

**Socket, Dual Readout, Low Insertion Force, DIMM 2P****1. SCOPE****1.1. Content**

This specification covers performance, tests and quality requirements for the AMP\* Dual Readout, Low Insertion Force, Dual In-Line Memory Module (DIMM) 2P socket used to connect the DIMM module to the mother board. The socket is available in thru-hole version in 168 position Type II style. Other position sizes can be made available upon request.

**1.2. Qualification**

When tests are performed on subject product line, procedures specified in AMP 109 series specifications shall be used. All inspections shall be performed using applicable inspection plan and product drawing.

**1.3. Qualification Test Results**

Successful qualification testing on the Dual Readout, Low Insertion Force, DIMM 2P socket was completed on 11Jul97. The test file number for this testing is CTL 1795-000-001. This documentation is on file at and available from the Americas Regional Laboratory.

**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 Military or Commercial Documents
- D. 114-1115: Application Specification
- E. 501-389: Qualification Test Report

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

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

**3.2. Materials**

- A. Contact: Post or preplated copper alloy, gold plating on interface and tin-lead plating on soldertails
- B. Extractor: Insulating polymer, glass filled, UL94V-0
- C. Housing: Insulating polymer, glass filled, UL94V-0
- D. Hold downs: Metallic spring member

**3.3. Ratings**

- A. Voltage: 250 vac
- B. Current: Signal application only
- 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 114-1115.	Visual, dimensional and functional per applicable quality inspection plan.
<b>ELECTRICAL</b>		
Termination resistance.	20 milliohms maximum initial. $\Delta R$ 10 milliohms maximum increase.	AMP 109-6-6. Subject mated sockets assembled in housing to 20 mv maximum open circuit at 100 ma maximum. See Figure 3.
Insulation resistance.	10000 megohms minimum.	AMP Spec 109-28-4. Test between adjacent contacts of unmated and unmounted samples.
Dielectric withstanding voltage.	1000 vac at sea level.	AMP Spec 109-29-1. Test between adjacent contacts of unmated and unmounted samples.
<b>MECHANICAL</b>		
Solderability.	Solderable area shall have minimum of 95% solder coverage.	AMP Spec 109-11-6. Subject sockets to solderability.
Vibration, sinusoidal.	No discontinuities of 1 microsecond or longer duration. See Note.	AMP Spec 109-21-1. Subject locking style samples mated with test board to 10-55-10 Hz traversed in 1 minute. 2 hours in each of 3 mutually perpendicular planes. See Figures 4 and 5.

Figure 1 (cont)

Test Description	Requirement	Procedure
Vibration, random.	No discontinuities of 1 microsecond or longer duration. See Note.	AMP Spec 109-21-7. Subject non-locking style samples mated with test board to 5-500 Hz. 1 hour in each of 3 mutually perpendicular planes. See Figures 4 and 5.
Physical shock.	No discontinuities of 1 microsecond or longer duration. See Note.	AMP Spec 109-26-1, except 30 G's. Subject samples mated with test board 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 Figures 4 and 5.
Durability.	See Note.	AMP Spec 109-27. Mate and unmate samples with test board for 25 cycles at maximum rate of 600 cycles per hour.
Mating force.	3 ounces per contact maximum.	AMP Spec 109-42, Condition A. Measure force necessary to mate samples with test board at maximum rate of .5 inch per minute. See Figure 5.

## ENVIRONMENTAL

Thermal shock.	See Note.	AMP Spec 109-22. Subject unmated samples to 5 cycles between -55 and 105°C.
Humidity-temperature cycling.	See Note.	AMP Spec 109-23-3, Condition B. Subject unmated samples to 10 cycles between 25 and 65°C at 95% RH.
Temperature life.	See Note.	AMP Spec 109-43. Subject mated samples to temperature life at 85°C for 240 hours.
Mixed flowing gas.	See Note.	AMP Spec 109-85-2. Subject mated samples to environmental class II for 14 days.

**NOTE**

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

Figure 1 (end)

### 3.6. Product Qualification and Requalification Test Sequence

Test or Examination	Test Group (a)				
	1	2	3	4	5
	Test Sequence (b)				
Examination of product	1,8	1,5	1,5	1,8	1,3
Termination resistance	3,7	2,4	2,4		
Insulation resistance				2,6	
Dielectric withstanding voltage				3,7	
Solderability					2
Vibration, sinusoidal	5(d)				
Vibration, random	5(e)				
Physical shock	6				
Durability	4				
Mating force	2				
Thermal shock				4	
Humidity-temperature cycling				5	
Temperature life		3(c)			
Mixed flowing gas			3(c)		

**NOTE**

- (a) See Para 4.1.A.  
 (b) Numbers indicate sequence in which tests are performed.  
 (c) Precondition samples with 5 cycles durability.  
 (d) Locking module extractor style only.  
 (e) Non-locking module extractor style only.

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. All test groups shall each consist of a minimum of 5 samples.

#### 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 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

Applicable AMP quality 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.

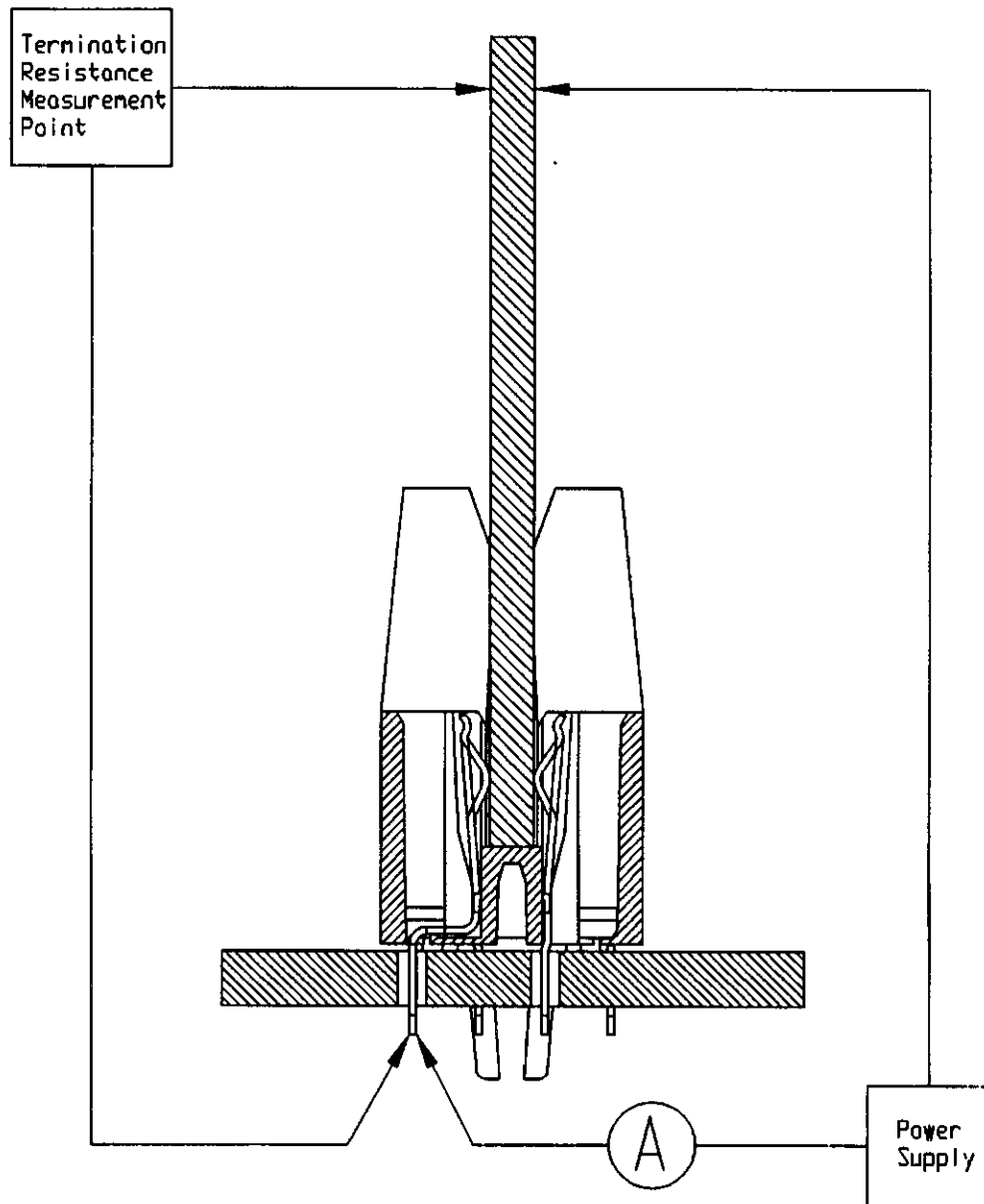


Figure 3  
Termination Resistance Measurement Points

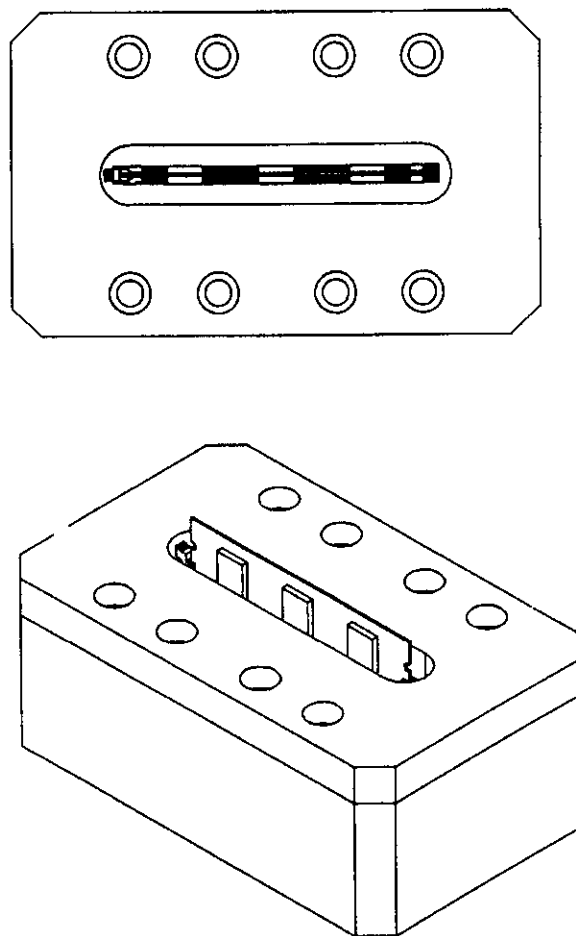
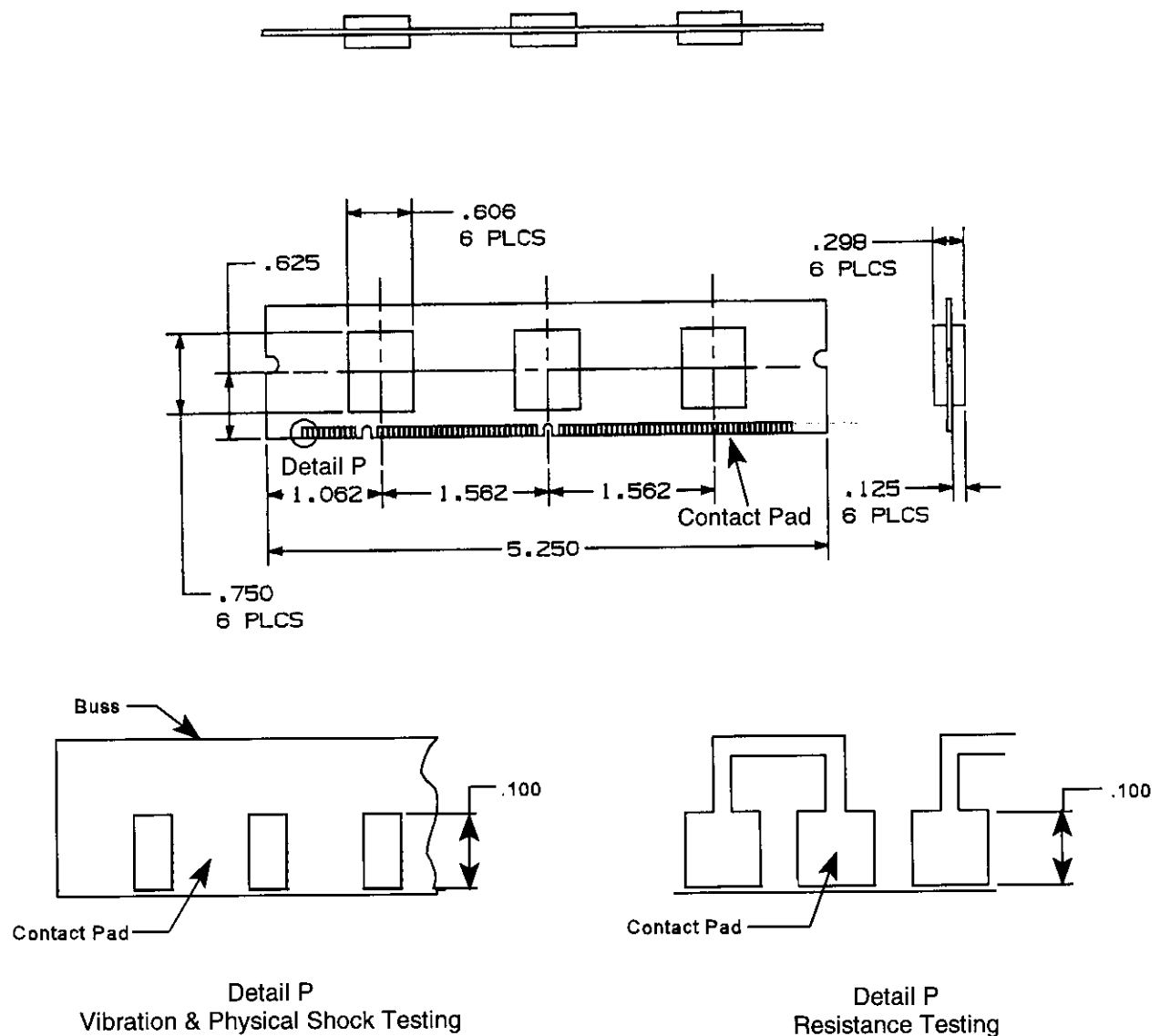


Figure 4  
Suggested Fixturing For Vibration & Physical Shock



**NOTE**

- (a) Blocks shall be aluminum.
- (b) Test board shall be per JEDEC STD M0-161 except  $.050 \pm .001$  inch thick across contact pads.
- (c) Attach aluminum blocks to test board using epoxy per above dimensions.
- (d) Material shall be laminated plastic sheet, copper clad  $\frac{1}{2}$  ounce 2 sides, Type FR4 Class 1.
- (e) Plating shall be underplate overall with .000050 inch minimum thick nickel, overplate contact pads with .000030 inch minimum thick gold, overplate other than contact pads with .000100 to .000200 inch thick tin-lead.

Figure 5  
Test Module