PRODUCT SPECIFICATION

1. SCOPE

1.1. Content

This specification covers the performance requirements for the AMP* MTA card edge and multiple tap connector system. This system provides dual purpose wiring techniques for interconnection between wires and printed circuit boards.

1.2. 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.

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)
C. 114-1020: Connector MTA 156, Application of

3. REQUIREMENTS

3.1. Design and Construction

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

3.2. Materials

A. Contact: MT brass, post tin-lead plated
MTA phosphor bronze, post tin plated
B. Housing: Polyester, 94 V-0

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LTR	REVISION RECORD	APP	DATE
A	Change per ECN AG-472		7/26/84

DIST 14

DR Fred Kirchhoff 1/8/81
CHK R.K Swab 1-13-81
APP E.M. Altomare 1/30/81

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LOC B | A | NO 108-1064 | REV A

SHEET 1 OF 8

NAME CONNECTOR, MT/MTA, CARD EDGE

3.3. Ratings

A. Current/Voltage: 250 vac at 5 amperes maximum, MT; and 5 amperes maximum, MTA

B. Operating Temperature: -55° to 105°C

3.4. Performance and Test Description

Connector assemblies 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 and AMP Spec 114-1020.	Visual, dimensional and functional per applicable inspection plan.
	ELECTRICAL	
Dielectric Withstanding Voltage	2.2 kvac for MT and 1.25 kvac for MTA dielectric withstanding voltage, one minute hold.	Test between adjacent contacts of unmated connector assemblies; AMP Spec 109-29-1.
Insulation Resistance	5000 megohms minimum initial.	Test between adjacent contacts of unmated connector assemblies; AMP Spec 109-28-4.
Termination Resistance, Specified Current	Wire Size, AWG / Test Current, amperes / Resistance, milliohms maximum initial: MT 18 / 3.0 / 4.0; MTA 18 / 3.0 / 6.0	Measure potential drop of mated contacts assembled in housing, see Figure 5 and 6; AMP Spec 109-25, calculate resistance.
Temperature Rise vs Current (a)	Temperature rise, see Figure 2 and 3; termination resistance, specified current.	T-rise at rated current; AMP Spec 109-45.
Termination Resistance, Dry Circuit	4.0 milliohms maximum initial for MT; and 6.5 milliohms maximum initial for MTA.	Subject mated contacts assembled in housing to 50 mv open circuit at 100 ma maximum, see Figure 5; AMP Spec 109-6, cond A.

Figure 1 (cont)

Test Description	Requirement	Procedure
Current Cycling	Temperature rise vs current; termination resistance, specified current.	Current cycle, 30 minutes "ON" - 15 minutes "OFF" at 125% specified current; AMP Spec 109-51, method 3, cond B.
MECHANICAL		
Durability	6.0 milliohms maximum termination resistance, dry circuit for MT and 7.0 for MTA.	Mate and unmate connector assemblies for 25 cycles; mount appropriate connector half in panel and printed circuit test board in free floating test fixture at a rate of 0.5 inch/minute; AMP Spec 109-27.
ENVIRONMENTAL		
Thermal Shock (b)	Dielectric withstanding voltage; 7.0 milliohms maximum termination resistance, dry circuit for MT; and 10.0 for MTA.	Subject mated connectors to 25 cycles between -55° and 85°C; AMP Spec 109-22.
Temperature-Humidity Cycling	1000 megohms minimum final insulation resistance; 6.0 milliohms maximum termination resistance, dry circuit for MT; and 10.0 for MTA.	Subject mated connectors to 10 temperature-humidity cycles between 25° and 65°C at 95% RH; AMP Spec 109-23, method III, cond B, with low frequency vibration and cold shock at -10°C.

(a) Maximum rated current that can be carried by this product is limited by maximum operating temperature of housings, which is 105°C, and temperature rise of contacts, which is 30°C. Variables which shall be considered for each application are: wire size, connector size, contact material, and ambient temperature.

(b) Shall remain mated and show no evidence of cracking or chipping.

Figure 1 (end)

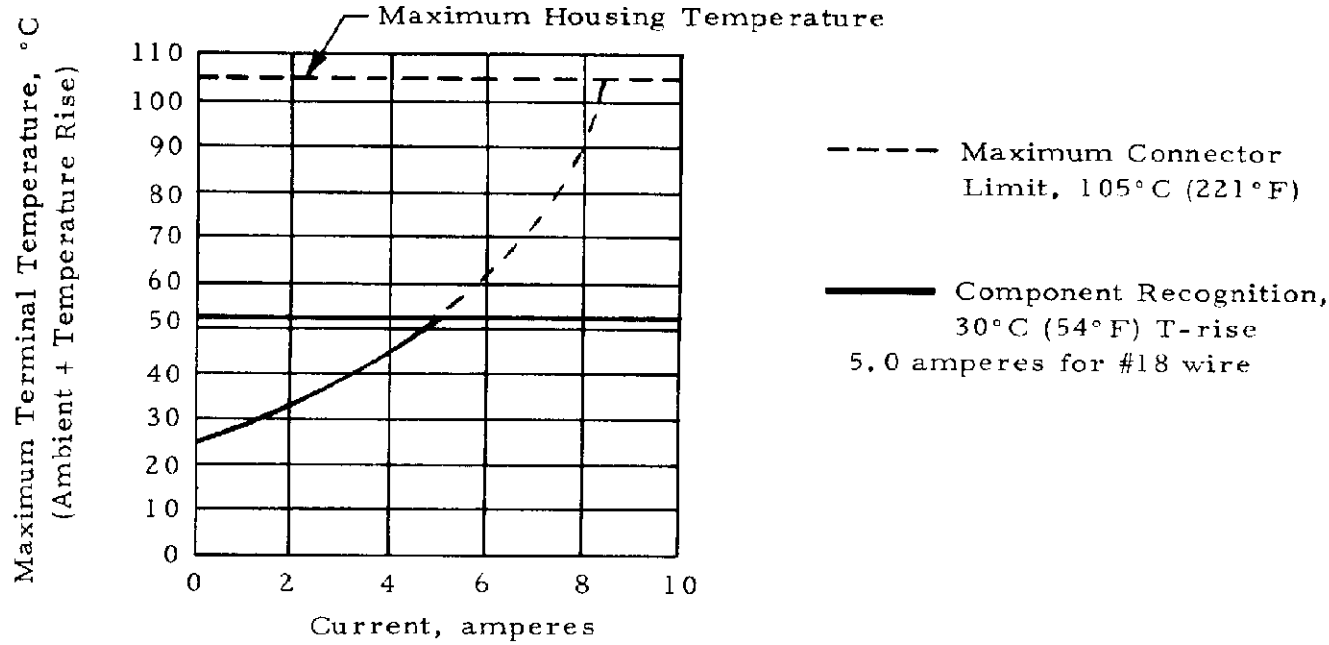


Figure 2

Terminal Temperature vs Current/Circuit
8 Circuit MTA Assembly

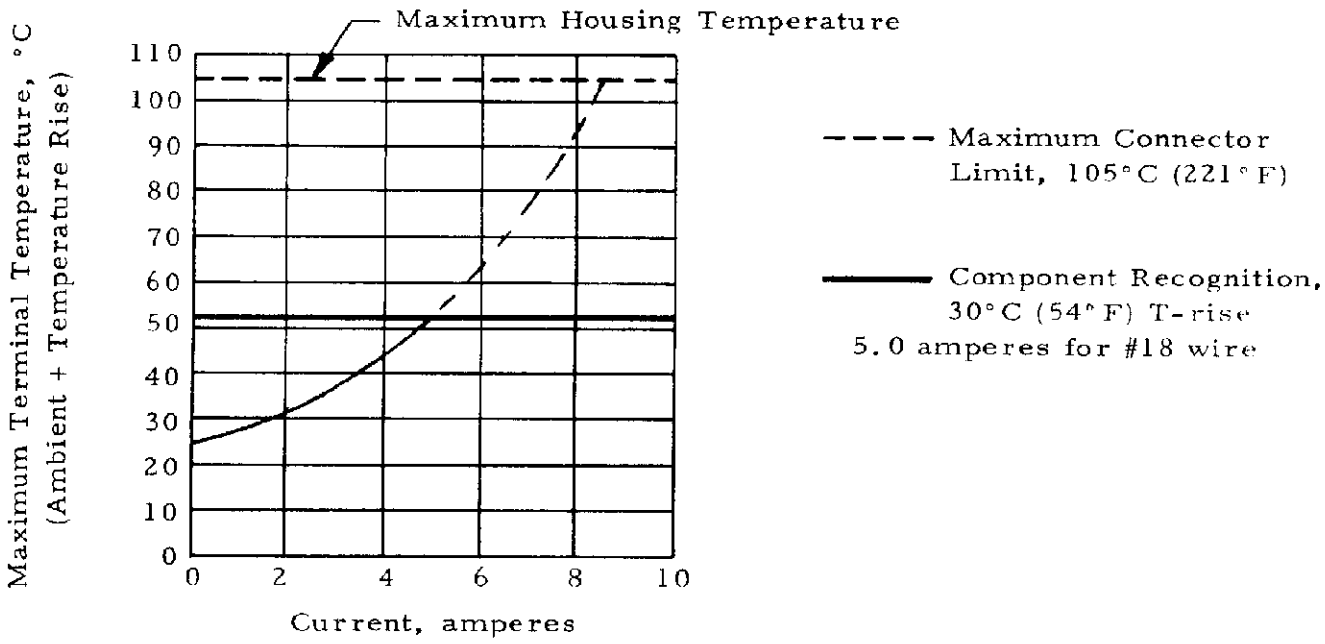


Figure 3

Terminal Temperature vs Current/
Circuit 6 Circuit MT Assembly

AMP | AMP INCORPORATED Harrisburg, Pa.			SHEET 4 OF 8
LOC B	A	NO 108-1064	REV A
NAME CONNECTOR, MT/MTA, CARD EDGE			

3.6. Connector Tests and Sequences

Test or Examination	Test Group (a)				
	1	2	3	4	5
	Test Sequence (b)				
Examination of Product	1				
Dielectric Withstanding Voltage				4	
Insulation Resistance					2, 5
Termination Resistance, Specified Current		2, 5			
Temperature Rise vs Current		1, 4			
Termination Resistance, Dry Circuit			1, 3	1, 3	1, 4
Current Cycling		3			
Durability			2		
Thermal Shock				2	
Temperature-Humidity Cycling					3

(a) See Para 4.1.A.
(b) Numbers indicate sequence in which tests are performed.

Figure 4

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Sample Selection

Connector housings and contacts shall be prepared in accordance with applicable Instruction Sheets. They shall be selected at random from current production. Test group 1 shall consist of 1 connector assembly which is representative of the entire lot being tested. Test groups 2 through 5 shall consist of 4 connector assemblies per group. All wires on the MTA contacts shall be applied in accordance with AMP Specification 114-1020. Printed circuit test boards shall be fabricated as indicated in Figure 7.

B. Test Sequence

Qualification inspection shall be verified by testing samples as specified in Figure 4.

C. Acceptance

(1) Requirements put on test samples, as indicated in the requirements portion of Figure 1, exist as either the upper or lower statistical tolerance limit (95% confidence, 99% reliability). 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 and samples resubmitted for qualification.

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.

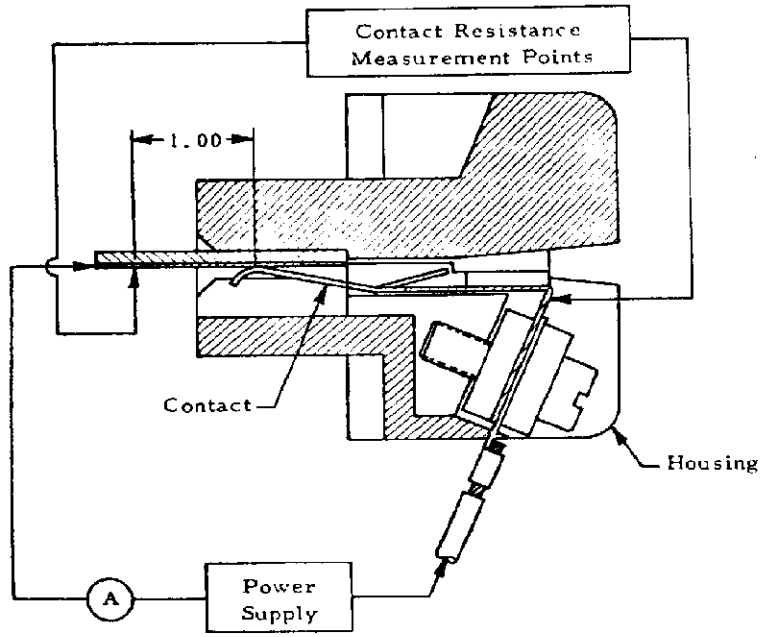


Figure 5
Termination Resistance Measurement Points, MT

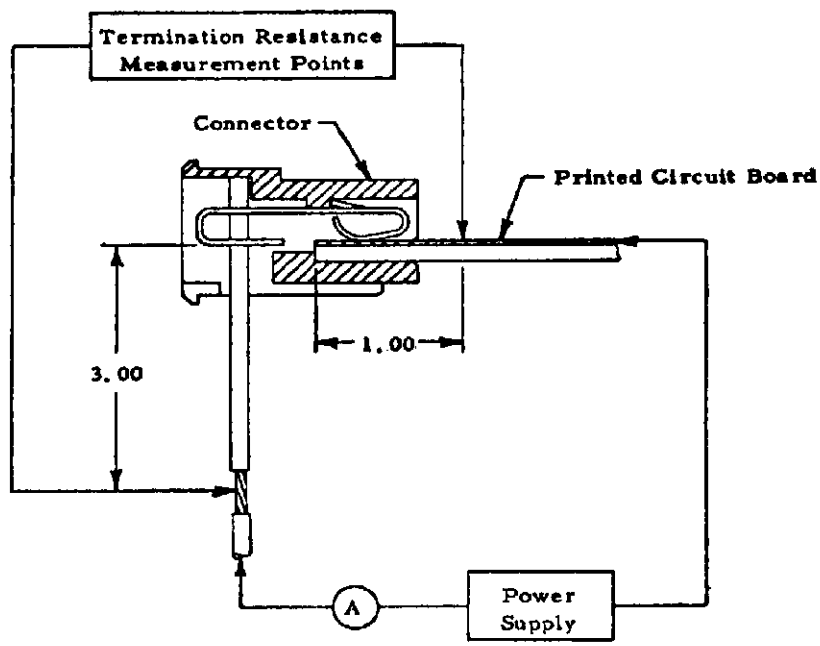
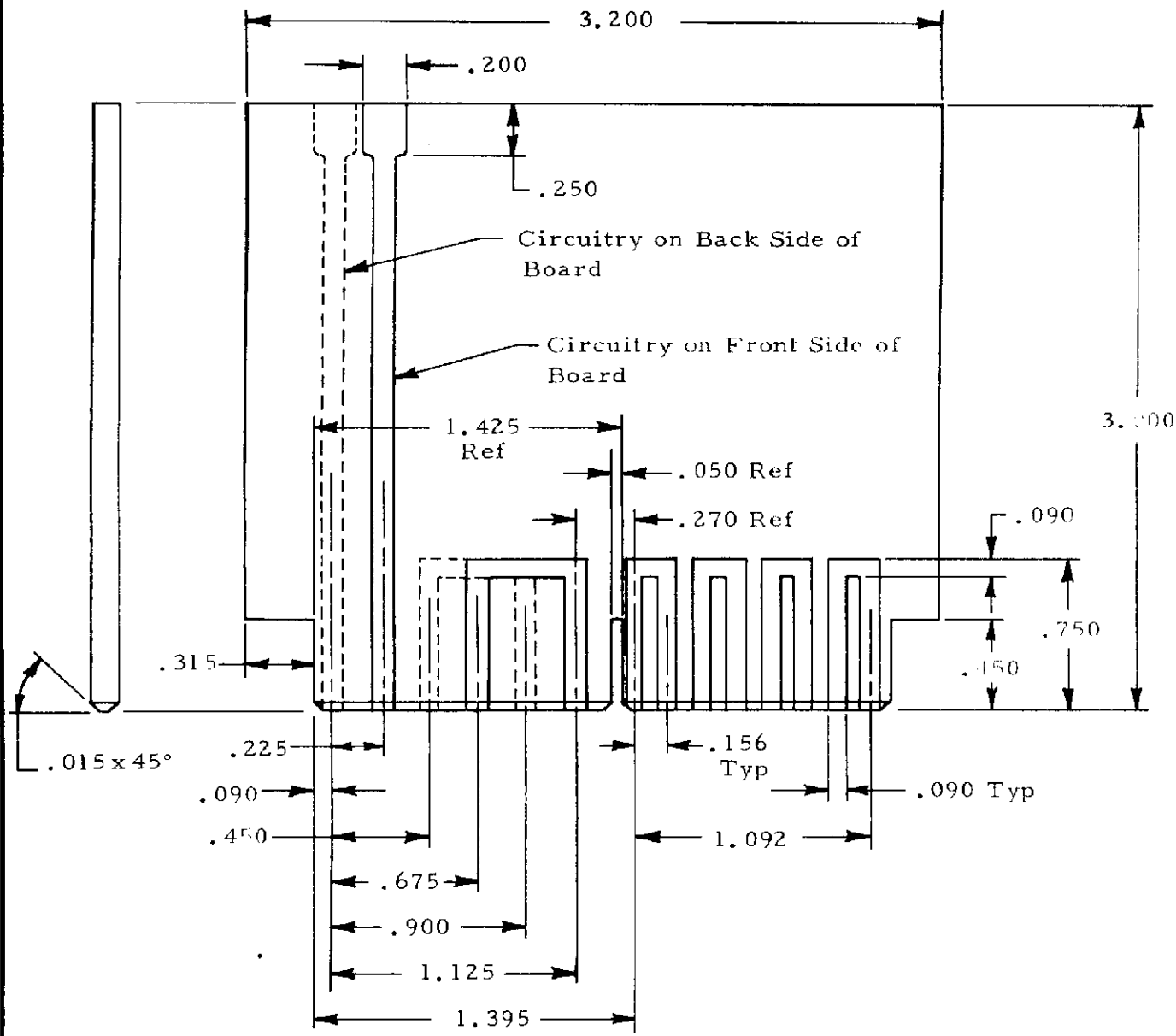


Figure 6
Termination Resistance Measurement Points, MTA

SHEET 7 OF 8	AMP	AMP INCORPORATED Harrisburg, Pa.	
	LOC B	A	NO 108-1064 REV A
NAME CONNECTOR, MT/MTA CARD EDGE			



Note: Printed circuit board, .062 thick, type G-10, 2 ounce copper circuitry, tin plated.

Figure 7

Printed Circuit Test Board

AMP | AMP INCORPORATED Harrisburg, Pa.			SHEET 8 OF 8
LOC B	A	NO 108-1064	REV A
NAME CONNECTOR, MT/MTA CARD EDGE			