

NOTE



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 [± 0.005] 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 SIP (Single In-Line Package) Sockets with Compliant Pins Contacts on 2.54 mm [.100 in.] centers. The sockets consist of a housing and contacts, and are available in a variety of sizes (ie, contact positions). They are designed to be inserted into printed circuit (pc) boards using manual or robotic equipment.

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.

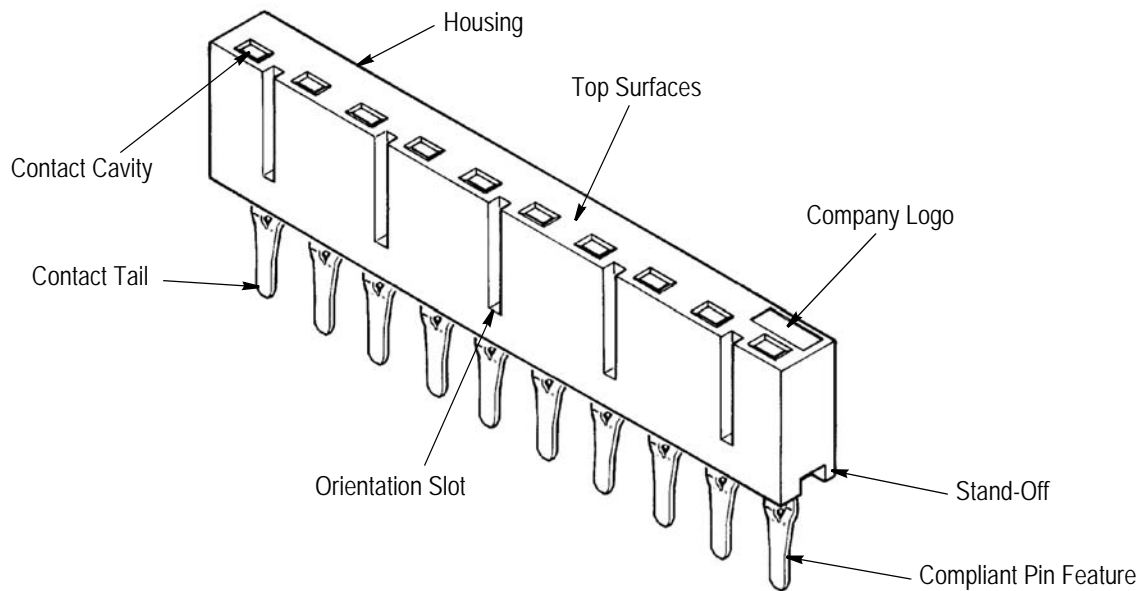


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

- Updated document to corporate requirements
- New logo

2.2. Customer Assistance

Reference Product Base Part Number 382444 and Product Code 1419 are representative numbers that identify the SIP Sockets with Compliant Pins. 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 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 specific products are available from the responsible TE Engineering Department via 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 108-1251 provides performance tests for these sockets.

3. REQUIREMENTS

3.1. Storage

Sockets should remain in the shipping container until ready for use to prevent deformation of the contact tails and to prevent damage to the housing.

3.2. Special Features

Notice that the contact cavities are off-center relative to the housing width and to the contact tail. The sockets can be mounted close enough to maintain in-row and row-to-row contact cavity spacing of 2.54 mm [.100 in.]. To do so, the sockets must be mounted in the same orientation. The orientation slots and logo marking provide a visual guide for positioning the sockets. See Figure 2.

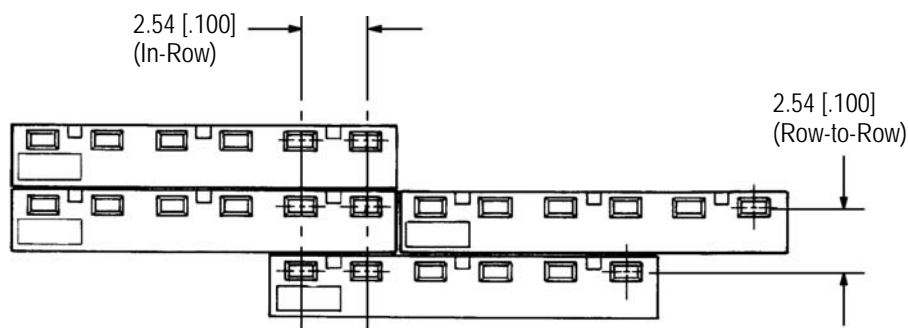


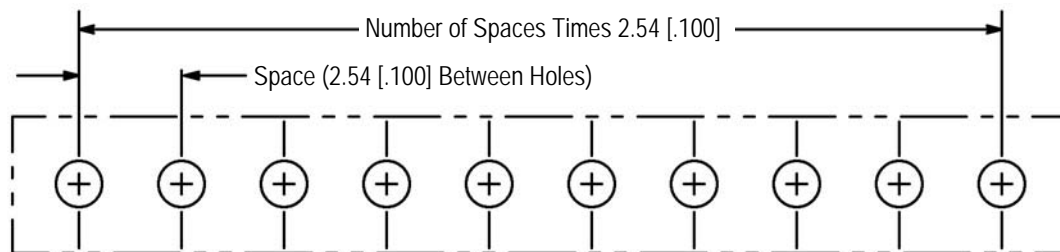
Figure 2

3.3. PC Board

The sockets have been designed for standard pc board thicknesses of 1.588 (1.397 minimum), 2.36, 3.18 mm [.0625 (.055 minimum), .093, .125 in.] and, if required by the application, can be used for thicker pc boards.

A. Layout

The hole layout for each socket must conform to the dimensions provided in Figure 3. A true position hole tolerance of ± 0.23 mm [.009 in.] must be maintained within the socket hole pattern. The sockets may be directly adjacent to each other (end-to-end or side-to-side) as long as a 2.54 mm [.100 in.] minimum hole spacing is maintained (see Figure 3).



NOTE: Hole-to-hole tolerance is non-accumulative over the length of the hole pattern.

Figure 3

B. Hole Configuration

The holes in the pc board must be plated through as specified in Figure 4 to assure optimum performance for the compliant pin contact feature.

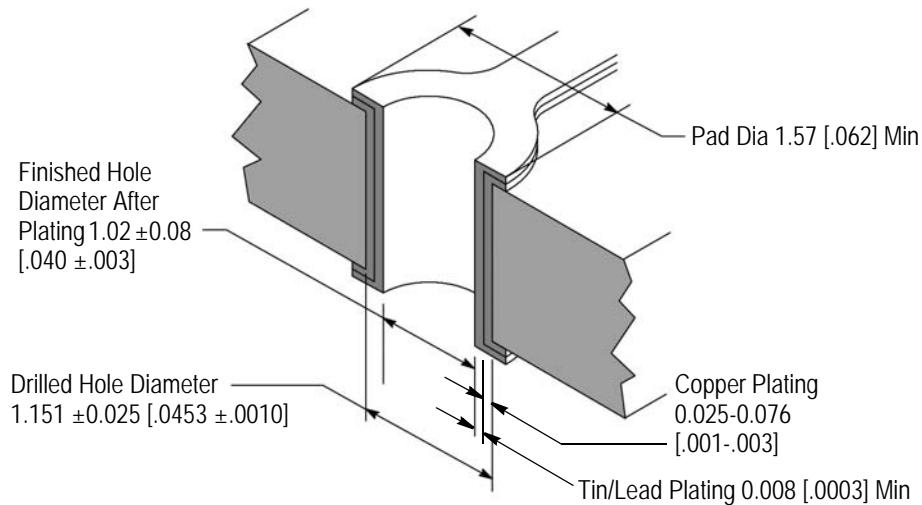


Figure 4

3.4. Special Handling During Assembly

A. Initial Positioning

Sockets should be handled by the housing only and not by the contact tails. When placing a socket into a pc board, all contact tails should be aligned and inserted into the pc board simultaneously to prevent twisting or bending of the contact tails. If using robotic equipment, a total equipment accuracy of ± 0.13 mm [± 0.005], including the gripper and fixture tolerance and equipment repeatability, is required.

B. Seating Socket

A flat-surfaced tool that covers the full top surface of the socket is required for inserting the compliant pin feature of the contact tails into the pc board. A maximum force of 66.72 N [15 lbs.] per contact is required to seat the socket on the pc board. A socket is fully inserted when the housing is bottomed or within 0.13 mm [.005 in.] from the pc board. See Figure 5.

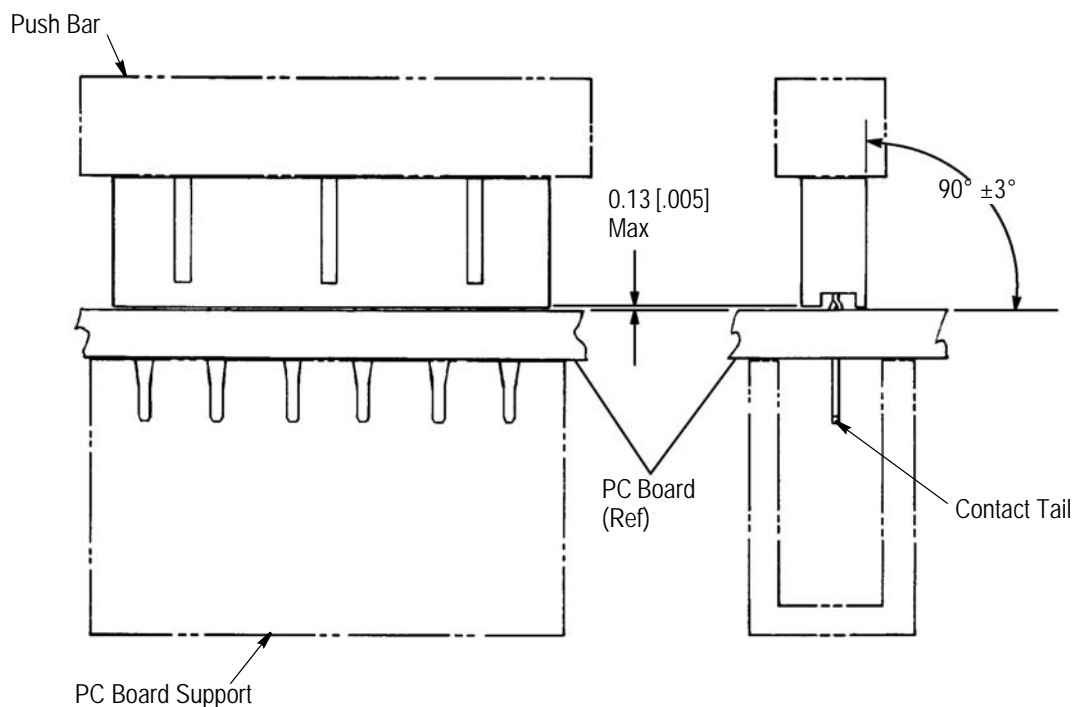


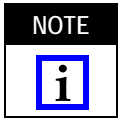
Figure 5



Perpendicular alignment of the socket with the surface of the pc board must be maintained while applying insertion force; otherwise, damage to the contacts and/or pc board could result.

C. Alignment

Alignment within the tolerance specified in Figure 5 must be maintained to assure a properly functioning socket.



No soldering is required. The compliant pin feature provides the electrical and mechanical characteristics necessary for a good termination.

3.5. Intermateability

A. Component Lead Cross-Section

The sockets are designed to accept rectangular tin/lead component leads that are 0.20 to 0.38 mm [.008 to .015 in.] thick and 0.25 to 0.76 mm [.010 to .030 in.] wide. They will also accommodate round leads of 0.20 to 0.46 mm [.008 to .018 in.] diameter.



Insertion of a component with leads smaller than a previously inserted leads can result in insufficient contact normal force for proper operation. Sockets must be replaced in these cases.

B. Component Lead Length

The component lead must enter the socket a minimum of 3.18 mm [.125 in.] (measured from the top surface of the housing) to ensure proper electrical performance. Leads that are 5.46 mm [.215 in.] or longer can be used; however, they will bottom on the pc board before the component bottoms on the socket housing.

3.6. Repair

These sockets are not repairable. Should one become damaged, it must be removed and replaced with a new one. The preferred method of removing a socket from a pc board is to push on the contact tails. If the pc board is more than 3.18 mm [.125 in.] thick, the contact tails broken or deformed, or the preferred method is otherwise unsuitable, an alternate method of pulling the socket out of the pc board can be used.

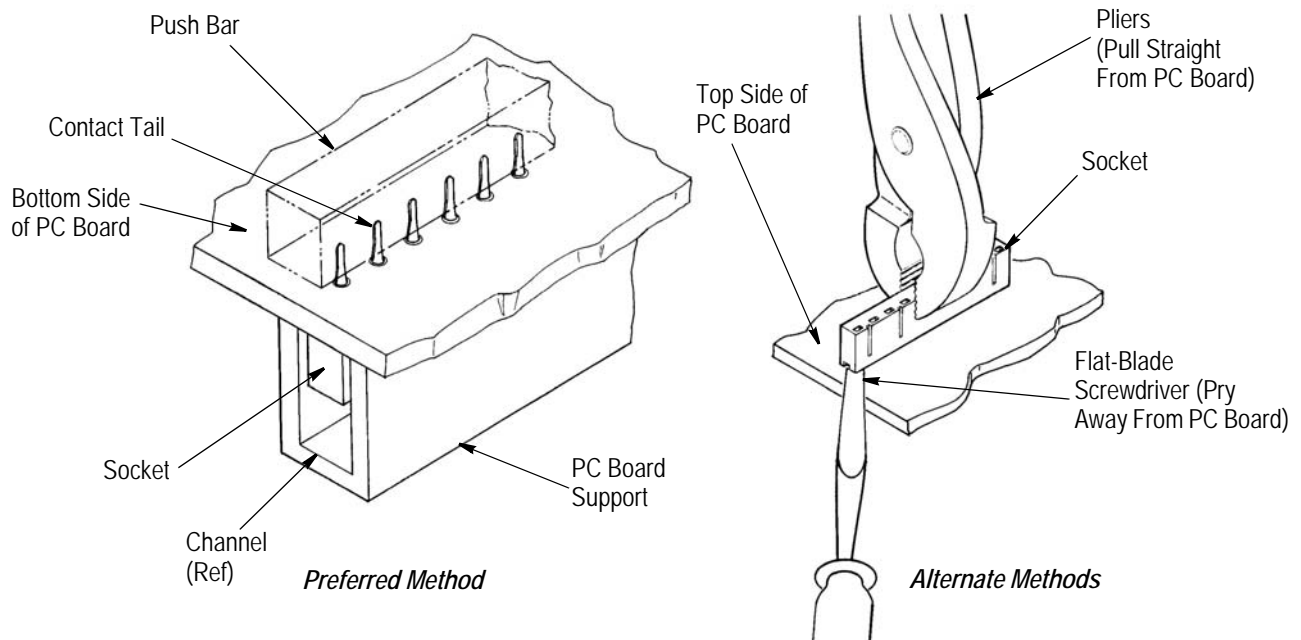


Figure 6

A. Preferred Method

Place the pc board on a board support that has a slot large enough to receive the socket, then place a push bar long enough to cover all contacts over the contact tails and press the contacts out of the pc board.

B. Alternate Method

The socket can be removed from the top side of the pc board by gripping the housing with pliers and pulling straight out of the pc board, or by prying them away from the pc board with a flat blade screwdriver.

4. QUALIFICATIONS

SIP Sockets with Compliant Pin Contacts have been submitted for agency evaluation and testing.

5. TOOLING (Figure 7)

Tools recommended for installation of these sockets are:

- PC Board Support
- Push Bar
- Robotic Equipment (for production line operation)

A. PC Board Support

A pc board support must be used to prevent bowing of the pc board during insertion of the socket into the pc board. It should have a flat surface with holes or a channel large enough to receive the contact tails during installation, or to receive the entire socket during removal.



The support design must also be adaptable to the other components on the pc board.

B. Push Bar

A push bar with a flat surface large enough to seat against the top surface of the socket and capable of exerting 66.72 N [15 lbs.] force per contact must be used to install the sockets into the pc board. This same push bar can be used to extract a socket from the pc board.

C. Robotic Equipment

Robotic equipment must have a true position accuracy of 0.13 mm [.005 in.] to properly locate the and insert sockets. This includes gripper and fixture tolerances as well as equipment repeatability. It must use the socket datum surfaces detailed on the customer drawing to ensure reliable socket placement.

TE Tool Engineers have designed machines for a variety of application requirements. If you need 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.

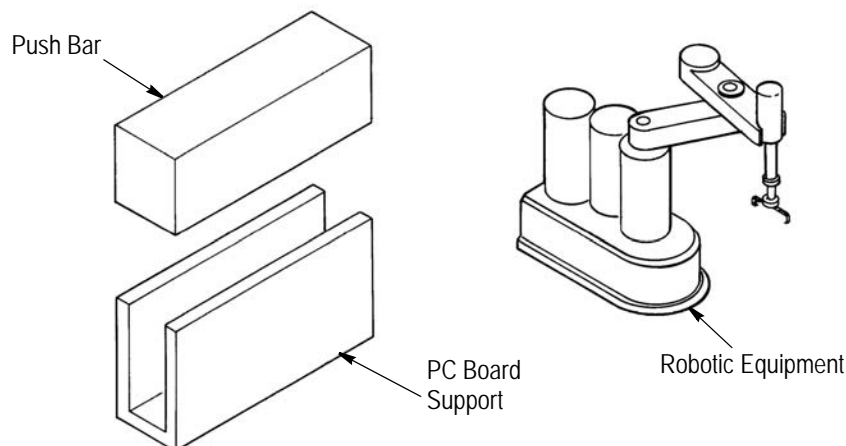


Figure 7

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.

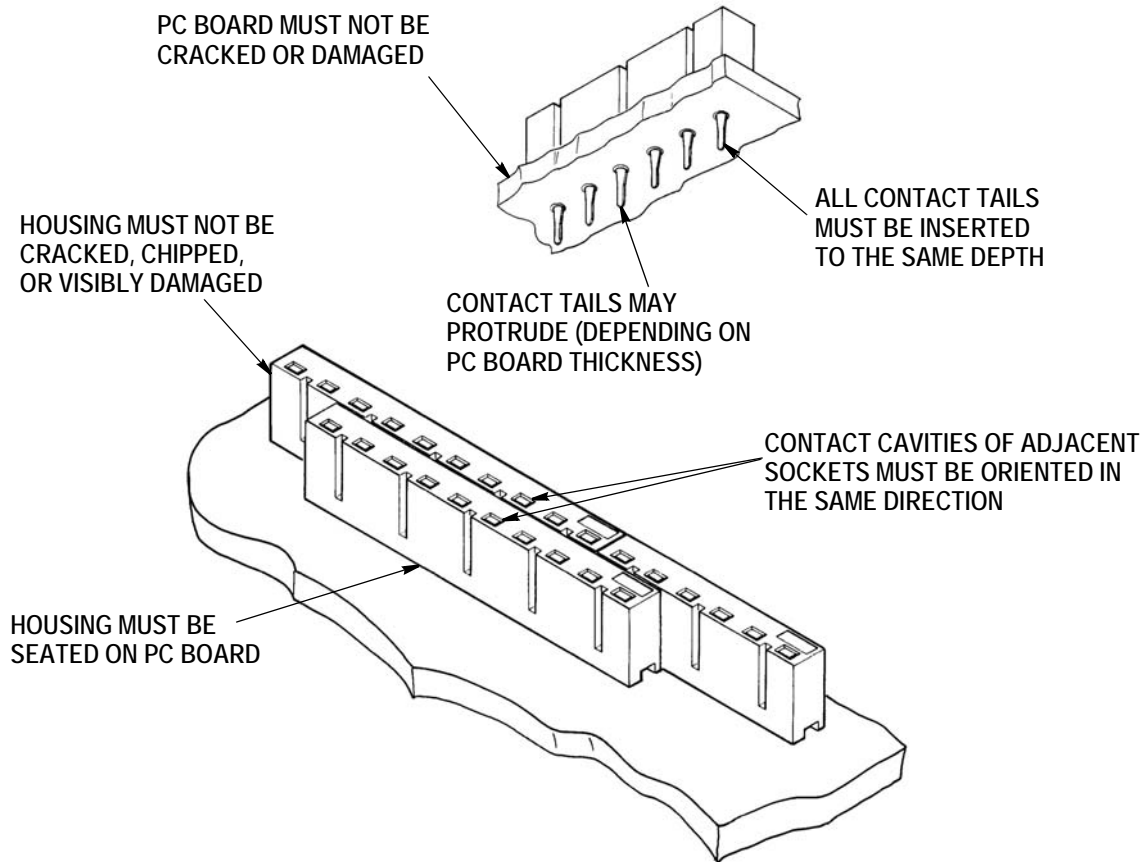


FIGURE 8. VISUAL AID