

Product Specification [产品规格书]:	Document No	PS-1044-01
Subject [主题]:	Date Issued	2024/09/20
1044 Series Connector Specification	Date Revised	2024/09/20
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This specification is referred to the 1044 series wire to board connector

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【1.适用范围 Scope】

此种规格包括 1044Series 连接器规格说明.

This specification includes the 1044 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
单排线端 Single row Housing	1044A-XXX-PTXXX	
单排卧式针座 Single row Horizontal type Wafer	1044WRS-XXX-LPXXXXX	
双排胶壳 double row Housing	1044H-2*XXX-PTXX	
双排 retainer double row retainer	1044C-2*XXX-PTXX	
双排卧贴针座 double row Horizontal type Wafer	1044WRS-2*XXX-LPXXXXX	

【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
胶壳/Housing	PBT	UL 94V-0
保持器/retainer	PBT	UL 94V-0
针座/ Wafer	Plastic :LCP	UL 94V-0
	PIN: copper alloy	Top planting: Au 3u"(0.075um) ; Under Ni 50~100u"(1.25~2.5um) overall

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

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【4. 额定等级 Ratings and applicable wires】

项目【Item】	规格【Standard】	
额定电压 Rated Voltage (Max.)	200V Max.	[AC/DC]
额定电流 Rated Current (Max.)	1A Max.	
使用温度范围 Ambient temperature Range	-40°C ~ +105°C	

【5.测试方法及要求 Test Methods and Requirements】

5-1. 外观检查 Examination of product.

测试内容 Item	规格要求 Specification requirements	标准/规格 Standard/Requirement
产品外观检查 Visual Inspection	借助 10 倍放大镜对每一个试验样品进行检查，详细记录所有制造或材料的瑕疵，如：裂缝、变色、毛刺等。 Inspect each sample with a 10x magnification, recording all defects in all process or material defects such as cracks, discoloration, flash, etc.	USCAR-2 Rev.7 5.1.8

5-2. 电气的性能 Electrical Performance.

项目 【Item】	条件 【Test Condition】	标准/规格 Standard/Requirement
5-2-1 接触阻抗 Contact Resistance	连接 FPC，然后测量每根导线之间的接触电阻。 Connect with applicable FPC, then contact resistance shall be measured between each coupled terminals	Initial: 30mΩ minimum Max. After environmental Test: 60mΩ Max.
5-2-2 耐电压 Dielectric Strength	500V 交流电 1 分钟，然后进行测量。 500V AC shall be applied for 1 minute, then measurement shall be made.	无电弧或击穿等损坏 Without damage such as arc or breakdown etc

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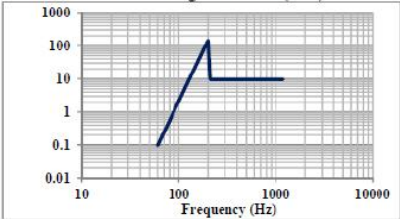
5-2-3	绝缘阻抗 Insulation Resistance	将试验样品的所有接端交错连接成两组，再施加 500 VDC 电压测量绝缘电阻，绝缘电阻>100 MΩ。 Interlace all the terminals of the test sample into two groups, and then apply a voltage of 500 VDC to measure the insulation resistance, and the insulation resistance is >100 MΩ	USCAR-2 5.5.1
5-2-4	电压降 Voltage Drop	在环境前/后 ≤50mV。 Initial/Final ≤50mV	USCAR-2 5.3.2
5-2-5	最大试验 电流能力 Maximum test current capacity	在无风的封闭场所内搭建一个电路 温度：23±5℃(室温) 时间：等待 15 分钟（电流在输出时，电路的温度达到稳定） Create a circuit in a draft free environment Temperature :23±5℃(room temperature) Time: Wait at least 15 minutes for the circuit temperature to reach Steady State	USCAR-2 5.3.3
5-2-6	电流循环 Current Cycling	1.测试电流为最大试验电流 90%，通电 45 分钟，断电 15 分钟，完成 1008 个循环 2.任何端子温升不超过 55℃ 3.干电路电阻 ≤30mΩ 1.Test current is 90% of the maximum test current , 45 minutes of power on , 15 minutes of power off , and 1008 cycles are completed. 2.The temperature rise must not exceed 55℃ at any time during the test for any terminal 3.Dry circuit resistance is less than or equal 30mΩ	USCAR-2 5.3.4

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5-3. 机械的性能 Mechanical Performance.

项 目 【Item】	条 件 【Test Condition】	标准/规格 Standard/Requirement
5-3-1 连接器的插拔力 Connector mate (unmate) force	以每分钟 50mm/s 的速度插入（拔出），测量连接器的插入力(拔出力)，插入力 45N 最大（拔出力 40N 最大）。 Insert (pull out) at a speed of 50mm/s per minute, and measure the insertion force (pull out force) of the connector. The maximum insertion force is 45N (pull out force is 40N).	插入力 45N max 拔出力 40N max insertion force 45N Max pullout force 40N max
5-3-2 连接器保持力 Connector Retention force	将插好端子的公母座含卡扣以每分钟 50mm 的速度拔出所需要力量，保持力 80N 最小。 Mate connectors and apply pull-out force at the speed rate of 50mm/min .This Test should be done with positive lock locked.Retention force 80N MIN.	80N Min
5-3-3 极性特征有效性 Polarization Feature Effectiveness	错误方向将公连接器插入母连接器,公母端子间不通电，不损坏端子。 Insert the male connector into the female connector in the wrong direction, and the male and female terminals are not electrical contact, terminal no damage	USCAR-2 5.4.4

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5-3-4	振动/机械冲击 Vibration/Mechanical Shock	<p>冲击: 1.加速度 35g、脉宽 5~10ms、半正弦 2.每轴 10/次、6 个轴向</p> <p>振动: 三个相互垂直的轴中各进行 8 小时振动测试, 使用 60-1200HZ 12.1grms</p> <p>没有任何端子对的电阻在 1 微秒内超过 7.0Ω 的情况发生</p> <p>Shock :1. Acceleration 35 g, Duration 5~10 ms,Half Sine Wave 2.Each axis 10/times ,6 axes.</p> <p>Vibration :8 hours of vibration test in each of the three vertical axes, using 60-1200 HZ 12.1grms</p> <p>Does not occur when the resistance of any terminal pair exceeds 7.0Ω within 1 microsecond.</p> <p>Vibration Class V2 - On Engine Random (PSD)</p> 	USCAR-2 5.4.6
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5-4. 环境性能及其它 Environmental Performance and Others.

项 目 【Item】	条 件 【Test Condition】	标准/规格 Standard/Requirement
5-4-1 热冲击 Thermal Shock	低温-40℃，高温+105℃ 低温保持 30 分钟，高温保持 30 分钟，高低温转换小于 30 秒， 1000 次循环，不能有任何端子电阻超过 7 欧的时间大于 1us 的情况发生 环境后干电路电阻 ≤60mΩ; 电压降 ≤50mV; Min.temperature:-40℃,Max.temperature:+105℃ Cold soak for 30 min,Heat soak for 30 min,Transfer time<30s,Cycles 100 times,There must be no instance in which the resistance of any terminal pair exceeds 7.0 Ω for more than 1 microsecond Dry Circuit Resistance ≤60mΩ; Voltage Drop ≤50mV	USCAR-2 5.6.1
5-4-2 高温暴露 High Temperature Exposure	时间：1008H，温度：105℃ 环境后干电路电阻 ≤60mΩ;电压降 ≤50mV; Time: 1008H, Temperature :105℃ Dry Circuit Resistance ≤60mΩ; Voltage Drop ≤50mV Dielectric Strength Without damage such as arc or breakdown etc	USCAR-2 5.6.3
5-4-3 温度/湿度循环 Temperature/Hu midity Cycling	温度变化幅度：-40℃ to 105℃ 时间：320H 湿度：(80-100)%，环境后 干电路电阻 ≤60mΩ;电压降 ≤50mV; 绝缘电阻 > 100 MΩ; 耐电压无击穿 Time: 320H Temperature range :-40℃ to 105℃ Humidity :(80-100)% Dry Circuit Resistance ≤60mΩ; Voltage Drop ≤50mV Insulation resistance > 100 MΩ Dielectric Strength Without damage such as arc or breakdown etc	USCAR-2 5.6.2

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5-4-4	重复插拔	插拔次数: 10 次 测试速度: 50mm/每分钟 Cycles: 10 times 次 Test speed: 50mm/minute	接触阻抗 Contact resistance 30mΩ Max
5-4-5	可焊性 solderability	焊接时间: 2±0.5 秒. 焊接温度: 235±5°C. Soldering time: 2±0.5sec solder. Temperature: 235±5°C. For other procedures, refer to JIS C 60068-2-20	浸锡性 Solder Wetting 浸渍面积需 95%以上 A new uniform coating of solder shall cover a minimum of 95% of the surface being immersed.
5-4-6	焊锡耐热性 Resistance to Soldering Heat	1) Reflow characteristics 加热条件 The connector housing shall be stored at a temperature, each as shown in the chart below. <ul style="list-style-type: none"> ① . . . Standing up part temperature Inclination 6°C or more/sec ② . . . 170~190°C 80~110sec ③ . . . Reflow part temperature inclination 4.5°C or more/sec ④ . . . 200°C or more MIN 70sec ⑤ . . . 220°C or more MIN 60sec ⑥ . . . Cooling part temperature inclination 6°C or more/sec 2) Manual Soldering using soldering iron Tip diameter: Selected to fit application Maximum tip temperature: 370°C Antistatic protection: Required Maximum exposure time: 3 sec 3) Manual hot gas soldering Max air temperature: 285°C Max air velocity: 10m/sec Max exposure time: 30 sec	外观无异常, 端子无松动 No abnormal appearance or loose terminals are found

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【6.测试组 Test Group】

流程图		连接器系统电性能测试顺序				
参考标准	测试序列	连接器插拔力	连接器保持力	极性特征有效性	电流循环	振动/机械冲击
USCAR-2	序列 ID	A	B	C	D	E
	测试样品	5	5	5	10	10
5-1	外观检查	1、3	1、3	1、3	1、5	1、7
5-2-1	接触电阻					3、5
5-2-2	耐电压					
5-2-3	绝缘电阻					
5-2-4	电压降					6
5-2-5	最大实验电流能力				3	
5-2-6	电流循环				4	
5-3-1	连接器插拔力	2				
5-3-2	连接器保持力		2			
5-3-3	极性特征有效性			2		
5-3-4	振动/机械冲击					4
5-4-1	热冲击					
5-4-2	高温暴露					
5-4-3	温度/湿度循环					
5-4-4	重复插拔				2	2
5-4-5	可焊性					
5-4-6	焊锡耐热性					

说明:

准备的样品应与适用于生产的说明一致，应随机从当前生产中选择

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流程图		连接器系统电性能测试顺序				
参考标准	测试序列	热冲击	温度湿度循环	高温暴漏	可焊性测试	焊锡耐热性
USCAR-2	序列 ID	F	G	H	I	J
	测试样品	10	10	10	3	3
5-1	外观检查	1、7	1、9	1、9	1、3	1、3
5-2-1	接触电阻	3、5	3、5	3、5		
5-2-2	耐电压		8	8		
5-2-3	绝缘电阻		7	7		
5-2-4	电压降	6	6	6		
5-2-5	最大实验电流能力					
5-2-6	电流循环					
5-3-1	连接器插拔力					
5-3-2	连接器保持力					
5-3-3	极性特征有效性					
5-3-4	振动/机械冲击					
5-4-1	热冲击	4				
5-4-2	高温暴露			4		
5-4-3	温度/湿度循环		4			
5-4-4	重复插拔	2	2	2		
5-4-5	可焊性				2	
5-4-6	焊锡耐热性					2

注释:

- 环境温度: -40°C to 105°C
- 振动等级 V2