170 Series LGH Micro-Miniature Connector

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for the AMP* 170 series LGH micro-miniature plug and receptacle free hanging lead assembly.

1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

1.3. Qualification Test Results

Successful qualification testing on the subject product line was completed on 16Dec98. The Qualification Test Report number for this testing is 501-462. This documentation is on file at and available from Global Engineering and Manufacturing Standards (GEMS).

2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

2.1. AMP Documents

A. 109-1: General Requirements for Test Specifications
B. 109 Series: Test Specifications as indicated in Figure 1
C. Corporate Bulletin 401-76: Cross-reference between AMP Test Specifications and Government or Commercial Documents
D. 501-462: Qualification Test Report

3. REQUIREMENTS

3.1. Design and Construction

Product shall be of the design, construction and physical dimensions specified on the applicable product drawing.

3.2. Materials

Materials used in the construction of this product shall be as specified on the applicable product drawing.

3.3. Ratings

A. Voltage: 6 kvdc
B. Current: Signal application only
C. Temperature: -55 to 125°C

3.4. Performance and Test Description

Product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions per AMP Specification 109-1.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of product.	Meets requirements of product drawing.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Partial discharge.	5 picocoulombs maximum for 1 minute.	Subject samples surrounded by a ground plane to corona extinction voltage of 6 kvdc at sea level.
Dielectric withstanding voltage.	10 kvdc at sea level. 10 kvdc at 100000 feet at -55 and 125°C. 1 minute hold with no breakdown or flashover.	AMP Spec 109-29-1. Test between adjacent contacts of mated samples.
MECHANICAL		
Vibration, random.	No discontinuities of 1 microsecond or longer duration. See Note.	AMP Spec 109-21-5. Subject mated samples to 7.56 G's rms between 50-2000 Hz. 1 hour in each of 3 mutually perpendicular planes.
Mechanical shock, specified pulse.	No discontinuities of 1 microsecond or linger duration. See Note.	AMP Spec 109-26-9. Subject mated samples to 100 G's sawtooth shock pulses of 6 milliseconds duration. 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks.
Durability.	See Note.	AMP Spec 109-27. Mate and unmate samples for 50 cycles at a maximum rate of 600 cycles per hour.
Mating force.	3 pounds maximum.	AMP Spec 109-42, Condition A. Measure force necessary to mate samples at a maximum rate of .5 inch per minute.
Unmating force.	1 pound minimum.	AMP Spec 109-42, Condition A. Measure force necessary to unmate samples at a maximum rate of .5 inch per minute.

Figure 1 (cont)

Test Description	Requirement	Procedure
ENVIRONMENTAL		
Thermal shock.	See Note.	AMP Spec 109-22. Subject mated samples to 5 cycles between -55 and 125°C.

NOTE

Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown in Figure 2.

Figure 1 (end)

3.6. Product Qualification and Requalification Test Sequence

Test or Examination	Test Group (a)	
	1	2
	Test Sequence (b)	
Examination of product	1,11	1,7
Partial discharge	3,9	2,6
Dielectric withstanding voltage (c)	4,8	3,5
Vibration	6	
Mechanical shock	7	
Durability	5	
Mating force	2	
Unmating force	10	
Thermal shock		4

NOTE

(a) See Para 4.1.A.
(b) Numbers indicate sequence in which tests are performed.
(c) Dielectric withstanding voltage shall be performed as follows: at sea level and at 100000 feet at ambient conditions; at sea level and at 100000 feet at -55°C; and at sea level and at 100000 feet at 125°C.

Figure 2

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Sample Selection

Samples shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. All test groups shall each consist of 5 samples.

B. Test Sequence

Qualification inspection shall be verified by testing samples as specified in Figure 2.

4.2. Requalification Testing

If changes significantly affecting form, fit or function are made to the product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development/product, quality and reliability engineering.

4.3. Acceptance

Acceptance is based on verification that the product meets the requirements of Figure 1. Failures attributed to equipment, test setup or operator deficiencies shall not disqualify the product. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

4.4. Quality Conformance Inspection

The applicable AMP quality inspection plan shall specify the sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with the applicable product drawing and this specification.