



All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters [and inches]. Unless otherwise specified, dimensions have a tolerance of ± 0.13 [$\pm .005$] 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 the Double Data Rate 2 (DDR2) Sockets with 240- and 276-positions and contact spacing on 1.00 centerlines.

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.

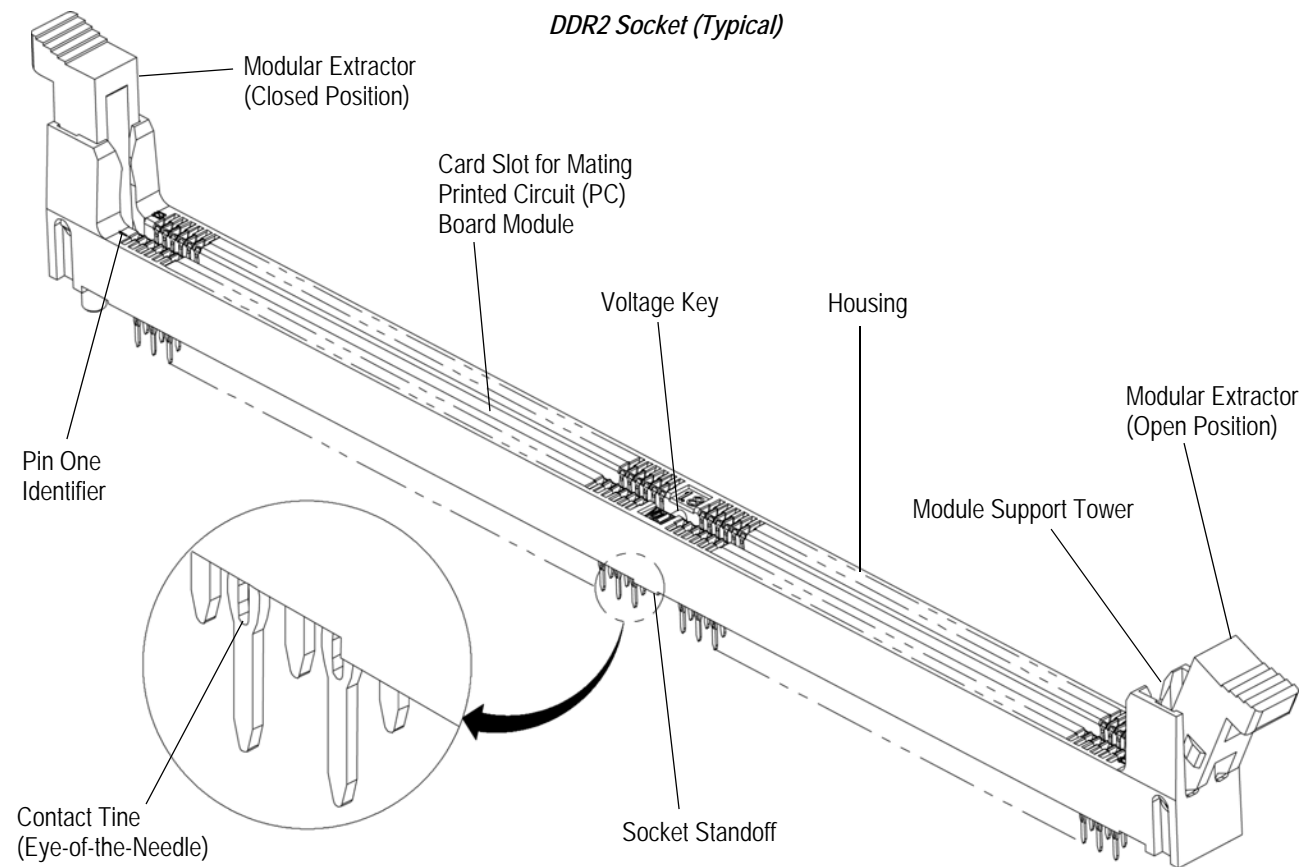


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

- Updated document to corporate requirements.

2.2. Customer Assistance

Reference Base Part Numbers 1489929 (240-position), and 1658808 (276-position), and Product Codes 3043 and H952 are representative numbers of DDR2 Sockets. Use of these numbers will identify the product line and expedite your inquiries through a service network established to help you obtain product and tooling information. Such information can be obtained through a local TE Representative (Field Sales Engineer, Field Applications Engineer, etc.) or, after purchase, by calling the Tooling Assistance Center or Product Information number at the bottom of page 1.

2.3. Drawings

Customer Drawings for each product part number are available from the service network. The information contained in the Customer Drawings takes priority if there is a conflict with this specification or with any other technical documentation supplied by TE.

2.4. Specifications

Product Specification 108-2123 provides product performance requirements and test information for the 240-position socket.

3. REQUIREMENTS

3.1. Storage

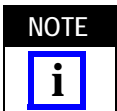
A. Shelf Life

The housings should remain in the shipping containers until ready for use to prevent deformation to those components. The components should be used on a first in, first out basis to avoid storage contamination that could adversely affect signal transmissions. When handling the sockets, pick them up by the module extractor or housing body only.

B. Chemical Exposure

Do not store contacts near any chemicals 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



Where the above environmental conditions exist, phosphor-bronze contacts are recommended instead of brass if available.

3.2. PC Board Layouts

A. Material and Thickness

1. Board material will be glass epoxy (FR-4, G-10).
2. Board thickness shall be 1.57 ± 0.18 .

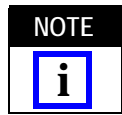
Contact the Product Information Center or the Tooling Assistance Center number listed at the bottom of page 1 for suitability of other board materials or thicknesses.

B. Tolerance

Maximum allowable bow of the pc board shall be 0.08 mm per 25.4 mm length over the length of the socket assembly.

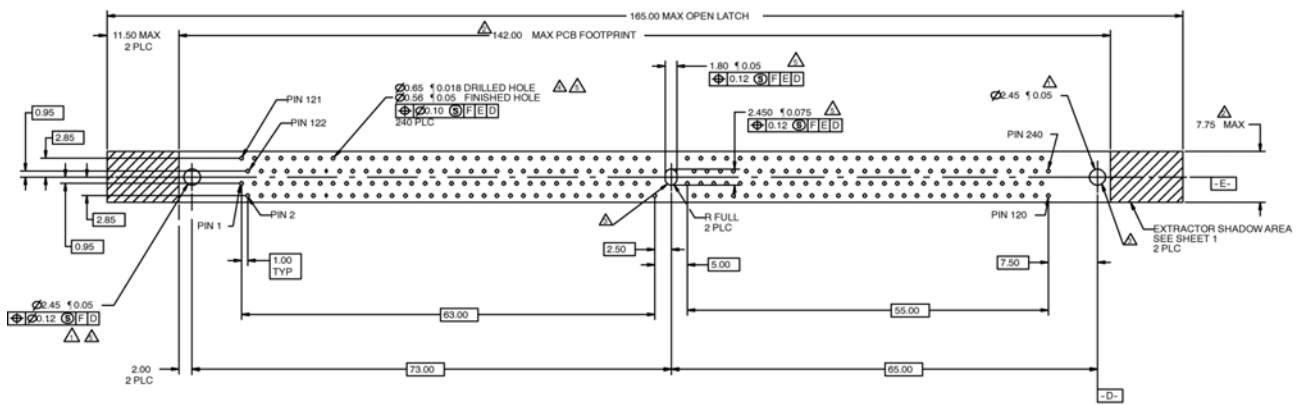
C. PC Board Layout

The mounting and contact holes in the pc board must be precisely located to ensure proper placement and optimum performance of the socket assembly. The pc board layout dimensions and tolerances shown in Figure 2 must be observed when preparing pc boards for the various socket styles. The layout shows the top (component) side of the board.



- 1 Right hole is global D-E origin for all position tolerances, left and right non plated thru holes establish -E-.
- 2 Keep out zone.
- 3 Holes indicated are part of the standard footprint required for the solder tail version, and may not be required for the press-fit version.
- 4 Refer to Figure 3.
- 5 Datum -F- is connector side surface of pc board.

240-Position Press Fit (DIMM) Double Data Rate 2 Socket (DDR2) PC Board Layout



276-Position Press Fit (DIMM) Double Data Rate 2 Socket (DDR2) PC Board Layout

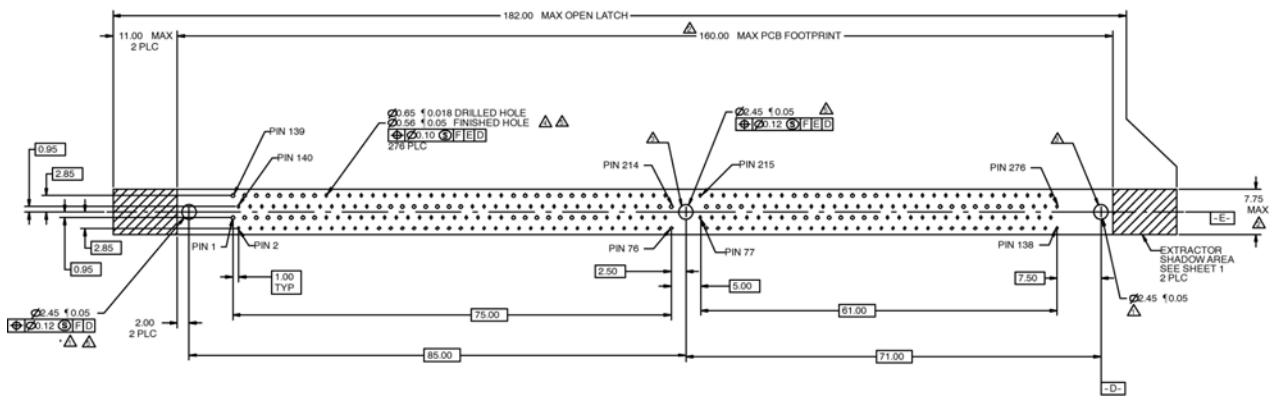


Figure 2

3.3. PC Board Contact Tine Holes

The holes in the pc board for the contact tines must be drilled and plated through to specific dimensions. See Figure 3.

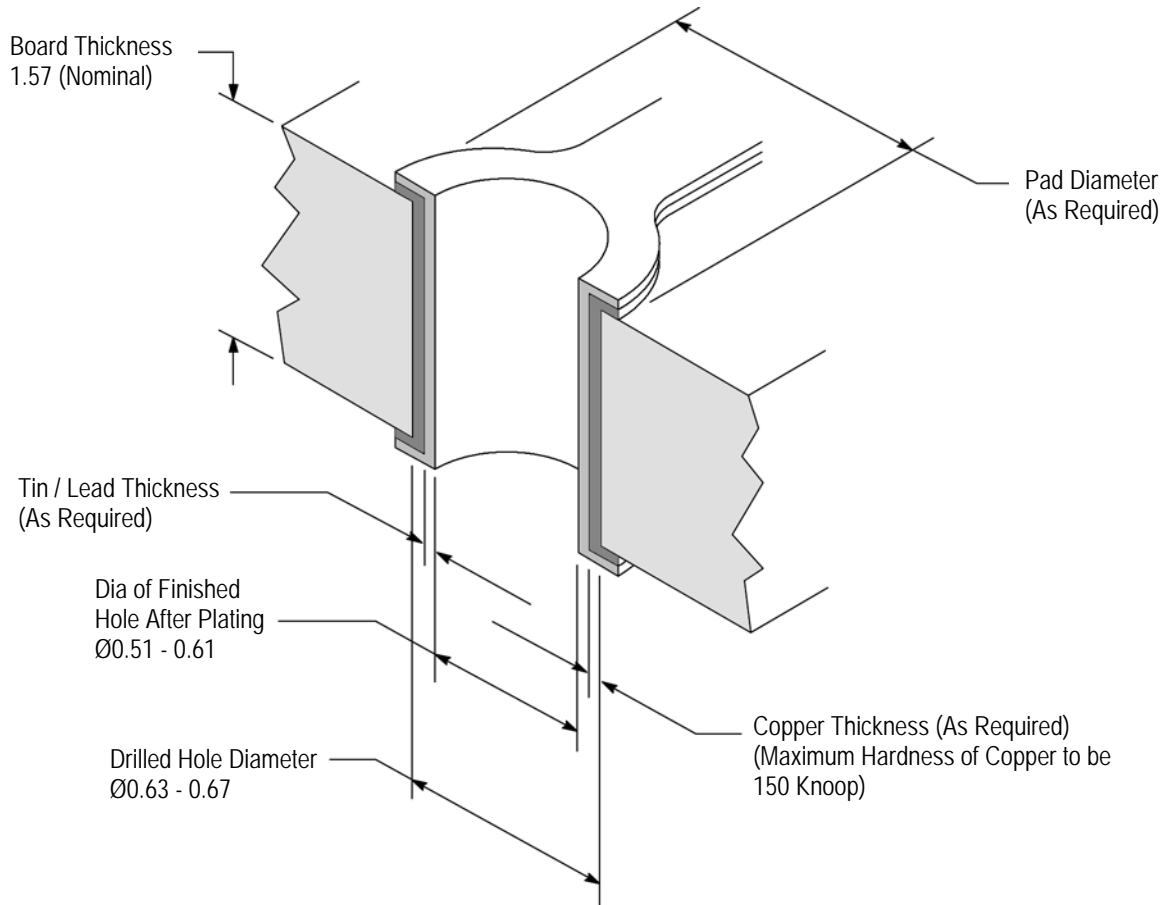


Figure 3

3.4. Polarization

The DDR2 Socket is polarized by the contact pattern.

3.5. Socket Assembly Orientation

The socket assembly must be oriented correctly prior to seating to ensure proper alignment of the contact tines and pc board contact holes. Refer to the following procedures for proper instructions.

A. Orientation of Socket Assembly Tray and PC Board

Figure 4, Detail A shows the correct orientation of the shipping tray and the pc board for optimum assembly and reduced scrap.

B. Orientation of Sockets to PC Board

Figure 4, Detail B shows the correct orientation of the sockets to the pc board.

C. Orientation of DIMM Module to Socket Assembly

Figure 4, Detail C shows the correct orientation off a DIMM module to the socket assembly.

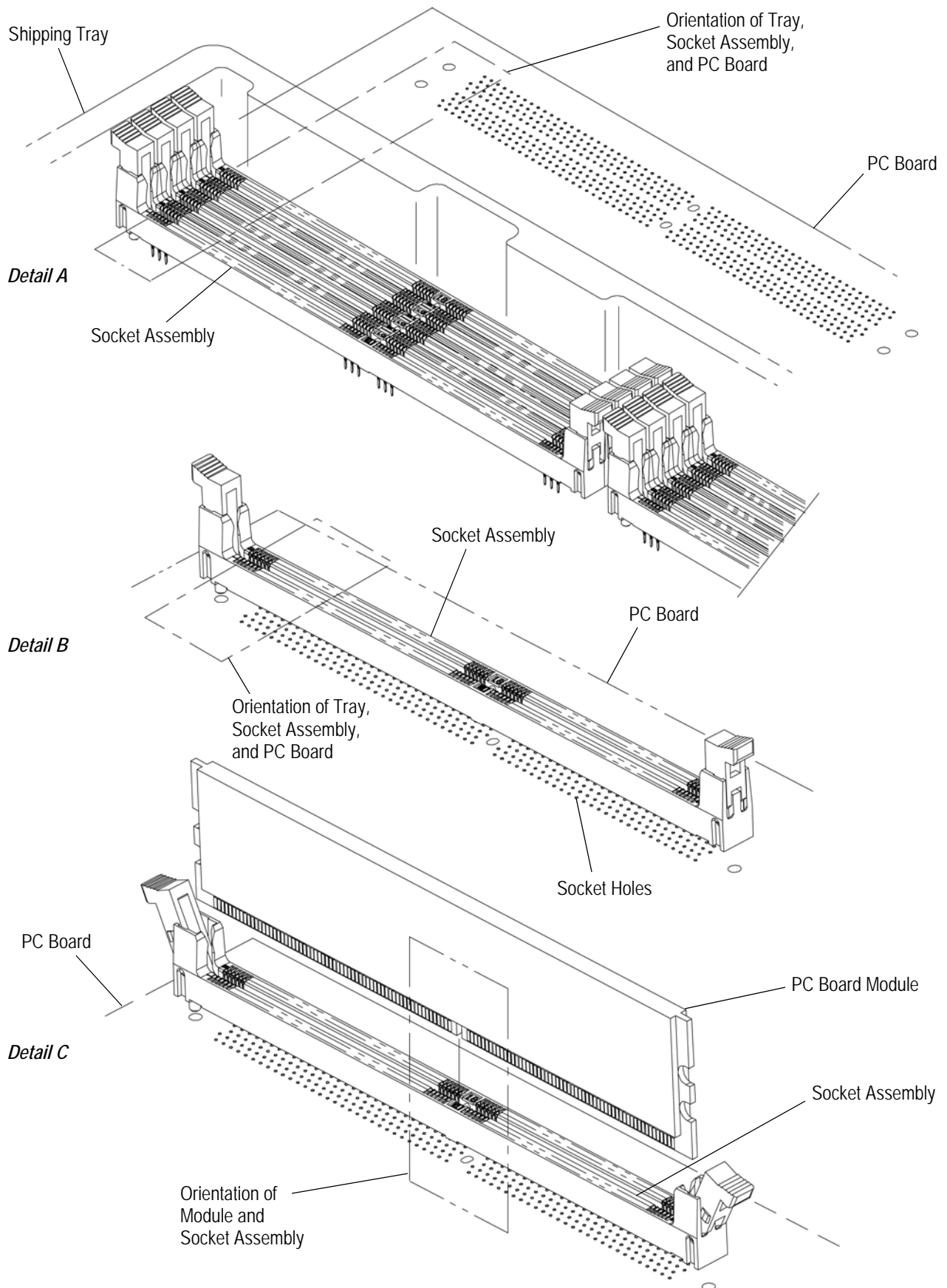


Figure 4

3.6. Socket Assembly Installation

A. Initial Positioning

The DDR2 Sockets must be pre-applied to a pc board by hand. The socket assembly should be gripped by the housing only and not by the contacts. When placing a socket assembly into a pc board, all contact tines should be aligned and inserted into the pc board simultaneously to prevent twisting or bending of the contacts.

B. Seating the Socket Assembly

The DDR2 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. Seating force must be applied evenly on the socket assembly to prevent deformation or other damage to the contacts and the housing. When installing the socket assembly, the insertion force must be evenly applied to the assembly (the top surface of the housing). Seating force to seat the socket assembly will vary according to hole diameter. Approximate seating force will be 3781-5338 N [850-1200 lbs] for the 240-position socket assembly, and 4314-6138 N [970-1380 lbs] for the 276-position socket assembly.

3.7. Checking Installed Socket Assemblies

The socket assemblies must be seated on the pc board to the dimensions shown in Figure 5.

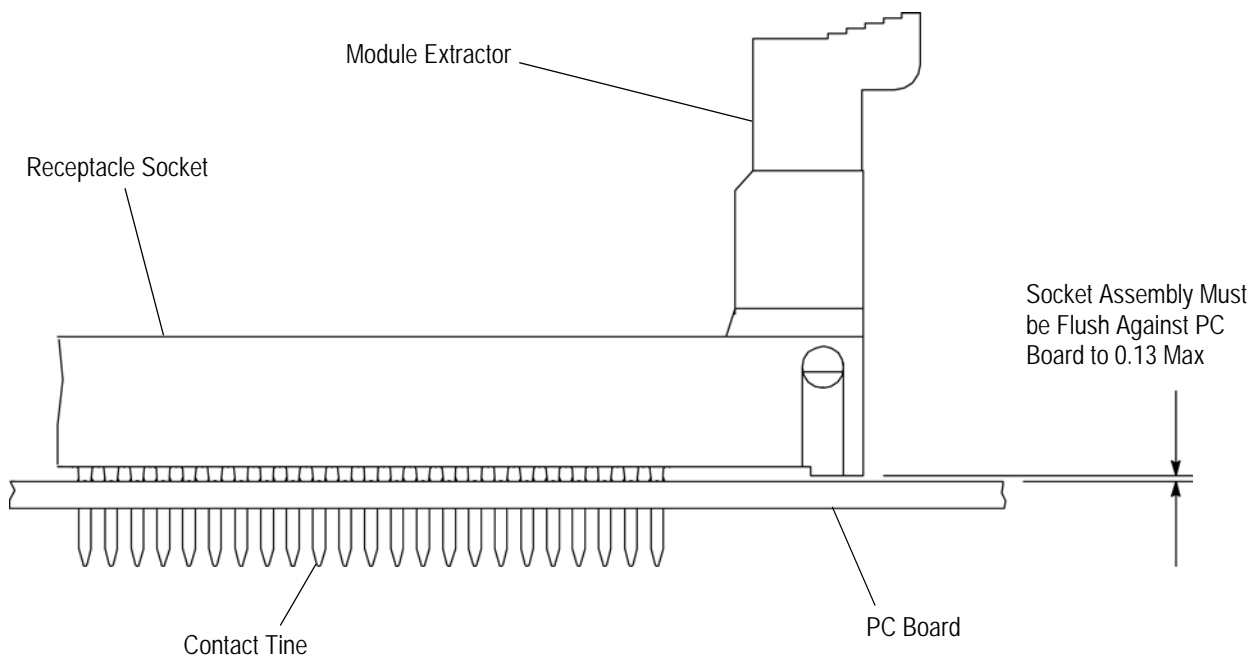


Figure 5

3.8. Removal and Repair

Damaged sockets must be removed, discarded, and replaced. The press-fit 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 DDR2 footprint pattern as shown in Figure 2, 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.

3.9. Daughterboard Configuration

The daughterboard configuration must be in accordance with the dimensions and tolerances provided in Figure 6.

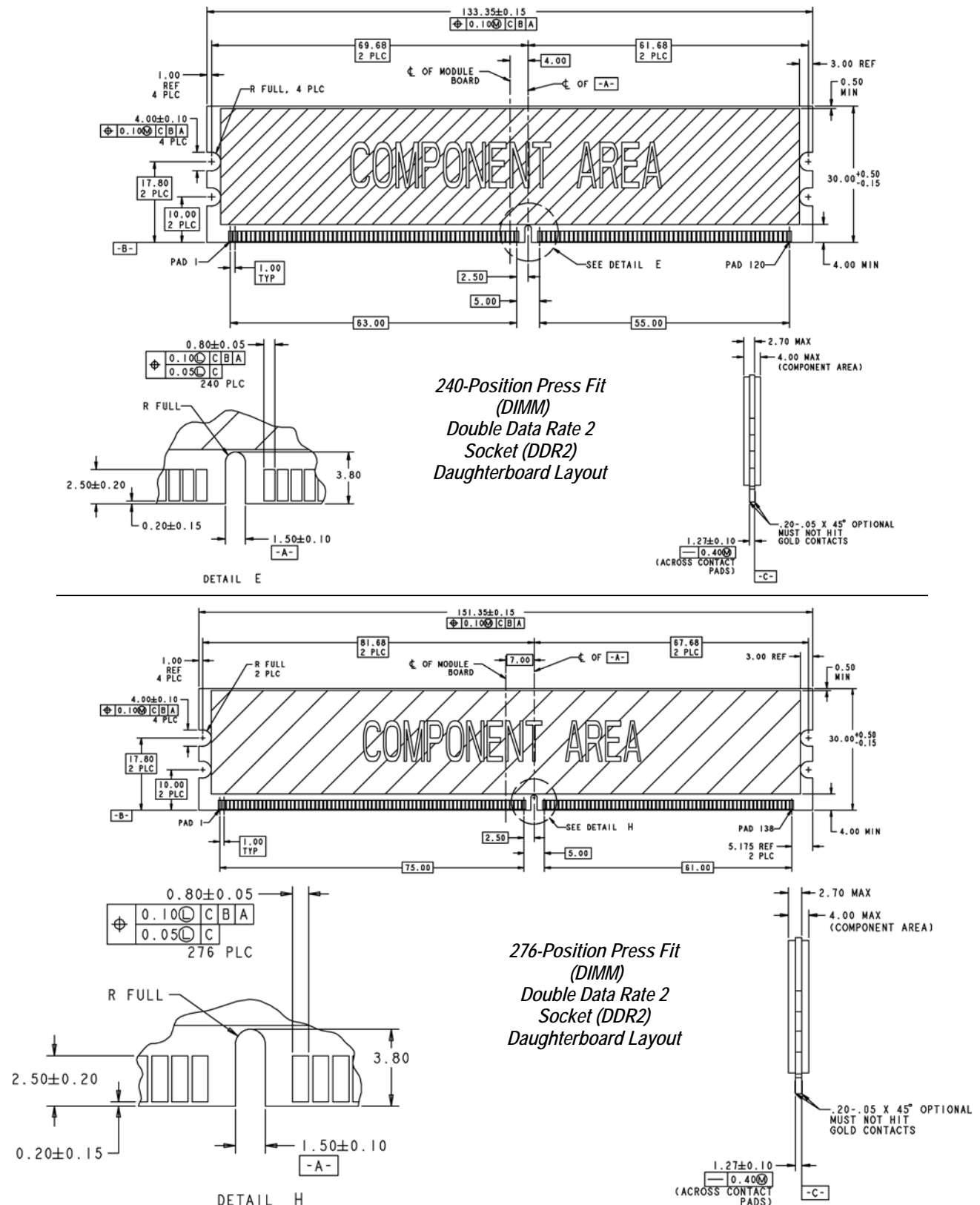


Figure 6

3.10. Installing PC Board Module



Prior to insertion of the pc board module, make sure the system has been powered down as component damage may occur.



Before insertion of the pc board module, any dust and debris must be removed from the card slot for effective mating of the receptacle socket and module pc board. Air may be blown in the card slot to remove any contaminants which may effect electrical continuity.

Prior to pc board module insertion, the extractor(s) must be in the open position (rotated away from the end(s) of the housing) and the pc board module board should be positioned such that its keying slot corresponds to the voltage key in the housing. The pc board module board should be inserted into the “module support towers” and pushed down until it fully seats into the socket. As the board is being inserted, the extractor(s) begin moving inward. When the extractors reach the vertical position, 90° to the pc board, and an audible “click” is heard, it indicates that the module is fully seated and locked into place. See Figure 7.

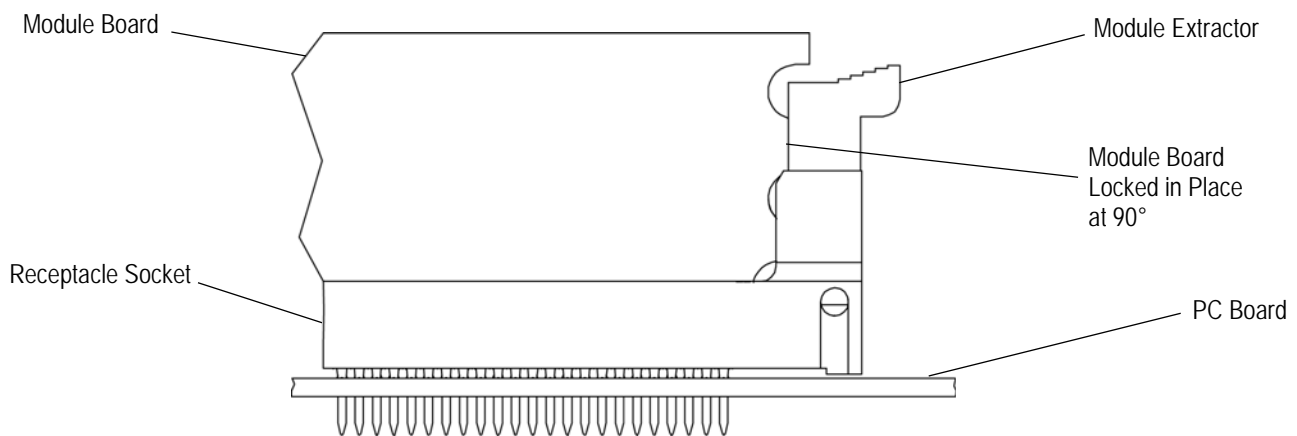


Figure 7

3.11. Module Extraction

When mating or unmating the pc board module, caution should be taken to prevent the longitudinal rocking of the module in respect to the socket assembly. See Figure 8. Angles greater than 5° can cause damage to the housing and misregistration of the contacts on the pc board lands.

The pc board module is extracted from the socket by simultaneously rotating each extractor lever away from the module board. At full rotation the module will be completely dislodged and may be removed by sliding it up through the board support towers.

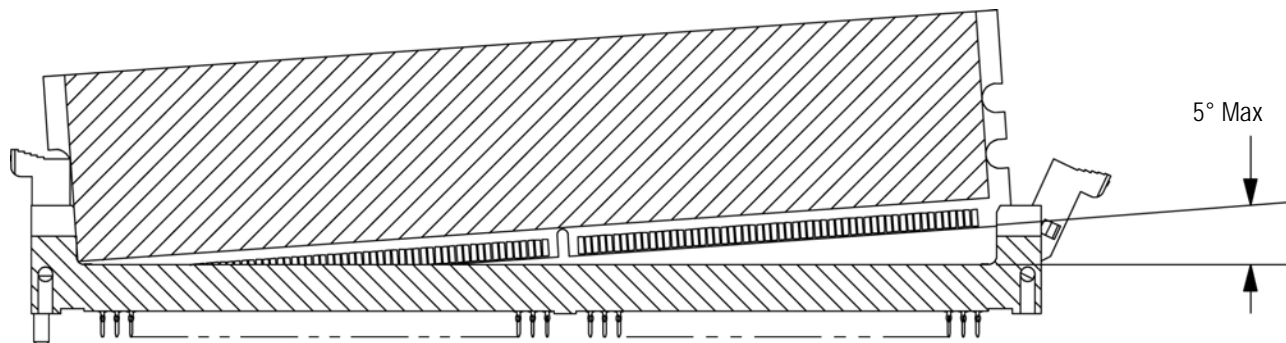


Figure 8

3.12. Socket Assembly Spacing

Care must be used to avoid interference between adjacent socket assemblies and/or other components. The information provided in Figure 9 is to ensure proper mating.

NOTE *The information provided is for manual placement of socket assemblies.*

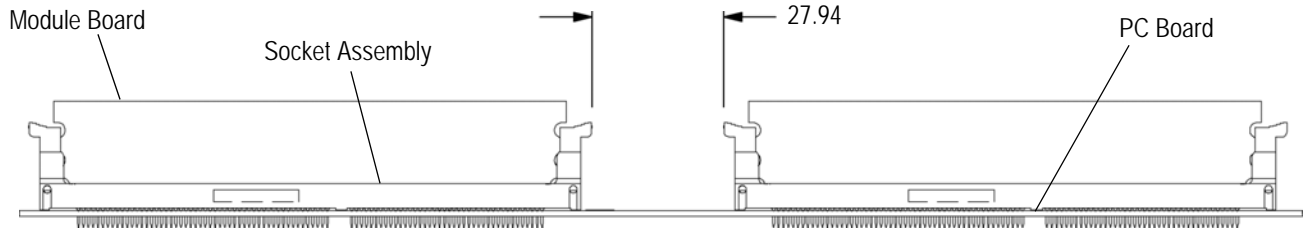


Figure 9

CAUTION *Damaged product should not be used. If a damaged product is evident, it should be removed and replaced with a new one.*

4. QUALIFICATIONS

DIMM DDR2 Sockets are Recognized by Underwriters Laboratories Inc. (UL) in File E28476. At the time of publication of this document, these sockets are still being evaluated by CSA International.

5. TOOLING

Figure 10 provides tooling information related to the DDR2 Socket.

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.

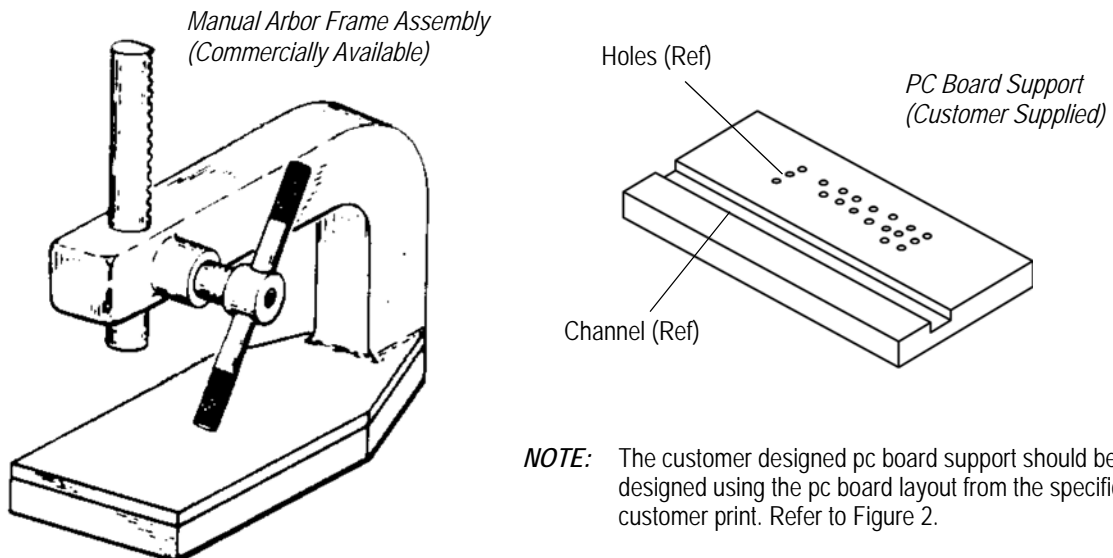


Figure 10

- 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.

6. VISUAL AID

The illustration below shows a typical application of a DDR2 Socket. 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.

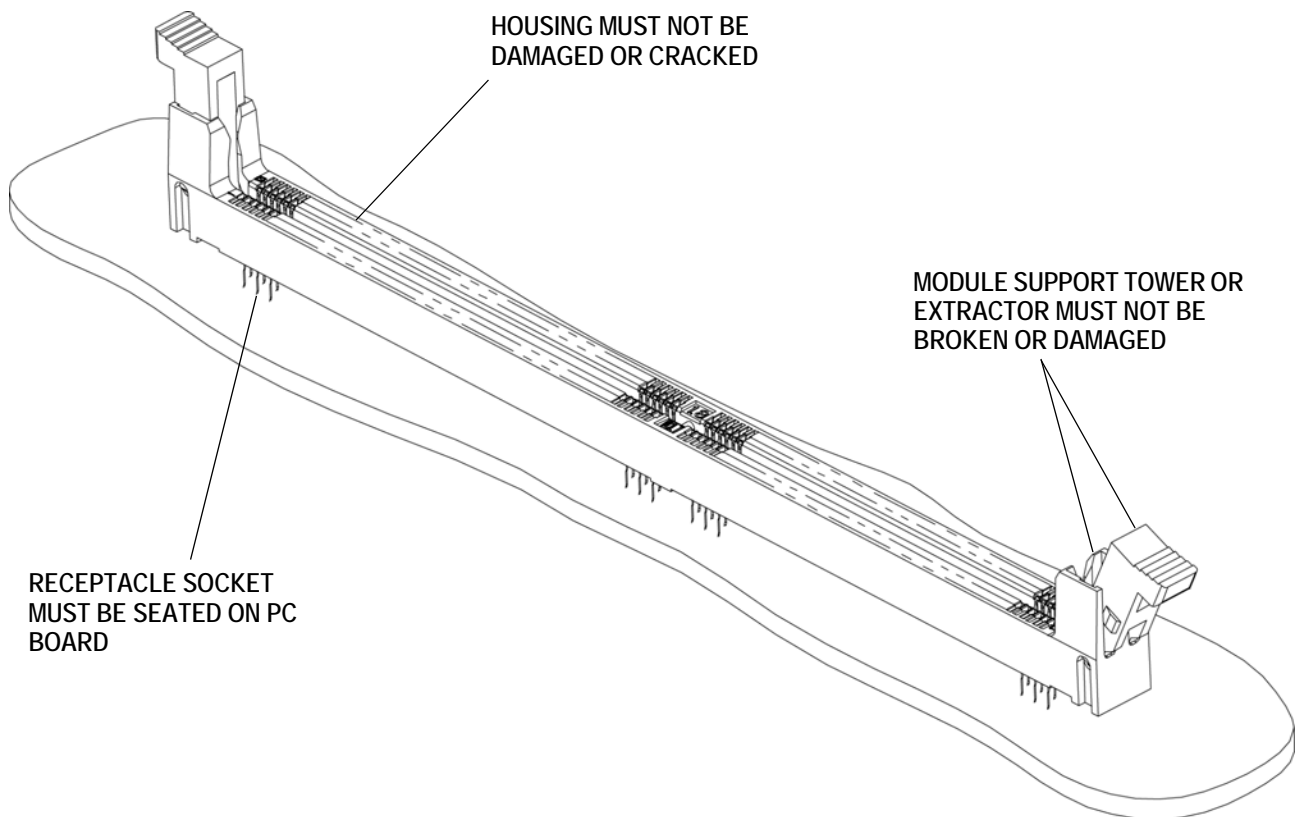


FIGURE 11. VISUAL AID