

NANO BLOCK SIM CONNECTOR, 0.34MM HEIGHT

1.0 SCOPE

This Product Specification covers the performance requirements of the Nano Block SIM Card Connector

2.0 PRODUCT DESCRIPTION

PRODUCT NAME AND SERIES NUMBER(S)

Product Name

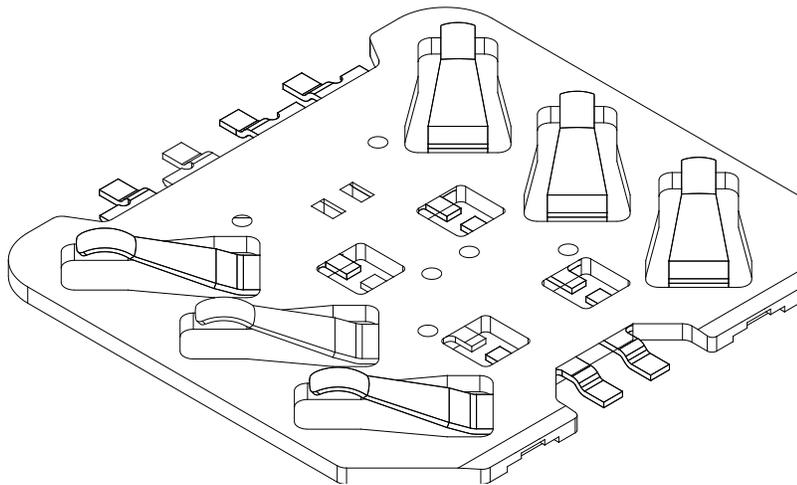
NANO BLOCK SIM CONNECTOR

Series Number

151059

DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See Sales Drawing SD-151059-0001 for information on dimensions, materials, platings and markings.



TENTATIVE RELEASE:

THIS SPECIFICATION IS BASED ON DESIGN OBJECTIVES AND IS STRICTLY TENTATIVE. PRELIMINARY TEST DATA MAY EXIST, BUT THIS SPECIFICATION IS SUBJECTED TO CHANGE BASED ON THE RESULTS OF ADDITIONAL TESTING AND EVALUATION.

REVISION: 2	ECR/ECN INFORMATION: EC No: S2015-0528 DATE: 2015/06/17	TITLE: NANO BLOCK SIM, 0.34MM HEIGHT	SHEET No. 1 of 8
DOCUMENT NUMBER: PS-151059-0001	CREATED / REVISED BY: JTAN 2015/06/17	CHECKED BY: JZENG 2015/06/17	APPROVED BY: KHLIM 2015/06/17

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

The following documents form a part of this specification to the extended specified herewith. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence.

4.0 RATINGS

4.1 CURRENT RATING

0.5Amps Max. per contact

4.2 VOLTAGE RATING

10 Volt DC Max.

4.3 TEMPERATURE

Operating: - 30°C to + 85°C

5.0 MECHANICAL INTERFACE

5.1 CARD INTERFACE

SIM card interface: GSM 11.11 specification

5.2 PWB INTERFACE

Plating on PWB pads: OSP plated (With Non Solder Mask Defined at terminal soldertail)

6.0 PERFORMANCE

6.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Low Level Contact Resistance (LLCR)	1. Mate connectors with dry circuit (20 mV, 100mA MAX) on mated connector. (EIA-364-23C)	Contact Resistance: Terminal: 100 milliohms Max.
2	Insulation Resistance	Unmated connectors: apply a voltage of 500 VDC between adjacent contact for 1 minutes.	100 Megaohms Min
3	Dielectric Withstanding Voltage	Unmated connectors: apply a voltage of 1000 VAC between adjacent contact for 1 minutes (EIA-364-20C)	No voltage breakdown

REVISION: 2	ECR/ECN INFORMATION: EC No: S2015-0528 DATE: 2015/06/17	TITLE: NANO BLOCK SIM, 0.34MM HEIGHT	SHEET No. 2 of 8
DOCUMENT NUMBER: PS-151059-0001	CREATED / REVISED BY: JTAN 2015/06/17	CHECKED BY: JZENG 2015/06/17	APPROVED BY: KHLIM 2015/06/17

4	Temperature Rise	Mated and measure the temperature rise of contact, when rated current is passed. (IEC 60512-5-2)	Temperature Rise 30°C [MAXIMUM]
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6.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	Contact Normal Force	Apply a perpendicular force to the contact at the rate of 25.4mm/min. The max. working height of contact is measured from surface of housing. Max Working Height:0.22mm (Refer to Appendix 1).	0.20N Min. At maximum working height
6	Durability	Mate and unmate connectors to 1500 cycles at a maximum rate of 720cycles/hour. (EIA-364-09C)	Contact Resistance: Terminal: 100 milliohms Max.
7	Solder Joint Peeling Strength	Apply 50N load to the connector frame parallel to the PWB (X & Y direction)	No mechanical damage
8	Solderability	Solder paste is deposited on a ceramic plate via stencil. The connectors are steam aged and placed onto the solder paste print. The substrate is processed through a forced hot convection oven. Refer to section 9.0 for temp profile. The connectors are removed from the ceramic and inspected. Steam Aging: 8 hour (ANSI-J-STD 002)	Min. Solder coverage = 95% 3.1
9	Vibration (Random)	Random Vibration, Frequency: 20~500Hz, 0.01g ² /Hz; 3 mutually perpendicular plane 20 min per plane.	a) Contact Resistance: Terminal: 100 milliohms Max. b) Discontinuity < 1 μs

REVISION: 2	ECR/ECN INFORMATION: EC No: S2015-0528 DATE: 2015/06/17	TITLE: NANO BLOCK SIM, 0.34MM HEIGHT	SHEET No. 3 of 8
DOCUMENT NUMBER: PS-151059-0001	CREATED / REVISED BY: JTAN 2015/06/17	CHECKED BY: JZENG 2015/06/17	APPROVED BY: KHLIM 2015/06/17

10	Mechanical Shock (specified pulse)	Pulse shape = half sine Peak acceleration = 490m/s ² (50G) Duration of pulse = 11ms Apply 3 successive shocks in each direction along the 3 mutually perpendicular axes. (EIA 364-27B) – Test condition A	a) Contact Resistance: Terminal: 100 milliohms Max. b) Discontinuity < 1 μs
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6.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
11	Low Temperature Exposure	At -40°C for 96 hours Recovery: 2 hours at ambient atmosphere (IEC60068-2-1Ab)	a) No mechanical damage b) Contact Resistance: Terminal: 100 milliohms Max.
12	High Temperature Exposure	At +85°C for 96 hours Recovery: 2 hours at ambient atmosphere (IEC60068-2-2Bb)	a) No mechanical damage b) Contact Resistance: Terminal: 100 milliohms Max.
13	Thermal Shock	25 cycles at T _a = -40°C for 0.5 hours, then change of temp = 25°C MAX 5min, then, T _b = +85°C for 0.5hour, then cool to ambient Recovery: 2hours at ambient atmosphere (IEC60068-2-14 Test Na)	a) No mechanical damage. b) Contact Resistance: Terminal : 100 milliohms Max.
14	Damp Heat (Cyclic)	Temp 25-55°C and 90-100%RH for 6 cycles of 24 hours Recovery at 25°C and 25~75%RH for 2hours. (Typical cycle in temp 25°C -> 55°C in 3 hours; then maintain at 55°C for 9hours -> 55°C -> 25°C in 3 hours; then maintain at 25°C for 9hours) (IEC60068-2-30Db)	a) Contact Resistance: Terminal : 100 milliohms Max. b) Insulation Resistance: 100 Megaohms Min. c) No mechanical damage

REVISION: 2	ECR/ECN INFORMATION: EC No: S2015-0528 DATE: 2015/06/17	TITLE: NANO BLOCK SIM, 0.34MM HEIGHT	SHEET No. 4 of 8
DOCUMENT NUMBER: PS-151059-0001	CREATED / REVISED BY: JTAN 2015/06/17	CHECKED BY: JZENG 2015/06/17	APPROVED BY: KHLIM 2015/06/17

15	Resistance to Soldering Condition	Unmated sample to be passed through reflow over according to temp profiles (shown in section 9.0) See Graph below	No mechanical damage
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7.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage.

<u>REVISION:</u> 2	<u>ECR/ECN INFORMATION:</u> EC No: S2015-0528 DATE: 2015/06/17	<u>TITLE:</u> NANO BLOCK SIM, 0.34MM HEIGHT	<u>SHEET No.</u> 5 of 8
<u>DOCUMENT NUMBER:</u> PS-151059-0001		<u>CREATED / REVISED BY:</u> JTAN 2015/06/17	<u>CHECKED BY:</u> JZENG 2015/06/17
		<u>APPROVED BY:</u> KHLIM 2015/06/17	

8.0 TEST SEQUENCES

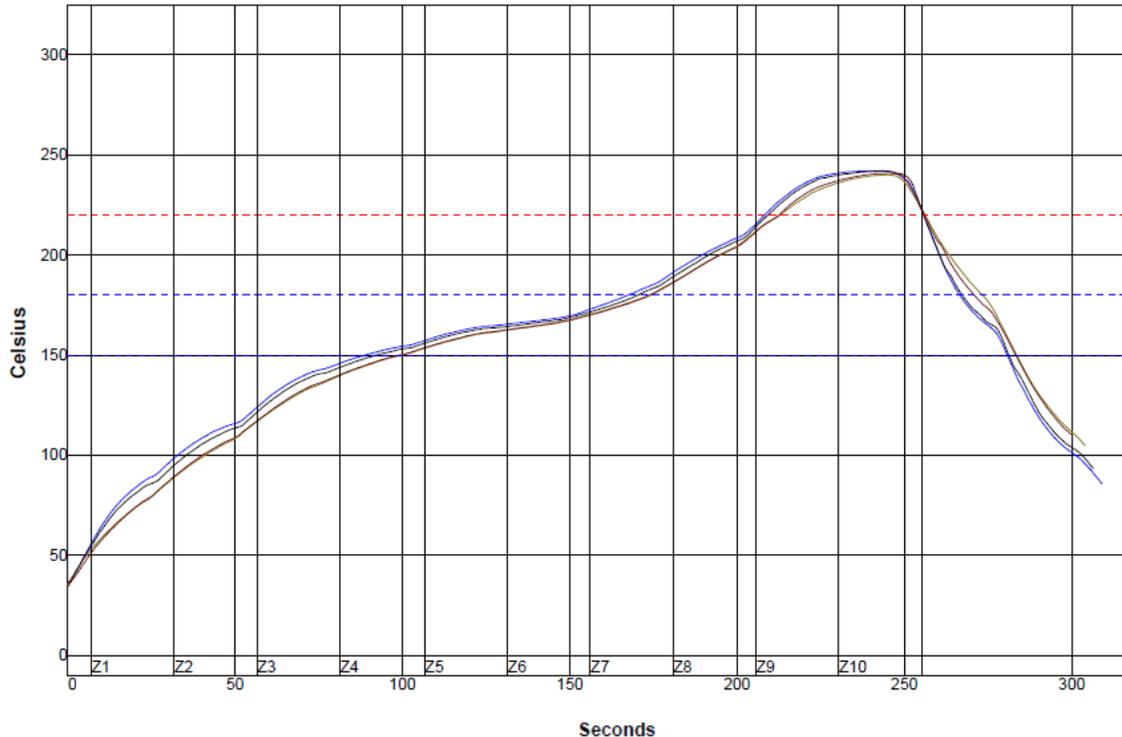
Test Group ☐	A	B	C	D	E	F	G	H	J	K	L	M
Sample size	5	5	5	5	5	5	5	5	5	5	5	5
Examination Of Connector(s)	1	1	1	1	1	1	1	1	1	1	1	1
Contact Resistance (LLCR)	3,5				3,5	3,5		3,5	3,5	3,5	3,5	3,5
Insulation Resistance							3					
Dielectric Withstanding Voltage							4					
Temperature Rise								4				
Contact Normal Force		3										
Durability	4											
Solder Joint Peel Off Strength			3									
Solderability				2								
Vibration					4							
Mechanical Shock						4						
Low Temp Exposure									4			
High Temp Exposure										4		
Thermal Shock											4	
Damp Heat (Cyclic)												4
Resistance to Soldering Conditions	2	2	2		2	2	2	2	2	2	2	2

REVISION: 2	ECR/ECN INFORMATION: EC No: S2015-0528 DATE: 2015/06/17	TITLE: NANO BLOCK SIM, 0.34MM HEIGHT	SHEET No. 6 of 8
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DOCUMENT NUMBER: PS-151059-0001	CREATED / REVISED BY: JTAN 2015/06/17	CHECKED BY: JZENG 2015/06/17	APPROVED BY: KHLIM 2015/06/17
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9.0 SOLDERING PROFILE

Setpoints (Celsius)										
Zone	1	2	3	4	5	6	7	8	9	10
Top	110	120	155	160	170	170	180	215	255	255
Bottom	110	120	155	160	170	170	180	215	255	255
Conveyor Speed (cm/min): 90.0										



Seconds										
PWI= 66%	Max Rising Slope		Max Falling Slope		Soak Time 150-180C		Reflow Time /220C		Peak Temp	
<TC3>	1.81	-19%	-3.00	-33%	78.74	-8%	47.60	-24%	242.11	-5%
<TC4>	1.57	-43%	-2.65	-10%	74.63	-36%	43.56	-64%	240.17	-31%
<TC5>	1.73	-27%	-2.99	-33%	78.12	-13%	46.63	-34%	242.17	-4%
<TC6>	1.63	-37%	-2.72	-15%	74.74	-35%	43.38	-66%	240.93	-21%
Delta	0.24		0.35		4.11		4.22		2.00	

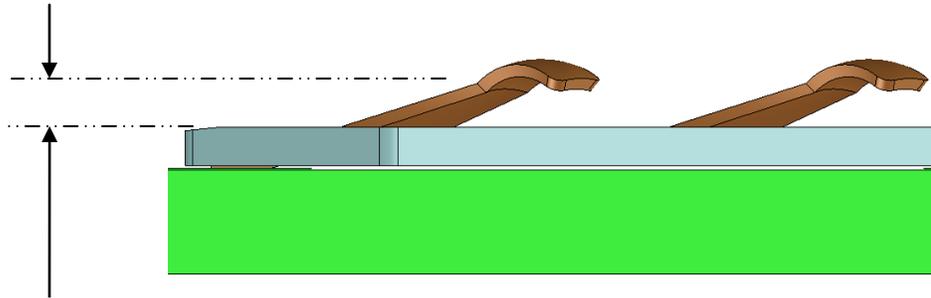
Process Window:

Solder Paste:		TongYong-MB-Profile								
Statistic Name	Low Limit	High Limit	Units							
Max Rising Slope (Target=2.0) (Calculate Slope over 40 Seconds)	1	3	Degrees/Second							
Max Falling Slope (Calculate Slope over 40 Seconds)	-4	-1	Degrees/Second							
Soak Time 150-180C	65	95	Seconds							
Time Above Reflow - 220C	40	60	Seconds							
Peak Temperature	235	250	Degrees Celsius							

REVISION: 2	ECR/ECN INFORMATION: EC No: S2015-0528 DATE: 2015/06/17	TITLE: NANO BLOCK SIM, 0.34MM HEIGHT	SHEET No. 7 of 8
DOCUMENT NUMBER: PS-151059-0001	CREATED / REVISED BY: JTAN 2015/06/17	CHECKED BY: JZENG 2015/06/17	APPROVED BY: KHLIM 2015/06/17

APPENDIX 1:

Terminal Working Height



Terminal working height from housing surface

REVISION: 2	ECR/ECN INFORMATION: EC No: S2015-0528 DATE: 2015/06/17	TITLE: NANO BLOCK SIM, 0.34MM HEIGHT	SHEET No. 8 of 8
DOCUMENT NUMBER: PS-151059-0001	CREATED / REVISED BY: JTAN 2015/06/17	CHECKED BY: JZENG 2015/06/17	APPROVED BY: KHLIM 2015/06/17