



# PRODUCT SPECIFICATION

## 1.0 SCOPE

This Product Specification covers the performance requirements for Milli-Grid 2mm Dual Row Bottom Entry Receptacles.

## 2.0 PRODUCT DESCRIPTION

The Milli-Grid 2mm Dual Row Bottom Entry Receptacles are board-in connectors that are intended to mate with Milli-Grid Headers for inter-connections.

## 2.1 PRODUCT NAME AND SERIES NUMBER(S)

<u>Product Name</u>	<u>Series</u>
Milli-grid Bottom Entry Receptacle SMT	87263

## 2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See the appropriate sales drawings for information on dimensions, materials, plating and markings.

## 2.3 SAFETY AGENCY APPROVALS

UL FILE	:	E29179 Volume 1, Section 76
CSA	:	LR 19980A-212

## 3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

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 addition, in 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
EIA 638	Surface Mount Solderability Test

<u>REVISION:</u> <b>B1</b>	<u>ECR/ECN INFORMATION:</u> EC No: <b>S2011-0505</b> DATE: <b>2010/12/03</b>	<u>TITLE:</u> <b>Milli-Grid 2mm Dual Row Bottom Entry Receptacle</b>	<u>SHEET No.</u> <b>1 of 5</b>
<u>DOCUMENT NUMBER:</u> <b>PS-87263</b>	<u>CREATED / REVISED BY:</u> <b>SKANG 2010/12/03</b>	<u>CHECKED BY:</u> <b>ATSEE 2010/12/16</b>	<u>APPROVED BY:</u> <b>MLONG 2010/12/16</b>



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## 4.0 RATINGS

### 4.1 CURRENT

1.0 Amps Max.

### 4.2 TEMPERATURE

Operating: -55°C to +105°C

## 5.0 PERFORMANCE

The standard range of atmospheric conditions for making measurements and tests is as follows:

Ambient Temperature : 20 ± 2°C

Relative Humidity : 60% to 85%

Air Pressure : 86KPa to 106KPa

### 5.1 ELECTRICAL PERFORMANCE

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.1.1	<b>Contact Resistance</b>	Per MIL-STD-1344A method 3004.1	15 milliohms Maximum
5.1.2	<b>Insulation Resistance</b>	250 VDC applied for 1 minute between adjacent terminals and between terminal and ground	1000 Megohms Minimum
5.1.3	<b>Dielectric Strength</b>	1000 VAC rms for 1 minute between adjacent terminal and between terminal and ground.	No breakdown
5.1.4	<b>Capacitance</b>	Measure between adjacent terminals at 1MHz	1.0 pf Maximum

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## 5.2 MECHANICAL PERFORMANCE

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.2.1	<b>Individual Contact Insertion Force</b>	Insert a 0.50mm square pin at a rate of 12.7mm per minute	180 grams Maximum
5.2.2	<b>Individual Contact Withdrawal Force</b>	Withdraw a 0.50mm square pin at a rate of 12.7mm per minute	20 grams Maximum
5.2.3	<b>Contact Normal Force</b>	Apply a load normal to the point of contact of the terminal	50 grams Minimum at deflection of 0.06mm
5.2.4	<b>Durability</b>	Mate connectors 25 times at a maximum rate of 10 cycles per minute	Contact resistance change from initial 10 milliohms Maximum
5.2.5	<b>Mechanical Shock</b>	½ Sine Wave, 50G, 11ms, Pulse, 3 shocks per axis per MIL-STD-202F method 231B condition A	Contact resistance change from initial 10 milliohms Maximum Discontinuity of 1 micro-second Maximum
5.2.6	<b>Vibration</b>	Simple Harmonic Motion 1.52mm total excursion, 10-55-10Hz traverse in 1 minute for 2 hours in each axis per MIL-STD-202F method 201A	Contact resistance change from initial 10 milliohms Maximum Discontinuity of 1 micro-second Maximum

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## 5.3 ENVIRONMENTAL PERFORMANCE

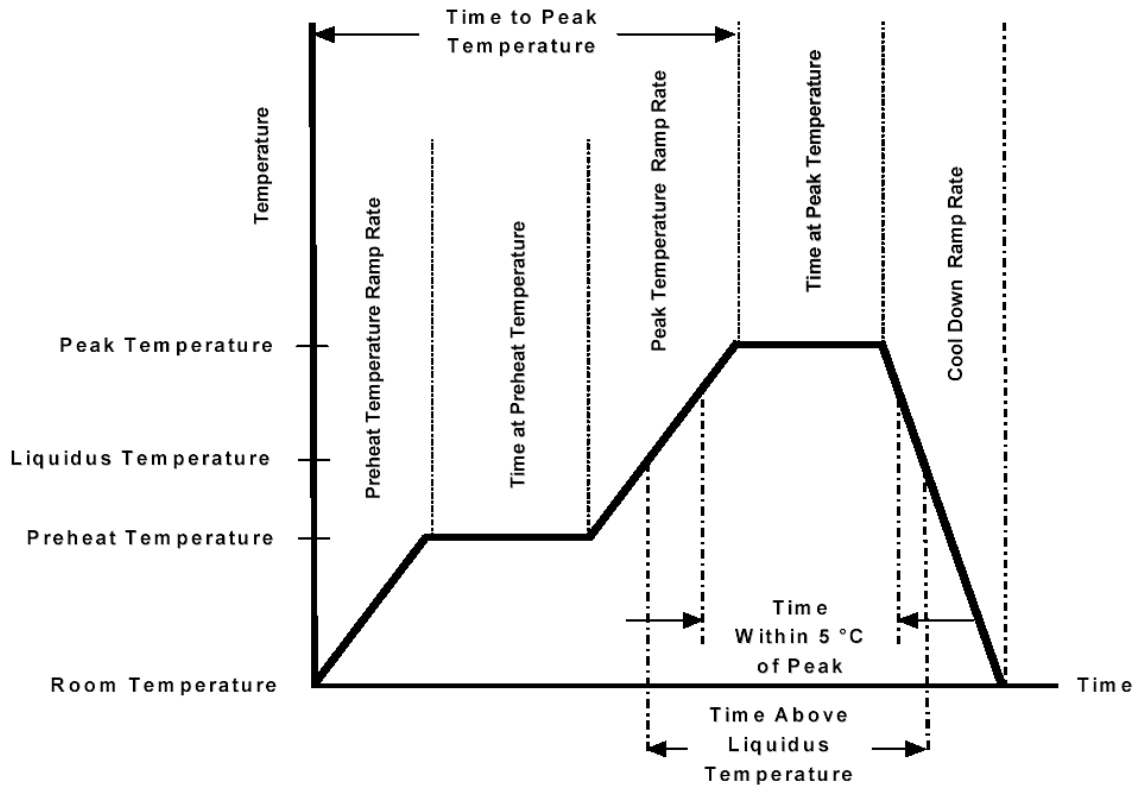
ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT						
5.3.1	<b>Thermal Shock</b>	Mated connectors expose for 5 cycles :  <table border="0"> <tr> <td><u>Temperature</u></td> <td><u>Duration</u></td> </tr> <tr> <td>-55 +0/-5°C</td> <td>30 minutes</td> </tr> <tr> <td>+105 +3/-0°C</td> <td>30 minutes</td> </tr> </table>	<u>Temperature</u>	<u>Duration</u>	-55 +0/-5°C	30 minutes	+105 +3/-0°C	30 minutes	No damage in appearance  Contact resistance change from initial 10 milliohms Maximum
<u>Temperature</u>	<u>Duration</u>								
-55 +0/-5°C	30 minutes								
+105 +3/-0°C	30 minutes								
5.3.2	<b>Thermal Aging</b>	Mated connectors expose at 105 +/-2°C for 96 hours	No damage in appearance  Contact resistance change from initial 10 milliohms Maximum						
5.3.3	<b>Cyclic Humidity</b>	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.	No damage in appearance  Contact resistance change from initial 10 milliohms Maximum						
5.3.4	<b>Salt Spray</b>	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 change from initial 10 milliohms Maximum						
5.3.5	<b>Temperature Rise</b>	Apply 1.0 amps DC to mated connectors and measure contact temperature rise for 96 hours.	+30°C Maximum temperature rise over ambient						
5.3.6	<b>Solderability</b>	Soldertail to be placed on solderpaste and subjected to IR per "EIA 638 Surface Mount Solderability Test"	Soldertail in contact with solderpaste should have 95% new solder coating coverage						
5.3.7	<b>Resistance to Soldering Heat</b>	Refer to Sheet 5 for Soldering Profile	No damage in appearance of the connector						

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## SOLDERING PROFILE



Description	Requirement
Average Ramp Rate	3°C/sec Max
Preheat Temperature	150°C Min to 200°C Max
Preheat Time	60 to 180 sec
Ramp to Peak	3°C/sec Max
Time over Liquidus (217°C)	60 to 150 sec
Peak Temperature	260 +0/-5°C
Time within 5°C of Peak	20 to 40 sec
Ramp - Cool Down	6°C/sec Max
Time 25°C to Peak	8 min Max

## 6.0 PACKAGING

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

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