



# PRODUCT SPECIFICATION

## MILLI-GRID 2MM DUAL ROW SIDE-ENTRY RECEPTACLES

### 1.0 SCOPE

This Product Specification describes the performance requirements for a 4 pin, 2mm Pitch Compression Connector which will be used on Mobile Phone.

### 2.0 PRODUCT DESCRIPTION

#### 2.1 PRODUCT NAME

Milli-grid 2mm Dual Row Side-Entry Receptacles  
Include the P.C. board Through Hole version 87264, and the P.C. board Surface Mount Version 87368. There are board-in connectors that are intended to mate with Milli-grid Headers for inter-connections.

#### 2.2 DIMENSIONS, MATERIAL, PLASTICS AND MARKINGS

Refer to the appropriate sales drawings for information on dimensions, materials, platings and markings.

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

MIL-STD-202                      Test methods for Electronic and Electrical component parts.  
MIL-STD-1344                  Test methods for Electrical Connectors.

#### 2.3 SAFTY AGENCY APPROVALS

UL File no. : E29179  
CSA File no. : LR19980

### 3.0 RATINGS

#### 3.1 CURRENT

1.0 Amps

#### 3.2 TEMPERATURE

Temperature Range -55°C ~ +105°C

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DOCUMENT NUMBER: <b>PS-87264</b>	CREATED / REVISED BY: <b>SKANG 2010/09/23</b>	CHECKED BY: <b>ATSEE 2010/10/19</b>	APPROVED BY: <b>MLONG 2010/10/20</b>



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## 4.0 PERFORMANCE

### 4.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
4.1.1	<b>Contact Resistance</b>	Per MIL-STD-1344A method 3004.1	15 milliohms MAXIMUM
4.1.2	<b>Insulation Resistance</b>	500 VDC applied for 1 minute per MIL-STD-1344A method 3003.1	1000 Megaohms MINIMUM
4.1.3	<b>Dielectric Strength</b>	500 Vrms for 1 minute between adjacent terminals	No breakdown
4.1.4	<b>Contact Capacitance</b>	Measure between adjacent terminals at 1MHz.	2.0 picofarads MAXIMUM

### 4.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
4.2.1	<b>Contact Normal Force</b>	Apply a load normal to the point of contact of the terminal.	50grams MINIMUM At deflection of 0.06mm
4.2.2	<b>Durability</b>	Mate connectors 25 times at a maximum rate of 10 cycles/min.	Contact Resistance 10 milliohms MAXIMUM (Change from initial)
4.2.3	<b>Vibration</b>	Simple Harmonic Motion 0.06 inch total excursion, 10-55-10 Hz traverse in 1 minute for 2 hours in each axis per MIL-STD-202F method 201A .	Contact Resistance 10 milliohms MAXIMUM (Change from initial) & Discontinuity < 1 microsecond
4.2.4	<b>Individual Contact Insertion Forces</b>	Insert a maximum gage pin at a rate of 12 +/- 5cm/min	180 grams MAXIMUM.
4.2.5	<b>Individual Contact Withdrawal Forces</b>	Withdraw a minimum gage pin at a rate of 12 +/- 5cm/min	20 grams MINIMUM
4.2.6	<b>Shock (Mechanical)</b>	½ Sine Wave, 50g (11 milliseconds) Pulse, 3 shocks per axis per MIL-STD-202F method 231B condition A	Contact Resistance 10 milliohms MAXIMUM (Change from initial) & Discontinuity < 1 microsecond

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## 4.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT						
4.3.1	Temperature Rise	Apply 1.0 amps DC to mated connectors and measure contact temperature rise for 48 hours	+30°C MAXIMUM Temperature Rise over Ambient						
4.3.2	Thermal Shock	Mated connectors expose for 5 cycles: <table border="1"> <tr> <td><u>Temperature °C</u></td> <td><u>Duration</u></td> </tr> <tr> <td>-55 +/-5</td> <td>30 minutes</td> </tr> <tr> <td>+105 +/-0</td> <td>30 minutes</td> </tr> </table>	<u>Temperature °C</u>	<u>Duration</u>	-55 +/-5	30 minutes	+105 +/-0	30 minutes	Contact Resistance 10 milliohms MAXIMUM (Change from initial) & Visual: No Damage
<u>Temperature °C</u>	<u>Duration</u>								
-55 +/-5	30 minutes								
+105 +/-0	30 minutes								
4.3.3	Thermal Aging	Mated connectors expose at 105 +/-2°C for 96 hours	Contact Resistance 10 milliohms MAXIMUM (Change from initial) & Visual: No Damage						
4.3.4	Cyclic Humidity	Mated connectors expose to temperature cycle between +25 +/-2°C to +65 +/-2°C at 90% to 98% R.H. for 240 hours per MIL-STD-1344A Method 1002.2 Type II, except Step 7	Contact Resistance 10 milliohms MAXIMUM (Change from initial) & Visual: No Damage						
4.3.5	Flowers of Sulfur	Mated connectors exposed to sulfur vapors for 17 hours at +65 +/-2°C	Contact Resistance 10 milliohms MAXIMUM (Change from initial)						
4.3.6	Salt Spray	Mated connectors exposed to 5% concentration sodium chloride solution at 35 +/-2°C for 96 hours per MIL-STD-202F Method 101D condition A	Contact Resistance 10 milliohms MAXIMUM (Change from initial)						
4.3.7	Current Cycling	Apply 1 amp DC to mated connectors over a cycle of 45 minutes ON and 15 minutes OFF for 48 hours	Contact Resistance 10 milliohms MAXIMUM (Change from initial)						
4.3.8	Solderability	Solder tail to be dipped in flux and examined as per MIL-STD-202F Method 208F	Dipped plated portion should have 95% continuous new solder coating coverage						

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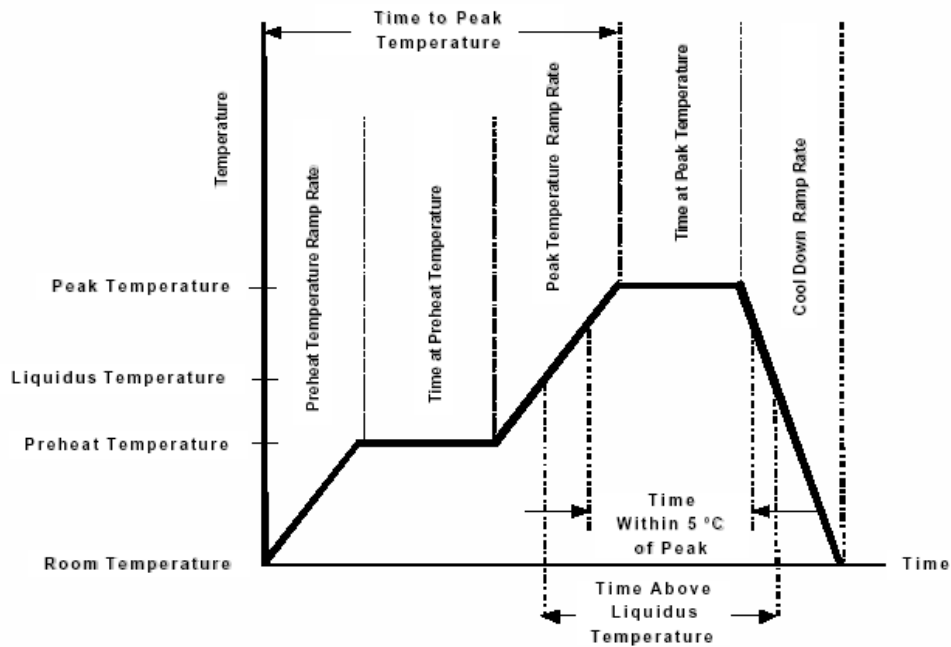


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## 4.3 ENVIRONMENTAL REQUIREMENTS (continued)

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
4.3.9	Resistance to Soldering Heat	Solder tail to be dipped in flux as per MIL-STD-202F Method 210A Condition B	Visual: No Damage
	Resistance to Infra-Red Heat	Subject connector to the IR Reflow temperature of 260 +/-5°C for 12+/-2 seconds	Visual: No Damage

**Reflow Temperature Profile**



4.3.10

**LEAD FREE ALLOY**

DESCRIPTION	REQUIREMENT
Average Preheat Ramp Rate	3 °C/ second maximum
Preheat Temperature	150 °C minimum ; 200 °C maximum
Preheat Time	60 to 180 seconds
Ramp to Peak	3 °C/ second maximum
Time over Liquidus (217 °C)	60 to 150 seconds
Peak Temperature	260 °C to +0/ -5 °C
Time within 5 °C of peak	20 to 40 seconds
Ramp - Cool Down	6 °C/ second maximum
Time 25°C to Peak	8 minutes maximum

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## 5.0 PACKAGING

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

## 6.0 GAGES

Individual Contact Insertion and Withdrawal Test to be performed using steel gage pins to simulate the minimum and maximum mating pin dimensions. The size of these gage pins are as follows:

Minimum Pin Size = 0.48 +/- 0.005mm

Maximum Pin Size = 0.52 +/- 0.005mm

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