

<b>Product Specification [产品规格书]:</b>	Document No	PS-HRS-1515-04
<b>Subject [主题]:</b> 1.50mm Pitch HRS-1515 Series Connector Specification	Date Issued	2022/5/12
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This specification is referred to the 1.50mm series wire to board connector

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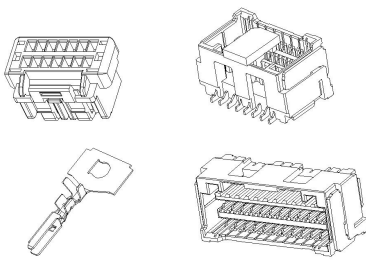
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**【1.适用范围 Scope】**

此种规格包括 1.50mm Pitch HRS-1515 Series 连接器规格说明.

This Specification Covers the 1.50mm Pitch HRS-1515 Series Connector Specification.

**【2.规格与料号 Spec and Part number】**

规格内容 Specification	产品料号 Production No.	产品图示 Picture of Product
端子/Terminal	HRS-1515T-PXXX	
胶壳/Housing	HRS-1515H-2*XX-PT	
针座/Wafer	HRS-1515WVS-2*XX-LPXXX HRS-1515WRS-2*XX-LPXXX	

**【3.材质与表面处理 Disposal of Material and surface】**

规格内容 Specification	材质 Materials	表面处理 Disposal of Surface
端子/Terminal	磷铜/Phosphor Bronze	1、Tin 100u"Min 、 Ni 50u"Min 2、Au 15u" Min、 Tin 50u"Min 、 Ni 50u"Min 3、Au 30u" Min、 Tin 50u"Min 、 Ni 50u"Min
胶壳/Housing	PBT/PA66	UL 94V-0
针座/Wafer	Base	High Temperature Plastic
	PIN	磷铜/Phosphor Bronze
	Solder tab	黄铜/Brass

(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】**

项目【Item】	规格【Standard】	
额定电压 Rated Voltage (Max.)	100V	
额定电流 Rated Current (Max.)	AWG#24	1.5A
	AWG#26	1.5A
使用温度范围 Ambient temperature Range	-40°C~+105°C	
适用线径 Applicable wire insulation O.D	AWG #24~26(0.22~0.13mm <sup>2</sup> ) Insulation O.D. 1.28mm(Max.)	

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

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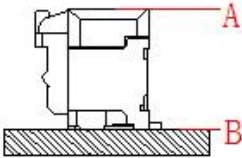
**【4.1 参考允许电流 CURRENT DERATING REFERENCE INFORMATION】**

AWG	2*04 PIN	2*08 PIN	2*13 PIN
	Amps(A)	Amps(A)	Amps(A)
24	2.0	2.0	1.5
26	2.0	1.5	1.5

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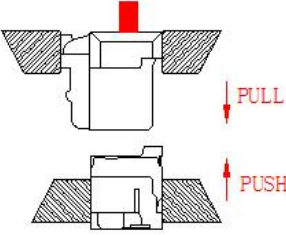
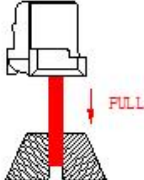
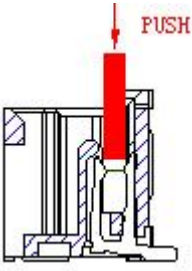
**【5.性能 PERFORMANCE】**

**5-1. 电气的性能 Electrical Performance.**

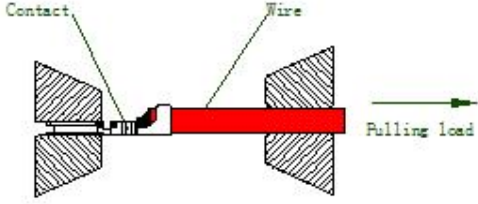
项 目 【Item】	条 件 【Test Condition】	规 格 【Requirement】
5-1-1 接触阻抗 Contact Resistance	<p>公母配合,开放电压 20mV 以下,电流 10mA 检测连接器 A~B 区. Mate connectors, measure by dry circuit, 20mV MAX, 10mA. (Based upon EIA-364-06A).</p> 	<p>Initial: 20 milliohms Max. After Test: 40 milliohms Max.</p>
5-1-2 绝缘阻抗 Insulation Resistance	<p>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. (Based upon EIA-364-21B / MIL-STD-202 Method 302 Cond.B)</p>	500 Megohms Min.
5-1-3 耐电压 Dielectric Strength	<p>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. Mate connectors, apply 500V AC for 1 minute between adjacent terminal or ground. (Based upon EIA-364-20A / MIL-STD-202 Method 301)</p>	<p>不出现中断等情况 No Breakdown and Flashover</p>
5-1-4 铆线后端子接触 阻抗 Contact resistance on crimped portion	<p>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.</p>	10 milliohms Max.

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**5-2. 机械的性能 Mechanical Performance.**

项目 【Item】		条件 【Test Condition】	规格 【Requirement】
5-2-1	插拔力 Insertion & Retention Force	<p>以每分钟 50mm /min 的速率插入和拔出。 Insert and withdraw Connectors at the speed rate of 50mm/minute.</p> 	参照第 6 项 Refer to paragraph 6
5-2-2	端子保持力 Terminal/Housing Retention Force	<p>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.</p> 	9.8N {1.0kgf} Min.
5-2-3	端子插入力 Terminal Insertion Force	<p>铆线后之端子插入 Housing 所需最大力量。 Insert the crimped terminal into the housing.</p>	9.8N {1.0kgf} Max.
5-2-4	Pin 针保持力 Pin Retention Force	<p>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.</p> 	2.94N {0.3kgf} min.

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项 目 【Item】		条 件 【Test Condition】	规 格 【Requirement】		
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 线号 (平方毫米)	#24 (0.22mm <sup>2</sup> )	#26 (0.13mm <sup>2</sup> )
			Spec.kgf. Min.	3.0	2.0
			Note> As for unspecified wire sizes in this specification define values with clients		
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 25.4±3mm 的速度拔出所需要力量。 Mateconnectors and apply pull-out force at the speed rate of 25.4±3mm/min.This Test should be done with positive lock locked.	3kgf min.		

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

项 目 【Item】		条 件 【Test Condition】	规 格 【Requirement】	
5-3-1	重复插拔 Repeated Insertion/ Withdrawal	以每分钟不超过 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（EIA364-70,Method 1） Mating connectors shall be energized at rating current until thermal stability is achieved, and then measured the temperature rise. (EIA364-70,Method 1)	温升测试 Temperature rise	30°C Max.
5-3-3	耐振动性 Vibration	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 Amplitude: 1.5mm P-P Sweep time: 10~55~10 HZ in 1 minute Duration: 2 hours in each X.Y.Z axials. (Based upon EIA-364-28B/MIL-STD-202 Method 213B Cond.A)	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/s <sup>2</sup> (50g 的力量)冲击下各 3 回.490m/s <sup>2</sup> {50G}, 3 strokes in each	外观 Appearance	无异状 No Damage

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		X.Y.Z. axes. (Based upon EIA-364-27B/MIL-STD-202 Method 213B Cond.A)	接触阻抗 Contact Resistance	40 milliohms Max.
			瞬断 Discontinuity	1 micro-second Max.
项目 【Item】		条件 【Test Condition】	规格 【Requirement】	
5-3-5	耐热性 Heat Resistance	105±2°C,96 hours. (Based upon MIL-STD-202 Method 108A Cond.A)	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±5°C,96 hours. ( Based upon EIA-364-105)	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°C 湿度: 90~95%(RH) 持续时间: 96 hours Temperature: 40±2°C Relative Humidity: 90~95% Duration: 96 hours (Based upon EIA-364-31A/MIL-STD-202 Method 103B Cond.B)	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
			绝缘阻抗 Insulation Resistance	100 Megohms Min.
5-3-8	温度变化 Temperature Cycling	从-40°C持续 30 分钟升至+105°C持续 30 分钟, 循环 5 次. 5 cycles of: a) -40°C 30 minutes. b) +105°C 30 minutes. (Based upon EIA-364-32B)	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°C,盐水浓度 5±1%下,盐水喷雾 48±1 小时.	外观 Appearance	无异状 No Damage

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		48±1 hours exposure to a salt spray from the 5±1% solution at 35±2°C. (Based upon EIA-364-26B/MIL-STD-202 Method 101D Cond.B).	接触阻抗 Contact Resistance	40 milliohms Max.
<b>项目 【Item】</b>	<b>条 件 【Test Condition】</b>		<b>规 格 【Requirement】</b>	
5-3-10	焊锡附着性 Solder-ability	焊接时间: 3~5 秒. 焊接温度: 245±5°C. Soldering Time: 3~5second. Solder Temperature: 245±5°C. (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°C. Soldering time:5~10 sec solder. Temperature:255+5/-5°C. (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) 30 <sup>th</sup> 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) 30 <sup>th</sup> Withdrawal (kgf Min.)
2*02	1.32	0.08	2*09	5.94	0.36
2*03	1.98	0.12	2*10	6.60	0.40
2*04	2.64	0.16	2*11	7.26	0.44
2*05	3.30	0.20	2*12	7.92	0.48
2*06	3.96	0.24	2*13	8.58	0.52
2*07	4.62	0.28	2*14	9.24	0.56
2*08	5.28	0.32	2*15	9.90	0.60

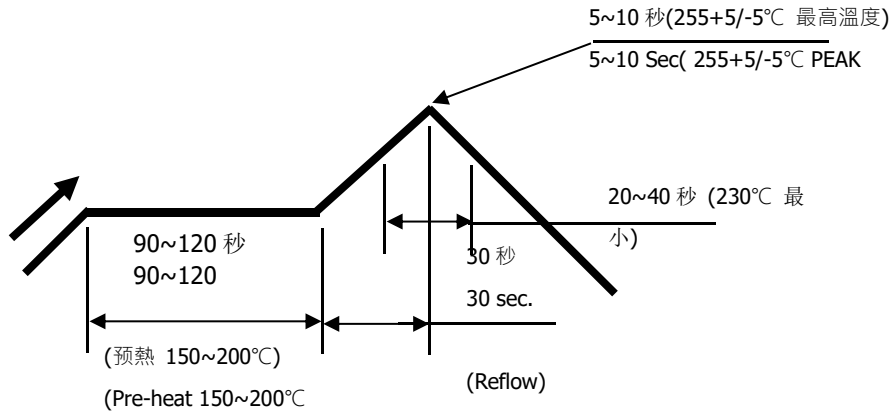
注：以上插拔次数为 30 次

Note: Insertion and Withdrawal for 30Cycles



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**【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.