



Kunshan Jiahua Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:		
Product specification	NEW SWITCH CARD HOLDER	PS-0103		
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******* Revised history *******

Edition	ECN NO.	Revised Page	Remark
1	ECN1805012	None	Initial Release
2	ECN1909017	Add Normal Force Test	Rev.B
3	ECN1910017	Add Withdraw Card Test	Rev.C

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1. 概述 Scope:

1.1 说明 Content

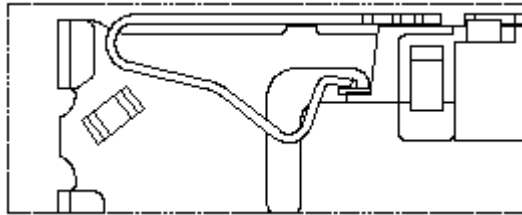
此份产品规格书是针对由昆山嘉华电子有限公司制造的 **NEW SWITCH CARD HOLDER CONN.** 产品所定义的产品性能和测试方法。

This product specification defines the product performance and the test methods to ensure the performance of the **NEW SWITCH CARD HOLDER CONN.**, which is 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.

4.测试规范和方法 Test Requirements and Methods

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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: 150mΩ Max; 试验后接触阻抗: 变化值 20mΩ Max; Initial: 150mΩ Max; After test: 20mΩ 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
4.3 机械性能 Mechanical Performance :		
4.3.1 Tray 保持力 Tray retention forces	Tray 保持力: 2N Min Tray retention forces: 2N Min 耐久后 Tray 保持力: 1N Min Test after tray retention forces: 1N Min	TRAY 在铁壳退出时的保持力. 退出速度: 25±3mm/min. Measured withdrawal force that resin grips and supports tray. Velocity of withdrawal:25±3mm/min.
4.3.2 耐久 Durability	1. 试验后接触阻抗: 变化值 20mΩ Max; 2. 产品无断裂、无破损; 1.After testing, contact resistance : Δ=20 mΩ Max; 2.No have fracture, crack;	产品焊板后, 用 Tray 重复插拔 3000 次, 速度为 10 个循环/分, After Soldering of testing product at PCB, Repeat insert withdrawal of card as 3000 cycle to parallel 1 cycle:10 sec (10times per minute)

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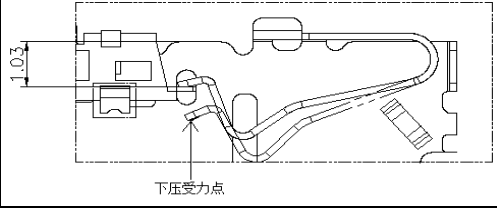
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4.3.3 振动 Vibration	1. 没有物理损坏, 弹片无变形 2. 不产生超过 1 微秒的瞬断 1.No have fracture , crack, Spring shake of product 2. No electrical discontinuity longer than 1 u sec.	产品焊板后测试, 测试频率: 10-55-10HZ, 振幅: 1.52mm,X,Y,Z 三个方向每个方向振动两个小时, (sweep time:30s) After attach at vibration plate and Soldering at test PCB, it test follow conditions : As condition of frequency:10-55-10HZ,amplitude 1.52mm,it test for two hours about each of X,Y,Z, axis(sweep time:30s)
4.3.4 推杆顶力测试 Level Riveting force test	1. 推杆顶力 $\geq 4\text{kgf}$. 1. Riveting force $\geq 4\text{kgf}$.	产品固定后, 用顶针以每分钟 25.4mm 的速度用顶针将推杆头部向下压 1mm, 测量其顶力。 Fix the product, apply a thimble to ejection rivet from the product at a speed of 25.4mm per minute, then measure the force.
4.3.5 铆钉推断力测试 Riveting force test	1. 铆钉推断力 $\geq 10\text{kgf}$. 1. Riveting force $\geq 10\text{kgf}$.	产品固定后, 用顶针以每分钟 25.4mm 的速度将铆钉从产品中顶出, 测量其推断力。 Fix the product, apply a thimble to ejection rivet from the product at a speed of 25.4mm per minute, then measure the force.
4.3.6 载卡退卡力测试 Withdraw card force test	1. 退卡力 $\leq 15\text{N}$ 1. Withdraw card force $\leq 15\text{N}$	产品焊好板含有豆腐块一起固定后,用载好上值卡的卡托插入后, 用顶针顶拉杆头部, 将卡托顶出来时测试其力量。 After the product welded board contains tofu blocks and fixed together, use the tray on the card to match well, use the thimble to top the pull rod head, and test force.
4.3.7 CAM 顶断力测试 Breaking force test	1. CAM 顶断力 $\geq 5\text{kgf}$. 1. Breaking force $\geq 5\text{kgf}$.	产品固定后, 用顶针以每分钟 25.4mm 的速度将 CAM 从产品中顶出, 测量其顶断力。 Fix the product, apply a thimble to ejection CAM from the product at a speed of 25.4mm per minute, then measure the force.

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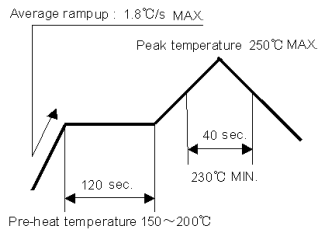
4.3.8 Switch 弹片正向力 Normal force test	1. 正向力 $\geq 25gf$. 1. $NF \geq 25gf$.	产品固定后,用顶针以每分钟 25.4mm 的速度将弹片下压至外壳边 1.03mm 时距离时,测试其力量。 Fix the product, apply a thimble to ejection product at a speed of 25.4mm per minute, then measure force. 
项目 Items	规格要求 Requirements	测试方法 Test Methods
4.4 环境性能 Environmental Performance :		
4.4.1 恒温恒湿 Humidity	1.产品无损坏, 弹片无变形 2. 测试后接触阻抗:变化值 20mΩMax 3. 测试后耐高压进行确认 1 .No have fracture crack ,Spring deflection and shake of product 2. After testing contact resistance: $\Delta=20\text{ m}\Omega\text{Max}$	配合后的产品在以下条件下测试: 温度: $40\pm 2^{\circ}\text{C}$; 相对湿度: 95%RH \pm 3%RH 时间: 96 hours Mated connectors shall be subjected to the following condition: Temperature: $40\pm 2^{\circ}\text{C}$ Relative humidity: 95%RH \pm 3%RH Period: 96 hours
4.4.2 耐低温 Low Temperature	1.产品无损坏, 弹片无变形 2. 测试后接触阻抗:变化值 20mΩMax 3. 测试后耐高压进行确认 1 .No have fracture crack ,Spring deflection and shake of product 2. After testing contact resistance: $\Delta=20\text{ m}\Omega\text{Max}$	配合后的产品在以下条件下测试: 温度: $-40\pm 3^{\circ}\text{C}$; 时间: 96 hours The card shall be mated and exposed to the condition of $-40\pm 3^{\circ}\text{C}$ for 96 hours. Recovery time 1~2 hours
4.4.3 耐高温 High temperature	1.产品无损坏, 弹片无变形 2. 测试后接触阻抗:变化值 20mΩMax 3. 测试后耐高压进行确认 1 .No have fracture crack ,Spring deflection and shake of product 2. After testing contact resistance: $\Delta=20\text{ m}\Omega\text{Max}$	配合后的产品在以下条件下测试: 温度: $85\pm 2^{\circ}\text{C}$ 时间: 96h Mated connectors shall be subjected to the following condition: temperature: $85\pm 2^{\circ}\text{C}$ Duration: 96h

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4.4.4 热冲击 Thermal shock	1.测试后满足相应机械及电气规格; 2.测试后接触阻抗: 变化值 20 mΩMax 3. 测试后耐高压进行确认 After test: Δ=20 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.
4.4.5 盐雾测试 Salt Spray Test	1.产品无损坏, 弹片无变形 2. 测试后接触阻抗:变化值 20mΩMax 3. 对产品外观腐蚀做判定 1.No have fracture crack ,Spring deflection and shake of product 2. After testing contact resistance: Δ=20 mΩMax	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
4.4.6 可焊性 Solder ability	焊脚吃锡面积 95%以上 More than 95% of area dipped in molten solder should be coated by solder	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
4.4.7 耐 Reflow 高温 Resistance to Reflow Soldering Heat	1.无损坏, 弹片无变形; 2.产品结构无破坏; 1.No have fracture crack ,Spring deflection and shake of product 2.No have break down outer feature/structure	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  Average rampup : 1.8°C/s MAX Peak temperature 250°C MAX 120 sec. 40 sec. 230°C MIN. Pre-heat temperature 150~200°C
4.4.8 机械冲击 Physical Shock	不产生超过 1 微秒的瞬断, 产品没有物理破坏以及零件脱落,端子接触阻抗满足规格要求。 No electrical discontinuity longer than 1 u sec. No mechanical damage or looseness.Contact resistance specifications remain satisfied.	参考测试标准: EIA-364-27. 波形:半正弦波; 加速度: 490m/s ² , 时间: 11 毫秒; 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) 本体无损伤, 接触阻抗在规格内。 Comply with method EIA-364-27, Shock Waveform: Half sine-wave, Duration Pulse : 11 msec., Acceleration: 50G, Total impacts delivered along 3 mutually each X. Y. and Z axes.(Total:18 impacts)

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4.5 Test Sequence

Group Number	A	B	C	D	E	F	G	H	I	J	K
Contact Resistance	1,4			1,5,9	1,4,7	1,3	1,3	1,3			
Insulation Resistance				2,6,10							
Dielectric Withstanding Voltage				3,7,11	2,5,8						
Retention force	2										
Withdraw Card force											1
Normal force			1								
Durability	3										
Vibration						2					
Physical Shock							2				
Riveting force test		2									
Level Riveting force test		1									
CAM Breaking force test		1									
High Relative Humidity Exposure				4							
Low Temperature Exposure					3						
High Temperature Exposure					6						
Thermal Shock				8							
Salt Spray Test								2			
Solder ability									1		
Resistance to Soldering reflow Heat										1	

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