PRODUCT SPECIFICATION

1. SCOPE

1.1. Content

This specification covers the performance requirements for the AMP-LEAF* connector assembly, with .000015 gold plated contacts and housings molded with either phenolic or thermoplastic material.

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
C. MIL-STD-275: Printed Wiring for Electronic Equipment

3. PERFORMANCE REQUIREMENTS

3.1. Ratings

A. Current: 5 amperes max per contact
B. Temperature: -55° to 105°C

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DR L. C. Fritz 8-27-75
CHK [illegible] 8/27/75
APP D. M. Bushey 8/27/75

AMP INCORPORATED Harrisburg, Pa.

LOC B | A | NO 108-9014 | REV F

SHEET 1 OF 5

NAME CONNECTOR, AMP-LEAF, PHENOLIC OR THERMOPLASTIC HOUSING

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	.006 ohm max, with wire AWG 20 or larger.	50 mv max open circuit, 100 ma max short circuit.
Termination Resistance, Rated Current	.006 ohm max, with wire AWG 20 or larger.	5 amp.
Insulation Resistance	5,000 megohms min initial, 1,000 megohms min final.	500 vdc.
Dielectric Withstanding Voltage	Altitude / Test Voltage, rms sea level / 1800 50,000 ft / 675 2 ma max leakage.	Unmated connectors, test between adjacent contacts, and contacts to mounting hardware.
Contact Engaging Force	16 oz max per contact pair.	Max thickness gage .070.
Contact Separating Force	2 oz min per contact pair.	Size 3 times with max thickness gage .070. Check with min thickness gage .054.
Connector Mating Force	16 oz max average per contact pair.	Max thickness gage .070.
Durability	No mechanical damage; meet limits of contact separation force and termination resistance.	100 matings and unmatings using max gage .070, for .000015 gold plate.
Thermal Shock	No evidence of physical damage; mate and unmate with max thickness gage.	-55° to 105°C, 5 cycles.
Vibration	No interruption of continuity greater than 1 microsecond. No physical damage.	10-55 Hz; .06 in total excursion; mated with printed circuit board.
Physical Shock	No interruption of continuity greater than 1 microsecond. No physical damage.	100 G's, 6 msec, sawtooth; mated with printed circuit board.
Humidity, Steady State	Meet insulation resistance and dielectric withstanding voltage.	Unmated, 90-95% RH, 40° ± 2°C, 96 hr.
Contact Retention (Crimped Contacts)	Contacts shall not dislodge from its normal locking position.	Axial load of 10 lb applied to contacts lead, AWG 20 or larger.

Figure 1 (cont)

Test Description	Requirement			Procedure
Crimp Resistance	Wire Size, AWG	Current, amp	Resistance, milliohms max Initial / Final	Measure potential drop across crimped contact between wire as it enters the wire barrel and the end of the wire barrel nearest the contact transition.
	26	1.0	2.5 / 4.0	
	24	3.0	2.0 / 3.3	
	22	5.0	1.2 / 2.0	
	20	7.5	0.7 / 1.2	
	18	10.0	0.5 / 0.8	
Current Cycling	Crimp resistance shall not exceed "final" value.			125% rated current for 30 min, 15 min no current, total of 50 cycles.
Crimp Tensile	Wire Size, AWG	Tensile Strength, lb min		Axial tensile load as shown. Wire shall not separate from contact.
	26	5		
	24	8		
	22	12		
	20	20		
	18	30		

Figure 1 (end)

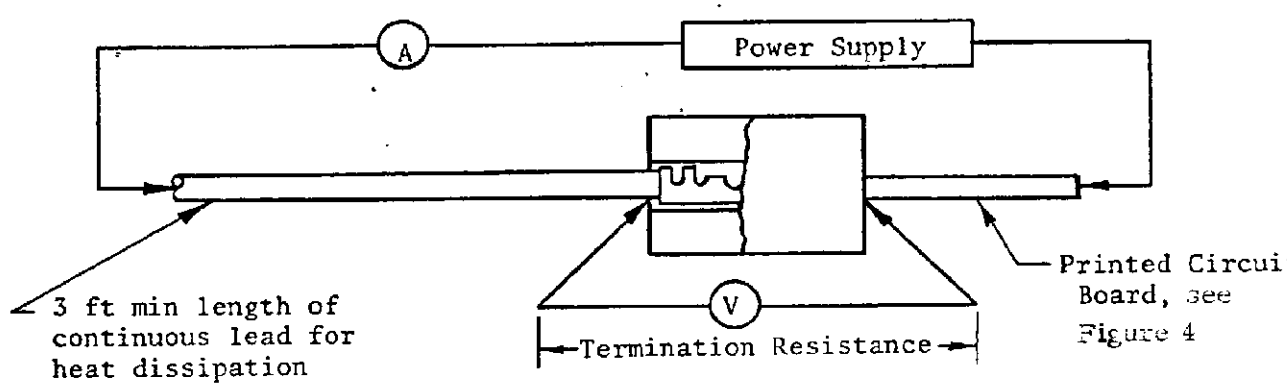


Figure 2
Termination Resistance Test Circuit

SHEET 3 OF 5

AMP INCORPORATED Harrisburg, Pa.

LOC B | A | NO 108-9014 | REV F

NAME
CONNECTOR, AMP-LEAF, PHENOLIC OR THERMOPLASTIC HOUSING

3.3. Connector Tests and Sequence

Test	MIL-STD-202 Method	109-9000 Requirement 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	
Insulation Resistance	302, cond B	5.4.	X	X	
Dielectric Withstanding Voltage	301	5.5.	X	X	
Contact Engaging Force		5.6.		X	
Contact Separation Force		5.7.		X	
Thermal Shock (c)	107, cond A	5.11.	X		
Durability Contact Separation Force		5.10.	X	X	
Vibration (d)	201	5.12.		X	
Physical Shock (d)	213, cond I	5.13.		X	
Humidity, Steady State Insulation Resistance, Final Dielectric Withstanding Voltage	103, cond B	5.14.	X		
Termination Resistance, Low Level (b)		5.2.	X	X	
Termination Resistance, Rated Current (b)		5.3.	X	X	
Contact Retention		5.16.	X	X	
Crimp Resistance		5.17.			X
Current Cycling		5.18.			X
Crimp Resistance		5.17.			X
Crimp Tensile		5.19.			X

(a) Test Sequence 1 and 2 are for connectors with contacts and hardware. Test Sequence 3 is for contacts.
(b) See Figure 2.
(c) Upper temperature limit 105°C.
(d) See Figure 4.

Figure 3

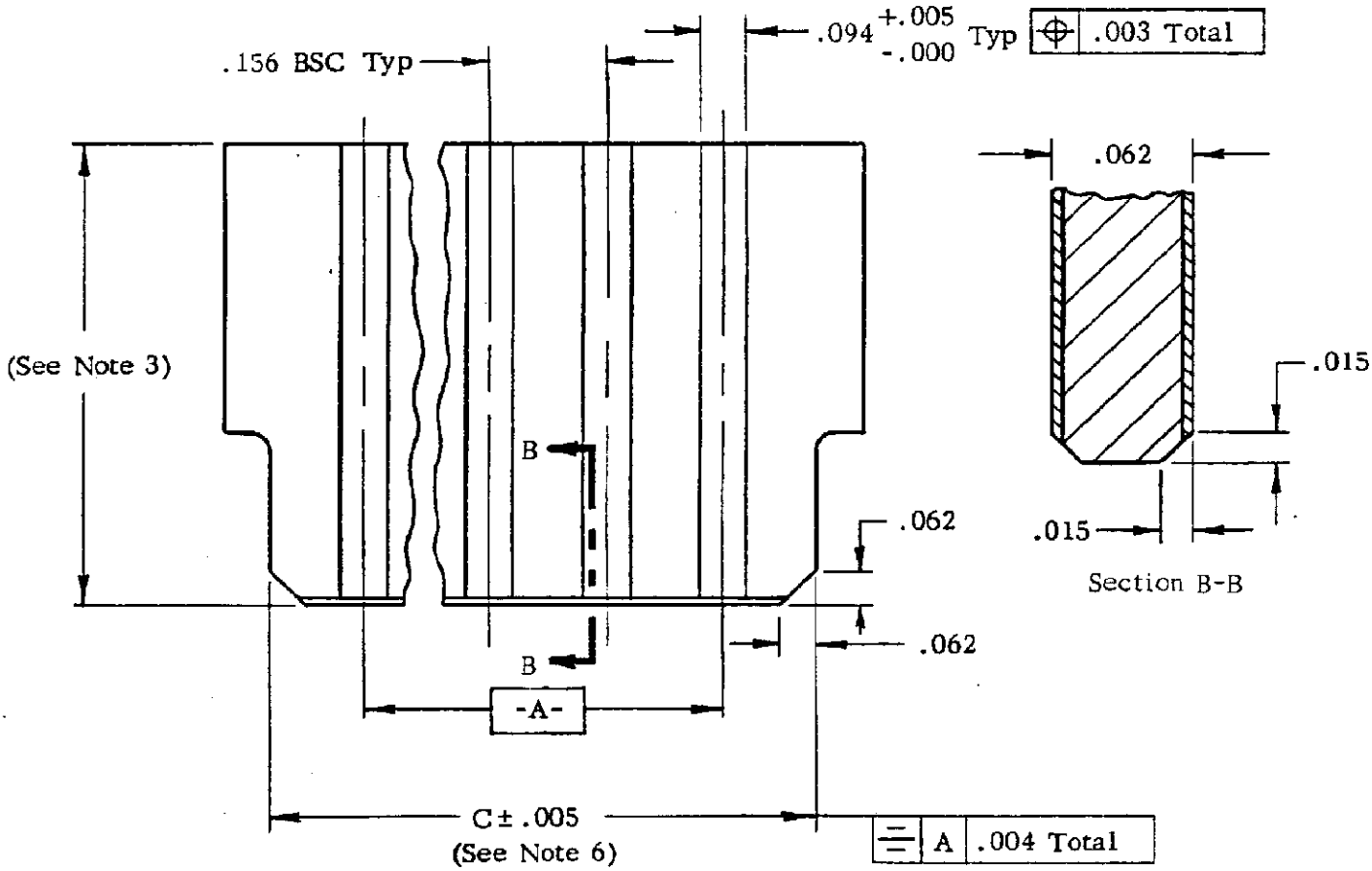
3.4. Selection of Test Samples

A. Test samples shall consist of 6 connectors of the greatest number of positions of each connector type offered, 3 each Test Sequence 1 and Test Sequence 2. Two additional specimens shall be selected from the least number of positions offered and tested to Test Sequence 2.

B. Thirty contacts of each style and desired wire size shall be tested to Test Sequence 3.

3.5. Acceptance Quality Level

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



Notes:

1. Dimensions are in inches.
2. Unless otherwise specified, tolerance is ±.005.
3. The test card shall extend 4.00 ± .02 from the receptacle after insertion.
4. Number of contacts shall be the same as on the corresponding printed wiring connector.
5. Printed circuit test board shall be 2 oz copper and gold over nickel plated per MIL-STD-275.
6. This dimension shall be the minimum connector card slot length minus .008.
7. Conductor configuration optional beyond card slot depth.
8. Printed wiring shall be identical on both sides.

Figure 4

Printed Circuit Test Board

SHEET 5 OF 5	AMP INCORPORATED Harrisburg, Pa.			
	LOC B	A	NO 108-9014	REV F
NAME CONNECTOR, AMP-LEAF, PHENOLIC OR THERMOPLASTIC HOUSING				