

**Socket, 144 Position Surface Mount 8 Byte SO DIMM, Ultra High****1. SCOPE****1.1. Content**

This specification covers performance, tests and quality requirements for the AMP\* 144 position surface mount 8 byte Small Outline (SO) Dual In-Line Memory Module (DIMM) Ultra High socket used to connect the SO DIMM module to the motherboard.

**1.2. Qualification**

When tests are performed on the subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

**1.3. Qualification Test Results**

Successful qualification testing on the subject product line was completed on 08Aug97. The test file number for this testing is CTL 4320-001-001. 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
- C. Corporate Bulletin 401-76: Cross-reference between AMP Test Specifications and Government or Commercial Documents
- D. 114-1114: Application Specification
- E. 501-386-1: 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. Contact: Phosphor bronze, gold plating on contact interface and tin-lead plating on soldertail, all over nickel plating
- B. Housing: Glass filled insulating polymer, UL94V-0
- C. Latches: Stainless steel, tin-lead over nickel plating

**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 114-1114.	Visual, dimensional and functional per applicable quality inspection plan.
<b>ELECTRICAL</b>		
Termination resistance.	30 milliohms maximum initial. $\Delta R$ 10 milliohms maximum increase.	AMP Spec 109-6-6. Subject mated contacts 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. 1 minute hold with no breakdown or flashover.	AMP Spec 109-29-1. Test between adjacent contacts of unmated and unmounted samples.
<b>MECHANICAL</b>		
Vibration, random.	No discontinuities of 1 microsecond or longer duration. See Note.	AMP Spec 109-21-7. Subject samples mated with test board module to 3.13 G's rms between 5-500 Hz. 15 minutes in each of 3 mutually perpendicular planes. See Figures 4 and 5.
Mechanical shock, specified pulse.	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 module 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.

Figure 1 (cont)

Test Description	Requirement	Procedure
Durability.	See Note.	AMP Spec 109-27. Mate and unmate samples for 25 cycles at a maximum rate of 600 cycles per hour.
<b>ENVIRONMENTAL</b>		
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.

**NOTE** *Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown 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	1,8
Termination resistance	2,6	
Insulation resistance		2,6
Dielectric withstanding voltage		3,7
Vibration	4	
Mechanical shock	5	
Durability	3	
Thermal shock		4
Humidity-temperature cycling		5

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

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 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 shall 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.

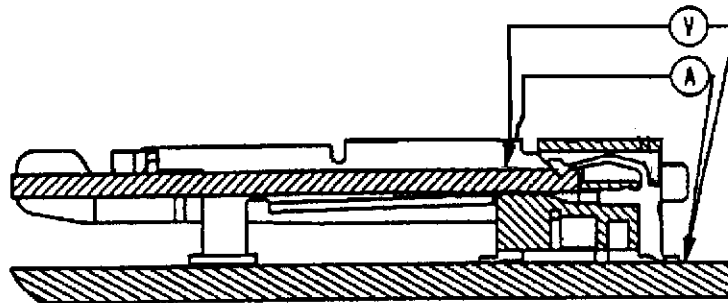


Figure 3  
Termination Resistance Measurement Points

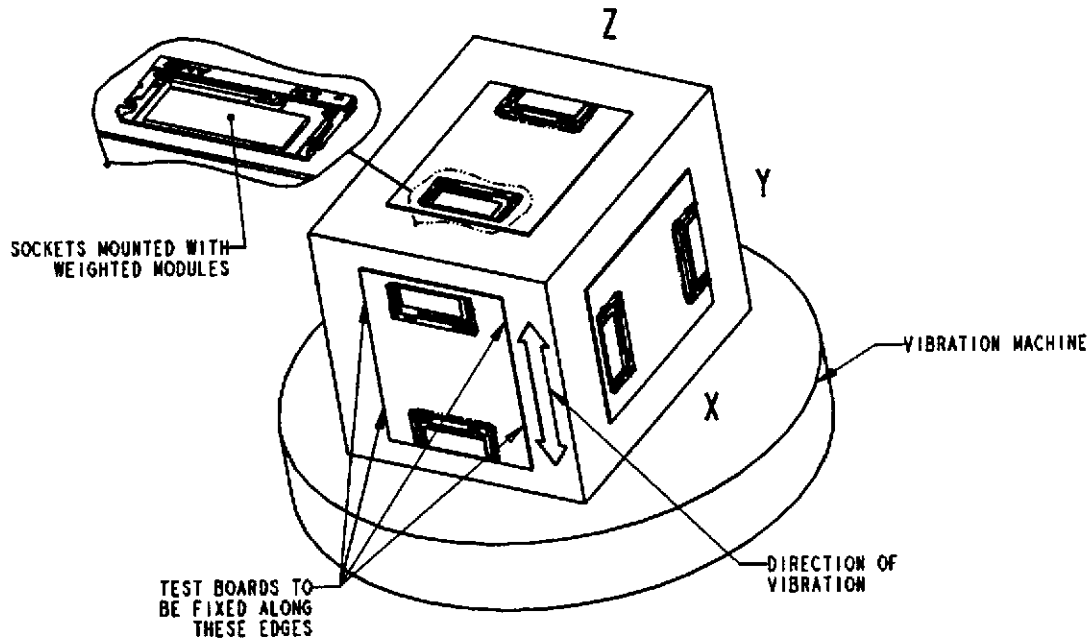
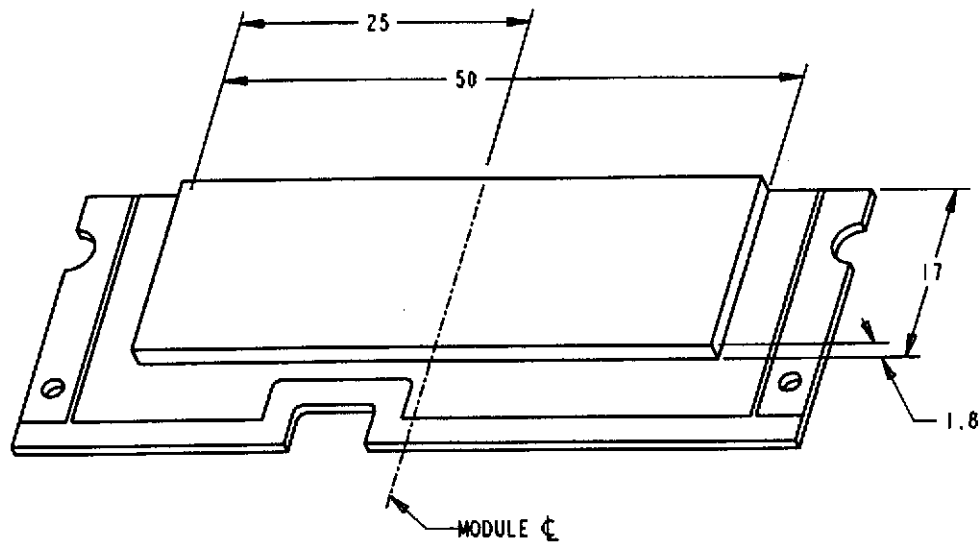


Figure 4  
Vibration & Mechanical Shock Mounting Fixture



**NOTE**

- (a) Weights of approximately 12 grams shall be steel per the above dimensions
- (b) Module board thickness shall be  $1 \pm .030$ .
- (c) Module board drawing number 97-4320-7.
- (d) Weights shall be attached to the test board using epoxy per the above dimensions.
- (e) All dimensions are in millimeters.

Figure 5  
Vibration & Mechanical Shock Test Module