

YUEQING HONGYI ELECTRONICS CO., LTD
乐清市宏一电子有限公司

SPECIFICATION FOR APPROVAL

承认书

| | |
|---------------------|---------------------|
| CUSTOMER 客户名称 | |
| DESCRIPRION 产品名称 | 502380 (1.25) 系列连接器 |
| ITEM NO 编 号 | HY-A12510 (A23) |
| DATE 日 期 | 2022-9-30 |

CUSTOMER ACKNOWLEDGEMENT SEAL

客户承认印签

| (APPROVAL) 核准 | (ENGINEERING) 工程 | (PURCHASE) 采购 | (QUALITY) 品质 |
|--|------------------|---------------|--------------|
| | | | |
| 承认结果: <input type="checkbox"/> 通过 <input type="checkbox"/> 不通过 <input type="checkbox"/> 重新送样 | | | |

IS09001

IS014001

IS045001

IATF16949 体系认证

ADD: No. 30, Wenjing Road, Houyu village, Shifan street, Yueqing City, Zhejiang Province

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产 品 承 认 书 目 录

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PRODUCT SPECIFICATION

产品规范

1、Scope

适用范围

This specification includes the following specifications, including the specification of 502380 series connector

本规范包括下列此种规格包括 502380 系列连接器规格说明

2、Appearance and Dimension

外观及尺寸

2.1 Appearance: Product surface without defect、dirt、crack、and mechanical damang, Contact without rust, plating not oxidized and not peeled.

产品表面不应有对制品有害的缺陷、污垢、裂痕及机械损伤；接触件无锈蚀、镀层氧化脱落等现象

2.2 Dimension: According to drawings

外形尺寸：依照附图

3、Disposal of Material and surface

材料与表面处理

| Specification 规格内容 | Material 材质 | Finish 表面处理 | Environmental protection grade 环保等级 | |
|-----------------------|--------------------------------|---------------------------------------|---|---------------------------------------|
| Terminal 端子 | Phosphor bronze 磷铜 厚 0.15mm | Tin Plating: 2.5~5 μm 镀锡: 2.5~5 μm | RoHS2.0 | |
| Housing 胶壳 | PA66 UL94V-0 | Color: White 颜色: 白色 | | |
| Wafer 卧贴针座 | Plastic 塑壳 | PA6T/LCP UL94V-0 | | Color: Beige 颜色: 米色 |
| | Contact 插针 | Phosphor bronze 锡青磷铜 厚 0.20mm | | Tin Plating: 2.5~5 μm 镀锡: 2.5~5 μm |
| | Solder tab 焊护耳 | Phosphor bronze 锡青磷铜 厚 0.20mm | | Tin Plating: 2.5~5 μm 镀锡: 2.5~5 μm |
| Wafer 立贴针座 | Plastic 塑壳 | PA6T/LCP UL94V-0 | | Color: Beige 颜色: 米色 |
| | Contact 插针 | Phosphor bronze 锡青磷铜 厚 0.20mm | | Tin Plating: 2.5~5 μm 镀锡: 2.5~5 μm |
| | Solder tab 焊护耳 | Phosphor bronze 锡青磷铜 厚 0.20mm | | Tin Plating: 2.5~5 μm 镀锡: 2.5~5 μm |

4、Ratings and applicable wires

额定等级

| Item 项目 | Standard 规格 |
|-------------------------------------|----------------|
| Rated Voltage 额定电压 | 50V AC/DC |
| Rated Current 额定电流 | 1A AC/DC |
| Ambient temperature Range 使用温度范围 | -25°C- +85°C |
| Applicable wire insulation 适用线径 | AWG26#-28# |

5、Electrical Performance

电气性能

| N0. 序号 | Ltem 项目 | Test mode 试验方法 | Requirement 技术要求 |
|-----------|------------------------------|---|---|
| 5.1 | ContactResistance 接触电阻 | Male female cooperation, open voltage less than 20mV, current 100mA detection connector at both ends 公母配合, 开放电压20mV 以下, 电流100mA 检测连接器连接器两端 | Initial:20mΩ Max 初始: 20mΩ Max After Test: 30mΩ Max 试验后: 30mΩ Max |
| 5.2 | withstandvoltage 耐电压 | Mate connectors, apply 500V AC for 1 minute between adjacent terminal or ground 公母配合, 在相邻端子, 端子与地片之间, 使用500V 的交流电1 分钟, 检测连接器 | No Breakdown and Flashover 外观无损伤, 无打火花 |
| 5.3 | InsulationResistance 绝缘电阻 | Mate connectors, apply 500V DC between adjacent terminal or ground 公母配合, 在相邻端子, 端子与地片之间, 使用500V 的直流电, 检测连接器 | 100MΩ Min |

6、机械性能

Mechanical Performance

| NO. 序号 | Ltem 项目 | Test mode 试验方法 | | Requirement 技术要求 |
|-----------|--|--|--------------------------|--------------------------------------|
| 6.1 | Terminal crimping wire strength 端子压接导线强度 | Fix the crimped terminal, apply axial pull out force on thewire | AWG#26 wire AWG#26 导线 | 20N Min |
| | | 固定铆线后的端子, 使电线与端 子分离时所需的最小力量 | AWG#28 wire AWG#28 导线 | 13N Min |
| 6.2 | Terminal/ Housing Retention Force 端子保持力 | Apply axial pull out force at the speed rate of 25.4±3mm/minute on the terminal assembled in the Housing 以每分 25.4±3mm 的速率, 将端子从Housing 内轴 向拔出力 | | Per contact: 8N Min 单一接触点: 8N Min |
| 6.3 | Insertion & withdraw Force 插拔力 | Insert and withdraw Connectors at the speed rate of 25.4±3mm/minute 以每分 25.4±3mm 的速率插入和拔出 | | Refer to paragraph 8 参照第 8 项 |
| 6.4 | Pin Retention Force Pin 针保持力 | Apply axial push force at the speed rate of 25.4±3mm/minute 以每分 25.4±3mm 的速率, 将 PIN 针从 Wafer 内轴向拔出力 | | Per contact: 3N Min 单一接触点: 3N Min |

7、Endurance Characteristics:

环境性能

| NO. 序号 | Ltem 项目 | Test mode 试验方法 | Requirement 技术要求 | |
|-----------|---|---|-------------------------------|---|
| 7.1 | Repeated Insertion/ Withdrawal 重复插拔 | When mated up to 30 cycles repeatedly by the rate of 10 cycles per minute 以每分钟不超过 10 次的速率, 将公母插拔 30 次 | Contact Resistance 接触电阻 | 30 mΩ Max |
| 7.2 | Temperature Rise 温升测试 | Mating connectors shall be energized at rating current until thermal stability is achieved, and then measured the temperature rise 公母连接器配合后, 加载额定电流直到温度上升到稳定 状态, 然后再测量温升 | Temperature Rise 温升测试 | 30℃ Max |
| 7.3 | Vibration test 振动测试 | Amplitude: 1.5mm P-P Sweep time: 10~55~10 HZ in 1 minute Duration: 2 hours in each X. Y. Z axials 振幅: 1.5mm P-P 时间: 10~55~10 HZ in 1 minute 持续时间: 每轴向 2 小时 | Appearance 外观 | No damage 无异常 |
| | | | Contact Resistance 接触电阻 | 30 mΩ Max |
| | | | Discontinuity 瞬断 | 1 micro-second Max. |
| 7.4 | Heat Resistance 耐热性 | 85±2℃,96 hours | Appearance 外观 | No damage 无异常 |
| | | | Contact Resistance 接触电阻 | 30 mΩ Max |
| 7.5 | Cold Resistance 耐寒性 | -25±3℃,96 hours | Appearance 外观 | No damage 无异常 |
| | | | Contact Resistance 接触电阻 | 30 mΩ Max |
| 7.6 | Humidity 耐湿性 | Temperature: 60±2℃ Relative Humidity: 90~95% Duration: 96 hours 温度: 60±2℃ 湿度: 90~95%(RH) 持续时间: 96 hours | Appearance 外观 | No damage 无异常 |
| | | | Contact Resistance 接触电阻 | 30 mΩ Max |
| | | | Withstand Voltage 耐电压 | No Breakdown and Flashover 外观无损伤, 无打火花 |
| | | | Insulation Resistance 绝缘电阻 | 100MΩ Min |

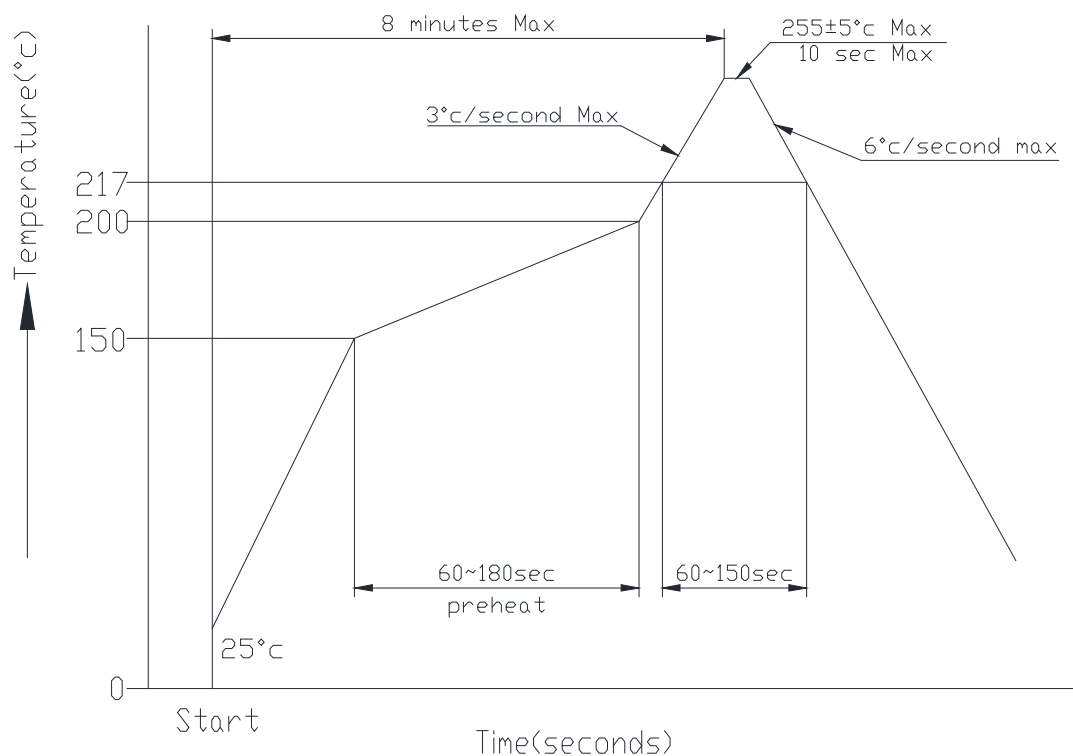
| NO. 序号 | Ltem 项目 | Test mode 试验方法 | Requirement 技术要求 | |
|-----------|--------------------------------|--|-------------------------------|---|
| 7.7 | 温度变化 Temperature Cycling | 5 cycles of: a) -25°C 30 minutes b) +85°C 30 minutes | Appearance 外观 | No damage 无异常 |
| | | 从-25°C持续30 分钟升至+85°C持续30 分钟, 循环5 次 | Contact Resistance 接触电阻 | 30 mΩ Max |
| 7.8 | Salt spray 盐雾 | 24±1 hours exposure to a salt spray from the 5±1% solution at 35±2°C | Appearance 外观 | No damage 无异常 |
| | | 在温度35±2°C, 盐水浓度5±1%下, 盐水 喷雾24±1 小时 | Contact Resistance 接触电阻 | 30 mΩ Max |
| 7.9 | Solderability 焊锡附着性 | Soldering Time: 3-5sec solder Temperature: 245±5°C 焊接时间: 3-5 秒 焊接温度: 245±5°C | Solder Wetting 焊料润湿 | Immersion area above 95% 浸渍面积 95% 以上 |
| 7.10 | Solder- Resistance 焊锡耐热性 | SMT reflow soldering heat resistance range: Soldering time:5~10sec solder. Temperature:255±5°C SMT 型回流焊接耐热范围: 焊接时间: 5~10 秒. 焊接温度: 255±5°C Please refer to the 9.1 solder reflow temperature curve 回流焊请参考 9.1 温度曲线图 | Appearance 外观 | No damage 无异常 |

8、INSERTION/WITHDRAWAL FORCE

综合插入力及拔出力

| No. of CTK PIN 数 | At Initial 初始值 | | At 30th 插拔 30 次 | No. of CTK PIN 数 | At Initial 初始值 | | At 30th 插拔 30 次 |
|------------------------|---------------------|---------------------|---------------------|------------------------|---------------------|---------------------|---------------------|
| | I. F (N Max) 插入力 | W. F (N Min) 拔出力 | W. F (N Min) 拔出力 | | W. F (N Min) 拔出力 | W. F (N Min) 拔出力 | W. F (N Min) 拔出力 |
| 2 | 10 | 0.4 | 0.4 | 12 | 36 | 2.3 | 2.3 |
| 3 | 11 | 0.6 | 0.6 | | | | |
| 4 | 12 | 0.8 | 0.8 | | | | |
| 5 | 15 | 1 | 1 | | | | |
| 6 | 18 | 1.2 | 1.2 | | | | |
| 7 | 20 | 1.4 | 1.4 | | | | |
| 8 | 24 | 1.6 | 1.6 | | | | |
| 9 | 27 | 1.8 | 1.8 | | | | |
| 10 | 30 | 2 | 2 | | | | |
| 11 | 33 | 2.2 | 2.2 | | | | |

9、 SMT lead-free process temperature curve SMT 无铅工艺温度曲线



Notes: Please check the reflow soldering condition by your own devices beforehand. Because the condition changes by the soldering devices, P.C. boards, and so on

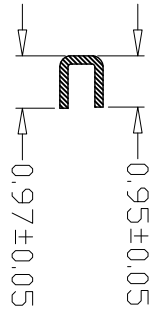
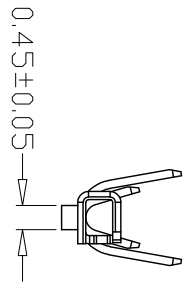
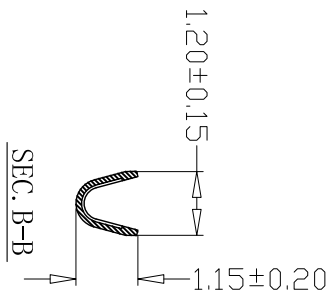
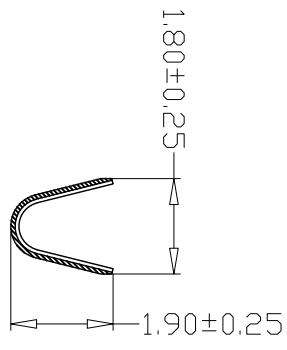
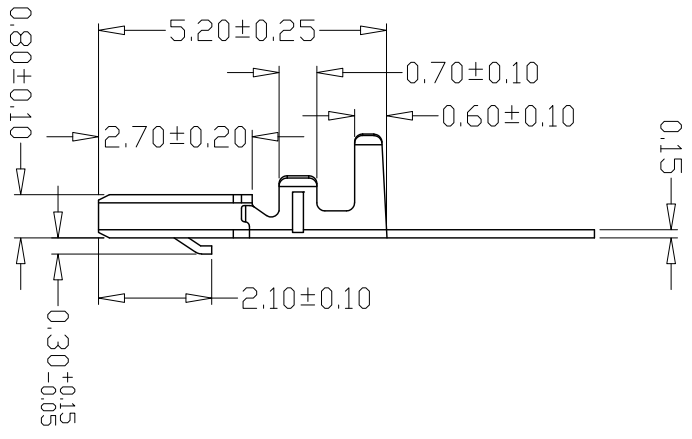
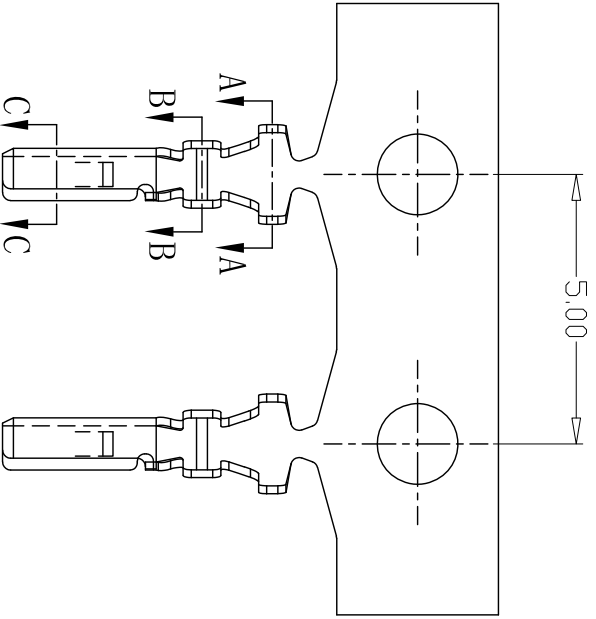
注记: 由于 P.C 板等焊接装置改变条件,所以请预先用自己的装置检查回流焊的条件

10、 Caution 注意事项

plastic because of characteristics with water after package is opened should avoid exposure to, the temperature is higher than 30 °C, humidity is higher than 60%RH in the environment, and in the 24 hours after all after use, to prevent subsequent reflow, wave soldering process to produce foaming phenomenon of deformation

塑料因具有吸水之特性包装拆封后应避免暴露于, 温度高于 30°C, 湿度高于 60%RH 的环境中, 并在拆封后 24 小时内全数使用完毕, 防止后续回流焊、波峰焊制程产生起泡变形现象

| REV./ DATE | 日期 | ECN NO. | 变更内容 | 制图 |
|------------|----|---------|----------------------------|-------|
| | | | DESCRIPTION <td>DRAWN</td> | DRAWN |



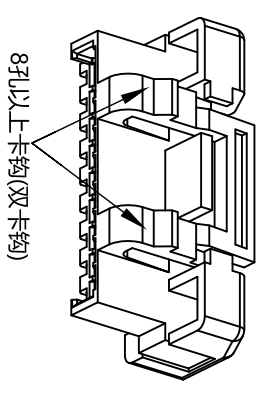
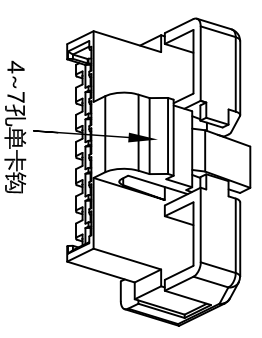
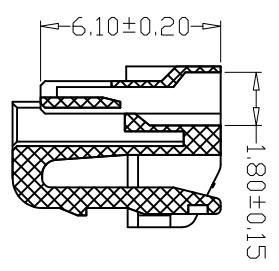
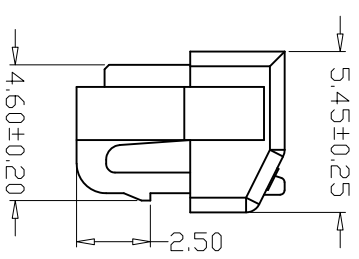
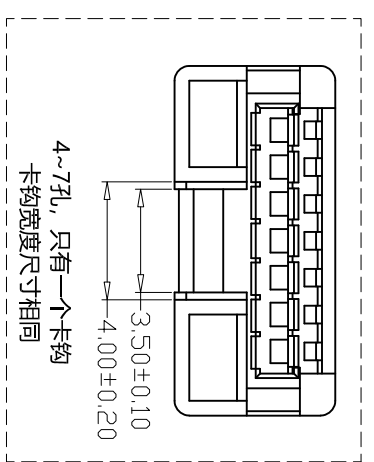
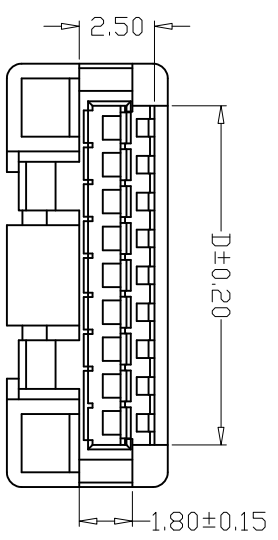
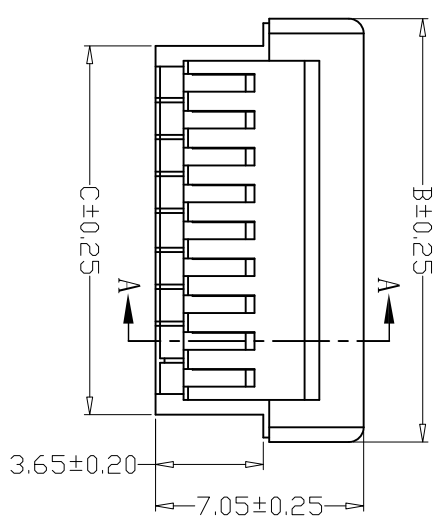
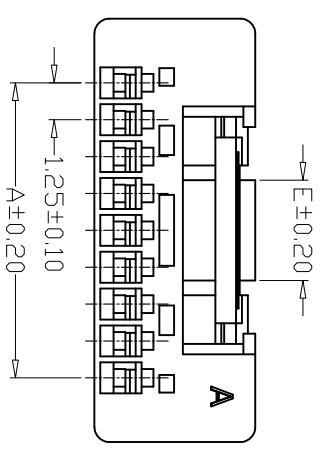
SPECIFICATIONS

- 1、Current Rating: 1A AC, DC
- 2、Voltage Rating: 125V AC, DC
- 3、Temperature Range: -25°C~+85°C
- 4、Contact Resistance: 20mΩ Max
- 5、Insulation Resistance: 100MΩ Min
- 6、Withstanding Voltage: 500V AC/minute
- 7、Material: Phosphoric bronze (5191) Tin-plated
- 8、Applicable Wire Sizes: AWG#26~28#

| GENERAL TOLERANCE | | 制图 | | 料号 | | 版本 | |
|-------------------|-------|----------|-----|-----------|----------|-------|-----|
| X.X±0.25 | X.±2° | DRAWING | 张迎春 | PART NO. | A12510-T | REV. | A |
| X.XXX±0.10 | | CHECK | 钱岳生 | TITLE | 502380端子 | SHEET | 1/1 |
| X.XX±0.20 | | APPROVAL | 张名 | CITM. NO. | | | |
| | | UNITS | MM | SCALE | 1:1 | | |

乐清市宏一电子有限公司
Yueqing HongYi Electronics Co., Ltd

| | | | | |
|------------|------------|---------|---------------------|-------------|
| 版本 REV. | 日期 DATE | ECN NO. | 变更内容 DESCRIPTION | 制图 DRAWN |
| | | | | |



SPECIFICATIONS

- 1、Current Rating: 1A AC, DC
- 2、Voltage Rating: 50V AC, DC
- 3、Temperature Range: -25°C~+85°C
- 4、Contact Resistance: 20mΩ Max
- 5、Insulation Resistance: 100MΩ Min
- 6、Withstanding Voltage: 500V AC/minute
- 7、Material: Wafer PA66, UL94V-0

尺寸 (mm)

| PIN | 尺寸 (mm) | | | | |
|------|---------|-------|-------|-------|------|
| | A | B | C | D | E |
| -02Y | 1.25 | 5.60 | 3.75 | 2.75 | / |
| -03Y | 2.50 | 6.85 | 5.00 | 4.00 | / |
| -04Y | 3.75 | 8.10 | 6.25 | 5.25 | / |
| -05Y | 5.00 | 9.35 | 7.50 | 6.50 | / |
| -06Y | 6.25 | 10.60 | 8.75 | 7.75 | / |
| -07Y | 7.50 | 11.85 | 10.00 | 9.00 | / |
| -08Y | 8.75 | 13.10 | 11.25 | 10.25 | 2.15 |
| -09Y | 10.00 | 14.35 | 12.50 | 11.50 | 3.40 |
| -10Y | 11.25 | 15.60 | 13.75 | 12.75 | 4.65 |
| -11Y | 12.50 | 16.85 | 15.00 | 14.00 | 5.90 |
| -12Y | 13.75 | 18.10 | 16.25 | 15.25 | 7.15 |

| | | | |
|-------------------|------------|------------|--------------|
| GENERAL TOLERANCE | | 制图 Mapping | 张迎春 |
| X±0.25 | X°±2° | 审核 | 钱岳生 |
| .X±0.25 | X°±1° | 批准 | 张名 |
| .XX±0.15 | .XX°±0.5° | 单位 | 2022. 09. 20 |
| .XXX±0.10 | .XXX°±0.5° | 比例 SCALE | 2022. 09. 20 |

料号 PART NO. A12510-nY

品名 TITLE 502380孔座

客户料号 CUST. NO.

版本 REV. A

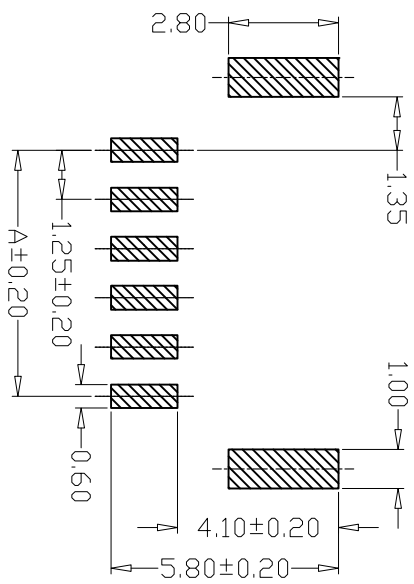
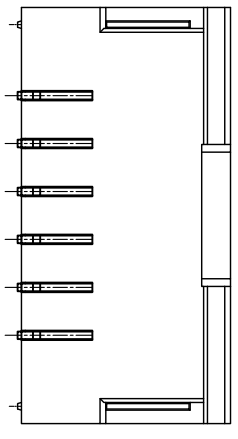
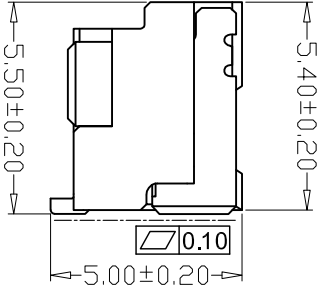
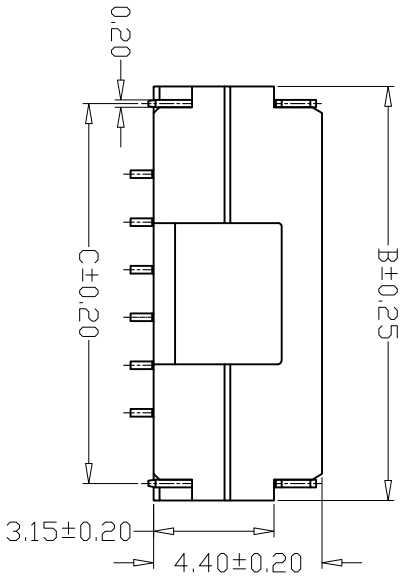
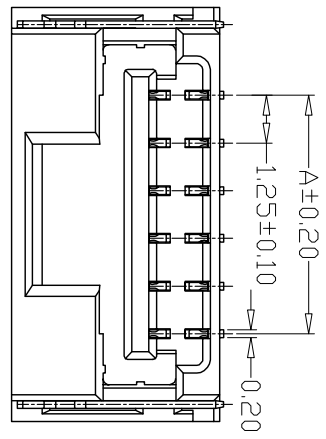
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YueDing HongYi Electronics Co., Ltd

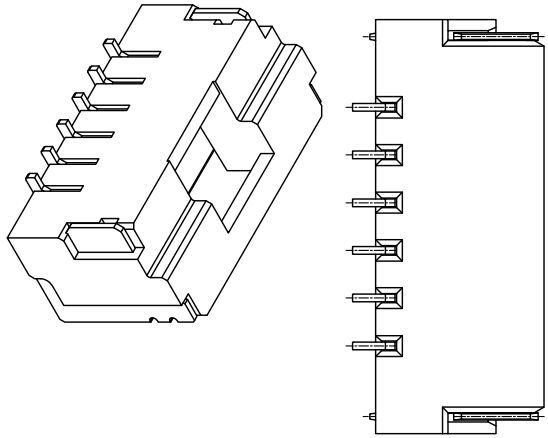
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| 版本 REV. | 日期 DATE | ECN NO. | 变更内容 DESCRIPTION | 制图 DRAWN |
| | | | | |

SPECIFICATIONS

- 1、Current Rating: 7A AC, DC
 - 2、Voltage Rating: 250V AC, DC
 - 3、Temperatuer Range: -25°C~+85°C
 - 4、Contact Resistance: 20mΩ Max
 - 5、Insulation Resistance: 1000MΩ Min
 - 6、Withstanding Voltang: 500V AC/minute
 - 7、Material :Wafer PA6T/LCP, UL94V-0
- PIN Phosphoric bronze Tin-plated
Solder tad Phosphoric bronze Tin-plated



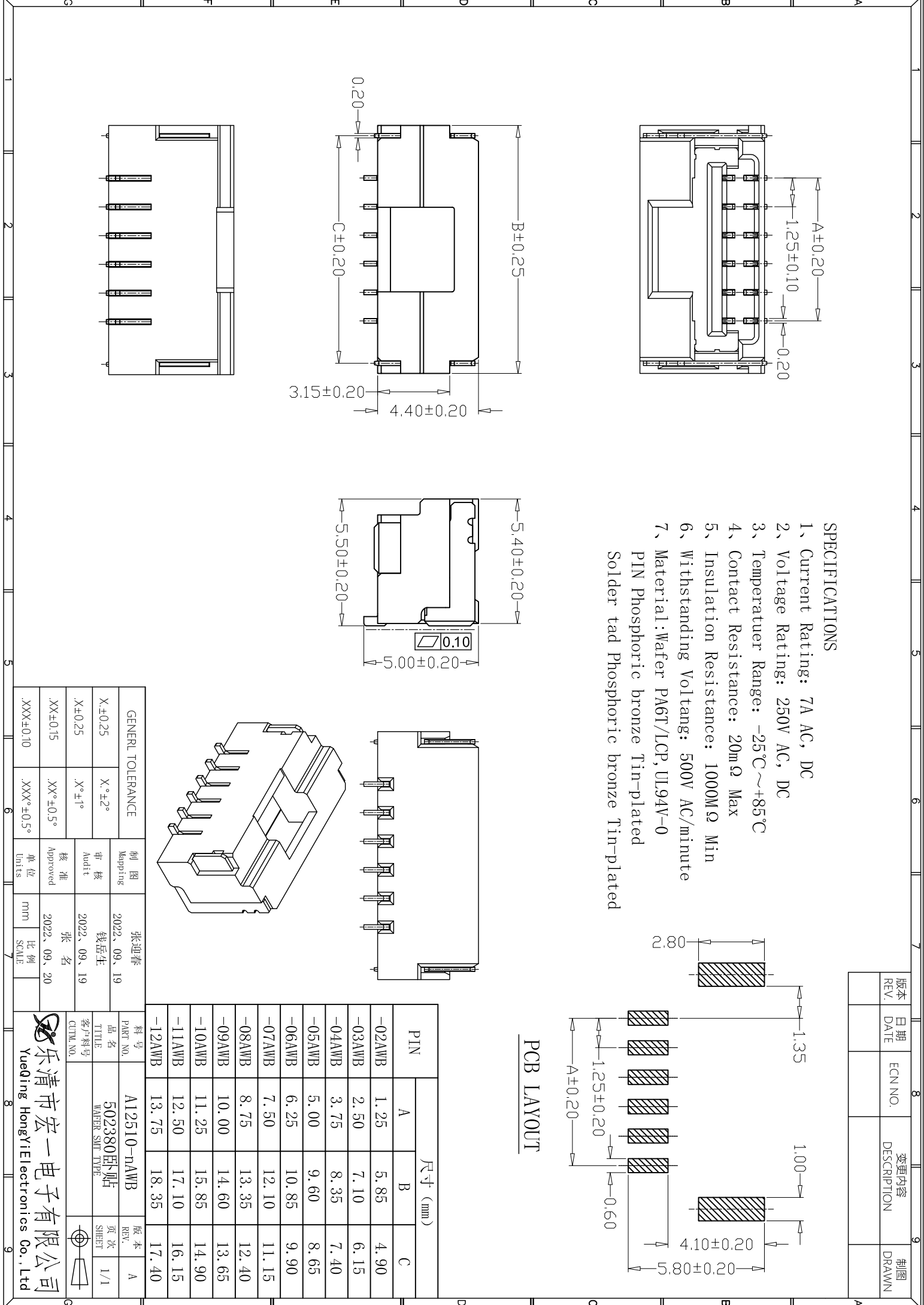
PCB LAYOUT



| PIN | 尺寸 (mm) | | |
|--------|---------|-------|-------|
| | A | B | C |
| -02AWB | 1.25 | 5.85 | 4.90 |
| -03AWB | 2.50 | 7.10 | 6.15 |
| -04AWB | 3.75 | 8.35 | 7.40 |
| -05AWB | 5.00 | 9.60 | 8.65 |
| -06AWB | 6.25 | 10.85 | 9.90 |
| -07AWB | 7.50 | 12.10 | 11.15 |
| -08AWB | 8.75 | 13.35 | 12.40 |
| -09AWB | 10.00 | 14.60 | 13.65 |
| -10AWB | 11.25 | 15.85 | 14.90 |
| -11AWB | 12.50 | 17.10 | 16.15 |
| -12AWB | 13.75 | 18.35 | 17.40 |

| | | | |
|-------------------|-----------------|----------------|--------------|
| GENERAL TOLERANCE | | 制图 Mapping | 张迎春 |
| X \pm 0.25 | X \pm 2° | 审核 Audit | 钱岳生 |
| .X \pm 0.25 | X \pm 1° | 批准 Approved | 张名 |
| .XX \pm 0.15 | .XX \pm 0.5° | 单位 Units | 2022. 09. 20 |
| .XXX \pm 0.10 | .XXX \pm 0.5° | 比例 SCALE | 7 |

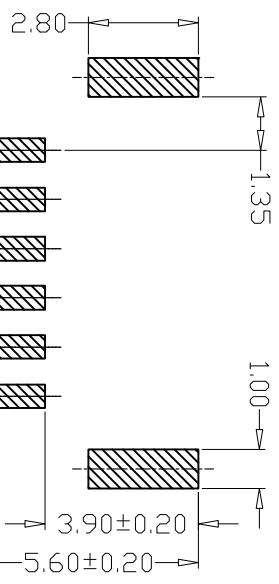
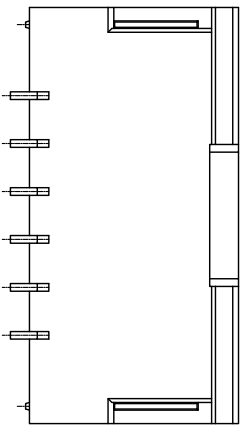
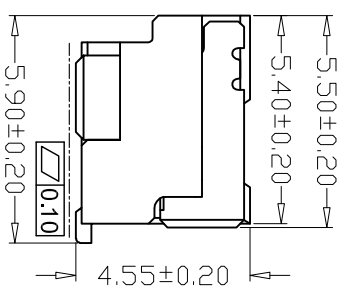
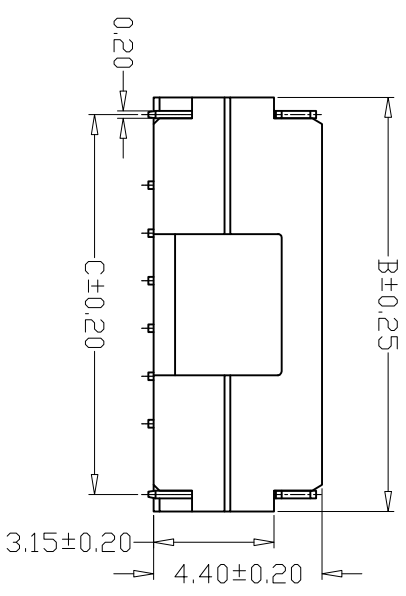
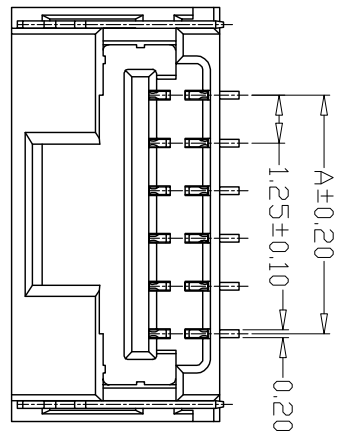
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|-------------------|----------------|-------------|-----|
| 料号 PART NO. | A12510-nAWB | 版本 REV. | A |
| 品名 TITLE | 502380贴片 | 页次 SHEET | 1/1 |
| 客户料号 CUST. NO. | WAFER SMT TYPE | | |



| | | | | |
|------------|------------|---------|---------------------|-------------|
| 版本 REV. | 日期 DATE | ECN NO. | 变更内容 DESCRIPTION | 制图 DRAWN |
| | | | | |

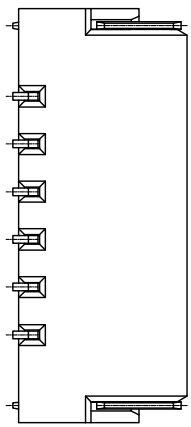
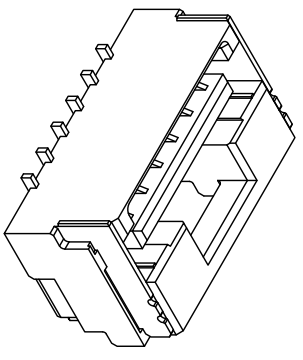
SPECIFICATIONS

- 1、Current Rating: 7A AC, DC
 - 2、Voltage Rating: 250V AC, DC
 - 3、Temperature Range: -25°C~+85°C
 - 4、Contact Resistance: 20mΩ Max
 - 5、Insulation Resistance: 1000MΩ Min
 - 6、Withstanding Voltage: 500V AC/minute
 - 7、Material: Wafer PA6T/LCP, UL94V-0
- PIN Phosphoric bronze Tin-plated
Solder tad Phosphoric bronze Tin-plated



PCB LAYOUT

| PIN | 尺寸 (mm) | | |
|-------|---------|-------|-------|
| | A | B | C |
| -02AB | 1.25 | 5.85 | 4.90 |
| -03AB | 2.50 | 7.10 | 6.15 |
| -04AB | 3.75 | 8.35 | 7.40 |
| -05AB | 5.00 | 9.60 | 8.65 |
| -06AB | 6.25 | 10.85 | 9.90 |
| -07AB | 7.50 | 12.10 | 11.15 |
| -08AB | 8.75 | 13.35 | 12.40 |
| -09AB | 10.00 | 14.60 | 13.65 |
| -10AB | 11.25 | 15.85 | 14.90 |
| -11AB | 12.50 | 17.10 | 16.15 |
| -12AB | 13.75 | 18.35 | 17.40 |



| | | | |
|----------------------|--------------------|----------------|-------------|
| GENERAL TOLERANCE | | 制图 Mapping | 张迎春 |
| X ₁ ±0.25 | X ₂ ±2° | 审核 Audit | 钱岳生 |
| X ₃ ±0.25 | X ₄ ±1° | 批准 Approved | 张名 |
| XX±0.15 | XX°±0.5° | 单位 Units | 2022.09.20 |
| XXX±0.10 | XXX°±0.5° | mm | 比例 SCALE |
| | | | 7 |

| | | | |
|-------------------|----------------|-------------|-----|
| 料号 PART NO. | A12510-T1AWB | 版本 REV. | A |
| 品名 TITLE | 502380立贴 | 页次 SHEET | 1/1 |
| 客户料号 CUST. NO. | WAFER SMT TYPE | | |

乐清市宏一电子有限公司
YueDing HongYi Electronics Co., Ltd