



PRODUCT SPECIFICATION

MICRO SIM CARD CONNECTOR, 1.35MM HEIGHT, PUSH PULL

1.0 SCOPE

This Product Specification covers the performance requirements of the Micro SIM Card Connector.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

Product Name

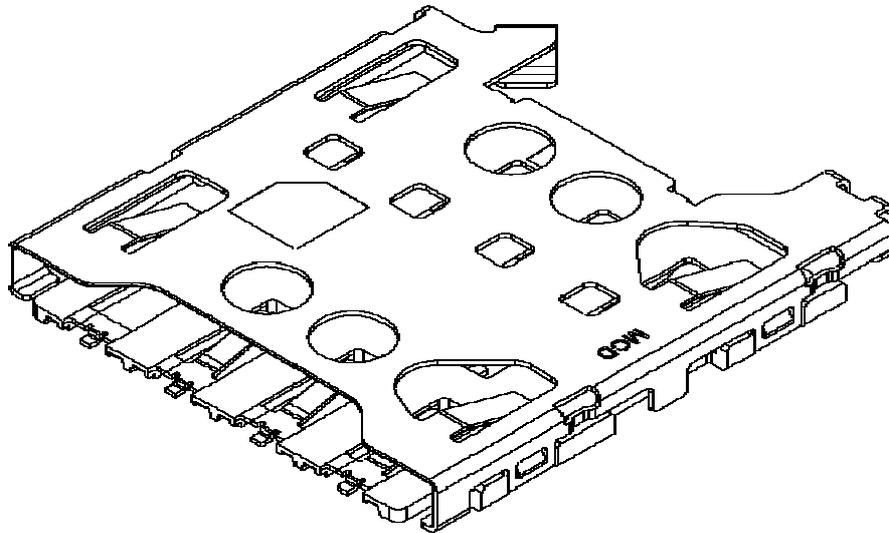
Series Number

MICRO SIM CARD CONNECTOR, 1.35MM HEIGHT, PUSH PULL

78723

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See Sales Drawing 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.

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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

5 Volt DC Max.

4.3 TEMPERATURE

Operating: - 40°C to + 85°C

Storage (with packaging): - 40°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 copper

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. (IEC 60512-2-1)	100 milliohm [MAXIMUM] [initial] Value includes bulk resistance of terminal
2	Insulation Resistance	Unmated connectors: apply a voltage of 500 VDC between adjacent contact for 1 minutes (IEC 60512-3-1)	1000 Megohms [MINIMUM]

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3	Dielectric Withstanding Voltage	Unmated connectors: apply a voltage of 500 VAC between adjacent contact for 1 minutes (IEC 60512-3-1)	No voltage breakdown
4	Temperature Rise	Mated and measure the temperature rise of contact, when rated current is passed. (IEC 60512-5-1)	Temperature Rise 30°C [MAXIMUM]

6.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	Contact Normal Force	Apply perpendicular force to terminal at the rate of 12.5mm/min. Measure contact normal force at 0.10mm working height, read at return curve. Refer to appendix 1.	0.30N min
6	Durability (Horizontal Insertion Direction)	Mate and unmate connectors to 500 cycles at a maximum rate of 720 cycles/hour. Take LLCR readings at 500 th cycles.	Contact resistance 100 milliohms [MAXIMUM]
7	Card insertion force	Insert the card in mating direction at a Max. rate of 12.5 mm/min	8N [MAXIMUM]
8	Card withdrawal force	Withdraw the card in un-mating direction at a rate of 12.5 mm/min	0.70N [MINIMUM]
9	Vibration (Random)	Frequency: 10~100 Hz, 0.0132 g ² /Hz; Frequency: 100~500Hz, -3dB/Oct Applied for 1 hour in each 3 mutually perpendicular axes (IEC60068-2-64 Fh)	Contact resistance 100 milliohms [MAXIMUM] Discontinuity < 1 μs
10	Solder Joint Peeling Strength	Apply a load parallel to PCB (3directions). Refer to Appendix 2 for X & Y direction. Loading speed: 5mm/min.	50N [MINIMUM]

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11	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. (IEC-60068-2-27 EA)	Contact resistance 100 milliohms [MAXIMUM] Discontinuity < 1 μs
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6.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
12	Low Temperature Storage Life (steady state)	At -40°C for 96 hours Recovery: 2 hours at ambient atmosphere (IEC60068-2-1Ab)	Contact resistance 100 milliohms [MAXIMUM]
13	High Temperature Storage Life (steady state)	At +85°C for 96 hours Recovery: 2 hours at ambient atmosphere (IEC60068-2-2Bb)	Contact resistance 100 milliohms [MAXIMUM]
14	Thermal Shock	25 cycle at T _a = -55°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)	No mechanical damage, corrosion and oxidation at contact area Contact resistance 100 milliohms [MAXIMUM]
15	Damp Heat (Cyclic)	Temp 25-55°C and 90-100%RH for 18 cycles of 24hours. 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) (IEC60068-2-30Db)	Contact resistance 100 milliohms [MAXIMUM] Insulation resistance 1000 Megohms [MINIMUM] No voltage breakdown

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16	Salt Spray	48 hours spray, at temp $35 \pm 2^\circ\text{C}$, R/H 90-95%, Salt NaCl mist 5% after test was parts and return to room ambient for 1~2 hours (IEC60068-2-11 Test Ka)	Contact resistance 100 milliohms [MAXIMUM]
17	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 hours (ANSI-J-STD 002)	Solder coverage = 95% [MINIMUM]
18	Resistance to Soldering Condition	Unmated sample to be passed through reflow over according to temp profiles (shown in section 9.0) 2X times	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 PK-78723-001.

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8.0 TEST SEQUENCES

Test Group →	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
Test or Examination ↓						
Sample size	5	5	5	5	5	5
Resistance to Soldering Conditions	1	1	1	1	1	1
Contact Resistance (LLCR)	2,4,6,8			2,5	2,4,6	2,4
Insulation Resistance		3,6				
Dielectric Withstanding Voltage		2,7				
Temperature Rise			2			
Contact Normal Force						
Durability (Horizontal Direction)	3					
Card Insertion Force						
Card Withdrawal Force						
Vibration				3		
Solder Joint Peeling Strength						
Mechanical Shock				4		
Low Temperature Storage Life					3	
High Temperature Storage Life					5	
Thermal Shock	5	4				
Damp Heat	7	5				
Salt Spray						3
Solderability						

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Screen Test Group →	Group 1 (Screen Test)	Group 2 (Screen Test)	Group 3 (Screen Test)	Group 4 (Screen Test)
Test or Examination ↓				
Sample size	5	5	5	5
Resistance to Soldering Conditions	1	1	1	1
Contact Resistance (LLCR)	2,7			
Insulation Resistance		2,5		
Dielectric Withstanding Voltage		3,6		
Temperature Rise				
Contact Normal Force	3,8			
Durability (Horizontal Direction)	6	4		
Card Insertion Force	4,9			
Card Withdrawal Force	5,10			
Vibration				
Solder Joint Peeling Strength				2
Mechanical Shock				
Low Temperature Storage Life				
High Temperature Storage Life				
Thermal Shock				
Damp Heat				
Salt Spray				
Solderability			2	

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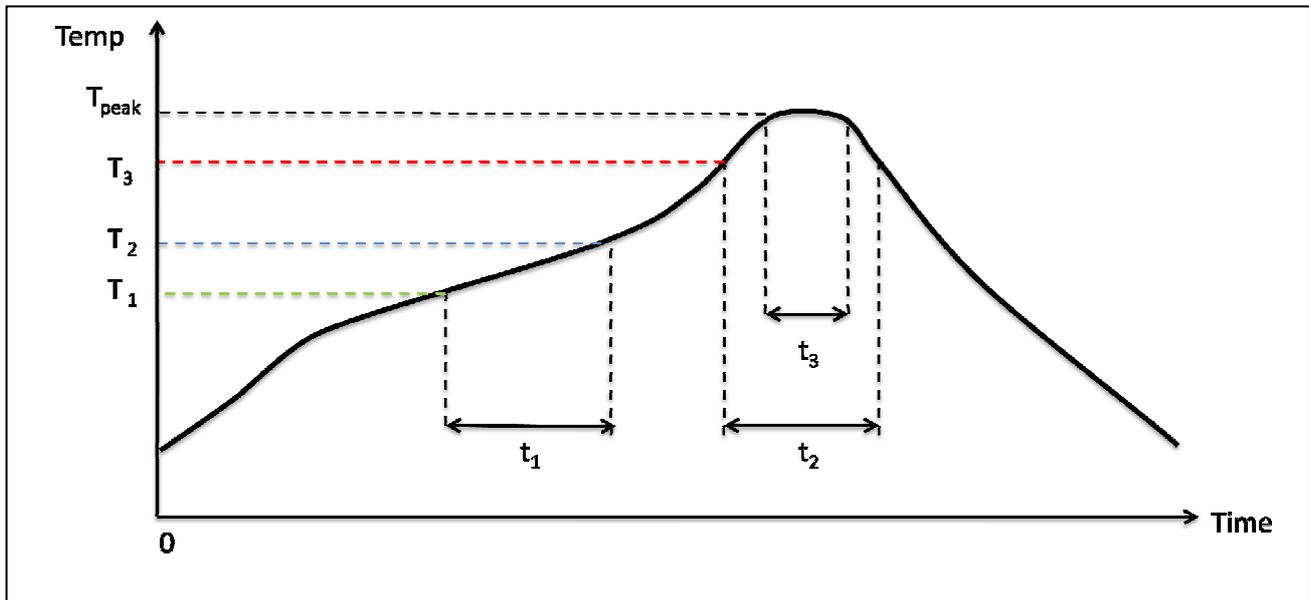


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9.0 SOLDERING PROFILE

Pb-free reflow profile requirement for solderability testing

Pb-free reflow profile requirements for solderability testing		
Parameter	Reference	Specification
Average temperature gradient in preheating (25~130°C)		Max 2°C/s
Preheat temperature	$T_1 \sim T_2$	130~165°C
Preheat time	t_1	60 ~ 120 s
Time above liquidus (T_3 : 217°C)	t_2	Max 30s
Peak temperature in reflow	T_{peak}	230~235°C
Time within 5°C of peak	t_3	10 s
Temperature gradient in cooling		Max -5°C/s



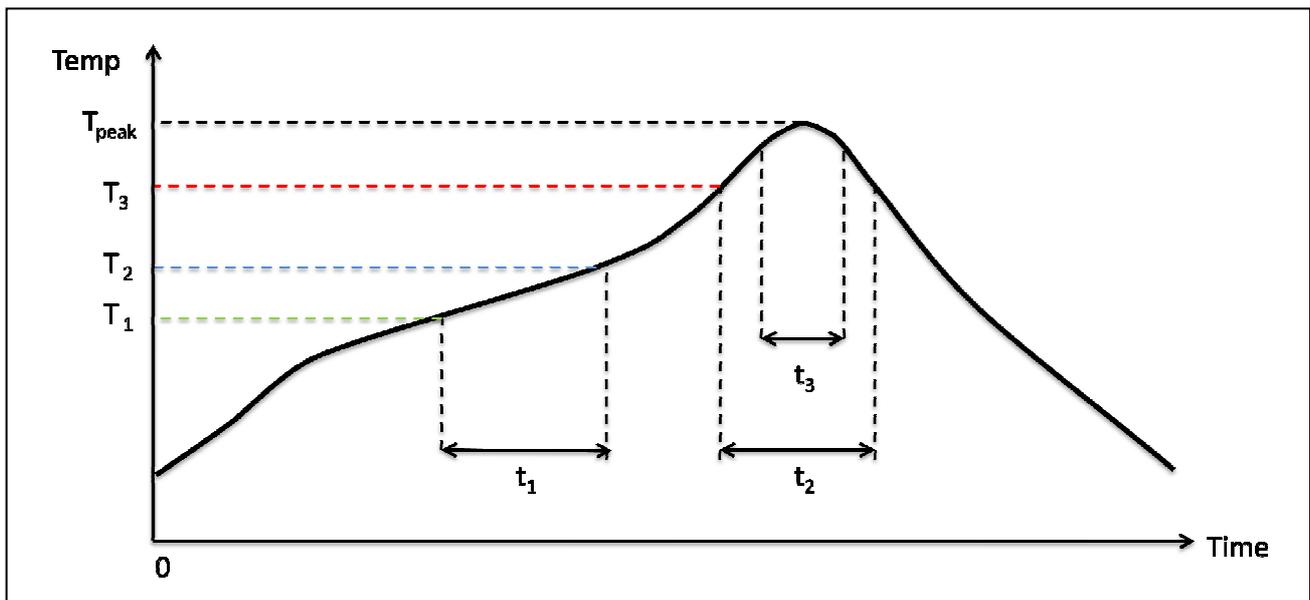
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Reflow soldering profile for soldering heat resistance testing

Pb-free reflow profile requirements for soldering heat resistance		
Parameter	Reference	Specification
Average temperature gradient in preheating (25~130°C)		Max 2°C/s
Preheat temperature	$T_1 \sim T_2$	130~165°C
Preheat time	t_1	60 ~ 120 s
Time above liquidus (T_3 : 217°C)	t_2	35~60s
Peak temperature in reflow	T_{peak}	235~250°C
Time within 5°C of peak	t_3	Min 10 s
Temperature gradient in cooling		Max -5°C/s



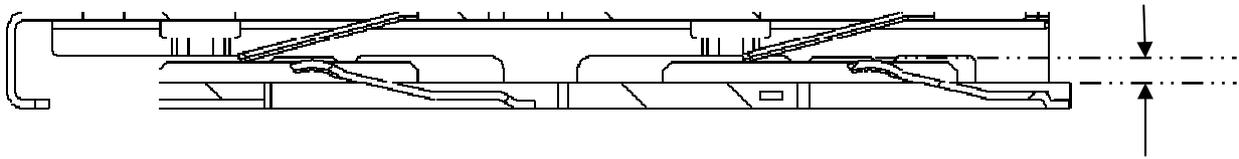
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APPENDIX 1:

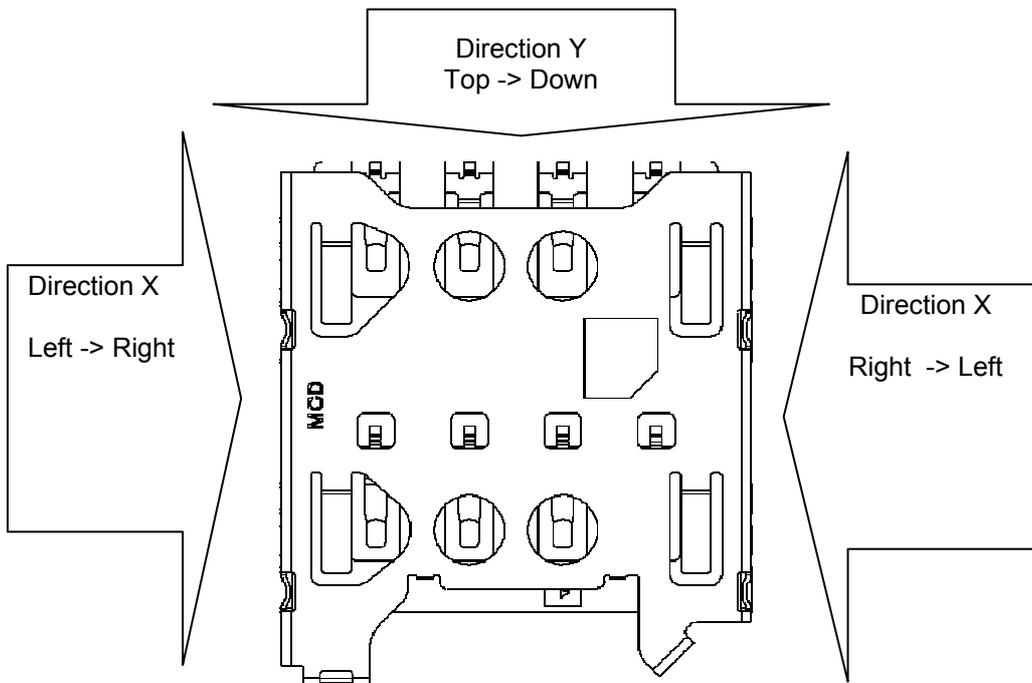
Contact Force Measurement



0.10mm from housing surface.

APPENDIX 2:

Solder Joint Peeling Test measurement



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