

## 产 品 规 格 书

### PRODUCT SPECIFICATION

<b>Title【主题】:</b>	Wire To Board Connector Product Specification 电源连接器产品规格书
<b>Description【说明】:</b>	Wire To Board 3.0mm Pitch and 1.0mm Pitch, 2P6S Hybrid type 线对板 3.0mm 间距和 1.0mm 间距, 2P6S 混合型
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This specification is referred to the Wire To Board 3.0mm Pitch and 1.0mm Pitch, 2P6S Hybrid type Connector

(此规格书针对线对板 3.0mm 间距和 1.0mm 间距，2P6S 混合型连接器)

## 索引【INDEX】

1. 适用范围【Scope】
2. 参考文献【Reference Documents】
3. 要求【Requirements】
  - 3.1 部件材料【Material of Components】
  - 3.2 连接器等级【Ratings of Connector】
4. 设计与施工【Design and Construction】
5. 性能和测试说明【Performance and Test Descriptions】
  - 5.1 电气的性能【Electrical Performance】
  - 5.2 机械的性能【Mechanical Performance】
  - 5.3 环境性能【Environmental Performance】
6. SMT 回流条件【SMT Reflow Condition】

## 【1. Scope 适用范围:】

This specification covers specific electrical and mechanical requirements for the 1.00 mm pitch and 3.00 mm pitch, 2P6S R/A Hybrid type wire-to-board connectors to insure functionality and reliability.

(本文档包含1.00 mm间距和3.00 mm间距, 2P6S R/A混合型线对板连接器的具体电气和机械要求, 以确保其功能和可靠性。)

## 【2. Reference Documents参考文献:】

The following documents form a part of this specification to the extent specified herein. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

(以下文件在本文规定的范围内构成本规范的一部分。如果本规范的要求与产品图纸有冲突, 产品图纸应优先。如果本规范的要求与参考文件之间发生冲突, 则以本规范为准)

A.EIA-364

The Test Sequence and Test procedures for Electrical Connectors and Sockets

(电气连接器和插座的测试顺序和测试程序)

## 【3. Requirements 要求:】

### 3.1 Material of Components 组件材料:

No.	Component 组件	Material 材料	Finish 电镀
1	Housing 塑胶	LCP (UL94V-0)	None (无)
2	Power Terminal 方针	High Performance Copper Alloy 高导铜	Refer to Ordering Information 参考订单信息
3	Single Terminal 端子	Phosphor Bronze 磷铜	Refer to Ordering Information 参考订单信息
4	Soledr TAB 接地片	Phosphor Bronze 磷铜	Refer to Ordering Information 参考订单信息

## 3.2 Ratings of Connector 连接器等级:

A) Voltage: Power 250 Volts AC(RMS)/DC  
Signal 50 Volts AC(RMS)/DC

B) Current and Applicable Wires 电流及适用电线:

Wire Gauge 线规	Insulation Diameter 绝缘直径
AWG#28	0.8 millimeters Max 最大 0.8 毫米
AWG#18~16	1.85-2.1 millimeters Max 最大 1.85 - 2.1 毫米

## 【4. Design and Construction 设计与施工:】

Product shall be of the design, construction and physical dimensions specified in the applicable product drawing. (产品应具有适用产品图纸中规定的设计, 结构和物理尺寸)

## 【5. Performance and Test Description 性能和测试说明:】

The product is designed to meet the electrical, mechanical and environmental performance requirements specified below. All tests are performed at ambient temperature unless otherwise specified.

(该产品设计符合以下规定的电气, 机械和环境性能要求。所有测试均在环境温度下进行, 除非另有规定。)

### 【5.1 Electrical Performance 电气性能:】

Test Items 测试项目		Test Procedures 测试程序	Condition of test specimens 测试条件	Requirements 要求
5.1.1	Low level contact resistance 低阶接触电阻	EIA-364-23 Subject mated contacts assembled in housing to closed circuit current of 100 mA maximum at open circuit at 20 mVDC maximum.  主体配合触点在外壳中组装，最大开路电流为 20 mVDC 时，最大为 100 mA 的闭路电流。	Mated	Initial: 30 mΩ Max. ΔR=20 mΩ Max. 初始值: 最大 30 mΩ 变化值: 最大 20 mΩ
5.1.2	Insulation Resistance 绝缘电阻	EIA-364-21 Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector assemblies. Test Voltage:500 V DC. Test Duration: 1 Minute  通过应用测试来测量相邻触点之间，以及配合连接器组件中触点和接地之间的电位。 测试电压:500 V DC. 测试持续时间: 1 分钟	Mated	1.Power terminal:1000M Ω Min. 2.Signal terminal:100 M Ω Min.  1. 电源端子: 最小 1000M Ω 2. 信号终端: 最小 100M Ω

Test Items 测试项目		Test Procedures 测试程序	Condition of test specimens 测试条件	Requirements 要求
5.1.3	Dielectric Withstanding Voltage 耐电压	EIA-364-20 Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector assemblies. Test Potential: Power terminal: 1000Vac at sea level Signal terminal: 500Vac at sea level Test Duration: 1 Minute  通过应用测试来测量相邻触点之间, 以及配合连接器组件中触点和接地之间的电位。 试验电位: 电源端子: 平均1000V AC 信号终端: 平均500V AC 测试持续时间: 1分钟	Mated	No evidence of damage. 没有损坏的现象.
5.1.4	Temperature rise 温升测试	EIA-364-70 Measure the temperature rise at the rated current  测量额定电流下的温升.	Mated	1. Power 18AWG wire meet 7A per pin max. 电源18AWG线满足每引脚最大7A 2. Signal 28AWG wire meet 0.5A per pin max. 信号28AWG线满足每引脚最大0.5A 3.The temperature rise above ambient shall not exceed 30°C. 温度上升不超过30°C



### 【5.2 Mechanical Performance 机械性能:】

Test Items 测试项目		Test Procedures 测试程序	Condition of test specimens 测试条件	Requirements 要求
5.2.1	Board (板端)	Mating Force 插入力	EIA-364-13 Measure force necessary to mate between the counterpart connectors at 25±3mm/minute 以25±3mm/分钟的速度测量对应连接器之间配合所需的力	1.Power terminal: Max:8N(800gf)/Pin 2.Signal terminal: Max:3N(300gf)/Pin  1.电源端子: 最大8N (800gf) /Pin 2.信号终端: 最大3N (300gf)Pin
5.2.2		Unmating Force 拔出力	EIA-364-13 Measure force necessary to un-mating between the counterpart connectors at 25±3mm/minute 以25±3mm/分钟的速度测量对应连接器之间所需的配合力	1.Power terminal: Min:2N(200gf)/Pin 2.Signal terminal: Min:0.1N(10gf)/Pin  1.电源端子: 最小2N (200gf) /Pin 2.信号终端: 最小0.1N (10gf)Pin
5.2.3		Power Terminal Retention Force Pin针保持力	EIA-364-29 Draw out a contact in solder tail direction at 25.4mm/minute 沿焊尾方向以25.4mm / 分钟拉出触点	Minimum: 0.8K gf ( Per Pin ) After solder 高温后最小0.8Kgf /Pin
5.2.4		Signal Terminal Retention Force 信号端保持力	EIA-364-29 Draw out a contact in solder tail direction at 25.4mm/minute 沿焊尾方向以25.4mm / 分钟拉出触点	Minimum: 0.8K gf ( Per Pin ) After solder 高温后最小0.8Kgf /Pin

Test Items 测试项目		Test Procedures 测试程序	Condition of test specimens 测试条件	Requirements 要求					
5.2.5	Wire (线端)	CAP Retention Force CAP帽保持力	EIA-364-29 Draw out a contact in solder tail direction at 25.4mm/minute 沿焊尾方向以25.4mm / 分钟拉出触点	Min最小: 100g/f Max最大: 1Kg/f					
5.2.6		Contact Retention Force 接触保持力	EIA-364-29 Apply axial push force at the speed rate of 25.4mm/minute. 施加轴向推力, 速度为25.4mm/分钟。	4.9N(Min.) for board mount after soldering 4.9N(最小)用于板端高温后测试端子保持力					
5.2.7		Crimping Terminal Retention Force (in housing with TPA key) 压接端子保持力 (线端Housing增加TPA key)	EIA-364-29 Apply axial push force at the speed rate of 25.4mm/minute. 施加轴向拉力, 速度为25.4mm/分钟。	Signal terminal Single pin 9.8N per pin Min 信号端子单PIN 9.8N /PIN最小					
5.2.8		Crimping Terminal Retention Force (in housing) 压接端子保持力 (Housing胶壳内)	EIA-364-29 Apply axial push force at the speed rate of 25.4mm/minute. 施加轴向拉力, 速度为25.4mm/分钟。	Power terminal Single pin 25.4N per pin Min 电源端子25.4N /PIN最小					
5.2.9		Crimping Retention (Terminal-Wire) 压接保持力(端子线)	Measurement of tensile strength at conductor crimp of socket contact using tensile tester. Rate: 25±3 mm/minute	<table border="1"> <thead> <tr> <th>Wire Size 线尺寸 (AWG)</th> <th>Retention 保持力 (N)</th> </tr> </thead> <tbody> <tr> <td>#18</td> <td>8.9</td> </tr> <tr> <td>#28</td> <td>57</td> </tr> </tbody> </table>	Wire Size 线尺寸 (AWG)	Retention 保持力 (N)	#18	8.9	#28
Wire Size 线尺寸 (AWG)	Retention 保持力 (N)								
#18	8.9								
#28	57								



Test Items 测试项目		Test Procedures 测试程序	Condition of test specimens 测试条件	Requirements 要求
5.2.10	Durability (preconditioning) 耐久性 (预处理)	Mate connectors up to 20 cycles at a maximum rate of 10 cycle per minute prior to Environmental test. 在环境测试之前,以每分钟10次的最大速率匹配连接器多达20次		1.No evidence of damage. 2. The electrical performances meet the spec. specified in paragraph 5.1.1 1.没有损坏的现象 2.电气性能符合指定的5.1.1的要求
5.2.11	Reseating 校正	Manually unplug/plug the connector or socket.Perform 3 such cycles. 手动拔下连接器或插座,执行3次这样的操作。		1.No evidence of damage. 1.没有损坏的现象
5.2.12	Durability 耐久性	Mate connectors up to 30 cycles at a maximum rate of 10 cycle per minute prior to Environmental test. 在环境测试之前,以每分钟10次的最大速率匹配连接器多达30次		1.No evidence of damage. 2. The electrical performances meet the spec. specified in paragraph 5.1.1 1.没有损坏的现象 2.电气性能符合指定的5.1.1的要求
5.2.13	Solder ability 可焊性	EIA-364-52 Category 3 Subject unmated connectors should be tested according to the condition listed Below : Steam Aging Temperature: 90 ~ 96°C Steam Aging Duration : 8 hours±5 min. Soldering Temperature : 245±5°C Soldering Time : 4 ~ 5 seconds 主体未配对连接器应根据下列条件进行测试如下: 蒸气老化温度 : 90 ~ 96°C 蒸气老化时间 : 8 小时±5分钟 焊接温度 : 245±5°C 焊接时间 : 4 ~ 5 秒		Continuous solder coating with a minimum 95% coverage. 连续焊接涂层至少95%覆盖

Test Items 测试项目		Test Procedures 测试程序	Condition of test specimens 测试条件	Requirements 要求
5.2.14	Vibration 振动	<p>EIA-364-28 Frequency: 10-55-10 Hz/ minute. Amplitude: 1.52 mm. Direction: Each of X, Y, Z-axis directions. Each axis shall be at right angles to others. Period: 2 hours for each direction.</p> <p>主体配对连接器应该根据所列条件进行测试如下: 测试条件:半正弦波 频率 : 10-55-10 Hz/ minute. 时间: 每轴方向 2 小时,三个轴向</p>	Mated	<p>1. No evidence of physical damage 2. Discontinuities <math>\leq</math> 1micro second. 3. <math>\Delta R=20\text{ m}\Omega</math> Max.</p> <p>1. 没有损坏的现象 2.不连续<math>\leq</math>1 微秒。 3. <math>\Delta R=20\text{ m}\Omega</math> 最大。</p>
5.2.15	Physical Shock 物理冲击	<p>EIA-364-27 Condition H Half-Sine pulse,50G,11ms.3 shock,6 directions (18 shocks totally) 50G,Half-Sine 脉冲 11ms。每个方向 3 次冲击, 做满 6 个方向 (共 18 次冲击)</p>	Mated	<p>1. No evidence of physical damage 2. Discontinuities <math>\leq</math> 1micro second. 3. <math>\Delta R=20\text{ m}\Omega</math> Max.</p> <p>1.没有物理损坏的现象 2.不连续<math>\leq</math>1 微秒。 3. <math>\Delta R=20\text{ m}\Omega</math> 最大。</p>

## 【5.3 Environmental Performance 环境绩效:】

Test Items 测试项目		Test Procedures 测试程序	Condition of test specimens 测试条件	Requirements 要求
5.3.1	Humidity 湿度	EIA 364-31 Method III Test Condition A Subject mated connectors should be tested according to the condition listed below: Temperature : 25 ~ 65°C Humidity : 90 ~ 95% ( R.H ) Duration: 168 hours 主体配对连接器应该根据所列条件进行测试如下: 温度 : 25 ~ 65°C 湿度 : 90 ~ 95% ( R.H ) 持续时间 : 168 小时	Mated	1. No evidence of damage 2. The electrical performances meet the spec. specified in paragraph 5.1.1  1. 没有损坏的现象 2. 电性能满足指定的规格段5.1.1的要求
5.3.2	Thermal Shock 冷热冲击	EIA 364-32 Test Condition I Subject mated connectors should be tested according to the condition listed below: Temperature : -55~ +85°C Cycles : 10 Exposure time at temperature extremes : 30 minutes 主体配对连接器应该根据所列条件进行测试如下 : 温度 : -55 ~ +85°C 周期 : 10次 曝光时间在极端温度 : 每个温度区间停留30分钟	Mated	1. No evidence of damage 2. Contact resistance $\Delta R=+20m\ \Omega$ Max.  1. 没有损坏的现象 2. 接触电阻: 最大 20m $\Omega$

Test Items 测试项目		Test Procedures 测试程序	Condition of test specimens 测试条件	Requirements 要求
5.3.3	Thermal Disturbance 热扰动	EIA 364-32 Cycle the connector or socket between 15 °C ±3 °C and 85 °C+3 °C, as measured on the part. Ramps should be a minimum of 2 °C per minute, and dwell times should insure that the contacts reach the temperature extremes (a minimum of 5 minutes). Humidity is not controlled. Number of cycles: 10 cycles 根据部件上的测量值, 在15°C±3°C和85°C+3°C之间循环使用连接器或插座。坡道应至少为每分钟2°C, 停留时间应确保触点达到极端温度(至少5分钟)。湿度不受控制。 周期数:10个周期	Mated	1. No evidence of physical damage 2. $\Delta R=20 \text{ m}\Omega$ Max.  1. 没有物理损坏的现象 2. $\Delta R=20 \text{ m}\Omega$ 最大。
5.3.4	Salt Spray 盐雾	EIA 364-26 Test Condition A Subject mated and unmated connectors should be tested according to the condition listed below: Temperature: 35±2°C Humidity : 95 ~ 98% ( R.H ) PH Value : 6.5 ~ 7.2 Duration :8 hours (Tin) 48 hours (Gold) 主体已配对和未配对的连接器应根据测试条件如下: 温度 : 35±2°C 湿度 : 95 ~ 98% ( R.H ) PH 价 : 6.5 ~ 7.2 持续时间 :8 小时 ( 电镀锡 ) 48 小时 ( 电镀金 )		1. No evidence of damage 2. The electrical performances meet the spec. specified in paragraph 5.1.1  1. 没有损坏的现象 2. 电性能满足指定的规格段5.1.1的要求
5.3.5	Temperature Life (preconditioning) 温度寿命	EIA 364-17 Method A Test connector in a minimum of 300 hours at 105°C.主体配对连接器应该根据所列条件进行测试如下 : 温度 : 105°C 持续时间 : 300小时	Mated	1. No evidence of physical damage 2. $\Delta R=20 \text{ m}\Omega$  1. 没有损坏的现象. 2. $\Delta R=20 \text{ m}\Omega$

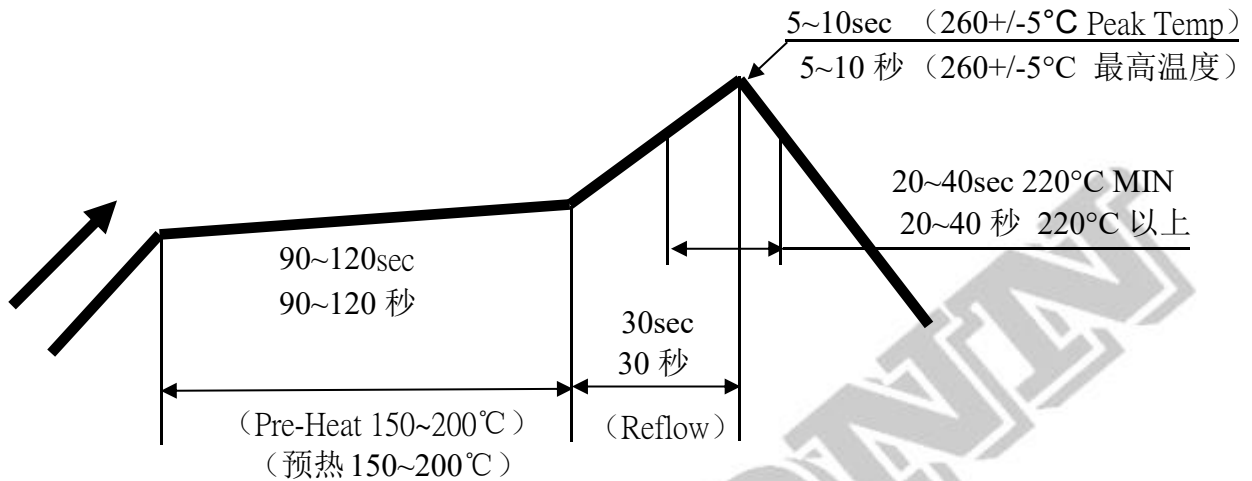
Test Items 测试项目		Test Procedures 测试程序	Condition of test specimens 测试条件	Requirements 要求
5.3.6	Resistance to Soldering Heat 耐焊性	<p>EIA 364-56 Procedure 3 Test Condition C</p> <p>LCP/PA9T/PA6T Thermoplastic Can Resistance to Reflow Solderin LCP/PA9T/PA6T Heat:260±5°C 5-10 Seconds</p> <p>LCP/PA9T/PA6T Thermoplastic Can Resistance to Wave Soldering LCP/PA9T PA6T Heat:260±5°C 5-10 Seconds</p> <p>LCP/PA9T/PA6T热塑性耐回流焊: 热度:260±5°C 5-10 秒 LCP/PA9T PA6T热塑性耐波峰焊: 热度:260±5°C 5-10 秒</p>		<p>1. No evidence of damage 没有损坏的现象.</p>
5.3.7	Dust 灰尘	<p>EIA 364-91 Unmated (Benign Dust composition). 未配对(良性尘埃成分)</p>		<p>1. No evidence of damage 2. The electrical performances meet the spec. specified in paragraph 5.1.1</p> <p>1. 没有损坏的现象. 2.电性能满足指定的 规格段5.1.1的要 求</p>



Test Items 测试项目		Test Procedures 测试程序	Condition of test specimens 测试条件	Requirements 要求
5.3.8	Mated Mixed Flowing Gas 混合流动气 体	EIA-364-65 <b>Class IIA, see table4.1 for exposure times. (Gold plated only)</b> IIA级，曝光时间见表4.1。(只限镀 金)	Mated	<ol style="list-style-type: none"> <li>1. No evidence of damage</li> <li>2. The electrical performances meet the spec. specified in paragraph 5.1.1</li> </ol> <ol style="list-style-type: none"> <li>1. 没有损坏的现象.</li> <li>2.电性能满足指定的规格段5.1.1的要求</li> </ol>
5.3.9	Thermal Cycling 热循环	EIA-364-110 Cycle the connector or socket between 15 °C± 3°C and 85 °C± 3 °C, as measured on the part. Ramps should be a minimum of 2 °C per minute, and dwell times should insure that the contacts reach the temperature extremes (a minimum of 5 minutes). Humidity is not controlled. Number of cycles: 500 cycles 根据部件上的测量值，在15° C± 3° C和85° C±3° C之间循环使 用连接器或插座。坡道应至少为每 分钟2° C，停留时间应确保触点达 到极端温度(至少5分钟)。湿度不受 控制。 循环次数:500次		<ol style="list-style-type: none"> <li>1. No evidence of damage</li> <li>2. The electrical performances meet the spec. specified in paragraph 5.1.1</li> </ol> <ol style="list-style-type: none"> <li>1. 没有损坏的现象.</li> <li>2.电性能满足指定的规格段5.1.1的要求</li> </ol>



## 【6. SMT 回流条件 SMT Reflow Condition】



温度条件曲线图/板上温度

TEMPERATURE CONDITION GRAPH

注：由于 P.C 板等焊接装置改变条件，所以请预先用自己的装置检查回流焊的条件。

NOTES: Please check the reflow soldering condition with your own equipment in advance. Because the condition changes by the soldering devices (such as PC boards and so on).