

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	HAC (HA 加高) 系列连接器
ITEM NO 编 号	HY-A25004 (A68)
DATE 日 期	2022-8-22

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

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产 品 承 认 书 目 录

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1、SCOPE

适用范围

The contents of specifications for XHC series connector strip, including product performance, test methods and inspection requirements

本规格书内容适用于 XHC 系列条形连接器，包含了产品的性能、试验方法和检验要求

2、APPLICABLE STANDARDS

适用的标准

- | | | |
|-----|----------|---|
| 2.1 | GB/T2421 | Testing method for Environmental of Electrical Connectors Class 1 :
General Principles |
| | GB/T2421 | 电工电子产品环境试验 第一部分 总则 |
| 2.2 | GB/T2423 | Testing method for Environmental of Electrical Connectors |
| | GB/T2423 | 电工电子产品环境试验方法 |
| 2.3 | GB/T2424 | Testing method for Environmental of Electrical Connectors |
| | GB/T2424 | 电工电子产品环境试验导则 |
| 2.4 | GB/T5095 | Testing Procedure/method for components of electric equipment |
| | | 电子设备用机电元件基本试验规程及测量方法 |

3、USE CONDITION

使用条件

- 3.1 Ambient temperature Range:-25℃~+85℃**
环境温度：-25℃~+85℃
- 3.2 Applicable Wire Sizes:AWG#22~#28**
适用线规：AWG#22~#28
- 3.3 Applicable PC board thickness:1.6mm**
适用 PC 板厚度：1.6mm

4、Appearance and Dimension

外观及尺寸

- 4.1 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.
- 4.2 Dimension:According to drawings**
外形尺寸：依照附图
- 4.3 Exchangable:Exchangable with same specification products.**
互换性：相同规格应能互换

5、Material

材 料

P/N 零件名称	Type 类 型	Material 材 料	Finish 表面处理	Explain 说 明
Terminal 端 子	Contact 插 簧	Phosphor bronze 锡青磷铜 厚 0.20mm	Tin Plating:3~5 μ m 镀锡: 3~5 μ m	RoHS2.0
Housing 孔 座	Plastic 塑 壳	Nylon66 UL94V-0	Color: White 颜色: 白色	
Wafer 直 针	Plastic 塑 壳	Nylon46 UL94V-0	Color: Beige 颜色: 米色	
	Contact 插 针	Brass 黄铜 厚□0.64mm	Tin Plating:2.5~5 μ m 镀锡: 2.5~5 μ m	

6、Electrical Performance

电 气 性 能

N0. 序号	Ltem 项 目	Test mode 试验方法	Requirement 技术要求
6.1	Current Rated 额定电流		3A AC DC
6.2	Voltage Rated 额定电压		250V AC DC
6.3	ContactResistance 接触电阻	A maximum voltage of 20mV and a maximum current of 100mA are applied to the Mate connector 组合状态下的连接器, 两端施以最大测试电压 20 mV 以及最大测试电流 100 mA Does not include wire resistance 不包含电线阻抗	Initial value Less than 20m Ω 初始值 ≤ 20 m Ω
6.4	withstandvoltage 耐电压	Apply 1000V AC(rms)for 1 minute and the leakage current shall not exceed 0.5mA to the adjacent terminal and ground of the Mate connectors 组合状态下的连接器, 相邻两导体末端各施以电压 1000V AC(有效值)时间 1 分钟, 且漏电流必须小于 0.5mA(毫安培)	No breakdownor flashover 无击穿或者产生火花
6.5	InsulationResistance 绝缘电阻	Apply 500V DC(rms)for 1 minute between adjacent contacts to measure the insulation resistance 相邻两接触导体, 1 分钟时间内施予 500V DC 电压, 测量期间的绝缘阻抗值	More than 1000 M Ω ≥1000M Ω

7、Mechanical Performance:

机械性能

NO. 序号	Ltem 项目	Test mode 试验方法	Requirement 技术要求								
7.1	Terminal crimping wire strength 端子压接导线强度	Terminal crimping wires, axial per minute to 25 ± 3mm rate of the pullout force 端子所压接电线，以每分钟 25±3mm 速率之轴向拔出力	<table border="1"> <tr> <td data-bbox="919 277 1129 362">AWG#22 wire AWG#22 导线</td> <td data-bbox="1129 277 1447 362">More than 50N ≥50N</td> </tr> <tr> <td data-bbox="919 362 1129 448">AWG#24 wire AWG#24 导线</td> <td data-bbox="1129 362 1447 448">More than 30N ≥30N</td> </tr> <tr> <td data-bbox="919 448 1129 533">AWG#26 wire AWG#26 导线</td> <td data-bbox="1129 448 1447 533">More than 20N ≥20N</td> </tr> <tr> <td data-bbox="919 533 1129 618">AWG#28 wire AWG#28 导线</td> <td data-bbox="1129 533 1447 618">More than 13N ≥13N</td> </tr> </table>	AWG#22 wire AWG#22 导线	More than 50N ≥50N	AWG#24 wire AWG#24 导线	More than 30N ≥30N	AWG#26 wire AWG#26 导线	More than 20N ≥20N	AWG#28 wire AWG#28 导线	More than 13N ≥13N
AWG#22 wire AWG#22 导线	More than 50N ≥50N										
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AWG#26 wire AWG#26 导线	More than 20N ≥20N										
AWG#28 wire AWG#28 导线	More than 13N ≥13N										
7.2	Fixed terminals and hole seat 端子与孔座固定力	The terminal and the hole seat, at a rate per minute to 25 ± 3mm along the wire direction are pulled out from the hole in the seat capacity 端子与孔座配合，以每分钟 25±3mm 的速率沿导 线方向将端子从孔座中拔出的力	Per contact 单一接触点 More than 15N ≥15N								
7.3	Singlecontact insertion force 单接触插入力	The Housing together with the terminal ends with Wafer matched, at a rate per minute to 25 ± 3mm, inserting force test 孔座连同端子与针座两端互配,以每分钟 25±3mm 的速率,作插入力测试	Less than 8N ≤8N								
7.4	Single contact withdrawal force 单接触拔出力	The Housing together with the terminal ends with Wafer matched, at a rate per minute to 25 ± 3mm, as the pull-out test 孔座连同端子与针座两端互配,以每分钟 25±3mm 的速率,作拔出力测试	More than 1N ≥1N								
7.5	Pin Retention force PIN 针固定力	Exerts a force on the pin end, at a rate per minute 25 ± 3mm, until the needle exit seat pull-out force 在针脚前端施加力,以每分钟 25±3mm 的速率, 直到针退出针座的拔出力	Per contact 单一接触点 More than 15N ≥15N								
7.6	Durability 耐久性	Mate connectors up 30 cycles at a Maximun rate of 10cycles per minute prior toenvironmental test 组合状态下的连接器且未经环境测试,每分钟内 进行 10 次嵌入与拔出,连续 30 次嵌入与拔出往 返测试	Contact Resistance ≤30 mΩ 接触电阻≤30 mΩ								

NO. 序号	Ltem 项目	Test mode 试验方法	Requirement 技术要求
7.7	Vibration 振动	<p>Connector combination state of the welding circuit board as test samples, the request in accordance with the following specifications, resistance to vibration test, whether to produce discontinuous current determined during the experiment (off) phenomenon, after the experiment measuring contact resistance</p> <p>组合状态下的连接器焊接电路板上作为试验样品, 依照如下规格要求, 进行耐振动试验, 试验过程中确定是否产生不连续电流(断电)现象, 试验过后测量接触电阻值</p> <p>Frequency(频率):10-55-10 Hz/minute Amplitude(振幅):1.5mm p-p Direction(方向):</p> <ol style="list-style-type: none"> 1、Axis of up and down 上下轴向(Y轴) 2、Axis of right the left 左右轴向(X轴) 3、Axis of front and back 前后轴向(Z轴) <p>Period(周期):2 hours for each direction 每一个轴向持续 2 小时</p>	<p>Appearance: No damage 外观: 无损伤</p> <p>Contact Resistance ≤30 mΩ 接触电阻≤30 mΩ</p> <p>current Discontinuity: 1 micro second Max 电流中断: 1 μ sec Max</p>

8、Endurance Characteristics:

环境性能

NO. 序号	Ltem 项目	Test mode 试验方法	Requirement 技术要求
8.1	Thermal Aging 高温老化试验	<p>Connector combination condition is placed in the oven, the request in accordance with the following specifications, high temperature aging test, after the test and measurement of contact resistance</p> <p>组合状态下的连接器放置于加热烤箱中, 依照如下规格要求, 进行高温老化试验, 试验后并测量接触电阻值</p> <p>Temperature:85± 2 °C Period:96 hours continuously 温度: 85± 2 °C 周期: 持续 96 小时</p>	<p>Appearance: No damage 外观: 无损伤</p> <p>Contact Resistance ≤30 mΩ 接触电阻≤30 mΩ</p>
8.2	Temperature 温升	<p>Mate connector measure the temperature rise of contact when the maximum rated current is passed</p> <p>组合状态下的连接器, 通过最大容许电流测量导体温度上升值</p>	30°C Max

8、Endurance Characteristics:

环境性能

NO. 序号	Item 项目	Test mode 试验方法	Requirement 技术要求
8.3	Humidity 恒定潮湿	<p>Connector combination under the condition of constant temperature and humidity place space, in accordance with the requirements of the following specifications, constant temperature and humidity test, after the experiment measuring contact resistance, insulation resistance and withstand voltage test</p> <p>组合状态下的连接器放置恒定温度的湿气空间，依照如下规格要求，进行恒温恒湿试验，试验过后测量接触电阻、绝缘电阻以及耐电压测试</p> <p>Temperature: $40 \pm 2 \text{ }^{\circ}\text{C}$ Relative humidity:90-95%RH Period:96 hours continuously</p> <p>温度:$40 \pm 2^{\circ}\text{C}$ 相对湿度:90-95% 周期: 持续 96 小时</p>	<p>Appearance: No damage 外观: 无损伤</p> <p>Contact Resistance: $\leq 30\text{m}\Omega$ 接触电阻: $\leq 30\text{ m}\Omega$</p> <p>Insulation Resistance: $\geq 500\text{M}\Omega$ 绝缘电阻: $\geq 500\text{M}\Omega$</p> <p>No breakdown or flashover 无击穿或者产生火花</p>
8.4	Temperature cycling 温度循环	<p>The combined state of connectors as test samples, in accordance with the requirements of the following specifications, thermal shock test, after the test measuring contact resistance, insulation resistance, and resistance to voltage</p> <p>组合状态下的连接器作为试验样品，依照如下规格要求，进行冷热冲击试验，试验后测量接触电阻、绝缘电阻、以及耐电压测试</p> <p>One cycle consists of: -$55 \pm 3^{\circ}\text{C}$,30min,Room temp.10-15 min $85 \pm 3^{\circ}\text{C}$,30min,Room temp.10-15 min Total cycle: 5 cycle</p> <p>-$55 \pm 3^{\circ}\text{C}$,30 分钟，放置转换时间 10-15 分钟 $85 \pm 3^{\circ}\text{C}$,30 分钟，放置转换时间 10-15 分钟 循环次数: 5 次</p>	<p>Same as paragraph 8.3 同 8.3 章节</p>

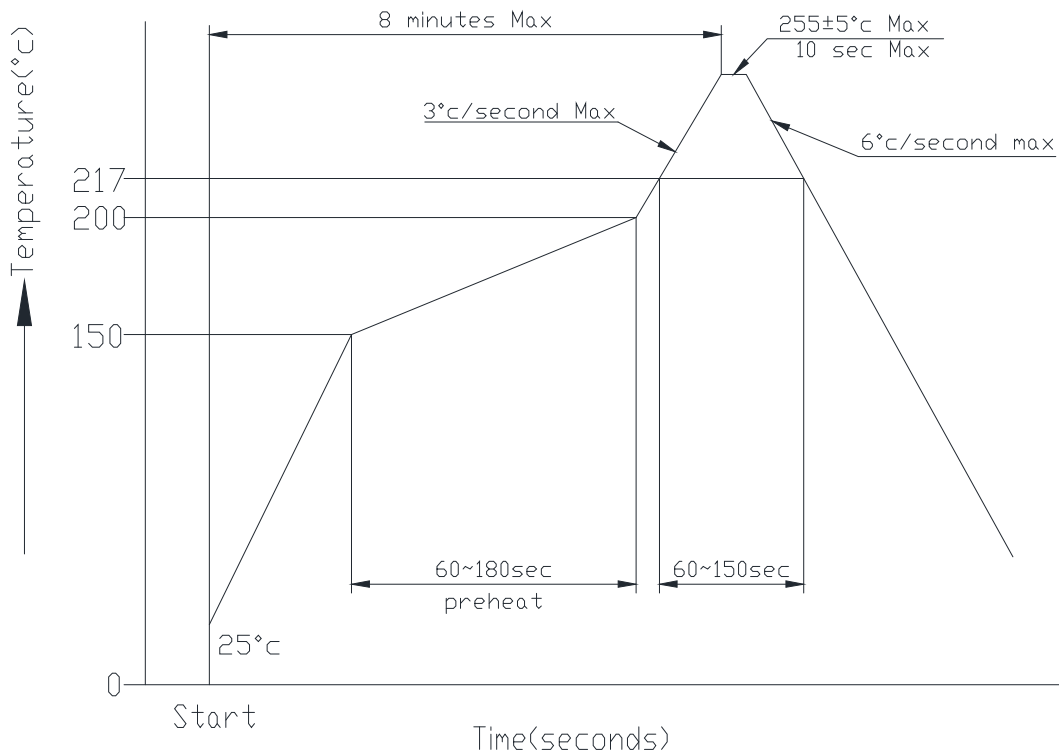
NO. 序号	Ltem 项目	Test mode 试验方法	Requirement 技术要求
8.5	Salt spray 盐雾	<p>The combined state of connector as test samples, salt spray test according to the following specifications, test samples will be clean again with the water to dry naturally, measurement of contact resistance 组合状态下的连接器作为试验样品，依照如下规格要求进行盐水喷雾试验，试验后将样品用清水冲干净自然凉干，测量接触电阻值</p> <p>Temperature: 35±3℃ Solution: 5±1% Period: Stamping after tin plated for 8 hours Stamping before tin plated for 48 hours 温度: 35±3℃ 浓度: 5±1% 周期: 先电镀后冲压 8 小时 先冲压后电镀 24 小时</p>	<p>Appearance: No damage 外观: 无损伤</p> <p>Contact Resistance: ≤30m Ω 接触电阻: ≤30 m Ω</p>
8.6	Solder ability 可焊性	<p>In accordance with the following specifications were placed tin soldering test 放置锡炉中依照如下规格进行焊锡试验</p> <p>Solder Temperature:245±5℃ Immersion period:3±0.5S 焊锡温度: 245±5℃ 沉浸周期: 3±0.5S</p>	<p>Area of Soldering: ≥95% 焊锡面积: ≥95%</p>
8.7	Resistance to soldering heat 耐焊接热	<p>anual soldering tin process Soldering time: 3±0.5S Soldering pot: 350±5℃ 手工烙铁焊锡工艺 焊接时间: 3±0.5S 焊接温度: 350±5℃</p> <p>Mode of operation: 操作方式: Position DIP type needle solder, conductor or a fixed piece at the end of the 1.5mm distance DIP 型针座焊锡位置，距离导体或固定片末端 1.5mm</p> <p>Wave soldering tin soldering process Soldering time: 5±0.5S Soldering pot: 230±5℃ 波峰焊焊锡工艺 焊接时间: 5±0.5S 焊接温度: 230±5℃</p>	<p>Appearance: No damage 外观: 无损伤</p>

9、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
	Insertion force (N Max) 插入力(最大值)	Pullout force (N Min) 拔出力(最小值)	Pullout force (N Min) 拔出力(最小值)
2	12	1.5	0.5
3	13	2	0.7
4	14	2	0.9
5	15	2.5	1
6	16	3	1.5
7	17	3	1.5
8	18	3.5	2
9	19	4	2
10	20	4	2.5
11	21	4.5	2.5
12	22	4.5	3
13	23	5	3
14	24	5	3
15	25	5.5	3.5
16	26	5.5	3.5
17	27	6	4
18	28	6	4
19	29	6.5	4.5
20	30	7	4.5

10、 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

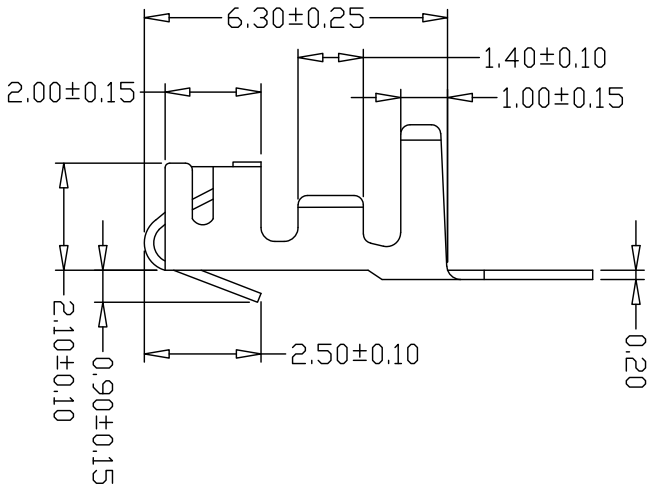
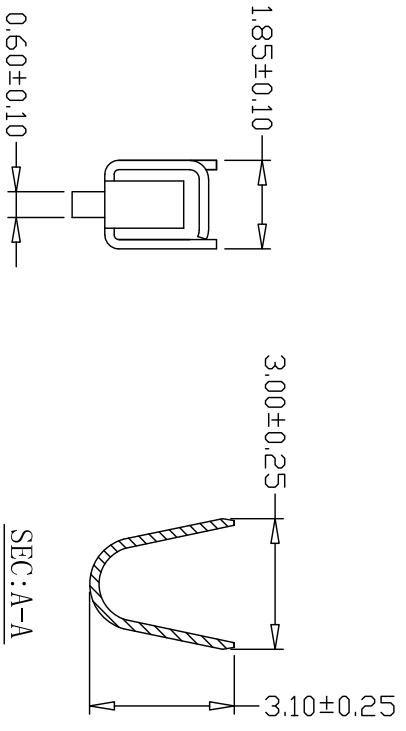
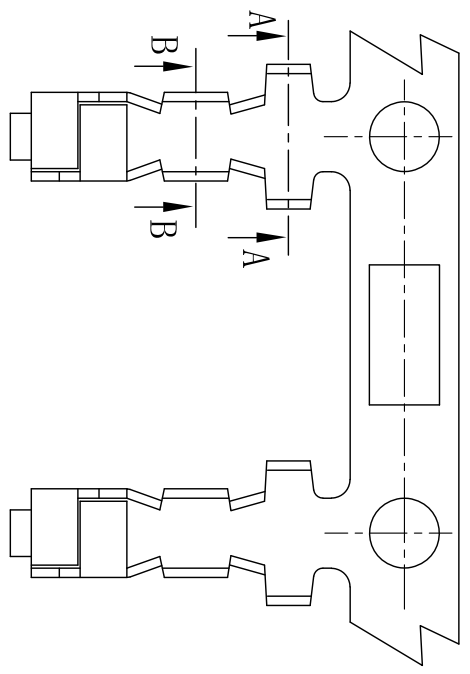
注记: 由于 P.C 板等焊接装置改变条件,所以请预先用自己的装置检查回流焊的条件

11、 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 48 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 48 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

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



SPECIFICATIONS

- 1、Current Rating: 3A 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: 1000V AC/minute
- 7、Material: Phosphoric bronze Tin-plated
- 8、Applicable Wire Sizes: AWG#22~28#

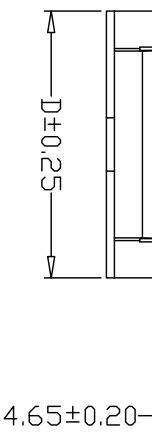
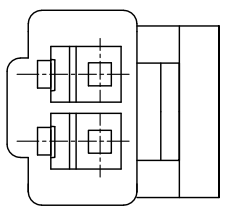
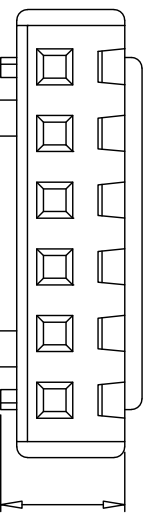
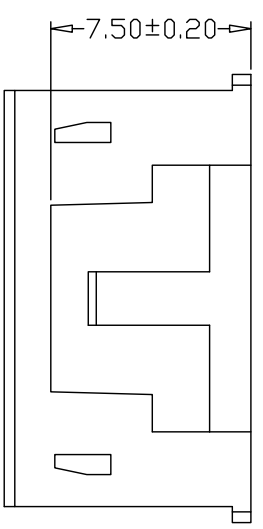
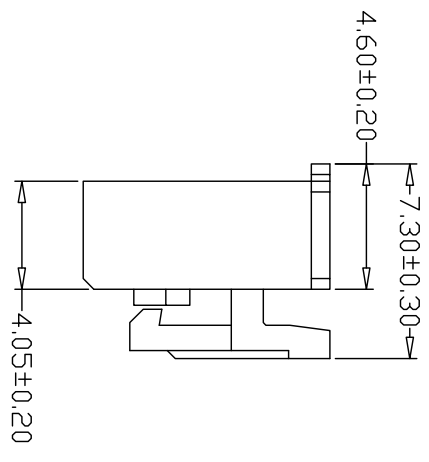
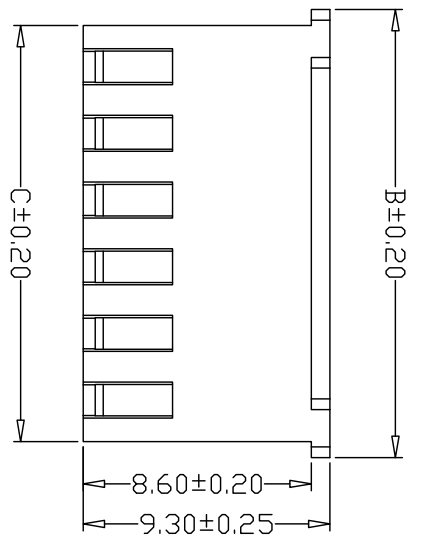
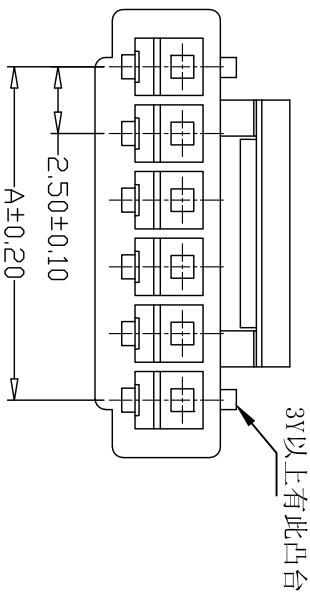
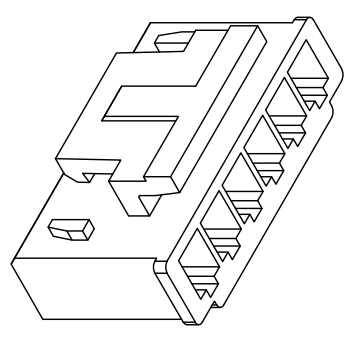
GENERAL TOLERANCE		制图 Mapping		料号 PART NO.		版本 REV.	
X±0.25	X°±2°	张迎春	2022、09、15	A25003-1	A		
.X±0.25	.X°±1°	审核 Audit	钱岳生	HA-端子 WIRE SMT TYPE	页次 SHEET	1/1	
.XX±0.15	.XX°±0.5°	核准 Approved	张名				
.XXX±0.10	.XXX°±0.5°	单位 Units	2022、09、16				
		mm	比例 SCALE				

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

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- 6、 Withstanding Voltage: 1000 AC/minute
- 7、 Material: Nylon66, UL94V-0



PIN	尺寸 (mm)			
	A	B	C	D
-02Y	2.50	6.80	5.60	5.00
-03Y	5.00	9.30	8.10	5.00
-04Y	7.50	11.80	10.60	5.00
-05Y	10.00	14.30	13.10	7.50
-06Y	12.50	16.80	15.60	10.00
-07Y	15.00	19.30	18.10	12.50
-08Y	17.50	21.80	20.60	15.00
-09Y	20.00	24.30	23.10	17.50
-10Y	22.50	26.80	25.60	20.00
-11Y	25.00	29.30	28.10	20.00
-12Y	27.50	31.80	30.60	22.50
-13Y	30.00	34.30	33.10	25.00
-14Y	32.50	36.80	35.60	27.50
-15Y	35.00	39.30	38.10	27.50
-16Y	37.50	41.80	40.60	30.00
-17Y	40.00	44.30	43.10	32.50
-18Y	42.50	46.80	45.60	35.00
-19Y	45.00	49.30	48.10	37.50
-20Y	47.50	51.80	50.60	40.00

GENERAL TOLERANCE		制图 Mapping		张迎春	
X±0.25	X°±2°	2022、09、15	钱岳生	2022、09、15	张名
X±0.25	X°±1°	2022、09、15	核 准	2022、09、16	张名
.XX±0.15	.XX°±0.5°	Approved	核 准	2022、09、16	张名
.XXX±0.10	.XXX°±0.5°	Units	核 准	2022、09、16	张名
		mm	比例	SCALE	

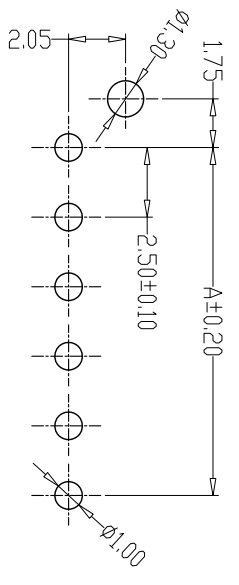
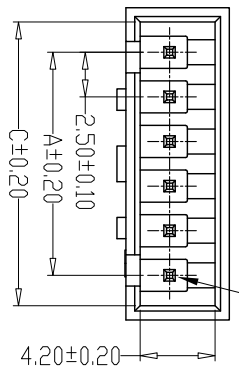
料号 PART NO.	A25003-nY	版本 REV.	A
品名 TITLE	HA-孔座	页次 SHEET	1/1
客户料号 CUST. NO.			

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YueDing HongYi Electronics Co., Ltd

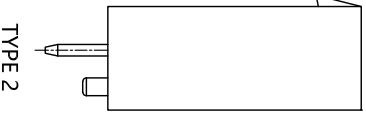
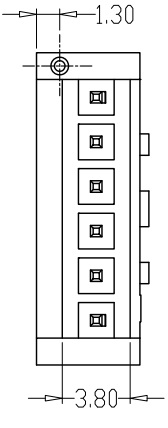
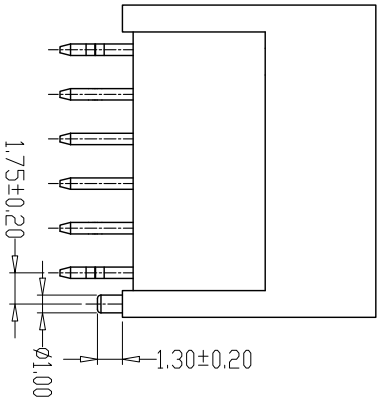
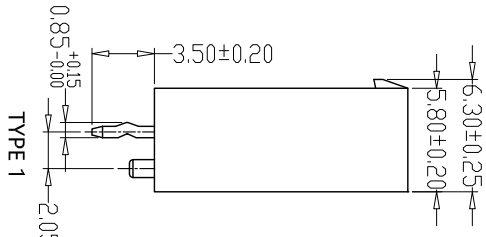
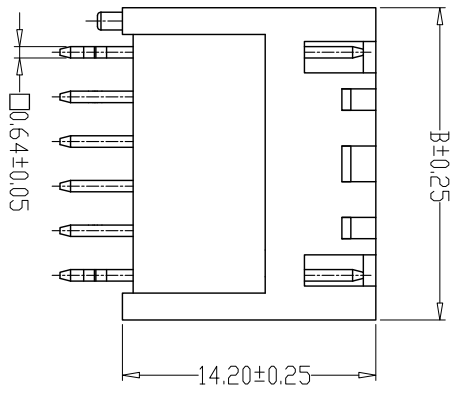
版本 REV.	日期 DATE	变更内容 ECN NO.	描述 DESCRIPTION	制图 DRAWN

SPECIFICATIONS

- 1、Current Rating: 3A 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: 1000V AC/minute
- 7、Material: Wafer PA66, UL94V-0
PIN Brass Tin-plated



PCB LAYOUT



PIN	尺寸 (mm)		
	A	B	C
-02A	2.50	7.50	6.00
-03A	5.00	10.00	8.50
-04A	7.50	12.50	11.00
-05A	10.00	15.00	13.50
-06A	12.50	17.50	16.00
-07A	15.00	20.00	18.50
-08A	17.50	22.50	21.00
-09A	20.00	25.00	23.50
-10A	22.50	27.50	26.00
-11A	25.00	30.00	28.50
-12A	27.50	32.50	31.00

GENERAL TOLERANCE		制图 Mapping	张迎春
X±0.25	X°±2°	审核 Audit	钱岳生
.X±0.25	.X°±1°	批准 Approved	张名
.XX±0.15	.XX°±0.5°	单位 Units	2022、09、16
.XXX±0.10	.XXX°±0.5°	mm	SCALE

料号 PART NO.	A25004-nA	版本 REV.	A
品名 TITLE	XHC (HAC) 加高直针	页次 SHEET	1/1
客户料号 CUSTOMER NO.			

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Yueqing Hongyi Electronics Co., Ltd