



<b>Product Specification [产品规格书]:</b>	Document No	PS-2543-01
<b>Subject [主题]:</b> 2.54mm Pitch 2543 Series Connector Specification	Date Issued	2021/06/30
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This specification is referred to the 2.54mm series wire to board connector

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**【1.适用范围 Scope】**

此种规格包括 2.54mm Pitch 2543 Series 连接器规格说明。

This Specification Covers the 2.54mm Pitch 2543 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	2543TF-PXXX	
塑胶/Housing	2543HM-2*XXN0HFBK	
针座/Wafer	2543WR-2*XX-LPXXXBG 2543WVS-2*XX-LPXXXBG	

**【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(C5191)/Phosphor Bronze	Nickel Plated: 50u" Min ,Bright Tin Plated: 100u" Min.
塑胶/Housing	PA66	UL 94V-0
针座/Wafer	Base	LCP
	PIN	黄铜(C2600)/Brass
		Nickel Plated: 50u" Min ,Matte Tin Plated: 100u" Min.

(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.)	250V	[AC/DC]
额定电流 Rated Current (Max.)	3A	
使用温度范围 Ambient temperature Range	-40°C~+125°C	
适用线径 Applicable wire insulation AWG(mm <sup>2</sup> )	AWG #20~22	Insulation O.D. 1.55mm(Max.)

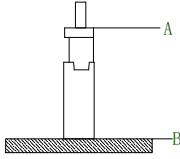
【 \*升温时含端子.Including terminal temperature rise. 】



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**【5.性能 PERFORMANCE】**

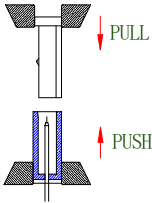
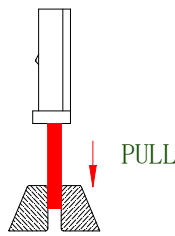
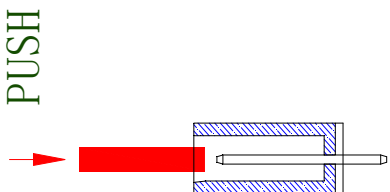
**5-1. 电气的性能 Electrical Performance.**

项 目 【Item】	条 件 【Test Condition】	规 格 【Requirement】
5-1-1 接触阻抗 Contact Resistance	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 1000V 的交流电 1 分钟,检测连接器. Mate connectors, apply 1000V AC for 1 minute between adjacent terminal or ground. (Based upon EIA-364-20A / MIL-STD-202 Method 301)	外观无损伤, 无打火花 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 & Retention Force	<p>以每分钟 50±3mm 的速率插入和拔出。 Insert and withdraw Connectors at the speed rate of 50±3mm/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 50±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 50±3mm/minute on the terminal assembled in the housing.</p> 	19.6N {2.0kgf} 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 100±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 100±3mm/minute.</p> 	14.7N {1.5kgf} 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#	#20	#22
			Spec. .kgf. Min.	5.0	4.0
			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 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	正弦振动 Vibration	低压电压: 12V 工作电流: 每个引脚电流不低于 1A 振幅: 2.4mm P-P 时间: 10~25~500 HZ in 1 minute 持续时间: 每轴向 8 小时 加速度: 6G 测试过程中伴随环境温度变化, 低温-40°C, 高温 85°C (见第 7 项温度曲线)	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	无变化
			瞬断 Discontinuity	1 micro-second Max.
	随机振动 Vibration	低压电压: 12V 工作电流: 每个引脚电流不低于 1A X、Y、Z 3 轴, 每个轴 22 小时 加速度: 9.86G 频率范围: 10~2000HZ (见第 8 项随机振动频率范围) 测试过程中伴随环境温度变化, 低温-40°C, 高温 85°C (见第 7 项温度曲线)	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	无变化
			瞬断 Discontinuity	1 micro-second Max.



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5-3-4	耐冲击性 Shock	低压电压: 12V 工作电流: 每个引脚电流不低于 1A 加速度: 50G 冲击波形半正弦, 单次冲击持续时间 6ms, ±X, ±Y, ±Z 六个方向, 各 1000 次, 共 6000 次	外观 Appearance	无异状 No Damage
			接触阻抗 Contact Resistance	无变化
			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 125±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	500 Megohms Min.
5-3-8	温度变化 Temperature Cycling 从-40°C持续 30 分钟升至+125°C持续 30 分钟, 循环 5 次. 5 cycles of: a) -40°C 30 minutes. b) +125°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. 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).	外观 Appearance	无异状 No Damage
		接触阻抗 Contact Resistance	40 milliohms Max.





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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.
<b>WRITTEN BY: <u>Bin</u></b>			<b>APPROVED BY: <u>Robing</u></b>	
			<b>Sheet: 7 of 9</b>	



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项 目 【Item】		条 件 【Test Condition】	规 格 【Requirement】	
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	3.2	1.00	2*08	12.8	4.00
2*03	4.8	1.50	2*09	14.4	4.50
2*04	6.4	2.00	2*10	16.0	5.00
2*05	8.0	2.50	2*11	17.6	5.50
2*06	9.6	3.00	2*12	19.2	6.00
2*07	11.2	3.50	2*13	20.8	6.50
			2*14	22.4	7.00

注: 以上插拔次数为 30 次

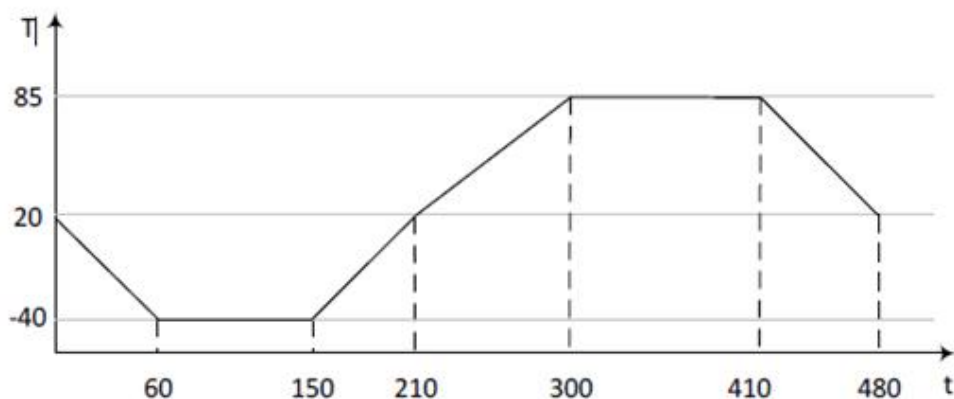
Note: Insertion and Withdrawal for 30Cycles





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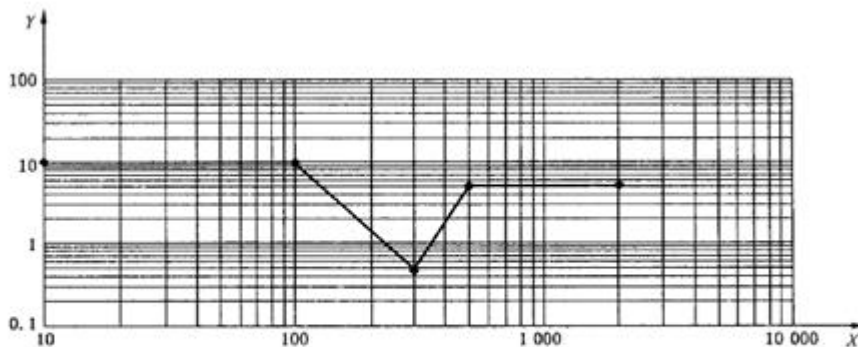
**【7. 振动过程温度变化】**



t—时间, min;

T—温度, °C; 85/-40为推荐的温度, 如DUT实际工作温度不同, 可适应性调整。

**【8. 随机振动频率范围】**



其中:

X—频率, Hz;

Y—PSD, (m/s²)²/Hz.

图 5 PSD 与频率

表 5 PSD 与频率

频率 Hz	PSD (m/s²)²/Hz
10	10
100	10
300	0.51
500	5
2 000	5