



# Kunshan Jiahua Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:		
Product specification	MICRO/NANO SIM CARD 0.5H	PS-0009		
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\*\*\*\*\* Revised history \*\*\*\*\*

Edition	ECN NO.	Revised Page	Remark
1	ECN1402012	None	Initial Release

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## 1. 概述 **Scope:**

### 1.1 说明 **Content**

此份产品规格书是针对由昆山嘉华电子有限公司设计和制造的 **MICRO/NANO SIM CARD 0.5H CONN.** 产品所定义的产品性能和测试方法。

This product specification defines the product performance and the test methods to ensure the performance of the **MICRO/NANO SIM CARD 0.5H CONN.**, which is designed and manufactured by Kunshan Jiahua Electronics Co., Ltd.

### 1.2 限制 **Qualification**

所有的测试和检验必须依照本文件中所要求的规格、方法进行。一旦产品的重要制程发生变更，必须立即进行品质验证和测试。

Tests and inspection shall be performed in accordance with the requirements, tests and methods contained herein. A re-qualification test shall be conducted immediately following all major process changes.

## 2. 参考文件 **Referenced Documents:**

EIA364

MIL-STD-883B: Methods 2022 solder Testing.

ISO 7816-1: Identification Cards-integrated circuit cards with contact-dimension and location of the contacts.

GSM11.11: IETS subscriber identity module-interface specification

EIA 481-3 ,SMD tapping standard

若某些项目被发现本规格书中的内容与以上参考文件要求不一致时，一律依本规格书中的内容为测试依据。

In case of any contradiction between this document and referenced documents, this document will take precedence.

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### 3. 规格要求 Requirements:

#### 3.1 应用条件 Application Condition:

3.1.1 额定电流: 0.5Amps DC Max. per contact  
CURRENT RATING : 0.5Amps DC Max. per contact

3.1.2 额定电压: 100 Volt DC Max.  
VOLTAGE RATING : 100 Volt DC Max

#### 3.1.3 使用环境 Operating Environment:

温度: -25°C to +85°C,相对湿度:25%~85%,此条件下功能不可失效。

Temperature:-25°C to +85°C, Relative Humidity:25%~85%, Without loss of function.

#### 3.1.4 储存环境 Storage Environment:

温度: -40°C to +85°C,相对湿度:25%~85%或更低,此条件下功能不可失效。

Temperature:-40°C to +85°C, Relative Humidity: 25%~85% or Less, Without loss of function.

#### 3.2 绿色环保要求 Health, Safety and Environment

此产品中所有涉及环保有关的有害物质管控标准请参考嘉华系统文件:[JH-GP-213](#)

Hazardous substances (Environment related to be controlled substances) contained in this product should comply with the regulations specified by FAF's [JH-GP-213](#).

#### 3.3 测试说明 Test Description

此产品性能须满足本文件第 4 节中的各项规格要求。除非有特别申明，所有的测试和量测必须在以下条件中进行:

The product is designed to meet the requirements specified in section 3.4. Unless otherwise specified, all tests and measurements are to be performed under the following conditions:

温度 Temperature: 15 to 35°C

相对湿度 Relative Humidity: 25% to 75%

大气压 Atmospheric Pressure: 650 to 800 millimeters (25.6 to 31.5 inches) of Mercury.

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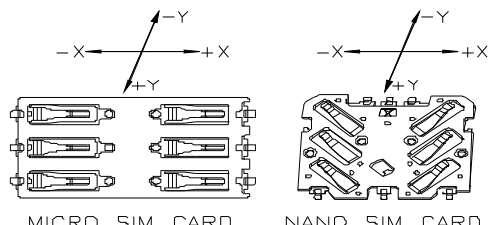
4.测试规范和方法 Test Requirements and Methods		
4.1 外观 Appearance		
项目 Items	规格要求 Requirements	测试方法 Test Methods
4.1 产品外观和尺寸检查 Appearance	所有零件必须组装完好,不能出现毛边,变形,刮伤,以及任何外观破坏等异常; All components shall be properly assembled and free of burrs, warps, scratches, broken chips, and other abnormalities	依照相应的文件和规格书进行外观,功能,及尺寸的检验量测。 Visual, functional, and dimensional inspection complies with applicable specification and document.
4.2 电气性能 Electrical Performance :		
4.2.1 接触阻抗 Low level contact resistance	初始接触阻抗: 100mΩ Max; 试验后接触阻抗: 变化值 50mΩ Max; Initial: 100mΩ Max; After test: 50mΩ Max Change	测量接触阻抗, 测试电流小于 100mA, 开路电压 20mVMax Measure contact resistance of product and test card PCB with less than current of 100 mA ( exception for the conductor resistance) Open voltage : 20mVMax
4.2.2 绝缘阻抗 Insulation resistance	初始绝缘阻抗: 1000 MΩ Min 试验后绝缘阻抗: 100 MΩ Min Initial:1000 MΩ Min After test:100 MΩ Min	测试电压: 直流 500V, 测试时间: 1 分钟, 测试相邻两端子之间的绝缘阻抗; Give DC 500V Voltage for 1 minutes and then measure insulation resistance of contact and contact
4.2.3 耐电压 Dielectric withstanding voltage	产品无击穿、飞弧现象 漏电流最大 0.2mA After the test, Neither creeping discharge nor flashover shall occur. Leakage current 0.2mA Max	两相邻端子之间加载交流 500V 电压 1 分钟; Give AC 500 V in near contact and insulator for 1 minute
4.2.4 温升 Temperature Rise	温度升高不超过 30 °C; Temperature Rise 30 °C Max;	在所有的端子将是连接, 使用额定电流 0.5A DC 测量, 直到温度相对稳定 (3 小时左右) 用热电偶测量端子表面的温度 Mate card and measure the temperature rise of contact, when rated current is passed. Per EIA-364-70 method 1
4.3 机械性能 Mechanical Performance :		

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4.3.1 端子保持力 Terminal retention forces	100gf Min 每支端子 100gf Min Per PIN	端子在塑胶退出时的保持力。 退出速度: 25±3mm/min. Measured withdrawal force that resin grips and supports terminal. Velocity of withdrawal:25±3mm/min.
4.3.2 抓板力 Shear force	抓板力: 3.5kgf Min Shear force: 3.5kgf Min	产品焊板后, 测量产品拔出力, 测试速度: 25±3mm/min, 测试如图四个方向 After Soldering of testing product at PCB, Measure pulling force of Plug at 25±3mm/min;  MICRO SIM CARD      NANO SIM CARD
4.3.3 端子正向力 Normal force	每 PIN 50gf Min 50gf Min per pin	参考测试标准: EIA-364-13. SIM CARD 以每分 25+/-3mm 的速度, MICRO SIM CARD 下压至距离塑胶面 0.1mm 的位置; NANO SIM CARD 下压至距离塑胶面 0.2mm 的位置; When applied SD CARD mating at speed 25+/-3mm/min The distance of the pressure is from the contact spring to over housing surface 0.1mm position of MICRO SIM CARD. The distance of the pressure is from the contact spring to over housing surface 0.2mm position of NANO SIM CARD.
4.3.4 耐久 Durability	1. 试验后接触阻抗: 变化值 50mΩMax; 2. 试验后正向力每 PIN 50gf Min 3. 试验后弹高 0.45mm Min 4. 产品无断裂、无破损; 1.After testing, contact resistance : Δ=50 mΩMax; 2.After testing, Normal force : 50gf Min per pin 3.After testing, The height of spring isn't Less than 0.45mm 4.No have fracture, crack;	产品焊板后, 用 SIM 卡重复插拔 5000 次, 速度为 10 个循环/分, After Soldering of testing product at PCB, Repeat insert withdrawal of card as 5000 cycle to parallel 1 cycle:10 sec (10times per minute)

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<p>4.3.5 振动 Vibration</p>	<p>1. 没有物理损坏, 端子无变形 2. 不产生超过 1 微秒的瞬断 1.No have fracture , crack, terminal contact point shake of product 2. No electrical discontinuity longer than 1 u sec.</p>	<p>产品焊板后测试, 测试频率: 10-55-10HZ, 振幅: 1.52mm,X,Y,Z 三个方向每个方向 振动两个小时, (sweep time:30s) After attach at vibration plate and Soldering at test PCB, it test follow conditions : As condition of frequency:10-55- 10HZ,amplitude1.52mm,it test for two hours about each of X,Y,Z, axis(sweep time:30s)</p>
<p>4.3.6 机械冲击 Mechanical Shock</p>	<p>1. 没有物理损坏, 端子无变形 2. 不产生超过 1 微秒的瞬断 1. No have fracture , crack, terminal contact point shake of product 2. No electrical discontinuity longer than 1 u sec</p>	<p>参考测试标准: EIA-364-27B. 波形:半正弦波; 加速度: 50G, 持续时间: 11ms 沿 X,Y,X 三个方向进行, 每个方向完成正 反 3 次冲击(总计 18 次冲击) Comply with method EIA-364-27B, Shock Waveform: Half sine-wave, Acceleration: 50G, Duration: 11 m sec. Total impacts delivered along 3 mutually each X. Y. and Z axes.(Total:18 impacts)</p>

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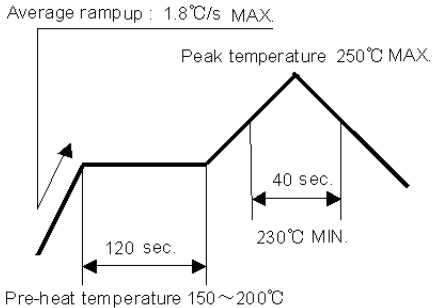
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项目 Items	规格要求 Requirements	测试方法 Test Methods
<b>4.4 环境性能 Environmental Performance :</b>		
4.4.1 恒温恒湿 Humidity	1.产品无损坏,端子无变形 2.测试后接触阻抗:变化值 50mΩMax 1.No have fracture crack ,terminal contact point deflection and shake of product 2. After testing contact resistance: Δ=50 mΩMax	配合后的产品在以下条件下测试: 温度: 40±2°C; 相对湿度: 95%RH+/-3%RH 时间: 96 hours Mated connectors shall be subjected to the following condition: Temperature: 40±2°C Relative humidity: 95%RH+/-3%RH Period: 96 hours
4.4.2 耐低温 Low Temperature	1. 产品无损坏,端子无变形; 2. 测试后接触阻抗:变化值 50 mΩMax 1. No have fracture crack, terminal Contact point deflection and shake of product 2. After testing contact resistance: Δ=50 mΩMax	配合后的产品在以下条件下测试: 温度: -40±3°C; 时间: 96 hours The card shall be mated and exposed to the condition of -40±3°C for 96 hours. Recovery time 1~2 hours
4.4.3 耐高温 High temperature	1 产品无损坏,端子无变形 2.试验后接触阻抗:变化值 50 mΩMax 1.No have fracture crack ,terminal contact point deflection and shake of product 2.After testing contact resistance: Δ=50 mΩMax;	配合后的产品在以下条件下测试: 温度: 85±2°C 时间: 96h Mated connectors shall be subjected to the following condition: temperature: 85±2°C Duration: 96h
4.4.4 热冲击 Thermal shock	测试后满足相应机械及电气规格; 测试后接触阻抗:变化值 50 mΩMax After test: Δ=50 mΩMax	参考测试标准: EIA-364-32; -55°C和+85°C各30分钟,总计5个循环。 Comply with method EIA-364-32. -55°C for 30 minutes and +85°C for 30 minutes for 5 cycles.

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<p>4.4.5 盐雾测试 Salt Spray Test</p>	<p>1.产品无损坏，端子无变形 2. 试验后接触阻抗：变化值 50 mΩMax 1. No have fracture crack ,terminal contact point deflection and shake of product 2. After testing contact resistance: Δ=50 mΩMax;</p>	<p>盐水浓度：5±1%，时间：48 小时 温度：35±2°C Mated connector shall be subjected to the following condition Concentration : 5±1% Spray time : 48hours Temperature : 35±2°C</p>
<p>4.4.6 可焊性 Solder ability</p>	<p>焊脚吃锡面积 95%以上 More than 95% of area dipped in molten solder should be coated by solder</p>	<p>温度：250°C±5°C 粘锡时间：3±0.5 秒 Solder Temperature : 250°C±5°C Immersion Duration : 3±0.5 seconds</p>
<p>4.4.7 耐 Reflow 高温 Resistance to Reflow Soldering Heat</p>	<p>1.无损坏，端子无变形； 2.产品结构无破坏； 1.No have fracture crack ,terminal contact point deflection and shake of product 2.No have break down outer feature/structure</p>	<p>根据下图温度条件测试产品的耐焊接热 The connector shall be tested resistance to soldering heat in the following conditions, The temperature shall be measured on the surface of PCB</p>  <p>Average rampup : 1.8°C/s MAX. Peak temperature 250°C MAX. 40 sec. 230°C MIN. 120 sec. Pre-heat temperature 150~200°C</p>

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## 4.5 Test Sequence

Group Number	A	B	C	D	E	F	G	H	I
Contact Resistance	1,6	1	1	1,3,5	1,5,7	1,3,5	1,3		
Insulation Resistance					2,8				
Dielectric Withstanding Voltage					3,9				
Temperature Rise									
Retention force		2							
Shear force			2						
Normal force	2,4								
Durability	3								
Vibration				2					
Mechanical Shock				4					
High Relative Humidity Exposure					6				
Low Temperature Exposure						2			
High Temperature Exposure						4			
Thermal Shock					4				
Salt Spray Test							2		
Solder ability								1	
Resistance to Soldering reflow Heat									1
Height of Spring	5								

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