东莞市国亚电子有限公司 GYA DONGGUO GUOYA ELECTRONICS CO.,LTD 址: 广东省东莞市长安镇增田村横增路 72号 批 Address: 72 Hengzeng Road, Zengtian Village, Chang' an Town, Dongguan cigy, Guangdong Province E-Tel: 0769-81769816 传真: 0769-87089563 E-mail: gya1688@gdgya.com QQ: 316563782 诚信通: gya 旗舰店 网站: www.gdgya.com Product Specification [产品规格书]: Document No PS-1503-01 Subject [主题]: Date Issued 2019/06/09 1.50mm Pitch 1503 Series Connector Specification Date Revised 2018/05/26 Version A0 This specification is referred to the 1.50mm series wire to board connector 索引【INDEX】 1. 适用范围 【Scope】 2. 规格与料号 【Spec and Part number】 3. 材质与表面处理 【Disposal of Material and surface】 4. 额定等级 【Ratings and applicable wires】 5. 性能 【 Performance 】 5-1. 电气的性能【Electrical Performance.】 5-2. 机械的性能【Mechanical Performance】 5-3. 环境性能及其它【Environmental Performance and Others】 6. 综合插入力及拔出力 【 Insertion/Withdrawal Force 】 7. SMT 回流条件 【 SMT Reflow Condition 】

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【1.适用范围 Scope】

此种规格包括 1.50mm Pitch 1503 Series 连接器规格说明.

This Specification Covers the 1.50mm Pitch 1503 Series Connector Specification.

【2.規格与料号 Spec and Part number】

規格内容 Specification	产品料号 Production No.	产品图示 Picture of Product
端子/Terminal	1503T-PXX	NONE
胶壳/Housing	1503H-XX-N0	NONE
针座/Wafer	1503WRS-XX-XXXX	NONE

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

規格内 Specifica		材 质 Materials	表面处理 Disposal of Surface
端子/Terminal		磷铜/Phosphor Bronze	Nickel: Over 30µ", Gold Flash
胶壳/Housing		PA66	UL 94V-0
	Base	High Temperature Plastic	UL 94V-0
针座/Wafer	PIN	黄铜/Brass	Nickel :Over 30µ″,Gold Flash
	Solder tab	黄铜/Brass	Nickel :Over 30µ″, Over Tin 70µ″

(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.)	150V	[AC/DC]	
额定电流 Rated Current (Max.)	3A	[AC/DC]	
使用温度范围 Ambient temperature Range	-25℃~+85℃		
适用线径 Applicable wire insulation O.D	24 AWG -28 AWG Insulation O.D. 1.10mm(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 条件 规格				
	[Item]	Test Condition	[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. (Based upon EIA-364-06A).	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 500V 的直流电,检测连接器. Mate connectors, apply 500V DC between adjacent terminal or ground. (Based upon EIA-364-21B / MIL-STD-202 Method 302 Cond.B)	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 500V 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. (Based upon EIA-364-20A / 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.	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 & withdraw Force	以每分锺 25.4±3mm 的速率插入和拔出. Insert and withdraw Connectors at the speed rate of 25.4±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 25.4±3mm 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 25.4±3mm/minute on the terminal assembled in the housing.	
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.	14.7N {1.5kgf} Max.
5-2-4	Pin 针保持力 Pin Retention Force	每分 25.4±3mm 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 25.4±3mm/minute.	0.5N {0.05kgf} min.
5-2-5	Lock 保持力 Lock Retention Force	将 Housing 与 Wafer 匹配后,将 Housing 从 Wafer 内轴 向拔出的力量,看其卡扣的承受力量 A housing and a header shall be mated, Pulling load shall be applied them, the load to make them come off each other shall be measured Housing	10N {1.02kgf} min.

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1.50mm Pitch 1503 Series Connector Specification

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	项目	条件	规	Ħ	ŧ.	
	[Item]	Test Condition	[Requ	ireme	nt)	
		固定铆线后的端子,使电线与端子分离时所需的最小力量.	AWG	24	26	28
		Fix the crimped terminal, apply axial pull out force on the	Spec.kgf.	2.0	2.0	1.0
		wire. (Do not crimp insulation part).	Min.	3.0	2.0	1.0
5-2-6	端子压着强度 (Crimped contact)	Contact Wire Pulling load	Note> As for unspecified this specification define			
			c	lients		

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

Insertion/ Withdrawal Insertion/ Withdrawal Insertion/ U cycles per minute. Contact Resistance Contact Resistance Contact Resistance 5-3-2 ^{Insertion/} Withdrawal Corles per minute. Contact Resistance Insertion/ Contact Resistance Insertion/ Withdrawal 5-3-2 ^{Insertion/} Temperature Rise Contact Resistance Contact Resistance Insertion/ Mating connectors shall be energized at rating current until thermal stability is achieved, and then measured the temperature rise(EIA364-70, Method 1) Imperature rise 30°C Max. 5-3-3 ^{Insertion/} Kasimini the figure figu	项目 条件 规格				
5-3-1 Repeated Insertion/ Withdrawal 以每分锺不超过 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 Mathemated Contact Resistance 5-3-2 	[Item]	Test Condition	[Requirement]		
5-3-2 温升测试 Temperature Rise 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 振磁测试 Vibration test 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 加速度: 44m/S2 外观 外观 开放电压: 20mV 以下 开放电流: 10mA 以下 Amplitude: 1.5mm P-P Sweep time: 10~55~10 HZ in 1 minute Duration: 2 hours in each X.YZ axials. (Based upon EIA-364-288/MIL-STD-202 Method 2138 Cond.A) 擬膨断 Discontinuity 1 micro- second Max. 5-3-4 冲击测试 Shock test 本本系表示 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.YZ. axes. (Based upon EIA-364-27B/MIL-STD-202 Method 2138 Cond.A) 外观 Contact Resistance 私の milliohms Ma Resistance	5-3-1 Repeated Insertion/	When mated up to 50 cycles repeatedly by the rate of		40 milliohms Max	
5-3-3 港动测试 形成 第4m/S2 振动测试 开放电压: 20mV 以下 接触阻抗 Yb& Appearance No Damage 接动测试 开放电压: 20mV 以下 接触阻抗 Ybbration test 开放电流: 10mA 以下 Contact Amplitude: 1.5mm P-P Sweep time: 10~55~10 HZ in 1 minute BW断 Duration: 2 hours in each X.Y.Z axials. (Based upon EIA-364-28B/MIL-STD-202 Method 213B Cond.A) BWm 5-3-4 冲击测试 A malitude: 1.5mm P-P Shock test EA-364-28B/MIL-STD-202 Method 213B Cond.A) Mno Damage 基本X.Y. Z 上 6 个方向上,以 490m/s²(50g 的力量)冲击下 A 3 回.490m/s²(50G), 3 strokes in each X.Y.Z. axes. Mno Damage This Appearance No Damage 基本X.Y. Z L 6 个方向上,以 490m/s²(50g 的力量)冲击下 A 3 回.490m/s²(50G), 3 strokes in each X.Y.Z. axes. Mno Damage 基本X.Y. Z L 6 个方向上,以 490m/s²(50g 的力量)冲击下 A 3 回.490m/s²(50G), 3 strokes in each X.Y.Z. axes. Mno Damage 基本X.Y. Z L 6 个方向上,以 490m/s²(50g 的力量)冲击下 A 3 回.490m/s²(50G), 3 strokes in each X.Y.Z. axes. Mno Damage 基本X.Y. Z L 6 个方向上,以 490m/s²(50g 的力量)冲击下 A 3 回.490m/s²(50G), 3 strokes in each X.Y.Z. axes. Mno Damage 基本X.Y. Z L 6 个方向上,以 490m/s²(50g 的力量)冲击 Appearance No Damage 基本X.Y. Z L 6 个方向上, MIL-STD-202 Method 2138 Mno Milliohms Ma Milliohms Mno Milliohms Mno Milliohms Milliohms Mno Milliohms	5-3-2	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	Temperature rise	30℃ Max.	
5-3-3 振动测试 加速度:44m/S2 接触阻抗 40 milliohms Ma 万-3-3 振动测试 开放电压:20mV以下 开放电流:10mA以下 40 milliohms Ma ア放电流:10mA以下 Amplitude:1.5mm P-P Sweep time:10~55~10 HZ in 1 minute Imicro-second Max. Duration:2 hours in each X.Y.Z axials. (Based upon EIA-364-28B/MIL-STD-202 Method 213B Cond.A) M來观 无异状 5-3-4 冲击测试 Anglitude:1.5mg/s2(50G), 3 strokes in each X.Y.Z. axes. Mo Damage 5-3-4 冲击测试 Anglitude:1.5mg/s2(50G), 3 strokes in each X.Y.Z. axes. Mo Damage 5-3-4 冲击测试 Anglitude:1.5mg/s2(50G), 3 strokes in each X.Y.Z. axes. Mo Damage 5-3-4 小市击测试 Anglitude:1.5mg/s2(50G), 3 strokes in each X.Y.Z. axes. Mo Damage 5-3-4 小市击测试 Anglitude:1.5mg/s2(50G), 3 strokes in each X.Y.Z. axes. Mo Damage 5-3-4 小市击测试 Anglitude:1.5mg/s2(50G), 3 strokes in each X.Y.Z. axes. Mo Damage 5-3-4 小市击测试 Anglitude:1.5mg/s2(50G), 3 strokes in each X.Y.Z. axes. Mo Milliohms Ma 6 Anglitude:1.5mg/s2(50G), 3 strokes in each X.Y.Z. axes. Mo Milliohms Ma Anglitude:1.5mg/s2(50G) 6 Anglitude:1.5mg/s2(50G), 3 strokes in each X.Y.Z. axes. Mo Milliohms Ma An		时间: 10~55~10 HZ in 1 minute			
5-3-4冰市測试 Shock testSweep 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)瞬断 Discontinuity1 micro- second Max.5-3-4冲击测试 Shock testAAA	5-3-3	加速度: 44m/S2 开放电压: 20mV 以下	加速度: 44m/S2 振动测试 开放电压: 20mV 以下	Contact	40 milliohms Max
5-3-4 冲击测试 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. Appearance No Damage 5-3-4 許示測试 各 3 回.490m/s ² {50G}, 3 strokes in each X.Y.Z. axes. Contact 40 milliohms Ma Shock test (Based upon EIA-364-27B/MIL-STD-202 Method 213B Cond.A) With Ma Milliohms Ma		Sweep time: 10~55~10 HZ in 1 minute Duration: 2 hours in each X.Y.Z axials. (Based upon			
5-3-4 冲击测试 各 3 回.490m/s²{50G}, 3 strokes in each X.Y.Z. axes. 接触阻抗 Shock test (Based upon EIA-364-27B/MIL-STD-202 Method 213B Cond.A) Contact 40 milliohms Ma 勝斯 1 micro-			21124		
瞬断 1 micro-	本击测试 各 3 回.490m/s ² {50G}, 3 strokes in each X.Y.Z. axes. Shock test (Based upon EIA-364-27B/MIL-STD-202 Method 213)	Contact	40 milliohms Max		
		Cond.Ay		1 micro- second Max.	

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项目 条件					
[Item]		[Test Condition]	[Requirement]		
5-3-5	耐热性 Heat Resistance	85±2°C,96 hours. (Based upon MIL-STD-202 Method 108A Cond.A)	外观 Appearance 接触阻抗	无异状 No Damage	
			Contact Resistance	40 milliohms Max.	
			外观	无异状	
5-3-6	耐寒性	-25±5°C,96 hours.	Appearance 接触阻抗	No Damage	
	Cold Resistance	(Based upon EIA-364-105)	Contact Resistance	40 milliohms Max.	
	3-7 副型性 温度: 40±2℃ 湿度: 90~95%(RH) 持续时间: 96 hours Temperature: 40±2℃ Humidity 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		
5.2.7		持续时间: 96 hours	接触阻抗 Contact Resistance	40 milliohms Max.	
5-3-7		Duration: 96 hours (Based upon EIA-364-31A/MIL-STD-202 Method 103B	耐电压 Dielectric Strength	Must meet 5-1-3	
			绝缘阻抗 Insulation Resistance	100 Megohms Min.	
	温度变化	从-25℃持续 30 分锺升至+85℃持续 30 分锺,循环 5 次. 5 cycles of: a) -25℃ 30 minutes.	外观 Appearance	无异状 No Damage	
5-3-8	Temperature Cycling	b) +85°C 30 minutes. (Based upon EIA-364-32B)	接触阻抗 Contact Resistance	40 milliohms Max.	
5-3-9	盐水喷雾	在温度 35±2℃,盐水浓度 5±1%下,盐水喷雾 24±1 小时. 24±1 hours exposure to a salt spray from the 5±1% solution at 35±2℃.	外观 Appearance	无异状 No Damage	
5-5-9	Salt Spray	(Based upon EIA-364-26B/MIL-STD-202 Method 101D Cond.B).	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.	

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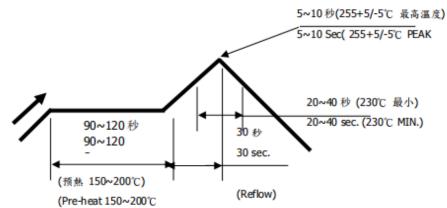
	项目	条件	規	格	
[Item]		Test Condition	[Requirement]		
	焊锡耐热性 Solder- Resistance	焊接时间: 5~10秒.	外观 Appearance	无异状 No Damage	
		焊接温度:255+5/-5℃.			
5-3-11		Soldering time: 5~10 sec solder.			
		Temperature:255+5/-5℃.			
		(Based upon EIA-364-56A)			

【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.)		
2	0.6	0.08	9	2.7	0.18		
3	0.9	0.09	10	3.0	0.20		
4	1.2	0.10	11	3.3	0.22		
5	1.5	0.11	12	3.6	0.24		
6	1.8	0.12					
7	2.1	0.14					
8	2.4	0.16					

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.