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	Date Issued	2024-08-13	Prepared by	Shanzha
	Date revised	2024-08-13	checked by	Sangshen
Product Specification	Rev. No.	A0	Approved by	Willy
Title : NANO SIM PUSH-PUSH SIM 卡座				

1. SCOPE (适用范围)

This specification covers the performance, tests and quality requirements for the NANO SIM Connector.(本规范涵盖了 NANO SIM 连接器的性能、测试和质量要求。)

2. PRODUCT DESCRIPTION (产品描述)

DESCRIPTION (描述)	Part Number (料号)
卡座连接器 NANO SIM H2.15 CARD CONN(SMT)	XKNANO-1131-1

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. (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。)

- MIL-STD-105
- EIA-364
- QQ-N-290
- ISO/IEC- 7816

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. (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)

Materials used in the structure of product shall be as specified on the applicable product drawing. (产品结构中使用的材料参考所适用的产品图纸)

4.3. Ratings (额定功率)

Item (项目)	Standard (标准)	
Rated Voltage (Maximum)额定电压	50V	DC

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Rated Current (Maximum)额定电流	0.5A	
Operating temperature range工作温度范围	-25℃~+85℃ From -25 to +85 degree centigrade	

5. TEST STANDARD (测试标准)

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)

- 5.1 Ambient temperature (环境温度) : 15℃ to 35℃
- 5.2 Relative humidity (相对湿度) : 50% to 85%
- 5.3 Air pressure (气压) : 86Kpa to 106Kpa

6. HOWEVER, IF DOUBTS ARISE CONCERNING JUDGMENTS. PERFORM UNDER THE FOLLOWING STANDARD CONDITIONS. (但是，如果对判决产生疑问，按照下列标准条件执行)

- Temperature (温度) : 23±1℃.
- Humidity (湿度) : 50%±2% RH.
- Air Pressure (气压) : 86~106kPa

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

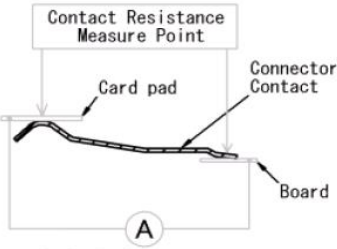
7.1 Appearance (外观)

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)

7.2 ELECTRICAL (电气)

ITEM	DESCRIPTION (类型)	TEST CONDITION (测试条件)	REQUIREMENT (要求)
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1	Low level contact resistance. (接触电阻)	Subject mated contacts assembled in housing to 20mV Max open circuit at 1mA Max Test method complies with EIA-364-06C. (依EIA-364-06C, 开路电压为20mV最大, 电流为1mA最大) 	Contact terminals接触端子: 50 mΩ Max.
2	Insulation Resistance. (绝缘电阻)	After 500 VDC for 1 minute, measure the insulation resistance between the adjacent contacts of mated and unmated connector assemblies. (使用500 V交流電測試1分鐘, 測量相邻两端的绝缘电阻)	1000 MΩ min.
3	Dielectric strength. (耐电压)	Apply ac 500V for 1minute 0.5mA between adjacent terminal or ground. Test method complies with EIA-364-20C (依EIA-364-20C, 相邻两端使用500 V交流电测试1分钟, 电流0.5mA)	Without damage to parts arcing or breakdown etc. (无短路或其他损坏)

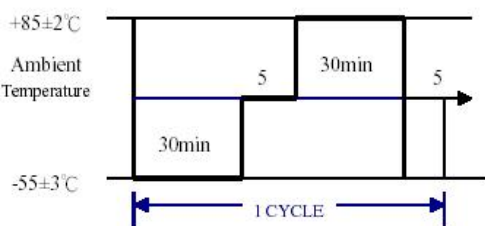
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7.3 MECHANICAL （机械）

ITEM	DESCRIPTION (类型)	TEST CONDITION (测试条件)	REQUIREMENT (要求)
1	Insertion force. (插入力)	Measure the module card insertion force at 25±3mm/min. (插入速度为 25 ± 3mm/分钟) EIA364-13	10 N maximum
2	Extraction force.(拔出力)	Measure the mated module card extraction force from the socket at 25±3mm/min. (拔出速度为 25 ± 3mm/分钟) EIA364-13	0.5N minimum and 10N maximum
3	Durability. (耐久)	Cycle Rate: 400 to 600 cycles per hour (每小时 400 至 600 次循环) No. of Cycles: 5000 cycles. (循环周期 5000 次) EIA 364-B	Initial (初始) : 50 mΩ Max. After Test (测试后) : 100 mΩ Max.
4	Mechanical Shock (机械冲击)	Accelerated Velocity (加速度) : 50 G (490 m/s ²) Waveform (波形) : Semi Sine (半正弦) Duration (持续时间) : 11 m sec. No of Shocks (冲击频率) : 6/dir., 3 axis, (6 个面, 3 个轴) (Total of 18 Shocks 共 18 次冲击) EIA364-27	(1) contact Resistance 接触电阻: 100 mΩ Max . (2) contact Resistance 绝缘电阻: 1000 MΩ MIN . (3) No electrical discontinuity greater than 100nsec. shall occur (电气连续性不超过 100 秒)
5	Vibration (振动)	Frequency Range (频率范围) : 10-2000 Total Amplitude (总振幅) : 2m/s ² . Duration (时间) : 2.5 hours 3 axes IEC 60512-6-4	(1) contact Resistance 接触电阻: 100 mΩ Max . (2) contact Resistance 绝缘电阻: 1000 MΩ MIN . (3) No electrical discontinuity greater than 100nsec. shall occur (电气连续性不超过 100 秒)

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7.4 ENVIRONMENTAL (环境)

ITEM	DESCRIPTION (类型)	TEST CONDITION (测试条件)	REQUIREMENT (要求)
1	High Temperature (高温)	The contact and card is exposed in the heat chamber 90°C for 96 hours. After test stored at room temperature for 1 hours test CR and IR. (触点和卡片在90 ° c 的热室中暴露96小时, 测试后放置室温1小时测试接触电阻与绝缘阻抗) IEC 60512-11-3	(1) contact Resistance 接触电阻: 100 mΩ Max . (2) contact Resistance 绝缘电阻: 1000 MΩ MIN . (2) Shall occur Function and performance shall be as specified. Not to change for physical appearance.(功能各外观须正常, 不得有任何损坏)
2	Low Temperature (低温)	The contact and card is exposed in the cold chamber -25°C for 96 hours. After test stored at room temperature for 1 hours test CR and IR. (触点和卡片在-25° c 的冷室中暴露96小时, 测试后放置室温1小时测试接触电阻与绝缘阻抗) IEC 60512-11-3	(1) contact Resistance 接触电阻: 100 mΩ Max . (2) contact Resistance 绝缘电阻: 1000 MΩ MIN . (3) Shall occur Function and performance shall be as specified. Not to change for physical appearance.(功能各外观须正常, 不得有任何损坏)
3	Thermal shock (热冲击)	-55°C to +90°C. 5 cycles 次 (1 cycles 次=1 hour 小时) with connectors engaged. 接通连接器 IEC-512-6-11D.  The diagram illustrates a thermal shock test cycle. It shows a temperature profile with two horizontal segments: one at +85±2°C and another at -55±3°C. Each segment is labeled '30min'. A vertical line separates the two segments, and the number '5' is placed above and below this line, indicating 5 cycles. A double-headed arrow at the bottom spans the duration of one cycle and is labeled '1 CYCLE'. The y-axis is labeled 'Ambient Temperature'.	(1) contact Resistance 接触电阻: 100 mΩ Max . (2) contact Resistance 绝缘电阻: 1000 MΩ MIN . (3) Shall occur Function and performance shall be as specified. Not to change for physical appearance.(功能各外观须正常, 不得有任何损坏)

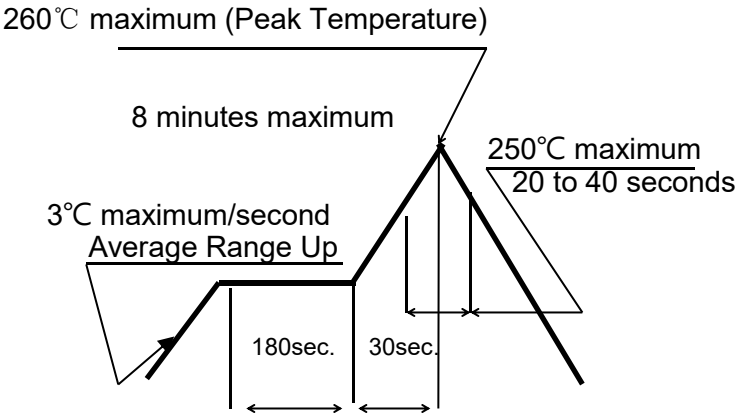
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4	Humidity resistance (高湿)	Steady state 40°C,90~95%RH for 96H with mate connectors · After test stored at room temperature for 1 hours test CR and IR. (配对连接器在 40° C 90~95%RH 的稳定状态下测试 96 小时, 测试后放置室温 1 小时测试接触阻抗与绝缘阻抗) IEC 60512-11-3	(1) contact Resistance 接触电阻: 100 mΩ Max . (2) contact Resistance 绝缘电阻: 1000 MΩ MIN . (3) Shall occur Function and performance shall be as specified. Not to change for physical appearance.(功能各外观须正常, 不得有任何损坏)
5	Salt Spray Test (盐雾测试)	Mated connectors to 35+/-2 °C.Humidity:85%(R.H). PH value:6.5~7.2 and 5+/-1% salt condition for 48hours. After test, rinse the sample with water and recondition the room temperature for 1 hour test CR and IR. (配对连接器放置在 35±2°C, 温度为 85% PH 值 6.5~7.2 和 5%浓度的实验箱内测试 48 小时, 测试后用水清洗样品, 放置室温 1 小时测试接触阻抗与绝缘阻抗) EIA-364-26B.	(1) contact Resistance 接触电阻: 100 mΩ Max . (2) contact Resistance 绝缘电阻: 1000 MΩ MIN . (3) Appearance shall no rust, oxidation, corrosion and other undesirable phenomena. (外观须无生锈、氧化、腐蚀等不良现象)
6	Solder ability (沾锡性)	Solder Temperature (焊接温度): 245+/-3°C Immersion Duration (浸泡时间): 3 ±0.5 sec. Flux (助焊剂): RMA 25%	Wet Solder Coverage: 95 % Min. (沾锡面积须95%最小)
7	Resistance to soldering heat (焊锡耐热性)	The contact of terminal shall be tested resistance to soldering heat in the following conditions. After Resistance to soldering heat test Contact Resistance. (端子应在下列条件下做耐吃锡性试验 · 焊锡耐热性后试接触阻抗) In case of solder iron (2 time) 电烙铁(两次) Temperature 温度: ≤350°C Time 时间: 5s+/-1s	Should not have any flaw scratch and crack. (无任何裂痕、刮伤和破裂)

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8	IR-reflow (回流焊)	MIL-STD-202G method 210F Peak temperature time 260°C Max,10 sec or more. (峰值温度时间最高 260°C, 10 秒或更长的时间) Duration : 2 cycles (过炉 2 次) Lead-Free Solder (无铅锡膏): Sn96.5Ag3Cu0.5	Should not have any flaw scratch and crack (无任何裂痕、刮伤和破裂) No visual damage to insulator. (绝缘体不得有严重变形)
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8.0 REFLOW PROFILE (回流焊炉温图)



(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

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

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TEST ITEM (测试项目)		TEST GROUP (测试分组)										
		A	B	C	D	E	F	G	H	I	J	K
		TEST SEQUENCE										
1	Appearance (外观)	1,4	1,5	1,6	1,5	1,6	1,7	1,5	1,5	1,5	1,4	1,4
2	Low Level Contact Resistance (接触电阻)		3,6	3,7			3,8	3,6	3,6	3,6		2,5
3	Dielectric withstanding Voltage (耐电压)					4,8	5,9					
4	Insulation Resistance(绝缘电阻)					3,7	4,10					
5	Temperature Rising (升温)	3										
6	Durability (耐久)		4									
7	Vibration (振动)			4								
8	Mechanical Shock (机械冲击)			5								
9	Insertion Force (插入力)				3							
10	Extraction Force (拔出力)				4							
11	High Temperature (高温)					5						
12	Low Temperature (低温)						6					
13	Thermal shock (热冲击)							4				
14	Humidity resistance (高湿)								4			
15	Salt Spray (盐雾)									4		
16	Solder ability (沾锡性)										3	
17	Reflow Soldering Heat Resistance (焊锡耐热性)											3
18	IR-reflow (回流焊)	2	2	2	2	2	2	2	2	2	2	
	Number of Samples Required (所需样本数目)	25										

Rev.	Description	Date revised	Created/ Revised by
A0	New Release	2024/08/14	Shanzha