
Connector, AMPLIMITE*, .050 Series, Stacked

1. SCOPE**1.1. Content**

This specification covers performance, tests and quality requirements for AMPLIMITE* .050 series board mounted stacked receptacle connectors.

1.2. Qualification

When tests are performed on the subject product line, 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. Unless otherwise specified, the latest edition of the document applies. 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 Documents

- 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. Corporate Bulletin 401-76: Cross-reference between AMP Test Specifications and Government or Commercial Documents
- D. 108-1228: Product Specification
- E. 114-40029: Application Specification
- F. 501-155-1: Qualification Test Report

3. REQUIREMENTS**3.1. Design and Construction**

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

3.2. Materials

- A. Case: Aluminum
- B. Contacts: Phosphor bronze, gold plating in mating area, tin-lead plating in solder area, all over nickel plating
- C. Die castings: Zinc, nickel plating over copper on lower connector, tin plating over copper on upper connector
- D. Housings: Liquid crystal polymer, black, UL94V-0
- E. Shells: Steel, bright tin plating over copper

All Para Revised EC 0410-0207-97, BAB

3.3. Ratings

- A. Voltage: 30 volts direct current per UL and CSA
- B. Current: Signal application only
 - (1) Lower connector: .5 ampere at 30°C maximum temperature rise, 2 paired circuits, middle position energized
 - (2) Upper connector: .4 ampere at 30°C maximum temperature rise, 1 paired circuit, middle position energized
- C. Temperature: -55 to 105°C

3.4. Performance and Test Description

Product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions per AMP Specification 109-1.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of product.	Meets requirements of product drawing and AMP Spec 114-40029.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Termination resistance.	25 milliohms maximum for lower connector. 30 milliohms maximum for upper connector.	AMP 109-6-1. Subject mated contacts assembled in housing to 50 mv maximum open circuit at 100 ma maximum. See Figure 3.
Capacitance.	3 picofarads maximum.	AMP Spec 109-47, Condition E. Test between adjacent circuits of unmated samples.
MECHANICAL		
Vibration, random.	No discontinuities of 1 microsecond or longer duration. See Note.	AMP Spec 109-21-5. Subject mated samples to 7.56 G's rms. 20 minutes in each of 3 mutually perpendicular planes. See Figure 4.
Physical shock.	No discontinuities of 1 microsecond or longer duration. See Note.	AMP Spec 109-26-1, except 30 G's. Subject mated samples to 30 G's half-sine shock pulses of 11 milliseconds duration. 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks. See Figure 4.

Figure 1 (cont)

Test Description	Requirement	Procedure
Durability.	See Note.	AMP Spec 109-27. Mate and unmate samples without locking latches for 500 cycles at maximum rate of 800 cycles per hour.
ENVIRONMENTAL		
Mixed flowing gas.	See Note.	AMP Spec 109-85-3. Subject mated samples to environmental class III for 20 days.

NOTE *Shall meet visual requirements, show no physical damage and shall meet the requirements of additional tests as specified in the Test Sequence in Figure 2.*

Figure 1 (end)

3.6. Product Qualification and Requalification Test Sequence

Test or Examination	Test Group (a)	
	1	2
	Test Sequence (b)	
Examination of product	1,7	1,6
Termination resistance	2,6	3,5
Capacitance		2(c)
Vibration	4	
Physical shock	5	
Durability	3	
Mixed flowing gas		4(d)

NOTE

- (a) *See Para 4.1.A.*
- (b) *Numbers indicate sequence in which tests are performed.*
- (c) *Unmated and unmounted.*
- (d) *Precondition samples with 10 cycles durability.*

Figure 2

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Sample Selection

Samples shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. Test group 1 shall consist of 5 mated pairs of connectors of minimum and maximum available sizes. Test group 2 shall consist of 5 connectors of any size. Thirty randomly selected contacts distributed between the 5 connectors shall be selected and identified, contact selection shall include the ends of the connector. Unless otherwise specified, these contacts shall be used for all measurements.

B. Test Sequence

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

4.2. Requalification Testing

If changes significantly affecting form, fit or function are made to the product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of the original testing sequence as determined by development/product, quality and reliability engineering.

4.3. Acceptance

Acceptance is based on verification that the product meets the requirements of Figure 1. 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. Testing to confirm corrective action is required before resubmittal.

4.4. Quality Conformance Inspection

The applicable AMP quality inspection plan will specify sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with the applicable product drawing and this specification.

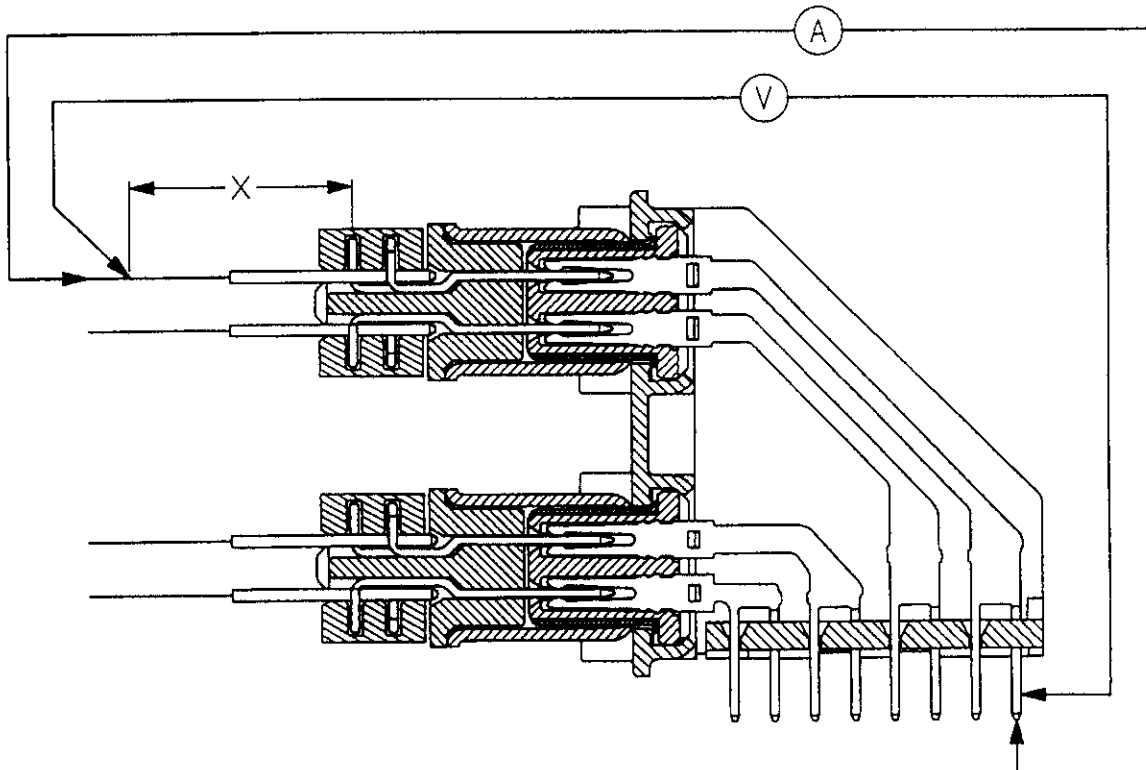


Figure 3
Termination Resistance Measurement Points

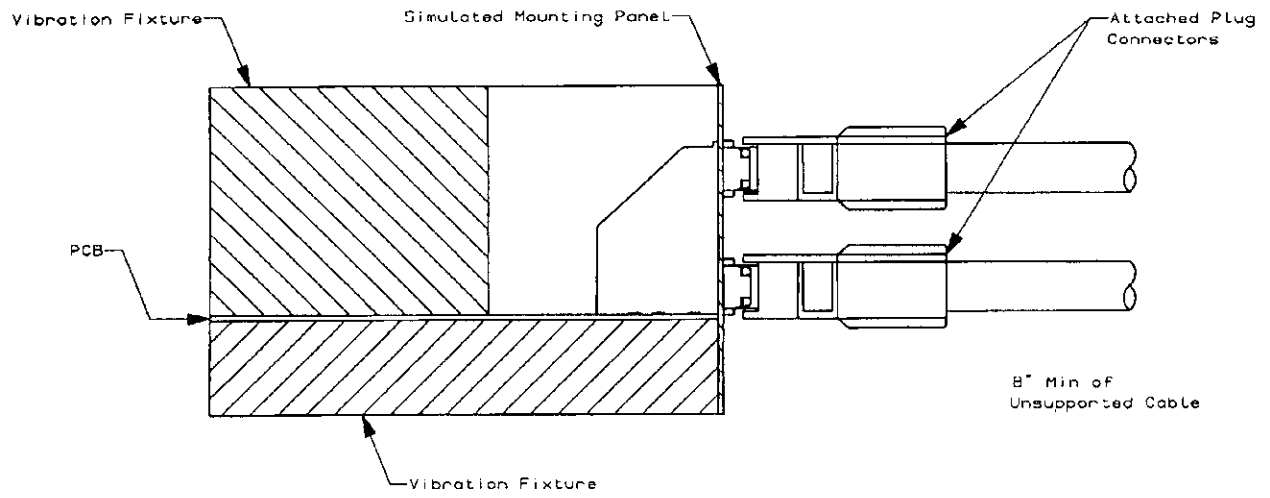


Figure 4
Vibration & Physical Shock Mounting Fixture