AMP-LATCH* and IDC Header Connectors, .100 X .100 Inch Grid

1. INTRODUCTION

1.1. Purpose

Testing was performed on AMP-LATCH* and IDC Header Connectors to determine their conformance to the requirements of Product Specification 108-40018, Revision E.

1.2. Scope

This report covers the electrical, mechanical, and environmental performance of AMP-LATCH* and IDC Header Connectors. Testing was performed at the Harrisburg Electrical Components Test Laboratory between 14Sep95 and 03Nov95, additional testing was performed on low profile headers between 28Jan10 and 23Feb10. The test file numbers for this testing are CTL5227-074-019 and EA20100084T respectively. This documentation is on file at and available from the Harrisburg Electrical Components Test Laboratory.

1.3. Conclusion

Specimens listed in paragraph 1.4. conformed to the electrical, mechanical, and environmental performance requirements of Product Specification 108-40018, Revision E.

1.4. Test Specimens

Test specimens were representative of normal production lots. A Certificate of Conformance (C of C) was issued stating that all specimens in the test package were produced, inspected, and accepted as conforming to product drawing requirements, and were manufactured using the same core manufacturing processes and technologies as production parts. Specimens identified with the following part numbers were used for test:

Test Group	Quantity	Part Number	Description
1,3	5 each	1-103308-0	Low profile header assembly
	5 each	1-102153-0	Universal header assembly
2,3	5 each	1-103310-0	Low profile header assembly
	5 each	1-102159-0	Universal header assembly
3	5	104338-9	Low profile, high temperature header assembly
	5	1-111008-0	Universal header for vapor-phase applications
1,3	5 each	5103308-1	Low profile, vertical header assembly

Figure 1

1.5. Environmental Conditions

Unless otherwise stated, the following environmental conditions prevailed during testing:

- Temperature: 15 to 35°C
- Relative Humidity: 25 to 75%

* Trademark
| Indicates change

1.6. Test Sequence

Test or Examination	Test Group (a)		
	1	2	3
	Test Sequence (b)		
Examination of product	1,3,5	1,3	1,8
Insulation resistance			2,6
Withstanding voltage			3,7
Solderability		2	
Component resistance to wave soldering	2		
Contact retention	4		
Thermal shock			4
Humidity/temperature cycling			5

NOTE *(a) See paragraph 1.4.*
(b) Numbers indicate sequence in which tests are performed.

Figure 2

2. SUMMARY OF TESTING

2.1. Examination of Product

Specimens were visually examined and no evidence of physical damage detrimental to product performance was observed.

2.2. Insulation Resistance

All insulation resistance measurements were greater than 5000 megohms initially, and greater than 1000 megohms after testing.

2.3. Withstanding Voltage

No dielectric breakdown or flashover occurred.

2.4. Solderability

All contact leads had a minimum of 95% solder coverage.

2.5. Component Resistance to Wave Soldering

No specimen exhibited any visual evidence of blistering, warpage, or significant discoloration. Slight discoloration was observed around the contacts as viewed from the bottom of the connectors using a microscope. No discoloration or other anomalies were observed when viewing the connectors from the inside.

2.6. Contact Retention

No physical damage occurred to either the contacts or the housing as a result applying an axial load to the contacts for 6 seconds.

2.7. Thermal Shock

No evidence of physical damage was visible as a result of thermal shock testing.

2.8. Humidity/temperature Cycling

No evidence of physical damage was visible as a result of humidity/temperature cycling.

3. TEST METHODS

3.1. Examination of Product

Specimens were visually examined for evidence of physical damage detrimental to product performance.

3.2. Insulation Resistance

Insulation resistance was measured between adjacent contacts of unmated specimens. A test voltage of 500 volts DC was applied for 2 minutes before the resistance was measured.

3.3. Withstanding Voltage

A test potential of 1000 volts AC was applied between adjacent contacts of unmated specimens. This potential was applied for 1 minute and then returned to zero.

3.4. Solderability

Contact solder tails were immersed in a non-activated rosin flux for 5 to 10 seconds, allowed to drain for 10 to 60 seconds and then held over molten Sn60/Pb40 solder maintained at 245°C without contact for 2 seconds. The contact solder tails were then immersed in the molten solder at a maximum rate of 1 inch per second, held in the molten solder for 3 to 5 seconds and then withdrawn at a maximum rate of 1 inch per second. Specimens were cleaned using isopropyl alcohol and then visually examined for solder coverage.

3.5. Component Resistance to Wave Soldering

Specimens were placed on .061 inch thick printed circuit board and the solderable areas of the specimens immersed in non-activated rosin flux type ROL0 maintained at room temperature for 5 to 10 seconds, removed from the flux, and allowed to drain for 5 to 20 seconds. The specimens were attached to a dipping machine and immersed at a rate of approximately 1 inch per second into a Sn60/Pb40 solder bath maintained at 240 ± 5°C to a point where the component body was 1 to 2 mm above the solder surface, held in the solder bath for 10 seconds, and then removed at a rate of approximately 1 inch per second. Specimens were cleaned for 5 minutes using isopropyl alcohol and then given a visual examination under 30X magnification.

3.6. Contact Retention

An axial load of 2 pounds was applied to each individual contact and held for 6 seconds (see Figure 3).

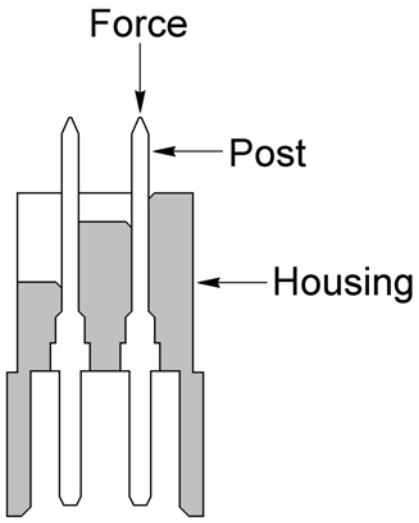

Figure 3

3.7. Thermal Shock

Unmated specimens were subjected to 5 cycles between -65 and 105°C with 30 minute dwells at each temperature extreme. Transition between extremes was less than 1 minute.

3.8. Humidity/temperature Cycling

Unmated specimens were exposed to 10 humidity/temperature cycles. Each cycle lasted 24 hours and consisted of cycling the temperature between 25 and 65°C twice while maintaining high humidity (see Figure 4).

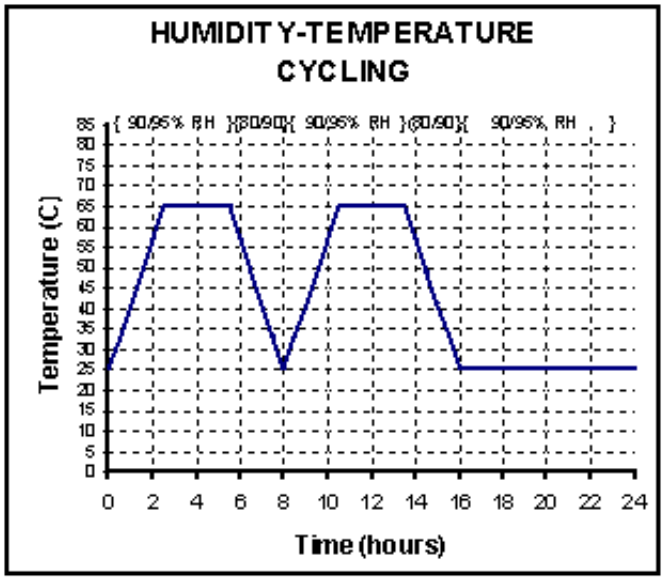

Figure 4