1. SCOPE

1.1. Content

This specification covers the performance requirements for the AMP-LEAF* connector assembly, with lubricated tin plated contacts.

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 portion of the following documents form a part of the manufacturing control of this product.

MIL-T-10727: Tin Plating, Electrodeposited or Hot Dipped

- 2.2. The following documents describe handling and use of this product.
 - A. 109-9000: Packaging Components Division Connector Test Methods
 - B. MIL-STD-1344: Test Methods for Electrical Connectors
 - C. MIL-STD-275: Printed Wiring for Electronic Equipment
- 3. PERFORMANCE REQUIREMENTS
- 3.1. Ratings
 - A. Current: 5 amperes maximum per contact
 - B. Temperature: -40° to 85°C

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					19 5 Sh	5/9/80	LOC B	Α	Olos	3-9043	REV 0	
DIST					SHEET	MAME CONI	NEC'	TOR	, AM	P-LEAF,		
					1 OF 5	TIN	PL	ATE	D CC	NTACT		
14	LTR	REVISION RECORD	APP	DATE								

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3.2. Test Requirem	nents and Procedures Summar	-			
Test Description	Requirement	Procedure			
Examination of Product	Meet requirements of drawing.	Dimensional and visual.			
	ELECTRICAL				
Termination Resistance, Low Level	.010 ohm maximum, with wire AWG 20 or larger.	50 mv maximum open circuit, 100 ma maximum short circuit.			
Termination Resistance, Rated Current	.010 ohm maximum, with wire AWG 20 or larger.	5 amperes.			
Crimp Resistance	Resistance, Wire milliohms Size, Current, maximum AWG ampere Initial Final 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	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.			
Insulation Resistance	5,000 megohms minimum initial; 1,000 megohms minimum final.	500 vdc.			
Dielectric Withstanding Voltage	Test Voltage, Altitude, rms feet 1800 Sea Level 675 50,000 2 milliamperes maximum leakage current.	Unmated connector, test between adjacent contacts, and contacts to mounting hardware.			
Current Cycling	Crimp resistance shall not exceed maximum final value. MECHANICAL	125% rated current for 30 minutes, 15 minutes no current, total 50 cycles.			
	T so				
Durability	No mechanical damage; meet limits of contact separation force.	50 matings and unmatings using maximum gage .070, for .000150 minimum tin-lead.			
Contact Engaging Force	24 ounces maximum per contact pair.	Maximum thickness gage .070.			

Figure 1 (cont)

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CONNECTOR, AMP-LEAF, TIN PLATED CONTACT								

	<u> </u>				
Test Description	Requirement	Procedure			
Contact Separation Force	2 ounces minimum per	Size 3 times with maximum			
	contact pair.	thickness gage .070.			
	_	Check with minimum			
		thickness gage .054.			
Connector Mating Force	24 ounces maximum	Maximum thickness gage			
	per contact pair.	.070.			
Vibration	No interruption of	10-55 Hz; . 06 inch total			
	continuity greater than	excursion; mated with			
	l microsecond. No	printed circuit board.			
	physical damage.				
Shock (Specified Pulse)	No interruption of	100 G's, 6 millisecond,			
· -	continuity greater than	sawtooth; mated with			
	l microsecond. No	printed circuit board.			
	physical damage.				
Contact Retention	Contacts shall not	Axial load of 10 pounds			
(Crimped Contacts)	dislodge from normal	applied to contact lead,			
	locking position.	AWG 20 or larger.			
Crimp Tensile	Wire Tensile	Axial tensile load as			
•	Size, Strength,	shown. Wire shall not			
	AWG pounds minimum	separate from contact.			
	26 5				
	24 8				
	22 12				
	20 20	·			
	18 · 30				
	ENVIRONMENTAL				
Temperature Cycling	No evidence of physical	-40° to 85°C, 5 cycles.			
	damage.				
Humidity, Steady State	Meet insulation resistance	Unmated, 90 - 95%, RH,			
	and dielectric	40° ± 2°C, 96 hours.			
	withstanding voltage.				

Figure l (end)

SHEET _3_OF_5	АМР			AMP INCORPORATED Harrisburg, Pa.					
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CONNECTOR, AMP-LEAF, TIN PLATED CONTACT									

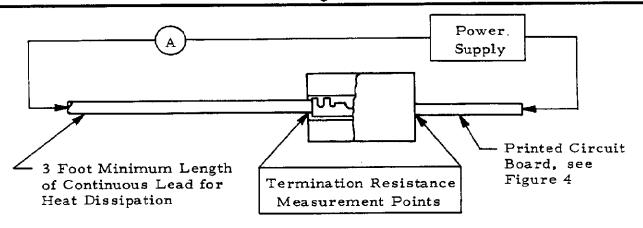
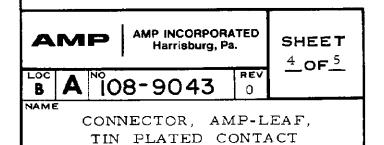


Figure 2
Termination Resistance Test Circuit

3.3. Connector Tests and Sequence

	3.477 CUED 12.44	109-9000	Test Group (a)		
Test or Examination	MIL-STD-1344	Requirement	1	2	3
	Method	Paragraph	Test Sequence (b)		
Examination of Product		5.1	1	1	1
Termination Resistance,	3002.1	5.2	2,12	3,13	
Low Level	3002.1	3.2	2,12	3,13	
Termination Resistance,	3004.1	5.3	3,13	4,14	
Rated Current	5004.1		3,1-	-,	
Crimp Resistance		5,17			2,4
Insulation Resistance	3003.1	5.4	4,10	5	
Dielectric Withstanding Voltage	3001.1, Cond-1 & 3	5.5	5,11	6	
Current Cycling		5.18			3
Durability	2016	5.10	7	9	
Contact Engaging Force	2014	5.6		7	
Contact Separation Force	2014	5.7	8	8,10	
Connector Mating Force	2013.1	5.8.A		2	
Vibration	2005.1, Cond I	5.12		11	
Shock (Specified Pulse)	2004.1, Cond G	5.13	<u> </u>	12	
Contact Retention	2007.1	5, 16	14	15	
(Crimped Contacts)	2001.1	3.10		1 3	
Crimp Tensile	2003.1	5.19			5
Temperature Cycling (c)	1003.1, Cond A	5.11	6	<u></u>	1
Humidity Steady State	1002.2, Type I, Cond B	5.14	9		

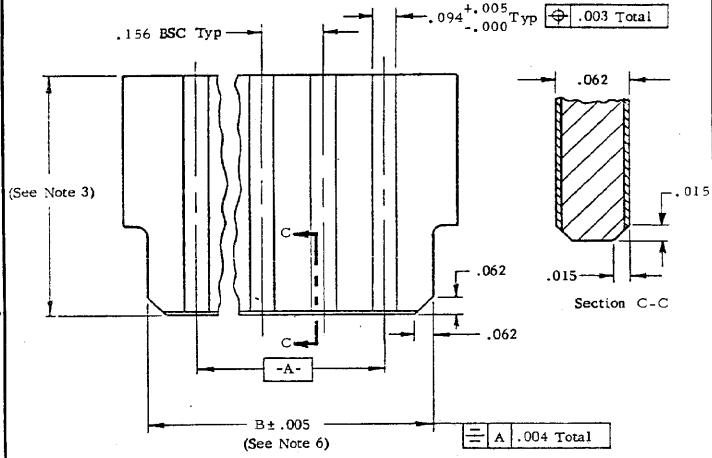


- (a) See Para 3.4.
- (b) Number indicates sequence in which tests are performed.
- (c) Lower temperature limit -40°.

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 groups 1 and 2. Two additional specimens shall be selected from the least number of positions offered and tested in test group 2.
- B. Thirty contacts of each style and desired wire size shall be tested to test group 3.



Notes:

- 1. Dimensions are in inches.
- 2. Unless otherwise specified, tolerance is $\pm .005$.
- 3. The test card shall extend $4.00 \pm .02$ 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 ounces copper and tin-lead 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 Board

