XFCN兴飞连接器有限公司
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# 产品规格书
# PRODUCT SPECIFICATION

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

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| Product Specification [产品规格书]: | ISSUED BY: Engineering Dept | |
|---|---|---|
| Subject [主题]: 3.96mm Pitch 3960 Series Connector Specification | Date Issued | 2011/08/05 |
| | Date Revised | 2013/07/28 |

**【1.适用范围 Scope】**

此种规格包括 3.96mm Pitch 3960 Series 连接器规格说明.

This Specification Covers the 3.96mm Pitch 3960 Series Connector Specification.

**【2.规格与料号 Spec and Part number】**

| 规格内容 Specification | 产品料号 Production No. | 产品图示 Picture of Product |
|---|---|---|
| 端子/Terminal | T3960BS-2 | NONE |
| 胶壳/Housing | P3960-XX-N0 | NONE |
| 针座/Wafer | M3960V-XX-N0<br>M3960R-XX-N0 | NONE |

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

| 规格内容 Specification | | 材 质 Materials | 表面处理 Disposal of Surface |
|---|---|---|---|
| 端子/Terminal | | 磷铜/Phosphor Bronze<br>黄铜/Brass | 1. Tin Plated: Over 70μ″ .Nickel: Over 30μ″ .<br>2. Tin Plated: Over 40μ″ .Nickel: Over 10μ″ . |
| 胶壳/Housing | | PA66 | UL 94V-0 |
| 针座/Wafer | Base | PA66 | UL 94V-0 |
| | PIN | 黄铜/Brass | Over Tin 70μ″ Plated ; Over 30μ″ Nickel |

（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】**

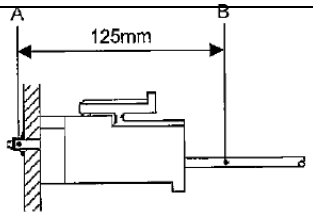
| 项 目【Item】 | 规 格【Standard】 | |
|---|---|---|
| 额定电压 Rated Voltage (Max.) | 250V | [AC/DC] |
| 额定电流 Rated Current (Max.) | 7A | |
| 使用温度范围 Ambient temperature Range | -25℃~+85℃ | |
| 适用线径 Applicable wire insulation O.D | AWG 18#~22# Insulation O.D. 3.00mm(Max.) | |

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

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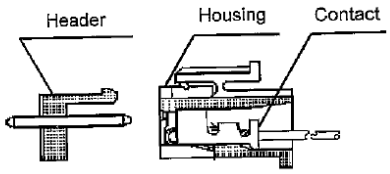
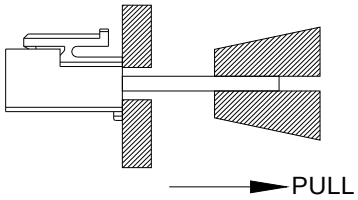
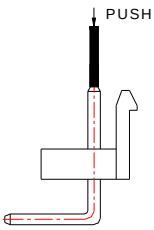
## 【5.性能 PERFORMANCE】

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

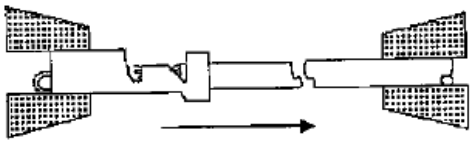
| 项 目 【Item】 | | 条 件 【Test Condition】 | 规 格 【Requirement】 |
|---|---|---|---|
| 5-1-1 | 接触阻抗 Contact Resistance | 公母配合,开放电压 20mV 以下,电流 10mA 检测连接器 A~B 区.<br>Mate connectors, measure by dry circuit, 20mV MAX, 10mA.<br>(Based upon EIA-364-06A).<br> | Initial:<br>10 milliohms Max.<br>After Test:<br>20 milliohms Max. |
| 5-1-2 | 绝缘阻抗 Insulation Resistance | 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) | 1000 Megohms Min. |
| 5-1-3 | 耐电压 Dielectric Strength | 公母配合,在相邻端子,端子与地片之间,使用 1500V 的交流电 1 分锺,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) | 不出现中断等情况<br>No Breakdown and Flashover |
| 5-1-4 | 铆线后端子接触阻抗 Contact resistance on crimped portion | 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. | 10 milliohms Max. |

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## 5-2. 机械的性能 Mechanical Performance.

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

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| 项 目 【Item】 | | 条 件 【Test Condition】 | 规 格 【Requirement】 | | | |
|---|---|---|---|---|---|---|
| 5-2-5 | 端子压着强度 Tensile strength (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. 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 【Item】 | | 条 件 【Test Condition】 | 规 格 【Requirement】 | |
|---|---|---|---|---|
| 5-3-1 | 重复插拔 Repeated Insertion/ Withdrawal | 以每分锺不超过 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 Contact Resistance | 20 milliohms Max. |
| 5-3-2 | 温升测试 Temperature Rise | 公母对插后,在通过额定电流下,所测定的温度.<br>Carrying rated current load. (UL 1977) | 温升测试 Temperature rise | 30℃ Max. |
| 5-3-3 | 耐振动性 Vibration | 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.<br>(Based upon EIA-364-28B/MIL-STD-202 Method 213B Cond.A) | 外观 Appearance | 无异状 No Damage |
| | | | 接触阻抗 Contact Resistance | 20 milliohms Max. |
| | | | 瞬断 Discontinuity | 1 micro-second Max. |
| 5-3-4 | 耐冲击性 Shock | 在 X.Y.Z 上 6 个方向上,以 490m/s$^2$(50g 的力量)冲击下各 3 回.490m/s$^2${50G}, 3 strokes in each X.Y.Z. axes.<br>(Based upon EIA-364-27B/MIL-STD-202 Method 213B Cond.A) | 外观 Appearance | 无异状 No Damage |
| | | | 接触阻抗 Contact Resistance | 20 milliohms Max. |
| | | | 瞬断 Discontinuity | 1 micro-second Max. |

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|---|---|---|---|---|
| 5-3-5 | 耐热性<br>Heat Resistance | 85±2℃,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 Max. |
| 5-3-6 | 耐寒性<br>Cold Resistance | -25±5℃,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 Max. |
| 5-3-7 | 耐湿性<br>Humidity | 温度: 40±2℃<br>湿度: 90~95%(RH)<br>持续时间: 96 hours<br>Temperature: 40±2℃<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 Max. |
| | | | 耐电压<br>Dielectric Strength | Must meet 5-1-3 |
| | | | 绝缘阻抗<br>Insulation Resistance | 500 Megohms Min. |
| 5-3-8 | 温度变化<br>Temperature Cycling | 从-55℃持续 30 分锺升至+85℃持续 30 分锺,循环 5 次.<br>5 cycles of: a) -55℃ 30 minutes.<br>b) +85℃ 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 Max. |
| 5-3-9 | 盐水喷雾<br>Salt Spray | 在温度 35±2℃,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℃.<br>(Based upon EIA-364-26A/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 Max. |
| 5-3-10 | 焊锡附着性<br>Solder-ability | 焊接时间: 3±0.5 秒.<br>焊接温度: 245±5℃.<br>Soldering Time: 3±0.5second.<br>Solder Temperature: 245±5℃.<br>(Based upon EIA-364-52) | 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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| 项 目 【Item】 | | 条 件 【Test Condition】 | 规 格 【Requirement】 | |
|---|---|---|---|---|
| 5-3-11 | 焊锡耐热性 Solder-Resistance | 焊接时间: 3~5 秒.<br>焊接温度: 255+5/-5℃.<br>Soldering time:3~5 sec solder.<br>Temperature:255+5/-5℃.<br>(Based upon EIA-364-56A) | 外观 Appearance | 无异状 No Damage |

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

| PIN 数 No. of CKT | 初次插入力(最大值) First Insertion (kgf Max.) | 30 次拔出力(最小值) 30th Withdrawal (kgf Min.) | PIN 数 No. of CKT | 初次插入力(最大值) First Insertion (kgf Max.) | 30 次拔出力(最小值) 30th Withdrawal (kgf Min.) |
|---|---|---|---|---|---|
| Single | 1.00 | 0.10 | 06 | 5.50 | 0.80 |
| 02 | 2.00 | 0.10 | 07 | 6.00 | 0.85 |
| 03 | 3.00 | 0.15 | 08 | 7.00 | 0.90 |
| 04 | 4.00 | 0.20 | 09 | 7.50 | 0.95 |
| 05 | 4.50 | 0.25 | 10 | 8.00 | 1.00 |

注：以上插拔次数为 30 次　　Note：Insertion and Withdrawal for 30Cycles

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XF-12571503P3 XF-P000143 M2545V-02P P1257-04P XF-P00014 XF-P00126 M1250VS-05P
M2010V-07P XF-P000223 XF-P00092 XF-2501L3003P3 XF-P000237 F1003-ZV-26-25T-R M2016V-08P
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