

PRODUCT SPECIFICATION

1. SCOPE

1.1. Content

This specification covers the performance, tests and quality requirements for the AMP* coaxial cable disconnect contacts for printed circuit boards. These contacts are intended to provide connect/disconnect capabilities for AMP Pick Type Coaxial Cable Braid Terminations.

1.2. Definitions

For the purpose of this specification, the following definitions shall apply.

- A. Test Board Assembly: Consists of a printed circuit board as illustrated in Figure 3, containing printed circuit board contacts installed and mated with appropriate braid termination contacts. The P.C. board shall be constructed of 1/16 inch G-10 fiberglass, clad with 2 oz. copper and circuitry designed to accommodate testing as specified.
- B. Printed Circuit Board Disconnect Contacts: A board mounted receptacle soldered in position on the test board. Each contact consists of an inner contact with an outer shell which is designed to mate with a coaxial braid termination.

1.3. 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.

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SHEET	TITLE						
1 OF 7	COAXIAL CABLE DISCONNECT CONTACTS FOR PRINTED CIRCUIT BOARDS						
DIST	ECN	APP	DATE				
12	C82-419						
LTR	REVISION RECORD						

2.1. AMP Specifications

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, see Figure 4)

3. REQUIREMENTS

3.1. Design and Construction

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

3.2. Materials

The materials used in the construction of this product and the finish or plating shall be as specified on the applicable product drawing.

3.3. Ratings

- A. Current/Voltage: 200 vac rms at 1.0 ampere maximum
- B. Operating Temperature: -55° to +85°C

3.4. Performance and Test Description

Contacts shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 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 inspection plan.		
ELECTRICAL				
Termination Resistance, Specified Current	6 milliohms maximum for center termination. 10 milliohms maximum for shield termination.	Measure potential drop across both center and outer shield terminations of mated contacts using a test current of 1 ampere DC, see Figure 3; AMP Spec 109-25, calculate resistance.		
Figure 1 (cont)				
AMP AMP INCORPORATED Harrisburg, Pa. 17105	LOC B	SHEET 2 OF 7	NO 108-12033	REV C

Test Description	Requirement	Procedure
Dielectric Withstanding Voltage Insulation Resistance	600 vac dielectric withstanding voltage, one minute hold. No breakdown or flash-over. 5000 megohms minimum.	Test between center and outer conductors of mated contacts; AMP Spec 109-29-1. Test between center and outer conductors of test specimens; AMP Spec 109-28-4.
MECHANICAL		
Vibration (a)	No discontinuities greater than 1 micro-second.	Subjected test board assemblies to 10-55-10 Hz traversed in 1 minute at .06 inches total excursion; 2 hours in each of 3 mutually perpendicular planes; AMP Spec 109-21-1. Monitor discontinuities at test points A and B with test points C and D jumpered, see Figure 3.
Physical Shock (a)	No discontinuities greater than 1 micro-seconds.	Subject test board assemblies to 100G's sawtooth in 6 milliseconds; 3 shocks in each direction applied along the 3 mutually perpendicular planes total 18 shocks; AMP Spec 109-26-9, monitor as for Vibration.
Contact Engaging Force	8.0 pounds maximum.	Measure force to engage outer contact using a max gage pin .1025 inch diameter, AMP Spec 109-35.
Contact Separating Force	2.0 ounces minimum.	Measure force to withdraw a min gage pin .096 inch diameter; AMP Spec 109-35.
Crimp Tensile	10 pounds minimum.	Determine crimp tensile at a rate of 1 inch/minute; AMP Spec 109-16. Cable may be cut midway between contacts to facilitate testing.
Durability (a)	No physical damage.	Mate and unmate contacts with a .1025 inch diameter gage pin for 25 cycles; AMP spec 109-27.

Figure 1 (cont)

AMP	AMP INCORPORATED Harrisburg, Pa. 17105	LOC B	SHEET 3 OF 7	NO 108-12033	REV C
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Test Description	Requirement	Procedure
Thermal Shock (a)	No physical damage.	Subject mated contacts to 5 cycles between -55° and +80°C; AMP Spec 109-22.

(a) Shall show no evidence of physical damage, cracking or chipping.

Figure 1 (end)

3.6. Contact Tests and Sequences

Test or Examination	Test Group (a)	
	1	2
Test Sequence (b)		
Examination of Product	1	1
Termination Resistance, Specified Current	2-8	2-6
Dielectric Withstanding Voltage	4-10	
Insulation Resistance	3-9	
Vibration	6	
Physical Shock	7	
Contact Engaging Force		3-7
Contact Separating Force		4-8
Crimp Tensile	11	
Durability		5
Thermal Shock	5	

(a) See Para 4.1.A.

(b) Numbers indicate sequence in which tests are performed.

Figure 2

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Sample Selection

Contacts shall be prepared in accordance with applicable Instruction Sheets. They shall be selected at random from current production. Test groups 1 and 2 shall consist of 8 contacts each. Contacts shall be crimped 1 to each end of 8-inch lengths of appropriate size coaxial cable and connected in series on a test board as illustrated in Figure 3.

B. Test Sequence

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

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LOC

B

SHEET

4 OF 7

NO

108-12033

REV

C

C. Acceptance

- (1) All samples tested in accordance with this specification shall meet the stated tolerance limit.
- (2) Failures attributed to equipment, test setup, or operator deficiencies shall not disqualify the product. When product failure occurs, corrective action shall be taken.

4.2. Quality Conformance Inspection

The applicable AMP 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.

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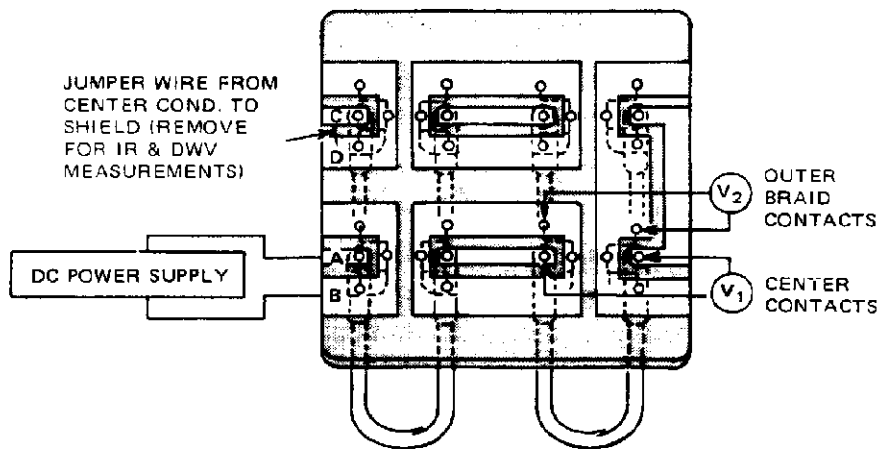
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LOC
B

SHEET
5 OF 7

NO
108-12033

REV
C



- Note: (a) Measure resistance at 1 ampere DC.
 (b) Measure resistance of an equivalent length of cable and subtract from test specimen measurements.

Figure 3
 Test Board Assembly

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LOC
B

SHEET
 6 OF 7

NO
108-12033

REV
C

AMP Test Spec. No	Title	Commercial Reference	Military Reference
109-16	Crimp Tensile Strength Test Procedure for Electrical Connectors	EIA RS-364, TP-8	MIL-STD-1344, Method 2003
109-21	Vibration Test Procedure for Electrical Connectors	EIA RS-364, TP-28	MIL-STD-1344, Method 2005 MIL-STD-202, Method 201 MIL-STD-202, Method 204
109-22	Thermal Shock Test Procedure for Electrical Connectors	EIA RS-364, TP-32	MIL-STD-1344, Method 1003 MIL-STD-1344, Method 1010 MIL-STD-202, Method 107
109-25	Rated Current Termination Resistance Test Procedure for Electrical Connectors	EIA RS-364, TP-6 IPC-3.1	MIL-STD-1344, Method 3004
109-26	Mechanical Shock, Specified Pulse Test Procedure for Electrical Connectors	EIA RS-364, TP-27	MIL-STD-1344, Method 2004
109-27	Durability Test Procedure for Electrical Connectors	EIA RS-364, TP-9	MIL-STD-202, Method 213 MIL-STD-1344, Method 2016
109-28	Insulation Resistance Test Procedure for Electrical Connectors	EIA RS-364, TP-21	MIL-STD-1344, Method 3003 MIL-STD-202, Method 302
109-29	Withstanding Voltage Test Procedure for Electrical Connectors	EIA RS-364, TP-20	MIL-STD-1344, Method 3001 MIL-STD-202, Method 301
109-35	Contact Engaging and Separating Force, Test Procedure for	EIA RS-364, TP-37	MIL-STD-1344, Method 2014

Figure 5

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SHEET
7 OF 7

NO
108-12033

REV
C