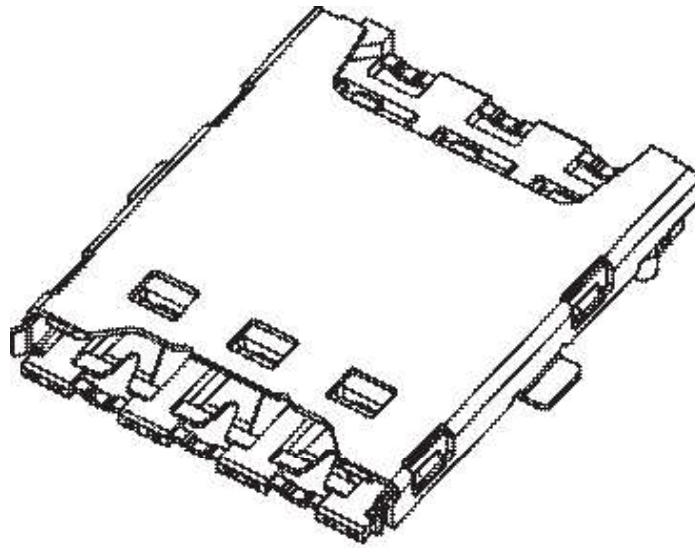


# PRODUCT SPECIFICATION

<b>Part Number</b>	SIM8051	<b>Rev</b>	A	<b>Date</b>	28/04/15		
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## 1.0 SCOPE.

This specification covers performance, tests and quality requirements for the Nano SIM Card Connector SIM 8051 (Push-Pull Type, 6-Pin, SMT, 1.35mm Profile).

## 2.0 PRODUCT NAME AND PART NUMBER.

Nano SIM Card Connector, 6 Pin, Push-Pull Type: SIM8051.

## 3.0 PRODUCT SHAPE, DIMENSIONS AND MATERIAL.

Please refer to drawings.

## 4.0 RATINGS.

Current rating ..... 0.5 Amp Max  
 Voltage rating ..... 30 Volts AC (rms.) Max.  
 Operating Temperature Range ..... -40°C to +85°C  
 Storage Temperature ..... -25°C to +85°C  
 Storage Humidity..... Relative Humidity: ≤80%

## 5.0 TEST AND MEASUREMENT CONDITIONS.

Product is designed to meet electrical, mechanical and environmental performance requirements specified in Paragraph 6.0. All tests are performed at ambient environmental conditions unless otherwise specified.

## 6.0 PERFORMANCE.

Item	Test Condition	Requirement
Examination of Product	Visual, dimensional and functional inspection as per quality plan.	Product shall meet requirements of product drawing and specification.

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## 6.1 Electrical Performance.

Item	Test Condition	Requirement
Contact Resistance	Measure and record contact resistance of mated connector using test current of 10mA max and 20 mV open circuit voltage in accordance with EIA-364-23.	100 mΩ max initial 100 mΩ max after test.
Insulation Resistance	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. In accordance with EIA-364-21.	1000 MΩ minimum @500V DC for 1 minute
Dielectric Strength	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. In accordance with EIA-364-20.	Connector must withstand test potential of 100 V AC for 1 minute. Current leakage must be 1.0 mA Max.

## 6.2 Mechanical Performance.

Item	Test Condition	Requirement
Durability	Insert & remove SIM card for 1500 cycles. The insertion force under 10N, and the extraction force meet 1~10N In accordance with EIA-364-09.	Contact Resistance: 100 mΩ max. And insertion/extraction force must meet the association specification. After testing.
Vibration	No electrical discontinuity greater than 1 μsec (s) shall occur. Contact resistance: 100 mΩmax.	Vibration conditions, for a period of 2 hours in each of 3 mutually perpendicular axes, with passing DC 1mA during the test, Amplitude: 1.52mm P-P or 19.6m/s <sup>2</sup> (2G) Frequency: 10-55-10 Hz In accordance with EIA-364-28
Contact Normal Force	Measure contact normal force at distance equal to inserting a 0.7mm thick nano SIM card.	0.25N Min. 1.50N Max.
Mechanical Shock	Mate card and subjected to the following shock conditions. 3 mutually perpendicular axis, passing DC 1mA current during the test. (Total of 18 shocks) Test pulse: Half sine peak value: 490m/s <sup>2</sup> (50G) duration : 11ms In accordance with EIA-364-27.	No electrical discontinuity greater than 1 μsec. shall occur. No damage to product.

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## 6.3 Environmental Performance and Others.

Item	Test Condition	Requirement
Thermal Shock	The card shall be mated and exposed to the following condition for 25 cycles. 1 cycle a) $-40\pm 3$ for 30 minutes b) $+85\pm 2$ for 30 minutes transit time shall be within 3 minutes Recovery time 1~2 hours. In accordance with EIA-364-32	No damage, Contact Resistance (Low Level) (Final) 100 mΩ max
Humidity Test	The card shall be mated and exposed to the condition of $+60\pm 2$ @ 90~95% humidity for 96 hours Recovery time 1~2 hours. In accordance with EIA-364-31.	No damage, Contact Resistance (Low Level) (Final) 100 mΩ max.. Dielectric Strength should be OK, Insulation Resistance should be 100 MΩ min.
Salt Water Spray	$5\pm 1\%$ salt concentration 48±4 hours $35\pm 2^\circ\text{C}$ MIL-STD-202, Method 101 Condition B.	No rusty cracks found. Contact Resistance (Low Level) (Final) 100 mΩ max
Temperature Life (High)	Subject product to $85\pm 2^\circ\text{C}$ for 96 hours continuously. MIL-STD-202, Method 108.	Contact resistance: 100 mΩ max
Temperature Rise	Mate card and measure the temperature rise of contact, when rated current is passed. In accordance with EIA-364-70 Method 1.	$30^\circ\text{C}$ Max
Solderability	Dip solders tails into molten solder, held at a temperature of $250\pm 5^\circ\text{C}$ up to 0.5mm from the tip of the tails for $3\pm 0.5$ seconds.	Contact solder pad has a min. 95% solder coverage
Resistance to Hand Soldering Heat	Soldering iron method Soldering Time: 5 sec. Solder Temperature: $370-400^\circ\text{C}$ 0.5mm from terminal tip	No damage
Resistance to Reflow Soldering Heat.	Mount connector, place in reflow oven and expose to the temperature profile shown in fig 1.0	No evidence of physical damage or abnormalities adversely affecting performance.

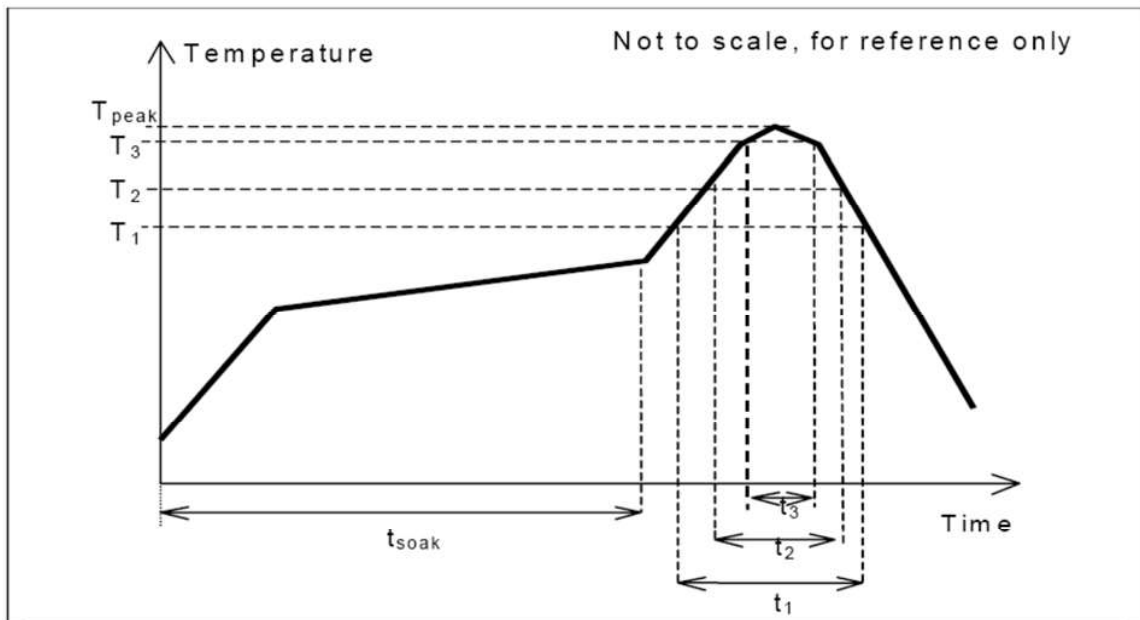
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## 6.5 REFLOW SOLDERING PROFILE

Pb-free reflow profile requirements

Parameter	Reference	Specification
Average temperature gradient in preheating		2.5°C/s
Soak time	t <sub>soak</sub>	2-3 minutes
Time above 217°C	t <sub>1</sub>	60 s
Time above 230°C	t <sub>2</sub>	50 s
Time above 250°C	t <sub>3</sub>	5 s
Peak temperature in reflow	T <sub>peak</sub>	255°C (-0/+5°C)
Temperature gradient in cooling		Max -5°C/s



This profile is the minimum requirement for evaluating soldering heat resistance of components. Heat transfer method used for reflow soldering is hot air convection. The actual air temperatures used to achieve the specified profile is higher and largely dependent on the reflow equipment.

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## 7.0 PRODUCT QUALIFICATION AND TEST SEQUENCE

Test Item	Group									
	A	B	C	D	E	F	G	H	I	J
Examination of Product	1,7	1,3	1,6	1,5	1,8		1,3	1,5	1,5	
Contact Resistance	2,6		2,5	2,4	2,6			2,4	2,4	
Insulation Resistance	3				3,7					
Dielectric Withstanding Voltage	4				4					
Durability	5									
Temperature Rise		2								
Vibration			3							
Shock			4							
Thermal Shock				3						
Humidity					5					
Solderability						1				
Resistance to Soldering Heat							2			
Salt Spray								3		
High Temperature									3	
Contact Normal Force										1

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## Revision details

Revision	Information	Page	Release Date
A	Specification Released	-	28/04/2015