PRODUCT SPECIFICATION

1. SCOPE

1.1. Content

This specification covers the performance, test and quality requirements for the Micro-Pitch connector manufactured by AMP* Incorporated.

1.2. Qualification

When tests are performed on the subject product line, the procedures specified in AMP 109 series specifications shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. 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. (Comply with MIL-STD-202, MIL-STD-1344 and EIA RS-364)
- C. Corporate Bulletin 401-76: Cross-reference between AMP Test Specifications and Military or Commercial Documents
- D. 501-90 : 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

- A. Contact: Phosphor bronze, C521, Plated overall tin/lead over nickel
- B. Housing: Poly-Benzoate-Naphthoate, Liquid crystal Polymer (LCP),U.L. Flammability 94V-0
- C. Cover: Polyphenylene sulfide Resin, Flammability 94V-0

* Trademark of AMP Incorporated Product Code: 0341

LTR	REVISION RECORD	APP	DATE
0	Release per ECN CD135	FR	7/6/89

DR 7/5/89
CHK 7-6-89
APP 7-6-89

AMP INCORPORATED
Harrisburg, Pa. 17105

NO 108-1223 REV 0 LOC B

TITLE CONNECTOR, MICRO-PITCH

AMP 1250-16 REV 7-87

3.3. Ratings

A. Voltage: 250 vac
B. Temperature: -55° to 105°C
C. Number of Insertions: 15

3.4. Performance and Test Description

The product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1. All tests are performed at ambient temperature unless otherwise specified.

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		
Termination Resistance, Dry Circuit	20 milliohms maximum initial. ΔR = 10 milliohms maximum.	Subject mated contacts assembled in housing to 50 mv open circuit at 100 ma maximum, see Figure 6; AMP Spec 109-6-1.
Dielectric Withstanding Voltage	750 vac dielectric withstanding voltage, one minute hold. 5 milliampere maximum leakage current.	Test between adjacent contacts of unmated connector assemblies; AMP Spec 109-29-1.
Insulation Resistance	5000 megohms minimum.	Test between adjacent contacts of unmated connector assembly; AMP Spec 109-28-4 .
Capacitance	1 picofarads maximum.	Test between adjacent circuits of unmated connector; AMP Spec 109-47, cond E.
MECHANICAL		
Vibration Sinusoidal High Frequency	No discontinuities greater than 1 microsecond. See note (a).	Subject mated connectors to 15 G's, between 10-2000 Hz traversed in 10 minutes; 4 hours in each of 3 mutually perpendicular planes; AMP Spec 109-21-3.

Figure 1 (cont)

Test Description	Requirement	Procedure
Physical Shock	No discontinuities greater than 1 microsecond. See note (a).	Subject mated connector to 50 G's sawtooth shock pulses of 11 millisecond duration; 3 shocks in each direction applied along the 3 mutually perpendicular planes total 18 shocks; AMP Spec 109-26-7.
Mating Force	.5 pound maximum initial per contact.	Measure force necessary to mate connector assembly with locking latches, from point of initial contact, incorporating free floating fixtures at a rate of .5 inch/minute; AMP Spec 109-42, cond A , calculate force per contact.
Contact Retention	Contact shall not dislodge.	Apply axial load of 12 ounces to the contact; AMP Spec 109-30
Durability	No physical damage.	Mate and unmate connector assemblies for 15 cycles; AMP Spec 109-27.
Solderability	Solderable area shall have a solder coverage of 95% minimum.	Subject contacts to solderability; AMP Spec 109-11-2 .
Resistance to Soldering Heat	No physical damage.	Subject product mounted on printed circuit boards to solder bath at 260°C for 10 seconds, AMP Spec 109-63-3.
ENVIRONMENTAL		
Thermal Shock	ΔR= 10 milliohms maximum termination resistance, dry circuit. See note (a).	Subject mated connectors to 25 cycles between -55° and 105°C; AMP Spec 109-22.
Humidity-Temperature Cycling	ΔR= 10 milliohms maximum termination resistance, dry circuit.	Subject mated to 10 humidity-temperature cycles between 25° and 65°C at 95% RH; AMP Spec 109-23, method III, cond B, less steps 7a & 7b.
Temperature Life	ΔR= 10 milliohms maximum termination resistance, dry circuit.	Subject mated connectors to temperature life; AMP Spec 109-43, test level 10, test duration A

Figure 1 (cont)

(a) Shall remain mated and show no evidence of damage, cracking or chipping.

Figure 1 (end)

3.6. Product Qualification and Requalification Tests

Test or Examination	Test Group (a)					
	1	2	3	4	5	6
	Test Sequence (b)					
Examination of Product	1,8	1,6	1,6	1,5	1,9	1,5
Termination Resistance, Dry Circuit	3,7	2,5	2,5			2,4
Dielectric Withstanding Voltage					3,7	
Insulation Resistance					2,6	
Capacitance				2		
Vibration	5					
Physical Shock	6					
Mating Force	2					
Contact Retention					8	
Durability	4	3	3			
Solderability				3		
Thermal Shock					4	3
Humidity-Temperature Cycling			4		5	
Temperature Life		4				
Resistance to Soldering Heat				4		

(a) See Para 4.1.A
(b) Numbers indicate sequence in which tests are performed.

Figure 2

3.7. Retention of Qualification Tests

Test or Examination	Test Group (a)	
	1	2
	Test Sequence (b)	
Examination of product	1,8	1,8
Termination Resistance Dry Circuit		3,7
Dielectric Withstanding Voltage	3,7	
Insulation Resistance	2,6	
Mating Force		2
Durability		4
Thermal Shock	4	
Humidity-Temperature Cycling	5	5

(a) See Para 4.1.A.
(b) Numbers indicate sequence in which tests are performed.

Figure 3

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Sample Selection

Sockets shall be prepared in accordance with applicable Instruction Sheets. They shall be selected at random from current production. Test group 2, 3, 4, 5, and 6 shall consist of 2 sockets per group. Test group 1 shall consist of 4 sockets (2 for discontinuity and 2 for termination resistance). Total of 14 socket assemblies 10 mating chip carriers and 12 test boards are required for testing. AMP Hand Tool PN 821958-2 shall be used for the mating and unmating of the 132 position connector.

B. Test Sequence

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

4.2. Retention of Qualification

If, in a three-year period, no changes to the product or process occur, the product shall be subjected to the two groups of the testing described in the test sequence, see Figure 4. Justification for exceeding this time limit must be documented and approved by the division manager.

4.3. Requalification Testing

If changes significantly affecting form, fit, or function are made to the product or to the manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence

4.4. 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.

4.5. Quality Conformance Inspection

The applicable AMP quality inspection plan will 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.

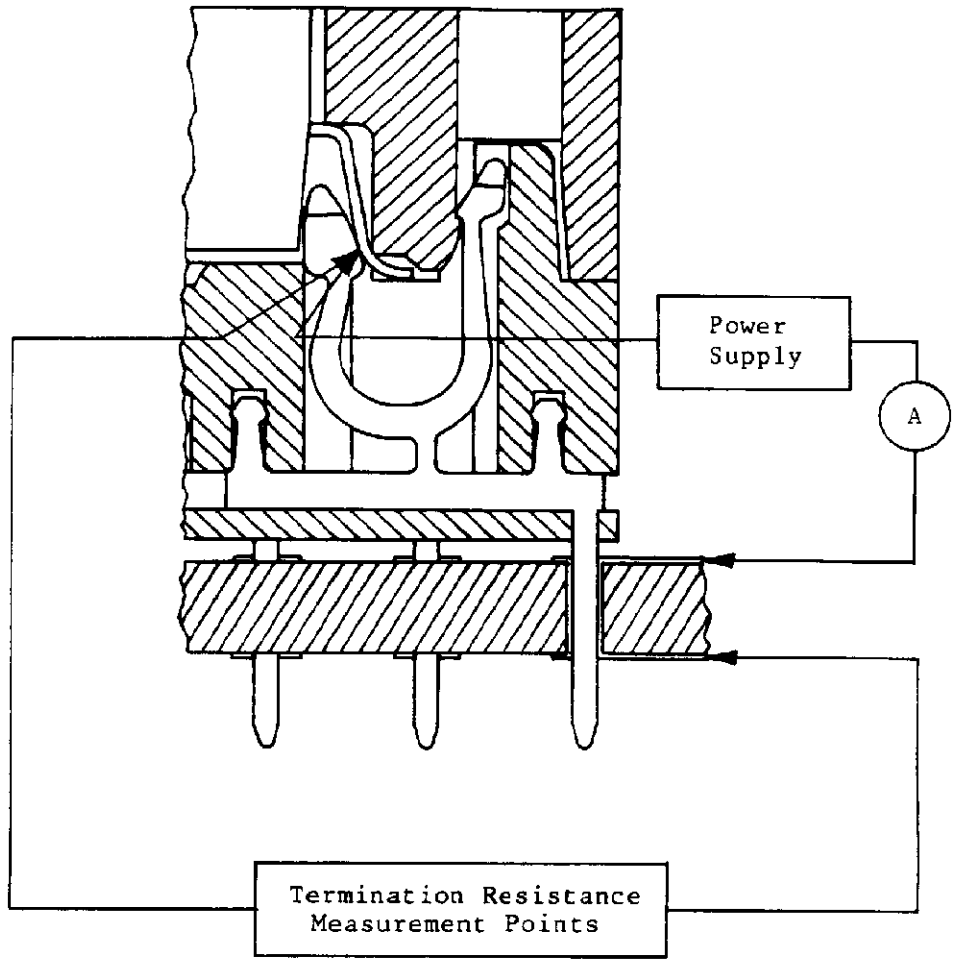

Figure 6
Resistance Measurement Points, Typical

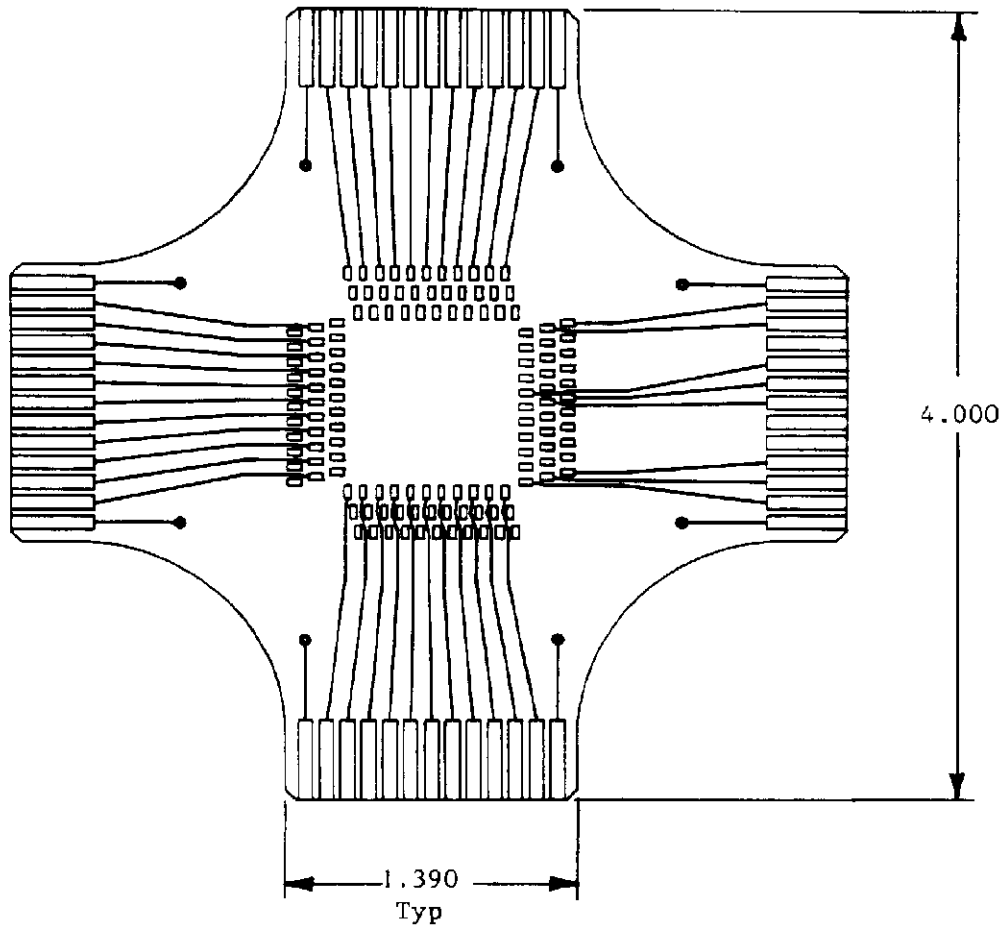

Figure 7
Typical Test Board