



Product Specification

0.5mmPitch FPC ZIF S/A SMT Type Connectors L521X-series.

产 品 规 格 书
PRODUCT SPECIFICATION

【1】 适用范围 SCOPE

本规格书适用于 0.5mmPitch H= 4.50 FPC 拉拔立式 SMT 型连接器系列。
This specification covers the 0.5mmPitch FPC ZIF S/A SMT Type Connectors series.

【2】 外观尺寸 CONNECTOR DIMENSIONS

请参照图面
See attached drawings.

【3】 材质 MATERIAL

绝缘胶体 Housing: LCP
颜色 Color:白色 White
耐燃等级 (UL94V-0)Flammability Rating (UL94V-0).
后盖 Actuator: LCP
颜色 Color:黑色 Black
耐燃等级 (UL94V-0)Flammability Rating (UL94V-0).
端子 Terminal: 磷青铜 Phosphor Bronze.
焊片 Fitting Nail:黄铜 Brass.

【4】 建议 P. C. B LAYOUT 图 ACCOMMODATED P. C. B LAYOUT

请参照图面
See attached drawings.

【5】 等级 RATING

项 目 ITEM	规 格 SPECIFICATIONS
最大容许电压 Operating Voltage(Max.)	50V AC
最大容许电流 Current Rating(Max.)	0.4A DC
使用温度范围 Operating Temperature range	-25°C ~ +85°C
使用湿度范围 Operating humidity range	相对湿度90%以下 Relative humidity 90% max.
保存温度范围 Storage temperature range	-10°C ~ +50°C
保存湿度范围 Storage humidity range	相对湿度90%以下 Relative humidity 90% max.

*:包含电流通过所产生的上升温度 Including terminal temperature rise.



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【6】 性能 PERFORMANCE

6.1 电气特性 ELECTRICAL PERFORMANCE

项目 ITEM	测试条件 TEST CONDITION	规格 REQUIRMENT
接触阻抗 Contact Resistance	将样品与适合之FPC连接, 测试电压20mV, 限电流10mA下进行阻抗测试。(EIA-364-23) Mate applicable FPC and measure by dry circuit, 20mV Max, 10mA. (EIA-364-23)	40 mΩ最大. 40 mΩ Max.
绝缘阻抗 Insulation Resistance	将样品与适合之FPC连接, 提供相邻端子间测试电压500V DC进行绝缘阻抗测试(EIA-364-21) Mate applicable FPC and apply 500V DC between adjacent terminal or ground. (EIA-364-21)	500MΩ最小. 500 MΩ Min.
耐电压 Dielectric Strength	将样品与适合之FPC连接, 相邻端子间需可承受250V AC(rms) 1分钟。(EIA-364-20) Mate applicable FPC, apply 250V AC(rms) for1 minute between adjacent terminal or ground.(EIA-364-20)	目视外观无任何损坏异状 No Breakdown

6.2 机械特性 MECHANICAL PERFORMANCE

项目 ITEM	测试条件 TEST CONDITION	规格 REQUIRMENT
FPC保持力 FPC Retention Force	将盖子盖上, 与FPC连接, 以操作速度每分钟位移25±3mm进行FPC保持力测试。 Insert the actuator, pull the FPC at a rate of 25±3mm per minute.	Pos.x 0.3N最小 Pos.x 0.3N Min.
端子保持力 Terminal Retention Force	端子与Housing组装后, 以操作速度每分钟位移25±3mm将端子拔出Housing, 进行端子保持力测试。 Apply axial pull out force at the rate of 25±3 mm/minute on the terminal assembled in the housing.	3N最小. 3N Min.



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项目 ITEM	测试条件 TEST CONDITION	规格 REQUIRMENT
焊片保持力 Fitting Nail Retention Force	焊片与Housing组装后，以操作速度每分钟位移 25 ± 3 mm将焊片拔出Housing，进行焊片保持力测试。 Apply axial pull out force at the rate of 25 ± 3 mm/minute on the Fitting Nail assembled in the housing.	1N最小。 1N Min

6.3 环境特性及其它性能 ENVIRONMENTAL PERFORMANCE AND OTHERS

项目 ITEM	测试条件 TEST CONDITION	规格 REQUIRMENT	
耐久性 Durability	将盖子与FPC反复连接，以每分钟小于10 cycles连续操作20次。 Insert and withdraw actuator up to 20 cycles at the speed rate of less than 10 cycles/minute.	接触阻抗 Contact Resistance	60mΩ最大。 60mΩ Max.
温度上升 Temperature Rise	量测通过FPC最大容许电流时，样品接触点之温升 (EIA-364-70 METHOD 2) Mate applicable FPC and measure the temperature rise of contact when the maximum AC rated current is passed. (EIA-364-70 METHOD 2)	温升 Temperature rise	30°C最大。 30°C Max.
耐振性 Vibration	通过DC电流1mA，位移相对距离1.5mm，振动周期10~55~10 Hz在1分钟内，持续2小时，方向在X,Y,Z轴做测试。(EIA-364-28 Condition I) Mate connectors and subject to the following vibration conditions, for period of 2 hours in each of 3 mutually perpendicular axes, passing DC 1mA during the test. Amplitude : 1.5mm P-P Frequency : 10~55~10 Hz in 1 minute. Duration : 2 hours in each of X,Y,Z axes. (EIA-364-28 Condition I)	外观 Appearance	目视外观无任何损坏异状 NoDamage
		接触阻抗 Contact Resistance	60mΩ最大。 60mΩ Max.
		瞬间断电 Discontinuity	1 μ sec最大 1 μ sec Max.



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项目 ITEM	测试条件 TEST CONDITION	规格 REQUIRMENT	
耐冲击性 Shock	将样品与适合之FPC连接, 通过DC 1 mA测试条件, 连续测试3次。在X、Y、Z 3轴6个垂直方向施予重力加速度490m/s ² {50G} 冲击。 (EIA-364-27, test condition A) Mate applicable FPC and subject to the following shock conditions. 3 times of shocks shall be applied for each 6 directions along 3 mutually perpendicular axes, passing DC 1 mA current during the test. (Total of 18 shocks) Peak value : 490m/s ² {50G}(EIA-364-27, test condition A)	外观 Appearance	目视外观无任何损坏异状 NoDamage
		接触阻抗 Contact Resistance	60mΩ 最大. 60mΩ Max.
		瞬间断电 Discontinuity	1 μ sec 最大 1 μ sec Max.
耐热性 Heat Resistance	将样品与适合之FPC连接, 置于环境温度85±2°C测试时间96小时, 再置放于室温下1~2小时。 Mate applicable FPC and expose to 85±2°C for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed.	外观 Appearance	目视外观无任何损坏异状 NoDamage
		接触阻抗 Contact Resistance	60mΩ 最大. 60mΩ Max.
耐寒性 Cold Resistance	将样品与适合之FPC连接, 置于环境温度-40±2°C, 测试时间96小时, 再置放于室温下1~2小时。 Mate applicable FPC and expose to -40±2°C for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed.	外观 Appearance	目视外观无任何损坏异状 NoDamage
		接触阻抗 Contact Resistance	60mΩ 最大. 60mΩ Max.



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项目 ITEM	测试条件 TEST CONDITION	规格 REQUIREMENT	
耐湿性 Humidity	将样品与适合之FPC连接，置于环境温度 $60\pm 2^{\circ}\text{C}$ ，相对湿度 $90\sim 95\%$ ，测试时间96小时，再置放于室温下1~2小时。 Mate applicable FPC and expose to $60 \pm 2^{\circ}\text{C}$, relative humidity 90 to 95% for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed.	外观 Appearance	目视外观无任何损坏异状 NoDamage
		接触阻抗 Contact Resistance	60mΩ最大. 60mΩMax.
		耐电压 Dielectric Strength	需能符合耐电压测试 No Breakdown
		绝缘阻抗 Insulation t Resistance	40 MΩ 最小. 40 MΩ Min
冷热冲击 Temperature Cycling	将样品与适合之FPC连接，承受5 cycles冷热冲击后置放于室温下1~2小时。1 cycle time如下 a) $-55\pm 3^{\circ}\text{C}$ 30分钟 b) $+85\pm 3^{\circ}\text{C}$ 30分钟 Mate applicable FPC and subject to the following conditions for 5 cycles. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. 1 cycle a) $-55\pm 3^{\circ}\text{C}$ 30minutes b) $+85\pm 3^{\circ}\text{C}$ 30minutes	外观 Appearance	目视外观无任何损坏异状 NoDamage
		接触阻抗 Contact Resistance	60mΩ 最大. 60mΩ Max.
盐水喷雾 Salt Spray	将样品与适合之FPC连接，使用 $5\pm 1\%$ 浓度盐水，测试温度 $35\pm 2^{\circ}\text{C}$ ，测试时间 48 ± 4 小时,后于室温下使用清水冲洗后再干燥。 Mate applicable FPC and expose to the following salt mist conditions. Upon completion of the exposure period, salt deposits shall be removed by a gentle wash or dip in running water, after which the specified measurements shall be performed. NaCl solution Concentration : $5 \pm 1\%$ Spray time : 48 ± 4 hours Ambient temperature : $35 \pm 2^{\circ}\text{C}$	外观 Appearance	目视外观无任何损坏异状 NoDamage
		接触阻抗 Contact Resistance	60mΩ 最大. 60mΩ Max.



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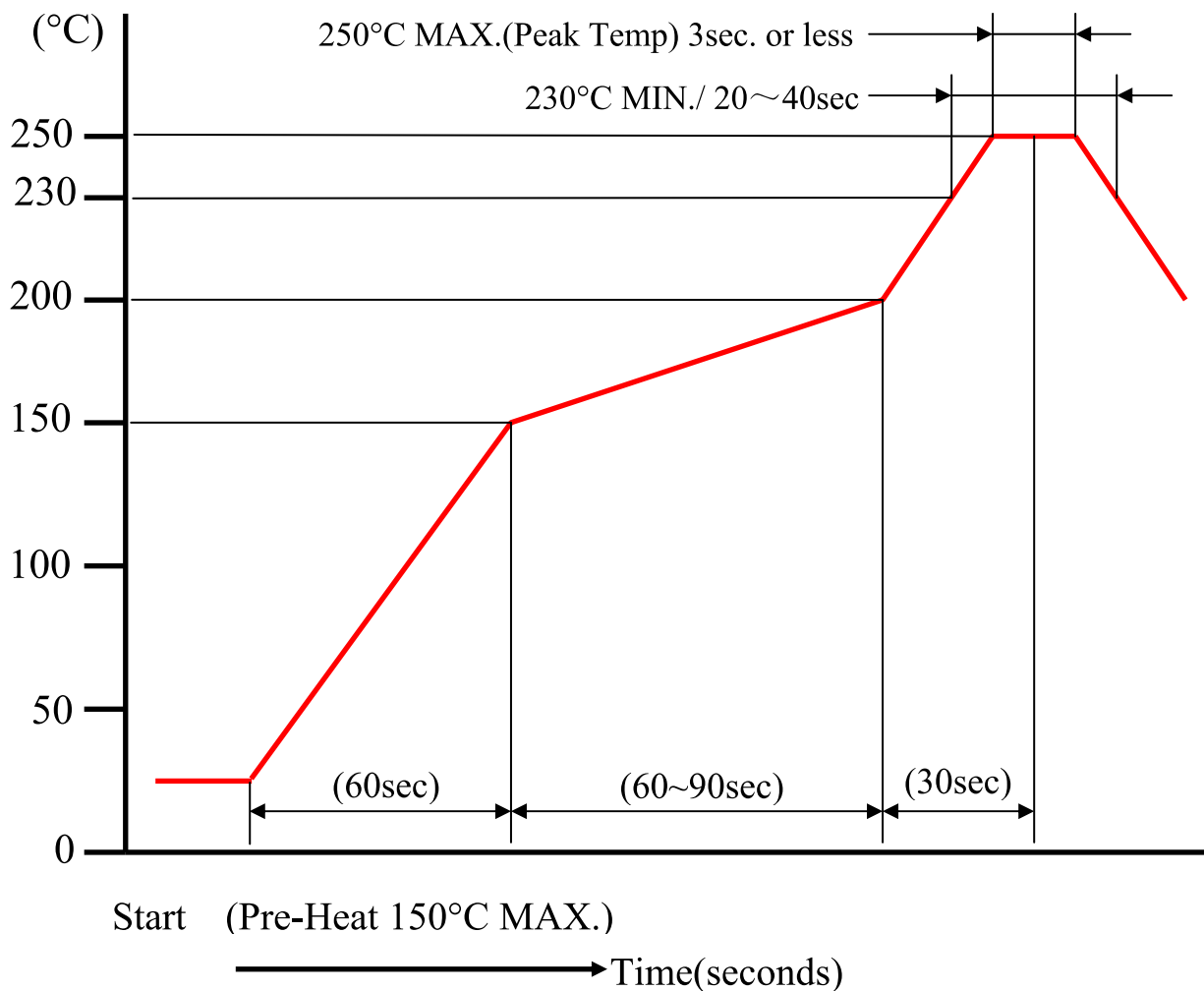
项目 ITEM	测试条件 TEST CONDITION	规格 REQUIREMENT	
二氧化硫(气体) SO2 Gas	将样品与适合之FPC连接，将其置放于50±5 ppm浓度二氧化硫气体中，测试温度40±2°C，测试时间24小时。 Mate applicable FPC and expose them to the following SO2 gas atmosphere. Temperature 40 ± 2°C Gas Density 50 ± 5 ppm Duration 24 hours	外观 Appearance	目视外观无任何损坏异状 NoDamage
		接触阻抗 Contact Resistance	60mΩ 最大. 60mΩ Max.
氨(气体) NH3 Gas	暴露来自浓度28%阿摩尼亚之蒸发气体NH3中，测试时间40分钟。 40 minutes exposure to NH3 gas evaporating from 28% Ammonia solution.	外观 Appearance	目视外观无任何损坏异状 NoDamage
		接触阻抗 Contact Resistance	60mΩ 最大. 60mΩ Max.
焊锡性 Solderability	锡温245±5°C，将导电端子浸入锡炉液面至Housing距离锡面0.1mm位置，焊锡时间3±0.5秒。 Tip of solder tails and fitting nails into the molten solder (held at 245±5°C) up to 0.1mm from the bottom of the housing for 3±0.5 seconds.	润湿性 Solder Wetting	润湿面积75%以上，并不得有漏焊针孔现象 75% of immersed area must show no voids, pin holes.
焊锡耐热性 Resistance to Soldering Heat	使用红外线回焊时请参考第7 When reflowing Refer to paragraph 7. 使用烙铁手焊时须可符合下述焊锡条件 Soldering iron method 0.3mm from terminal tip and fitting nail tip. Soldering time : 3 seconds Max. Solder temperature : 370 ~ 400°C	外观 Appearance	目视外观无任何损坏异状 NoDamage



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【7】 红外线回焊温度曲线 INFRARED REFLOW CONDITION



温度条件TEMPERATURE CONDITION GRAPH
(基板表面温度) (TEMPERATURE ON BOARD PATTERN SIDE)