PRODUCT SPECIFICATION

SIM CARD CONNECTOR Frame WITH PIVOT ARM

1.0 SCOPE

This Product Specification covers the mechanical, electrical and environmental performances requirements and test methods for 0.38mm height Block SIM connector.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

Product Name	Series Number
BLOCK SIM CONNECTOR	151130

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See Sales Drawing (R)SD-151130-0001 for information on dimensions, materials, platings and markings.

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: - 40°C to + 85°C

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.

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

6.0 PERFORMANCE

6.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	**Low Level Contact Resistance (LLCR)**	Mate connectors with dry circuit (20 mV, 100mA MAX) on mated connector. Refer to appendix 1. (EIA-364-23C)	**50** milliohm max [initial] Value includes bulk resistance of terminal or Detect switch
2	**Insulation Resistance**	Apply a voltage of 100 V DC between adjacent terminals. Electrification Time: 1 min (EIA-364-21D)	**1000** Megohms minimum
3	**Dielectric Withstanding Voltage**	Unmated connectors: apply a voltage of **500** VAC between adjacent contact for **1** minutes (EIA-364-20C)	No voltage breakdown
4	**Temperature Rise**	Mated and measure the temperature rise of contact, when rated current is passed. (EIA-364-70B) - Method1	Temperature Rise **30°C** max

6.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	**Durability (Horizontal Insertion Direction)**	Compress terminal vertically to 1500 cycles at a maximum rate of 720cycles/hour.	Contact resistance Δ**30** milliohms max

6	**Contact Normal Force**	Measure contact normal force at **0.20mm** away from housing top surface and at **maximum deflection** (0mm from housing)	**0.20N** min **1.35N** max
7	**Vibration**	Sine Vibration, 10g peak Frequency: 10~500Hz, 2 cycles per axis 15 mins per cycle (EIA 364-28F) – Test Condition II	Contact resistance Δ**30** milliohms max Discontinuity < 1 μs
8	**Mechanical Shock (specified pulse)**	Pulse shape = half sine Peak acceleration = 490m/s2 (50G) Duration of pulse = 11ms Apply 3 successive shocks in each direction along the 3 mutually perpendicular axes. (EIA 364-27B) – Test condition A	Contact resistance Δ**30** milliohms max Discontinuity < 1 μs
9	**Solder Joint Peeling Strength**	Apply a load to the Nano SIM connector parallel to the PWB (Y direction)	**15N** minimum

6.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
10	**High Temperature Storage Life (steady state)**	At +85°C for 120 hours Recovery: 1~2 hours at ambient atmosphere	Contact resistance Δ**30** milliohms max
11	**Thermal Shock**	Expose the mated connectors to the following condition for 5 cycles (60 mins/cycle): -55 ^{O}C (30 min) ⟷ 105 ^{O}C (30 min) Transit time shall be within 5 mins (Max) (EIA-364-32E) - Test condition VI	No mechanical damage, corrosion and oxidation at contact area Contact resistance Δ**30** milliohms max

12	**Cyclic Humidity**	Cycle the part between 25°C+/-3°C at 80%+/-3%RH and 65°C+/-3°C at 50%+/-3%RH Ramp times should be 30mins and dwell times to be 1hour. Dwell times start when temp and humidity have stabilized within the specified levels. Perform 24 cycles	Contact resistance ∆**30** milliohms max Insulation resistance **1000** Megohms max No voltage breakdown
13	**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: 1 hour (ANSI-J-STD 002)	Solder coverage = 95% minimum
14	**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

7.0 PACKAGING

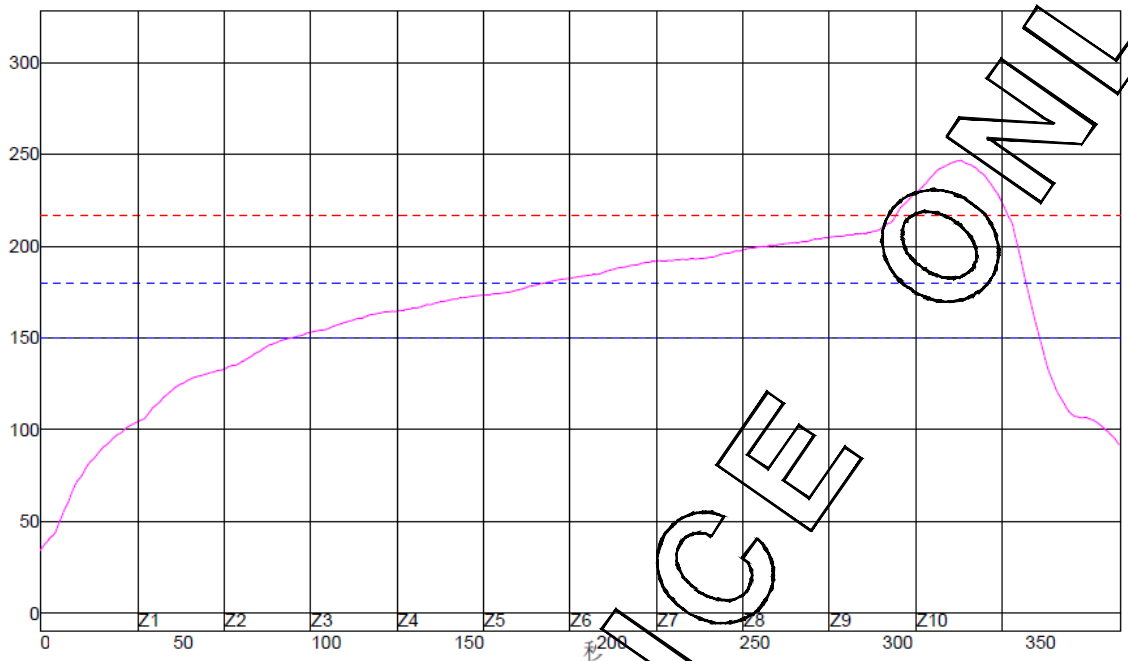
Parts shall be packaged to protect against damage during handling, transit and storage. The parts shall be carried in reels inside boxes. For details, kindly refer to Packaging spec (R)PK-151130-0001 and Sale drawing (R)SD-151130-0001.

8.0 TEST SEQUENCES

Test Group →	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
Test or Examination ↓							
Sample size	5	5	5	5	5	5	5
1. Low Level Contact Resistance (LLCR)	3,5,8,10	2,5				2,4	
2. Insulation resistance			2,6				
3. Dielectric withstanding voltage			3,7				
4. Temperature Rise				2			
5. Durability	4						
6. Contact Normal Force	2,6						
7. Vibration		3					
8. Mechanical Shock		4					
9. Solder Joint Peeling Strength					2		
10. High Temperature Storage Life (steady state)						3	
11. Thermal Shock	7		4				
12. Cyclic Humidity	9		5				
13. Solderability							1
14. Resistance to Soldering Condition	1	1	1	1	1	1	

9.0 SOLDERING PROFILE

Lead-free reflow profile requirement for solderability testing

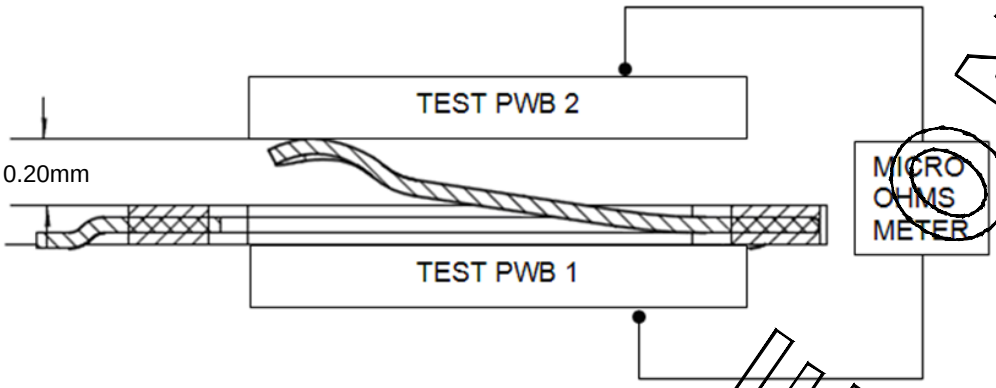


Condition	Exposure
Average ramp-up rate (200°C to 250°C)	Less than 3°C/second
Between 150 and 180°C	Between 60-120 seconds
> 217°C	Between 30-40 seconds
Peak Temperature	250°C +0/-5°C
Time within 5°C of peak	10 seconds Minimum
Ramp-down rate (Peak to 50°C)	Less than 6°C/second
Time from 25°C to Peak	No greater than 480 seconds

TEMPERATURE CONDITION GRAPH
(TEMPERATURE ON BOARD PATTERN SIDE)

APPENDIX 1:

Contact resistance measurement



APPENDIX 2:

Nano SIM Solder Joint Peeling Strength