

东莞市翰皓精密电子有限公司

DONGGUAN HANHAO PRECISION ELECTRONIC CO.,LTD

Product Specification [产品规格书]:	Document No	PS-1515-03
Subject [主题]: 1.50mm Pitch M1515 Series Connector Specification	Date Issued	2013/11/30
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This specification is referred to the 1.50mm series wire to board connector

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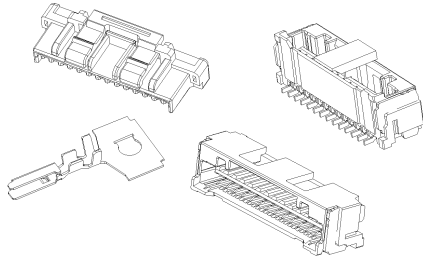
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【1.适用范围 Scope】

此种规格包括 1.50mm Pitch M1515 Series 连接器规格说明

This Specification Covers the 1.50mm Pitch M1515 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	M1515T	
胶壳/Housing	M1515H-XX M1515H-2*XX	
针座/Wafer	M1515WVS-XX M1515WRS-XX M1515WVS-2*XX	

【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	Tin80~200u" over the Ni 40~120u"	
胶壳/Housing	PBT/PA66	UL 94V-0	
针座/Wafer	Base	High Temperature Plastic	
	PIN	磷铜/Phosphor Bronze	Tin80~200u" over the Ni 40~120u"
	Solder tab	黄铜/Brass	Tin80~200u" over the Ni 40~120u"

(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.)	2A
使用温度范围 Ambient temperature Range	-40℃ ~ +105℃
适用线径 Applicable wire insulation O.D	AWG #24~26(0.22~0.13mm ²) Insulation O.D. 1.28mm(Max.)

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

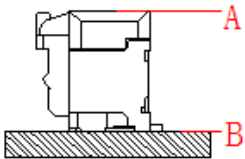
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【5.性能 PERFORMANCE】

5-1. 电气的性能 Electrical Performance.

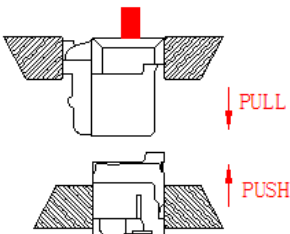
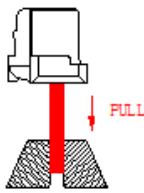
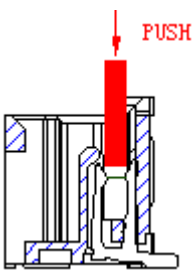
项 目 【Item】	条 件 【Test Condition】	规 格 【Requirement】
5-1-1 接触阻抗 Contact Resistance	<p>公母配合,开放电压 20mV 以下,电流 10mA 检测连接器 A~B 区. Mate connectors, measure by dry circuit, 20mV MAX, 10mA. (Based upon EIA-364-06A).</p> <div style="text-align: center;">  </div>	<p>Initial: 20 milliohms Max. After Test: 40 milliohms 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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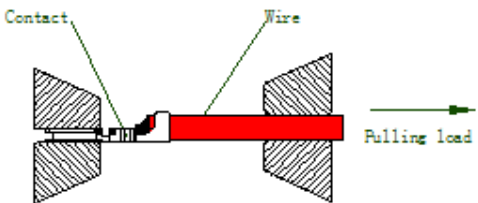
5-2. 机械的性能 Mechanical Performance.

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> 	<p>参照第 6 项 Refer to paragraph 6</p>
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> 	<p>9.8N {1.0kgf} Min.</p>
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>	<p>9.8N {1.0kgf} Max.</p>
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> 	<p>2.94N {0.3kgf} min.</p>

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项目 【Item】	条件 【Test Condition】	规格 【Requirement】		
5-2-5 端子压着强度 (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 ²)	#26 (0.13mm ²)
		Spec.kgf. Min.	3.0	2.0
		Note> As for unspecified wire sizes in this specification define values with clients		

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 50 次。 When mated up to 50 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 ² (50g 的力量)冲击下各 3 回.490m/s ² {50G}, 3 strokes in each X.Y.Z. axes. (Based upon EIA-364-27B/MIL-STD-202	外观 Appearance	无异状 No Damage
		接触阻抗 Contact Resistance	40 milliohms Max.

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	Method 213B Cond.A)	瞬断 Discontinuity	1 micro-second Max.
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项目 【Item】	条件 【Test Condition】	规格 【Requirement】	
5-3-5 耐热性 Heat Resistance	105±2℃,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℃,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℃ 湿度: 90~95%(RH) 持续时间: 96 hours Temperature: 40±2℃ 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
5-3-8 温度变化 Temperature Cycling	从-40℃持续 30 分钟升至+105℃持续 30 分钟, 循环 5 次. 5 cycles of: a) -40℃ 30 minutes. b) +105℃ 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℃,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.
项 目 【Item】	条 件 【Test Condition】		规 格 【Requirement】	
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 th 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 th 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
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 th 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 th 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

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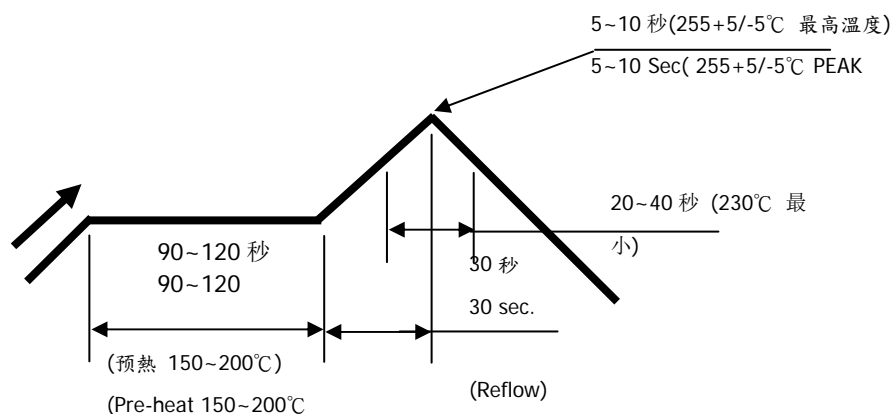
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2*07	4.62	0.28	2*14	9.24	0.56
2*08	5.28	0.32	2*15	9.90	0.60

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

【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.