Molex 87858-0002 PDF

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PRODUCT SPECIFICATION

2MM DUAL ROW OR SINGLE ROW (SMT/ VERTICAL/ RIGHT ANGLE) HEADER

1.0 SCOPE

This specification covers the performance requirements for 2mm Dual Row or Single Row Header (SMT/ Vertical/ Right Angle)

2.0 PRODUCT DESCRIPTION

2.1 Product covered by this specification is for series number 87752, 87753, 87754, 87755, 87756, 87758, 87759, 87760, 87761, 87762, 87239, 87858, 87979, 151003, 151011, 151017, 151033 151036, 151037, 151147, 151148 151149,151150, 151151, 151152

2.2 For dimensions, materials & plating, refer to the appropriate product drawings.

2.3 Safety Agency Approvals
UL File Number: E29179

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

The following documents are 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 reference documents, this specification shall take the precedence.

MIL-STD-202	Test Methods for Electrical and Electronic Component Parts.
MIL-STD-1344	Test methods of Electrical Connector

4.0 RATINGS

4.1 Voltage : 125V

4.2 Current : 2.00 Amp

4.3 Operating Temperature : -55°C to + 125°C Current

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	**Capacitance**	Measure between adjacent terminals	1.2 pf max
2	**Insulation Resistance**	Test between adjacent contact at 500 V DC for 1 minute, per (MIL-STD-1344 MTD 3001.1)	1000 Megaohms minimum
3	**Dielectric Strength**	Test between adjacent contact at 500VAC rms and 1 minute hold time.	No breakdown

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
4	**Pin Retention Force in Housing**	Push pin axially from housing at a rate of 12.7mm/min (0.50 inch/min)	0.85 Kgf min

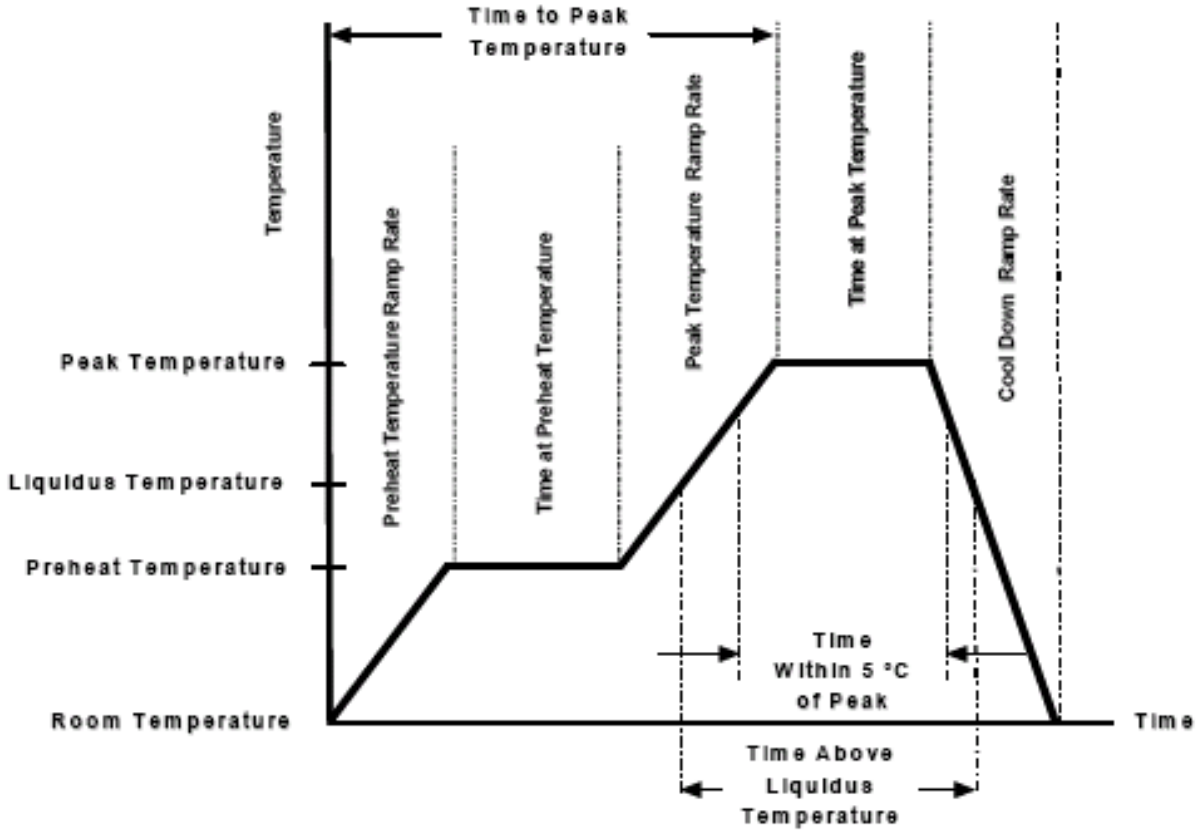
5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	**Temperature Rise**	Apply 2 amps DC to the header and measure contact temperature rise for 48 hours	30°C maximum temperature rise above ambient.
6	**Solderability**	Solder Time: 5 ± 0.5 sec. Solder Temperature: 245 ±5 °C	Soldertail should have 95% continuous new solder coating coverage (Apply to non-kinked Soldertail only)
7	**Resistance to Soldering Heat (Wave Soldering) For Series** **a)87760** **b)87758, 87830, 87761** **c) Other series**	Sample mounted on PCB and subject to wave soldering, a)Temperature : 260 ±5 °C for 12 ± 2 Sec b)Temperature : 260 ±5 °C for 10+2/-0Sec c) Temperature : 245 ±5 °C for 5Sec	Appearance : No Damage
8	**Resistance to Solder Heat (Reflow) For SMT Series 87753, 87756, 87759, 87762, 87763, 87858, 87979, 87830**	Pass Jack through IR machine for 3 cycles of the following reflow profile: Average Ramp Rate 3°C/sec max. Preheat Temp. (Min.) 150°C Preheat Temp. (Max.) 200°C Preheat Time 60 – 180 sec Ramp to Peak 3°C/sec max. Time over liquidus (217°C) 60 – 150 sec Peak Temperature 260 +0/-5°C Time within 5°C of peak 20 – 40 sec. Ramp – Cool Down 6°C/sec max. Time 25°C to Peak 8 mins max.	Appearance : No Damage

6.0 Packaging

Product shall be packaged and protected against damage during handling, transportation and storage.

7.0 SURFACE MOUNT REFLOW TEMPERATURE PROFILE



TEST SUMMARY

2MM DUAL ROW OR SINGLE ROW (SMT/ VERTICAL/ RIGHT ANGLE) HEADER

1.0 SCOPE

This Test Summary covers the performance requirements of 2MM DUAL ROW OR SINGLE ROW (SMT/ VERTICAL/ RIGHT ANGLE) HEADER

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND PART NUMBER(S)

Sl. No	Series No.	Part Description
1	87752	2.00mm Pitch Header, Through Hole, Breakaway, Vertical
2	87754	2.00mm Pitch Header, Breakaway, Right-Angle, Through Hole
3	87755	2.00mm Pitch PCB Header, Through Hole, Single Row Dual Body, Vertica
4	87756	2.00mm Pitch PCB Header, Surface Mount, Single Row Dual Body, Vertical
5	87758	2.00mm Pitch Milli-Grid Header, Through Hole, Vertical
6	87759	Milli-Grid Header, Surface Mount, Vertical, 4 Circuits
7	87760	2.00mm Pitch Milli-Grid Header, Right-Angle, Through Hole
8	87761	Milli-Grid Header, Dual Row Dual Body, Through Hole, Vertical
9	87762	Milli-Grid Header, Dual Row Dual Body, Surface Mount, Vertical
10	87858	2.00mm Pitch Milli-Grid Breakaway Header, Surface Mount, Single Row, Vertical, with Peg
11	87979	Milli-Grid Breakaway Header, Horizontal Surface Mount

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

Refer to respective sales drawings for the information related to dimensions, materials, platings and markings.

2.3 PRODUCT SPECIFICATION TITLE AND DOCUMENT NUMBER

TITLE: 2MM DUAL ROW OR SINGLE ROW (SMT/ VERTICAL/ RIGHT ANGLE) HEADER

DOCUMENT NUMBER: PS-87761-100.

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

3.1 TESTING PROCEDURES AND SEQUENCES

MIL-STD-202; Test Methods for Electrical and Electronic Component Parts.
MIL-STD-1344; Test methods of Electrical Connector
ES-40000-5013; Connector Heat Resistance Specification

4.0 QUALIFICATION

Laboratory conditions and sample selection are in accordance with **MIL-STD.**

5.0 PERFORMANCE REQUIREMENTS

5.1 ELECTRICAL PERFORMANCE RESULTS

ITEM	DESCRIPTION	TRETMENT	REQUIREMENTS	MIN.	MAX.	AVG.
5.1.1	**Insulation Resistance**	Test between adjacent contact at 500 V DC for 1 minute, per (MIL-STD-1344 MTD 3001.1) (Initial Condition)	1000 Megaohms MINIMUM	Meets the Requirement		
5.1.2	**Dielectric Strength**	Test between adjacent contact at 500VAC rms and 1-minute hold time.	No breakdown	No breakdown		
5.1.3	**Capacitance**	Measure between adjacent terminals	1.2 pf MAXIMUM	0.41	0.72	0.50

5.2 MECHANICAL PERFORMANCE RESULTS

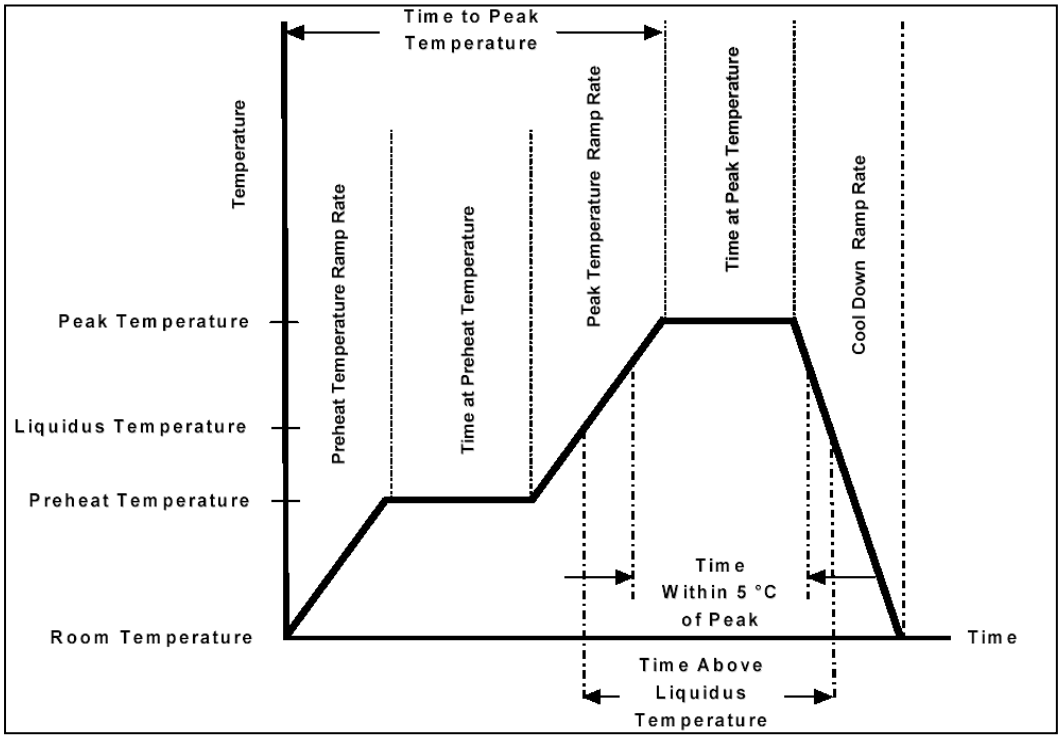
ITEM	DESCRIPTION	TRETMENT	REQUIREMENTS	MIN.	MAX.	AVG.
5.2.1	**Pin Retention Force in Header Housing**	Push pin axially from housing at a rate of 12.7mm/min (0.50 inch/min)	0.85 Kgf/min	1.44	2.24	1.93

5.3 ENVIRONMENTAL PERFORMANCE RESULTS

ITEM	DESCRIPTION	TREATMENT	REQUIREMENTS	MIN.	MAX.	AVG.
5.3.1	**Temperature Rise**	Apply DC to the header and measure contact temperature rises for 48 hours	30 MAXIMUM rise over ambient	Less than 30 rise °C Cover ambient was measured on the connectors after 48 hours		
5.3.2	**Solderability**	Solder Time: 5 ± 0.5 sec. Solder Temperature: 245 ±5 °C	Solder Tail Should have 95% Continuous new Solder Coating Coverage	 < 95% Solder Coverage		
5.3.3	**Resistance to Soldering Heat (Wave Soldering)**	Sample mounted on PCB and subject to wave soldering. a) Temperature: 260 ±5 °C for 12 ± 2 Sec (High Temp. Thermoplastic) b) Temperature: 245 ±5 °C for 3Sec (Polyester Thermoplastic)	No Damage	No Damage Observed		
5.3.4	**Resistance to Solder Heat (Reflow) For SMT Series:** - 87753, 87756, 87759, 87762, 87763, 87858, 87979, 87830	Per, SEMES-152. Refer, to Section 5.3.4 A & B for Reflow profile	No Damage	No Damage Observed		

5.3.4. A & B REFLOW PROFILE FOR HEAT RESISTANCE TEST

(This profile is per AS-40000-5013 and is provided as a guideline only)



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