

# 东莞市翰皓精密电子有限公司

DONGGUAN HANHAO PRECISION ELECTRONIC CO.,LTD

|  |              |            |
|--|--------------|------------|
| Product Specification [产品规格书]:                                     | Document No  | PS-3961-02 |
| Subject [主题]:<br>3.96mm Pitch J3961 Series Connector Specification | Date Issued  | 2011/08/05 |
|  | Date Revised | 2020/03/24 |
|  | Version      | A          |

This specification is referred to the 3.96mm series wire to board connector

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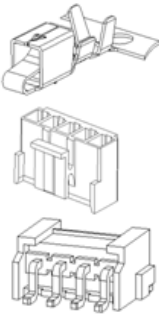
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## 【1.适用范围 Scope】

此种规格包括 3.96mm Pitch J3961 Series 连接器规格说明。

This Specification Covers the 3.96mm Pitch J3961 Series Connector Specification.

## 【2.规格与料号 Spec and Part number】

| 规格内容<br>Specification | 产品料号<br>Production No. | 产品图示<br>Picture of Product   |
|-----------------------|------------------------|--|
| 端子/Terminal           | J3961T                 |  |
| 胶壳/Housing            | J3961H-XX              |  |
| 针座/Wafer              | J3961WRS-XX            |  |

## 【3.材质与表面处理 Disposal of Material and surface】

| 规格内容<br>Specification | 材质<br>Materials | 表面处理<br>Disposal of Surface                                   |   |
|-----------------------|-----------------|---|---|
| 端子/Terminal           | 黄铜 C2680/Brass  | 镀镍/Nickel Plated: 30u" Min<br>镀亮锡/Bright Tin Plated: 80u" Min |   |
| 胶壳/Housing            | PA66            | UL 94V-0  |   |
| 针座/Wafer              | Base            | PA9T  | UL 94V-0  |
|                       | PIN             | 黄铜 C2680/H65/Brass  | 镀镍/Nickel Plated: 30u" Min<br>镀亮锡/Bright Tin Plated: 80u" Min |

(上述参数请以工程图为准/Please Refer to the Project drawing for the above Specification)

## 【4. 额定等级 Ratings and applicable wires】

| 项目【Item】  | 规格【Standard】 |                              |
|---|--------------|------------------------------|
| 额定电压 Rated Voltage (Max.)                             | 250V         | [AC/DC]                      |
| 额定电流 Rated Current (Max.)                             | 7A           |                              |
| 使用温度范围 Ambient temperature Range                      | -25℃ ~ +85℃  |                              |
| 适用线径 Applicable wire insulation AWG(mm <sup>2</sup> ) | AWG #22~18   | Insulation O.D. 3.00mm(Max.) |

【 \*升温时含端子. Including terminal temperature rise. 】

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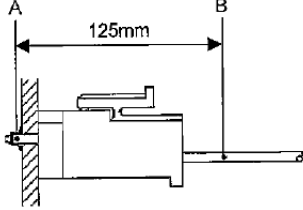
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## 【5.性能 PERFORMANCE】

### 5-1. 电气的性能 Electrical Performance.

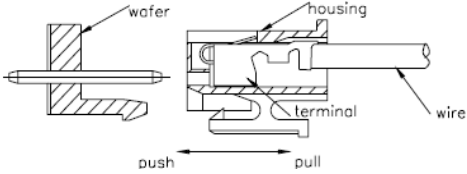
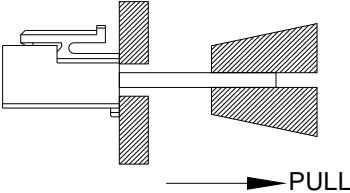
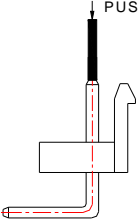
| 项 目<br>【Item】  | 条 件<br>【Test Condition】   | 规 格<br>【Requirement】  |
|--|---|---|
| 5-1-1<br>接触阻抗<br>Contact<br>Resistance                             | <p>公母配合,开放电压 20mV 以下,电流 10mA 检测连接器 A~B 区.<br/>Mate connectors, measure by dry circuit, 20mV MAX, 10mA.<br/>(Based upon EIA-364-06A).</p>  | <p>Initial:<br/>10 milliohms Max.<br/>After Test:<br/>20 milliohms Max.</p> |
| 5-1-2<br>绝缘阻抗<br>Insulation<br>Resistance                          | <p>公母配合,在相邻端子,端子与地片之间,使用 500V 的直流电,检测连接器.<br/>Mate connectors, apply 500V DC between adjacent terminal or ground.<br/>(Based upon EIA-364-21B / MIL-STD-202 Method 302 Cond.B)</p>  | 1000 Megohms Min.   |
| 5-1-3<br>耐电压<br>Dielectric<br>Strength                             | <p>公母配合,在相邻端子,端子与地片之间,使用 1500V 的交流电 1 分钟,检测连接器.<br/>Mate connectors, apply 1500V AC for 1 minute between adjacent terminal or ground.<br/>(Based upon EIA-364-20A / MIL-STD-202 Method 301)</p>                             | 外观无损伤, 无打火花<br>No Breakdown<br>and Flashover                                |
| 5-1-4<br>铆线后端子接触<br>阻抗 Contact<br>resistance on<br>crimped portion | <p>铆线后之端子,开放电压 20mV 以下,电流 10mA 检测连接器.<br/>Crimp the applicable wire on to the terminal measure by dry circuit 20mV MAX, 10mA.</p>   | 10 milliohms Max.   |

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## 5-2. 机械的性能 Mechanical Performance.

| 项 目<br>【Item】   | 条 件<br>【Test Condition】   | 规 格<br>【Requirement】                    |
|---|---|---|
| 5-2-1<br>插拔力 Insertion<br>& Retention<br>Force            | <p>以每分钟 <math>25.4 \pm 3\text{mm}</math> 的速率插入和拔出。<br/>Insert and withdraw Connectors at the speed rate of <math>25.4 \pm 3\text{mm}/\text{minute}</math>.</p>    | <p>参照第 6 项<br/>Refer to paragraph 6</p> |
| 5-2-2<br>端子保持力<br>Terminal/<br>Housing<br>Retention Force | <p>以每分 <math>25.4 \pm 3\text{mm}</math> 的速率,将端子从 Housing 内轴向拔出的力量。<br/>Apply axial pull out force at the speed rate of <math>25.4 \pm 3\text{mm}/\text{minute}</math> on the terminal assembled in the housing.</p>  | <p>29.4N {3.0kgf} Min.</p>              |
| 5-2-3<br>端子插入力<br>Terminal<br>Insertion Force             | <p>铆线后之端子插入 Housing 所需最大力量。<br/>Insert the crimped terminal into the housing.</p>   | <p>14.7N {1.5kgf} Max.</p>              |
| 5-2-4<br>Pin<br>针保持力<br>Pin Retention<br>Force            | <p>以每分 <math>25.4 \pm 3\text{mm}</math> 的速率,将 PIN 针从 Wafer 内轴向拔出的力量。<br/>Apply axial push force at the speed rate of <math>25.4 \pm 3\text{mm}/\text{minute}</math>.</p>   | <p>39.2N {4.0kgf} Min.</p>              |

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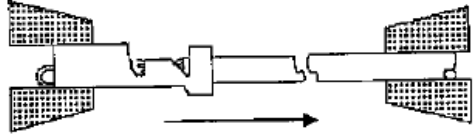
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| 项目<br>【Item】                             | 条件<br>【Test Condition】  | 规格<br>【Requirement】  |     |     |     |
|--|---|--|-----|-----|-----|
| 5-2-5<br>端子压着强度<br>(Crimped connections) | 固定铆线后的端子，使电线与端子分离时所需的最小力量。<br>Fix the crimped terminal, apply axial pull out force on the wire. (Do not crimp insulation part). | AWG  | 18  | 20  | 22  |
|  |   | Spec.kgf.<br>Min.  | 8.0 | 6.5 | 4.5 |
|  |    | Note> As for unspecified wire sizes in this specification define values with clients |     |     |     |

### 5-3. 环境性能及其它 Environmental Performance and Others.

| 项目<br>【Item】                                       | 条件<br>【Test Condition】   | 规格<br>【Requirement】        |                     |
|--|--|----------------------------|---------------------|
| 5-3-1<br>重复插拔<br>Repeated Insertion/<br>Withdrawal | 以每分钟不超过 10 次的速率,将公母插拔 30 次。<br>When mated up to 30 cycles repeatedly by the rate of 10 cycles per minute.  | 接触阻抗<br>Contact Resistance | 20 milliohms Max.   |
| 5-3-2<br>温升测试<br>Temperature Rise                  | 公母连接器配合后,加载额定电流直到温度上升到稳定状态,然后再测量温升(EIA364-70,Method 1)<br>Mating connectors shall be energized at rating current until thermal stability is achieved, and then measured the temperature rise.<br>(EIA364-70,Method 1)            | 温升测试<br>Temperature rise   | 30°C Max.           |
| 5-3-3<br>振动测试<br>Vibration test                    | 振幅: 1.5mm P-P<br>时间: 10~55~10 HZ in 1 minute<br>持续时间: 每轴向 2 小时<br>Amplitude: 1.5mm P-P<br>Sweep time: 10~55~10 HZ in 1 minute<br>Duration: 2 hours in each X.Y.Z axials. (Based upon EIA-364-28B/MIL-STD-202 Method 213B Cond.A) | 外观<br>Appearance           | 无异状<br>No Damage    |
|  |  | 接触阻抗<br>Contact Resistance | 20 milliohms Max.   |
|  |  | 瞬断<br>Discontinuity        | 1 micro-second Max. |
| 5-3-4<br>冲击测试<br>Shock test                        | 在 X.Y.Z 上 6 个方向上,以 490m/s <sup>2</sup> (50g 的力量)冲击下各 3 回.490m/s <sup>2</sup> {50G}, 3 strokes in each X.Y.Z. axes.<br>(Based upon EIA-364-27B/MIL-STD-202 Method 213B Cond.A)  | 外观<br>Appearance           | 无异状<br>No Damage    |
|  |  | 接触阻抗<br>Contact Resistance | 20 milliohms Max.   |
|  |  | 瞬断<br>Discontinuity        | 1 micro-second Max. |

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|        |                             |   |                               |   |
|--------|-----------------------------|---|-------------------------------|---|
| 5-3-5  | 耐热性<br>Heat Resistance      | 85±2°C, 96 hours.<br>(Based upon MIL-STD-202 Method 108A Cond.A)  | 外观<br>Appearance              | 无异状<br>No Damage  |
|        |                             |   | 接触阻抗<br>Contact Resistance    | 20 milliohms<br>Max.  |
| 5-3-6  | 耐寒性<br>Cold Resistance      | -25±5°C, 96 hours.<br>(Based upon EIA-364-105)  | 外观<br>Appearance              | 无异状<br>No Damage  |
|        |                             |   | 接触阻抗<br>Contact Resistance    | 20 milliohms<br>Max.  |
| 5-3-7  | 耐湿性<br>Humidity             | 温度: 40±2°C<br>湿度: 90~95%(RH)<br>持续时间: 96 hours<br>Temperature: 40±2°C<br>Relative Humidity: 90~95%<br>Duration: 96 hours<br>(Based upon EIA-364-31A/MIL-STD-202 Method 103B Cond.B) | 外观<br>Appearance              | 无异状<br>No Damage  |
|        |                             |   | 接触阻抗<br>Contact Resistance    | 20 milliohms<br>Max.  |
|        |                             |   | 耐电压<br>Dielectric Strength    | Must meet 5-1-3   |
|        |                             |   | 绝缘阻抗<br>Insulation Resistance | 500 Megohms<br>Min.   |
| 5-3-8  | 温度变化<br>Temperature Cycling | 从-25°C持续 30 分钟升至+85°C持续 30 分钟,循环 5 次.<br>5 cycles of: a) -25°C 30 minutes.<br>b) +85°C 30 minutes.<br>(Based upon EIA-364-32B)  | 外观<br>Appearance              | 无异状<br>No Damage  |
|        |                             |   | 接触阻抗<br>Contact Resistance    | 20 milliohms<br>Max.  |
| 5-3-9  | 盐水喷雾<br>Salt Spray          | 在温度 35±2°C, 盐水浓度 5±1%下, 盐水喷雾 24±1 小时.<br>24±1 hours exposure to a salt spray from the 5±1% solution at 35±2°C.<br>(Based upon EIA-364-26B/MIL-STD-202 Method 101D Cond.B).          | 外观<br>Appearance              | 无异状<br>No Damage  |
|        |                             |   | 接触阻抗<br>Contact Resistance    | 20 milliohms<br>Max.  |
| 5-3-10 | 焊锡附着性<br>Solder-ability     | 焊接时间: 3~5 秒.<br>焊接温度: 245±5°C.<br>Soldering time: 3~5sec solder.<br>Temperature: 245±5°C.   | Solder Wetting                | 浸渍面积需 95% 以上<br>95% of immersed area must show no voids, pin holes. |

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|--------------|----------------------------|--|---------------------|---|
| 5-3-10       | 焊锡附着性<br>Solder-ability    | 焊接时间: 3~5 秒.<br>焊接温度: 245±5℃.<br>Soldering time: 3~5sec solder.<br>Temperature: 245±5℃.                                    | Solder Wetting      | 浸渍面积需 95%<br>以上<br>95% of immersed<br>area must show<br>no voids, pin<br>holes. |
| 5-3-11       | 焊锡耐热性<br>Solder-Resistance | 焊接时间: 5~10 秒.<br>焊接温度: 255+5/-5℃.<br>Soldering time:5~10 sec solder.<br>Temperature:255+5/-5℃.<br>(Based upon EIA-364-56A) | 外观<br>Appearance    | 无异状<br>No Damage  |

## 【6.综合插入力及拔出力 INSERTION/WITHDRAWAL FORCE】 <Connector mating force>

| PIN 数<br>No. of<br>CKT | 初次插入力(最大值)<br>First Insertion<br>(kgf Max.) | 30 次拔出力(最小值)<br>30 <sup>th</sup> Withdrawal<br>(kgf Min.) | PIN 数<br>No. of<br>CKT | 初次插入力(最大值)<br>First Insertion<br>(kgf Max.) | 30 次拔出力(最小值)<br>30 <sup>th</sup> Withdrawal<br>(kgf Min.) |
|------------------------|---|---|------------------------|---|---|
| 双排 (DOUBLE ROW)        |   |   |                        |   |   |
| 2*02                   | 1.6   | 0.24  | 2*08                   | 6.4   | 0.96  |
| 2*03                   | 2.4   | 0.36  | 2*09                   | 7.2   | 1.08  |
| 2*04                   | 3.2   | 0.48  | 2*10                   | 8.0   | 1.20  |
| 2*05                   | 4.0   | 0.60  | 2*11                   | 8.8   | 1.32  |
| 2*06                   | 4.8   | 0.72  | 2*12                   | 9.6   | 1.44  |
| 2*07                   | 5.6   | 0.84  |                        |   |   |

注: 以上插拔次数为 30 次

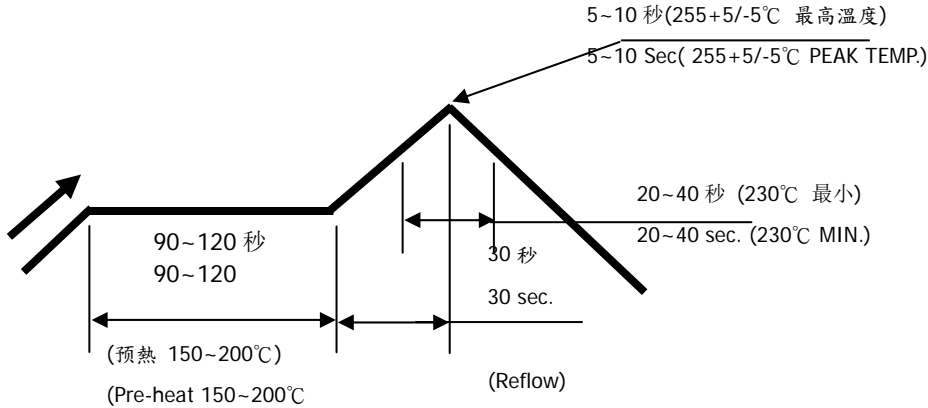
Note: Insertion and Withdrawal for 30Cycles

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### 【7. SMT 回流条件 SMT REFLOW CONDITION】



温度条件曲线图/ 基板上温度

TEMPERATURE CONDITION GRAPH/ (TEMPERATURE ON BOARD PATTERN SIDE)

注记: 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 by your own devices beforehand. Because the condition changes by the soldering devices, P.C. boards, and so on.