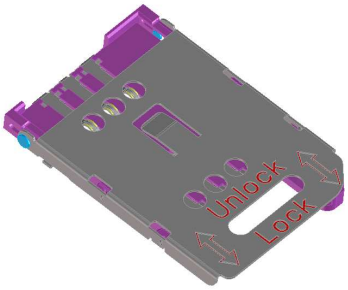
# PRODUCT SPECIFICATION

## SIM CARD CONNECTOR, 2 .54MM PITCH

**INDEX**






| REVISION: | ECR/ECN INFORMATION: | TITLE: | SHEET NO. |
|---|---|---|---|
| B | EC NO: SH2008-0464<br>DATE: 2008/06/24 | SIM CARD CONNECTOR | 1 OF 7 |

| DOCUMENT NUMBER: | WRITTEN BY: | CHECKED BY: | APPROVED BY: | FILE NAME |
|---|---|---|---|---|
| PS-47388-201 | YWANG | YLZHU | HWWANG | |

## 1.0 SCOPE

This specification defines the performance for the 2.54mm SIM Card Connector 473882001.

## 2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND NUMBER

| *Product name* | *Product number* |
|---|---|
| SIM Card Connector, 2.54mm pitch | 473882001 |

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See the appropriate Sales Drawing (SD-47388-201) for information on dimensions, materials, plating and markings.

2.3 This connector assembly consists of a plastic housing, 6 contacts and top shell. Solder components shall meet Lead-free soldering requirements.

## 3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

Please refer to the Sales Drawings **SD-47388-201**, and other sections of this Specification for specific references to applicable documents and specifications. In cases where the Product Specification differs from the Sales Drawings, the Sales Drawing will take precedence.

## 4.0 RATINGS

4.1 Voltage: 5 V DC Max.

4.2 Current: 0.5A DC Max. Per Contact

4.3 Operating Temperature : -40℃ to +85℃

4.4 Storage temperature: -40℃ to +100℃

## 5 ELECTRICAL PERFORMANCE

| TEST REF. | ITEM | TEST CONDITION | REQUIREMENT |
|---|---|---|---|
| 5.1 | Contact resistance | Mate connector with dry circuit of 20mV and a current of 100mA maximum. Per EIA-364-23 | 100mΩ max. |
| 5.2 | Insulation resistance | Measurement shall be performed after 60 second from voltage application 500VDC between the adjacent contact Per EIA-364-21 | 100MΩ min. |
| 5.3 | Dielectric withstanding voltage | Apply 500V AC for 1 minute between adjacent terminals or terminal and ground. Per EIA-364-20 | No voltage breakdown |
| 5.4 | Temperature Rise | Mate card and measure the temperature rise of contact, when rated current is passed. Per EIA-364-70 method 1 | 30ºC Max. |

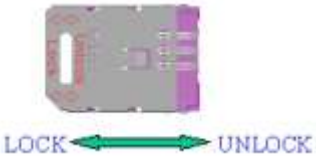
## 6 ENVIRONMENTAL PERFORMANCE

| TEST REF. | ITEM | TEST CONDITION | REQUIREMENTS |
|---|---|---|---|
| 6.1 | Cyclic Humidity | Precondition at 50 ℃ for 1 hour then place in chamber. Cycle the parts between 25 ℃±3 ℃ at 80%±3%RH and 65℃ ±3℃ at 50%±3%RH. Ramp time should be 0.5 hour and dwell time should be 1.0 hour. Dwell time start when the temperature and humidity have stabilized within the specified levels. Perform 24 cycles. Allow the parts to dry at ambient room temperature for 4 hours prior to measurements. Per EIA-364-31 | Appearance: no damage Contact Resistance: 100 mΩ maximum |
| 6.2 | Low Temperature Exposure | The card shall be mated and exposed to the condition of -40±3℃ for 96 hours. Recovery time 1~2 hours | Appearance: no damage Contact resistance: 100 mΩ maximum |

| | | | |
|---|---|---|---|
| 6.3 | High Temperature Exposure | The card shall be mated and exposed to the condition of +85±2℃for 96 hours, less than 25% relative humidity. Recovery time 1~2 hours | Appearance: no damage<br>Contact resistance: 100 mΩ maximum |
| 6.4 | Thermal Shock | The card shall be mated and exposed to the following condition for 25 cycles.<br>1 cycle: a) -40±3℃ for 30 minutes<br>b) +85±2℃ for 30 minutes<br>Transit time shall be within 3 minutes, Recovery time 1~2 hours<br>Per EIA-364-32 | Appearance: no damage<br>Contact resistance: 100 mΩ maximum |
| 6.5 | Salt Spray Test | The card shall be mated and exposed to the following salt mist conditions. At the completion of the exposure period, salt deposits shall be removed by a gentle wash or dip in running water, after which the specified measurements shall be performed.<br>NaCl solution:<br>Concentration ： 5±1%<br>Spray time ： 48 hours<br>Temperature ： 35±2℃<br>Per EIA-364-26 condition A | Appearance: no damage<br>Contact resistance: 100 mΩ maximum |
| 6.6 | Solderability test | Dip solder tails into the molten solder held at 250±5℃ for 3 ±0.5 sec.<br>Per EIA-364-52 | Contact solder tail shall have a Min. 95% solder coverage |
| 6.7 | Solder Heat Resistance | Twice through IR Profile*<br>Reference the appendix2 | Visual:<br>No Damage to insulator material |

7 **MECHANICAL PERFORMANCE**

| TEST REF. | ITEM | TEST CONDITION | REQUIREMENTS |
|---|---|---|---|
| 7.1 | Normal force | Measure normal force at SIM contact point terminal in the housing as per Appendix1 | 0.7N Min at initial<br>0.6N Min at final |

| | | | |
|---|---|---|---|
| 7.2 | Terminal vs. Housing retention force | Apply an axial load to terminal assembled in the housing at a speed of 25-50 mm/min. | Retention force 3N min. |
| 7.3 | Shell vs. housing pulling off force | Apply an axial load to shell which is vertical to housing at a speed of 25-50 mm/min.   | 2.5Kgf Min. |
| 7.4 | Durability | Press and withdrawal are repeated 5000 cycles with card at the speed rate of 400~600 cycles/hour. Per EIA-364-09B | Appearance: no damage Contact Resistance: 100 mΩ Maximum |
| 7.5 | 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/s2 {50G} Duration ： 11ms Per EIA-364-27B | Appearance: no damage <1ms discontinuity 100 mΩ Maximum |
| 7.6 | Vibration | Mate card and subjected to the following 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/s2{2G} Frequency : 10-55-10Hz shall be traversed in 1 minute. Per EIA-364-28C | Appearance: no damage <1 ms discontinuity 100 mΩ Maximum |
| 7.7 | Lock/unlock force | Apply an force to lock/unlock top shell at a speed of 20 mm/min.   | Unlock force: 1.2+0.3/-0.5Kgf at initial condition; 300gf Min. after 500 cycles life test Lock force: 1.5Kgf Max. at initial and after 500 cycles condition |

**8 PACKAGING**

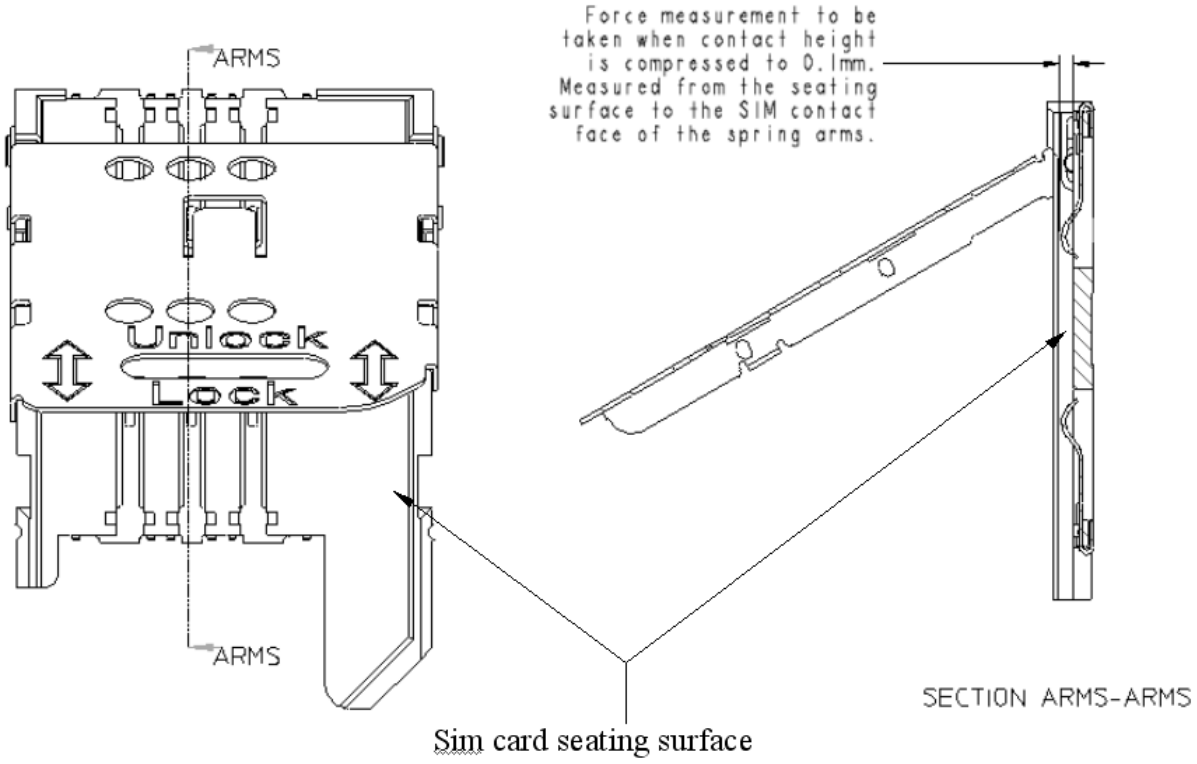
See packaging specification and pack assembly drawing PK-47388-001and. Parts shall be packaged to protect against damage during handing, transit and storage.

**9 TEST SEQUENCES FOR MS Duo: (SAMPLE GROUP SIZE: 5PCS)**

| GROUP NUMBER | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Contact resistance | **1,4** | **1,6** | **1,6** | **1,3** | **1,4** | | | | | |
| Insulation resistance | | **2,7** | **2,7** | | | | | | | |
| Dielectric withstanding voltage | | **3,8** | **3,8** | | | | | | | |
| Temperature Rise | | | | | | **1** | | | | |
| Cyclic Humidity | | | **5** | | | | | | | |
| Low Temperature Exposure | | | | | **2** | | | | | |
| High Temperature Exposure | | | | | **3** | | | | | |
| Thermal Shock | | | **4** | | | | | | | |
| Salt Spray Test | | | | **2** | | | | | | |
| Solderability | | | | | | | | | | **1** |
| Normal force | | **4,9** | | | | | | | | |
| Terminal vs. Housing retention force | | | | | | | **1** | | | |
| Shell vs. Housing retention force | | | | | | | | | **1** | |
| Durability | | **5** | | | | | | | | |
| Mechanical Shock | **2** | | | | | | | | | |
| Vibration | **3** | | | | | | | | | |
| unlock force | | | | | | | | **1,3,** | | |
| Durability for hinge | | | | | | | | **2,** | ` | |

***** On the each test groups (except group “7”,”10”), the samples need to be soldered on PCB by IR reflow twice before any test is performed.

**Appendix1**




**Appendix 2**

| Condition | Exposure |
|---|---|
| > 100 ℃ | between 360~ 600 seconds |
| > 150 ℃ | at least 240 seconds |
| > 217 ℃ | at least 90 seconds |
| within 5 ℃ of Peak | 20 ~40 second |
| Peak Temperature | Greater than or equal to 255℃ |
| Average ramp-up rate (25℃ to217℃) | Less than 3℃ /second |
| Cool-down rate (Peak to 50℃) | Less than 6℃ /sec ond |
| Time from 30℃ to 255℃ | No greater than 360 seconds |