuit board and subjected to a vibration test of the following conditions.</p> <p>During the test, test current continuity shall be checked. After the test, contact resistance shall be measured.</p> <p>(EIA/ECA 364-28E-Condition I)</p> <p>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。</p> <p>Frequency(頻率) : 10~55~10 Hz/minute.</p> <p>Amplitude (振幅) : 1.5 mm P-P</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)</p> <p>Period(週期) : 2 hours for each direction. (每一個軸向持續 2 小時)</p>	<p>Initial Contact Resistance :</p> <p>20 milliohms Max.</p> <p>接觸阻抗最初容許值:20m 歐姆</p> <p>(After the test)</p> <p>Contact Resistance:</p> <p>40 milliohms Max.</p> <p>經耐振動試驗後接觸阻抗 :</p> <p>最大容許值 40m 歐姆</p>
8.3 Humidity 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℃.</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>40milliohms Max.</p> <p>經恆溫恆濕試驗後接觸阻抗 :</p> <p>最大容許值. 40m 歐姆</p> <p>(After the test)</p> <p>Insulation Resistance :</p> <p>500Megohms Min.</p> <p>經恆溫恆濕試驗後絕緣阻抗 :</p> <p>最小容許值. 500M 歐姆</p> <p>經恆溫恆濕試驗後測耐電壓 :</p> <p>(After the test)</p> <p>Withstanding Voltage:</p> <p>2200V A/C for 1 minute</p>



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Item(項目)	Test Condition(測試條件)	Requirement(規格)
8.4 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</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 8.3</p> <p>同 8.3 章節</p>
8.5 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 III . 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.</p> <p>Period(週期): 96 hours continuously . (持續 96 小時)</p>	<p>Initial Contact Resistance :</p> <p>20 milliohms Max.</p> <p>接觸阻抗最初容許值:20m 歐姆</p> <p>(After the test)</p> <p>Contact Resistance :</p> <p>40milliohms Max. .</p> <p>經高溫老化試驗後接觸阻抗 :</p> <p>最大容許值.40m 歐姆</p>



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Item(項目)	Test Condition(測試條件)	Requirement(規格)
8.6 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。</p> <p>Density(鹽水密度): 5 % in weight. Temperature(溫度): 35±2℃. Period(週期): Terminal or contact (Stamping after tin plated for 8 hours) ; Terminal or contact (Stamping before tin plated for 48 hours) 端子或導體 (先電鍍後沖壓 8 小時) ; 端子或導體 (先沖壓後電鍍 48 小時) (EIA 364-26B Conditions B)</p>	<p>Initial Contact Resistance : 20 milliohms Max. 接觸阻抗最初容許值:20m 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. 40m 歐姆</p>

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:

No. Of Circuits 極數	AT INITIAL 首次嵌入與拔出(初始值)		AT 10 TH 10 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 10 TH 10 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
	1x1	0.70	0.15		0.10	5x2	7.00
1x2	1.39	0.29	0.20	6x2	8.39	1.79	1.20
1x3	2.10	0.45	0.29	7x2	9.80	2.10	1.40
2x2	2.79	0.60	0.39	8x2	11.20	2.40	1.60
3x2	4.20	0.90	0.60	9x2	12.60	2.70	1.80
4x2	5.60	1.20	0.80				

Unit : Kg/f

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**