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**Socket, 144 Position Surface Mount 8 Byte SO DIMM**

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**1. SCOPE**

1.1. Content

This specification covers performance, tests and quality requirements for the Tyco Electronics 144 position surface mount 8 byte Small Outline (SO) Dual In-Line Memory Module (DIMM) 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 06Jun97 and 08Oct01. The test file numbers for this testing are CTL 4320-001 and CTL B020298-001. This documentation is on file at and available from the Engineering Assurance Product Test 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. Tyco Electronics Documents

- 109-197: AMP Test Specifications vs EIA and IEC Test Methods
- 114-1114: Application Specification
- 501-386: Qualification Test Report

2.2. Commercial Standards

- EIA-364: Electrical Connector/Socket Test Procedures Including Environmental Classifications
- EIA-368: Surface Mount Solderability Test

**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

Materials used in the construction of this product shall be as specified on the applicable product drawing.

3.3. Ratings

- Voltage: 250 volts AC
- Current: Signal application only
- 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 EIA-364.

3.5. Test Requirements and Procedures Summary

| Test Description                 | Requirement  | Procedure  |
|----------------------------------|--|--|
| Initial examination of product.  | Meets requirements of product drawing.                                       | EIA-364-18.<br>Visual and dimensional (C of C) inspection per product drawing.   |
| Final examination of product.    | Meets visual requirements.   | EIA-364-18.<br>Visual inspection.  |
| ELECTRICAL                       |  |  |
| Termination resistance.          | 30 milliohms maximum initial.<br>$\Delta R$ 10 milliohms maximum increase.   | EIA-364-23.<br>Subject mated contacts assembled in housing to 20 mv maximum open circuit at 100 ma maximum. See Figure 3.  |
| Insulation resistance.           | 10000 megohms minimum.   | EIA-364-21.<br>Test between adjacent contacts of unmated and unmounted specimens.  |
| Dielectric withstanding voltage. | 1000 volts AC at sea level.<br>1 minute hold with no breakdown or flashover. | EIA-364-20,<br>Condition I.<br>Test between adjacent contacts of unmated and unmounted specimens.  |
| MECHANICAL                       |  |  |
| Solderability.                   | Solderable area shall have minimum of 95% solder coverage.                   | EIA-638.<br>Subject specimens to solderability.  |
| Vibration, random.               | No discontinuities of 1 microsecond or longer duration.<br>See Note.         | EIA-364-28,<br>Test Condition VII,<br>Condition D.<br>Subject specimens mated with test board module to 3.10 G's rms between 20-500 Hz. 15 minutes in each of 3 mutually perpendicular planes.<br>See Figures 4 and 5. |

Figure 1 (cont)

| Test Description                            | Requirement  | Procedure   |
|---|--|---|
| Mechanical shock, specified pulse.          | No discontinuities of 1 microsecond or longer duration.<br>See Note. | EIA-364-27,<br>Method H.<br>Subject specimens 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.<br>See Figures 4 and 5. |
| Durability.                                 | See Note.  | EIA-364-9.<br>Mate and unmate specimens for 25 cycles at a maximum rate of 600 cycles per hour.   |
| ENVIRONMENTAL                               |  |   |
| Thermal shock.                              | See Note.  | EIA-364-32,<br>Test Condition VII.<br>Subject unmated specimens to 5 cycles between -55 and 105°C.  |
| Humidity-temperature cycling.               | See Note.  | EIA-364-31,<br>Method III.<br>Subject unmated specimens to 10 cycles between 25 and 65°C at 95% RH.   |
| Temperature life.                           | See Note.  | EIA-364-17,<br>Method A,<br>Test Condition 4.<br>Subject mated specimens to temperature life at 105°C for 315 hours.  |
| Mixed flowing gas.                          | See Note.  | EIA-364-65,<br>Class II.<br>Subject mated specimens to environmental class II for 14 days.  |
| Mixed flowing gas (22.5 degree connectors). | See Note.  | EIA-364-65,<br>Class IIA.<br>Subject mated specimens to environmental class IIA for 14 days.  |

**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    | 3    | 4   | 5 |
|                                  | Test Sequence (b) |      |      |     |   |
| I Initial examination of product | 1                 | 1    | 1    | 1   | 1 |
| Termination resistance           | 2,6               | 2,4  | 2,4  |     |   |
| Insulation resistance            |                   |      |      | 2,6 |   |
| Dielectric withstanding voltage  |                   |      |      | 3,7 |   |
| Solderability                    |                   |      |      |     | 2 |
| Vibration                        | 4                 |      |      |     |   |
| Mechanical shock                 | 5                 |      |      |     |   |
| Durability                       | 3                 |      |      |     |   |
| Thermal shock                    |                   |      |      | 4   |   |
| Humidity-temperature cycling     |                   |      |      | 5   |   |
| Temperature life                 |                   | 3(c) |      |     |   |
| Mixed flowing gas                |                   |      | 3(c) |     |   |
| I Final examination of product   | 7                 | 5    | 5    | 8   | 3 |

**NOTE**

- (a) See paragraph 4.1.A.
- (b) Numbers indicate sequence in which tests are performed.
- (c) Precondition specimens with 5 cycles durability.

Figure 2

**4. QUALITY ASSURANCE PROVISIONS**

4.1. Qualification Testing

A. Specimen Selection

Specimens shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. Test groups 1 through 4 shall each consist of 5 specimens. Test group 5 shall consist of 1 specimen.

B. Test Sequence

Qualification inspection shall be verified by testing specimens 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 specimens resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

4.4. Quality Conformance Inspection

The applicable 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.

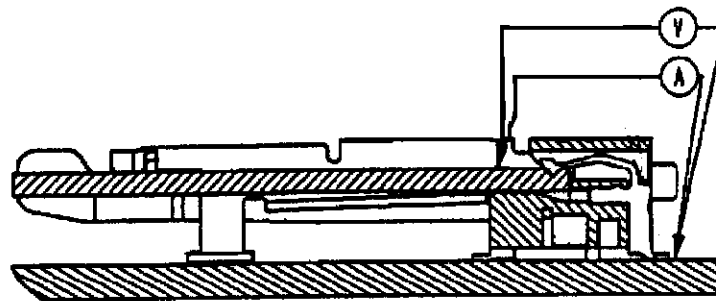


Figure 3  
Termination Resistance Measurement Points

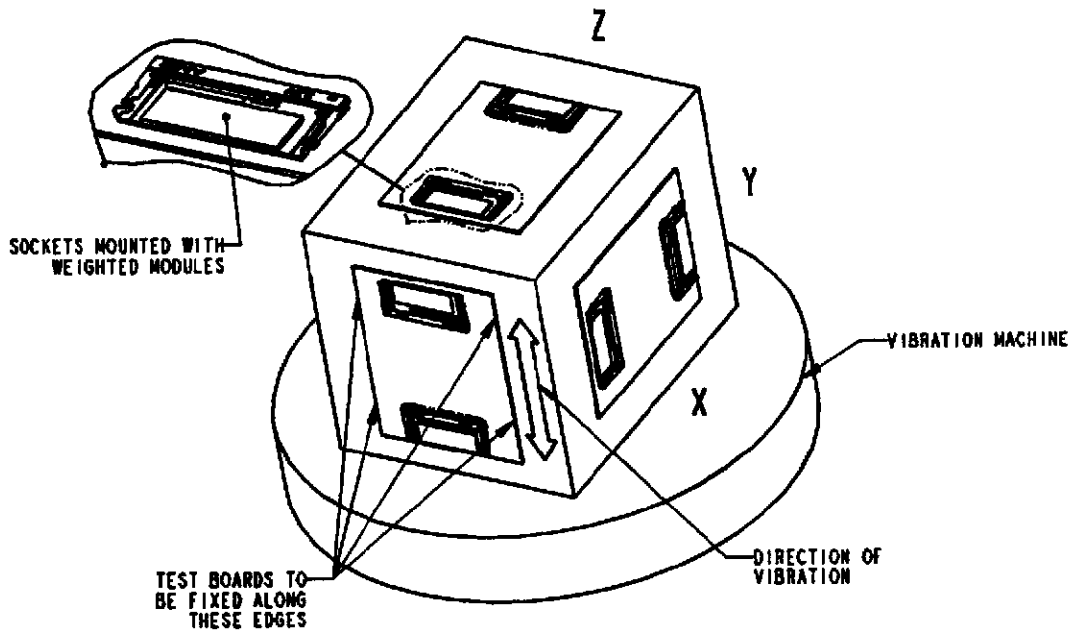
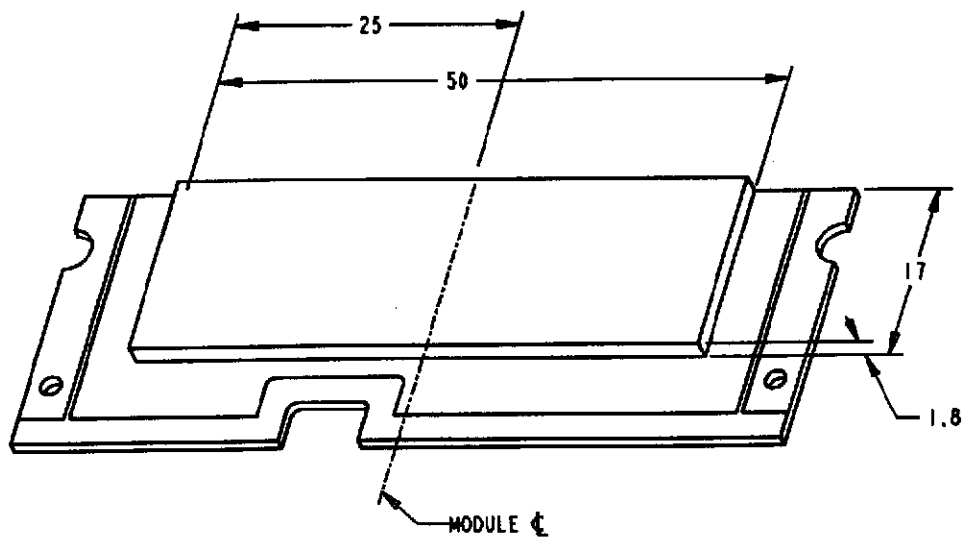


Figure 4  
Vibration & Mechanical Shock Mounting Fixture



**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