AMP

QUALIFICATION TEST REPORT

AMP* Pre-Insulated and Uninsulated
TERMASHIELD* Printed Circuit
Board Connectors
Types F, G, and H

501-22 Rev. 0

Product Specification: AMP 108-12054 Rev. O 1/23/96

CTL No.: CTL3280-500-002

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CORPORATE TEST LABORATORY

Product Qualification Test Report for
AMP Pre-Insulated and Uninsulated
TERMASHIELD Printed Circuit Board Connector
Types F, G. and H

1. Introduction

1.1 Purpose

The purpose of testing was to determine subject product's conformance to AMP Product Specification 108-12054, Rev. O.

1.2 Scope

This report covers the electrical and mechanical performance of the subject product when tested per AMP 108-12054, Rev. O. The test samples were manufactured by the Signal Components Products Division of the Signal Transmission Products Group. Testing was performed between May 15, 1985 and August 1, 1985.

1.3 Conclusion

AMP pre-insulated and uninsulated TERMASHIELD printed circuit board connectors, Types F, G, and H conform to the requirements of AMP 108-12054, Rev. O.

1.4 Product Description

The TERMASHIELD connectors covered by this report consist of the following types:

A. Type F TERMASHIELD Connector: A one-piece, one-crimp, pre-insulated ferrule with an integral shield connecting solder tab for printed circuit board use.

B. Type G TERMASHIELD Connector: A one-piece, one-crimp, pre-insulated ferrule with an integral shield and center conductor connecting solder tabs for printed circuit board use.

C. Type H TERMASHIELD Connector: A one-piece, one-crimp, uninsulated ferrule with an integral shield connecting solder tabs for printed circuit board use.

1.5 Test Samples

*Test Group	Type	Part Number	Quantity
1	F	330494	8
1	G	53230-3	8
1	H	50859	8
2	F	330494	8
2	G	53230-3	8
2	H	50859	8
3	F	330494	8
3	G	53230-3	8
3	H	50859	8

*Samples from Test Groups 1 and 2 were mounted on printed circuit boards, shown in Figure 1.

Samples from Test Group 3 were mounted on printed circuit boards, shown in Figure 2.

1.6 Qualification Test Sequence

The test samples were divided into three groups. Each group was tested independently and in accordance with the following sequence.

Paragraph	Test	Test Group 1	2	3
		Test Sequence (a)		
2.1	Examination of Product	1	1	1
2.2	Termination Resistance, Specified Current	2,4,6,8	2,4	
2.3	Dielectric Withstanding Voltage		5	
2.4	Vibration	5		
2.5	Crimp Tensile	9		3
2.6	Resistance to Soldering Heat			2
2.7	Thermal Shock	3		
2.8	Corrosion, Salt Spray	7		
2.9	Temperature Life		3	

(a) Numbers indicate sequence in which tests were performed.

2. Summary of Testing

2.1 Examination of Product - All Groups

All product submitted for testing was selected from production lots that were subjected to inspection and accepted by the Quality Department of the Signal Components Division.

2.2 Termination Resistance - Specified Current - Groups 1 and 2

The test samples were mounted on printed circuit boards illustrated in Figure 1. Potential drop measurements were made, as indicated in Figure 3. Resistance was calculated from this measured drop. The specified current for measurement was 1 ampere dc. Measurements were taken initially, after thermal shock, after corrosion, after vibration, and after temperature life.

Test Results

All measurements taken conform to the specification requirement of 5 milliohms or less for the outer shield and 3 milliohms or less for the center conductor.

2.3 Dielectric Withstanding Voltage - Group 2

A voltage potential of 1,000 vac 60 Hz was applied between mutually insulated areas, as illustrated in Figure 4. The voltage was applied for one minute. Type H connectors were not subjected to this test.

Test Results

No breakdowns or flashovers occurred during the one minute of voltage application.

2.4 Vibration - Group 1

The test samples were subjected to a simple harmonic motion having an amplitude of 0.06 inch double amplitude. The frequency range from 10-55-10 Hz was traversed in one minute.

The samples were vibrated 6 hours in each of 2 mutually perpendicular planes. The samples were board mounted, and the board was firmly fixed to the vibration table with the wires clamped to the table 3 inches from the connectors. During test, the samples were monitored for discontinuities greater than one microsecond.

Test Results

There were no discontinuities greater than one microsecond during test and no evidence of cracking, breakage, or loosening of parts. Samples also met the requirements for termination resistance after test.

2.5 Crimp Tensile - Groups 1 and 3

The test samples were pulled to destruction at a rate of 1 inch/minute. The cable between connectors was cut, and the tensile force was applied between the test board and the cable.

Test Results

The samples tested met the requirements of the specification.

		Tensile Pounds			Minimum
Test Group	Type	Min.	Max.	Avg.	Spec. Limit
1	F	17.4	38.5	26.9	15
	H	20.5	34.5	23.5	15
	G	37.3	44.2	42.1	10
3	F	23.8	33.2	28.9	15
	H	23.8	34.6	28.2	15
	G	34.8	42.8	37.6	10

2.6 Resistance to Soldering Heat - Group 3

Samples were mounted on printed circuit boards, as illustrated in Figure 2. The board mounted samples were then immersed so that the bottom of the board rested on the molten solder. The temperature of the molten solder was 280°C, and the board was in contact with the solder for 30 seconds.

Test Results

There was no evidence of cracking, chipping, breaking, or loosening of parts after test. Also, there was no softening of the insulation. The test samples met the specification requirement for crimp tensile after test.

2.7 Thermal Shock - Group 1

The board mounted samples were subjected to 5 cycles of thermal shock between the temperature extremes of -65°C and +105°C. Each cycle consisted of exposing the samples to -55°C for 30 minutes, followed immediately by exposure to +105°C for 30 minutes. The transition time between extremes was less than one minute.

Test Results

There was no evidence of damage, cracking, chipping, breaking, or loosening of parts after test. The samples met the specification requirement for termination resistance following test.

2.8 Corrosion, Salt Spray - Group 1

Board mounted samples were exposed to a 5% salt fog atmosphere for 48 continuous hours.

Test Results

There was no evidence of base metal exposure on plated parts. The samples met the specification requirement for termination resistance following test.

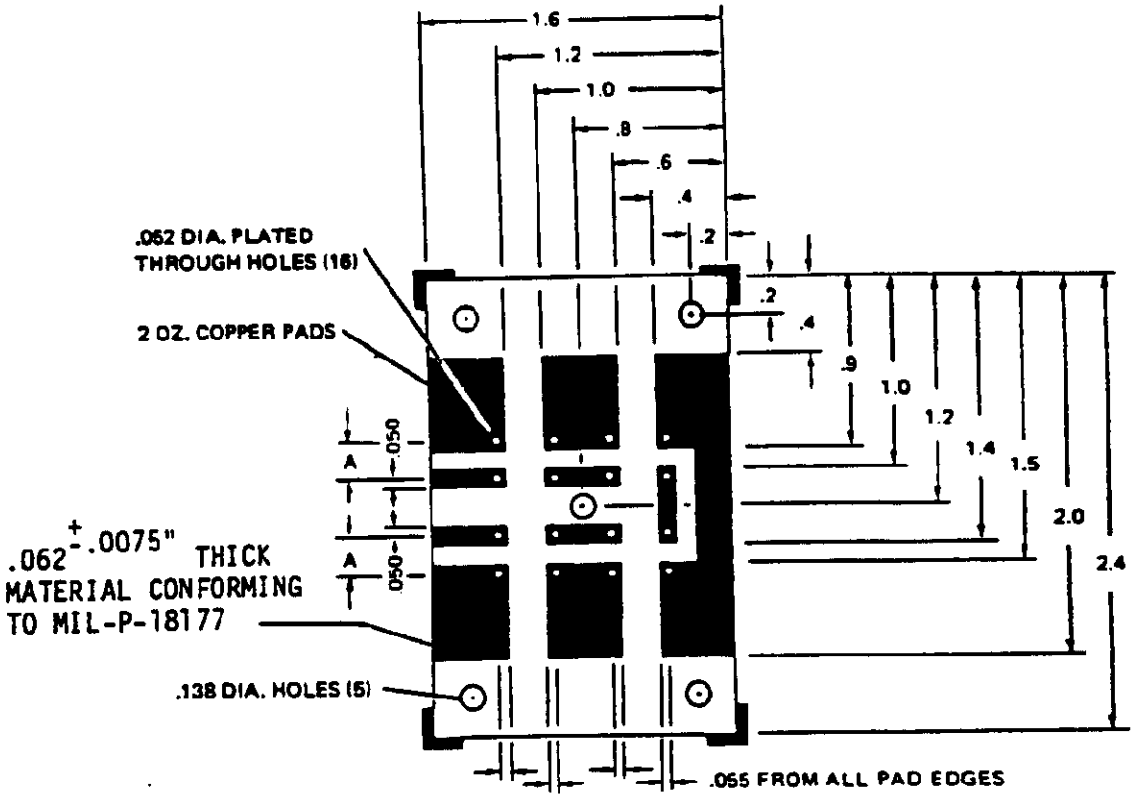
2.9 Temperature Life - Group 2

Board mounted samples were subjected to a temperature life test of 105°C for 96 hours.

Test Results

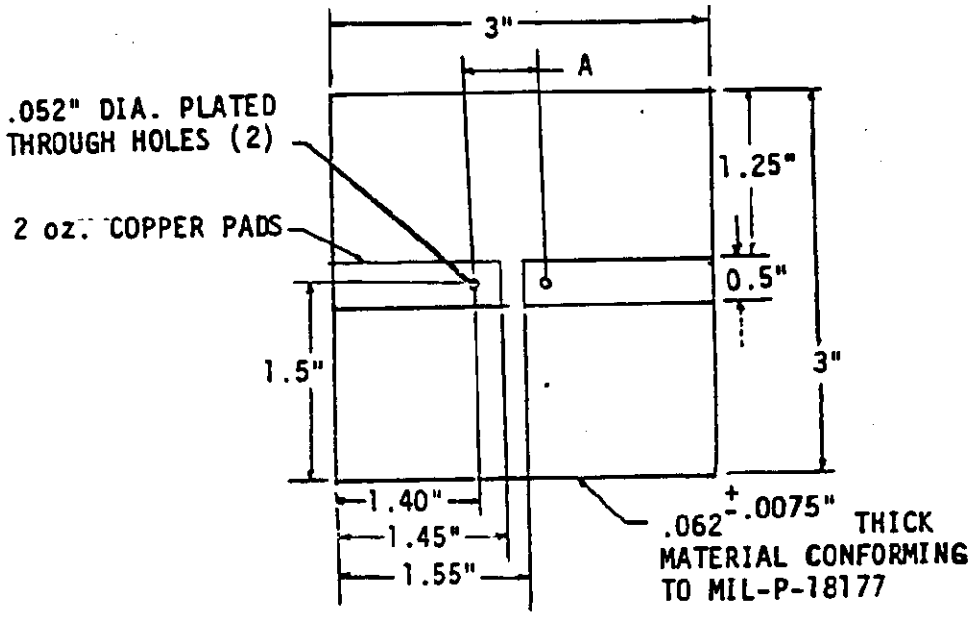
There was no evidence of damage, cracking, chipping, breaking, or loosening of parts. The samples met the specification requirements for termination resistance and dielectric withstanding voltage following test.

2.10 Figures



(a) "A" dimension -- .200 or .250 inch between hole centerlines, as applicable for connectors being tested.

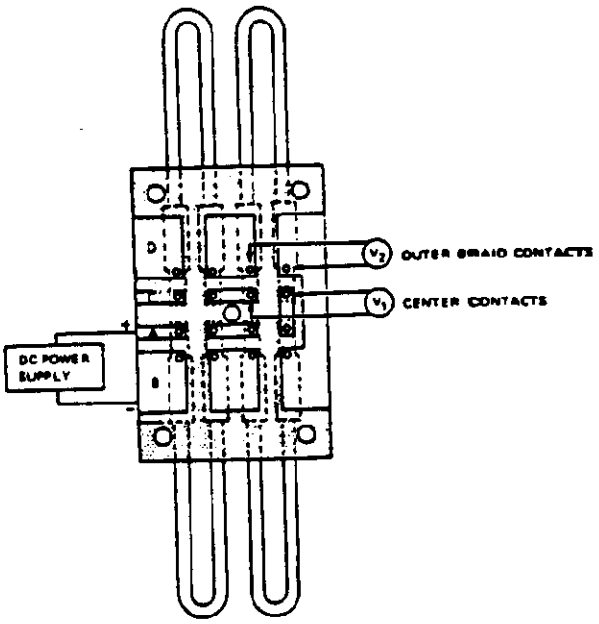
Fig. 1



NOTE: (a) "A" dimension -- .200 or .250 inch between hole centerlines, as applicable for connectors being tested.

Resistance to Soldering Heat Mounting Board

Fig. 2



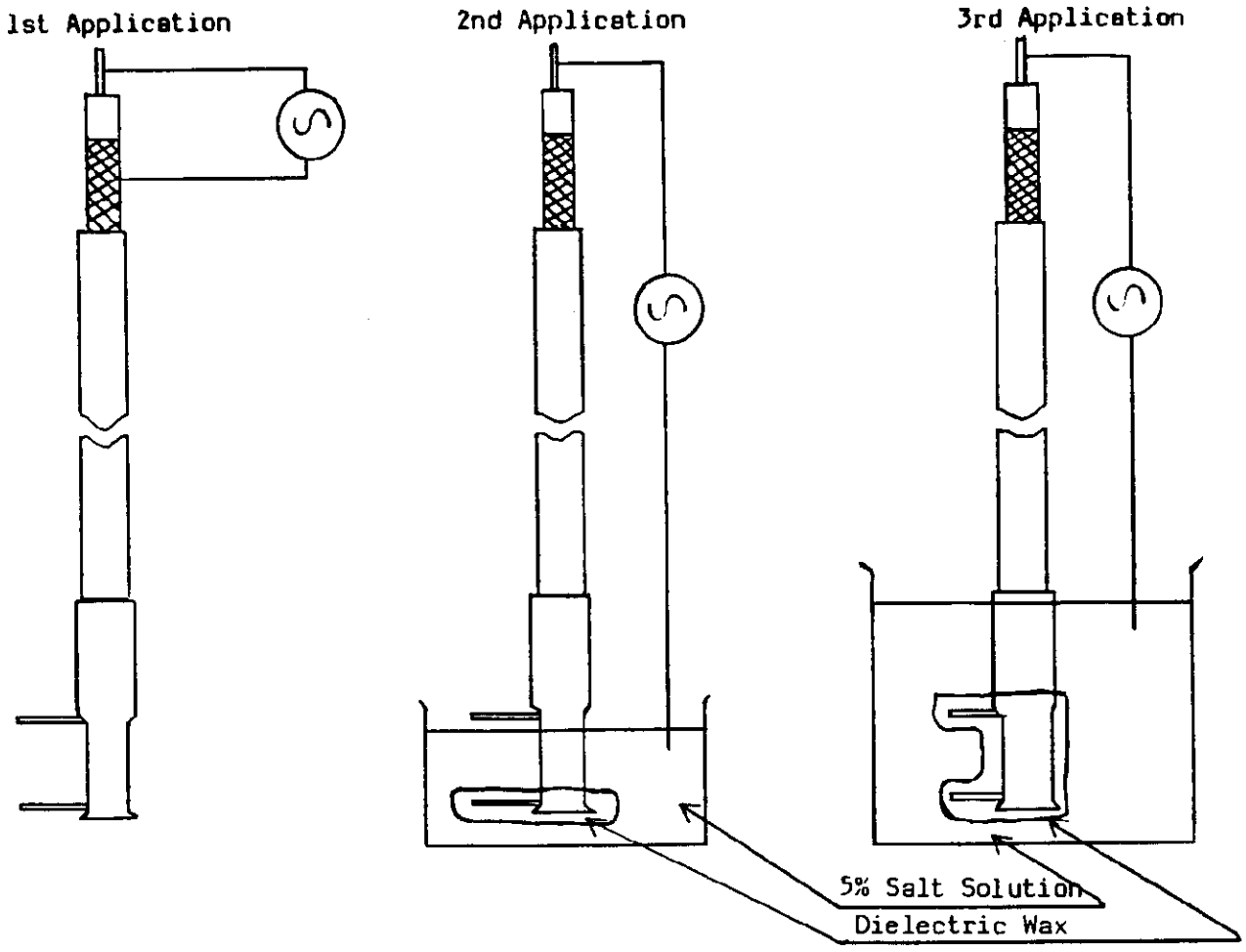
NOTES: (a) Measure shield at V_2 and center termination V_1 (if applicable) using a test current of 1.0 amperes DC.

(b) Measure a 30-inch length of equivalent cable and calculate milliohms per inch.

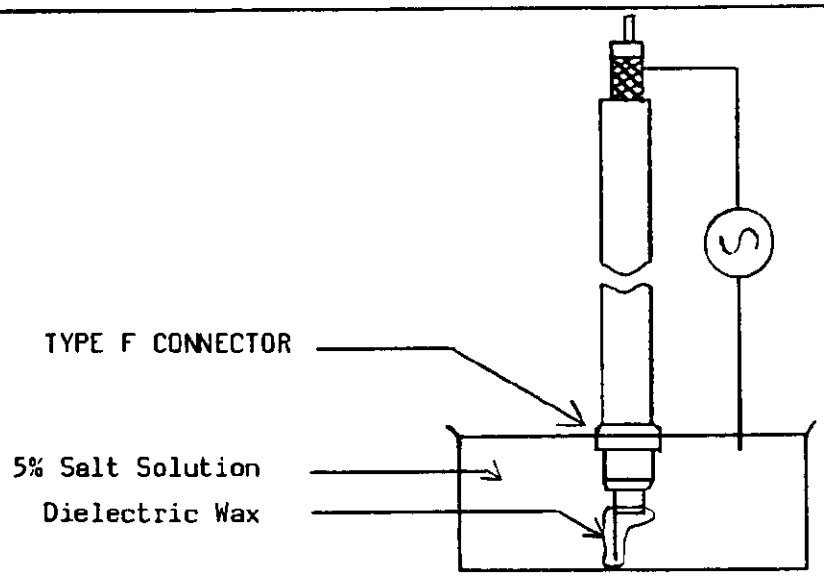
(c) Measure distance between probe points on test specimens and subtract an equal distance of cable resistance to determine actual termination resistance.

Resistance Measurement Points

Fig. 3



TYPE G CONNECTOR



DIELECTRIC VOLTAGE APPLICATION POINTS

Fig. 4

3. Validation

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