AMP

QUALIFICATION TEST REPORT

AMP* Miniature UHF Plug
and Bulkhead Jack

501-8 Rev. B.

Product Spec.: 108-12034, Rev. D
CTL No. 3338-500-001
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Corporate Test Laboratory Harrisburg, Pennsylvania

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CORPORATE TEST LABORATORY

Qualification Report
AMP Miniature UHF Plug and Bulkhead Jack
P/N 228665-2 and 226600-1

1. Introduction

1.1 Purpose

Testing was conducted to determine product compliance to AMP Specification 108-12034, Rev. D.

1.2 Scope

This report covers the electrical and mechanical performance of the AMP Miniature UHF plug and bulkhead jack, produced by the Signal Components Division of the Connector and Electronic Products Group. Testing of voltage standing wave ratio was not performed, due to the different size wire for the plug and jack. Testing was performed between May 18, 1984 and August 9, 1984

1.3 Product Description

The AMP Miniature UHF Series Connector is a lightweight coaxial connector especially designed for application in which miniaturization is essential. It accommodates RG-58/u and RG-188/u coaxial cable and is intended for use at frequencies up to 2.0 GHz and peak voltages to 335 volts.

1.4 Conclusion

The AMP Miniature UHF Series Connector conforms to the requirements of the specification.

1.5 Test Samples

Part Number	Description	Wire Size	Quantity
228665-2	Miniature UHF Bulkhead Jack	RG-188/u	13
226600-1	Miniature UHF Plug	RG- 58/u	13

1.6 Test Sequence

Test	Test Groups 1	2
Examination of Product	1	1
Permeability	2	2
Low Level Conductivity	5,7,9	5,8
Dielectric Withstanding Voltage	4,14	4
Insulation Resistance	3,13	3
Vibration	10	
Physical Shock	11	
Crimp Tensile	15	
Durability	8	6
Thermal Shock	6	
Temperature-Humidity Cycling	12	
Corrosion, Salt Spray		7

2. Summary of Testing

2.1 Examination of Product - All Samples

All samples met the visual, dimensional and functional requirements of the product drawing.

2.2 Permeability - All Samples

Magnetic permeability was measured on all samples using a permeability indicator conforming to MIL-I-17214.

Test Results

There were no points on any connector with a permeability greater than 2.0 mu.

2.3 Insulation Resistance - All Samples

A voltage potential of 500 volts d.c. was applied between the center conductor and the outer conductor of a mated connector. Electrification time was two minutes. Readings taken after temperature-humidity cycling were taken within 5 minutes after completion of cycling.

Test Results

All samples met the specification requirement of 5000 megohms minimum initially, and 200 megohms minimum after temperature-humidity cycling.

2.4 Dielectric Withstanding Voltage - All Samples

A test potential of 1000 vac rms was applied for one minute between the center and outer contacts of the mated connector assembly. Readings taken after temperature-humidity cycling were taken after a drying period of 24 hours at ambient temperature.

Test Results

All samples tested met the requirements of the specification of no breakdowns or flashovers.

2.5 Low Level Conductivity - All Samples

The center and outer circuits were energized with 50 millivolts, and the current flow through the samples was measured. Readings were taken in the forward and reverse direction.

Test Results - Readings are in milliamperes.

Reading	Center Conductor		Outer Conductor	
	Forward	Reverse	Forward	Reverse
Initial Group 1	66.00	66.07	71.65	71.26
Initial Group 2	99.18	95.96	186.9	186.4
After Thermal Shock Group 1	65.97	66.14	71.65	70.93
After Durability Group 1	64.58	64.20	72.25	71.53
After Salt Spray Corrosion Group 2	123.00	129.33	154.00	163.00

GROUP 1 readings are an average of 10 readings while GROUP 2 readings are an average of 3 readings. All samples met the requirement of 50 milliamperes.

2.6 Vibration - Group 1

Mated connectors were subjected to a simple harmonic motion of 0.06-inch double amplitude or 10 g's peak, whichever is less. The frequency was varied logarithmically between 10 and 500 Hz and return to 10 Hz. This motion was applied for three hours in each of two mutually-perpendicular axis for a total vibration time of six hours. Samples were monitored for discontinuities greater than 10 microseconds.

Test Results

No discontinuities occurred during test, and there was no evidence of physical damage to the samples.

2.7 Physical Shock - Group 1

Mated connectors were subjected to a sawtooth shock pulse of 100 g's with a duration of six milliseconds. Eight shocks were applied along the two mutually-perpendicular axes for a total of 16 shocks. Samples were monitored for discontinuities greater than ten microseconds.

Test Results

No discontinuities occurred during test, and there was no evidence of physical damage to the samples.

2.8 Crimp Tensile - Group 1

Test samples were tested for crimp tensile strength by pulling on the cables at a rate of 1.0 inch per minute.

Test Results

	Bulkhead Jacks - RG-188/u	Plugs - RG-58/u
Min.	21 lbs.	72 lbs.
Max.	42 lbs.	89 lbs.
Avg.	35 lbs.	81 lbs.

The sample met the specification requirements of 20 lbs. minimum for RG-188/u and 40 lbs. minimum for RG-58/u.

2.9 Durability - All Samples

Test samples were mated and unmated a total of 500 times. The rate of mating and unmating was between 500 and 600 times an hour.

Test Results

The samples showed no evidence of physical damage.

2.10 Thermal Shock - Group 1

Mated connector assemblies were subjected to temperature extremes of -55°C and +85°C. Exposure time at each extreme was 30 minutes. Transition time between extremes was less than 5 minutes. A total of five cycles were performed.

Test Results

The samples showed no evidence of physical damage.

2.11 Temperature-Humidity Cycling - Group 1

Mated connectors were subjected to ten temperature-humidity cycles between 25°C and 65°C at 95% R.H. A cold shock at -10°C was performed during five of the first nine cycles.

Test Results

The samples showed no evidence of physical damage.

2.12 Corrosion, Salt Spray - Group 2

Mated connectors were subjected to 48 hours exposure of 5% salt spray.

Test Results

The samples had no base metal exposure on any mating or interface surfaces.

3.0 Validation

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