PRODUCT SPECIFICATION

Milligrid BMI 2mm Pitch Vertical Header

1.0 SCOPE

This specification covers the performance requirements for 2mm pitch, Vertical Header

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER (S)

Product Name	Series Number
MILLIGRID 2MM PITCH VERTICAL HEADER	151013

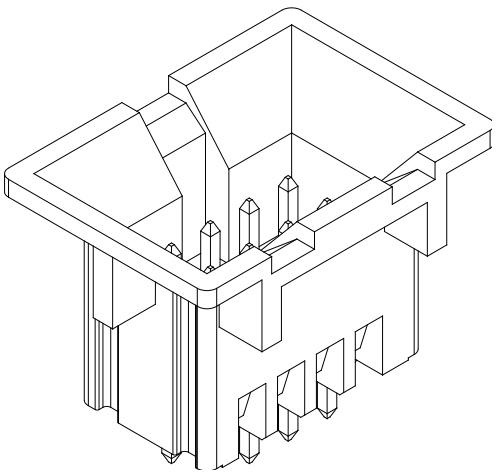
This series mates with Molex Milligrid 2mm Wire to Board Connector Crimp Receptacle Housing, 51110-**52 and 51110-**60 series and Crimp Terminal, 50394 series.

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See Sales Drawing, SD-151013-0001 for information on dimensions, materials platings and markings.

2.3 SAFETY AGENCY APPROVALS

UL Number: E29179
CSA Number: 1585720 (LR19980)



3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See Sales Drawing SD-151013-0001, IPC/WHMA-A-620AS and other sections of this Specification for the necessary referenced Documents and Specifications.

4.0 RATINGS

4.1 VOLTAGE : 125 V Max.

4.2 CURRENT : 2.00 Amps Max

4.3 TEMPERATURE

Operating	0°C to +75°C
Non-operating	-40°C to +105°C

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	**Contact Resistance (Low Level)**	Mate connectors: apply a maximum voltage of 20 mV and a current of 100 mA Per EIA-364-23	**40** milliohms Max.
2	**Insulation Resistance**	Unmate connectors: apply **500** VDC for **1** minute, measure the insulation resistance between adjacent terminals Per EIA 364-21	**1000** Megaohms Min.
3	**Dielectric Withstanding Voltage**	Unmate connectors: apply **1250** VAC for **1** minute between adjacent terminals Per EIA 364-20	No breakdown
4	**Temperature Rise (via Current Cycling)**	Mate connectors: measure the temperature rise at the rated current after: 1.) 96 hours (steady state) 2.) 240 hours (45 minutes ON and 15 minutes OFF per hour). 3.) 96 hours (steady state)	Temperature rise: **+30**°C Max.

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	**Pin Retention Force**	Apply an axial load on the terminal in the housing to dislodge the terminals from the connector at a rate of 12.5mm per minute	**8.5** N Min. per pin (initial)
6	**Durability**	Mate connectors **25** cycles with maximum rate of **10** cycles per minute Per EIA-364-09	**20** milliohms Max. (change from initial) No evidence of physical Damage
7	**Vibration**	Mate connectors : Test Condition per EIA 364-28, test condition VII, test condition letter D (15 min. in each of 3 mutual perpendicular directions. Both mating halves should be rigidly fixed so as not to contribute to the relative motion of one contact against another.	**10** milliohms Max. (change from initial) & Discontinuity < **1** microsecond
8	**Mechanical Shock**	Mate connectors and shock at **50** g's with ½ sine wave (11 milliseconds) shocks in the ± X, ± Y, ± Z axes (**18** shocks total).	**10** milliohms Max. (change from initial) & Discontinuity < **1** microsecond

5.3 ENVIRONMENT REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
9	**Solderability**	Solder Time: 5 +/-0.5 secs. Solder Temperature: 260+/- 5°C Steam aging for 8hours	Dipped portion should have 95% continuous new solder coating coverage
10	**Resistance to Soldering Heat**	Refer to Section 8.0 for soldering profile	No damage in appearance of the connector
11	**Thermal Shock**	Mate connectors; expose to **5** cycles of: Temperature °C — Duration (Minutes) **-55+0/-3** — **30** **+25±10** — **5** MAXIMUM **+85+3/-0** — **30** **+25±10** — **5** MAXIMUM Per EIA 364-32 condition I	**20** milliohms Max. (change from initial) & Visual: No Damage
12	**Temperature Life**	Mate connectors; expose to: **96** hours at **105 ± 2°**C Per EIA 364-17	**20** milliohms Max. (change from initial]) & Visual: No Damage

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
14	**Humidity (Cyclic)**	**24** cycles at temperature **25 ± 3°**C at **80 ± 3**% relative humidity and **65 ± 3°**C at **50 ± 3**% relative humidity; dwell time of **1.0** hour; ramp time of **0.5** hours. Dwell times start when the temperature and humidity have stabilized within the specified levels. Per EIA-364-31	Dielectric Withstanding Voltage: No Breakdown at **500** VAC & Insulation Resistance: **1250** Megohms Min. & Visual: No Damage

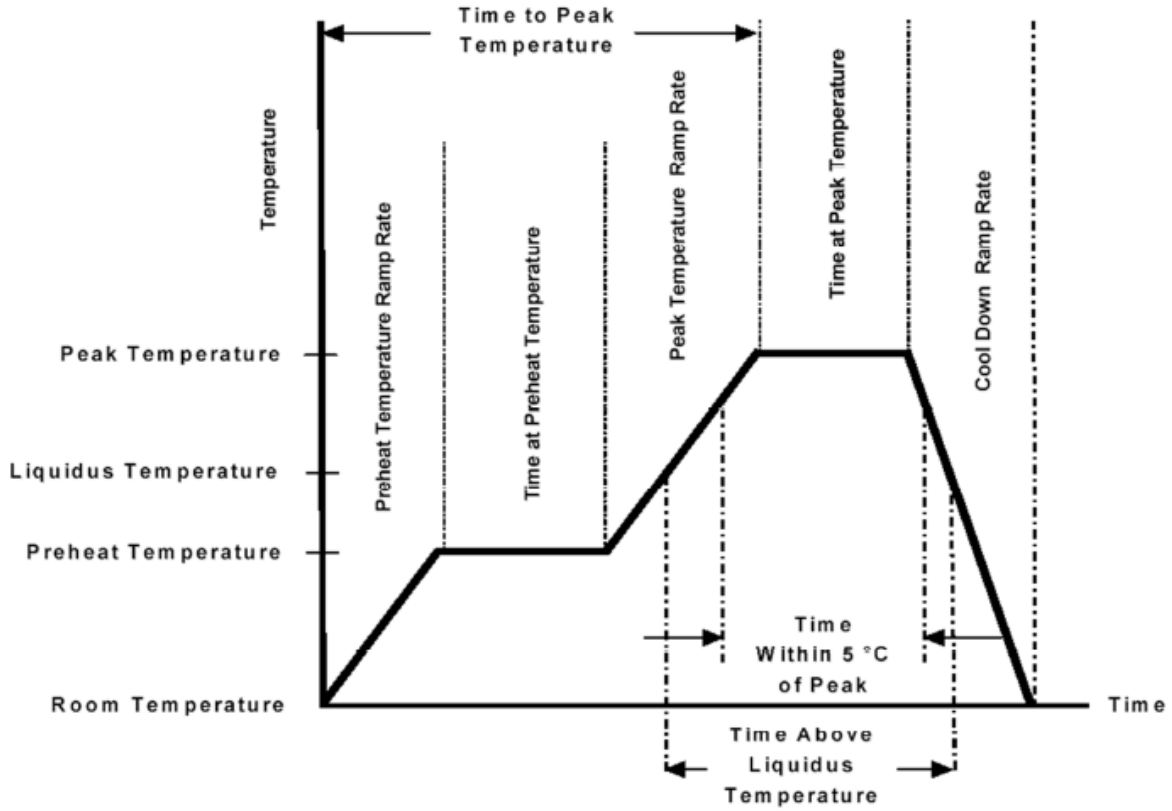
6.0 PACKAGING

Refer to Packing Specification, PK-151013-0001 for packaging details.

7.0 TEST SEQUENCES

Test Group →	A	B	C	D	E	F	G
Test or Examination ↓							
Examination of the connector(s)	1	1,5	1	1,8	1	1	1
Contact Resistance (Low Level) (LLCR)				3,5, 7	3,5, 7	3,5, 7,9	
Insulation Resistance	3,6						
Dielectric Withstanding Voltage	4,7						
Temperature Rise (via Current Cycling)		4					
Pin Retention Force in housing			2				
Durability		3		4	4	4	
Vibration						6	
Mechanical Shock						8	
Humidity (cyclic)	5						
Temperature Life				6			
Thermal Shock					6		
Resistance to Soldering Heat	2	2		2	2	2	
Solderability							2

8.0 SOLDERING PROFILE



Description	Requirement
Average Ramp Rate	3°C/sec Max
Preheat Temperature	150°C Min to 200°C max
Preheat Time	60 to 180sec
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 40sec
Ramp - Cool Down	6°C/sec max
Time 25°C to Peak	8min Max