

108-18012

PRODUCT SPECIFICATION

1. SCOPE

1.1 Content

This specification covers the performance and test requirements and quality assurance provisions for the AMPMODU* Pinheader. This miniature system consists of AMPMODU Mod II Pinheader for application with MODU II board mounted rec. contacts, or female connectors with MODU II solder, MODU IV, IV 1/2, V or Tandem Spring crimp respectively MT contacts.

1.2 Connector Assembly Definition

Pinheader soldered to printed circuit board.

1.3 Description of Connector Configuration (Housing and Contact Spacing)

The pinheaders consist contact pins 0,63 dia (.025) respectively 0,63 square loaded to a pinhousing in a spacing of 2,54 (.100).

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 Specifications

A. 109 Series: Test Specifications as indicated in Figure 1

2.2 Military Standard


MIL-STD-105: Sampling Procedures and Tables for Inspection by Attributes

2.3 Military and Federal Specifications

- A. MIL-G-45204: Gold Plating, Electrodeposited
- B. MIL-I-45208: Inspection System Requirements
- C. MIL-M-14: Molded Plastics and Molded Plastic Parts, Thermosetting

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			DR 20.1.86 <i>[Signature]</i>		 AMP Deutschland GmbH Langen b. Ffm.						
			CHK 21.2.87 <i>[Signature]</i>								
			APP 23.2.87 <i>[Signature]</i>		LOC	A1	NO	A	108-18012	REV	D
D	SPECIFICATION CORRECT	<i>[Signature]</i>	4.6.87	SHEET 1 OF 6		INTERCONNECTION SYSTEM AMPMODU MOD II PINHEADER					
C	SPECIFICATION RELEASED	<i>[Signature]</i>	19.03.1987								
B	SPECIFICATION NO WAS 108-18011, Now 108-18012	<i>[Signature]</i>	27.2.87								
A	SPECIFICATION COMPLETED	<i>[Signature]</i>	2.4.87								
LTR	REVISION RECORD	APP	DATE								

6/4/87

108 - 18012

- D. MIL-M-20693: Moulding Plastics, Polyamide
- E. MIL-M-24519: Moulding Plastics, Polyester Thermoplastic
- F. MIL-T-10727: Tin Plating, Electrodeposited
- G. QQ-B-750: Phosphor Bronze
- H. QQ-B-626: Brass
- J. QQ-N-290: Nickel Plating, Electrodeposited

3. PERFORMANCE REQUIREMENTS

3.1 Ratings

- A. Current:
 ambient temp. max. 70 % 5 amperes maximum per contact pin;
 for mated contacts see specification of female part but 5 amperes maximum.
- B. Temperature Range:
 - 65° to 105° C for mated pair
 - 65° to 125° C for unmated contact pin

3.2 Test Requirements and Procedure Summary

Test Description	Requirement	Procedure
Examination of Product	Meet requirement of drawing	Dimensional and visual; AMP Spec 109-25000
Insulation Resistance	5000 megohms minimum initial; 1000 megohms minimum after moisture	Unmated connectors; test between adjacent contacts and contacts to mounting hardware, 500 vdc; AMP Spec 109-28
Dielectric Withstanding Voltage	Test Voltage (rms) Altitude 2,54 CL (.100) <u>feet</u> unmated pinheader 1000 sea level mated pair 750 sea level mated pair 300 50,000 mated pair 275 70,000 No breakdown or flashover	Unmated pinheader, test between adjacent contacts and contacts to mounting hardware, 500 volts per second until test potential is reached; hold for 1 minute; AMP Spec 109-29
Thermal Shock	Termination resistance, dry circuit (low level); no physical damage	Subject wired and mated connector to 5 cycles, -65° to 105° C, AMP Spec 109-22

Figure 1 (cont'd)

SHEET
2 OF 6



AMP Deutschland GmbH
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LOC
A1

NO
A

108-18012

REV
D


NAME

INTERCONNECTION SYSTEM
AMP MODU MOD II PINHEADER

108 - 18012

Test Description	Requirements	Procedure
Durability	Termination resistance, dry circuit (low level); individual contact separation force; no mechanical damage	Mate and unmate at a rate of 150 cycles per hour for the number of cycles specified; AMP Spec 109-27 Cycles see on the specification of the used female contact.
Vibration	No interruption of continuity greater than 1 microsecond; no physical damage	Subject wired and mated connectors to 15 G's, 10 - 2000 Hz, with 100 ma current applied; AMP Spec 109-21, cond C.
Physical Shock	No interruption of continuity greater than 1 microsecond; no physical damage	Subject rigid mount wired and mated connectors to 100 G's, 6 millisecond; sawtooth wave form; with 100 ma current applied, 3 drops, 3 each direction per plane; AMP Spec 109-26, cond I.
Moisture Resistance	Termination resistance, dry circuit (low level); insulation resistance; dielectric withstanding voltage; no physical damage	Subject mated connectors to 10 days temperature-humidity cycling, 25° to 65° C, 80 - 98 % RH, 5 cold shocks at -10° C; AMP Spec 109-23, cond B, method III, less step 7b
Corrosion, Salt Spray	Termination resistance, dry circuit and rated current (low level)	Subject mated connectors to 5 % solution, 48 hours; AMP Spec 109-24, cond B
Corrosion, Industrial Gas	Termination resistance, dry circuit and rated current (low level)	Subject mated connectors to 10 % SO ₂ environment, 24 hours, AMP Spec 109-37, method 1
Contact Retention	Contact shall not dislodge from its normal locking position	Apply an axial load of 10 N minimum to each contact at a rate of 25 mm per minute; AMP Spec 109-30 (not for low profile pinheaders)

Figure 1 (cont'd)

SHEET 3 OF 6			AMP Deutschland GmbH Langen b. Ffm.	
	LOC A1	NO A	108-18012	REV D
NAME INTERCONNECTION SYSTEM AMP MODU MOD II PINHEADER				

108-18012

Test Description	Requirements	Procedure
Solderability	Contact tails shall have a solder coverage of 95 % minimum	AMP Spec 109-11-1

a) Values do not apply to "no strip receptacles"


Figure 1 (end)

3.3 Connector Tests and Sequence

Test of Examination	Test Spec	Test Group (a)	
		1	2 Evaluation
		Test Sequence (b)	
Examination of Product	109-25000	1	1
Insulation Resistance	109-28	3; 10	
Dielectric Withstanding Voltage	109-29	4; 11	
Thermal Shock	109-22	5	
Durability	109-27	6	
Vibration	109-21	7	
Physical Shock	109-26	8	
Moisture Resistance	109-23	9	
Corrosion, Salt Spray (c)	109-24	12	
Corrosion, Industrial Gas (c)	109-37	13	
Contact Retention	109-30	14	
Solderability	109-11	2	2

- (a) Test Group 1 and 2 shall consist of a minimum of 6 connector assemblies of each type plating indicated in Figure 4 with a minimum of 36 receptacles.
Test Group 2 shall consist of 30 pinheaders of each type plating indicated in Figure 4. All test measurements shall consist of a minimum of 30 random readings for each group.
- (b) Numbers indicate sequence in which tests are performed.
- (c) This test not applicable to tin plated parts.

Figure 2 (end)

SHEET 4 OF 6	 AMP Deutschland GmbH Langen b. Ffm.		
	LOC A1	NO A	REV D
NAME INTERCONNECTION SYSTEM AMP MODU MOD II PINHEADER			

108 - 18012

4. PRODUCT ASSURANCE PROVISIONS

4.1 General Requirements

Connectors presented under this specification shall be a product which has passed qualification tests per Para 4.2 and which meet the quality assurance requirements of Para 4.3.

4.2 Qualification Requirements

Qualification requirements shall be in accordance with the test sequence of Para 3.3 of this specification and Para 4. of AMP Specification 109-25000.

4.3 Quality Assurance Requirements

Product manufacture shall be controlled by an inspection system at least equivalent to the requirements of MIL-I-45208 to assure the delivered product to be within 1.0 AQL when inspected in accordance with MIL-STD-105, Normal Sampling, Inspection Level II.

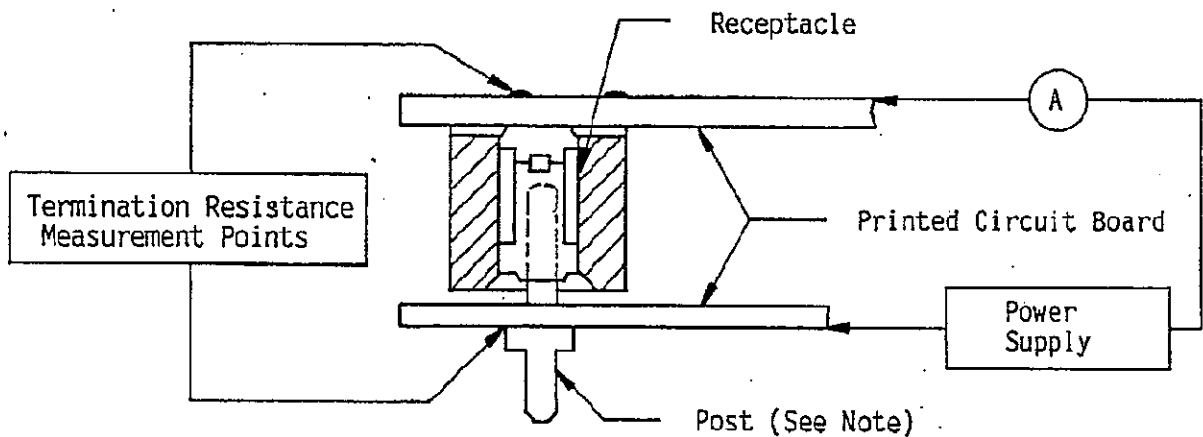



Figure 3

Termination resistance measurement points for Printed Circuit Board Mounted Receptacles.


Note: Post plating shall be identical to receptacle plating when conducting tests, see Figure 4

SHEET <u>5 OF 6</u>	 AMP Deutschland GmbH Langen b. Ffm.		REV. D
	LOC A1	NO 108-18012	
NAME INTERCONNECTION SYSTEM AMP MODU MOD II PINHEADER			

108 - 18012

Standard Version	Plating Configuration or unless specified on the applicable Product-Drawing (Thickness in Micrometers)
1	0,8 Au select / 1,2 Ni
	0,4 Au select / 1,2 Ni
	2,5 Sn / 0,8 Ni
2	0,8 Au select / 1,2 Ni
	0,4 Au select / 1,2 Ni
	2,5 Sn / 0,8 Ni

Figure 4
Plating Configuration

SHEET 6 OF 6	 AMP Deutschland GmbH Langen b. Ffm.			
NAME INTERCONNECTION SYSTEM AMP MODU MOD II PINHEADER	LOG A1	NO A	108-18012	REV D