



浙江珠城科技股份有限公司

ZHEJIANG ZUCH TECHNOLOGY CO., LTD

产品系列  
Product Series

RAST2.5 系列

文件名称  
Document name

产品规格书  
Product specification

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## RAST2.5 系列

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## 文件修订履历( Modify history)

标记 Tag	修订日期 revision date	修订内容摘要 Revision content	修订者 reviser	备注 Note
1	2020.5.20	新编制 First release	陈翔	
2	2021.8.3	新增规格 Added Specifications	陈翔	
3	2024.4.20	修改端子簧端子的插拔力标准	陈翔	
4	2025.6.25	增加针座及相关标准	瞿益远	

## 1、范围 Scope

本产品规格书适用于浙江珠城科技股份有限公司生产的 RAST2.5 系列连接器

This Specification covers the RAST2.5 series connector made by ZHEJIANG ZUCH TECHNOLOGY CO., LTD.

## 2、产品描述 Product Description

产品名称 Product name	规格型号 Part No.	材质 Material	阻燃等级 Flame Retardant Grade	压接范围 Applicable Wire Size	表面处理 Surface Treatment
孔座 Housing	HP2527G-nY	PA66/磷铜 Phosphor copper	UL94V-0	22-24# AWG	/
孔座 Housing	HP2527A-nY	PA66/磷铜 Phosphor copper	UL94V-0	22-24# AWG	/
孔座 Housing	HP2527D-nY	PA66/磷铜 Phosphor copper	UL94V-0	22-24# AWG	/
孔座 Housing	HP2527B-nY	PA66/磷铜 Phosphor	UL94V-0	22-24# AWG	/



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		copper			
针座 Header	HW2527F-nA 灌胶型针座	PA66/磷铜 Phosphor copper	UL94V-0	/	镀锡 Tin-plating
针座 Header	HW2527G-nA	PA66/磷铜 Phosphor copper	UL94V-0	/	镀锡 Tin-plating

### 3、相关标准 Related Standards

注：本规格书为系列产品通用，当规格书参数要求与产品图纸发生冲突时，以产品图纸中的要求为准，当规格书参数与参考标准内容冲突时，以本规格书中的要求为准。

Note: This specification is for one full series normal version. If this specification has any conflicting items with products drawings, should take product drawings as right one. If any parameter is this specification conflict with reference standard, should take the parameter in this specification as right one.

#### 参考文件：Reference standard.

GB/T 2421	电工电子产品环境试验 第一部分 总则 Testing Method for Environmental of Electrical Connectors Class 1: General Principles
GB/T 2423	电工电子产品环境试验方法 Testing Method for Environmental of Electrical Connectors
GB/T 2424	电工电子产品环境试验导则 Testing Method for Environmental of Electrical Connectors
GB/T 5095	电子设备机电元件基本试验规程及测量方法 Testing procedure/Method for components of electric equipments



#### 4、参数范围 Parameter Ratings

额定电压 Rated Voltage	50V AC/DC Max		
额定电流 Rated Current	2A AC/DC Max (使用 AWG22 线时)		
	AWG22#	AWG24#	
	2A	1.5A	
温度范围 Operation temperature range	-40°C~110°C(含通电温度上升值) Including temperature rise		
适用线型 Applicable wires	22#-24# AWG (0.20mm <sup>2</sup> ~0.38mm <sup>2</sup> )		
适用线路板厚度 Applicable PCB thickness	1.5±0.14mm		

#### 5、产品性能 Performance Specification

产品应满足电气,机械和环境性能要求, 测试方法及判断标准如 5.1、5.2、5.3、

所有测试在室温进行,除非另有说明.

The product shall be designed to meet the electrical, mechanical and environmental performance requirements specified in 5.1,5.2 and 5.3.

All tests shall be performed in the room temperature, unless otherwise specified.



## 5.1 电气特性 Electrical Requirements

序号 COD	项目 Test project	测试方法及条件 Test methods and conditions	标准规格 Standard
5.1.1	外观 Appearance	目测 Checking by eye 视力 Eyesight: >1.0 照明 Lamp: (200-300) lx 目测距离 Space: 0.3-0.5m GB/T 5095.2 Method 1a	a. 塑料件应无明显疤痕、凹陷、开裂、变色及影响使用的变形。 Plastic parts shall not be no obvious scar, dent, crack, discoloration, deformation and other bad effects on use and test b. 金属件应无锈蚀氧化、无明显的机械损伤及电镀层脱落等。 Metal parts should no rust and oxidation, no obvious mechanical damage and plating off.
5.1.2	接触电阻 Contact resistance	公母端子对配后, 通过 100mA 电流, 20mV 以下电压, 测试公母端接触电阻。 Mate connectors: apply a Maximum voltage of 20 mV at rated current of 100mA. GB/T 5095.2 Method 2a / EIA-364-23B	10mΩ Max.(初始值) 10mΩ Max. (Initial value) 15mΩ Max(实验后) 15mΩ Max (After experiment)
5.1.3	耐电压 Withstand voltage	在满负载(未拔针)的未配对连接器上施加 370V AC 电压, 非满负载(拔针)施加 1370V AC 电压, 漏电流 1mA 的电压作用, 时间 1min。 The voltage applied to leakage current 1mA between adjacent contacts or ground wires is AC for 1minute. GB/T 5095.2 Method 4a / EIA-364-20B	外观: 无击穿和飞弧现象 no breakdown and flashover
5.1.4	绝缘电阻 Insulation resistance	在相邻的接触件这间或地线之间施加 500V DC 电压, 持续时间 1min。 500V DC shall be applied a voltage of between adjacent contacts of a mated specimen to measure insulation resistance for one minute. GB/T 5095.2 Method 3a / EIA-364-21C	10MΩ Min (初始值) 10MΩ Min (initial value) 5MΩ Min (实验后) 5MΩ Min (After experiment)

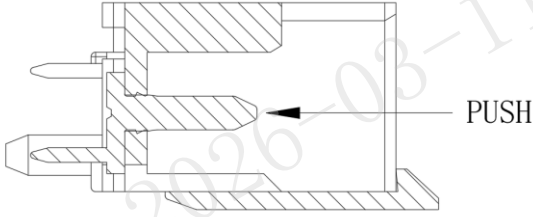
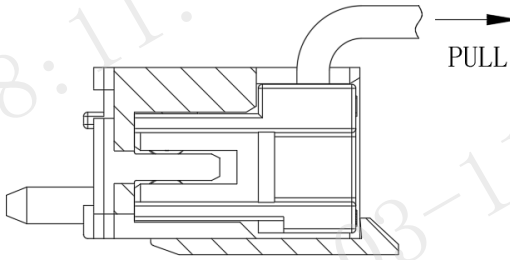


5.1.5	IDC 温升 IDC Temperature Rise	<p>测试 IDC 压接区由于通电而产生的高于环境温度的温升，测试工具必须处于不受空气对流影响的区域。 稳定在某一定值后，5 分钟间隔的 3 个读数差值都在 1℃ 以内。</p> <p>Measure the temperature rise above ambient created by the energizing current. Measurement must be taken at a place where there is no influence from air convection. Measure in the area on the IDC area.</p> <p>Stabilize at a single current level until 3 readings at 5 minute intervals are within 1℃.</p> <p><b>GB/T 5095.3 Method 5a / EIA-364-70A</b></p>	Δ45℃ Max. (Δ45K Max)
5.1.6	漏电起痕指数 Tracking index	<p>按照 GB/T 4207-2012 标准进行检测测试溶液 A</p> <p>Test Liquid A</p> <p><b>GB/T 4207-2012</b></p>	CTI 250V

## 5.2 机械特性 Mechanical Requirements

5.2.1	端子预装保持力 Contact Retention in Insert	<p>将孔座固定，由底端对端子施加拉力，测端子与壳体之间发生位移所需的拉力。操作速度为 25.4mm/min。</p> <p>Fix the plug, apply tension to the terminal from the bottom. Measure the tension required for displacement between the terminal and the housing.</p> <p>Operating Speed: 25.4 mm/min</p> <p><b>GB/T 5095.8 Method 15a / EIA-364-29B</b></p>	保持力: 5N Min Retention force: 5N Min
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5.2.2	插针保持力 Pin resistance force	<p>将针座水平固定，由顶端对插针施加两相反方向的力，测插针与壳体之间发生位移所需的力。</p> <p>The header is fixed, from the top of pin thrust between the pin and the shell, displacement of the required thrust.</p> <p><b>GB/T 5095.8 Method 15a / EIA-364-29B</b></p> 	插针针座保持力: 20N Min. DIP Retention force: 20N Min.
5.2.3	胶壳锁扣强度 Lock strength	<p>固定连接器（仅塑件）和测力计，在轴线方向将一端拔出，速度不大于 25±3mm/min.</p> <p>Mated connector (Only for plastic part), apply axial pull out force at the speed rate of 25mm/min.</p> 	锁扣强度: 20N Min Lock strength: 20N Min
5.2.4	簧端子的插拔力 Insertion and withdraw force	<p>将簧端子固定在测力计上，沿连接器轴线方向插拔，速度不大于 25mm/min。</p> <p>Fix the spring terminal on the dynamometer and use the PCB board to insert and pull out along the length of the connector, the speed is not more than 25mm/min.</p> <p><b>GB/T 5095.8 Method 16e / EIA-364-13B</b></p>	插入力 6N Max Insertion force: 6N Max  拔出力: 0.8N Min Pullout force :0.8N Min
5.2.5	球压测试 Ball Pressure Test	<p>按照GB/T5169.21-2017标准进行检测</p> <p>试验温度: 125℃ 试验时间: 1小时 Test temperature:125℃ Test time:1 hour</p>	压痕直径: ≤2mm Diameter:≤2mm



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		GB/T5169.21-2006		
5.2.6	机械寿命 Durability	将插头和插座进行 30 次插拔后，测定其接触电阻。 After plugging and unplugging the plug and socket 30 times, measure the contact resistance. GB/T 5095.5 Method 9a / EIA-364-09C	外观无损伤 Appearance without damage  接触电阻: ≤15mΩ Contact resistance: ≤15mΩ	
5.2.7	线端分离拉力 Termination Tensile Strength	与 IDC 压接区呈 90° 的方向拔出导线，速度为 25.4mm/min。 Test 90° to the mating direction in the IDC area. Apply axial pull out force at the speed rate of 25.4mm/min. GB/T5095.8 Method 16d / EIA-364-08B	适用电线 Wire Size	抗张强度 Tensile Strength
			22AWG	30N Min.
			24AWG	25N Min.
5.2.8	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（10~55~10）Hz，每个循环时间为 1 分钟，振幅 1.52mm。沿 XYZ 三轴正反方向各循环 2h Mated connectors subjected to following vibration conditions, for a period of 2 hours in each of 3 mutually perpendicular axes, 100 mA current shall be applied. Frequency: (10~55~10) HZ/min. Amplitude: 1.52mm GB/T 5095.4 Method 6d / EIA-364-28D	接触电阻: ≤15mΩ Contact resistance: ≤15mΩ  电路瞬断: 1μsec Max. Instantaneous break: 1μsec Max.	



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5.2.9	机械冲击 Mechanical shock	<p>插件连接器，串联在直流电源上，允许电流 <b>100mA</b>；在冲击试验台上，模拟正常工作状态，在三个互相垂直方向的每一方向连续施加三次冲击，即共 <b>18</b> 次，冲击加速度为 <b>980m/s<sup>2</sup></b>（100G），脉冲持续时间为 6ms，施加波形为半正弦波。</p> <p>The plug-in connector is connected in series with the DC power source and allows the current 100mA; the normal working state is simulated on the impact test platform, and the three is in the two Three shocks are applied continuously in each direction, i.e., 18 times, the impact acceleration is 980m/s<sup>2</sup> (100G), and the pulse duration is constant Time is 6ms, and the waveform is half sine wave. Test equipment should be installed in the test, the instantaneous opening time should not exceed 1s.</p> <p><b>GB/T 5095.4 Method 6c / EIA-364-27B</b></p>	<p>试验后应无影响正常操作的损伤 There should be no damage to normal operation after the test.</p> <p>接触电阻: ≤15mΩ Contact resistance: 15mΩ Max.</p> <p>电路瞬断: 1μsec Max. Instantaneous break: 1μsec Max.</p>
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## 5.3 环境特性 Environmental Requirements

5.3.1	热冲击 Heat Shock	<p>端子公母端插接后置于实验装置中进行循环测试，按下列步骤调试温度：</p> <p>a) 在(110+3/-0)°C的恒温条件下放置 30min；  b) 在+25°C常温条件下放置不超过 5max，  c) 在(-40+0/-3)°C的恒温条件下放置 30min；  d) 在+25°C常温条件下放置不超过 5max，  从 a)到 d)为一个循环周期，共进行 25 个循环，恢复 1~2h。</p> <p>The male and female terminals of the terminal are inserted into the experimental device to be tested in circulation,  Temperature °C      Duration (Minutes)  a 105+3/-0              30  b +25                      5Max.  c -40+0/-3               30  d +25                      5Max.</p> <p>Step a to d is one cycle, 25 cycles shall be tested.  Recovery time 1~2 hours.  GB/T 5095.6 method 11d / EIA-364-32C</p>	<p>外观：无损伤 Appearance: No Damage</p> <p>接触电阻：15mΩ Max Contact Resistance: 15mΩ Max</p> <p>绝缘电阻：5MΩMin Insulation resistance: 5MΩ Min</p> <p>耐电压：满足 5.1.3d Withstand voltage: meet 5.1.3</p>
5.3.2	高温测试 Heat Resistance	<p>将插头在温度为 110±5°C的高温环境中连续放置 168 小时，然后测量其两端接触电阻。</p> <p>The plug in the embedded state are continuously placed in the high temperature environment with a temperature of 105 ± 5 DEG C for about 240 hours, and then the contact resistance is measured.  GB/T 5095.6 Method 11i / EIA-364-17B</p>	<p>外观：无损伤 Appearance: No Damage</p> <p>接触电阻 20mΩ Max Contact resistance: 20mΩ Max.</p>
5.3.3	低温测试 Cold Resistance	<p>将插头放进温度为-30°C的低温箱存放 24 小时后待其恢复到室温。</p> <p>The plug is placed in a low temperature box with a temperature of -30 DEG C for 24 hours, and then it is returned to the room temperature.  GB/T 5095.6 Method 11j</p>	<p>外观：无明显变形、开裂等对使用有影响的缺陷。 Appearance: No obvious deformation, cracking and other defects affecting the use</p> <p>接触电阻：20mΩ Max Contact resistance: 20mΩ Max.</p>



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5.3.4	耐湿性 Humidity	<p>将插头置于实验装置中进行测试            温度: <math>40 \pm 2^{\circ}\text{C}</math>            相对湿度: 90-95%            持续时间: 96 小时            The plug shall be placed in the experimental device to be tested.            Temperature: <math>40^{\circ}\text{C}</math>            Humidity: 90-95%            Duration: 96 hours  <b>GB/T 5095.6 Method 11c / EIA-364-31B</b></p>	<p>外观: 无损伤  <b>Appearance: No Damage</b></p> <p>接触电阻: <math>15\text{m}\Omega</math> Max  <b>Contact Resistance: <math>15\text{m}\Omega</math> Max</b></p> <p>绝缘电阻: <math>5\text{M}\Omega</math> Min  <b>Insulation resistance: <math>5\text{M}\Omega</math> Min</b></p> <p>耐电压: 满足 5.1.3  <b>Withstand voltage: meet 5.1.3</b></p>
5.3.5	盐水喷雾 Salt spray	<p>将插头置于实验装置中进行测试            盐水浓度: 5%            温度: <math>35 \pm 2^{\circ}\text{C}</math>            持续时间: 48 小时            The plug shall be placed into the experimental device to be tested.            Salt concentration: 5%            Temperature: <math>35 \pm 2^{\circ}\text{C}</math>            Duration: 48 hours  <b>GB/T 5095.6 Method 11f / EIA-364-26B</b></p>	<p>外观: 无露出底金属的严重锈蚀  <b>Appearance: No erosion with material exposed is acceptable</b></p> <p>接触电阻: <math>15\text{m}\Omega</math> Max  <b>Contact Resistance: <math>15\text{m}\Omega</math> Max</b></p>
5.3.6	灼热丝测试 Glow wire test	<p>按 GB/T 5169.11 进行灼热丝试验, 试验温度分别为 <math>750^{\circ}\text{C}</math>、<math>850^{\circ}\text{C}</math>, 试验时间 30s。            Carry out the glow wire test according to GB/T 5169.11, the test temperature is <math>750^{\circ}\text{C}</math> and <math>850^{\circ}\text{C}</math>.            Test time: 30s.</p>	<p>火焰持续 <math>\leq 30\text{s}</math> (<math>850^{\circ}\text{C}</math>)            火焰持续 <math>\leq 2\text{s}</math> (<math>750^{\circ}\text{C}</math>)  <b>Flame duration <math>\leq 30</math> seconds (Test at <math>850^{\circ}\text{C}</math>).</b>  <b>Flame duration <math>\leq 2</math> seconds (Test at <math>750^{\circ}\text{C}</math>).</b></p>
5.3.7	可焊性 Solderability test	<p>把试验样品需要焊接的部位蘸助焊剂, 再浸入焊锡炉中, 锡炉温度 (<math>245 \pm 5</math>) <math>^{\circ}\text{C}</math>; 时间 2~3s, 取出冷却后, 检查连接器焊接端蘸锡情况。            Dip the welding part of the test sample in flux into the tin solder furnace at a temperature of (<math>245 \pm 5</math>) <math>^{\circ}\text{C}</math>. Time 2~3s, take out and cool, check the solder dip condition of connector welding end.  <b>GB/T 5095.6 Method 12a / EIA-364-52</b></p>	<p>上锡率 95% 以上  <b>Tin coverage <math>\geq 95\%</math></b></p>



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5.3.8	耐焊接性 Resistance to soldering heat	1.把试验样品需要焊接的部位浸入焊锡炉中,锡炉温度(270±3)℃;时间(10±1)s后,室温下恢复1h。 Dip solder tails into the molten solder(held at (270±3) °C for (10±1) sec., Recovery time 1 hours GB/T 5095.6 Method 12d / EIA-364-56A	外观:无影响使用的物理损伤 Appearance: No damage
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## 测试分组 Test Sequences

序号	测试项目 Test item	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5.1.1	外观检测 Appearance	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5.1.2	接触电阻 Contact resistance			2	2	2	2		2	2						
5.1.3	耐电压 Withstand voltage				6	4		2								
5.1.4	绝缘电阻 Insulation resistance							3								
5.1.5	IDC 温升 IDC Temperature rise				3/5											
5.1.6	漏电起痕指数 Tracking index										2					
5.2.1	端子保持力 Contact Retention in Insert	2														
5.2.2	插针保持力 Pin resistance force												2			
5.2.3	胶壳锁扣强度 Lock strength													2		
5.2.4	簧端子的插拔力 Insertion and withdraw force		2													
5.2.5	球压测试 Ball Pressure Test											2				
5.2.6	机械寿命 (插拔耐久性) Durability			3												
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5.2.8	振动 Vibration						3									
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5.3.1	热冲击 Thermal shock									3						
5.3.2	高温测试 Heat Resistance				4											
5.3.3	低温测试 Cold Resistance					3										
5.3.4	耐湿性 Humidity							4								
5.3.5	盐水喷雾 Salt spray								3							
5.3.6	灼热丝测试 Glow wire test										3					

