AMP

QUALIFICATION TEST REPORT

CONNECTOR, MDI,
THRU-HOLE

501-269-1 Rev. O

Product Specification:	108-1503-1
CTL No.:	CTL2657-003
Date:	March 17, 1995
Classification:	Unrestricted
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Corporate Test Laboratory Harrisburg, Pennsylvania

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(R2657WS)

AMP

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CORPORATE TEST LABORATORY

Qualification Test Report

1. Introduction

1.1 Purpose

Testing was performed on AMP* MDI (Multi-Directional Interface) thru-hole connector to determine its conformance to the requirements of AMP Product Specification 108-1503-1 Rev. O.

1.2 Scope

This report covers the electrical, mechanical, and environmental performance of the MDI thru-hole connector manufactured by the Interconnection Components & Assemblies Products Division of the Capital Goods Business Unit. The testing was performed between December 6, 1994 and January 10, 1995.

1.3 Conclusion

The MDI thru-hole connector meets the electrical, mechanical, and environmental performance requirements of AMP Product Specification 108-1503-1 Rev. O.

* Trademark

1.4 Product Description

The AMP MDI thru-hole connectors are intended for printed circuit (pc) board to printed circuit (pc) board appilcations. The connectors have plastic housings with pre-installed contacts which have thru-hole solder tails. The housing has mounting posts offset to assure proper orientation on the pc board. The connectors can be mated horizontally (0°), vertically (90°), or any angle between 0°and 90°.

1.5 Test Samples

The test samples were randomly selected from normal current production lots, and the following part numbers were used for test:

Test Group	Quantity	Part Nbr	Description
1	5	787252-1	HEADER
1	5	787253-1	RECEPTACLE

1.6 Qualification Test Sequence

TEST OR EXAMINATION	Group-1
Examination of Product	1,9
Termination Resistance, Dry Circuit	2,7
T-Rise vs Current	3,8
Vibration	6
Mixed Flowing Gas	4
Temperature Life	5

Numbers indicate sequence in which tests were performed.

2. Summary of Testing

2.1 Examination of Product

All samples submitted for testing were selected from normal current production lots. They were inspected and accepted by the Product Assurance Department of the Capital Goods Business Unit.

2.2 Termination Resistance, Dry Circuit

All termination resistance measurements, taken at 100 milliamperes DC and 50 millivolts open circuit voltage were less than 15 milliohms initially, and 20 milliohms final.

2.2 Termination Resistance, Dry Circuit (continued)

Reading	Min	Max	Mean
Initial	3.08	4.53	3.904
Final	3.51	5.00	4.085

All readings are in Milliohms.

2.3 Temperature Rise vs Current

All contacts had a temperature rise of less than 30°C above ambient when a specified current of 5.5 amperes AC was applied.

2.4 Vibration

The test samples were energized with a test current of 2.5 amperes dc during the vibration test, and showed no apparent physical damage to the samples.

2.5 Mixed Flowing Gas

No evidence of physical damage to either the contacts or the connector was visible as a result of exposure to the pollutants of mixed flowing gas.

2.6 Temperature Life

No evidence of physical damage to either the contacts or the connector was visible as a result of exposure to an elevated temperature.

3. Test Methods

3.1 Examination of Product

Product drawings and inspection plans were used to examine the samples. They were examined visually and functionally.

3.2 Termination Resistance, Dry Circuit

Termination resistance measurements at low level current were made using a four terminal measuring technique (Figure 1). The test current was maintained at 100 milliamperes DC with an open circuit voltage of 50 millivolts DC.

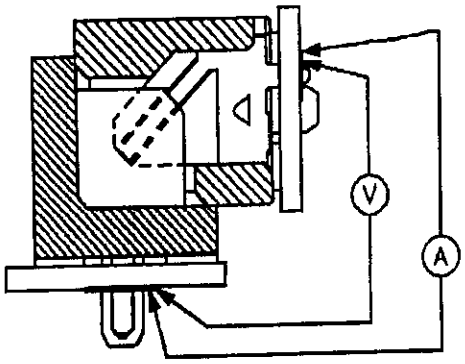

Figure 1
Typical Termination Resistance Measurement Points

3.3 Temperature Rise vs Current

The temperature of all contacts energized individually was measured while energized at the specified current of 5.5 amperes AC. Thermocouples were attached to the connectors to measure their temperatures. When stabilization had occurred, the temperature was recorded and then the ambient temperature was subtracted from the measurement to determine the temperature rise.

3.4 Vibration

Mated connectors were subjected to a random vibration test, specified by a random vibration spectrum, with excitation frequency bounds of 10 and 500 hertz. The power spectral density at 10 hz is 0.000312 G^2/Hz. The spectrum slopes up at 6 dB per octave to a PSD of 0.06 G^2/Hz at 18 Hz. The spectrum is flat at 0.06 G^2/Hz from 18 to 500 Hz. The root-mean square amplitude of the excitation was 5.41 GRMS. The exitation was applied for 20 minutes in each of three mutually perpendicular axes, for a total of one hour. Connectors were energized with 2.5 amperes DC.

3.5 Mixed Flowing Gas

Mated connectors were exposed for 10 days to a mixed flowing gas Class III exposure. Class III exposure is defined as a temperature of 30°C and a relative humidity of 75% with the pollutants of Cl_2 at 20 ppb, NO_2 at 200 ppb, and H_2S at 100 ppb. Samples were preconditioned with 10 cycles of durability.

3.6 Temperature Life

Mated samples were exposed to a temperature of 105°C for 315 hours.

4. Validation

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3/17/95

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