



All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters. Unless otherwise specified, dimensions have a tolerance of ± 0.13 and angles have a tolerance of $\pm 2^\circ$. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

This specification covers the requirements for application of Fully Buffered (FB) Dual In-Line Memory Module (DIMM) and DDR3 DIMM Sockets-Press Fit for main memory applications in networking equipment. The sockets are available in a 240-position with contact spacing on 1.00 mm centerlines (1-mm pitch). The sockets are designed to connect processor modules (daughterboard) to printed circuit (pc) boards (motherboard).

The socket consists of a polarized housing containing pre-installed press fit contacts. Each contact is a solid one-piece construction with a tapered lead-in press fit tine. The socket features module support towers and extractors designed to support and hold the module in the mated position, and a card slot which contains a molded-in voltage key and function key to ensure polarization with the mating daughterboard (which must be slotted to accept the keys). The socket also features alignment post(s) to aid in pc board alignment during mating, contact support frames, and molded-in circuit identification on the mating face. The sockets are designed for manual placement on the pc board.

When corresponding with TE Connectivity Personnel, use the terminology provided in this specification to facilitate your inquiries for information. Basic terms and features of this product are provided in Figure 1.

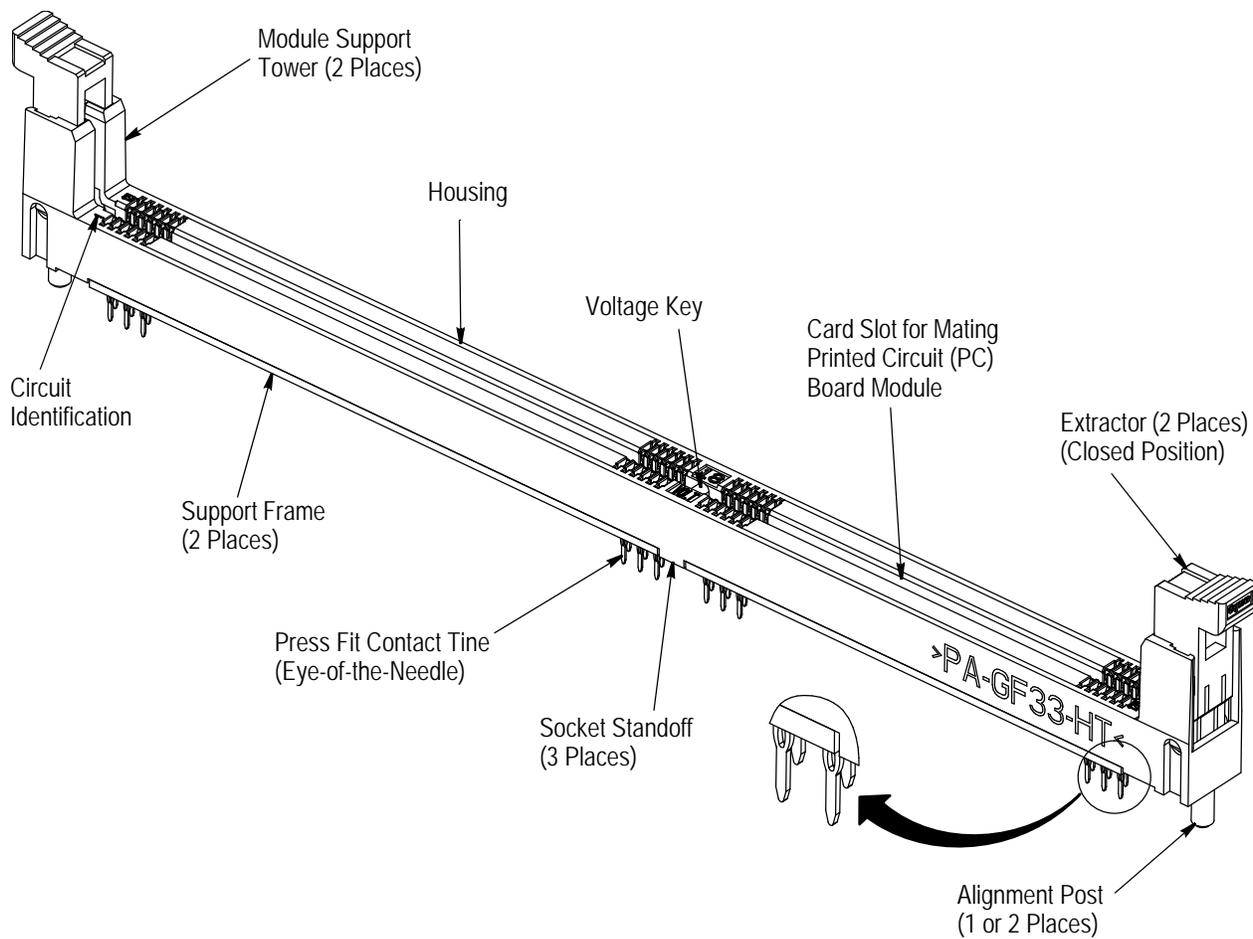


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

- Updated document to corporate requirements and new logo

2.2. Customer Assistance

Reference Product Base Part Numbers 1761623 and 2013266, and Product Code H952 are representative of FB DIMM and DDR3 DIMM Sockets-Press Fit. Use of these numbers will identify the product line and help you to obtain product and tooling information. Such information can be obtained through a local TE Representative, by visiting our website at www.te.com, or by calling PRODUCT INFORMATION or the TOOLING ASSISTANCE CENTER at the numbers at the bottom of page 1.

2.3. Drawings

Customer Drawings for product part numbers are available from the service network. If there is a conflict between the information contained in the Customer Drawings and this specification or with any other technical documentation supplied, the Customer Drawing takes preference.

2.4. Specifications

Product Specification 108-2245 provides product performance requirements and test information.

3. REQUIREMENTS

3.1. Safety

Do not stack socket packages so high that the shipping containers buckle or deform.

3.2. Special Feature

The socket supports memory capacity to 256 MB.

3.3. Limitations

Socket assemblies are designed to operate in a temperature range of -55° to 105°C [-67° to 221°F].

3.4. Material

The housing and extractors are made of high temperature nylon. The support frames are made of high temperature thermoplastic and the contacts are made of phosphor bronze.

3.5. Storage

A. Shelf Life

The sockets should remain in the shipping containers until ready for use to prevent deformation to the contacts. The sockets should be used on a first in, first out basis to avoid storage contamination that could adversely affect performance.

B. Chemical Exposure

Do not store sockets near any chemical listed below as they may cause stress corrosion cracking in the contacts.

Alkalies	Ammonia	Citrates	Phosphates	Citrates	Sulfur Compounds
Amines	Carbonates	Nitrites	Sulfur	Nitrites	Tartrates

3.6. PC Board

A. Material and Thickness

The pc board material must be glass epoxy (FR-4 or G-10). The pc board thickness shall be 1.57 +0.18 mm.

NOTE

Contact the Product Information Center at the number listed at the bottom of page 1 for suitability of other board materials and thicknesses.

B. Tolerance

Maximum allowable bow of the pc board must be 0.08 mm over each 25.4 mm of length of the socket.

C. Press Fit Contact Tine Hole Dimensions

The pc board holes for the socket contact tines must be plated through. The drilled hole size, plating types, and plating thickness will depend on application requirements. The finished hole size must be as stated to provide adequate eye-of-the-needle distortion and contact retention. See Figure 2.

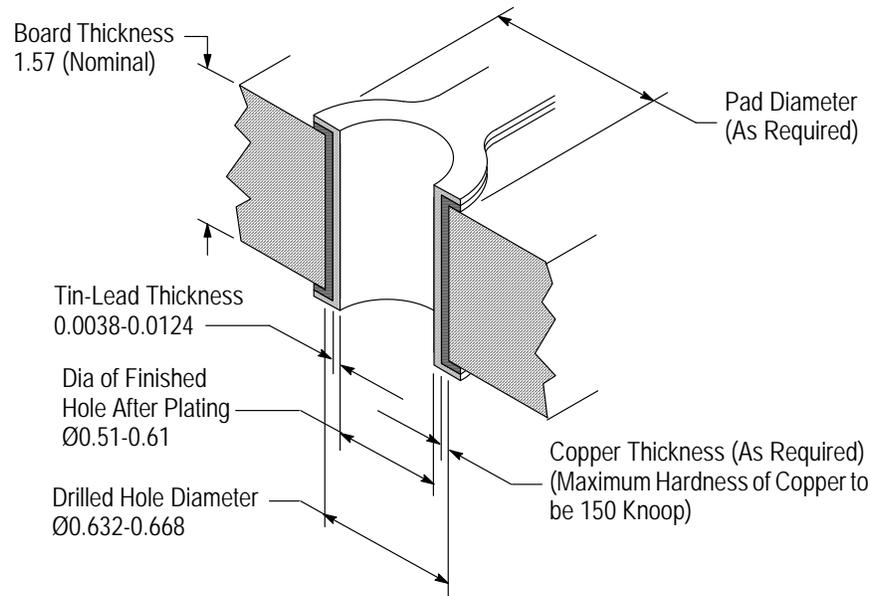
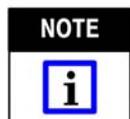


Figure 2

D. Layout (Motherboard)

The contact holes and alignment post holes in the pc board must be precisely located to ensure proper placement and optimum performance of the socket. The pc board layout dimensions and tolerances shown in Figure 3A (FB DIMM) and Figure 3B (DDR3 DIMM) must be observed when preparing pc boards for the socket styles. The layout shows the top (component) side of the board.



1 Finished hole size: 0.15 mm maximum annular ring
 Copper plating: 0.025–0.050 mm
 Tin-lead plating: 0.0038–0.0124 mm
 For PTH tin-lead plating only, finished hole tolerance may be +0.05/-0.058 mm in zone I and \pm 0.076 mm in zone II.



2 Keep out zone.



3 Hole indicated is part of the standard 240 position footprint required for the soldertail version. May be omitted for the press fit versions.



4 Hole indicated is part of the standard 240 position footprint required for the soldertail and the 1761623–2 press fit version. May be omitted for the 1761623–1 press fit version.

3.7. Socket Spacing

Care must be used to avoid interference between adjacent sockets and other components. The minimum allowable distance between sockets, measured from extractor end to extractor end, to ensure proper assembly is provided in Figure 4.

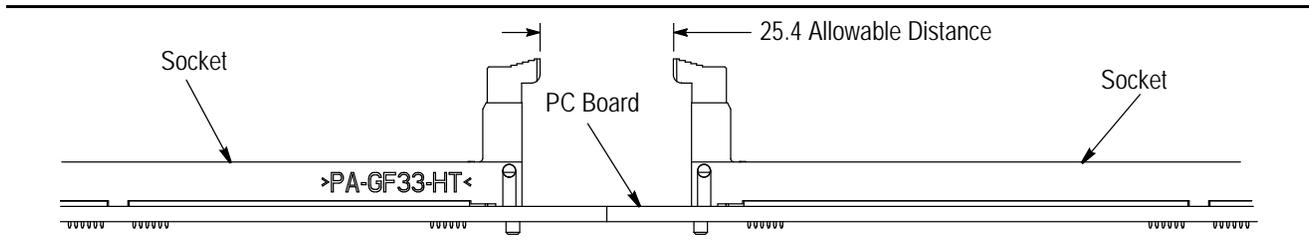


Figure 4

3.8. Socket Placement Onto PC Board

A. Initial Positioning



When placing sockets onto the pc board, make sure that the socket circuit identification number one position is aligned with the number one position pc board hole. The alignment post(s) must be aligned and started into the matching pc board holes before the press fit contact tines are pre-inserted into their respective holes. Avoid applying in-line force which could cause irreparable damage to the contact tines. The socket must be kept parallel to the full length of the pc board.

B. Final Seating

The sockets may be seated using TE or commercially available flat-rock press-in tooling. This press-in tooling may be used in application machines listed in Section 5, TOOLING.



When seating the socket, the load must be evenly applied to the assembly (top surface of the housing) to prevent deformation or damage to the contacts and/or housing.

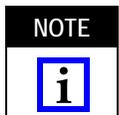
The seating force required to fully seat the socket assembly will vary depending on hole diameter and PTH plating thickness. Approximate seating force will be 3781-5338 N [850-1200 lbs].



Sockets should be handled only by the housing to avoid deformation, contamination, or damage to the contact solder tines.

3.9. Checking Installed Socket

The socket assemblies must be seated on the pc board not exceeding the dimension shown in Figure 5.



Due to the 28-ohm system impedance requirement for the Rambus channel, it is important to minimize tilt of the socket and adhere to the seating requirement.

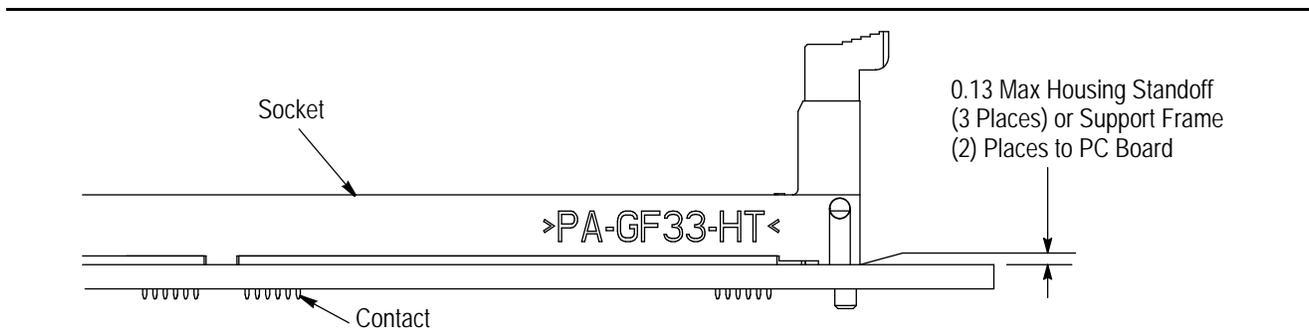
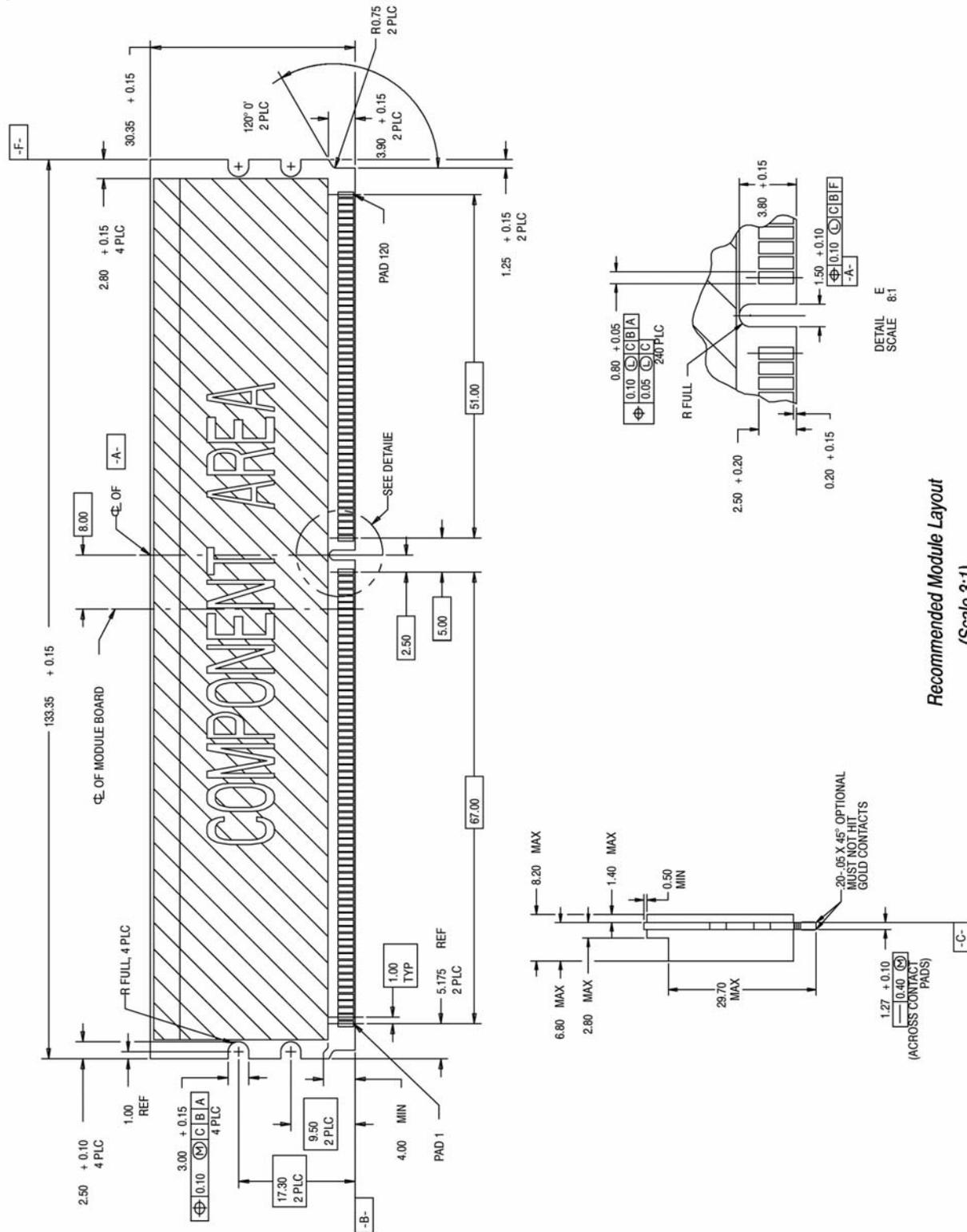


Figure 5

3.10. Daughterboard Configuration

Daughterboard configuration must be in accordance with the dimensions and tolerances provided in Figure 6A (FB DIMM) and Figure 6B (DDR3 DIMM).

6A


Recommended Module Layout
(Scale 3:1)

Refer to JEDEC Specification MO-256 for Complete Module details

Figure 6 (Cont'd)

6B

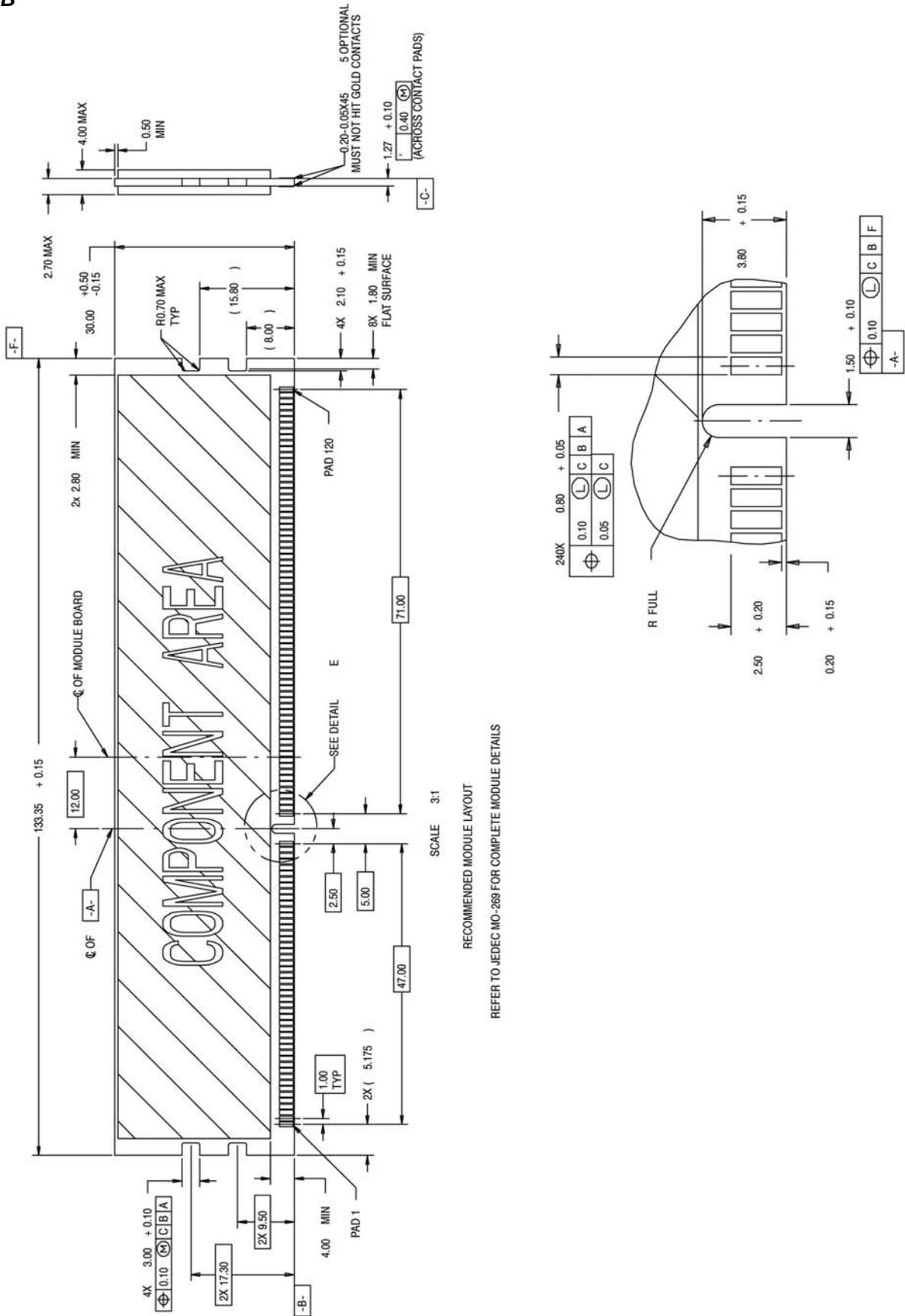


Figure 6 (End)

3.11. Processor Module Mating and Unmating



When mating or unmating module, care should be taken to prevent longitudinal rocking of the module with respect to the socket. Angles greater than 3° could cause damage to the housing or misregistration of the contacts and module circuit pads. Refer to Figure 7.

The module must be mated to the socket according to the following requirements:

1. The socket extractors must be moved to the open position. See Figure 7.
2. The keying slots of the module must align with the keys of the socket.
3. The module must be slid along the interior walls of the module support towers of the socket and into the card slot. The extractors must rotate inward until there is an audible click. The module must be fully seated, and the extractors must be in the closed position.

The module must be removed from the socket according to the following requirements:

1. The extractors must be simultaneously rotated away from the module. As the extractors rotate outward, the module must move upward out of the socket. When the extractors are fully rotated (90° away from end of housing), the module must be completely disengaged from the socket.
2. The module must be carefully slid straight out of the module support towers.

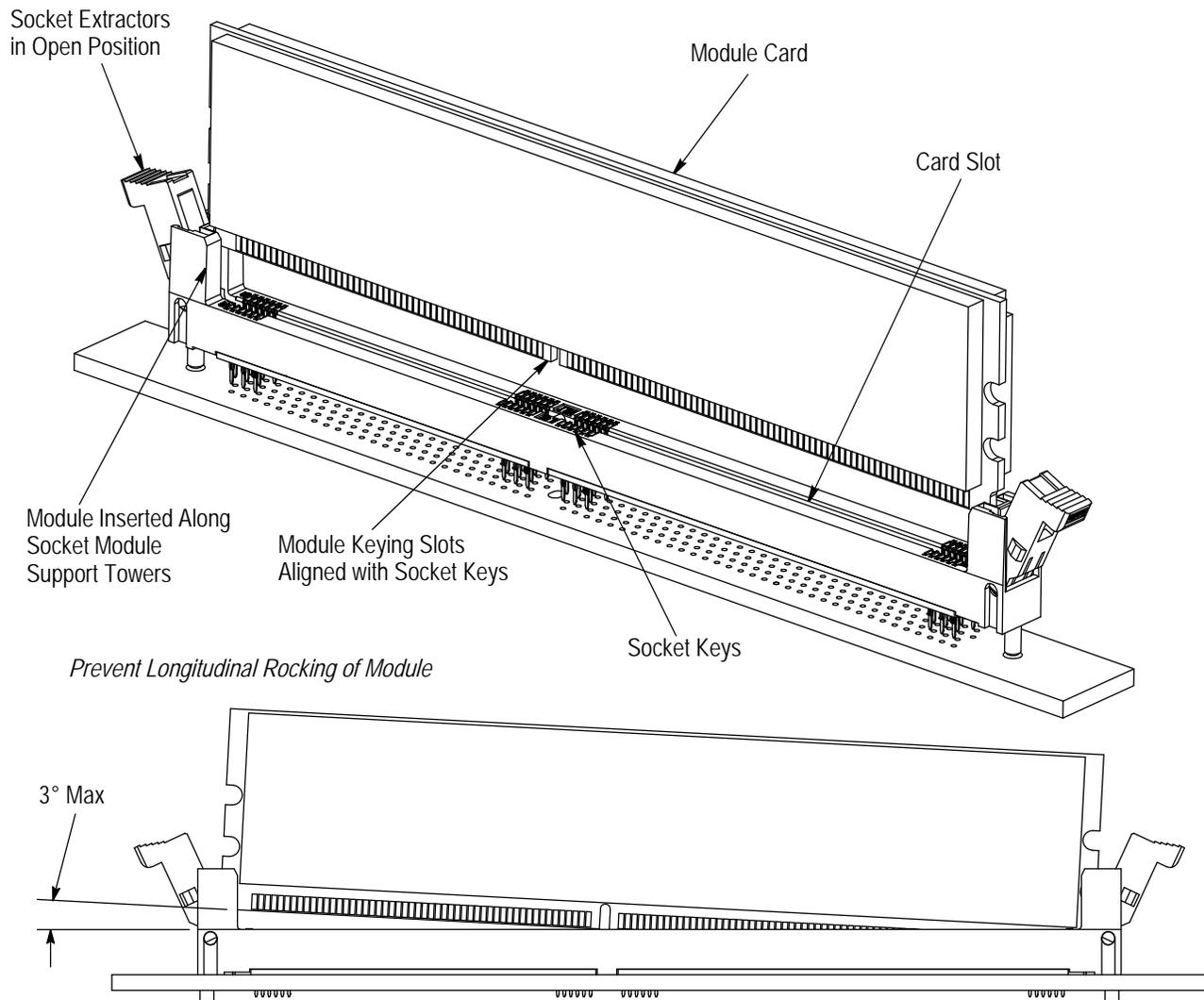


Figure 7

3.12. Removal and Repair

Damaged sockets must be removed, discarded, and replaced. The press fit socket design is a bottom load connector which enables two options for removal. The plated through holes will allow a maximum of three mating cycles (1 initial and 2 rework). All sockets that are removed must be discarded and replaced.

Option 1 - Create a push out tool to force the contacts back out of the plated through hole. If the contact tail length is significantly long and the pc board thickness is low, a flat rock tool may suffice. If not, a tool must be used, equipped with pins per the FB footprint patterns as shown in Figure 3, and of adequate strength and diameter to push the entire connector out.



Care must be taken to avoid damaging the plated through holes in the pc board. The amount of extraction force is estimated to be approximately 1/2 that of the insertion force.

Option 2 - The entire connector housing can be removed by prying it from the pc board. This will expose the rows of contacts for individual extraction.



Care must be taken to pull each contact vertically as a rolling or side force has the potential to yield permanent plated through hole damage.

4. QUALIFICATION

FB DIMM and DDR3 DIMM Sockets are Recognized by Underwriters Laboratories Inc. (UL) in File E28476.

5. TOOLING

Figure 8 provides tooling information related to the FB DIMM and DDR3 DIMM Sockets-Press Fit



TE Tool Engineers have designed machines for a variety of application requirements. For assistance in setting up prototype and production line equipment, contact TE Tool Engineering through your local TE Representative or call the Tooling Assistance Center number at the bottom of page 1.

- **Arbor Frame Assembly**

Manual arbor frame assemblies are used to exert a downward force used to apply connectors to a pc board using seating tools or flat-rock tooling.

- **PC Board Support**

A pc board support must be used to prevent bowing of the pc board during the insertion of a connector into the board. It should have flat surfaces with holes or a channel wide and deep enough to receive the contact compliant pins and other attaching hardware during installation of the connector on the pc board.

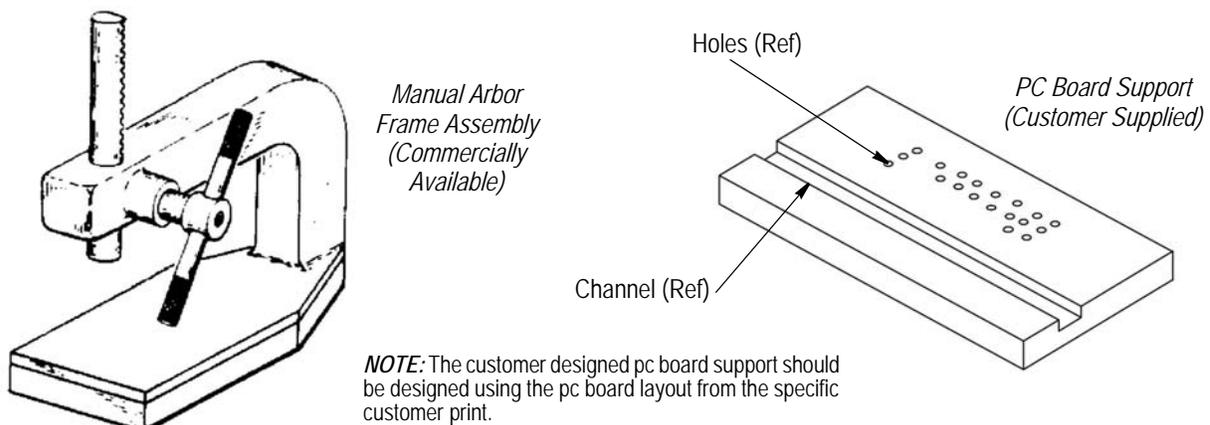


Figure 8

6. VISUAL AID

The illustration below shows a typical application of this product. This illustration should be used by production personnel to ensure a correctly applied product. Applications which DO NOT appear correct should be inspected using the information in the preceding pages of this specification and in the instructional material shipped with the product or tooling.

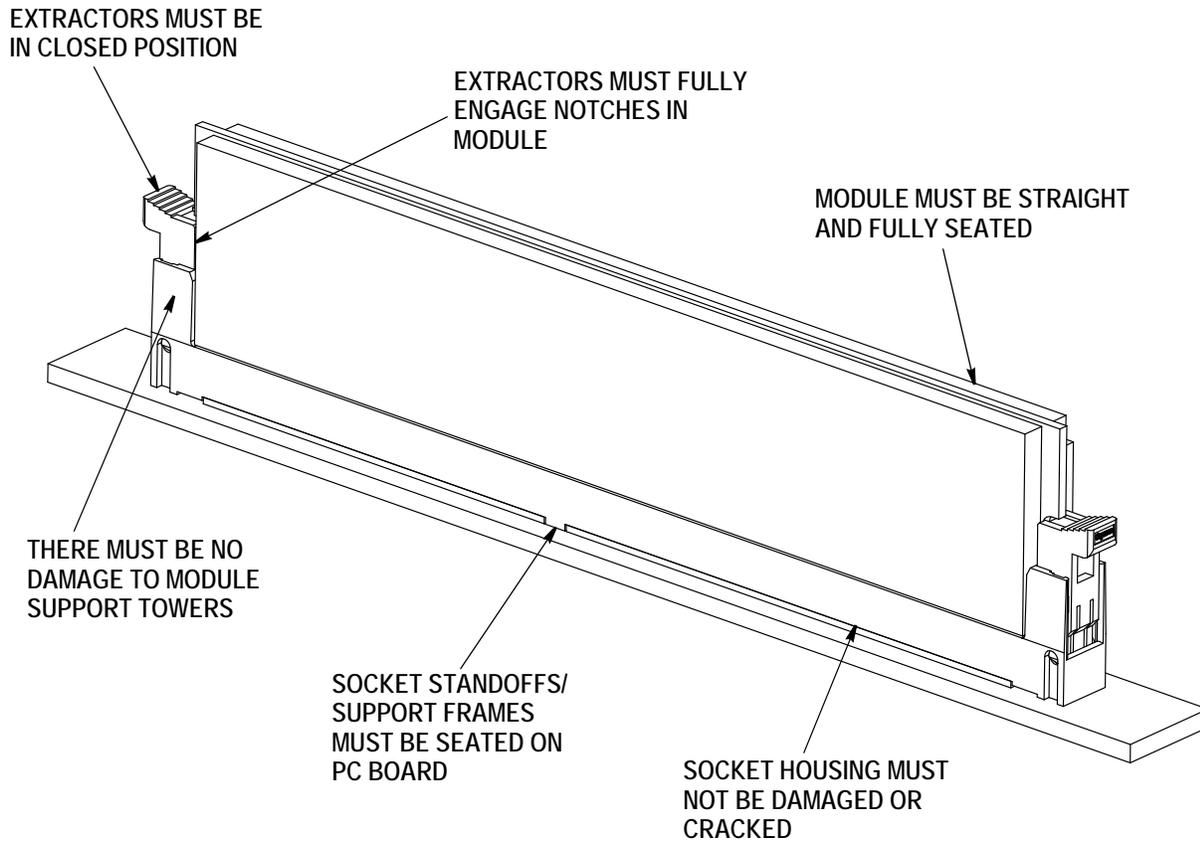


FIGURE 9. VISUAL AID