Product Specification [产品规格书]:	Document No	PS-HRS-2023-01
Subject [主题]: 2.00mmPitch HRS-2023 Series Connector Specification	Date Issued	2020/6/28
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This specification is only referred to the HRS-2023 series connector

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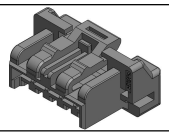
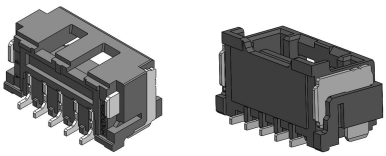
【1.适用范围 Scope】

此种规格包括 2.00mm Pitch HRS-2023 Series 连接器规格说明.

This Specification Covers the 2.00mm Pitch HRS-2023 Series Connector Specification.

【2.产品型号描述 Product Description】

产品名称 Part Name	产品料号 Production No.	产品图示 Picture of Product
端子/Terminal	HRS-2023TX-PSN1	
胶壳/Housing	HRS-2023H-XX-N0HFWH	
针座/Wafer	HRS-2023WRS-XXHF-9TSWNR HRS-2023WVS-XXHF-9TSWNR	

【3.材质与表面处理 Material and surface treatment】

规格内容 Specification		材 质 Materials	表面处理 Disposal of Surface
端子/Terminal		磷铜/Phosphor Bronze	Underplated: Ni (1~3μm)overall; Top plating: Sn (2~5μm) overall
胶壳/Housing		PA66	白色 white
针座/Wafer	Base	PA9T	本色 color
	PIN	磷铜/Phosphor Bronze	Underplated: Ni (1~3μm)overall; Top plating: Sn (2~5μm) overall
	Solder tab	黄铜/Brass	Underplated: Ni (1~3μm)overall; Top plating: Sn (2~5μm) overall

（上述参数请以工程图为准/Please Refer to the Project drawing for the above Specification）

【4. 额定等级 Ratings and applicable wires】

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项 目【Item】	规 格【Standard】		
额定电压 Rated Voltage (Max.)	250V		[AC/DC]
额定电流 Rated Current (Max.)	AWG#22	3.0A	
	AWG#24	2.0A	
	AWG#26	1.5A	
使用温度范围 Ambient temperature Range	-40℃~105℃		
适用线径 Applicable wire insulation O.D	HRS-2023TL-PSN1	AWG #24~26(0.22~0.13mm^2) Insulation O.D. φ1.20~φ1.05mm	
	HRS-2023T-PSN1	AWG #22~24(0.35~0.22mm^2) Insulation O.D. φ1.40~φ1.20mm	

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

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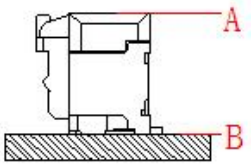
【5.性能 PERFORMANCE】

5-1. 电气的性能 Electrical Performance.

项目 【Item】		条件 【Test Condition】	规格 【Requirement】
5-1-1	接触阻抗 Contact Resistance	公母配合,开放电压 20mV 以下,电流 10mA 检测连接器 A~B 区。 Mate connectors, measure by dry circuit, 20mV MAX, 10mA. (JIS C5402-2-1) 	Initial: 20 milliohms Max. After Test: 40 milliohms Max.
5-1-2	绝缘阻抗 Insulation Resistance	公母配合,在相邻端子,端子与地片之间,使用 250V 的直流电,检测连接器。 Mate connectors, apply 250V DC between adjacent terminal or ground. (JIS C5402-3-1/ MIL-STD-202 Method 302)	1000 Megohms Min.
5-1-3	耐电压 Dielectric Strength	公母配合,在相邻端子,端子与地片之间,使用 800V 的交流电 1 分锺,检测连接器. Mate connectors, apply 500V AC for 1 minute between adjacent terminal or ground. (JIS C5402-4-1/ MIL-STD-202 Method 301)	不出现中断等情况 No Breakdown and Flashover
5-1-4	铆线后端子接触阻抗 Contact resistance on crimped portion	铆线后之端子,开放电压 20mV 以下,电流 10mA 检测连接器. Crimp the applicable wire on to the terminal measure by dry circuit 20mV MAX, 10mA.	5 milliohms Max.

5-2. 机械的性能 Mechanical Performance.

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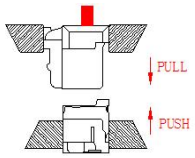
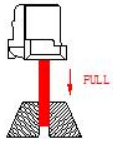
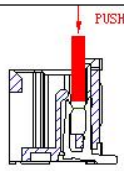
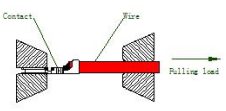
项目 【Item】		条件 【Test Condition】	规格 【Requirement】	
5-2-1	插拔力 Insertion & Retention Force	以 25±3mm /min 的速率插入和拔出. Insert and withdraw Connectors at the speed rate of25±3mm/minute. 	参照第 6 项 Refer to paragraph 6	
5-2-2	端子保持力 Terminal/ Housing Retention Force	以每分 50mm /min 的速率,将端子从 Housing 内轴向拔出的力量. Apply axial pull out force at the speed rate of 50mm/minute on the terminal assembled in the housing. 	9.8N {1.0kgf} Min.	
5-2-3	端子插入力 Terminal Insertion Force	铆线后之端子插入 Housing 所需最大力量. Insert the crimped terminal into the housing.	9.8N {1.0kgf} Max.	
5-2-4	Pin 针保持力 Pin Retention Force	以每分 100mm /min 的速率,将 PIN 针从 Wafer 内轴向拔出的力量. Apply axial push force at the speed rate of 100mm/minute. 	2.94N {0.3kgf} min.	
5-2-5	端子压着强度 Tensile strength (Crimped connections)	固定铆线后的端子，使电线与端子分离时所需的最小力量. Fix the crimped terminal, apply axial pull out force on the wire. (Do not crimp insulation part).	AWG#22 (0.35mm²)	39.2N{4.0kgf} MIN
			AWG#24 (0.22mm²)	29.4N{3.0kgf} MIN
			AWG#26 (0.13mm²)	19.6N{2.0kgf} MIN
			Note> As for unspecified wire sizes in this specification define values with clients	

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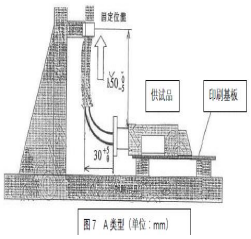
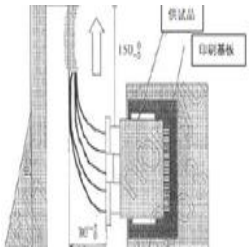
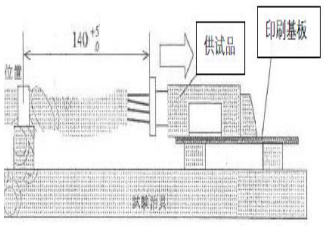
5-2-6	公母座带卡扣保持力 Male/Female Housing Retention Force	将插好端子的公母座含卡扣以每分钟50±3mm的速度拔出所需要力量。 Mate connectors and apply pull-out force at the speed rate of 50 ± 3mm/min. This Test should be done with positive lock locked.	29.4N {3.0 kgf} MIN.
5-2-7	抓板力 Catch plate force	将带电线的公端连接器与母端连接器进行连接，如下图示的箭头方向按 25-100mm/min 的一定速度拉伸至连接器从测定印刷基板脱落的最大荷重。 Connect the male connector with wire with the female connector, and stretch it at a certain speed of 25-100 mm / min in the direction of the arrow as shown in the figure below to the maximum load of the connector falling off from the printed substrate.   	19.6N {2.0 kgf} MIN.

5-3. 环境性能及其它 Environmental Performance and Others.

项目 【Item】	条件 【Test Condition】	规格 【Requirement】

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5-3-1	重复插拔 Repeated Insertion/ Withdrawal	以每分锤不超过 10 次的速率,将公母插拔 30 次. When mated up to 30 cycles repeatedly by the rate of 10 cycles per minute.	接触阻抗 Contact Resistance	40 milliohms Max.
5-3-2	温升测试 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 Mating connectors shall be energized at rating current until thermal stability is achieved, and then measured the termperature rise. （UL498）	温升测试 Temperature rise	30℃ Max.
5-3-3	耐振动性 Vibration	振幅: 1.52mm P-P 时间: 10~55~10 HZ in 1 minute 持续时间: 每轴向 2 小时 Amplitude: 1.5mm P-P Sweep time: 10~55~10 HZ in 1 minute Duration: 2 hours in each X.Y.Z axials. (JIS C60068-2-6/MIL-STD-202 Method 201)	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	40 milliohms Max.
			瞬断 Discontinuity	1 micro-second Max.
5-3-4	耐冲击性 Shock	在 X.Y.Z 上 6 个方向上,以 490m/s2(50g 的力量)冲击下各 3 回.490m/s2{50G}, 3 strokes in each X.Y.Z. axes. (JIS C60068-2-27/MIL-STD-202 Method 213)	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	40 milliohms Max.
			瞬断 Discontinuity	1 micro-second Max.
5-3-5	耐热性 Heat Resistance	105±2℃,96 hours. (JIS C60068-2-2/ MIL-STD-202 Method 108)	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	40 milliohms Max.
5-3-6	耐寒性 Cold Resistance	-40±3℃,96 hours. (JIS C60068-2-1)	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	40 milliohms Max.
5-3-7	耐湿性 Humidity	温度: 40±2℃ 湿度: 90~95%(RH) 持续时间: 96 hours Temperature: 40±2℃ Relative Humidity: 90~95% Duration: 96 hours (JIS C60068-2-78/MIL-STD-202 Method 103)	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	40 milliohms Max.
			耐电压 Dielectric Strength	Must meet 5-1-3

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			绝缘阻抗 Insulation Resistance	100 Megohms Min.
5-3-8	温度变化 Temperature Cycling	从-40℃持续 30 分锺升至+105℃持续 30 分锺,循环 5 次. 5 cycles of: a) -40℃ 30 minutes. b) +105℃ 30 minutes. (JIS C60068-2-14)	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	40 milliohms Max.
5-3-9	盐水喷雾 Salt Spray	在温度 35±2℃,盐水浓度 5±1%下,盐水喷雾 48±1 小时. 48±1 hours exposure to a salt spray from the 5 ±1% solution at 35±2℃. (Based upon EIA-364-26B/MIL-STD-202 Method 101D Cond.B).	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	40 milliohms Max.
5-3-10	焊锡附着性 Solder-ability	焊接时间: 3~5 秒. 焊接温度: 245±5℃. Soldering Time: 3~5second. Solder Temperature: 245±5℃. (Based upon EIA-364-52)	Solder Wetting	浸渍面积需 95%以上 95% of immersed area must show no voids, pin holes.
5-3-11	焊锡耐热性 Solder-Resistance	焊接时间: 5~10 秒. 焊接温度: 255+5/-5℃. Soldering time:5~10 sec solder. Temperature:255+5/-5℃. (Based upon EIA-364-56A)	外观 Appearance	无异状 No Damage

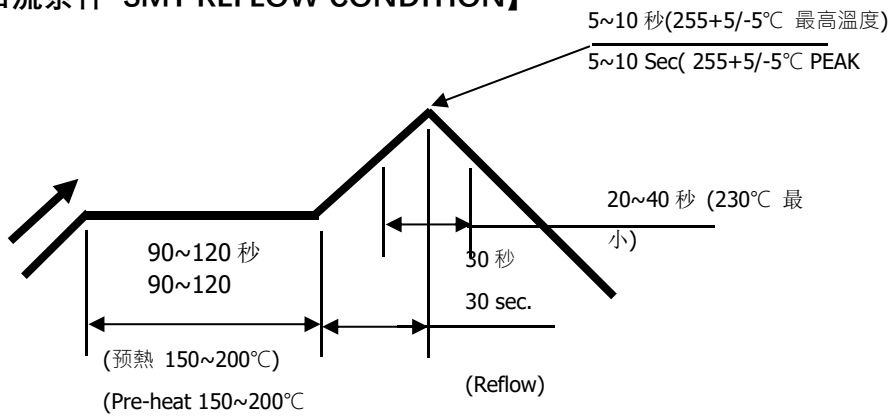
【6.综合插入力及拔出力 INSERTION/WITHDRAWAL FORCE】<Connector mating force>

PIN 数 No. of CKT	初次插入力(最大值) First Insertion (kgf Max.)	30 次拔出力(最小值) 30th Withdrawal (kgf Min.)	PIN 数 No. of CKT	初次插入力(最大值) First Insertion (kgf Max.)	30 次拔出力(最小值) 30th Withdrawal (kgf Min.)
02	0.66	0.04	09	2.97	0.18
03	0.99	0.06	10	3.30	0.20
04	1.32	0.08	11	3.63	0.22
05	1.65	0.10	12	3.96	0.24
06	1.98	0.12	13	4.29	0.26

07	2.31	0.14	14	4.62	0.28
08	2.64	0.16	15	4.95	0.30

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

【7. SMT 回流条件 SMT REFLOW CONDITION】



温度条件曲线图/ 基板上温度

TEMPERATURE CONDITION GRAPH/ (TEMPERATURE ON BOARD PATTERN SIDE)

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.

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.