AMP

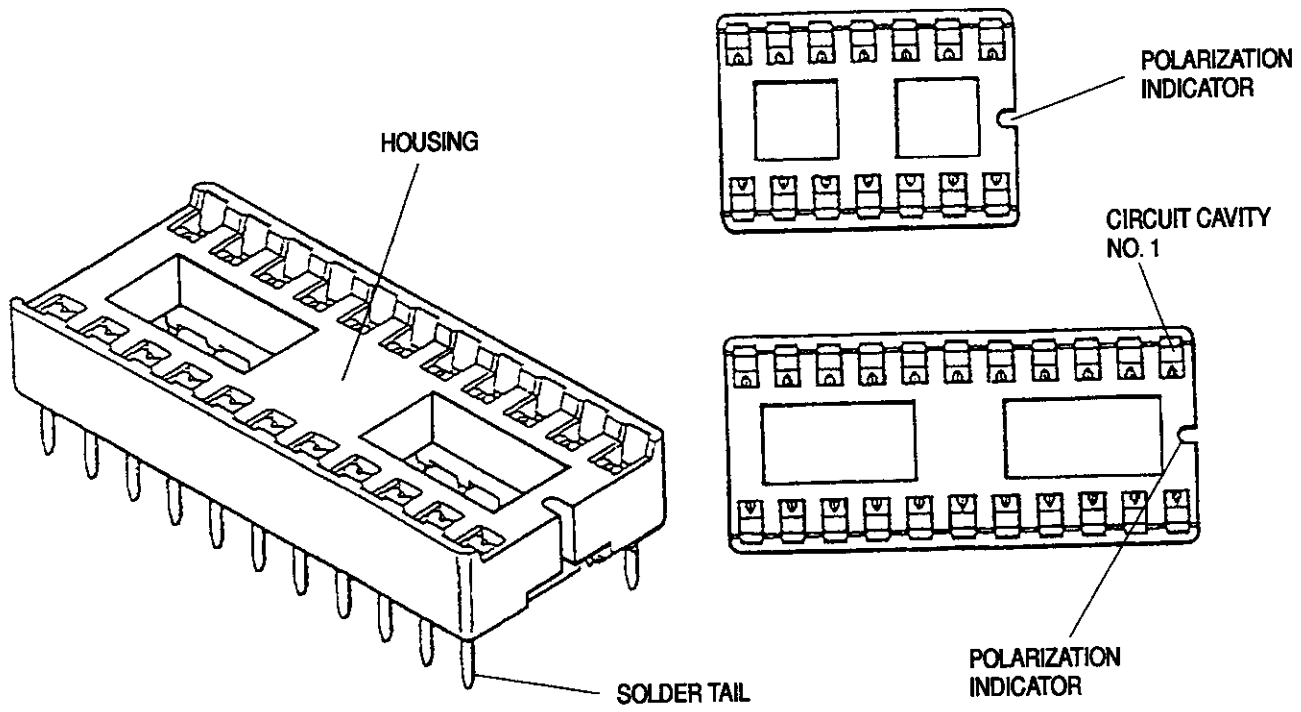
# DIPLOMATE* DL (Dual Leaf) DIP Socket (Reflow Compatible)

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 [.005] and angles have a tolerance of ±2°.*

## 1. INTRODUCTION

This specification covers the requirements for the application of AMP* DIPLOMATE DL (Dual Leaf) DIP Socket Product families. These requirements are applicable to hand or automated application tooling. For specific features of the products covered in this specification, see Figure 1.




95-22

*Figure 1*

## 2. REFERENCE MATERIAL

### 2.1. Revision Summary

This paragraph is reserved for a revision summary of the most recent additions and changes made to this specification which include the following:

Per EC 0160-3425-93

- Revised Figures 1 and 3 to show vacuum pickup pad and remove steps from end of socket.

Per EC 0990-7823-93

- Updated format
- Added metric units
- Provided new information in Section 1
- Added Paragraph 2.1, Revision Summary

### 2.2. Customer Assistance

Reference part number 644018 and product code 1529 are representative numbers that identify the AMP Surface-Mount DIPLOMATE DL DIP Sockets. Use of these numbers will identify the product line and expedite your inquiries through an AMP service network established to help obtain product and tooling information. Such information can be obtained through a local AMP representative (Field Sales Engineer, Field Applications Engineer, etc) or, after purchase, by calling the Technical Assistance Center or the AMP FAX/Product Information number at the bottom of page 1.

### 2.3. Drawings

Customer drawings for specific products are available from the responsible AMP 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 AMP Incorporated.

### 2.4. Specifications

AMP Product specification 108-1066 provides applicable performance requirements.

### 2.5. Instructional Material

AMP Corporate Bulletin No.401-52 is available upon request and can be used as a guide in soldering. This bulletin provides information on various flux types and characteristics along with commercial designation and flux removal procedures. A checklist is attached to the bulletin as a guide for information on soldering problems

## 3. REQUIREMENTS

### 3.1. Printed Circuit Board (pc board) Layout

**A. Material**

1. Board material will be glass epoxy (FR-4, G-10). Consult AMP Engineering for suitability of other board materials.

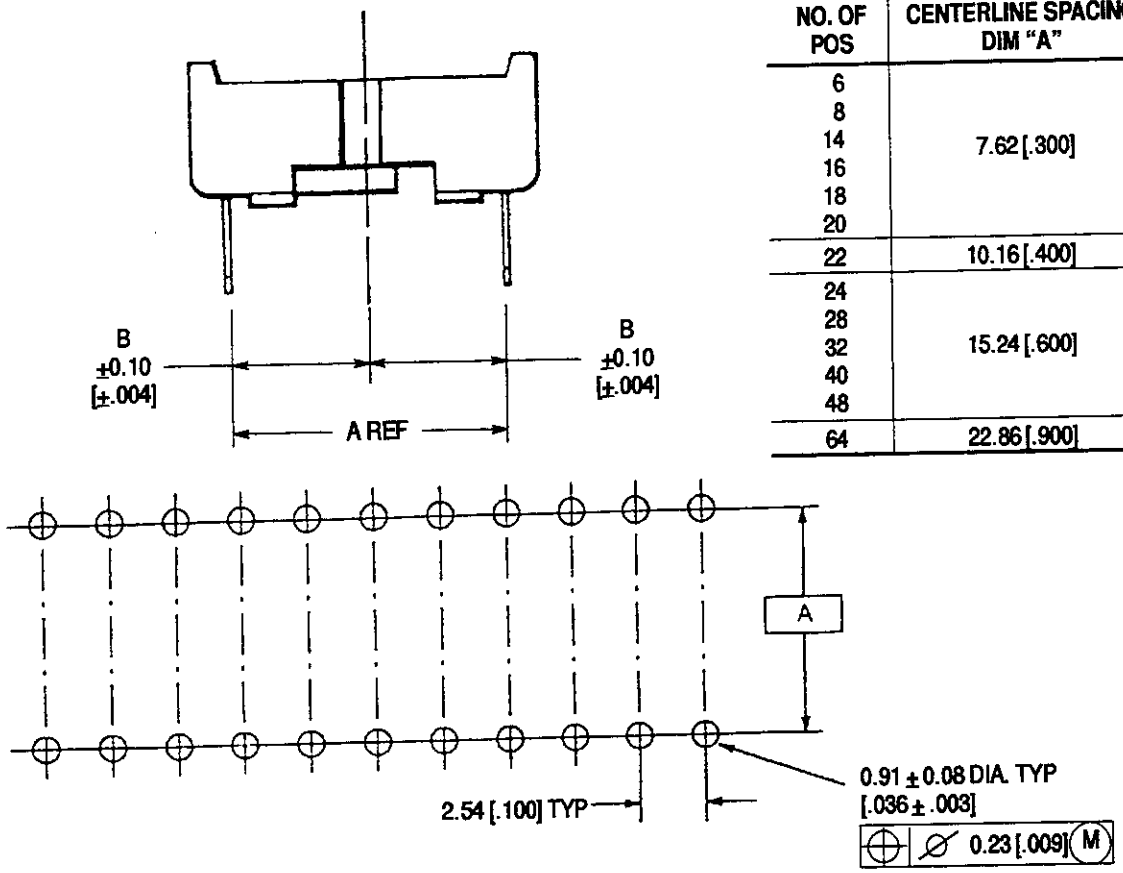
2. Maximum board thickness shall be 2.36 [.093] inches. For suitability with other board thicknesses, contact AMP Engineering.

**B. Recommended Board Layout**

Recommended pattern and dimensions, as well as tolerances, are shown in Figure 2.

### 3.2. Mounting Requirements

Insert solder tails into through holes of the pc board, making sure the socket is parallel to and resting on the board. If desired, the solder tails may be clinched to hold the socket in place during handling and soldering. Avoid excessive force to the ends of the solder tails (perpendicular to the board). This may dislodge the contact from its proper position in the housing.




| NO. OF POS | CENTERLINE SPACING DIM "A" | DIM "B" |
|---|---|---|
| 6<br>8<br>14<br>16<br>18<br>20 | 7.62 [.300] | 3.81 [.150] |
| 22 | 10.16 [.400] | 5.08 [.200] |
| 24<br>28<br>32<br>40<br>48 | 15.24 [.600] | 7.62 [.300] |
| 64 | 22.86 [.900] | — |

95-23

*Figure 2*

## 3.3. Soldering and Cleaning

### A. Flux Selection

Prior to soldering, or during the reflow process, a mildly activated or activated rosin base flux shall be used. Proper flux selection will depend on the type of pc board used, and any components mounted on the board. Flux must also be compatible with the customer's soldering process, as well as with manufacturing and safety requirements.

### B. Soldering Guidelines

AMP Corporate Bulletin 401- 52 is available upon request and can be used as a guide in soldering. This bulletin provides information on various flux types and characteristics along with the commercial designation and flux removal procedures. A checklist is attached to the bulletin which is intended to serve as a guide for obtaining information on soldering problems.

### C. Soldering Procedures

1. The temperature to which the socket is subjected shall not exceed 220°C (428°F) for more than 3 minutes.

2. The socket design is compatible with vapor phase and infrared reflow and wave soldering processing. For suitability of other soldering processes, contact AMP Engineering.

### 3.4. Cleaning

After soldering, removal of fluxes, residues, and activators is mandatory. Consult the solder and flux recommended cleaning solvents. The following common cleaning solvents can be used on these sockets for a period of up to 10 minutes at room temperature with no harmful effects. If you have a particular solvent that is not listed, consult an AMP representative before using it on these sockets.

Alpha 2110† Isopropyl Alcohol Terpene Solvent

† Product of Fry's Metals, Inc.

**DANGER** *Consideration must be given to toxicity and other safety requirements recommended by the solvent manufacture. Refer to the Material Safety Data Sheet (MSDS) supplied by the manufacturer for characteristics and handling of cleaners.*

### 3.5. Drying

When drying cleaned assemblies and pc boards, make certain that temperature and duration do not exceed the above recommendation. Excessive temperatures can cause housing and/or plating degradation.

## 4. QUALIFICATIONS

The DIPLOMATE DL (Dual Leaf) DIP Sockets are not required to be listed or recognized by Underwriters' Laboratories, Inc. (UL), or the Canadian Standards Association (CSA).

## 5. TOOLING

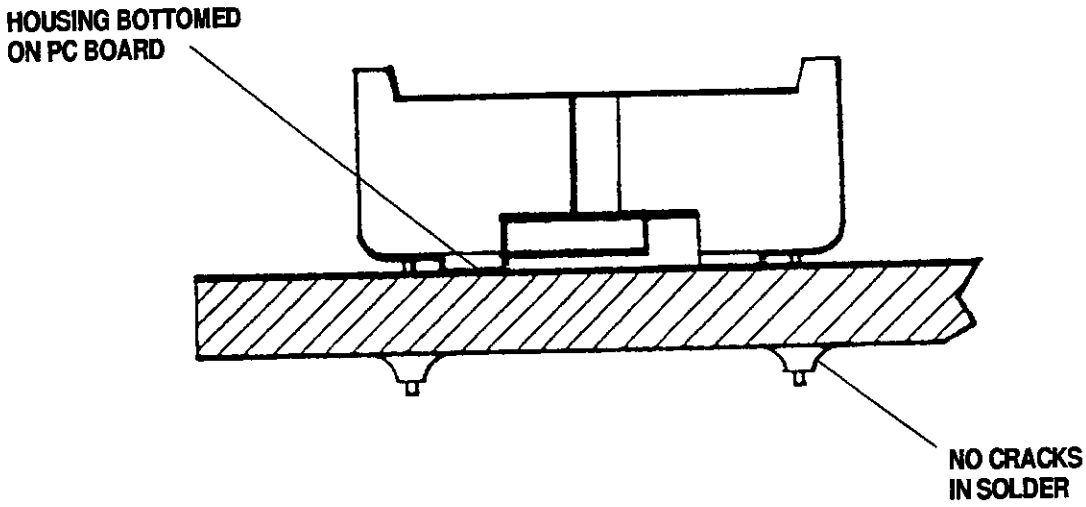
The AMP DIPLOMATE DL (Dual Leaf) DIP Sockets (Reflow Compatible) can be installed manually or by machine. Recommended automatic insertion equipment is listed in Figure 3.

| COMPANY | EQUIPMENT |
|---|---|
| Universal Instruments<br>Binghamton, NY | Model: 6791, 6792, 6794, 6796, 6772, 6774<br>All Multi–Mod and Uni–Mod Standard and Brickwall |
| NETCO AUTOMATION<br>Haverhill, MA | Model: 6/40 Mark II<br>Standard and Brickwall |
| DYNA/PERT DIVISION<br>Beverly, MA | Models:DIP G, HPDI W/ or W/O M36,<br>Option (Intellisert DD4500) |
| AMISTAR CORP.<br>Torrance, CA | Models:CI–750, CI–1000, CI–1800, CI–3000<br>Standard & Brickwall |

*Figure 3*

## 6. VISUAL AID

Figure 4 shows a typically applied AMP DIPLOMATE DL (Dual Leaf) Dip Socket. The illustration depicts, in general, the conditions that production personnel should check to visually ensure a good installation. For dimensional inspection, refer to the details in preceding pages of this specification and the appropriate customer drawing.




95–24

*FIGURE 4. VISUAL AID*