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	Date revised	2025-08-22	checked by	Sangshen
Product Specification	Rev. No.	A0	Approved by	Willy
Title : 2.50mm Pitch X2515 Series Connector				

1. SCOPE (适用范围)

This specification covers the performance, tests and quality requirements for the 2.54mm series wire to board connector. (XKB Connection 本规范涵盖了盖 2.54mm 系列线对板连接器性能、测试和质量要求)

2. PRODUCT DESCRIPTION (产品描述)

DESCRIPTION (描述)	Part Number (料号)
2.50mm 线对板连接器针座	X2515WRS-02-LPSW

3. APPLICABLE DOCUMENT (适用文件)

The following documents form a part of this specification to the extent specified herein. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence. (XKB Connection 下列文件构成本规范的一部分，在此规定的范围内。本规范要求与产品图纸有冲突时，以产品图纸为准。如果本规范的要求与参考文件发生冲突，应以本规范为准。)

4. REQUIREMENTS (要求)


4.1. Design and Structure (设计和结构)

Product shall be of the design, structure and physical dimensions specified on the applicable product drawing. (XKB Connection 产品的设计、结构和物理尺寸参考所适用的产品图纸)

4.2. Materials/ Finish (材料/表面处理)

Specification 规格内容	Materials 材质	Disposal of Surface 表面处理
Wafer	LCP	UL 94V-2/UL94V-0
针座	Phosphor Bronze 磷青铜	SW-Matte Tin plating 70u" Min.; 30u" Ni Min

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

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4.3. Ratings (额定功率)

XKB Connectivity Item (项目)	Standard (标准)	
Rated Voltage (Maximum) 额定电压	250V	AC/DC
Rated Current (Maximum) 额定电流	2A	
Ambient temperature Range 使用温度范围	-40°C ~ +125°C From -40 to +125 degree centigrade	

5. TEST STANDARD (测试条件)

5.1 Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows (除另有说明外，用以进行测量和测试的标准环境条件范围如下)

Ambient temperature (环境温度) : 5°C to 35°C

Normal humidity (正常湿度) : 45% to 85%

Air pressure (气压) : 86Kpa to 106Kpa

5.2 However if doubt arises on the decision based on the measured Values under the above-mentioned Conditions. The following conditions shall be employed: (但是在对判定产生疑问时，按下述状态实施)

Temperature (温度) : 20±2°C


Relative humidity (相对湿度) : 65±5%

Air pressure (气压) : 86Kpa to 106Kpa

6. PERFORMANCE AND TEST DESCRIPTION (性能和测试类型)

6.1 APPEARANCE (外观)

ITEM	DESCRIPTION (类型)	TEST CONDITION (测试条件)	REQUIREMENT (要求)
1	Appearance (外观)	Visual. (目视)	Should not have any flaw Scratch discoloration and crushed (无任何裂痕、刮伤、 污染和变形)


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6.2 ELECTRICAL (电气)

ITEM	DESCRIPTION (类型)	TEST CONDITION (测试条件)	REQUIREMENT (要求)
1	contact resistance (接触阻抗)	Mate applicable and measure by dry circuit · 20mV MAX · 10mA. (适合嵌合状态；开放电压 20mV 以下；短路电流 10mA 的状态下测定)	Initial (初始) : 10 mΩ Max. After Test (测试后) : 20 mΩ Max
2	Insulation Resistance (绝缘阻抗)	Based upon EIA-364-21B/MIL-STD-202 Method 302 Cond. B Mate connectors, apply 500V DC between adjacent terminal or ground. (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)	1000 MΩ Min.
3	Dielectric strength (耐电压)	Based upon EIA-364-20A/MIL-STD-202 Method 301 Mate connectors, apply 1000V AC for 1 minute between adjacent terminal or ground. (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)	There shall be no breakdown. (无击穿、跳火现象)

6.3 MECHANICAL (机械)


ITEM	DESCRIPTION (类型)	TEST CONDITION (测试条件)	REQUIREMENT (要求)
1	Insertion Force (插入力)	EIA364-13 Insertion and withdrawal speed : 25mm/minute. (以每分钟 25mm 的速度沿轴向插入母座测量其插入力)	Refer to paragraph 6 参照第 8 项
2	Extraction Force (拔出力)	EIA364-13 Insertion and withdrawal speed : 25mm/minute. 以每分钟 25mm 的速度沿轴向从母座拔出测量其拔出力)	Refer to paragraph 6 参照第 8 项
3	Repeated Insertion/ Withdrawal (重复插拔)	When mated up to 30 cycles repeatedly by the rate of 10 cycles per minute. (以每分钟不超过 10 次的速率, 将公母插拔 30 次.)	Contact Resistance (接触阻抗) : 20 mΩ Max.

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4	Vibration (耐振动性)	<p>Based upon EIA-364-28B/MIL-STD-202 Method 213B Cond.A</p> <p>Amplitude (振幅) : 1.5mm P-P</p> <p>Sweep time (频率) : 10~55~10 HZ in 1 minute</p> <p>Duration (持续时间) : 2 hours in each X.Y.Z axials. (每轴向 2 小时)</p>	<p>Appearance 外观: No Damage 无异状</p> <p>Contact Resistance 接触阻抗: 20 mΩ Max.</p> <p>Discontinuity 瞬断: 1 micro- second Max.</p>
5	Shock (耐冲击性)	<p>490m/s²{50G} · 3 strokes in each X.Y.Z. axes.(DC 1mA 通电状态下; 嵌合轴沿相互垂直的 6 个方向; 以 490m/s²{50G}冲击; 各 3 次)</p>	<p>Appearance 外观: No Damage 无异状</p> <p>Contact Resistance 接触阻抗: 20 mΩ Max.</p> <p>Discontinuity 瞬断: 1 micro- second Max.</p>

6.4 ENVIRONMENTAL (环境)

ITEM	DESCRIPTION (类型)	TEST CONDITION (测试条件)	REQUIREMENT (要求)
1	Temperature Rise (温升测试)	Carrying rated current load.(适合嵌合状态; 最大容许电流通电, 温度测定)	30°C Max.
2	Heat Resistance (耐热性)	Based upon MIL-STD-202 Method 108A Cond.A 125 ± 2 °C ,96 hours.	<p>Appearance 外观: No Damage 无异状</p> <p>Contact Resistance 接触阻抗: 20 mΩ Max.</p>
3	Cold Resistance (耐寒性)	Based upon EIA-364-105 -45±5°C,96 hours.	<p>Appearance 外观: No Damage 无异状</p> <p>Contact Resistance 接触阻抗: 20 mΩ Max.</p>


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4	Humidity (耐湿性)	<p>Based upon EIA-364-31A/MIL-STD-202 Method 103B Cond.B Temperature (温度): $40\pm 2^{\circ}\text{C}$ Relative Humidity (湿度): $90\sim 95\%$ Duration (持续时间): 96 hours</p>	<p>Appearance 外观: No Damage 无异状 Contact Resistance 接触阻 抗: 20 mΩ Max Insulation Resistance 绝缘 阻抗: 1000 MΩ min.</p>
5	Temperature Cycling (温度循环)	<p>Based upon EIA-364-32B 5 cycles of: a) -55°C 30 minutes. b) $+85^{\circ}\text{C}$ 30 minutes. (从-55°C持续 30 分钟升至$+85^{\circ}\text{C}$持续 30 分钟, 循环 5 次)</p>	<p>Appearance 外观: No Damage 无异状 Contact Resistance 接触阻 抗: 10 mΩ Max.</p>
6	Salt Spray (盐水喷雾)	<p>Based upon EIA-364-26A/MIL-STD-202 Method 101D Cond.B 48 ± 1 hours exposure to a salt spray from the $5\pm 1\%$ solution at $35\pm 2^{\circ}\text{C}$. (在温度 $35\pm 2^{\circ}\text{C}$, 盐水浓度 $5\pm 1\%$下, 盐水喷雾 48 ± 1 小时) 注: 此项测试只针对先冲后镀端子</p>	<p>Appearance 外观: No Damage 无异状 Contact Resistance 接触阻 抗: 20 mΩ Max.</p>
7	Solder-ability (焊锡附着性)	<p>Based upon EIA-364-52 Soldering Time 焊接时间: 3 ± 0.5second. Solder Temperature 焊接温度: $245\pm 5^{\circ}\text{C}$.</p>	<p>Immersed area must show no voids, pin holes. 浸渍面积需95%以上</p>
8	Solder- Resistance (焊锡耐热性)	<p>Based upon EIA-364-56A Soldering time 焊接时间: $3\sim 5$ sec Solder Temperature 焊接温度: $260\pm 5^{\circ}\text{C}$.</p>	<p>Appearance 外观: No Damage 无异状</p>

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7.Product Qualification and TEST GROUP (产品验证和测试分组)

XKB Connectivity TEST ITEM (测试项目)		TEST GROUP (测试分组)						
		A	B	C	D	E	F	G
		TEST SEQUENCE						
1	Appearance (外观)	1,10	1,11	1,9	1,7	1,6	1,6	1,5
2	Low Level Contact Resistance (接触电阻)	3,9	3,10	3,7	3,5	3,5	2,5	2,4
3	Insulation Resistance (绝缘电阻)			4,8				
4	Dielectric Withstanding Voltage (耐电压)				4,6			
5	Insertion Force (插入力)	4,7	4,8					
6	Extraction Force (拔出力)	5,8	5,9					
7	Durability (寿命测试)	6						
8	Vibration Sinusoidal Low Frequency (低频正弦振动)		6					
9	Mechanical Shock (机械冲击)		7					
10	Thermal Shock (冷热冲击)					4		
11	Humidity (恒温恒湿)			5				
12	Solder ability (可焊性)				2			
13	High temperature (高温)						3	
14	Salt Spray (盐雾)							3
15	Reflow Soldering Heat Resistance (焊锡耐热性)						4	
16	IR-reflow (回流焊)	2	2	2		2		
	Number of Samples Required (所需样本数目)	35 pcs						

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8.INSERTION/WITHDRAWAL FORCE 综合插入力及拔出力:


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.)
Single	1.0	0.35	7	5.6	1.75
2	1.6	0.50	8	6.4	2.00
3	2.4	0.75	9	7.2	2.25
4	3.2	1.00	10	8.0	2.50
5	4.0	1.25	11	8.8	2.75
6	4.8	1.50	12	9.6	3.00
DOUBLE ROW (双排)					
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			

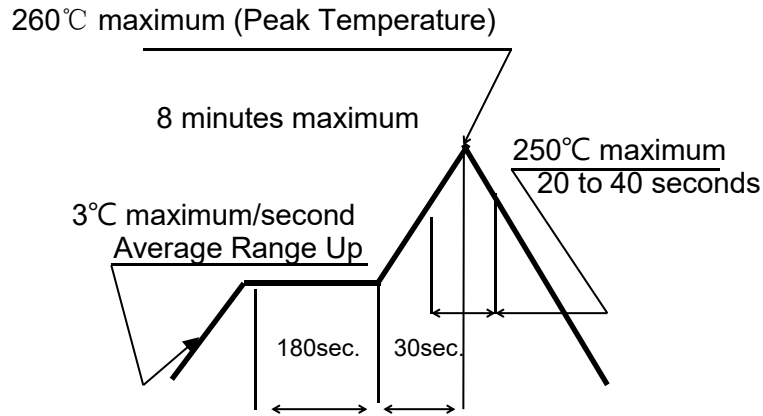
9. SOLDERING 焊接 :

9.1. Wave soldering (波峰焊) : DIP Suggestions solder temperature at 260°C(500°F) max.5 seconds . DIP 型推荐焊接焊锡温度为 260°C (500°F) 最多 5 秒

9.2. Hand soldering (手焊) : Use a soldering iron of 30 watts controlled at 350°C approximately 5 seconds. while applying solder.
使用 30W 烙铁控制温度在 350°C,焊接时长约 5 秒

9.3. Reflow soldering profile(回炉焊):When the maximum temperature of the reflow furnace is 260 °C and the temperature is 260 °c. 10 seconds MAX. (reference) SMT 型回焊炉最高温度为 260°C , 温度为 260°C时 , 最长时间不超过 10 秒 (如图)

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(Preheat Temperature 预热温度: 150~200°C Maximum.)
 Temperature Condition Graph. 温度状态图
 (Temperature on Board Pattern Side)

Requirement 要求: No physical damaged or plastic melting.: 无物理损伤或塑料熔化

Rev.	Description	Date revised	Created/ Revised by
A0	New Release	2025/08/22	AShu