



## QUALIFICATION TEST REPORT

CONNECTOR, AMPMODU\*,  
SURFACE MOUNT, HEADER

501-201

Rev. 0

Product Specification: 108-25035 Rev. 0  
Test No.: CTL5462-020-004  
CTL5462-200-002  
Date: November 18, 1992  
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Corporate Test Laboratory Harrisburg, Pennsylvania

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# AMP

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**CORPORATE TEST LABORATORY**

### Qualification Test Report Connector AMPMODU Surface Mount Header

#### 1. Introduction

##### 1.1 Purpose

Testing was performed on AMP's AMPMODU Surface Mount Header to determine its conformance to the requirements of AMP Product Specification 108-25035 Rev.0.

##### 1.2 Scope

This report covers the electrical, mechanical, and environmental performance of the AMPMODU Surface Mount Header manufactured by the Printed Circuit Board Products Division of the Capital Goods Business Unit.

##### 1.3 Conclusion

The AMPMODU Surface Mount Header meets the electrical, mechanical, and environmental performance requirements of AMP Product Specification 108-25035 Rev. 0.

1.4 Product Description

The AMPMODU Surface Mount Headers are comprised of .025 inch square posts pressed into flame retardant housings providing a .100 inch centerline grid interface. The terminals are a copper alloy, tin-lead with select gold plating. The housings are Glass Filled Thermoplastic, UL 94V-0

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 Number	Description
1	6 ea.	104596-2	22 Pos Header
1	6 ea.	2-87456-2	26 Pos Receptacle
2,3	6 ea.	104083	50 Pos Header

1.6 Qualification Test Sequence

Test or Examination	Test Groups		
	1	2	3
Examination of Product	1,6	1,7	1,3
Termination Resistance, Dry Circuit	2,5		
Dielectric Withstanding Voltage		2,5	
Insulation Resistance		3,6	
Durability	3		
Contact Retention			2
Humidity-Temperature Cycling		4	
Mixed Flowing Gas	4		

The numbers indicate sequence in which tests were performed.

2. Summary of Testing

2.1 Examination of Product - All Groups

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 - Group 1

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

Test Group	No. of Samples	Condition	Min.	Max.	Mean
1	132	Initial	7.51	10.81	9.332
	132	After Mixed Flowing Gas	8.61	17.06	10.634

All values in milliohms

2.3 Dielectric Withstanding Voltage - Group 2

No dielectric breakdown or flashover occurred when a test voltage was applied between adjacent contacts.

2.4 Insulation Resistance - Group 2

All insulation resistance measurements were greater than 5000 megohms.

2.5 Contact Retention - Group 3

No physical damage occurred to either the contacts or the housing, and no contacts dislodged from the housings as a result of applying an axial load of 3 pounds to the contacts.

2.6 Durability - Group 1

No physical damage occurred to the samples as a result of mating and unmating the connector 50 times.

2.7 Humidity-Temperature Cycling - Group 2

No evidence of physical damage to either the contacts or the connector was visible as a result of exposure to humidity-temperature cycling.

2.8 Mixed Flowing Gas - Group 1

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.

### 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, Low Level

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.

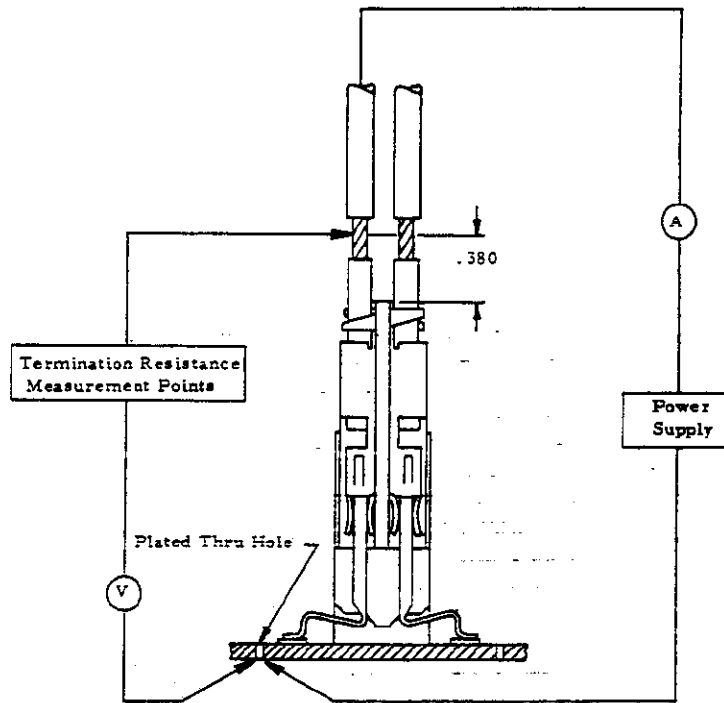


Figure 1  
Typical Termination Resistance Measurement Points

#### 3.3 Dielectric Withstanding Voltage

A test potential of 750 vac was applied between the adjacent contacts. This potential was applied for one minute and then returned to zero.

#### 3.4 Insulation Resistance

Insulation resistance was measured between adjacent contacts, using a test voltage of 500 volts dc. This voltage was applied for one minutes before the resistance was measured.

3.5 Contact Retention

An axial load of 3 pounds was applied to each contact and held for 60 seconds. The force was applied in a direction to cause removal of the contacts from the housing.

3.6 Durability

Connectors were mated and unmated 50 times at a rate not exceeding 600 per hour.

3.7 Humidity-Temperature Cycling


Mated connectors were exposed to 10 cycles of humidity-temperature cycling. Each cycle lasted 24 hours and consisted of cycling the temperature between 25°C and 65°C twice, while the relative humidity was held at 95%. During five of the first nine cycles, the connectors were exposed to a cold shock at -10°C for 3 hours.

3.8 Mixed Flowing Gas, Class III


Mated connectors were exposed for 20 days to an 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<sub>2</sub> at 20 ppb, NO<sub>2</sub> at 200 ppb, and H<sub>2</sub>S at 100 ppb.

4. Validation


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