

**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  $\pm 0.13$  [.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 AMP\* Low Profile DIMM (Dual In-Line Memory Module) 2P 168 position socket. The sockets have contact spacing on 1.27 [.050] centerlines for through-hole printed circuit (pc) boards.

When corresponding with AMP personnel, use the terminology provided on this specification to help facilitate your inquiry for information. Basic terms and features of components are provided in Figure 1.

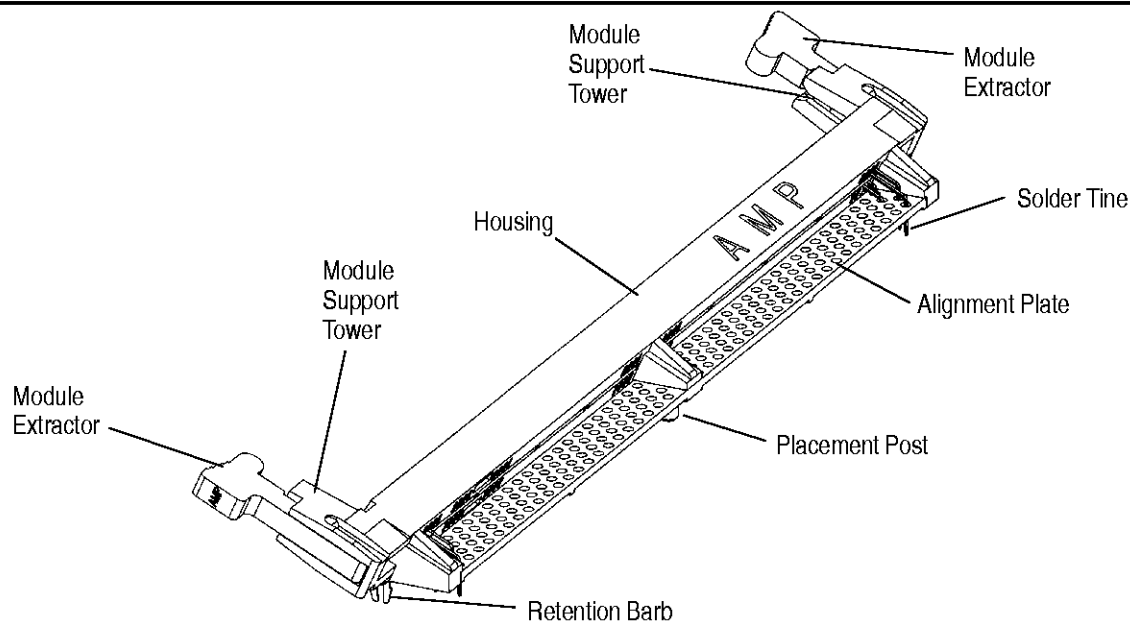


Figure 1

**2. REFERENCE MATERIAL****2.1. Revision Summary**

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

Per EC 0990-1384-98

- Changed "2 Pocket" to 2P in title
- Removed "(2 Pocket)" from Paragraph 1

**2.2. Customer Assistance**

Reference Part Number 390170 and Product Code 2954 are representative numbers of AMP Low Profile DIMM 2P 168 position socket. Use of these numbers will identify the product line and expedite your inquiries through an AMP service network established to help you 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 Tooling Assistance Center or AMP FAX/Product Information number at the bottom of this page.

**2.3. Drawings**

AMP 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 AMP Incorporated.

## 2.4. Specifications

AMP Product Specification 108-1801 provides product performance requirements and test information.

## 2.5. Bulletins

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 as a guide for information on soldering problems.

## 3. REQUIREMENTS

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.

### 3.1. PC Board Layouts

#### A. Material and Thickness

1. Board material will be glass epoxy (FR-4, G-10).
2. Board thickness shall be  $1.57 \pm 0.18$  [.062  $\pm$  .007].

Contact the Tooling Assistance Center or AMP/FAX Product Information center the 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 [.003 in. per inch 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. The layout shows the top (component) side of the board.

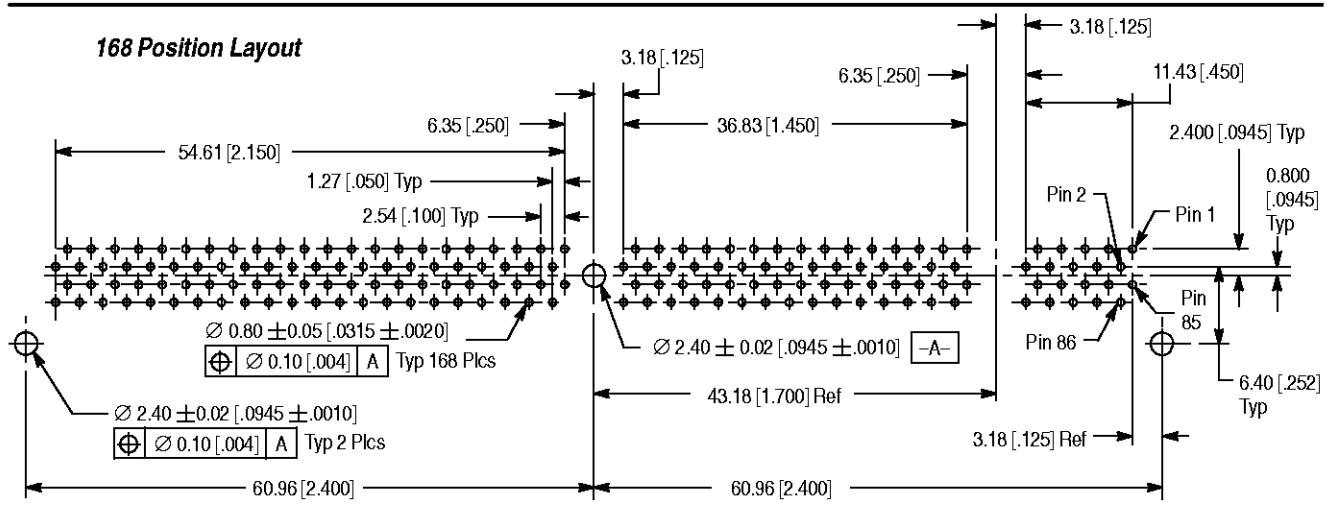


Figure 2

### 3.2. Polarization

#### A. Socket to PC Board

The Low Profile DIMM 2P 168 position socket is polarized to the pc board by the retention barbs and solder tine pattern.

#### B. Module Board to Socket

The DIMM module board is polarized to the socket by two notches in the DIMM module board that correspond with mating keys in the socket. This keying feature prevents improper orientation in the DIMM module in the socket. Keying options are governed by JEDEC specification MO-161.

**3.3. Mounting Requirements**

Insert the placement post, retention barbs, and solder tines into the holes of the pc board, making sure the socket is parallel to and resting on the board. The socket retention barbs provide the retention to hold the socket in place during handling and soldering. If solder tine clinching is desired for additional retention, the method of clinching is at the discretion of the customer. Avoid applying excessive force to the solder tines perpendicular to the pc board.

**3.4. Module to Socket Mating**

Prior to module insertion, the module extractors must be in the open position (pivoted away from the end(s) of the housing) and the DIMM module board should be positioned such that its keying slots correspond to one another. The DIMM 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 extractors 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 3.

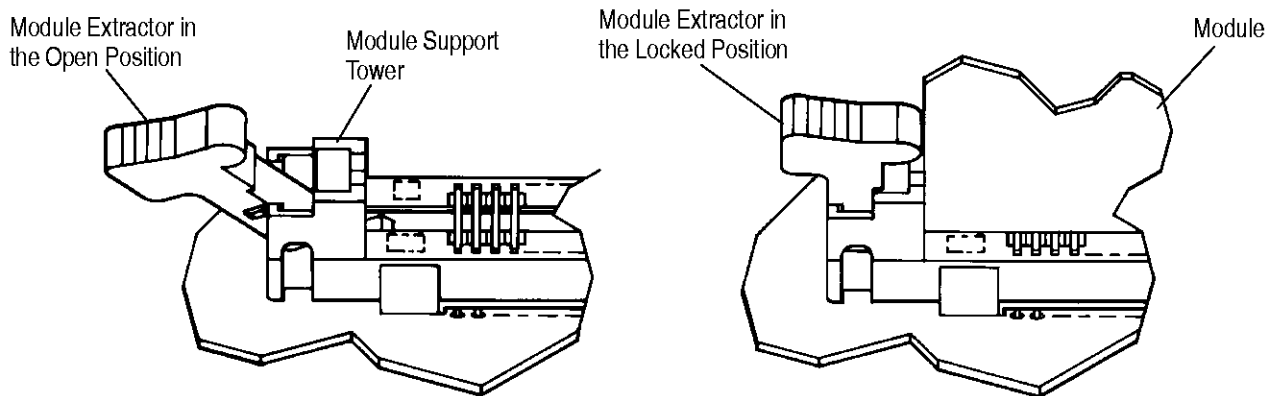


Figure 3

**3.5. Module Extraction**

The DIMM module board 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.

**3.6. Soldering**

**A. Flux Selection**

Contact solder tines must be fluxed prior to soldering with a mildly active, rosin base flux. Selection of the flux will depend on the type of pc board and other components mounted on the board. Additionally, the flux must be compatible with the wave solder line, manufacturing, health, and safety requirements. Call the Product Information phone number at the bottom of page 1 for consideration of other types of flux. Some fluxes that are compatible with these socket assemblies are provided in Figure 4.

FLUX TYPE	ACTIVITY	RESIDUE	COMMERCIAL DESIGNATION	
			KESTER <sup>88</sup>	ALPHA <sup>■</sup>
Type RMA (Mildly Activated)	Mild	Noncorrosive	186	611

<sup>88</sup> Product of Kester Solder Co.    ■ Product of Alphametals Inc.

Figure 4

**B. Cleaning**

Fluxes, residues, and activators must be removed. Cleaning procedures depend on the type of flux used on the solder line. The following cleaning compounds and chemicals may be used to clean the connectors without adverse affect on the housings and contacts. See Figure 5.

**DANGER** Consideration must be given to toxicity and other safety requirements recommended by the solvent manufacturer. Refer to the manufacturer’s Material Safety Data Sheet (MSDS) for characteristics and handling of cleaners. Trichloroethylene and Methylene Chloride can be used with no harmful affect to the socket assemblies; however AMP does not recommend them because of the harmful occupational and environmental effects. Both are carcinogenic (cancer-causing) and Trichloroethylene is harmful to the earth’s ozone layer.

**NOTE** If you have a particular solvent that is not listed, consult an AMP representative before using it on these connectors.

**CAUTION** Excessive temperature may cause housing degradation or plating deterioration.

CLEANER		TIME (Minutes)	TEMPERATURES (Maximum)	
NAME	TYPE		CELSIUS	FAHRENHEIT
Alpha 2110■	Aqueous	1	132	270
Bioact EC-7◆	Solvent	5	100	212
Butyl Carbitol●	Solvent	1	Room Ambient	
Isopropyl Alcohol	Solvent	5	100	212
Kester 5778⚡	Aqueous	5	100	212
Kester 5779⚡	Aqueous	5	100	212
Loncoterge 520●	Aqueous	5	100	212
Loncoterge 530●	Aqueous	5	100	212
Terpene Solvent	Solvent	5	100	212

■ Product of Fry’s Metals, Inc. ◆ Product of Petroferm, Inc. ● Product of Union Carbide Corp. ⚡ Product of Litton Systems, Inc.

Figure 5

**C. Drying**

When drying cleaned assemblies and printed circuit boards, make certain that temperature limitations of –55° to 105°C [–67° to 221°F] are not exceeded. Excessive temperatures may cause housing degradation.

**D. Soldering Guidelines**

AMP Low Profile DIMM 2P Socket Assemblies can be soldered using wave or equivalent soldering techniques. The temperatures and exposure time shall be within the ranges specified in Figure 6. We recommend using SN60 or SN62 solder for these socket assemblies.

**NOTE** AMP Corporate Bulletin 401–52 provides some guidelines for establishing soldering practices. Refer to Paragraph 2.5, Bulletins.

SOLDERING PROCESS	TEMPERATURE		TIME (At Max Temperature)
	CELSIUS	FAHRENHEIT	
WAVE SOLDERING	260⚡	500⚡	5 Seconds

⚡ Wave Temperature

Figure 6

**4. QUALIFYING SUPPORT**

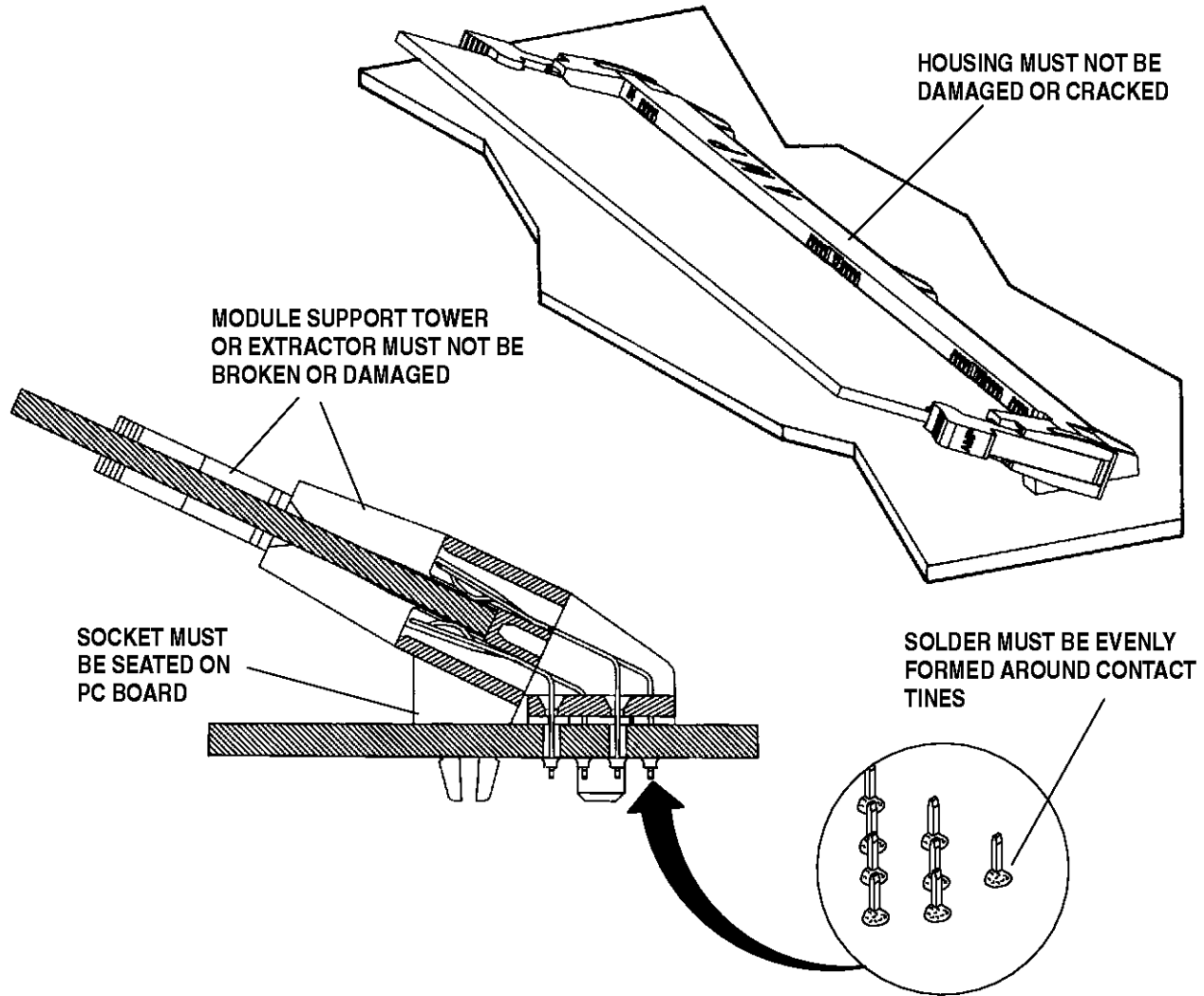
AMP Low Profile DIMM 2P socket 168 position connectors are recognized by Underwriters Laboratories Inc. under UL File Number E28476 and certified with the Canadian Standards Association under CSA File number LR7189.

**5. TOOLING**

No special tooling is required for placement of the connector onto the pc board.

**6. VISUAL AID**

Figure 7 shows a typical application of AMP Low Profile DIMM 2P 168 Position Sockets. 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.



**FIGURE 7. VISUAL AID**