

PRODUCT SPECIFICATION

1. SCOPE

1.1. Content

This specification covers the performance requirements for the AMP* mini box contact connector assembly. These are plug and receptacle connectors which provide a connection method on .050 centerline.

1.2. Qualification

When testing or inspecting the subject product, this document shall always be supported by the applicable product drawing and by 109-9000, Packaging Components Division Connector Test Methods. In case of conflict the order of document precedence is as follows:

- A. Product Drawing
- B. This Product Specification
- C. 109-9000: Packaging Components Division Connector Test Methods

2. APPLICABLE DOCUMENTS

2.1. Applicable portions of the following documents form a part of the manufacturing control of this product.

- A. MIL-G-45204: Gold Plating, Electrodeposited
- B. MIL-STD-105: Sampling Procedures and Tables for Inspection by Attributes

2.2. The following documents describe handling and use of this product.

- A. 109-9000: Packaging Components Division Connector Test Methods
- B. MIL-STD-202: Test Methods for Electronic and Electrical Component Parts

3. PERFORMANCE REQUIREMENTS

3.1. Ratings

- A. Current: 1.5 amperes max per contact
- B. Temperature: -65 to 125 C

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CONTROLLED DOCUMENT This specification is a controlled document per AMP Specification 102-21. It is subject to change and Corporate Standards should be contacted for latest revision.				DR C. Fritz 11/16/76		AMP AMP Incorporated Harrisburg, PA 17105-3606	
				CHK H. Hagan 11/16/76			
				APP G. Preputnick 11/16/76	NO 108-9046	REV D	LOC B
D	Revise per EC 0600-0094-93	<i>B/B</i>	<i>4/1/93</i>	PAGE	TITLE CONNECTOR, MINI BOX CONTACT		
LTR	REVISION RECORD	APP	DATE	1 OF 5			

3.2. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of Product	Meet requirements of drawing.	Dimensional and visual.
Termination Resistance, Low Level	Resistance, ohms max Connector Initial Final Standard .015 .020 Right Angle .025 .030	50 mv max open circuit. 100 ma max short circuit.
Termination Resistance, Rated Current	Resistance, ohms max Connector Initial Final Standard .015 .020 Right Angle .025 .030	1.5 amp
Insulation Resistance Dielectric Withstanding Voltage	1,000 megohms min. Altitude Test Voltage, rms Sea Level 600 70,000 ft 150	Mated, 500 vdc. Mated connectors, test between adjacent contacts, and contacts to mounting hardware.
Contact Engaging Force	6 oz max.	Size 3 times with .019 diameter post simulator prior to gaging. Then check with .019 diameter post simulator to depth of .147.
Connector Mating Force	.30 lb times number of contacts max.	Fully insert plug and receptacle after 3 unmonitored cycles.
Connector Unmating Force	.03 lb times number of contacts min.	Fully withdraw plug and receptacle.
Durability	No mechanical damage, connector mating and unmating force.	.000050 gold, 500 cycles; .000030 gold, 200 cycles.
Thermal Shock	No evidence of physical damage; mate and unmate at extremes.	-65° to 125°C, unmated; mate and unmate during fifth cycle.
Vibration	No interruption of continuity greater than 1 microsecond; no physical damage.	10-2000 Hz; 15 G peak; mated; energized with 100 milliamp dc current.
Physical Shock	No interruption of continuity greater than 1 microsecond; no physical damage.	100 G peak, 6 msec, sawtooth; mated; energized with 100 milliamp dc current.
Moisture Resistance	Meet insulation resistance and dielectric withstanding voltage.	10 days test, mated, 90-98% RH, 2 cycles per day.
Contact Separating Force	.10 oz min.	Size 3 times with .019 diameter post simulator; check with .017 diameter post simulator to depth of .147.

Figure 1 (cont)

AMP AMP Incorporated Harrisburg, PA 17105-3608	PAGE	NO	REV	LOC
	2	108-9046	D	B

Test Description	Requirement	Procedure
Salt Spray (Corrosion)	Termination resistance, low level and rated current.	5% solution, 48 hr, mated.
Solderability	95% coverage min; 10X magnification.	230° ± 5°C, 5 ± 1/2 sec.
Resistance to Soldering Heat	No evidence of physical damage; meet contact retention.	260 + 5°C, 10 ± 2 sec on a mounting board.
Contact Retention	Contacts shall not dislodge from housing.	Axial load of .75 lb pull applied to individual contact.

Figure 1 (end)

3.3. Connector Tests and Sequence

Test	MIL-STD-202 Method	109-9000 Requiring Paragraph	Test Sequence (a)		
			1	2	3
Examination of Product		5.1.	X	X	X
Connector Mating Force		5.8.		X	
Termination Resistance, Low Level (b)		5.2.	X	X	
Termination Resistance, Rated Current (b)	307	5.3.	X	X	
Connector Unmating Force		5.9.		X	
Insulation Resistance	302, Cond B	5.4.	X		
Dielectric Withstanding Voltage	301	5.5.	X		
Contact Engaging Force (c)		5.6.		X	
Contact Separation Force (c)		5.7.		X	
Thermal Shock	107, Cond B	5.11.	X		
Durability		5.10.	X	X	
Connector Mating & Unmating Force				X	
Vibration	204, Cond B	5.12.		X	
Physical Shock	213, Cond I	5.13.		X	
Moisture Resistance	106 Except 7B	5.14.	X		
Insulation Resistance					
Dielectric Withstanding Voltage					
Salt Spray (Corrosion)	101, Cond B	5.15.B.		X	
Termination Resistance Low Level (b)		5.2.	X	X	
Termination Resistance Rated Current (b)	307	5.3.	X	X	
Solderability	208				X
Resistance to Soldering Heat (d)	210, Cond C				X
Contact Retention		5.16.			X

- (a) Test sequence 1 and 2 samples are mounted on PC boards. Test sequence 3 samples are unmounted.
 (b) See Figures 3 or 4.
 (c) See Figure 5.
 (d) Receptacle assemblies only.

Figure 2

3.4. Selection of Test Samples

- A. Test samples shall consist of 6 connectors, 3 each Test Sequence 1 and Test Sequence 2. Three additional specimens shall be selected and tested to Test Sequence 3.

3.5. Acceptance Quality Level

MIL-STD-105, Inspection Level II, Normal Inspection, AQL 1.5%.

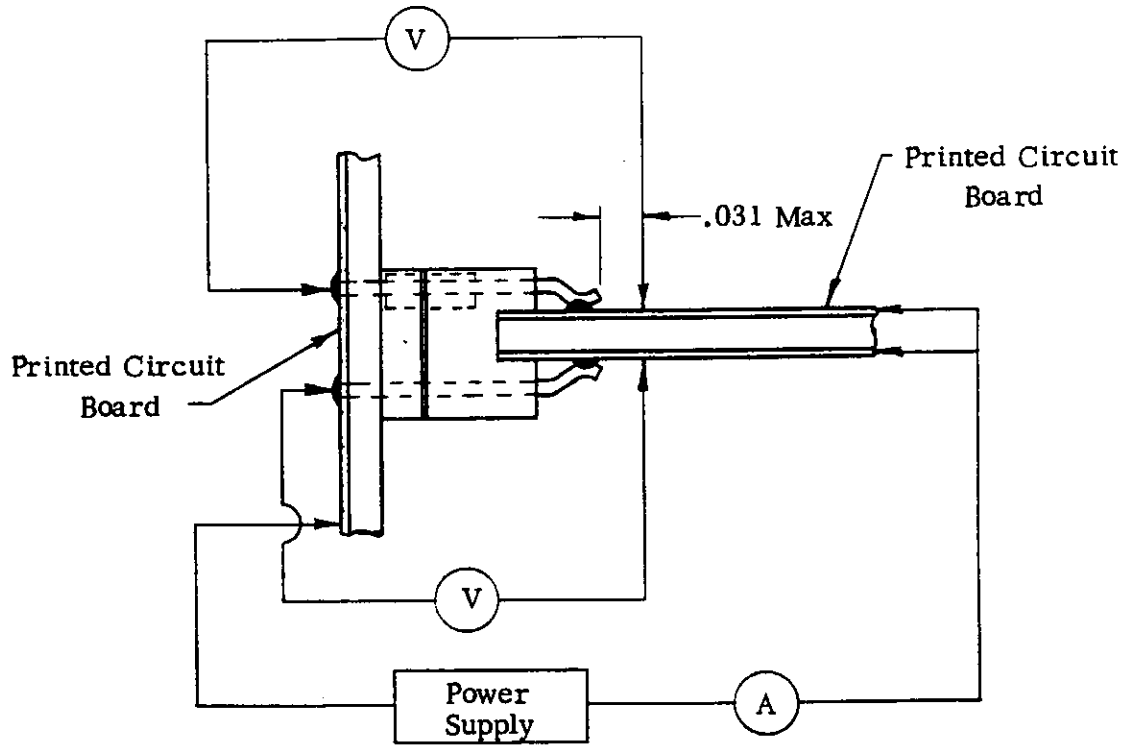


Figure 3
Termination Resistance Test Circuit for Standard Connector

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PAGE NO

4

108-9046

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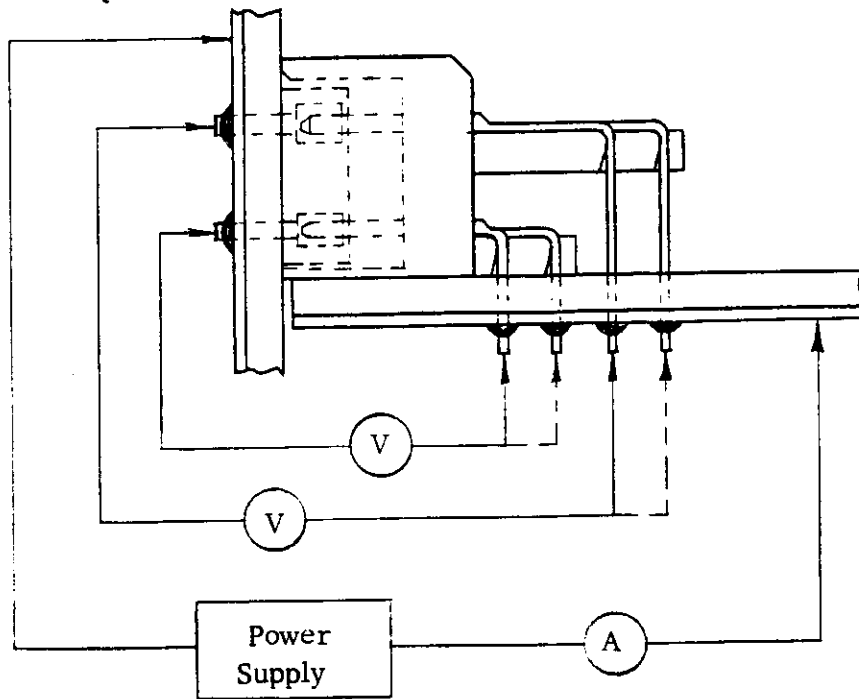
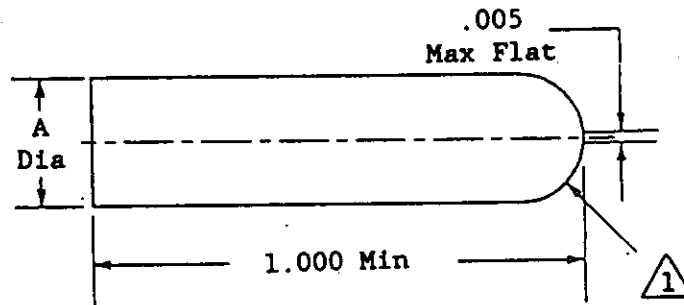


Figure 4
Termination Resistance Test Circuit for Right Angle Connector



Gage	A Diameter
Engaging (Maximum)	.0190 +.0001 -.0000
Separating (Minimum)	.0170 +.0001 -.0000

- Note: 1 Spherical radius shall be 1/2 pin diameter and smoothly blended without a break into pin diameter.
 2 Material: Steel
 3 Heat treat: RC 58 minimum
 4 Finish: 6 to 10 microinches root mean square

Figure 5
Individual Post Simulator