# 浙江联和电子有限公司

## Zhejiang Lianhe Electronics Co., Ltd.

## 样品提交核准程序

## PPAP PACKAGE

1. 零件保证书（Part Submission Warrant）(PSW)
2. 生产流程图(Operation Process chart)(OPS)
3. 过程潜在的失效模式及影响分析（PFMEA)
4. 全尺寸量测报告(Dimension test Report)
5. 性能测试报告(Performance Test Report)
6. 材料特性(Material Characteristics)
7. 关键质量特性（CPK)
8. 控制计划（Control Plan)
9. 工程图纸(Drawing)
10. 规格书(Product Specificaion)
11. 环保检测报告(Environmental test report )
12. 样品(Sample)

批准APPROVED BY：

| | | | | | |
|---|---|---|---|---|---|
| 工程AQP | 玉夫 YuFu | 质保SQA | 周雪莲<br>Xuelian Zhou | 质量负责人QA MGR | 鲸鱼JinYu |

# Part Submission Warrant
# 零件保证书

Part Name 产品名称: AMPSEAL(C1.3)
Cust. Part Number 客户产品编码: N/A
Shown on Drawing Number 所示图纸编号:
Org. Part Number 公司产品编码: N/A
Engineering Change Level 工程变更等级 Additional: N/A
Dated日期: N/A
Engineering Changes 附加的工程变更: N/A
Dated日期: N/A
Safety and/or Government Regulation 安全规定 / 政府法规: ☐ YES 是 ☑ NO 否
Purchase Order No. 采购订单编号: N/A
Weight (g) 重量 (克):
Checking Aid No. 检具编号: N/A
Checking Aid Engineering Change Level 工程变更版次: N/A
Dated 日期: N/A

**ORGANIZATION MANUFACTURING INFORMATION**
**组织制造厂信息**

浙江联和电子有限公司
Organization Name and Supplier Code / Vendor Code
组织名称和供应商/供应商代码
N/A.,
Street Address 街道地址
浙江省乐清市乐清湾港区创新路8号
City 城市 Region 地区 Postal Code 邮编 Country 国家

**CUSTOMER SUBMITTAL INFORMATION**
**提交顾客信息**

Customer Name / Division
顾客名称/部门
Buyer / Buyer Code 采购人员/采购人员代码
Application 使用范围

**MATERIALS REPORTING材料报告**

Has customer-required Substances of Concern information been reported?
顾客关注的受关注物质信息是否已报告？
☑ Yes 是 ☐ No 否 ☐ N／A 无
Submitted by IMDS or other customer format 通过MDS报告或用顾客规定的其他表格报告：

**REASON FOR SUBMISSION 送检理由**

- ☑ Initial submission 首次提交
- ☐ Engineering Change (s) 工程变更
- ☐ Tooling: Transfer, Replacement, Refurbishment, or additional工装：转移、更换、整修或添加
- ☐ Correction of Discrepancy 差异之修正
- ☐ Tooling Inactive > than 1 year 模具停产超过1年
- ☐ Change to Optional Construction or Material 物料变更
- ☐ Sub-Supplier or Material Source Change供应商或材料来源变更
- ☐ Change in Part Processing 零件制程变更
- ☐ Parts produced at Additional Location 新厂生产之零件
- ☐ Other - please specify below其它 – 请叙述

**REQUESTED SUBMISSION LEVEL (Check one) 要求送件层级（选一项）**

- ☐ Level 1 - Warrant only (and for designated appearance items, an Appearance Approval Report) submitted to customer.
  第一级只提交保证书（若制定为外观项目，还应提交外观核准报告。
- ☐ Level 2 - Warrant with product samples and limited supporting data submitted to customer.
  第二级只提交保证书、产品样品及部分资料。
- ☑ Level 3 - Warrant with product samples and complete supporting data submitted to customer.
  第三级只提交保证书、产品样品及完整资料。
- ☐ Level 4 - Warrant and other requirements as defined by customer.
  第四级只提交保证书、客户制定资料。
- ☐ Level 5 - Warrant with product samples and complete supporting data reviewed at supplier's manufacturing location.
  第五级包装书、产品样品和完整资料保留在组织制造现场，供审核时使用。

**SUBMISSION RESULTS 送件结果**

☑ dimensional measurements 尺寸量测 ☑ material and functional tests 材料及性能测试 ☑ appearance criteria 外观评估 ☑ statistical process package 统计数据

These results meet all drawing and specification requirements以上結果是否符合所有图面及规格要求：
☑ Yes是 ☐ No（If "NO" - Explanation Required）否（如果「否」务必说明） MOLD
模型／Cavity多模穴／Production Process制造流程： 来料-注塑-压针-冲压-装配-检验-包装-入库

**DECLARATION 声明**

I affirm that the samples represented by this warrant are representative of our parts which were made by a process that meets all PPAP Manual 4th Edition Requirements. I further affirm that these samples were produced at the rate of ____ / ____ 1 hrs. I also certify that evidence of such compliance is on file and available for review. I have noted any deviations from this declaration below.
本人确定本保证所提出之样品为本公司生产零件之代表，依PPAP第四版要求所生产，我保证此样品是出于数量____ ____ 所完成的，所有符合性证明文件都已妥善归档，以供审查，並說明任何与此声明有偏差的内容，见下文。 ocumented / -1 小时
EXPLANATION/COMMENTS 说明和建议： 之生产
Is each Customer Tool properly tagged and numbered?每种顾客的工具是否都已适当加标签和编号？ ☑ Yes是 ☐ No否
Organization Authorized Signature经授权组织代表签名
Date日期 2022/03/13
Print Name代表姓名 季育文
Phone No.电话 0577-62383699
Fax 传真 +86-0577-62382566
Title职务 总经理
E-mail邮箱 97365892@qq.com

**FOR CUSTOMER USE ONLY（ IF APPLICABLE ）顾客专用栏（若适用）**

PPAP Warrant Disposition 保证书处理意见： ☐ Approved 核准 ☐ Rejected 拒收 ☐ Other其他：
Customer Signature经授权的组织代表签名
Date 日期
Print Name代表姓名
Customer Tracking Number 顾客追踪编号

# 生 产 流 程 图

PROCESS FLOW DIAGRAM

供应商
Supplier

浙江联和电子有限公司
ZHEJIANG LIANHE ELECTRONICS CO.,LTD

| | | |
|---|---|---|
| 品名 Family name AMPSEAL(C1.3) | 订制日期：Date (Orig.) 2022/03/13 | 编制者：Prepared by 玉夫 Yu Fu |
| 产品型号 Part Number | 修订日期：Date (Rev.) N/A | 职称：Title 工程 Product Engineer |
| 制程类别 Part Name | 页面： Page 1 of 1 | 电话：Phone Number 86-0577-62383699 |
| APQP小组 Cross Functional Team Members<br>鲸鱼、小马、玉夫、郑培建、周雪莲、猎户Jin<br>Yu ,Marita Chen ,Yu Fu ,Peijian Zheng ,Xue Lian Zhou ,Lie Hu | | ◆ 生产/Manufacturing<br>● 搬运/Assembly Movement of Materials<br>▲ 存贮/Parts Storage of Materials<br>■ 检验/Parts Inspecition |

| 编号Step# | 生产Fab | 搬运Move | 存储Store | 检验Insp | 制程名称Operation description | 项目Item # | 关键产品特性Special Characteristics | | |
|---|---|---|---|---|---|---|---|---|---|
| | ◆ | ● | ▲ | ■ | | | | | |
| 1 | | * | | * | 入厂材质 Material | | 标签，材料重量 label,material weight | | 材料不合格 Material NG |
| 2 | * | | | | 冲压成型Stamping molding | | 外观，数量Appearance， QTY | | 成型外观不良Bad forming appearance |
| 3 | | | | * | 首检检验FAI | | 尺寸、插拔力测试 dimensional Insertion / Withdrawal Force Test | | |
| 4 | * | | | | 注塑Injection molding | | | | 表面粗糙不平 Rough and uneven in surface |
| 5 | * | | | | 压针Pressure needle | | | | |
| 6 | * | | | | 装配Assembling | | | | |
| 7 | | | | * | 首检检验FAI | | 尺寸 dimensional | | 产品内孔和外尺寸不合格<br>Product forming defec Inner dim. NG |
| 8 | | | * | | 包装Package | | 遵循包装标准操作规程<br>Follow the Package SOP | | |
| 9 | | | * | | 入库Warehouse | | | | 纸箱破损 Carton damage |
| 10 | | * | | * | 出货Shipment | | | | 标签与内容不匹配<br>Label does not match content |
| | | | | | | | | | |

# 浙江联和电子有限公司

## PROCESS FAILURE MODE AND EFFECTS ANALYSIS(过程潜在失效模式和后果分析)

Part No.(零件编号)：

Part Name(产品名称)：

Key Date(关键日期) ：2022/03/13

Core team(核心小组)： 季华丰、吴芬迪、余博、陈浙海、玉夫、李华、彭保欢、吴珊珊、林铃萍

Customer(客户) ： 通用

Process Responsibility(过程责任)：工程部/产品课

Prepared by(制定人)：玉夫

FMEA No. ：LHE-AMPSEAL(C1.3)-WM02ER1

Page ： 7

FMEA Date (Orig) ：2022/03/13（REV A0）

FMEA Date (Rev) ：A1

| 序号 | 过程步骤/功能要求 | 潜在失效模式 | 潜在失效后果 | 严重度S | 级别 | 特殊特性分类 | 潜在失效的起因 | 频度O | 现行控制预防 | 现行控制探测 | 探测度D | RPN | 建议措施 | 责任及目标完成日期 | 措施结果 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | 采取措施 | S | O | D | RPN |
| 10 | 铜带进料 | 10-1.外观不符（外观不能有变形，压伤，发黑，氧化等现象） | 影响外观 | 6 | MA | | 供应商原因 | 2 | 目视 | IQC检验 | 3 | 36 | | | | | | | |
| | | 10-2尺寸不符 | 影响本厂生产 | 7 | MA | | 供应商原因 | 2 | 要求厂商按本厂要求规格生产 | 收料员核对工单验收，IQC验证性能 | 2 | 28 | | | | | | | |
| | | 10-3.材质不符（磷铜） | 影响产品外观及功能 | 7 | MA | | 供应商原因 | 2 | 目视，供应商提供材质报告 | 收料员核对工单验收，IQC验证性能 | 2 | 28 | | | | | | | |
| | | 10-5.ROHS不合格 | 客户赔款 | 8 | CR | | 供应商原因，材料中含管制的有害物质超标 | 2 | 要求厂商提供ROHS合格证明 | 用ROHS测试仪检验 | 2 | 32 | | | | | | | |
| 20 | 领料生产 | 20-1.材质不符（磷铜） | 影响产品功能 | 7 | MA | | 生产时用错物料 | 2 | 生产前核对工单要求 | 领料员签字核对 | 3 | 42 | | | | | | | |
| 30 | 冲压端子 | 30-1.端子不能压伤、平头未倒角，变形，等严重不良。 | 影响外观及功能 | 6 | MA | | 1.冲压模具未调好 2.冲压零件磨损 | 5 | 1.模具调好确认OK后方可生产。2.定期更换不良零件 | 首件/IPQC巡检 | 2 | 60 | | | | | | | |
| | | 30-2.尺寸不符（要求见图纸） | 影响端子组装 | 7 | MA | ◆ | 冲压模具有磨损 | 3 | CCD尺寸检验 | 首件/IPQC巡检 | 5 | 105 | 尺寸做SPC控 | 品管课/生产时，IPQC巡检时做 | 尺寸已做SPC控制 | 7 | 3 | 2 | 42 |
| | | 30-3.CCD失效 | 产生批量不良 | 7 | MA | ◆ | CCD 未校准 | 3 | 1 不良率有没有做做分析和控制 2 不良发生后的处理措施 3怎么保证测量的准确性 | | | | | | | | | | |

| 序号 | 过程步骤/功能要求 | 潜在失效模式 | 潜在失效后果 | 严重度S | 级别 | 特殊特性分类 | 潜在失效的起因 | 频度O | 现行控制预防 | 现行控制探测 | 探测度D | RPN | 建议措施 | 责任及目标完成日期 | 措施结果 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | 采取措施 | S | O | D | RPN |
| | | 30-4. CCD 尺寸不准 | 产生批量不良 | 7 | MA | | | | | | | | | | | | | | |
| | | 30-3.插拔力太小 | 产品对插会难插入，或退PIN | 6 | MA | | 塑胶和端子干涉过大，以致于塑胶开裂 | 5 | 控制端子挂钩 | 首件/IPQC巡检 | 2 | 60 | | | | | | | |
| | | | | | | | 塑胶和端子干涉过小 | 5 | | | 2 | 60 | | | | | | | |
| | | 30-4.产速不符 | 影响生产效率和品质 | 5 | MI | ● | 技术员未按要求调速度 | 2 | 技术员生产前要按要求调速度 | 首件/IPQC巡检 | 3 | 30 | | | | | | | |
| 40 | 电镀端子/接地片（要求外观无不良现象，镀SN：40-120U″） | 40-1.电镀外观不良（发黑，脏污，氧化，色泽不光亮均匀，色差，斑点，起泡，露铜，混料等现象 | 影响外观及接触性能 | 5 | MA | | 厂商电镀时没有将端子清理干净，电镀时电流过高 | 5 | 供应商制程自检,要求附电镀检验报告 | IQC目视检验,过盐雾测试 | 2 | 50 | | | | | | | |
| | | 40-2.电镀端子镀锡太少. | 影响产品寿命 | 5 | MA | | 厂商电镀参数条件不当 | 5 | 供应商制程自检,要求附电镀检验报告 | IQC检验,膜厚测试 | 3 | 75 | | | | | | | |
| | | 40-3.电镀端子镀锡太厚 | 易产生锡层脱离现象 | 5 | MA | | 厂商电镀参数条件不当 | 5 | 供应商制程自检,要求附电镀检验报告 | IQC加严检验,膜厚测试 | 3 | 75 | | | | | | | |
| 50 | 成品检验 | 50-1.产品外观不良现象 | 影响外观 | 5 | MI | | 物料外观不良，治具导致不良 | 4 | 生产时需保证物料OK,治具无异常 | FQC检验 | 3 | 60 | | | | | | | |
| | | 50-2.插拔力太小（要 | 产品对插会难插入，或退PIN | 6 | MA | | 塑胶和端子干涉过大，以致于塑胶开裂 | 5 | 端子挂钩 | FQC检验 | 2 | 60 | | | | | | | |
| | | | | | | | 塑胶和端子干涉过小 | 5 | | | 2 | 60 | | | | | | | |
| 60 | 产品包装（卷装） | 60-1.数量不符 | 客诉 | 6 | MA | | 作业员没有按包装要求作业 | 4 | 包装前看包装作业规格 | 包装员自检/FQC抽检 | 3 | 72 | | | | | | | |
| | | 60-2.混料 | 客诉 | 6 | MA | | 产品没清理干净 | 4 | 泡沫芯上写产品名称，产品上跟随工单 | 包装员自检/FQC抽检 | 3 | 72 | | | | | | | |
| | | 60-3.标签不符 | 客诉 | 6 | MA | | 作业员没有核对工单料号 | 4 | 写标签和打标签时一定要核对产品名称 | 包装员自检/FQC抽检 | 3 | 72 | | | | | | | |

| 序号 | 过程步骤/功能要求 | 潜在失效模式 | 潜在失效后果 | 严重度S | 级别 | 特殊特性分类 | 潜在失效的起因 | 频度O | 现行控制预防 | 现行控制探测 | 探测度D | RPN | 建议措施 | 责任及目标完成日期 | 措施结果 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | 采取措施 | S | O | D | RPN |
| | | 60-4.用错纸箱 | 数量不对 | 6 | MA | | 物料员没有核对工单发料，包装员拿错 | 3 | 物料员和包装员需核对工单要求 | 包装员自检/FQC抽检 | 2 | 36 | | | | | | | |
| 70 | 出货检验 | 70-1.数量不符 | 客诉 | 6 | MA | | 作业员没有按包装要求作业 | 4 | 包装前看包装作业规格 | OQC抽检 | 3 | 72 | | | | | | | |
| | | 70-2.混料 | 客诉 | 6 | MA | | 不同规格产品放在一起 | 4 | 产品单独分开放置托盘，白色标签分开，标签上备注产 | OQC抽检 | 3 | 72 | | | | | | | |
| | | 70-3.实物与工单标签不符 | 客诉 | 6 | MA | | 作业员及FQC没有核对工单料号 | 4 | 写标签和打标签时一定要核对工单料号 | OQC抽检 | 3 | 72 | | | | | | | |
| | | 70-4.用错包装 | 客诉 | 6 | MA | | 物料员没有核对工单发料，包装员拿错 | 3 | 物料员和包装员需核对工单要求 | OQC抽检 | 2 | 36 | | | | | | | |
| | | 70-5.产品端子接触阻抗过大 | 影响产品的正常电气连接功能 | 5 | MA | | 电镀层氧化 | 4 | 产品需用微电阻测试仪测试 | 客户要求时OQC抽检 | 2 | 40 | | | | | | | |
| | | 70-6.ROHS不合格 | 客诉退货 | 7 | CR | | 厂商电镀的工艺和药水含管制的有害物质超标 | 2 | IQC加严检验，采购通知厂商作特别重点管控,要求附报告 | 客户要求时OQC抽检 | 2 | 28 | | | | | | | |
| | | 70-7.产品的信赖性测试不合格 | 影响产品的正常电气连接功能及使 | 5 | MA | | 产品尺寸没有达到客户要求，组装没有到位 | 4 | 产品需做信赖性测试，OK后方可生产 | 客户要求时OQC抽检 | 2 | 40 | | | | | | | |
| | | 70-8.产品外观尺寸功能特性不符（详见成品检验项目） | 客诉 | 6 | MA | | 前工序没有按要求管控好 | 3 | 物料及制程需按照图面要求管控，产品首件及FQC检验时需严格按图面标准 | 客户要求时OQC抽检 | 2 | 36 | | | | | | | |

核准: 陈浙海　　会签:□工程部□生产部□品管部□其它　　编制:玉夫

# 浙江联和电子有限公司

Zhejiang Lianhe Electronics Co., Ltd.

## PROCESS FAILURE MODE AND EFFECTS ANALYSIS(过程潜在失效模式和后果分析)

■送样Sample ■试产Pre-launch ■量产Mass Production

| | | | | | |
|---|---|---|---|---|---|
| 零件编号(Part No.) | | 客户( Customer) ： | | 文件编号（PFMEA No.） | LHE-AMPSEAL(C1.3)-PD |
| 产品名称(Part Name) | | 制定人(Prepared by)： | 玉夫 YuFu | 版本(Rev) ： | A0 |
| 核心小组(Core team)：鲸鱼、小马、玉夫、李大明、周雪莲、巨爵（Jin Yu ,Marita Chen ,Yu Fu ,Da Ming Li ,Xue Lian Zhou ,Ju Jue） | | 批准（Approval By)： | 鲸鱼Jin Yu | 制作日期(Date)： | 2022.03.13 |

| 项目 No. | 过程功能要求 Function | 潜在失效模式（不良現象） Potential Failure Mode | 潜在失效后果 Potential Effect of Failure | 严重度 S | 级别 Class | 特性 characteristics | 潜在失效原因 Potential Cause of Failure | 频度 O | 现行控制预防 Potential Cause of Failure | 现行控制探测 Current process control detection | 探测度 D | 风险指标 RPN | 建议措施 Proposed measures | 责任归属及完成日期 Responsibility& Target Completion Date | 措施结果 采取措施 Action Taken | 严重度 S | 频度 O | 探测度 D | 风险指标RPN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 塑胶粒来料 Material | 塑胶粒外观不符（1.外观脏污、颗粒大小不均匀；2.混有杂质）Poor appearance of plastic particles | 影响产品外观及功能 Influencing products and functions | 5 | MA | | 供应商原因Supplier Reasons | 2 | 目视检验Visual inspection | 进料检验Incoming inspection | 3 | 30 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | 材质不符（Material NG） | 功能不正常Function is abnormal | 6 | MA | | 进料检验流失IQC missing | 2 | 厂商提供材质证明 Material certification | 1. 原料测试 Material test 2. 小量生产 Try out | 3 | 36 | 更变原料厂Change the material supplier | N/A | 更变原料厂Change the material supplier | N/A | N/A | N/A | N/A |
| | | ROHS不合格(ROHS is not up to standard) | 客户退货customer returns | 7 | CR | | 供应商原因Supplier Reasons | 2 | 厂商提供材质证明 Material certification | 1. 原料测试 Material test | 2 | 28 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | 防火等级不合格（Unqualified fire protection level） | 功能不正常Function is abnormal | 7 | MA | | 供应商原因Supplier Reasons | 1 | 厂商提供材质证明 Material certification | 1. 原料测试 Material test | 3 | 21 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 2 | 铜针进料 | 外观不符（外观不能有歪针，压伤，混料，发黑，氧化等现象）Bad appearance of copper needles | 影响产品外观及功能 Influencing products and functions | 5 | MA | | 参数错误Setup incorrect | 5 | 出货检验证明 Shipment Inspection Certificate | IQC目视检验/盐雾测试盐雾试验 visual/Salt fog test | 2 | 50 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | 型号规格不符 | 影响本厂生产 | 7 | MA | | 送错物料Wrong Material | 2 | 按规格要求生产 Production according to material specifications | 尺寸量测 Dimension measurement | 2 | 28 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | 沾锡不良（吃锡面积95%以上） | 影响产品外观及焊锡性 | 5 | MA | | 厂商电镀参数条件不当 Improper plating parameters | 5 | 供应商制程自检,要求附电镀检验报告 | 可焊性测试 Solderability | 2 | 20 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | ROHS不合格(ROHS is not up to standard) | 客户退货customer returns | 7 | CR | | 供应商原因Supplier Reasons | 2 | 厂商提供材质证明 Material certification | 1. 原料测试 Material test | 2 | 28 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| 项目 No. | 过程功能要求 Function | 潜在失效模式 (不良現象) Potential Failure Mode | 潜在失效后果 Potential Effect of Failure | 严重度 S | 级别 Class | 特性 characteristics | 潜在失效原因 Potential Cause of Failure | 频度 O | 现行控制预防 Potential Cause of Failure | 现行控制探测 Current process control detection | 探测度 D | 风险指标 RPN | 建议措施 Proposed measures | 责任归属及完成日期 Responsibility& Target Completion Date | 措施结果 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | 采取措施 Action Taken | 严重度 S | 频度 O | 探测度 D | 风险指标RPN |
| 3 | 注塑成型Copper strip feeding | 变形、毛边、缺料、烧焦等（Core deformation、Edge、Poor appearance、charring and so on) | 外观不良Surface NG | 3 | MA | ◆ | 1.参数错误Setup incorrect 2.料温异常Material tempis unusual | 2 | 稳定后再生产To product when tooling is stable | 1.小量生产 Try out 2.调整参数 Adjustment parameters | 4 | 24 | N/A | 量产前Before mass production | N/A | N/A | N/A | N/A | N/A |
| | | 材质不符（Material NG) | 外观及功能不正常 Surface NG&Function is abnormal | 7 | MA | | 注塑用错料 Wrong stuff. | 1 | Mistake Material for Injection Molding | 首件/IPQC巡检 First Parts/IPQC Patrol Inspection | 3 | 21 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | 尺寸不符Size discrepancy | 功能不正常Function is abnormal | 6 | MA | ● | 模具加工尺寸不符 Mold machining size does not match | 2 | 模具零件尺寸检验 Mold inspection | 首检First Parts | 2 | 24 | N/A | N/A | 停机，模具维修Machine Stop and Tooling Repair | N/A | N/A | N/A | N/A |
| | | 模具不良 Mold NG | 外观不良Surface NG | 5 | MA | | 模具配件劳损 Mold parts damaged | 6 | 模具维修Tooling Repair | 巡检IPQC Patrol Inspection | 2 | 60 | N/A | N/A | 停机，模具维修Machine Stop and Tooling Repair | N/A | N/A | N/A | N/A |
| | | 成型周期不符 Inconsistent molding cycle | 交货不及时 L/T delay | 3 | MA | | 周期太慢Cycle time is too slow | 4 | 依标准调整周期 Adjustment of Cycle time | 生产计划 production plan | 2 | 24 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 4 | 压针组装Pin assembly | 外观不良（插伤、飞边、缺料等）Bad appearance(insert injury missing material, etc..) | 客户退货customer returns | 5 | MI | | 物料外观不良，治具导致不良 Bad appearance of rubber shell, poor adjustment of the instrument | 4 | 物料首检确认First material confirmation | 首件/IPQC/FQC检验 | 3 | 60 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | 尺寸不符Size discrepancy | 影响机械性能和电气性能Influence on mechanical and electrical properties | 7 | MA | | 机台铆压不到位Rivet's not in position. | 5 | 调整好治具Adjusting treatment tools | 首件/IPQC巡检 First Parts/IPQC Patrol Inspection | 2 | 70 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | 机台气压不对The pressure of the platform is not the same | 影响机台稳定 Influence on the stability of the platform | 6 | MA | ● | 没有调好气压The pressure wasn't adjusted properly. | 5 | 要求调到4-6kgf/cm2 | 首件/IPQC巡检 First Parts/IPQC Patrol Inspection | 2 | 60 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | 引脚尺寸不符（要求11.0+/-0.15）Inconsistent pin size(requirement 11.0 plus or minus 0.15) | 影响产品焊板及接触 Impact on welding and exposure | 6 | MA | ◆ | 插针不良、治具折弯不到位 Improper bending size of pin | 5 | 按要求调试Debug as required | 首件/IPQC巡检 First Parts/IPQC Patrol Inspection | 5 | 150 | 尺寸做SPC控制 | 品管课/生产时，IPQC巡检时做 | 尺寸已做SPC控制 | 6 | 5 | 2 | 60 |
| | | 产品平面度不良（要求0.15MAX）Poor plane(maximum requirement 0.15) | 影响产品焊板Impact on welding | 6 | MA | ◆ | 胶壳注塑变形Plastic shell injection deformation | 5 | 调整好治具Adjusting treatment tools | 首件/IPQC巡检 First Parts/IPQC Patrol Inspection | 5 | 150 | 尺寸做SPC控制 | 品管课/生产时，IPQC巡检时做 | 尺寸已做SPC控制 | 6 | 5 | 2 | 60 |

| 项目 No. | 过程功能要求 Function | 潜在失效模式（不良现象） Potential Failure Mode | 潜在失效后果 Potential Effect of Failure | 严重度 S | 级别 Class | 特性 characteristics | 潜在失效原因 Potential Cause of Failure | 频度 O | 现行控制预防 Potential Cause of Failure | 现行控制探测 Current process control detection | 探测度 D | 风险指标 RPN | 建议措施 Proposed measures | 责任归属及完成日期 Responsibility& Target Completion Date | 措施结果 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | 采取措施 Action Taken | 严重度 S | 频度 O | 探测度 D | 风险指标RPN |
| 5 | 首检检验FAI | 外观不良（插伤、飞边、缺料等）Bad appearance(insert injury missing material, etc..) | 客户退货customer returns | 4 | MA | ◆ | 物料外观不良，治具导致不良 Bad appearance of rubber shell, poor adjustment of the instrument | 2 | 物料首检确认First material confirmation | 首检First Parts | 3 | 24 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | 可焊性不良（要求浸锡面积95%以上）Poor weldability (Requirements for tin area above 95 %) | 影响产品焊锡 Influencing product soldering | 6 | MA | | 电镀不良Poor electroplating | 3 | 首检First Parts | 可焊性测试 Solderability | 2 | 36 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | 插针固定力太小（要求10N Min)Insufficient fixation(more than 10 cows required) | 插针退PIN或松动To loosen or loosen a needle. | 6 | MA | | 塑胶和端子干涉过大The terminal and the shell interfere too much. | 5 | 首检First Parts | 固定力测试Fixed force test | 2 | 60 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | | | | | | 塑胶和端子干涉过小The terminal and the shell interfere too little. | 5 | | | 2 | 60 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | 引脚尺寸不符（要求11.0+/-0.15）Inconsistent pin size(requirement 11.0 plus or minus 0.15) | 互配困难Hard to Marting | 5 | MA | | 尺寸不符合公差 Spec. NG | 3 | 卡尺量测Caliper measurement | 首检First Parts | 2 | 30 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 6 | 成品检验 Inspection of finished products | 缺针、长短针、歪针、针变形、断针等不良Poor needle deformation and so on | 外观不良Surface NG | 3 | MA | | 插针不良、治具行程不当 Improper stroke of bad needle treatment | 3 | 挑选或报废Selection or scrapping | FQC检验Final Quality Control | 3 | 27 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 7 | 包装入库 Packaging and storage | 数量不足 Q'ty shortage | 客诉Guest complaints | 4 | MA | | 未按包装规范要求作业 Failure to comply with packing specifications | 3 | 按包装要求作业 Package SOP | 定量包 Package as fixed q'ty | 3 | 36 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | 混料Blank. | 客诉Guest complaints | 4 | MA | | 未按包装规范要求作业 Failure to comply with packing specifications | 2 | 按包装要求作业 Package SOP | 包装员自检 Packager self-examination | 3 | 18 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | 标签不符Label does not match | 客诉Guest complaints | 3 | MA | | 未按包装规范要求作业 Failure to comply with packing specifications | 2 | 按包装要求作业 Package SOP | 包装员自检 Packager self-examination | 3 | 18 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | 纸箱损坏 Corton damage | 成品撞伤变形使用 Housing damage | 6 | MA | | 搬运时不慎撞伤 Moving damage | 3 | 搬运时注意小心轻放 Beware of moving | 使用标准尺寸外箱 Use standard carton | 2 | 36 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 8 | 出货检验 Shipment | 标签与内容不符Label does not match content | 客诉Guest complaints | 4 | MA | | 作业人员疏忽 Operator negligence | 2 | 通知出货检Notify shipment inspection | OQC抽检Final Quality Control | 3 | 24 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

# 浙江联和电子有限公司

## 全尺寸检测报告

表单编号：LHE20220314001

| 客户 | | 产品数量 | - | 产品料号 | 770520-1 |
|---|---|---|---|---|---|
| 检验日期 | 2022/3/13 | 检验数量 | 5 | 产品名称 | / |
| 材料 | 磷铜镀锡 | | | | |
| 外观 | 表面无锈蚀、氧化、无明显的机械损伤等缺陷 | | | | 符合要求 |

| 序号 | 尺寸 | 公差 | | 检验结果 | | | | | 判定 | 备注 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 上 | 下 | 1 | 2 | 3 | 4 | 5 | | |
| 1 | 3.7 | 3.9 | 3.7 | 3.73 | 3.71 | 3.71 | 3.73 | 3.75 | OK | |
| 2 | 7.2 | 7.5 | 7.2 | 7.22 | 7.25 | 7.24 | 7.24 | 7.21 | OK | |
| 3 | 0.3 | 0.5 | 0.3 | 0.3 | 0.29 | 0.31 | 0.29 | 0.29 | OK | |
| 4 | 2.5 | 2.6 | 2.5 | 2.51 | 2.5 | 2.5 | 2.52 | 2.52 | OK | |
| 5 | 7.6 | 7.75 | 7.6 | 7.64 | 7.64 | 7.6 | 7.62 | 7.65 | OK | |
| 6 | 19.8 | 20.1 | 19.8 | 19.82 | 19.86 | 19.83 | 19.87 | 19.88 | OK | |
| 7 | 23.3 | 23.6 | 23.3 | 23.34 | 23.33 | 23.37 | 23.34 | 23.34 | OK | |
| 8 | 1.5 | 1.7 | 1.5 | 1.51 | 1.49 | 1.49 | 1.49 | 1.49 | OK | |
| 9 | 10.5 | 10.8 | 10.5 | 10.5 | 10.52 | 10.49 | 10.52 | 10.49 | OK | |
| 10 | 2.55 | 2.75 | 2.55 | 2.57 | 2.55 | 2.54 | 2.54 | 2.54 | OK | |
| 11 | 2.9 | 3.2 | 2.9 | 2.97 | 2.92 | 2.92 | 2.93 | 2.92 | OK | |
| 12 | 2.9 | 3.2 | 2.9 | 2.89 | 2.92 | 2.91 | 2.95 | 2.94 | OK | |
| 13 | 4.3 | 4.5 | 4.3 | 4.3 | 4.31 | 4.3 | 4.34 | 4.32 | OK | |
| 14 | 3.8 | 4 | 3.8 | 3.82 | 3.82 | 3.82 | 3.82 | 3.82 | OK | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| 21 | | | | | | | | | | |

核准： 陈浙海　　审核： 桉树　　检验： 石斛

# 浙江联和电子有限公司

## 全尺寸检测报告

表单编号：LHE20220313001

| 客户 | | 产品数量 | - | 产品料号 | 776262-1 |
|---|---|---|---|---|---|
| 检验日期 | 2022/3/13 | 检验数量 | 5 | 产品名称 | / |
| 材料 | 黄铜、PBT | | | | |
| 外观 | 表面无锈蚀、氧化、无明显的机械损伤等缺陷 | | | | 符合要求 |

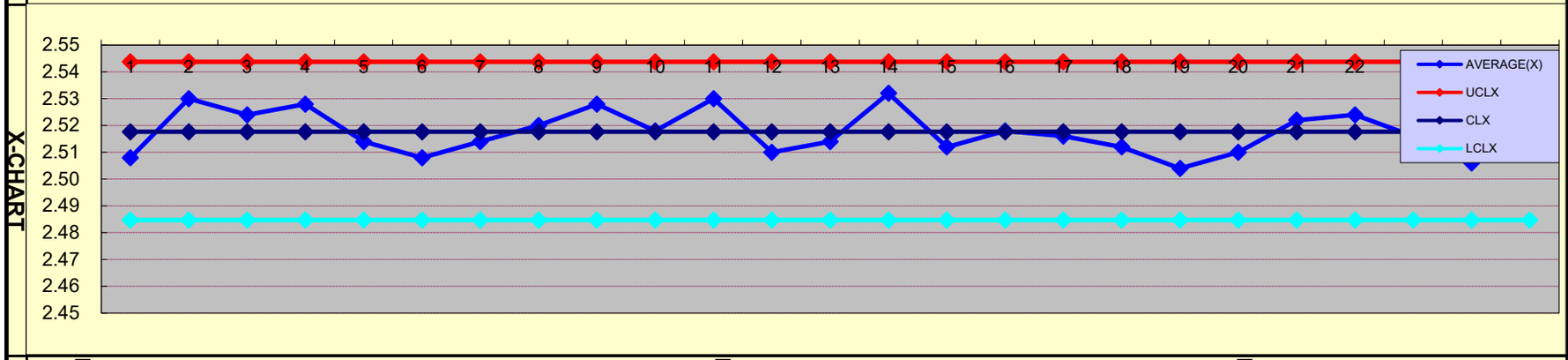
| 序号 | 尺寸 | 公差 | | 检验结果 | | | | | 判定 | 备注 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 上 | 下 | 1 | 2 | 3 | 4 | 5 | | |
| 1 | 48.8 | 49.3 | 48.3 | 48.85 | 48.88 | 48.82 | 48.82 | 48.82 | OK | |
| 2 | 35.4 | 35.9 | 34.9 | 35.42 | 35.42 | 35.49 | 35.44 | 35.42 | OK | |
| 3 | 31.4 | 31.9 | 30.9 | 31.42 | 31.45 | 31.45 | 31.42 | 31.45 | OK | |
| 4 | 2.17 | 2.47 | 1.87 | 2.16 | 2.16 | 2.18 | 2.16 | 2.18 | OK | |
| 5 | 32.1 | 32.6 | 31.6 | 32.13 | 32.16 | 32.15 | 32.12 | 32.19 | OK | |
| 6 | 23.6 | 24.1 | 23.1 | 23.61 | 23.61 | 23.62 | 23.62 | 23.63 | OK | |
| 7 | 18.1 | 18.5 | 17.7 | 18.15 | 18.12 | 18.13 | 18.12 | 18.13 | OK | |
| 8 | 38.4 | 38.9 | 37.9 | 38.16 | 38.14 | 38.16 | 38.12 | 38.13 | OK | |
| 9 | 2 | 2.3 | 1.7 | 2.01 | 2 | 2.02 | 2.02 | 1.99 | OK | |
| 10 | 19.3 | 19.7 | 18.9 | 19.33 | 19.32 | 19.34 | 19.33 | 19.35 | OK | |
| 11 | 15 | 15.4 | 14.6 | 15.03 | 15.04 | 15.04 | 15.01 | 15.05 | OK | |
| 12 | 13.5 | 13.9 | 13.1 | 13.5 | 13.5 | 13.5 | 13.5 | 13.49 | OK | |
| 13 | 1.5 | 1.8 | 1.2 | 1.49 | 1.51 | 1.52 | 1.52 | 1.51 | OK | |
| 14 | 2 | 2.3 | 1.7 | 1.99 | 2 | 2 | 2.01 | 2 | OK | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| 21 | | | | | | | | | | |

核准： 陈浙海　　审核： 按树　　检验： 石斛

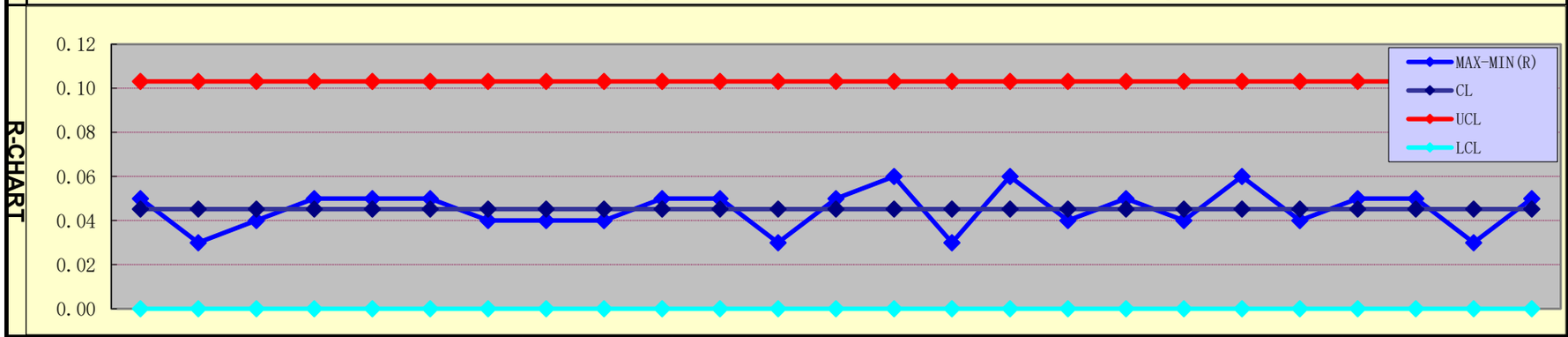
# X̄-R 管 制 图

| 生产线别 | | 工序 | 外观尺寸 | 性能参数 | 外观尺寸 | 规格上限 | 2.60 | 组容/频率 | 25 | 取样数值 | 1/2-1/5数据 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 产品规格 | 770520-1 | | | 规 格 值 | 2.50 | 规格下限 | 2.40 | 日期 | 2022.03.13 | 模式 | 分析控制图 |

$\bar{\bar{X}}$=AVE（$\bar{X}$）= 2.52　　$UCL_{\bar{X}}=\bar{\bar{X}}+A_2\bar{R}$= 2.54　　$LCL_{\bar{X}}=\bar{\bar{X}}-A_2\bar{R}$= 2.49




$\bar{R}$=AVE（R）= 0.045　　$UCL_R=D_4\bar{R}$= 0.10　　$LCL_R=D_3\bar{R}$= 0.00




**说　明　栏**

●对特殊原因采取措施说明
*任何超出控制限的点
*连续7点在中心线之上或之下
*连续7点上升/下降
*任何其它明显非随机的图形

●采取措施的说明
①不要对过程做不必要改变
②注明对过程因素（人机料法环或MS）的调整

| 组容 | $A_2$ | $D_3$ | $D_4$ | $d_2$ |
|---|---|---|---|---|
| 2 | 1.88 | * | 3.27 | 1.12 |
| 3 | 1.02 | * | 2.57 | 1.69 |
| 4 | 0.73 | * | 2.28 | 2.06 |
| 5 | 0.58 | * | 2.11 | 2.33 |
| 6 | 0.48 | * | 2.00 | 2.53 |
| 7 | 0.42 | 0.08 | 1.92 | 2.70 |
| 8 | 0.37 | 0.14 | 1.86 | 2.85 |
| 9 | 0.34 | 0.18 | 1.82 | 2.97 |
| 10 | 0.31 | 0.22 | 1.78 | 3.08 |

1. 在确定Cpk前过程必须受控
2. 组容＜7时没有极差下控制限

●Cpk = Min $\left|\frac{USL-\bar{X}}{3\bar{R}/d_2}\right|\left|\frac{\bar{X}-LSL}{3\bar{R}/d_2}\right| \geqslant 1.33$

=Min| 1.41 | 2.02 | = 1.41

| 日期/时间 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 检查记录 1 | 2.54 | 2.51 | 2.53 | 2.5 | 2.52 | 2.54 | 2.54 | 2.53 | 2.54 | 2.53 | 2.5 | 2.53 | 2.51 | 2.54 | 2.53 | 2.53 | 2.53 | 2.49 | 2.49 | 2.55 | 2.5 | 2.5 | 2.53 | 2.51 | 2.54 |
| 2 | 2.51 | 2.53 | 2.5 | 2.55 | 2.5 | 2.49 | 2.52 | 2.5 | 2.53 | 2.53 | 2.54 | 2.51 | 2.52 | 2.55 | 2.5 | 2.5 | 2.5 | 2.54 | 2.51 | 2.49 | 2.52 | 2.55 | 2.5 | 2.5 | 2.55 |
| 3 | 2.49 | 2.54 | 2.54 | 2.54 | 2.49 | 2.52 | 2.5 | 2.54 | 2.51 | 2.54 | 2.52 | 2.51 | 2.51 | 2.49 | 2.51 | 2.49 | 2.5 | 2.52 | 2.5 | 2.51 | 2.54 | 2.52 | 2.54 | 2.49 | 2.53 |
| 4 | 2.49 | 2.53 | 2.52 | 2.52 | 2.54 | 2.49 | 2.5 | 2.53 | 2.55 | 2.5 | 2.54 | 2.5 | 2.49 | 2.55 | 2.5 | 2.52 | 2.54 | 2.5 | 2.49 | 2.5 | 2.51 | 2.55 | 2.52 | 2.52 | 2.5 |
| 5 | 2.51 | 2.54 | 2.53 | 2.53 | 2.52 | 2.5 | 2.51 | 2.5 | 2.51 | 2.49 | 2.55 | 2.5 | 2.54 | 2.53 | 2.52 | 2.55 | 2.51 | 2.51 | 2.53 | 2.5 | 2.54 | 2.5 | 2.49 | 2.51 | 2.5 |
| TOTAL | 12.54 | 12.65 | 12.62 | 12.64 | 12.57 | 12.54 | 12.57 | 12.60 | 12.64 | 12.59 | 12.65 | 12.55 | 12.57 | 12.66 | 12.56 | 12.59 | 12.58 | 12.56 | 12.52 | 12.55 | 12.61 | 12.62 | 12.58 | 12.53 | 12.62 |
| VERAGE | 2.51 | 2.53 | 2.52 | 2.53 | 2.51 | 2.51 | 2.51 | 2.52 | 2.53 | 2.52 | 2.53 | 2.51 | 2.51 | 2.53 | 2.51 | 2.52 | 2.52 | 2.51 | 2.50 | 2.51 | 2.52 | 2.52 | 2.52 | 2.51 | 2.52 |
| $CL_{\bar{X}}$ | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 | 2.52 |
| $UCL_{\bar{X}}$ | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 |
| $LCL_{\bar{X}}$ | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 | 2.48 |
| AX-MIN( | 0.05 | 0.03 | 0.04 | 0.05 | 0.05 | 0.05 | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 | 0.03 | 0.05 | 0.06 | 0.03 | 0.06 | 0.04 | 0.05 | 0.04 | 0.06 | 0.04 | 0.05 | 0.05 | 0.03 | 0.05 |
| $CL_R$ | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| $UCL_R$ | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 |
| $LCL_R$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

结论：　该过程目前能被接受,批准后即可开始生产，并按照控制计划进行。

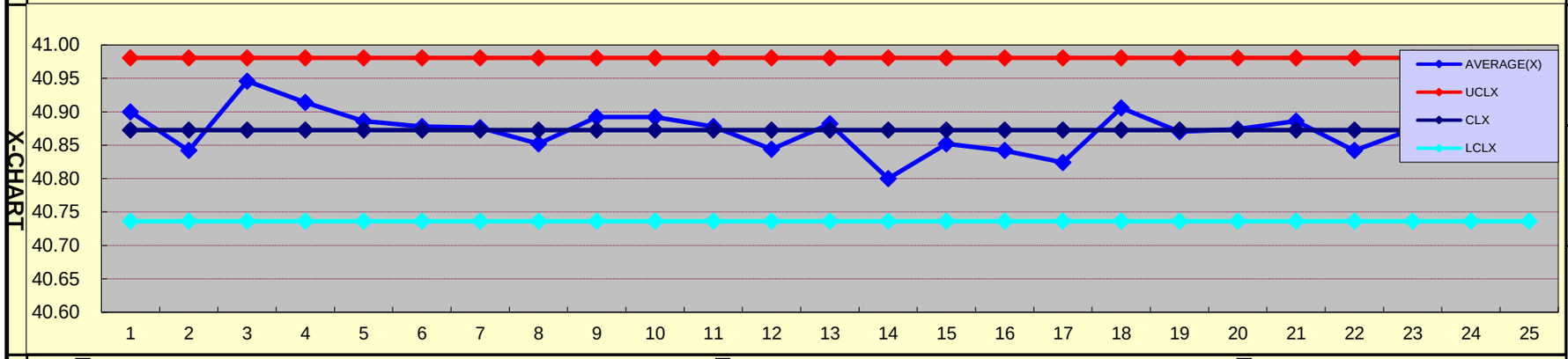
制表/日期:石斛 2022.03.13　　审核/日期:陈浙海 2022.03.13

编号：ACL20220313-001

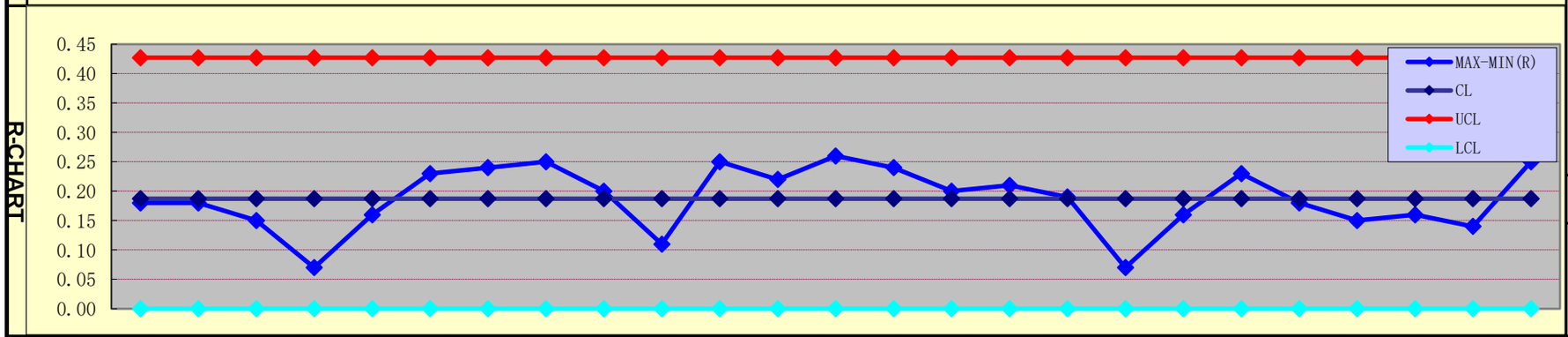
# X-R 管 制 图

| 生产线别 | | 工序 | 外观尺寸 | 性能参数 | 外观尺寸 | 规格上限 | 41.30 | 组容/频率 | 25 | 取样数值 | 1/2-1/5数据 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 产品规格 | 776262-1 | | | 规 格 值 | 40.80 | 规格下限 | 10.30 | 日期 | 2022.03.13 | 模式 | 分析控制图 |

$\bar{\bar{X}}$=AVE（$\bar{X}$）= 40.87　　UCL$_{\bar{x}}$=$\bar{\bar{X}}$+A$_2\bar{R}$= 40.98　　LCL$_{\bar{x}}$=$\bar{\bar{X}}$-A$_2\bar{R}$= 40.76




$\bar{R}$=AVE（R）= 0.187　　UCL$_R$=D$_4\bar{R}$= 0.40　　LCL$_R$=D$_3\bar{R}$= 0.00




**说 明 栏**

●对特殊原因采取措施说明
*任何超出控制限的点
*连续7点在中心线之上或之下
*连续7点上升/下降
*任何其它明显非随机的图形

●采取措施的说明
①不要对过程做不必要改变
②注明对过程因素（人机料法环或MS）所的调整

| 组容 | $A_2$ | $D_3$ | $D_4$ | $d_2$ |
|---|---|---|---|---|
| 2 | 1.88 | * | 3.27 | 1.12 |
| 3 | 1.02 | * | 2.57 | 1.69 |
| 4 | 0.73 | * | 2.28 | 2.06 |
| 5 | 0.58 | * | 2.11 | 2.33 |
| 6 | 0.48 | * | 2.00 | 2.53 |
| 7 | 0.42 | 0.08 | 1.92 | 2.70 |
| 8 | 0.37 | 0.14 | 1.86 | 2.85 |
| 9 | 0.34 | 0.18 | 1.82 | 2.97 |
| 10 | 0.31 | 0.22 | 1.78 | 3.08 |

1. 在确定Cpk前过程必须受控
2. 组容＜7时没有极差下控制限

●Cpk = Min $\left|\frac{USL-\bar{X}}{3\bar{R}/d_2}\right|\left|\frac{\bar{X}-LSL}{3\bar{R}/d_2}\right|$ ≥1.33

=Min| 1.77 | 126.84 | = 1.77

| 日期/时间 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 检查记录 1 | 40.93 | 40.84 | 40.96 | 40.93 | 40.98 | 40.81 | 40.76 | 40.74 | 40.88 | 40.88 | 40.97 | 40.96 | 40.93 | 40.98 | 40.82 | 40.83 | 40.77 | 40.94 | 40.84 | 40.83 | 40.89 | 40.94 | 40.84 | 40.84 | 40.99 |
| 2 | 40.86 | 40.75 | 40.85 | 40.96 | 40.82 | 40.88 | 41 | 40.97 | 40.79 | 40.97 | 40.74 | 40.88 | 40.74 | 40.75 | 40.77 | 40.82 | 40.93 | 40.87 | 40.92 | 40.97 | 40.96 | 40.79 | 40.87 | 40.86 | 40.81 |
| 3 | 40.93 | 40.84 | 40.98 | 40.89 | 40.86 | 40.99 | 40.85 | 40.99 | 40.88 | 40.89 | 40.99 | 40.83 | 40.84 | 40.77 | 40.8 | 40.74 | 40.74 | 40.89 | 40.94 | 40.86 | 40.9 | 40.8 | 40.99 | 40.98 | 40.85 |
| 4 | 40.8 | 40.93 | 40.94 | 40.9 | 40.87 | 40.76 | 41 | 40.74 | 40.99 | 40.86 | 40.77 | 40.74 | 40.9 | 40.76 | 40.9 | 40.95 | 40.77 | 40.89 | 40.87 | 40.97 | 40.9 | 40.89 | 40.83 | 40.92 | 40.91 |
| 5 | 40.98 | 40.85 | 41 | 40.89 | 40.9 | 40.95 | 40.77 | 40.82 | 40.92 | 40.86 | 40.92 | 40.81 | 41 | 40.74 | 40.97 | 40.87 | 40.91 | 40.94 | 40.78 | 40.74 | 40.78 | 40.79 | 40.84 | 40.92 | 40.74 |
| TOTAL | 204.50 | 204.21 | 204.73 | 204.57 | 204.43 | 204.39 | 204.38 | 204.26 | 204.46 | 204.46 | 204.39 | 204.22 | 204.41 | 204.00 | 204.26 | 204.21 | 204.12 | 204.53 | 204.35 | 204.37 | 204.43 | 204.21 | 204.37 | 204.52 | 204.30 |
| VERAGE | 40.90 | 40.84 | 40.95 | 40.91 | 40.89 | 40.88 | 40.88 | 40.85 | 40.89 | 40.89 | 40.88 | 40.84 | 40.88 | 40.80 | 40.85 | 40.84 | 40.82 | 40.91 | 40.87 | 40.87 | 40.89 | 40.84 | 40.87 | 40.90 | 40.86 |
| $CL_{\bar{X}}$ | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 | 40.87 |
| $UCL_{\bar{X}}$ | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 | 40.98 |
| $LCL_{\bar{X}}$ | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 | 40.74 |
| AX-MIN( | 0.18 | 0.18 | 0.15 | 0.07 | 0.16 | 0.23 | 0.24 | 0.25 | 0.20 | 0.11 | 0.25 | 0.22 | 0.26 | 0.24 | 0.20 | 0.21 | 0.19 | 0.07 | 0.16 | 0.23 | 0.18 | 0.15 | 0.16 | 0.14 | 0.25 |
| $CL_R$ | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 |
| $UCL_R$ | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 | 0.43 |
| $LCL_R$ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

结论：　该过程目前能被接受,批准后即可开始生产，并按照控制计划进行。

制表/日期:石斛 2022.03.13　　审核/日期:陈浙海 2022.03.13

编号：ACL20220313-001

# 浙江联和电子有限公司

## 控制计划(Control Plan)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 产品阶段 Product Phase | ◉ 样件 ○ 试产 ○ 量产 | 联系人 Tablemaker | 玉夫Yu Fu | 制定日期Date(Org.) | 2022.03.13 | 修正日期Date (Rev.) | |
| 客户料号Customer Part No.: | | 核心小组: | 鲸鱼、小马、玉夫、李大明、周雪莲、巨爵(Jin Yu ,Marita Chen ,Yu Fu ,Da Ming Li ,Jin Yu ,Ju Jue) | | | 控制计划编号Control Plan No.: | CP-LHE-AMPSEAL(C1.3)-T32 |
| 产品料号Part No.: | | | | | | 客户工程批准Customer RD Approval: | |
| 产品品名Part Name: 770520-1 | | | | | | 客户质量批准Customer QA Approval : | |
| 供应商 Supplier: | 浙江联和电子有限公司 Zhejiang lianhe Electronics Co., Ltd. | 供应商编号 Supplier No. | N/A | 批准人Approval | 鲸鱼Jin Yu | 其他批准Other Approva: | |

| 制程编号 Part / Process No. | 工序名称 Process Name | 机器;装置;夹具;工装Mfg. Machine,Device, Jig, Tools | 特性Characteristics 编号No. | 产品Product | 过程Process | 特殊特性分类Special Char. Class | 方法Methods 产品过程规范公差 Product/ Process/Specification/Tolerance | 评价测量技术 Evaluation Measurement Technique | 样本Sample 容量Size | 频率Freq. | 控制方法 Control Method | 反应计划 Reaction Plan |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 来料 Material Incoming | 目视/XRF测试仪 Visual/XRF tester | 1 | 外观appearance | 来料检验IQC | | 进料检验规范Incoming Test Specification | 目视Visual | MIL-STD-105E (S-2) | 每批Per Lot | 进料检测报告Incoming Test Report | 1.标识隔离、异常上报 Sign, quarantine, anomaly report. |
| | | | 2 | 材质Material | | | | Material proof | 100% | | | |
| | | | 3 | 环保EP | | | | XRF tester | 原料：10-20g | | | |
| | | | 4 | 防火性 flammability | | | | Material proof | 100% | | | |
| 20 | 首检检验FAI | 投影仪/卡尺 Profile Projector/Caliper | 1 | 外观Appearance | 首检检验FAI | | 检验指导书SIP | 目视Visual | 1模1 Cav. | 每批Per Lot | 首检记录 First Inspection Record | 1标识隔离、异常上报 Sign, quarantine, anomaly report. 2.停机维护 Machine Stop and Tooling Repair |
| | | | 2 | 颜色to check color | | | N/A | 目视Visual | | | | |
| | | | 3 | 适配Mating/ Unmating Test | | | 无干涉No Interference | 试装 Testing. | | | | |
| | | | 4 | 尺寸Dimension | | ▲ | 7.6±0.15 mm | 投影仪/卡尺 Profile Projector/Caliper | | | | |
| | | | | | | | 7.2±0.2 mm | | | | | |
| | | | | | | | 19.8±0.3 mm | | | | | |
| | | | | | | | 2.5±0.1 mm | | | | | |
| | | | | | | | 3.8±0.2 mm | | | | | |
| 30△ | 成品组装（如需要）Finished assembly (If required) | 工装tools | 1 | 外观Appearance | 巡检IPQC | | 作业指导书SOP | 目视Visual | 1模1 Cav. | 2小时 2H | 巡检记录 Inspection records | 1标识隔离、异常上报 Sign, quarantine, anomaly report. |
| | | | 2 | 位置 | | ▲ | 长L：19.8±0.3 mm | 卡尺Caliper | | | | |
| | | | | | | | 宽D: 2.5±0.1 mm | | | | | |
| | | | | | | | 高H: 3.8±0.2 mm | | | | | |
| 40 | 出货检验OQC | 目视Visual | 1 | 外观Appearance | 出货检验OQC | | 检验指导书/订单 SIP/Order | 目视Visual | MIL-STD-105E(Ⅱ) AQL=1.0 | 每批Per Lot | 出货检验报告OQC Inspection report | 返工 rework |
| | | | 2 | 数量QTY | | | | | | | | |
| | | | 3 | 尺寸Dimension | | ▲ | 长L：19.8±0.3 mm | 卡尺Caliper | 5只/ 5PCS | | | |
| | | | | | | | 宽D: 2.5±0.1 mm | | | | | |
| | | | | | | | 高H: 3.8±0.2 mm | | | | | |
| 50 | 运输 Shipment | 打包机/推车 Packer/Cart | 1 | 包装操作规范 Package SOP | | | 包装规范Packing Rule | 目视Visual | 每箱Every Carton | 每次Every Time | 装箱清单 Packing List | 重检Re-check |

# 浙江联和电子有限公司

## 控制计划(Control Plan)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 产品阶段 Product Phase | ○ 样件 ○ 试产 ◉ 量产 | 联系人 Tablemaker | 玉夫Yu Fu | 制定日期Date(Org.) | 2022.03.13 | 修正日期Date (Rev.) | 无 |
| 客户料号Customer Part No.: / | | 核心小组: | 陈浙海、小马、玉夫、李大明、周雪莲(chenzhehai ,Marita Chen ,Yu Fu ,Da Ming Li ) | | | 控制计划编号Control Plan No.: | CP-LHE-AMPSEAL(C1.3)-WV |
| 产品料号Part No.: AMPSEAL(C1.3) | | | | | | 客户工程批准Customer RD Approval: | |
| 产品品名Part Name: 776262-1 | | | | | | 客户质量批准Customer QA Approval : | |
| 供应商 Supplier: | 浙江联和电子有限公司 Zhejiang lianhe Electronics Co., Ltd. | 供应商编号 Supplier No. | N/A | 批准人Approval | 陈浙海 | 其他批准Other Approva: | |

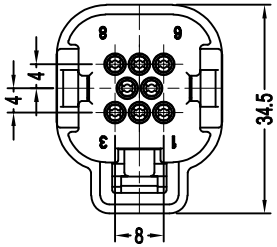
| 制程编号 Part / Process No. | 工序名称 Process Name | 机器;装置;夹具;工装Mfg. Machine,Device, Jig, Tools | 特性Characteristics 编号 No. | 产品Product | 过程Process | 特殊特性分类Special Char. Class | 方法Methods 产品过程规范公差 Product/ Process/Specification/Tolerance | 评价测量技术 Evaluation Measurement Technique | 样本Sample 容量Size | 频率Freq. | 控制方法 Control Method | 反应计划 Reaction Plan |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 来料Material Incoming | 目视/卡尺 Visual/Caliper | 1 | 外观appearance | 来料检验IQC | | 进料检验规范Incoming Test Specification | 目视Visual | GB/T2828.1 (S-2) | 每批Per Lot | 进料检测报告 Incoming Test Report | 1.标识隔离、异常上报Sign, quarantine, anomaly report. |
| | | | 2 | 材质Material | | | | 材质证明 Material | 100% | | | |
| | | | 3 | RoHS检测 | | | | X-RAY | 至少20pcs | | | |
| | | | 4 | 尺寸take the size | | | 针 25.5 mm | 卡尺Caliper | 5pcs | | | |
| 20 | 注塑首检检验 FAI | 投影仪/卡尺 Profile Projector/Caliper | 1 | 外观Appearance | 注塑首件检验 FAI | | 检验指导书SIP | 目视Visual | 1模1 Cav. | 每批Per Lot | 首检记录 First Inspection Record | 1.标识隔离、异常上报 Sign, quarantine, anomaly report. 2.停机维护 Machine |
| | | | 2 | 颜色to check color | | | N/A | 目视Visual | | | | |
| | | | 3 | 适配Mating/ Unmating Test | | | 无干涉No Interference | 试装 Testing. | | | | |
| | | | 4 | 尺寸Dimension | | | 见图纸 | 投影仪/卡尺 Profile | | | | |
| 30 | 注塑成型 injection moulding | 注塑机 Injection Machine | 1 | 成型参数Shaping parameters | 巡检IPQC | * | 注塑工艺卡Injection Process Card | 目视, Visual | 1模1 Cav. | 2小时 2H | 巡检记录 Inspection records | 2.停机维护 Machine Stop and Tooling Repair |

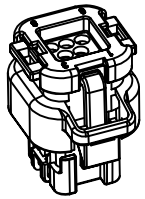
| 制程编号 Part / Process No. | 工序名称 Process Name | 机器;装置;夹具;工装Mfg. Machine,Device, Jig, Tools | 特性Characteristics | | | 特殊特性分类Special Char. Class | 方法Methods | | | | | 反应计划 Reaction Plan |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 编号 No. | 产品Product | 过程Process | | 产品过程规范公差 Product/ Process/Specification/Tolerance | 评价测量技术 Evaluation Measurement Technique | 样本Sample | | 控制方法 Control Method | |
| | | | | | | | | | 容量Size | 频率Freq. | | |
| 40 | 成品组装 首检检验FAI | 测力计/卡尺/焊锡炉 dynamometer /Caliper/Tin furnace | 1 | 外观Appearance | 首检检验FAI | * | 检验指导书SIP | 目视Visual | 1模1 Cav. | 每批Per Lot | 首检记录First Inspection Record | 1标识隔离、异常上报Sign, quarantine, anomaly report. 2.停机维护Machine Stop and Tooling Repair |
| | | | 2 | 设备参数device parameters | | | 气压表值：0.6-0.8MPa | 目视, Visual | | | | |
| | | | | | | | 检查电测是否正常停机 | | | | | |
| | | | 3 | 可焊性Weldable | | | 首检检验作业办法 | 测试Testing. | | | | |
| | | | 4 | 固定力Fixed force | | | ≥80N | 测试Testing. | | | | |
| | | | 5 | 尺寸Dimension | | | 25.5 mm 针 | 卡尺Caliper | | | | |
| 50 | 成品组装 Finished assembly | 工装tools | 1 | 外观Appearance | 巡检IPQC | | 作业指导书SOP | 目视Visual | 1模1 Cav. | 2小时 2H | 巡检记录 Inspection records | 1标识隔离、异常上报 Sign, quarantine, anomaly report |
| | | | 2 | 尺寸Dimension | | | 25.5 mm 针 | 卡尺Caliper | | | | |
| 60 | 成品检验FQC | 测量仪器 Measurement Instruments | 1 | 外观Appearance | 入库终检FQC | | 检验指导书SIP | 目视Visual | MIL-STD-105E (AQL-1.0) | 每批Per Lot | 成品检验报告 FQCinspection report | 挑选/报废 Selecting / scrapping |
| | | | 2 | 尺寸Dimension | | | 25.5 mm 针 | 卡尺Caliper | 1模1 Cav. | | | |
| 70 | 包装入库 Packaging and storage | 打标机 marking machines | 1 | 数量 QTY | 包装 Packaging | | 包装作业指导书 Packaging work instruction | 包装 packaging | 100% | 每批Per Lot | ERP系统库存报表ERP & Warehouse report | 返工 rework |
| | | | 2 | 标签marking | | | | 目视Visual | | | | |
| | | | 3 | 装箱packing | | | | 目视Visual | | | | |

| 制程编号 Part / Process No. | 工序名称 Process Name | 机器;装置;夹具;工装Mfg. Machine,Device, Jig, Tools | 特性Characteristics | | | 特殊特性分类Special Char. Class | 方法Methods | | | | | 反应计划 Reaction Plan |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 编号 No. | 产品Product | 过程Process | | 产品过程规范公差 Product/ Process/Specification/Tolerance | 评价测量技术 Evaluation Measurement Technique | 样本Sample 容量Size | 样本Sample 频率Freq. | 控制方法 Control Method | |
| 80 | 出货检验OQC | 目视Visual | 1 | 外观Appearance | 出货检验OQC | | 检验指导书/订单 SIP/Order | 目视Visual | MIL-STD-105E(II) AQL=1.0 | 每批Per Lot | 出货检验报告 OQC Inspection report | 1标识隔离、异常上报 Sign, quarantine, anomaly report. |
| | | | 2 | 数量QTY | | | | | | | | |
| | | | 3 | 尺寸Dimension | | | 48.8±0.5 mm | 卡尺Caliper | MIL-STD-105E (AQL-1.0) | | | |
| | | | | | | | 32.1±0.5 mm | | | | | |
| | | | | | | | 31.4±0.5 mm | | | | | |
| | | | | | | | 23.6±0.5 mm | | | | | |
| | | | | | | | mm 针 | | | | | |
| | | | 4 | 保持力Retention force | | | ≥80N | 测力计 | | | | |
| | | | 5 | 接触电阻Contact resistance | | | 接触电阻≤10mΩ | 电阻仪 | | | | |
| | | | 6 | 膜厚Thickness | | | 镀层厚度 Sn：2.5～5um | 膜厚仪 | | | | |
| | | | 7 | 互换性 Interchangeability | | | 同一规格、型号的产品应能互配 | 实配 | | | | |
| | | | 8 | 可焊性Solderability | | | 温度245℃，2S，焊锡面积≥90% | 锡炉 | | | | |
| | | | 9 | 绝缘电阻Insulation resistance | | | 以500VDC/min,进行测试60S,绝缘电阻≥100mΩ | 绝缘电阻仪 | | | | |
| | | | 10 | 耐电压Dielectric strength | | | 以1000VDC/min,5mA进行测试60S,无闪格、飞弧、击穿 | 耐压仪 | | | | |
| | | | 11 | RoHS检测 | | | 符合RoHS要求 | X-RAY | | | | |
| | | | 12 | 盐雾测试Salt spray | | | 5%盐水浓度,连续喷雾16H,镀层无损伤 | 盐雾箱 | | | | |
| 90 | 运输 Shipment | 打包机/推车 Packer/Cart | 1 | 包装操作规范 Package SOP | | | 包装规范Packing Rule | 目视Visual | 每箱Every Carton | 每次Every Time | 装箱清单 Packing List | 重检Re- check |

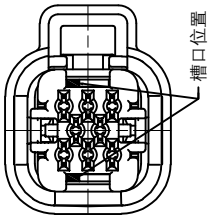
# C1.3系列连接器

| REV | SYM | REVISION RECORD | DR. | APPR. | DATE |
|---|---|---|---|---|---|
| A/0 | | 原 始 版 本 | | | A/0 |
| A/1 | | | | | |

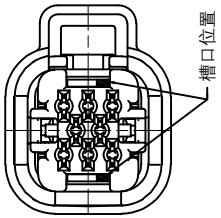


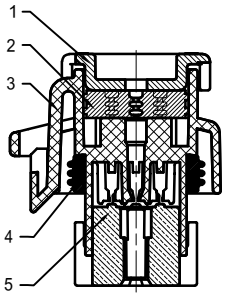



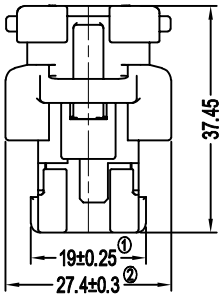
LHE PN:201300811163
型号:776286-1
颜色:黑色

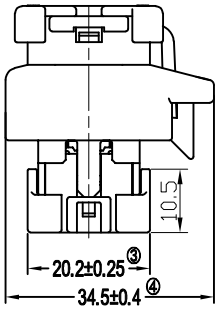



LHE PN:201300811164
型号:776286-2
颜色:本色

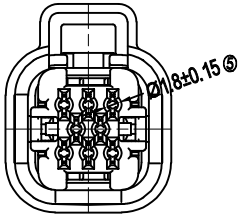


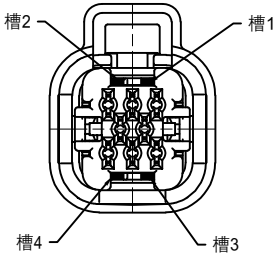




| 776286-1 | 201300811163 | 黑 | 2 4 |
|---|---|---|---|
| 776286-2 | 201300811164 | 白 | 1 3 |
| 型号 | LHE PN | 颜色 | 槽位置 |




| 序号 | 名称 | 颜色 | 材料 | 数量 | 附注 |
|---|---|---|---|---|---|
| 5 | 端子锁 | 红色 | PBT | 1 | |
| 4 | 橡胶圈 | 绿色 | 硅胶 | 1 | |
| 3 | 主体 | | PBT | 1 | |
| 2 | 橡胶堵 | 绿色 | 硅胶 | 1 | |
| 1 | 上盖 | 黑色 | PBT | 1 | |

主要技术参数
Main Specifications

1. 表面光洁,无明显缩坑与熔接痕;
2. 适配端子770520-1;
3. 工作环境温度:-40° - +120° ;
4. 未注要求符合QC/T417-2004相关标准;
5 ⑤代表关键尺寸,共5处;

| 未 注 公 差 | | | | |
|---|---|---|---|---|
| X.° ±3° | | | | |
| 0<XX≤5 | 5<XX≤20 | 20<XX≤50 | 50<XX≤100 | 100<XX |
| ±0.20 | ±0.30 | ±0.40 | ±0.80 | ±0.10 |
| 制 作 | 审 核 | 批 准 | | |

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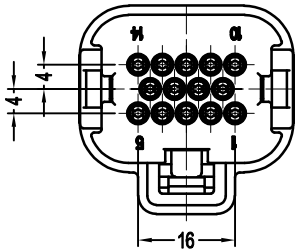
ZHEJIANG LIANHE ELECTRONICS CO.,LTD

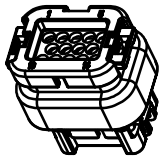
| 单位 | 比例 | Design Units | SIZE | 页码 |
|---|---|---|---|---|
| MM Only | —— | METRIC | A4 | |
| 材 料 | 图 号 | | | Part No. |
| 见图解 | 品 名 | 8孔母侧护套组装 | | |

旧底图总号
底图总号
签 字
日 期

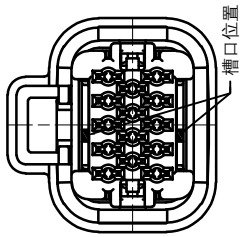
# C1.3系列连接器

| REV | SYM | REVISION RECORD | DR. | APPR. | DATE |
|---|---|---|---|---|---|
| A/0 | | 原 始 版 本 | | | A/0 |
| A/1 | | | | | |

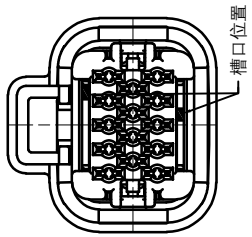


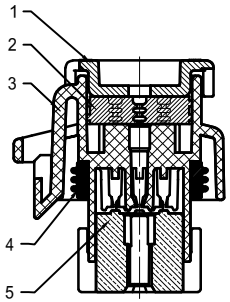



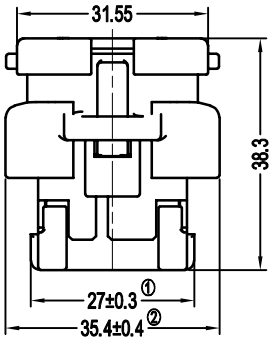
LHE PN:201301411165
型号:776273-1
颜色:黑色

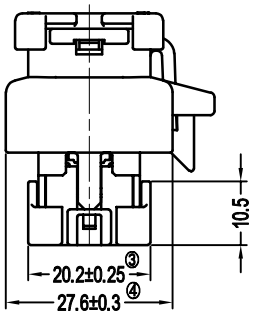



LHE PN:201301411166
型号:776273-2
颜色:本色

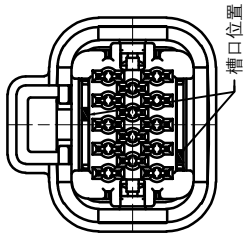


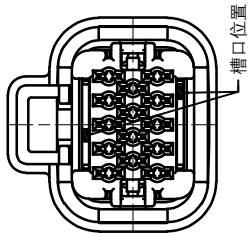



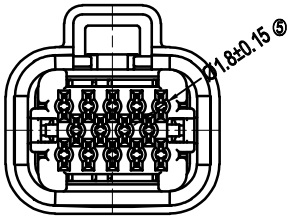



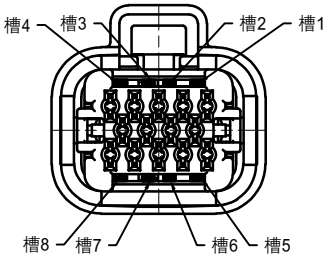

LHE PN:201301411167
型号:776273-4
颜色:灰色




LHE PN:201301411168
型号:776273-5
颜色:蓝色




| 序号 | 名称 | 颜色 | 材料 | 数量 | 附注 |
|---|---|---|---|---|---|
| 5 | 端子锁 | 红色 | PBT | 1 | |
| 4 | 橡胶圈 | 绿色 | 硅胶 | 1 | |
| 3 | 主体 | 黑色 | PBT | 1 | |
| 2 | 橡胶堵 | 绿色 | 硅胶 | 1 | |
| 1 | 上盖 | 黑色 | PBT | 1 | |

主要技术参数
Main Specifications

1. 表面光洁,无明显缩坑与熔接痕;
2. 适配端子770520-1;
3. 工作环境温度:-40° - +120° ;
4. 未注要求符合QC/T417-2004相关标准;
5 ⑤代表关键尺寸,共5处;

| 型号 | LHE PN | 颜色 | 槽位置 |
|---|---|---|---|
| 776273-1 | 201301411165 | 黑 | 3 7 |
| 776273-2 | 201301411166 | 白 | 1 6 |
| 776273-4 | 201301411167 | 灰 | 2 8 |
| 776273-5 | 201301411168 | 蓝 | 3 5 |

| 未注公差 | | | | |
|---|---|---|---|---|
| X.° ±3° | | | | |
| 0<XX≤5 | 5<XX≤20 | 20<XX≤50 | 50<XX≤100 | 100<XX |
| ±0.20 | ±0.30 | ±0.40 | ±0.80 | ±0.10 |

制 作 | 审 核 | 批 准

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ZHEJIANG LIANHE ELECTRONICS CO.,LTD

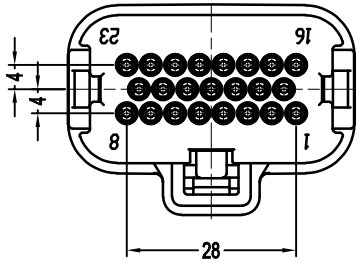
| 单位 | 比例 | Design Units | SIZE | 页码 |
|---|---|---|---|---|
| MM Only | —— | METRIC | A4 | |

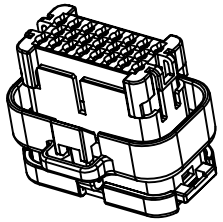
| 材 料 | 图 号 | | Part No. |
|---|---|---|---|
| 见图解 | 品 名 | 14孔母侧护套组装 | |

旧底图总号
底图总号
签 字
日 期

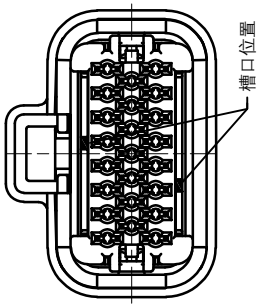
# C1.3系列连接器

| REV | SYM | REVISION RECORD | DR. | APPR. | DATE |
|---|---|---|---|---|---|
| A/0 | | 原 始 版 本 | | | A/0 |
| A/1 | | | | | |

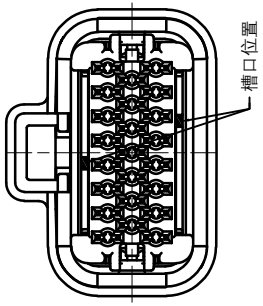


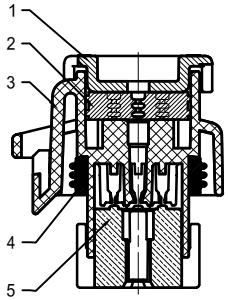



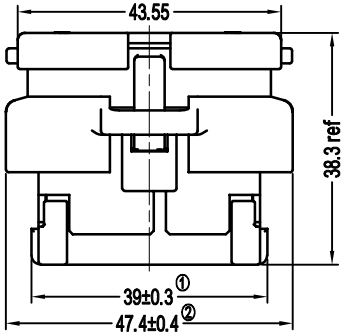
LHE PN:201302311169
型号:770680-1
颜色:黑色

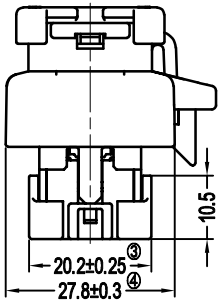



LHE PN:201302311170
型号:770680-2
颜色:本色

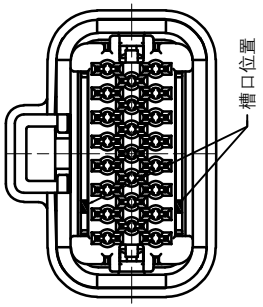


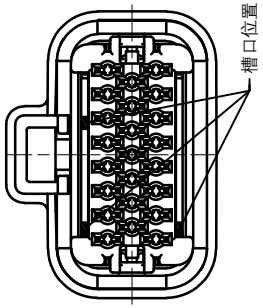



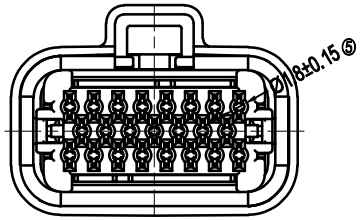




LHE PN:201302311171
型号:770680-4
颜色:灰色




LHE PN:201302311172
型号:770680-5
颜色:蓝色




| 序号 | 名称 | 颜色 | 材料 | 数量 | 附注 |
|---|---|---|---|---|---|
| 5 | 端子锁 | 红色 | PBT | 1 | |
| 4 | 橡胶圈 | 棕色 | 硅胶 | 1 | |
| 3 | 主体 | 黑色 | PBT | 1 | |
| 2 | 橡胶堵 | 绿色 | 硅胶 | 1 | |
| 1 | 上盖 | 黑色 | PBT | 1 | |

主要技术参数
Main Specifications

1. 表面光洁,无明显缩坑与熔接痕;
2. 适配端子770520-1;
3. 工作环境温度:-40° - +120° ;
4. 未注要求符合QC/T417-2004相关标准;
5 ⑤代表关键尺寸,共5处;

| 型号 | LHE PN | 颜色 |
|---|---|---|
| 770680-1 | 201302311169 | 黑 |
| 770680-2 | 201302311170 | 本 |
| 770680-4 | 201302311171 | 灰 |
| 770680-5 | 201302311172 | 蓝 |

| 未 注 公 差 | | | | |
|---|---|---|---|---|
| X.° ±3° | | | | |
| 0<XX≤5 | 5<XX≤20 | 20<XX≤50 | 50<XX≤100 | 100<XX |
| ±0.20 | ±0.30 | ±0.40 | ±0.80 | ±0.10 |

| 制 作 | 审 核 | 批 准 |
|---|---|---|
| | | |

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ZHEJIANG LIANHE ELECTRONICS CO.,LTD

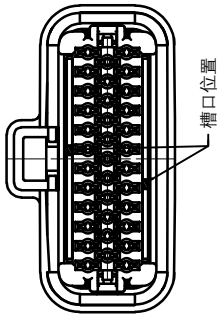
| 单位 | 比例 | Design Units | SIZE | 页码 |
|---|---|---|---|---|
| MM Only | —— | METRIC | A4 | |
| 材 料 | 图 号 | | | Part No. |
| 见图解 | 品 名 | 23孔母侧护套组装 | | |

旧底图总号
底图总号
签 字
日 期

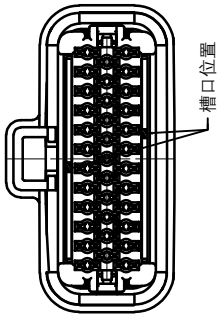
# C1.3系列连接器

| REV | SYM | REVISION RECORD | DR. | APPR. | DATE |
|---|---|---|---|---|---|
| A/0 | | 原 始 版 本 | | | A/0 |
| A/1 | | | | | |

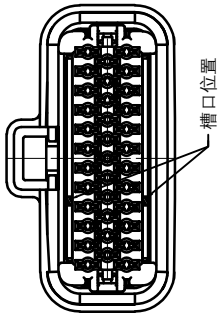
LHE PN:201303511173
型号:776164-1
颜色:黑色



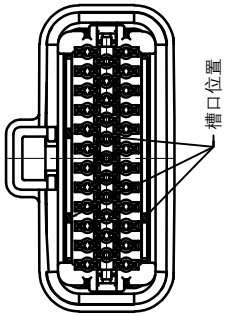

LHE PN:201303511174
型号:776164-2
颜色:本色



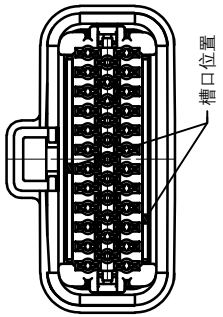

LHE PN:201303511175
型号:776164-4
颜色:灰色

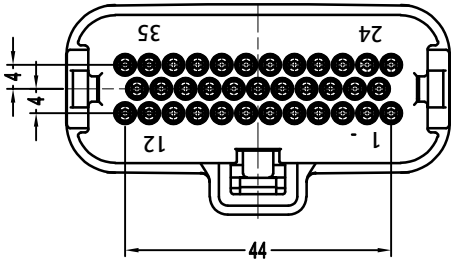


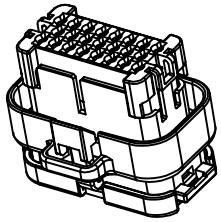

LHE PN:201303511176
型号:776164-5
颜色:蓝色

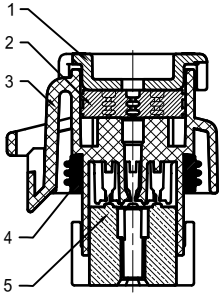


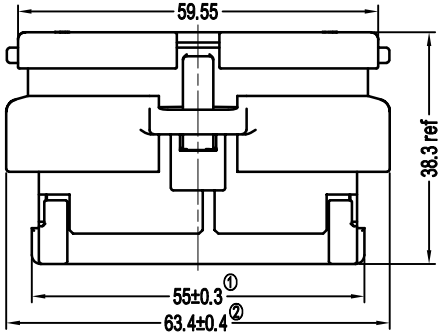

LHE PN:201303511177
型号:776164-6
颜色:橙色

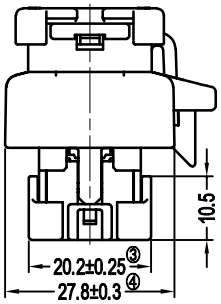


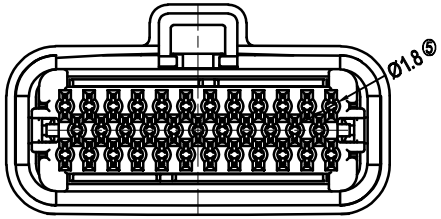






| 序号 | 名称 | 颜色 | 材料 | 数量 | 附注 |
|---|---|---|---|---|---|
| 5 | 端子锁 | 红色 | PBT | 1 | |
| 4 | 橡胶圈 | 棕色 | 硅胶 | 1 | |
| 3 | 主体 | 黑色 | PBT | 1 | |
| 2 | 橡胶堵 | 绿色 | 硅胶 | 1 | |
| 1 | 上盖 | 黑色 | PBT | 1 | |

主要技术参数
Main Specifications

1. 表面光洁,无明显缩坑与熔接痕;
2. 适配端子770520-1;
3. 工作环境温度:-40° - +120° ;
4. 未注要求符合QC/T417-2004相关标准;
5 ⑤代表关键尺寸,共5处;

| 型号 | LHE PN | 颜色 |
|---|---|---|
| 776164-1 | 201303511173 | 黑 |
| 776164-2 | 201303511174 | 本 |
| 776164-5 | 201303511175 | 灰 |
| 776164-5 | 201303511176 | 蓝 |
| 776164-6 | 201303511177 | 橙 |

| 未注公差 | | | | |
|---|---|---|---|---|
| X.° ±3° | | | | |
| 0<XX≤5 | 5<XX≤20 | 20<XX≤50 | 50<XX≤100 | 100<XX |
| ±0.20 | ±0.30 | ±0.40 | ±0.80 | ±0.10 |
| 制 作 | 审 核 | 批 准 | | |

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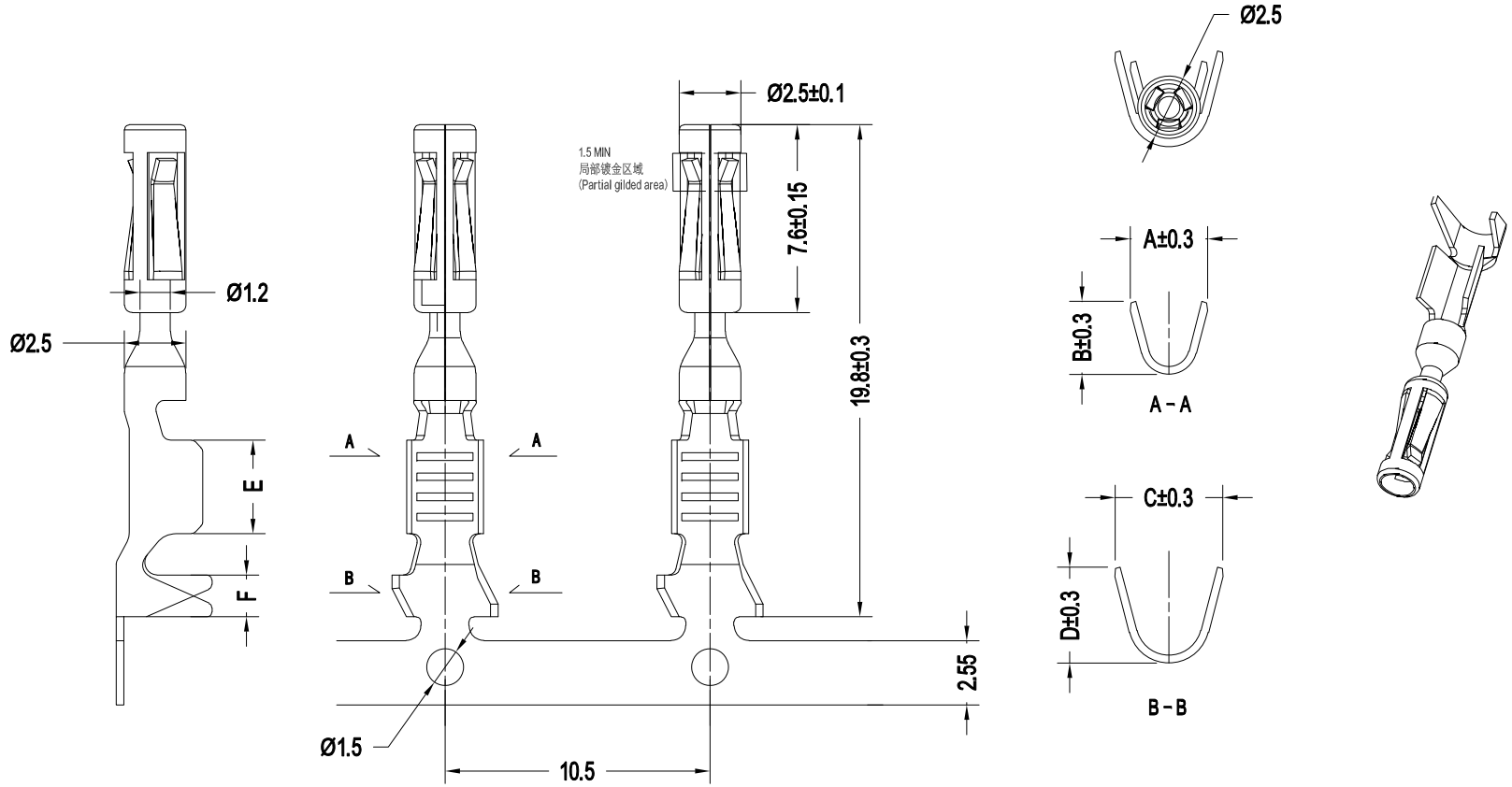
| 单位 | 比例 | Design Units | SIZE | 页码 |
|---|---|---|---|---|
| MM Only | —— | METRIC | A4 | |
| 材 料 | 图 号 | | | Part No. |
| 见图解 | 品 名 | 35孔母侧护套组装 | | |

旧底图总号
底图总号
签 字
日 期

# C1.3系列承认图面

| REV | SYM | REVISION RECORD | DR. | APPR. | DATE |
|---|---|---|---|---|---|
| A/0 | | 原 始 版 本 | | | A/0 |
| A/1 | | | | | |




| 序号 | 型号 | 零件号 | A | B | C | D | E | F | 线径($mm^2$) | 表面处理 | 附注 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 1-770520-1 | 6201320457 | 2.5 | 2.4 | 4.4 | 3.75 | 3.8 | 1.75 | 0.3-0.5 | 镀金 | |
| 3 | 770520-6 | 6201320458 | | | | | | | | 镀锡 | |
| 2 | 770520-3 | 6201321449 | 2.8 | 2.9 | 4.4 | 3.75 | 3.8 | 1.65 | 0.5-1.5 | 镀金 | |
| 1 | 770520-1 | 6201321253 | | | | | | | | 镀锡 | |

主要技术参数
Main Specifications

1. 表面光洁,毛刺小于0.03;
2. 工作环境温度:-40° - +120° ;

| 旧底图总号 | |
|---|---|
| 底图总号 | |
| 签 字 | |
| 日 期 | |

未 注 公 差

X.° ±3°

| 0 <XX ≤5 | 5 <XX ≤20 | 20 <XX ≤50 | 50 <XX ≤100 | 100<XX |
|---|---|---|---|---|
| ±0.2 | ±0.30 | ±0.40 | ±0.8 | ±0.1 |

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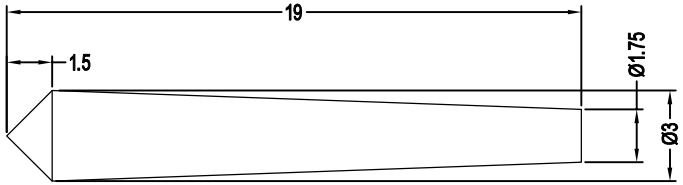
ZHEJIANG LIANHE ELECTRONICS CO.,LTD

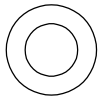
| 单位 | 比例 | Design Units | SIZE | 页码 |
|---|---|---|---|---|
| MM Only | —— | METRIC | A4 | |

| 制 作 | 审 核 | 批 准 | 材 料 | 图 号 | Part No. |
|---|---|---|---|---|---|
| | | | 见图解 | 品 名 | 母侧端子 |

# C1.3系列连接器

| REV | SYM | REVISION RECORD | DR. | APPR. | DATE |
|---|---|---|---|---|---|
| A/0 | | 原 始 版 本 | | | A/0 |
| A/1 | | | | | |



| 序号 | 型号 | LHE PN | 名称 | 颜色 | 材料 | 数量 | 附注 |
|---|---|---|---|---|---|---|---|
| 1 | 770678-1 | 503006 | 盲栓 | 自然色 | PA66 | | |

| 未 注 公 差 | | | | |
|---|---|---|---|---|
| X.° ±3° | | | | |
| 0<XX≤5 | 5<XX≤20 | 20<XX≤50 | 50<XX≤100 | 100<XX |
| ±0.20 | ±0.30 | ±0.40 | ±0.80 | ±0.10 |
| 制 作 | 审 核 | 批 准 | | |

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| 单位 | 比例 | Design Units | SIZE | 页码 |
|---|---|---|---|---|
| MM Only | —— | METRIC | A4 | |
| 材 料 | 图 号 | | | Part No. |
| 见图解 | 品 名 | 770678-1 | | |

旧底图总号

底图总号

签 字

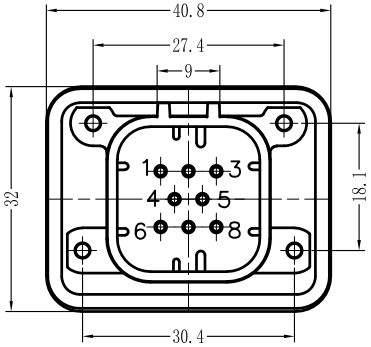
日 期

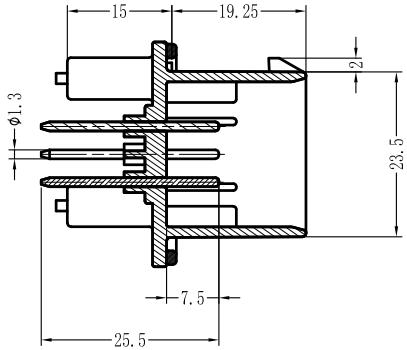
主要技术参数
Main Specifications

1. 表面光洁,无明显缩坑与熔接痕;
2. 未注要求符合QC/T417-2004相关标准;

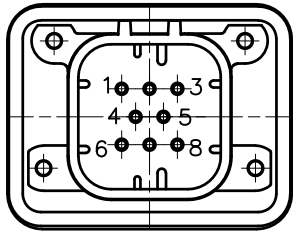
C1.3系列连接器

| REV | SYM | REVISION RECORD | DR. | APPR. | DATE |
|---|---|---|---|---|---|
| A/0 | | 原 始 版 本 | | | A/0 |
| A/1 | | | | | |

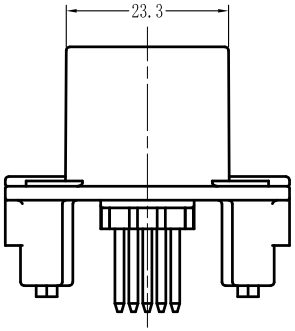


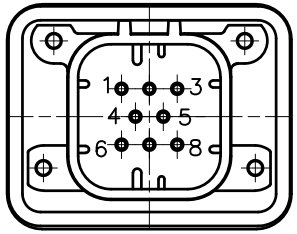

黑 色




776276-1

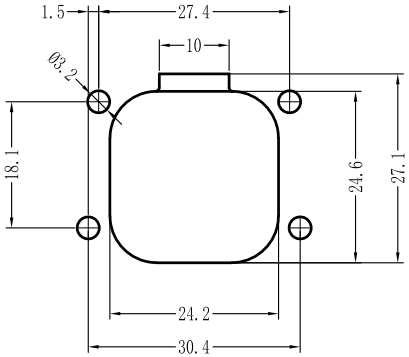


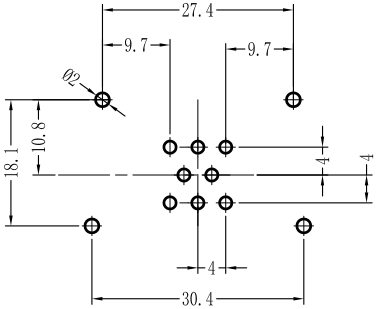

白 色




776276-2

适用线路板安装示意




| LHE PN | Part No. | HEADER | | | | |
|---|---|---|---|---|---|---|
| | | HOUSING MATERIAL | COLOR | GASKET MATERIAL | CONTACT MATERIAL | CONTACT FINISH |
| 301300811178 | 776276-1 | PBT-GF V0 | BLACK | SILICONE | H65 | TIN |
| 301300811179 | 776276-2 | | WHITE | | | TIN |

未 注 公 差

X.° ±0.3°

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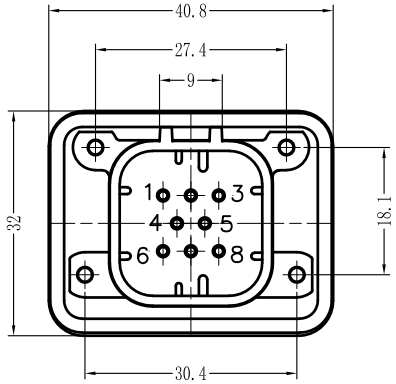
| 0<XX≤5 | 5<XX≤20 | 20<XX≤50 | 50<XX≤100 | XX>100 | 单位 | 比例 | Design Units | SIZE | 页码 |
|---|---|---|---|---|---|---|---|---|---|
| ±0.20 | ±0.30 | ±0.40 | ±0.80 | ±0.10 | MM Only | —— | METRIC | A4 | |

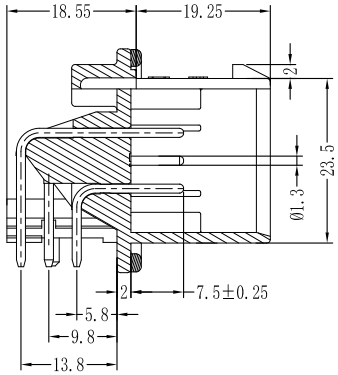
| 制 作 | 审 核 | 批 准 | 材 料 | 图 号 | Part No. |
|---|---|---|---|---|---|
| | | | 见图解 | 品 名 | 8P直针插座 |

| 旧底图总号 |
|---|
| |
| 底图总号 |
| |
| 签 字 |
| |
| 日 期 |
| |

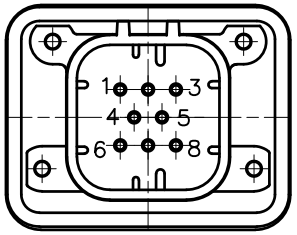
# C1.3系列连接器

| REV | SYM | REVISION RECORD | DR. | APPR. | DATE |
|---|---|---|---|---|---|
| A/0 | | 原 始 版 本 | | | A/0 |
| A/1 | ① | 修改尺寸 | SL | | 2022.06.30 |



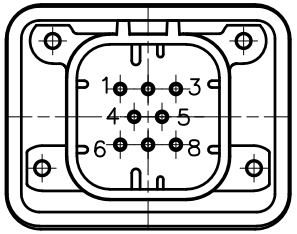




黑 色

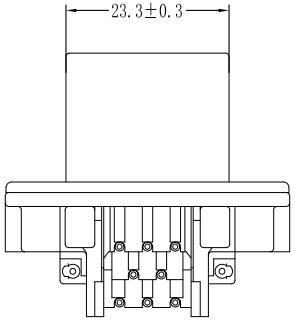


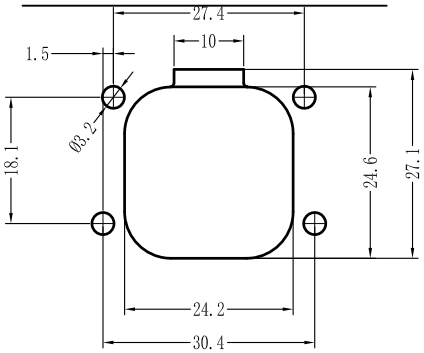

776280-1

白 色

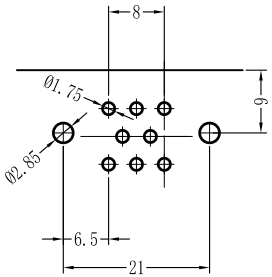



776280-2




适用线路板安装示意




| LHE PN | Part No. | HEADER | | | | |
|---|---|---|---|---|---|---|
| | | HOUSING | COLOR | GASKET | CONTACT | |
| | | MATERIAL | | MATERIAL | MATERIAL | FINISH |
| 301300821193 | 776280-1 | PBT-GF V0 | BLACK | SILICONE | H65 | TIN |
| 301300821194 | 776280-2 | | WHITE | | | TIN |

未 注 公 差

X.° ±0.3°

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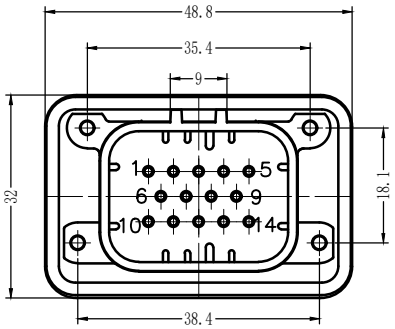
| 0<XX≤5 | 5<XX≤20 | 20<XX≤50 | 50<XX≤100 | XX>100 | 单位 | 比例 | Design Units | SIZE | 页码 |
|---|---|---|---|---|---|---|---|---|---|
| ±0.20 | ±0.30 | ±0.40 | ±0.80 | ±0.10 | MM Only | —— | METRIC | A4 | |

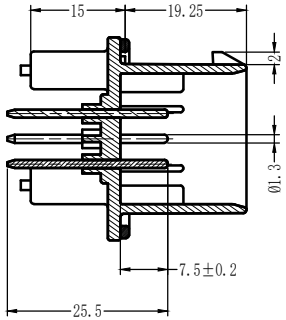
| 制 作 | 审 核 | 批 准 | 材 料 | 图 号 | Part No. |
|---|---|---|---|---|---|
| | | | 见图解 | 品 名 | 8P弯针插座 |

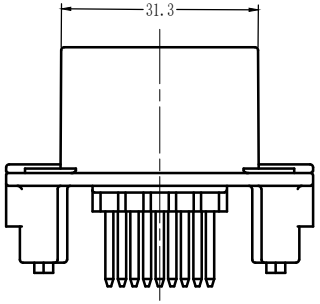
| 旧底图总号 |
|---|
| |
| 底图总号 |
| |
| 签 字 |
| |
| 日 期 |

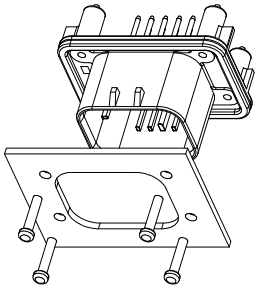
# C1.3系列连接器

| REV | SYM | REVISION RECORD | DR. | APPR. | DATE |
|---|---|---|---|---|---|
| A/0 | | 原 始 版 本 | | | 20190517 |
| A/1 | | | | | |

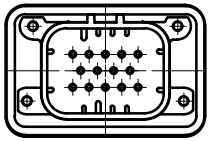


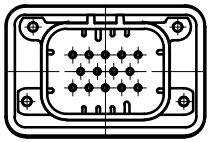



白色 WHITE



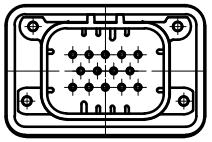
776262-2

灰色 GRAY

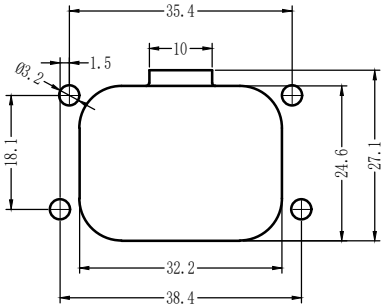


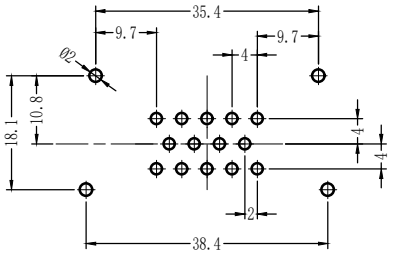
776262-4

蓝色 BLUE



776262-5




适用线路板安装示意

| LHE PN | Part No. | HEADER HOUSING MATERIAL | COLOR | GASKET MATERIAL | CONTACT MATERIAL | CONTACT FINISH |
|---|---|---|---|---|---|---|
| 301301411180 | 776262-1 | PBT | BLACK | SILICONE | BRASS | TIN |
| 301301411181 | 776262-2 | | WHITE | | | TIN |
| 301301411182 | 776262-4 | | GRAY | | | TIN |
| 301301411183 | 776262-5 | | BLUE | | | TIN |
| 301301411180G | 1-776262-1 | | BLACK | | | GOLD |
| 301301411181G | 1-776262-2 | | WHITE | | | GOLD |
| 301301411182G | 1-776262-4 | | GRAY | | | GOLD |
| 301301411183G | 1-776262-5 | | BLUE | | | GOLD |

| 未注公差 | | | | 单位 | 比例 | Design Units | SIZE | 页码 |
|---|---|---|---|---|---|---|---|---|
| X.° ±3° X.X° ±0.5° | | | | | | | | |
| ≤5 | >5 | >20 | >50 | | | | | |
| ±0.3 | ±0.4 | ±0.5 | ±0.8 | MM Only | —— | METRIC | A4 | |
| 制 作 | 审 核 | 批 准 | | 材 料 | 图 号 | | | Part No. |
| | | | | 见图解 | 品 名 | 14P直针插座 | | |

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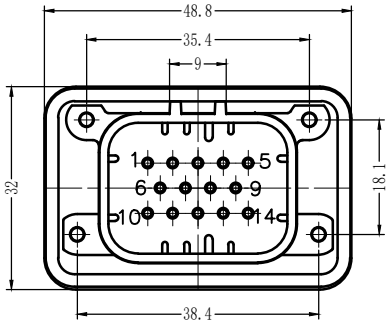
底图总号

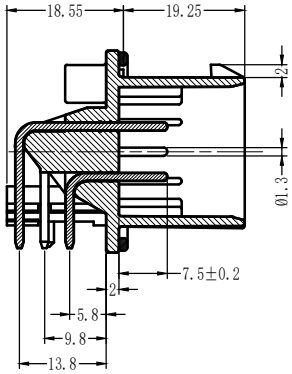
签 字

日 期

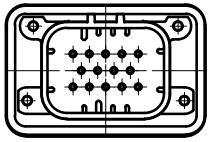
# C1.3系列连接器

| REV | SYM | REVISION RECORD | DR. | APPR. | DATE |
|---|---|---|---|---|---|
| A/0 | | 原 始 版 本 | | | 20190517 |
| A/1 | | | | | |



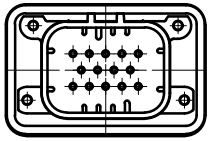




白色 WHITE



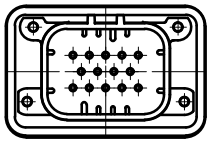
776267-2

灰色 GRAY

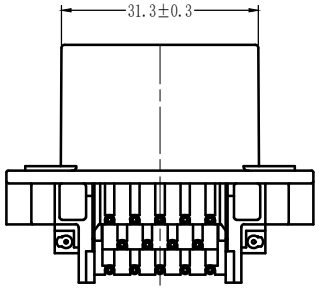


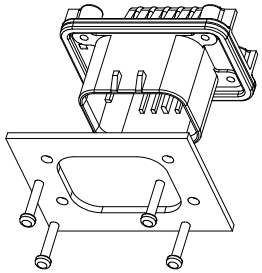
776267-4

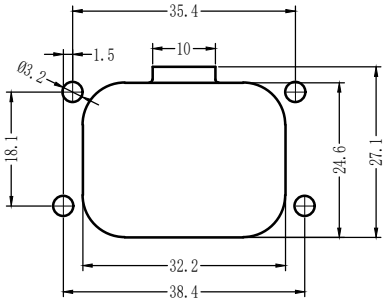
蓝色 BLUE

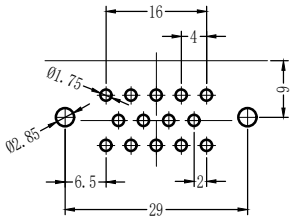


776267-5






适用线路板安装示意

| LHE PN | Part No. | HEADER HOUSING MATERIAL | COLOR | GASKET MATERIAL | CONTACT MATERIAL | CONTACT FINISH |
|---|---|---|---|---|---|---|
| 301301421195 | 776267-1 | PBT | BLACK | SILICONE | BRASS | TIN |
| 301301421196 | 776267-2 | | WHITE | | | TIN |
| 301301421197 | 776267-4 | | GRAY | | | TIN |
| 301301421198 | 776267-5 | | BLUE | | | TIN |
| 3013014211956 | 1-776267-1 | | BLACK | | | GOLD |
| 3013014211966 | 1-776267-2 | | WHITE | | | GOLD |
| 3013014211976 | 1-776267-4 | | GRAY | | | GOLD |
| 3013014211986 | 1-776267-5 | | BLUE | | | GOLD |

| 未注公差 | | | | 单位 | 比例 | Design Units | SIZE | 页码 |
|---|---|---|---|---|---|---|---|---|
| X.° ±3° X.X° ±0.5° | | | | | | | | |
| ≤5 | >5 | >20 | >50 | MM Only | —— | METRIC | A4 | |
| ±0.3 | ±0.4 | ±0.5 | ±0.8 | | | | | |
| 制 作 | 审 核 | 批 准 | | 材 料 | 图 号 | | | Part No. |
| | | | | 见图解 | 品 名 | 14P弯针插座 | | |

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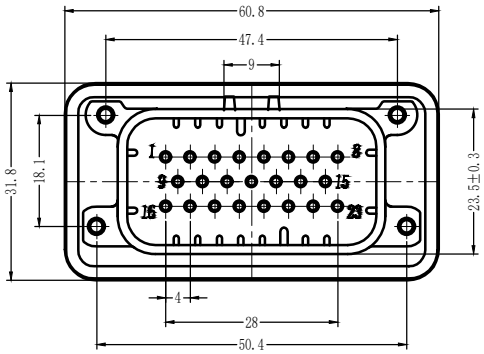
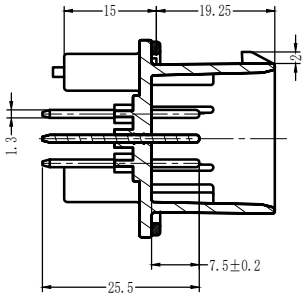
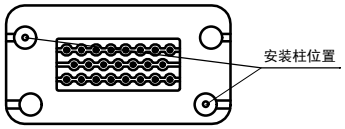
# C1.3系列连接器

| REV | SYM | REVISION RECORD | DR. | APPR. | DATE |
|---|---|---|---|---|---|
| A/0 | | 原 始 版 本 | | | 20191203 |
| A/1 | | | | | |

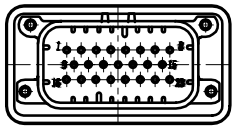


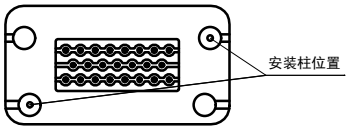




适用于776228-1 776228-5

白色 WHITE

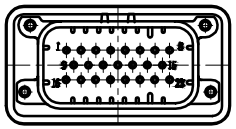


776228-2

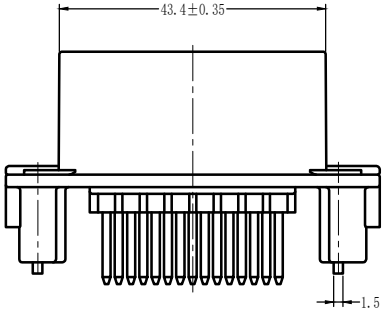


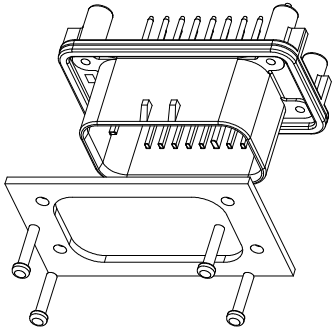

适用于776228-2 776228-4

灰色 GRAY

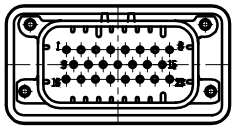


776228-4

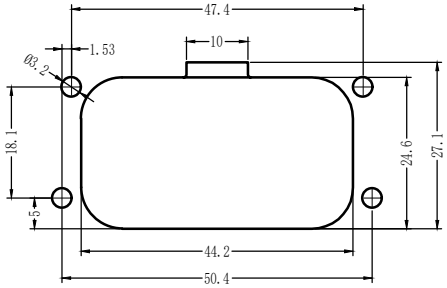


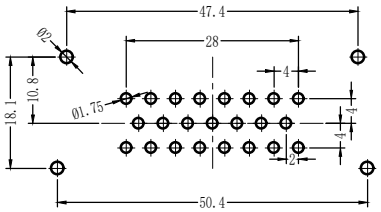



蓝色 BLUE



776228-5




适用线路板安装示意

| LHE PN | Part No. | HEADER HOUSING MATERIAL | COLOR | GASKET MATERIAL | CONTACT MATERIAL | CONTACT FINISH |
|---|---|---|---|---|---|---|
| 301302311184 | 776228-1 | PBT | BLACK | SILICONE | BRASS | TIN |
| 301302311185 | 776228-2 | | WHITE | | | TIN |
| 301302311186 | 776228-4 | | GRAY | | | TIN |
| 301302311187 | 776228-5 | | BLUE | | | TIN |
| 3013023111846 | 1-776228-1 | | BLACK | | | GOLD |
| 3013023111856 | 1-776228-2 | | WHITE | | | GOLD |
| 3013023111866 | 1-776228-4 | | GRAY | | | GOLD |
| 3013023111876 | 1-776228-5 | | BLUE | | | GOLD |

| 未 注 公 差 | | | | |
|---|---|---|---|---|
| X.° ±3° | | | | |
| 0<X≤5 | 5<X≤20 | 20<X≤50 | 50<X≤100 | 100<X |
| ±0.2 | ±0.3 | ±0.4 | ±0.8 | ±0.1 |

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| 单位 | 比例 | Design Units | SIZE | 页码 |
|---|---|---|---|---|
| MM Only | —— | METRIC | A4 | |

| 制 作 | 审 核 | 批 准 | 材 料 | 图 号 | Part No. |
|---|---|---|---|---|---|
| | | | 见图解 | 品 名 | 23P直针插座 |

旧底图总号

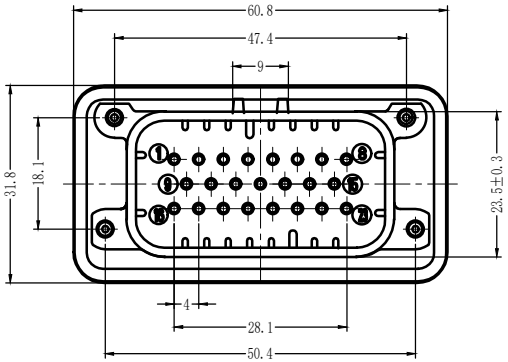
底图总号

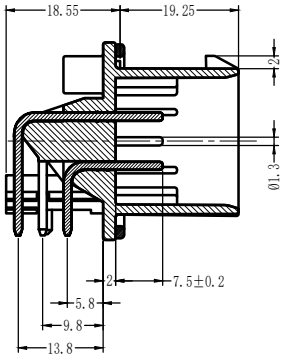
签 字

日 期

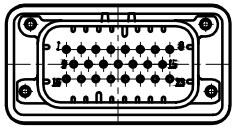
# C1.3系列连接器

| REV | SYM | REVISION RECORD | DR. | APPR. | DATE |
|---|---|---|---|---|---|
| A/0 | | 原 始 版 本 | | | 20191203 |
| A/1 | | | | | |



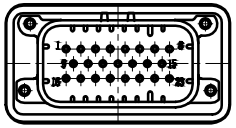




白色 WHITE



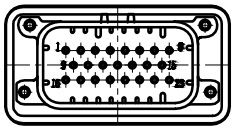
776087-2

灰色 GRAY

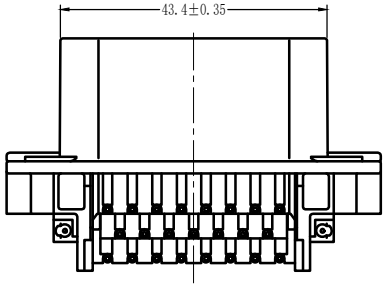


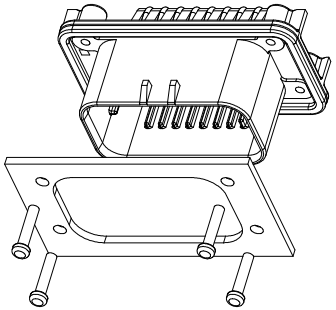
776087-4

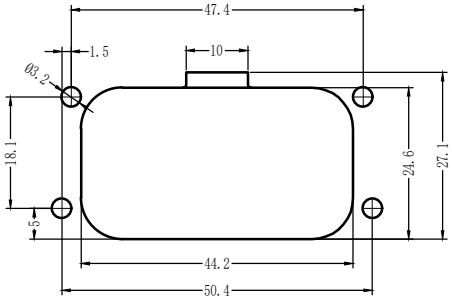
蓝色 BLUE

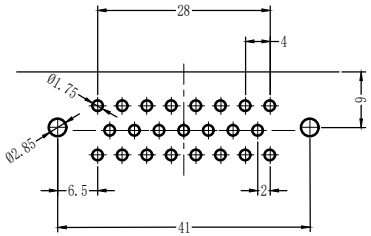


776087-5






适用线路板安装示意

| LHE PN | Part No. | HEADER HOUSING MATERIAL | COLOR | GASKET MATERIAL | CONTACT MATERIAL | CONTACT FINISH |
|---|---|---|---|---|---|---|
| 301302321199 | 776087-1 | PBT | BLACK | SILICONE | BRASS | TIN |
| 301302321200 | 776087-2 | | WHITE | | | TIN |
| 301302321201 | 776087-4 | | GRAY | | | TIN |
| 301302321202 | 776087-5 | | BLUE | | | TIN |
| 3013023211996 | 1-776087-1 | | BLACK | | | GOLD |
| 3013023212006 | 1-776087-2 | | WHITE | | | GOLD |
| 3013023212016 | 1-776087-4 | | GRAY | | | GOLD |
| 3013023212026 | 1-776087-5 | | BLUE | | | GOLD |

未 注 公 差

X.° ±3°

| 0<X≤5 | 5<X≤20 | 20<X≤50 | 50<X≤100 | 100<X |
|---|---|---|---|---|
| ±0.2 | ±0.3 | ±0.4 | ±0.8 | ±0.1 |

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ZHEJIANG LIANHE ELECTRONICS CO.,LTD

| 单位 | 比例 | Design Units | SIZE | 页码 |
|---|---|---|---|---|
| MM Only | —— | METRIC | A4 | |

| 制 作 | 审 核 | 批 准 | 材 料 | 图 号 | Part No. |
|---|---|---|---|---|---|
| | | | 见图解 | 品 名 | 23P弯针插座 |

旧底图总号

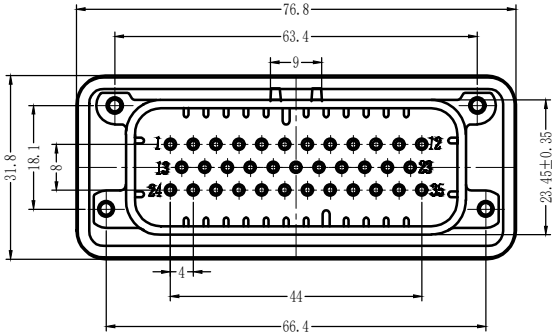
底图总号

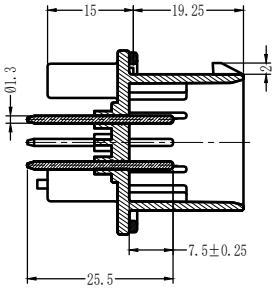
签 字

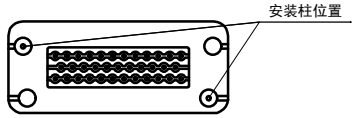
日 期

# C1.3系列连接器

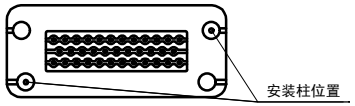
| REV | SYM | REVISION RECORD | DR. | APPR. | DATE |
|---|---|---|---|---|---|
| A/0 | | 原 始 版 本 | | | 20191203 |
| A/1 | | | | | |



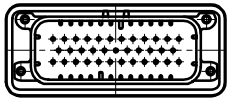




适用于776231-1 776231-4 776231-6



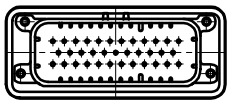

适用于776231-2 776231-5

白色 WHITE



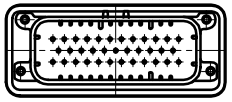
776231-2

灰色 GRAY



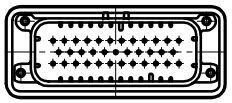
776231-4

蓝色 BLUE

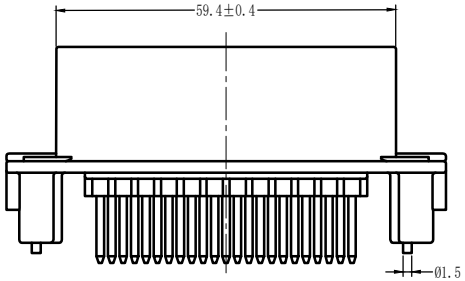


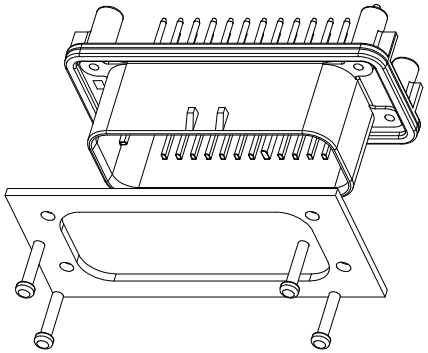
776231-5

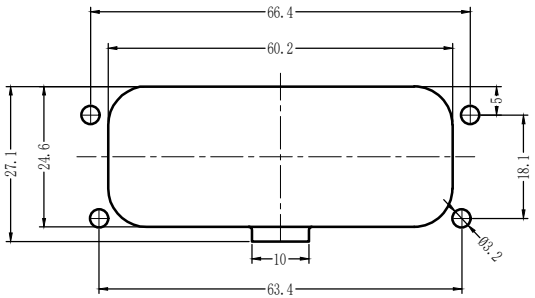
橙色 ORANGE

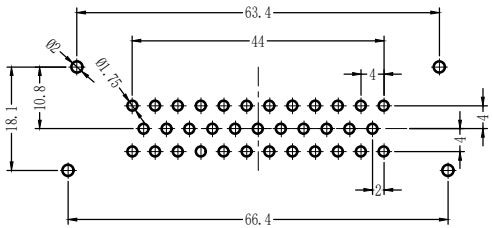


776231-6






适用线路板安装示意

| LHE PN | Part No. | HEADER | | | | |
|---|---|---|---|---|---|---|
| | | HOUSING MATERIAL | COLOR | GASKET MATERIAL | CONTACT MATERIAL | CONTACT FINISH |
| 301303511188 | 776231-1 | PBT | BLACK | SILICONE | BRASS | TIN |
| 301303511189 | 776231-2 | | WHITE | | | TIN |
| 301303511190 | 776231-4 | | GRAY | | | TIN |
| 301303511191 | 776231-5 | | BLUE | | | TIN |
| 301303511192 | 776231-6 | | ORANGE | | | TIN |
| 3013035111886 | 1-776231-1 | | BLACK | | | GOLD |
| 3013035111896 | 1-776231-2 | | WHITE | | | GOLD |
| 3013035111906 | 1-776231-4 | | GRAY | | | GOLD |
| 3013035111916 | 1-776231-5 | | BLUE | | | GOLD |
| 3013035111926 | 1-776231-6 | | ORANGE | | | GOLD |

未 注 公 差

X.° ±3°

| 0<X≤5 | 5<X≤20 | 20<X≤50 | 50<X≤100 | 100<X |
|---|---|---|---|---|
| ±0.2 | ±0.3 | ±0.4 | ±0.8 | ±0.1 |

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ZHEJIANG LIANHE ELECTRONICS CO.,LTD

| 单位 | 比例 | Design Units | SIZE | 页码 |
|---|---|---|---|---|
| MM Only | —— | METRIC | A4 | |

| 制 作 | 审 核 | 批 准 | 材 料 | 图 号 | Part No. |
|---|---|---|---|---|---|
| | | | 见图解 | 品 名 | 35P直针插座 |

旧底图总号

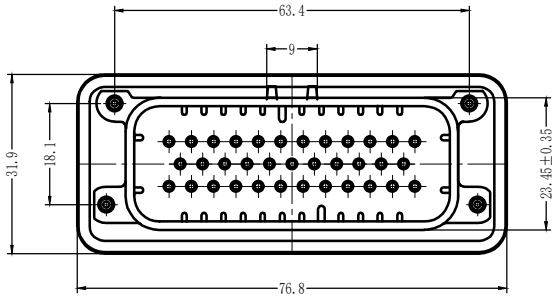
底图总号

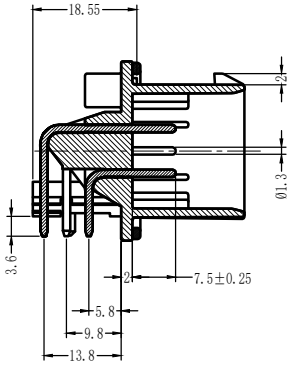
签 字

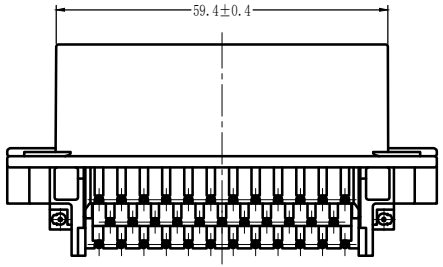
日 期

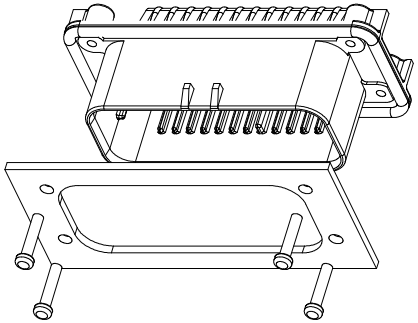
# C1.3系列连接器

| REV | SYM | REVISION RECORD | DR. | APPR. | DATE |
|---|---|---|---|---|---|
| A/0 | | 原 始 版 本 | | | 20190517 |
| A/1 | | | | | |

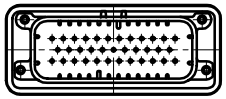


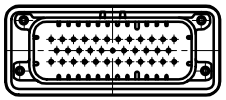



白色 WHITE



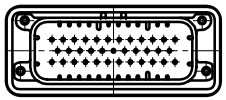
776163-2

灰色 GRAY



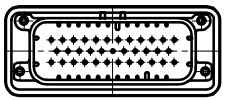
776163-4

蓝色 BLUE

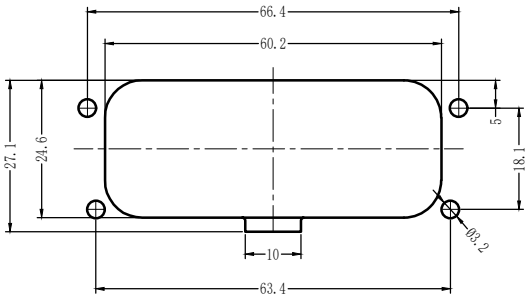


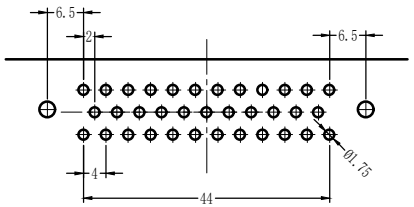
776163-5

橙色 ORANGE



776163-6




适用线路板安装示意

| LHE PN | Part No. | HEADER | | | | |
|---|---|---|---|---|---|---|
| | | HOUSING MATERIAL | COLOR | GASKET MATERIAL | CONTACT MATERIAL | CONTACT FINISH |
| 301303521203 | 776163-1 | PBT | BLACK | SILICONE | BRASS | TIN |
| 301303521204 | 776163-2 | | WHITE | | | TIN |
| 301303521205 | 776163-4 | | GRAY | | | TIN |
| 301303521206 | 776163-5 | | BLUE | | | TIN |
| 301303521207 | 776163-6 | | ORANGE | | | TIN |
| 3013035212036 | 1-776163-1 | | BLACK | | | GOLD |
| 3013035212046 | 1-776163-2 | | WHITE | | | GOLD |
| 3013035212056 | 1-776163-4 | | GRAY | | | GOLD |
| 3013035212066 | 1-776163-5 | | BLUE | | | GOLD |
| 3013035212076 | 1-776163-6 | | ORANGE | | | GOLD |

| 未 注 公 差 | | | | |
|---|---|---|---|---|
| X.° ±3° | | | | |
| 0<X≤5 | 5<X≤20 | 20<X≤50 | 50<X≤100 | 100<X |
| ±0.2 | ±0.3 | ±0.4 | ±0.8 | ±0.1 |

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ZHEJIANG LIANHE ELECTRONICS CO.,LTD

| 单位 | 比例 | Design Units | SIZE | 页码 |
|---|---|---|---|---|
| MM Only | —— | METRIC | A4 | |

| 制 作 | 审 核 | 批 准 | 材 料 | 图 号 | Part No. |
|---|---|---|---|---|---|
| | | | 见图解 | 品 名 | 35P弯针插座 |

旧底图总号

底图总号

签 字

日 期

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ZHEJIANG LIANHE ELECTRONICS CO.,LTD

# 产品规格书

PRODUCT SPECIFICAION

版本号
Version Number: A

产品编码
Part Number:

## ■ 规格 Specifications

◆1、极数 Poles: 8P/14P/23P/35P
◆2、额定电流 Current rating: 8.0A Max
◆3、额定电压 Voltage rating: 250V
◆4、温度范围 Temperature range: -40℃ to +105℃
◆5、接触电阻 Contact resistance: ≤10mΩ
◆6、绝缘电阻 Insulation resistance: ≥100MΩ
◆7、耐电压 Withstand voltage: 1000V AC/minute
◆8、适用线规 Applicable wire: 16~20 AWG

| 产品性能测试 Performance test | | | |
|---|---|---|---|
| | 项目 Item | 测试条件 Test Condition | 规格要求 Requirement |
| 1 | 外观<br>Appearance | 目测 Visual by eye<br>视力 Light: ＞1.0<br>照明 Lamp: 200～300Lx<br>目测距离 Space: 0.3～0.5m | 1.塑料件表面应无明显疤痕、凹陷、开裂及影响使用的变形。<br>Plastic part:smooth and flat surface without discolor,broken,crack distortion defects is acceptable.<br>2.金属件表面无锈蚀、氧化、无明显的机械损伤等缺陷。<br>Metal part:btight and even surface without rust,oxide,fog and obvious physical damage defects is acceptable.<br>3.导线表面清洁、无破损等缺陷，印字及标志清晰。<br>Wire:clearing surface without discolor,broken defects,indistinct words and mark is acceptable. |
| 2 | 接触电阻<br>Contact Resistance | 插合连接器,用小功率电路进行测试。<br>Mate connectors,measure by dry circuit. | 10mΩ MAX |
| 3 | 绝缘电阻<br>Insulation Resistance | 在相邻接触件之间或地线之间，用500V DC电压进行测试。<br>Apply 500V DC between adjacent terminal or ground. | 100MΩ MIN |
| 4 | 耐电压<br>Dielectric Strength | 相邻接触件之间或地线之间施加50Hz 1000V AC(有效值),漏电流1mA的电压作用，时间1min。<br>Mate connectors, apply 1000V AC for 1 minute between adjacent terminal or ground. | 无击穿和飞弧现象<br>No Breakdown |

# 产品规格书

PRODUCT SPECIFICAION

版本号
Version Number: A

产品编码
Part Number:

| 产品性能测试 Performance test | | | | |
|---|---|---|---|---|
| | 项目 Item | 测试条件 Test Condition | 规格要求 Requirement | |
| 5 | 压着部位抗张强度<br>Crimping Pull Out Force | 在试验装置夹头中固定测试样品，在连接的轴线方向施加张力;速度不大于25mm/min。<br>Fix the crimped terminal,apply axial pull out force on the wire at the speed rate of not more 25mm/min. | 16AWG<br>18AWG<br>20AWG | 75N Min<br>60N Min<br>45N Min |
| 6 | 壳体/端子固定力<br>Terminal/Housing Retention Force | 固定连接器或测力计，在连接器轴线方向施加规定的拉力;速度不大于25mm/min。<br>Apply axial pull out force at the speed rate of not more 25mm/min on the pin assembled in the housing. | 80N(With wedge lock) | |
| 7 | 针的固定力<br>Pin Retention Force | 固定连接器或测力计，在连接器轴线方向对针施加规定的推力;速度不大于25mm/min。<br>Apply axial push out force at the speed rate of not more 25mm/minute on the terminal assembled in the base. | 插针不能被取出。<br>Contact retention.<br>Contacts shall not dislodge. | |
| 8 | 可焊性<br>Solderability | 把测试样品需要焊接的部位浸入焊锡炉中(锡炉温度245℃±5℃)2±0.5秒钟。<br>Soldering time: 2±0.5 second<br>Solder Temperature:245℃±5℃ | 上锡率≥90%<br>90% of immersed area must show no voids,pin holes | |
| 9 | 耐焊接热<br>Resistance to Soldering Heat | 把测试样品需要焊接的部位浸入焊锡炉中(锡炉温度260℃)；2±0.5秒钟后在正常的条件下恢复1小时。<br>Soldering time: 2±0.5 second<br>Solder Temperature:260℃ | 外观<br>Appearance | 无损伤<br>No Damage |
| 10 | 耐高温<br>Heat Resistance | 连接器配合后，于85℃±2℃的空气中放置96小时，然后再回到室温中放置1～2h小时测定<br>Mated connectors are exposed to a temperature of 85℃±2℃ for 96 hours. | 外观<br>Appearance<br>接触电阻<br>LLCR | 无损伤<br>No Damage<br>20mΩ Max |
| 11 | 耐低温<br>Clod Resistance | 连接器配合后，于-25℃±2℃的空气中放置96小时，然后再回到室温中放置1～2h小时测定<br>Mated connectors are exposed to a temperature of -25℃±2℃for 96 hours. | 外观<br>Appearance<br>接触电阻<br>LLCR | 无损伤<br>No Damage<br>20mΩ Max |
| 12 | 温度上升<br>Temperature Rise | 插合连接器,通以最大允许电流。<br>Carring rated current load. | 温度最大上升<br>Temperature Rise | 30℃ MAX |

# 产品规格书

PRODUCT SPECIFICAION

版本号
Version Number: A

产品编码
Part Number:

| 产品性能测试 Performance test | | | | |
|---|---|---|---|---|
| | 项目 Item | 测试条件 Test Condition | 规格要求 Requirement | |
| 13 | 恒定湿热 Humidity | 温度：40±2℃<br>相对湿度：90%～95%<br>搁置时间：96小时，取出恢复2h后检查<br>Temperature：40±2℃<br>Relative Humidity：90%～95%<br>Duration：96 hours | 外观 Appearance | 无损伤 No Damage |
| | | | 耐电压 Dielectric Strength | 1000V,AC /minute |
| | | | 绝缘电阻 Insulation Resistance | 100MΩ MIN |
| | | | 接触电阻 LLCR | 20mΩ MAX |
| 14 | 温度循环 Temperature cycle | 把测试样品放入高低温试验箱中,按下列步骤调试温度:<br>a)在-25℃±2℃的恒温条件下放置0.5小时;<br>b)在85℃±2℃的恒温条件下放置0.5小时;<br>从a)到b)为一个循环周期,共进行5个循环。恢复1h后检查。状态转换时间不多于1小时。<br>Mated connectors are exposed to 5 cycles of:<br>a)-25℃±2℃ 0.5hour<br>b)+85℃±2℃ 0.5hour | 外观 Appearance | 无损伤 No Damage |
| | | | 耐电压 Dielectric Strength | 1000V,AC /minute |
| | | | 绝缘电阻 Insulation Resistance | 100MΩ MIN |
| | | | 接触电阻 LLCR | 20mΩ MAX |
| 15 | 机械振动 Vibration | 插合连接器，串联在一直流电源上，电流100mA;并模拟正常工作状态,振频为10～55Hz、振幅1.5mm；55～500Hz、加速度50m/s$^2$,每一轴线扫频循环次数10次、2小时。<br>Frequency：10～55Hz<br>Amplitude：±1.5mm<br>Frequency：＞55～500Hz<br>Acceleration：50m/s$^2$<br>Duration：2 hours in each X,Y,Z axes | 外观 Appearance | 无损伤 No Damage |
| | | | 接触电阻 Contact Resistance | 20mΩ MAX |
| | | | 中断 Intermittence | 1μsec MAX |
| 16 | 机械寿命 Repeated insertion/ withdrawal | 以每分钟插拔10次的速率，插拔50次。<br>When mated up to 50 cycles repeatedly by the rate of 10 cycles per minute. | 外观 Appearance | 无损伤 No Damage |
| | | | 耐电压 Dielectric Strength | 1000V,AC /minute |
| | | | 绝缘电阻 Insulation | 100MΩ MIN |
| | | | 接触电阻 Contact Resistance | 20mΩ MAX |

# 产品规格书

PRODUCT SPECIFICAION

版本号
Version Number: A

产品编码
Part Number:_____

| 产品性能测试 Performance test | | | | | |
|---|---|---|---|---|---|
| | 项目 Item | 测试条件<br>Test Condition | 规格要求 Requirement | | |
| 17 | 盐雾<br>Salt Spray | 把先冲后镀的测试样品从试验箱顶悬挂下来，采用浓度为5%±1(质量百分比)的氯化钠溶液，连续雾化16小时，试验后用流动的蒸馏水轻轻洗去表面沉积物。在常温常驻湿条件下恢复1～2小时。<br>16 hour exposure to a saltspray from the 5%±1 solution. | 外观无损伤(五金件应无露出底金属的严重锈蚀；使用预镀的型材，其落料面允许有不影响其性能的轻微腐蚀。)<br>Appearance:No Damage(No erosion with material exposed.And with plating material,slight erosion on the cutting surface acceptable) | | |
| 18 | 插入力与拔出力<br>Insertion and Withdrawal Force | 相配的接触件以1mm/s～5mm/s的速度沿接插器轴线方向插入和拔出。<br>Insertion and withdraw contact at the speed rate of 1mm/s～5mm/s. | | 插入力（最大值）<br>Insertion (Max) | 拔出力（最小值）<br>Withdrawal (Min) |
| | | | Single PIN | ≤20N | ≥100N |

制订 日期
Edit:_____ Date:_____

审核 日期
Check:_____ Date:_____

批准 日期
Approval:_____ Date:_____

# 检测报告(Test Report)

**报告编号(Report No.)：WTF21H03018118C-2** 日期(Date)：2021/3/15 页数(Page)：1 of 8

委托单位： 浙江联和电子有限公司

Applicant: zhejiang lianhe electronics co,.ltd

单位地址： 浙江省乐清市乐清湾港区创新路 8 号

Address: No. 8, Chuangxin Road, Yueqing Bay Port District, Yueqing City, Zhejiang Province

**样品信息(Sample Information)：**

样品名称(Sample Name)： PBT 连接器+色粉(PBT connector + toner)

样品描述(Sample Description)： 黑色塑胶(Black plastic)

样品型号(Sample Model)： 请参见后续页(Please refer to following page(s))。

委托日期(Sample Received Date)： 2021/3/11

检测日期(Testing Period)： 2021/3/11 - 2021/3/15

**检测结果(Test Result)：** 请参见后续页(Please refer to following page(s))。

| 检测要求(Test Requested) ： | 结论(Conclusion) |
|---|---|
| 根据客户要求，参照欧盟 RoHS 指令 2011/65/EU 及其修订指令 EU 2015/863&客户限值，检测样品中的铅、镉、汞、六价铬、多溴联苯、多溴二苯醚、DBP、BBP、DEHP、DIBP 的含量(As specified by client, to determine the Pb, Cd, Hg, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP content in the sample with reference to EU RoHS Directive 2011/65/EU and its amendment Directive EU 2015/863&Client's Limit.)。 | 合格(PASS) |

授权签字人

Signed for and on behalf of HCT

Kathy Liu

Kathy Liu

Shenzhen Hongcai Testing Technology Co., Ltd 深圳市虹彩检测技术有限公司 报告专用章

# 检测报告(Test Report)

**报告编号(Report No.)：WTF21H03018118C-2** 日期(Date)：2021/3/15 页数(Page)：2 of 8

**样品型号(Sample Model)：**

1.0 SH SHD NH 1.25 51021 DF14 DF13 GH ZH PH PHB PAPHSD DF11 C1251 51047
51146 FI-S PHD YHD200 SMW SMH200 SMH200-H YH200/20039WR 杜邦(DuPont) 2.0 XH/TJC3 XA
HAXHB XHD XHE XHQ EH EI/小四(Small four) P 5264 5267 SZN SAN SCN SCND JC15 JC20 5102 5240
SMH250 SMP250 SMW250 25048HS 25045HP SM TJC8/杜邦(DuPont) 2.54 TJC8A/杜邦带锁(DuPont with lock)
TJC8B TJC8H 5051/2510 543 美尚美(Meishangmei) CH10 25415 43640 43645 43020 43025 5500 5600 VH
VHRR/YH396 VHR 35156 2139/3.96 90331 5195 5196 39612 FL 5557 5559 5566 5569 42474
42475 SL RV42 CL014/OTP ELYL 小(Small) EL QH NV 50300 50301 8981/大四(Big four) P 5058/5.08 5197
5198 5025 L6.2 VL VLP/VLR 3191 5199 TJC2 TJC2ATJC2B STV5 YHL500 YWL500 TJC4
TJC1 SMF Cy-X201/35108 35150 35151 35224 35180 35965 1806 110 2.8 42021 42022 42002
6.3 250 35955 SASCS 35189 35196 MX3.0 1.58 51005 51006 BH3.5 BH4.0 63080 187 4.8
51004 TJC15 D220 D230 D250 D480 D520 D280 D630 D430 D400 D450 U-T MKH
F1001-T SIN-T 774 773 778 294 TU-JTK(SV) TU(SNB) TO-JTK(RV) MDD FDD TG-JT IDC
AUTO CONNECTOR DJ70 DT04 DT06 UY/K1 UY2/K2 UR/K3 UR2 UB/K4 UB2AUG/K5
U1R/K8 U1B/K9 HJKT10 UDW2 314A4203A5001 A5002 MC100 FPC2.54 SMH SGN PHR
ZHR 205 5.2 C1801 C1802 2060 SMP JC25 CH2.5 A5003 ME020 ME010 FPC/FFC
(1.0 SH SHD NH 1.25 51021 DF14 DF13 GH ZH PH PHB PAPHSD DF11 C1251 51047
51146 FI-S PHD YHD200 SMW SMH200 SMH200-H YH200/20039WR DUBANG 2.0 XH/TJC3 XA
HAXHB XHD XHE XHQ EH EI/X4 P 5264 5267 SZN SAN SCN SCND JC15 JC20
5102 5240 SMH250 SMP250 SMW250 25048HS 25045HP SM TJC8/DUBANG 2.54 TJC8A/DUBANG-S
TJC8B TJC8H 5051/2510 543 MEISHANGMEI CH10 25415 43640 43645 43020 43025 5500 5600 VH
VHRR/YH396 VHR 35156 2139/3.96 90331 5195 5196 39612 FL 5557 5559 5566 5569 42474
42475 SL RV42 CL014/OTP ELYL SMALL EL QH NV 50300 50301 8981/D4 P 5058/5.08 5197
5198 5025 L6.2 VL VLP/VLR 3191 5199 TJC2 TJC2ATJC2B STV5 YHL500 YWL500 TJC4
TJC1 SMF Cy-X201/35108 35150 35151 35224 35180 35965 1806 110 2.8 42021 42022 42002
6.3 250 35955 SASCS 35189 35196 MX3.0 1.58 51005 51006 BH3.5 BH4.0 63080 187 4.8
51004 TJC15 D220 D230 D250 D480 D520 D280 D630 D430 D400 D450 U-T MKH
F1001-T SIN-T 774 773 778 294 TU-JTK(SV) TU(SNB) TO-JTK(RV) MDD FD NH XHQ 42474 42475 QH NV 50300 50301 5025 3191 5199 STV5 YHL500 YWL500 F001 F002 D440 D600 D620 D700 D220 D230 D250 D480 D520 D280 D630 D430 D400 D450 U-T F1001-T SIN-T 774 773 778 294 TU-JTK(SV) TU(SNB) TO-JTK(RV) MDD FDD TG-JT IDC AUTO CONNECTOR DJ70 DT04 DT06 UY/K1 UY2/K2 UR/K3 UR2 UB/K4 UB2A UG/K5 U1R/K8 U1B/K9 HJKT10 UDW2 314 A5001 A5002 MC100 FPC2.54 SGN PHR ZHR 205 5.2 C1801 C1802 2060

Shenzhen Hongcai Testing Technology Co., Ltd
深圳市虹彩检测技术有限公司报告专用章

# 检测报告(Test Report)



A5003 ME020 ME010 FPC/FFC B2541 1971845 1971846 2232043 2232044 2232511 1971895 1971896 JWPF SY Molex1.5 ME0100 RAST A5004 DV SJN SDN 35182 35524 RCY LC VR SHJ SHL DF19 ACH IL-Z SATA XSR SUR SUH ZE ZND ZPD SFH PUD AMP2.0 35507 DF3 PND RE RA RF SYP/SYR HIF3 MC100/ME020/ME010 F2541 A5005 A5006 A5007 A2509 A25010 A25011 A25012 B13001 B76201 VHB VHC VHD

1969738, 1969740, 1971845, 1971846, 1971895, 1971896, 1971946 thru 1971949, 1971954 thru 1971957, 2232008 thru 2232011, 2232000 thru 2232003, 2232016 thru 2232019, 1971962 thru 1971965, 2232024 thru 2232027, 2232289 thru 2232292, 2232043 thru 2232074, 2232298 thru 2232301, 2232511, 2232532, 2232557, 2232559, 2232560, 2232562, 2232563, 2232565, 2232566, 2232568, 2232569, 2232571, 2232572, 2232574, 2232575, 2232577, 2232578, 2232580, 2232581, 2232583, 2232584, 2232586, 2232587, 2232589, 2232590, 2232592, 2232593, 2232595, 2232596, 2232598, 2232599, 2232601, 2232602, 2232604, 2232605, 2232607, 2232608, 2232611 thru 2232682, 2292457, 2292458,

Shenzhen Hongcai Testing Technology Co., Ltd
深圳市虹彩检测
技术有限公司
报告专用章

# 检测报告(Test Report)

**报告编号(Report No.)：WTF21H03018118C-2** 日期(Date)：2021/3/15 页数(Page)：4 of 8

**检测结果(Test Result(s))：** 单位(Unit)：mg/kg

| 检测项目 (Test Items) | 检测方法/仪器 (Test Method/ Equipment) | 方法检出限 (MDL) | 含 量 (Content) | 客户限值 (Client's Limit) |
|---|---|---|---|---|
| **铅 Lead(Pb)** | IEC 62321-5:2013. ICP-OES/AAS | 2 | N.D. | 600# |
| **镉 Cadmium(Cd)** | | 2 | N.D. | 75 |
| **汞 Mercury(Hg)** | IEC 62321-4:2013 +AMD1:2017. ICP-OES | 2 | N.D. | 600 |
| **六价铬 Hexavalent Chromium(Cr(VI))** | IEC 62321-5:2013/ IEC 62321-7-2:2017. ICP-OES/AAS UV-VIS | 8 | N.D. | 600## |
| 一溴联苯 Mono-bromobiphenyl | IEC 62321-6:2015. GC-MS | 5 | N.D. | — |
| 二溴联苯 Di-bromobiphenyl | | 5 | N.D. | |
| 三溴联苯 Tri-bromobiphenyl | | 5 | N.D. | |
| 四溴联苯 Tetra-bromobiphenyl | | 5 | N.D. | |
| 五溴联苯 Penta-bromobiphenyl | | 5 | N.D. | |
| 六溴联苯 Hexa-bromobiphenyl | | 5 | N.D. | |
| 七溴联苯 Hepta-bromobiphenyl | | 5 | N.D. | |
| 八溴联苯 Octa-bromobiphenyl | | 5 | N.D. | |
| 九溴联苯 Nona-bromobiphenyl | | 5 | N.D. | |
| 十溴联苯 Deca-bromobiphenyl | | 5 | N.D. | |
| **多溴联苯 Polybrominated Biphenyls(PBBs)** | | — | N.D. | 600 |
| 一溴二苯醚 Mono-bromodiphenyl ether | | 5 | N.D. | — |
| 二溴二苯醚 Di-bromodiphenyl ether | | 5 | N.D. | |
| 三溴二苯醚 Tri-bromodiphenyl ether | | 5 | N.D. | |
| 四溴二苯醚 Tetra-bromodiphenyl ether | | 5 | N.D. | |
| 五溴二苯醚 Penta-bromodiphenyl ether | | 5 | N.D. | |
| 六溴二苯醚 Hexa-bromodiphenyl ether | | 5 | N.D. | |
| 七溴二苯醚 Hepta-bromodiphenyl ether | | 5 | N.D. | |
| 八溴二苯醚 Octa-bromodiphenyl ether | | 5 | N.D. | |
| 九溴二苯醚 Nona-bromodiphenyl ether | | 5 | N.D. | |
| 十溴二苯醚 Deca-bromodiphenyl ether | | 5 | N.D. | |
| **多溴二苯醚 Polybrominated Diphenyl Ethers(PBDEs)** | | — | N.D. | 600 |

Shenzhen Hongcai Testing Technology Co., Ltd 深圳市虹彩检测技术有限公司 报告专用章

# 检测报告(Test Report)

**报告编号(Report No.)：WTF21H03018118C-2** 日期(Date)：2021/3/15 页数(Page)：5 of 8

| 检测项目 (Test Items) | 检测方法/仪器 (Test Method/ Equipment) | 方法检出限 (MDL) | 含 量 (Content) | 客户限值 (Client's Limit) |
|---|---|---|---|---|
| 邻苯二甲酸二正丁酯 Dibutyl phthalate (DBP) | IEC 62321-8:2017, GC-MS | 30 | N.D. | 600 |
| 邻苯二甲酸丁苄酯 Butylbenzyl phthalate (BBP) | | 30 | N.D. | 600 |
| 邻苯二甲酸二(2-乙基己基)酯 Di-(2-ethylhexyl) Phthalate (DEHP) | | 30 | N.D. | 600 |
| 邻苯二甲酸二异丁酯 Di-iso-butyl phthalate (DIBP) | | 30 | N.D. | 600 |

**备注(Note)：** mg/kg = ppm=parts per million

MDL=Method Detection Limit 方法检出限

N.D.=Not Detected(less than method detection limit)，未检出（小于方法检出限）

"—"=Not regulated 无规定

Results shown as N.D. are ignored in the sum calculation.结果显示为 N.D.不计入总和的计算。

The detected Chromium (Cr) content is "N.D.", therefore, the Hexavalent Chromium (Cr (VI)) content is "N.D.", No need for validation test of the Hexavalent Chromium (Cr (VI)).检测的铬（Cr）含量是"N.D."，则六价铬（Cr(VI)）含量也是"N.D."，不需要进行六价铬（Cr(VI)）的确认性测试。

If Chromium (Cr) content exceeds Hexavalent Chromium (Cr (VI)) method detection limit, Validation test of the Hexavalent Chromium (Cr (VI)) is required.

若铬（Cr）含量超过六价铬（Cr(VI)）方法检出限，需要进行六价铬（Cr(VI)）的确认性测试。

#=PVC category power cord≤300mg/kg, steel alloy≤3200mg/kg, aluminum alloy≤3600mg/kg, copper alloy≤ 36000mg/kg, other material≤600mg/kg.

PVC 类电源线≤300mg/kg，钢合金≤3200mg/kg，铝合金≤3600mg/kg，铜合金≤ 36000mg/kg，其他物料≤600mg/kg。

##=Trivalent chromium surface treatment and hot dip galvanized sheet plating ≤50mg/kg, electroplating color zinc surface and electroplating white zinc surface and other chromium-free treatment plating N.D., other materials ≤600mg/kg.

三价铬表面处理和热镀锌板镀层≤50mg/kg，电镀彩锌表面和电镀白锌表面以及其他无铬处理镀层 N.D.，其他物料≤600mg/kg。

Result(s) of specimen(s) is(are) quoted from HCT report No.WTF21H03018118C-1.

样品的数据是引自 HCT 报告号为 WTF21H03018118C-1 的数据。

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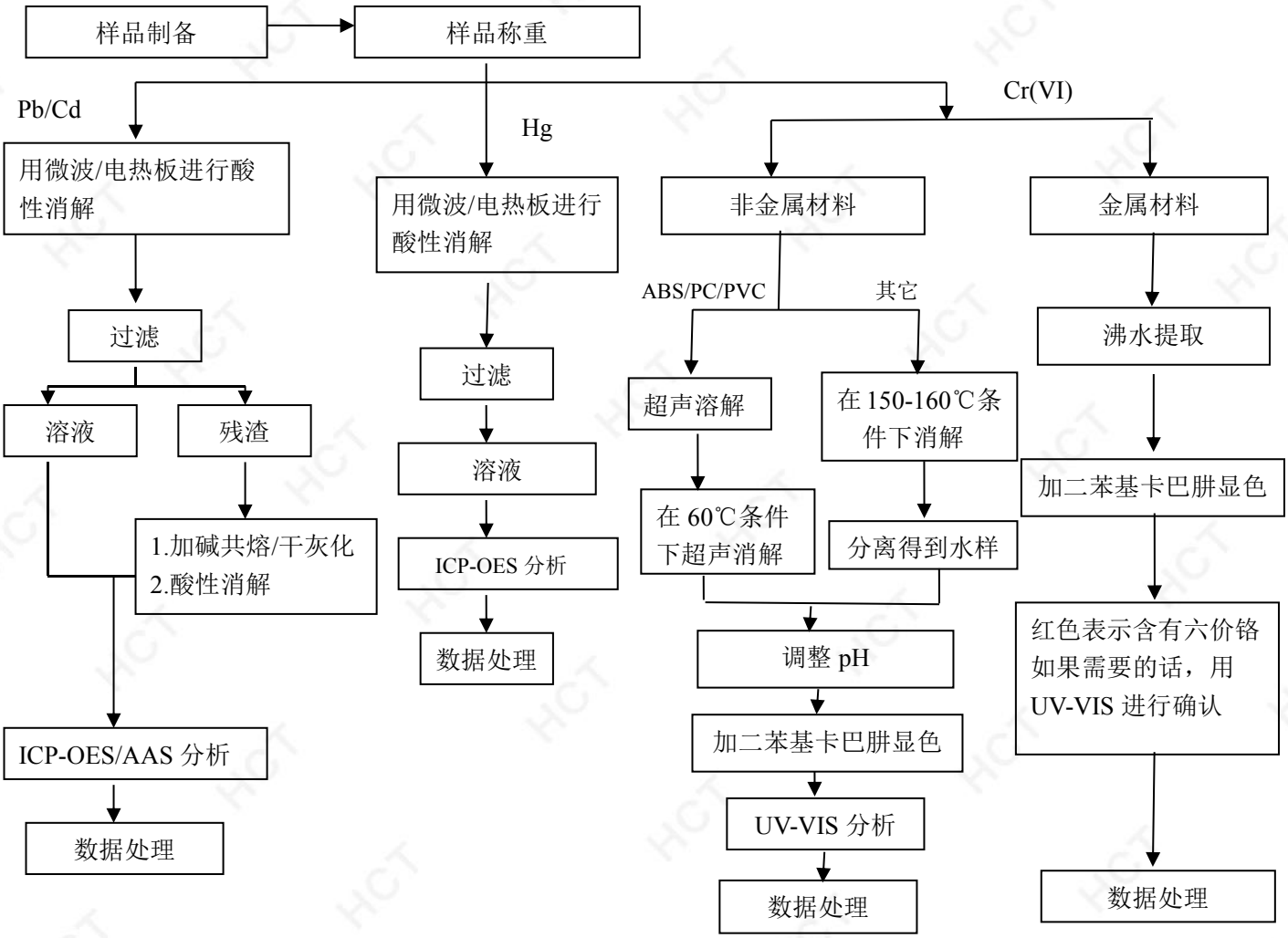
# 检测报告(Test Report)

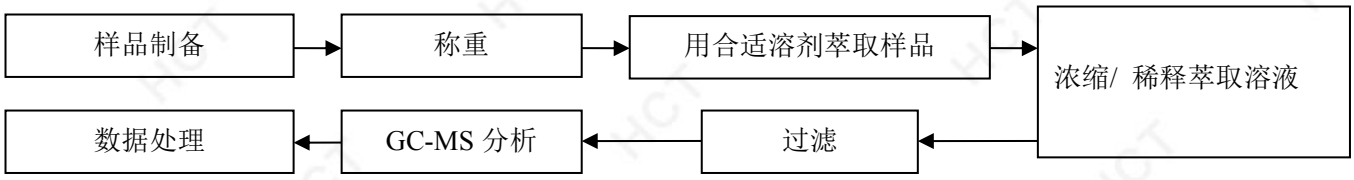
**报告编号(Report No.)：WTF21H03018118C-2** 日期(Date)：2021/3/15 页数(Page)：6 of 8

## 铅、镉、汞、六价铬、多溴联苯、多溴二苯醚的检测流程图




根据以上的流程图之条件，样品已经完全溶解(六价铬检测方法除外)。

**PBBs/PBDEs**

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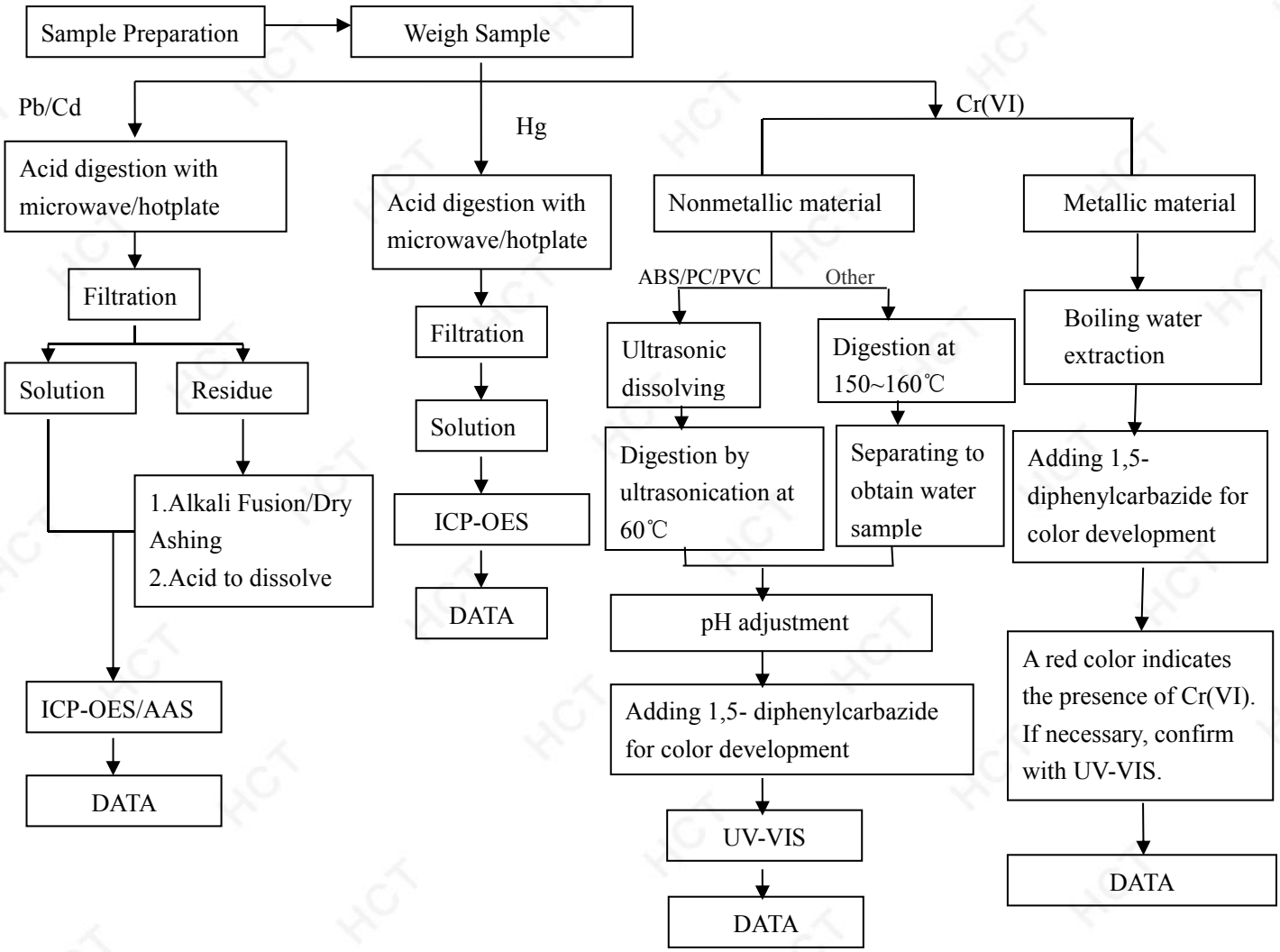
# 检测报告(Test Report)

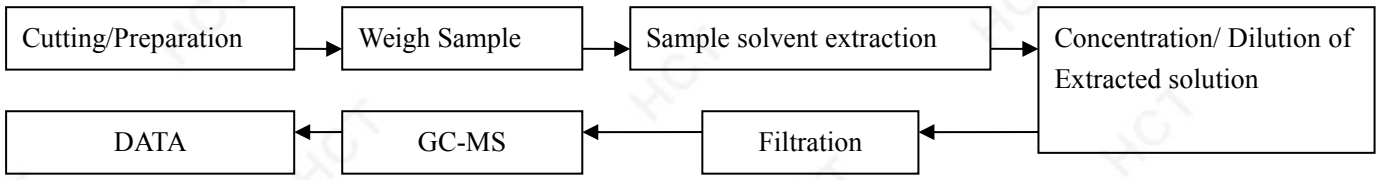
**报告编号(Report No.)：WTF21H03018118C-2** 日期(Date)：2021/3/15 页数(Page)：7 of 8

**Test Flow Chart for Pb, Cd, Hg, Cr(VI), PBBs, PBDEs**




These sample were dissolved totally by pre-conditioning method according to above flow chart(Cr(VI) test method excluded)

**PBBs/PBDEs**

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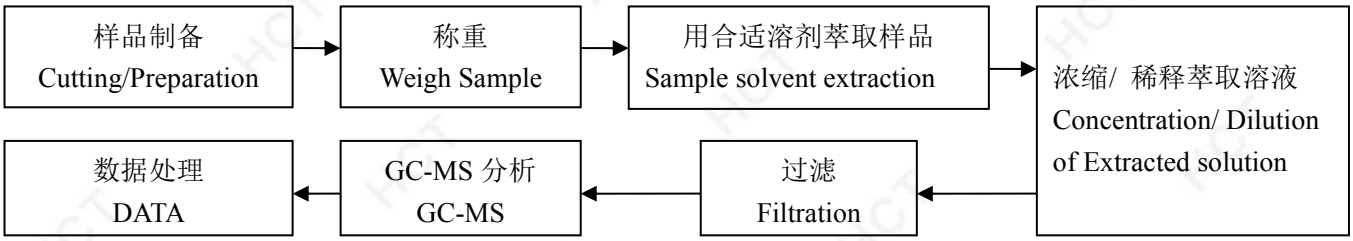
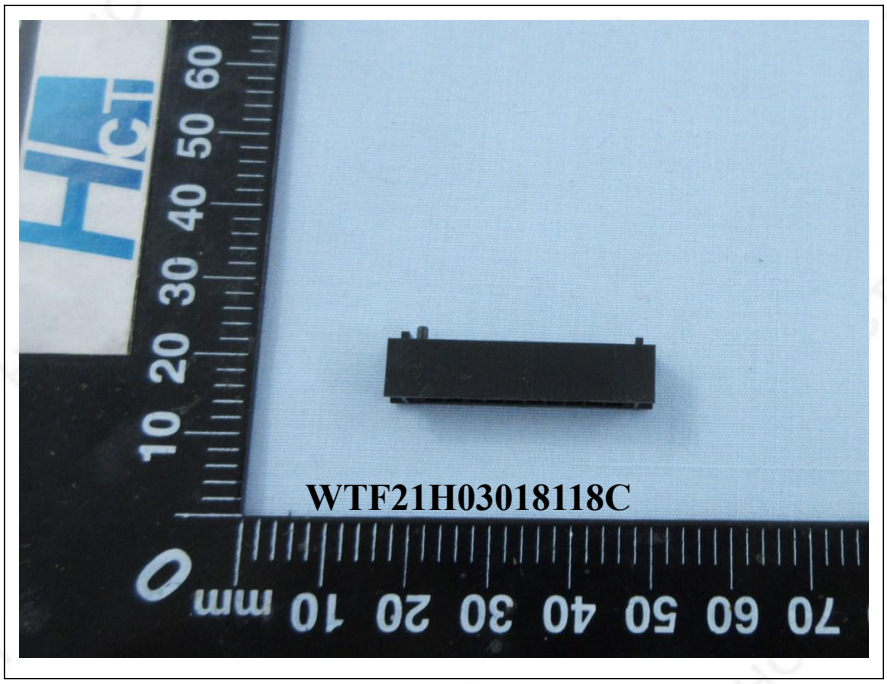
# 检测报告(Test Report)

**报告编号(Report No.)：WTF21H03018118C-2** 日期(Date)：2021/3/15 页数(Page)：8 of 8

**DBP, BBP, DEHP, DIBP 的检测流程图**
**(Test Flow Chart for DBP, BBP, DEHP, DIBP)**




## 样 品 附 图(The photo of the sample)




*****报告结束(End)*****

本报告 HCT 盖章才生效，本报告不可以删改。本报告只对接收样品的检测结果负责。
未经本公司书面授权，不得部分复制本报告做宣传品使用。

This report will go into effect with HCT stamp. This report could not be revised. This report is only responsible for the test result of received samples. Without written authorization, any copy of this report for propaganda is invalid.

深圳市虹彩检测技术有限公司 报告专用章

# 测试报告

No. SHAEC2108746204　　日期: 2021年05月12日　第1页,共6页

浙江联和电子有限公司
浙江省乐清市乐清湾港区

以下测试之样品是由申请者所提供及确认：端子针

| | |
|---|---|
| SGS工作编号： | SP21-013321 - SH |
| 型号： | xh |
| 客户参考信息： | 见附件 |
| 样品接收日期： | 2021年05月08日 |
| 测试周期： | 2021年05月08日 - 2021年05月12日 |
| 测试要求： | 根据客户要求测试 |
| 测试方法： | 请参见下一页 |
| 测试结果： | 请参见下一页 |
| 结论： | 基于所送样品进行的测试，镉、铅、汞、六价铬的测试结果不超过客户限值。 |

通标标准技术服务（上海）有限公司
授权签名

scan to see the report
SHAEC2108746204

Jenny Lan兰柳珍
批准签署人

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中国·上海·徐汇区宜山路889号3号楼　邮编: 200233　t HL (86-21) 61402594　f HL (86-21)61156899　e sgs.china@sgs.com

Member of the SGS Group (SGS SA)

测试结果 :

测试样品描述 :

| 样品编号 | SGS样品ID | 描述 |
|---|---|---|
| SN1 | SHA21-087462.001 | 银色金属 |

备注 :

(1) 1 mg/kg = 0.0001%

(2) MDL = 方法检测限

(3) ND = 未检出 ( < MDL )

(4) "-" = 未规定

镉(Cd),铅(Pb),汞(Hg),六价铬(Cr(VI))

测试方法 : 参考IEC 62321-4:2013+AMD1:2017， IEC 62321-5:2013和 IEC 62321-7-1:2015，采用ICP-OES和UV-Vis进行分析。

| 测试项目 | 限值 | 单位 | MDL | *001* |
|---|---|---|---|---|
| 镉 (Cd) | 75 | mg/kg | 2 | ND |
| 铅(Pb) | 600 | mg/kg | 2 | 11 |
| 汞 (Hg) | 600 | mg/kg | 2 | ND |
| 六价铬(Cr(VI))▾ | - | μg/cm² | 0.10 | ND |

备注 :

(1) 最大允许限值来源于客户要求。
IEC 62321系列等同于 EN 62321系列
https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP_ORG_ID,FSP_LANG_ID:1258637,25

(2) ▾ = a. 当六价铬的浓度高于0.13 μg/cm²时，样品为阳性，即含有六价铬；
b. 当六价铬的浓度为ND(低于0.10 μg/cm² )时，样品为阴性，即未检测到六价铬；
c. 当六价铬的浓度介于0.10 μg/cm²与0.13 μg/cm²之间时，无法直接判定是否检测到六价铬，因不同个体的样品表面差异可能会影响测定结果；
由于未获知样品的存储条件和生产日期，样品的六价铬测试结果仅能代表测试时样品含六价铬的状态。
除非另有说明，此报告结果仅对测试的样品负责。本报告未经本公司书面许可，不可部分复制。
检测报告仅用于客户科研、教学、内部质量控制、产品研发等目的，仅供内部参考。

检验检测专用章 Inspection & Testing Services
SGS-CSTC Standards Technical Services (Shanghai) Co.,Ltd. Testing Center-Chemical Laboratory

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附件

1.0， SH， SHD， 1.25， 51021， DF14， DF13， GH， ZH， PH， PHB， PA， PHSD， DF11， C1251， 51047， 51146， FI-S， PHD， YHD200， PA， SMP，SMW，SMH， SMH200， SMH200-H， YH200，20039WR， 杜邦2.0， XH/TJC3， XA， HA， XHB， XHD， XHE， EH， EI， 小四P， 5263， 5264，5267，5268， SZN， SAN， SCN， SCND， JC15， JC20， JC25， 5102， 5240， SMH250， SMP250， SMW250， 25048HS， 25045HP， SM， TJC8, 杜邦2.54， TJC8A，杜邦带锁， TJC8B， TJC8H， 5051，2510， 美尚美， 43640， 43645， 43020， 43025， 5500， 5600， VH， VHRR， YH396， VHR， 35156， 2139， 3.96， 90331， 5195， 5196， 39612， FL， 5557， 5559， 5566， 5569， SL，RV42， EL， YL， 小EL， 8981， 大四P， 5058， 5.08， L6.2， VL， VLP/VLR， TJC2， TJC2A， TJC2B， TJC4， TJC1， 1806， MX3.0， 1.58， 51005， 51006， BH3.5， BH4.0， 63080， 51004， TJC15， A4203， CL014， OTP， MKH， SMF， Cy-X201， 35108， 35150， 35151， 35224， 35180， 35965， 42021， 42022， 42002， 35955， SA， SCS， 35189， 35196， CH10， CH2.5， 543， SLP， SLR， YHL500， YWL500， FFC， FPC， 20030， 250， LGC， S11， YH025， 35155， 25415， 5197， 5198， 110， 2.8， 6.3， SCS

NH， XHQ， 42474， 42475， QH， NV， 50300， 50301， 5025， 3191， 5199， STV5， YHL500， YWL500， F001， F002， D440， D600， D620， D700， D220， D230， D250， D480， D520， D280， D630， D430， D400， D450， U-T， F1001-T， SIN-T， 774， 773， 778， 294， TU-JTK(SV)， TU(SNB)， TO-JTK(RV)， MDD， FDD， TG-JT， IDC， AUTO， CONNECTOR， DJ70， DT04， DT06， UY/K1， UY2/K2， UR/K3， UR2， UB/K4， UB2A， UG/K5， U1R/K8， U1B/K9， HJKT10， UDW2， 314， A5001， A5002， MC100， FPC2.54， SGN， PHR， ZHR， 205， 5.2， C1801， C1802， 2060， A5003， ME020， ME010， FPC/FFC， B2541， 1971845， 1971846， 2232043， 2232044， 2232511， 1971895， 1971896， JWPF， SY， Molex1.5， ME0100， RAST， A5004， DV， SJN， SDN， 35182， 35524， RCY， LC， VR， SHJ， SHL， DF19， ACH， IL-Z， SATA， XSR， SUR， SUH， ZE， ZND， ZPD， SFH， PUD， AMP2.0， 35507， DF3， PND， RE， RA， RF， SYP/SYR， HIF3， MC100/ME020/ME010， F2541， A5005， A5006， A5007， A2509， A25010， A25011， A25012， B13001， B76201， VHB， VHC， VHD

1969738, 1969740, 1971845, 1971846, 1971895, 1971896, 1971946 thru 1971949, 1971954 thru 1971957, 2232008 thru 2232011, 2232000 thru 2232003, 2232016 thru 2232019, 1971962 thru 1971965, 2232024 thru 2232027, 2232289 thru 2232292, 2232043 thru 2232074, 2232298 thru 2232301, 2232511, 2232532, 2232557, 2232559, 2232560, 2232562, 2232563, 2232565, 2232566, 2232568, 2232569, 2232571, 2232572, 2232574, 2232575, 2232577, 2232578, 2232580, 2232581, 2232583, 2232584, 2232586, 2232587, 2232589, 2232590, 2232592, 2232593, 2232595, 2232596, 2232598, 2232599, 2232601, 2232602, 2232604, 2232605, 2232607, 2232608, 2232611 thru 2232682, 2292457, 2292458,

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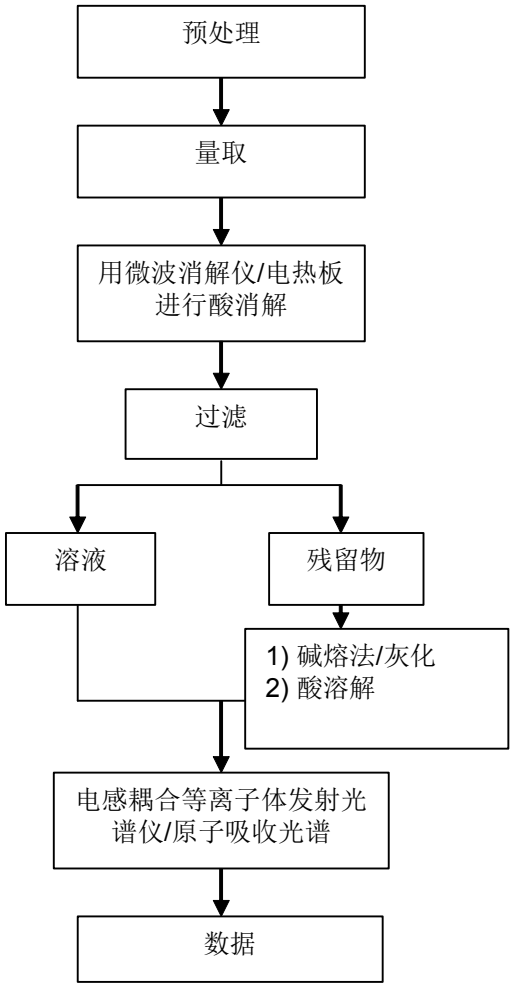
附件

## 元素(IEC62321) 测试流程图

1)样品按照下述流程被完全消解

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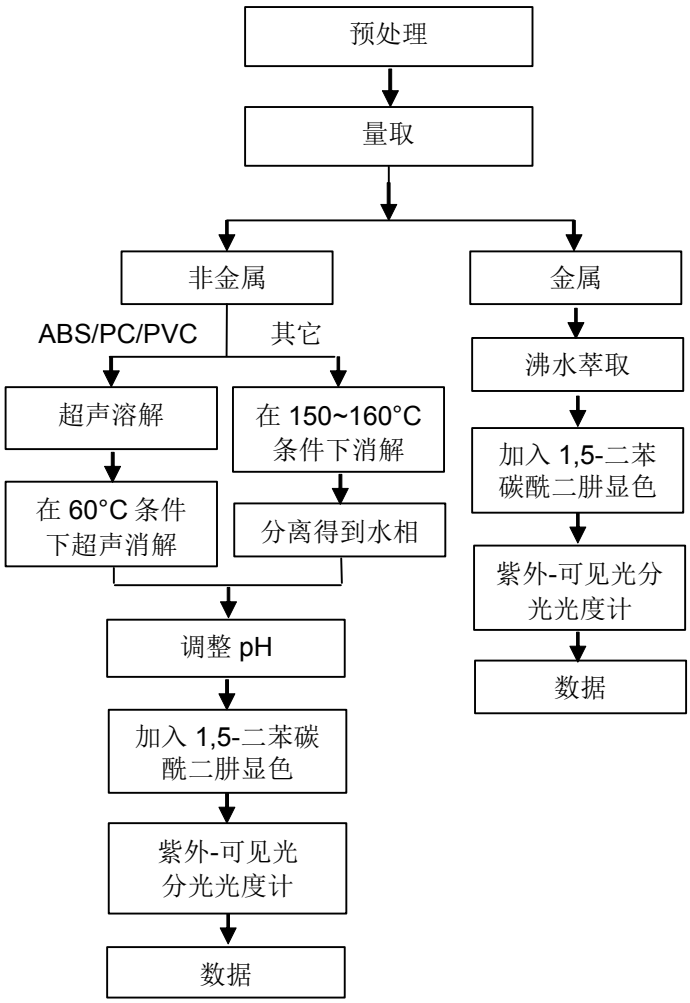
## 六价铬测试流程图

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