AMP

Right–Angle DIMM II 168–Position Sockets

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°. 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* Right–Angle DIMM II (Dual In Line Memory Module) 168–Position Sockets with contact spacing on 1.27 mm [.050–in.] centerlines.

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.

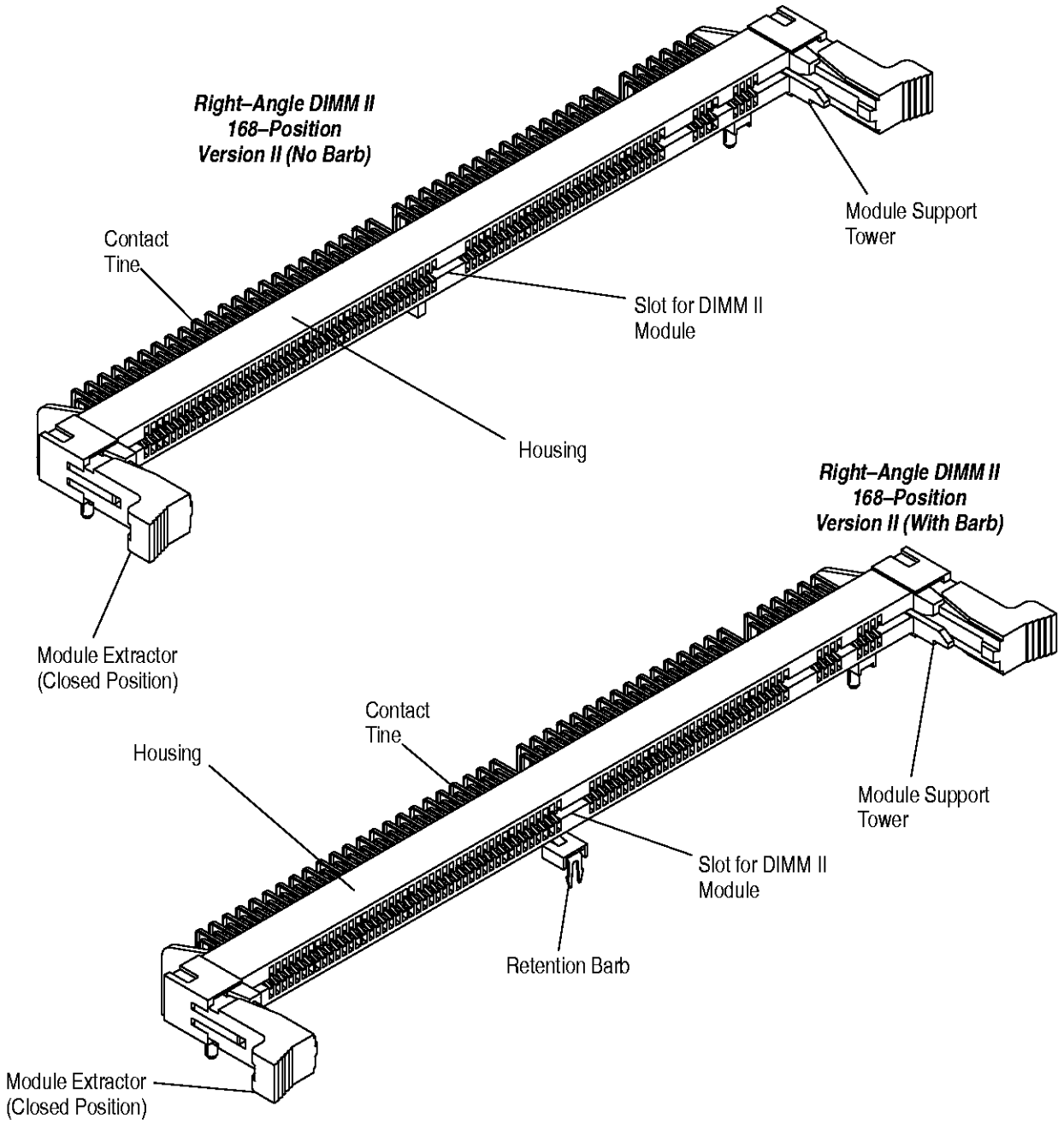

Figure 1

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2. REFERENCE MATERIAL

2.1. Revision Summary

Per EC 0990–1312–98

- Initial release of application specification

2.2. Customer Assistance

Reference Part Number 390175 and Product Code 1793 are representative of AMP Right–Angle DIMM II 168–Position Sockets. These numbers are used in the AMP network of customer service to access tooling and product application information. This service is provided by your local AMP representative (Field Sales Engineer, Field Application Engineer, etc) or, after purchase, by calling the Tooling 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. If there is a conflict with this specification or any other technical documentation and the Customer Drawings supplied by AMP Incorporated, contact the Tooling Assistance Center or the AMP FAX/Product Information number at the bottom of page 1.

2.4. 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.

2.5. Specifications

AMP Product Specification 108–1756 provides test and performance requirements for AMP Right–Angle DIMM II 168–Position Sockets.

3. REQUIREMENTS

3.1. Storage

A. Ultraviolet Light

Prolonged exposure to ultraviolet light may deteriorate the chemical composition used in the socket housing material.

B. Shelf Life

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

C. Chemical Exposure

Do not store sockets 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	Sulfides Nitrites	Tartrates

3.2. PC Board

A. Material and Thickness

1. Board material will be glass epoxy (FR–4, G–10).

2. The socket can be installed on 1.57 mm [.062 in.] thick pc boards. Board thickness may vary depending upon the application; however, contact tine length through the pc board becomes important for wave soldering operations. A recommended minimum of 1.02 [.040] of the contact solder tine should protrude through the pc board. 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 0.03 [.001] over the length of the socket.

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. Design the pc board using the dimensions provided in Figure 2. The layout shows the top (component) side of the board.

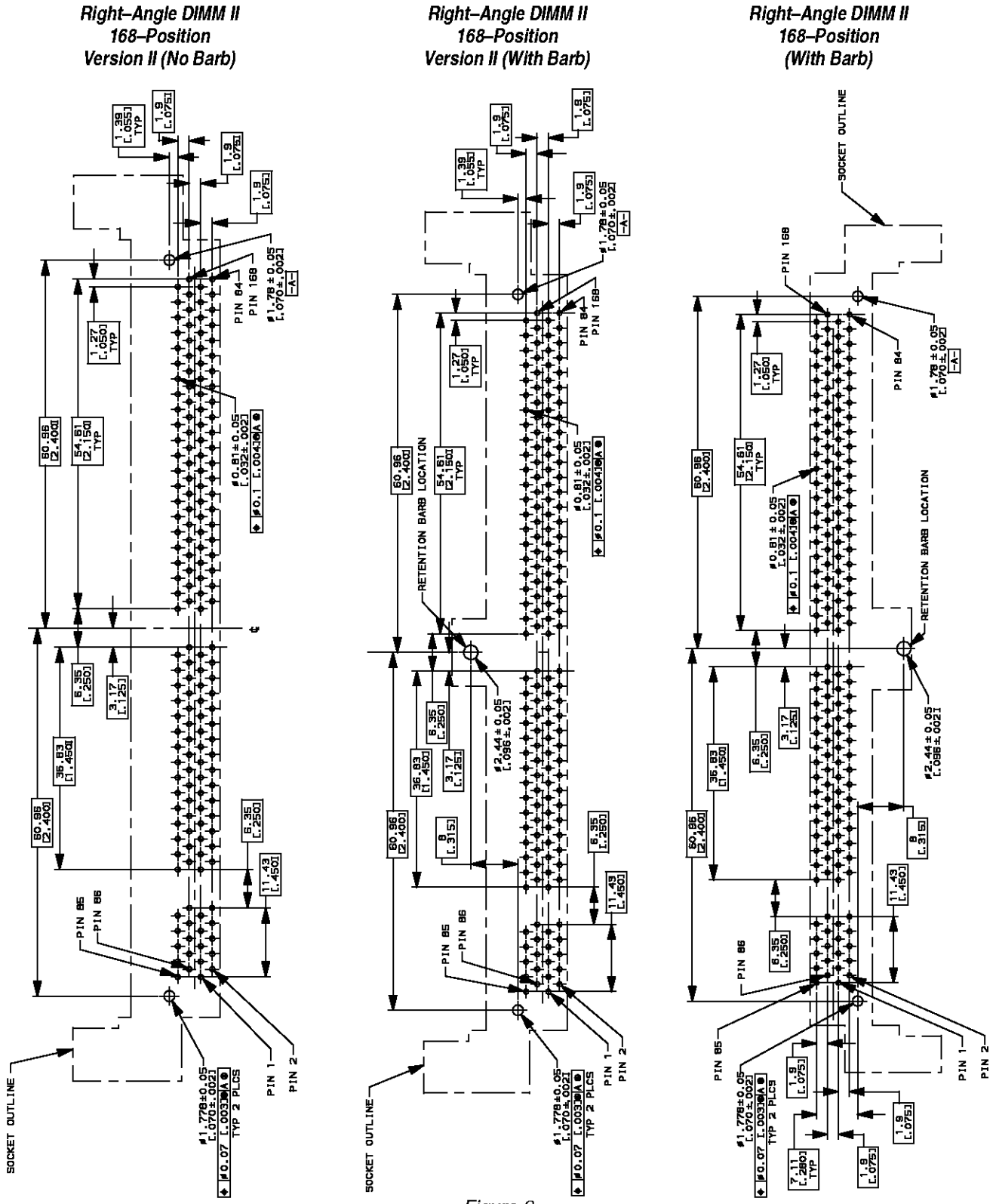

Figure 2

D. Contact Hole Configuration

The contact holes in the pc board for all sockets must be prepared as specified in Figure 3.

NOTE: The drilled hole diameter must be sized so that the diameter of the finished hole after plating meets the dimensions as shown.

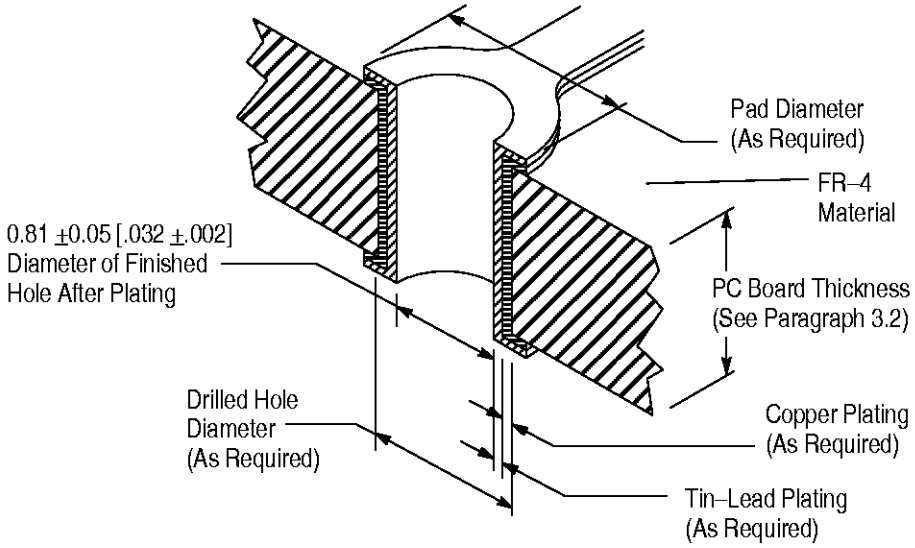

Figure 3

3.3. Polarization

The Right–Angle DIMM II Socket is inherently polarized. The contact tine hole pattern and placement posts designate the specific configurations for application to a pc board.

The 168–position DIMM II Module is polarized to the socket by two keying features. Notches in the DIMM II module board correspond to mating keys in the socket. This prevents the DIMM II module board from being oriented incorrectly in the socket. Keying options are governed by JEDEC specifications MO–161 and MO–172. See Figure 4.

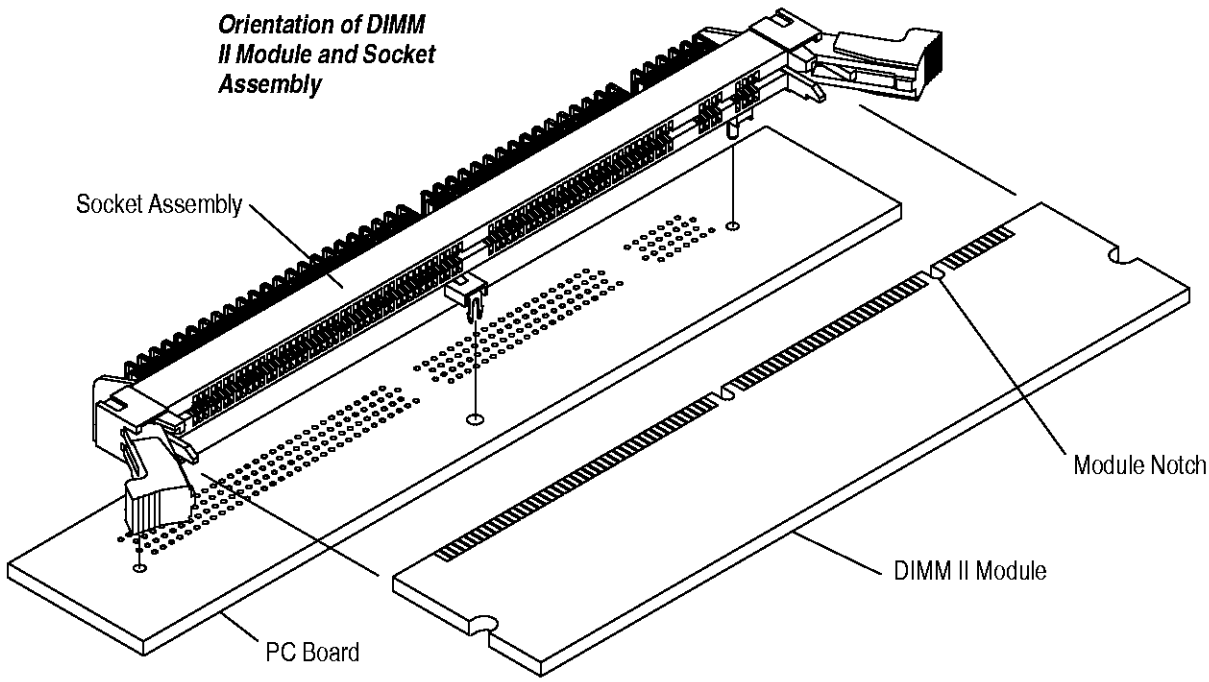

Figure 4

3.4. Mounting Requirements

Sockets should be gripped by the housing only and not by the contacts. Prior to positioning a socket, the pc board should be placed on an appropriate board support fixture. Insert placement posts and solder tines into the through holes of the pc board, making sure the socket is parallel to and resting on the board. The center retention barb provides the retention to hold the socket in place during handling and soldering. The force necessary to apply a socket to the pc board will not exceed 22 Newton [5 pound–force]. 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 board). If using robotic equipment, a total equipment accuracy of $\pm$0.13 [.005], including the gripper and fixture tolerance and equipment repeatability, is required.

3.5. Module to Socket Mating

Prior to module insertion, the module extractors must be in the open position (rotated away from the ends of the housing) and the DIMM II module board should be positioned such that its keying slots correspond to one another. The DIMM II module board should be inserted into the card guides and pushed in until it fully seats into the socket. As the board is being inserted, the extractors begin moving inward. When the extractors reach a position parallel to the DIMM II module, it indicates that the module is fully seated and locked into position. In the event that the extractors are not parallel to the DIMM II module board after insertion, the extractors should be manually pushed inward and the DIMM II module board pushed into the socket until full seating occurs. See Figure 5.

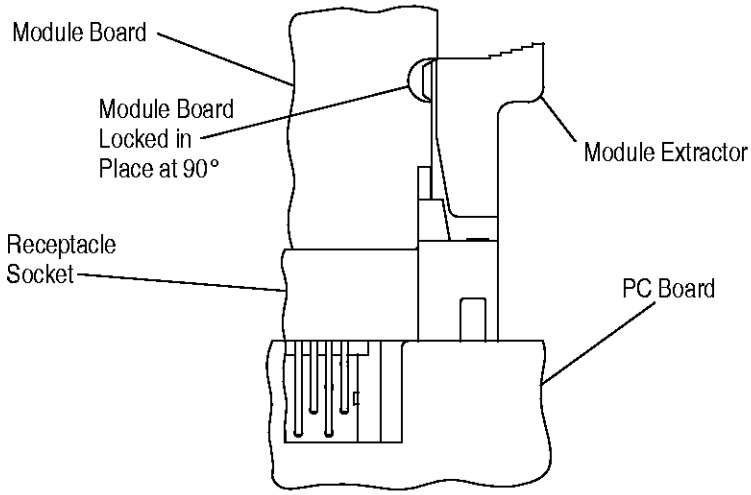

Figure 5

3.6. Module Extraction

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

3.7. Soldering

A. Soldering Guidelines

AMP Right–Angle DIMM II 168–Position Sockets 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.

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

❖ Wave Temperature

Figure 6

NOTE *AMP Corporate Bulletin 401–52 provides some guidelines for establishing soldering practices. Refer to Paragraph 2.4, Bulletins.*

B. Fluxing

The 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 number at the bottom of page 1 for consideration of other types of flux. Some fluxes that are compatible with these sockets are provided in Figure 7.

FLUX TYPE	ACTIVITY	RESIDUE	COMMERCIAL DESIGNATION	
			KESTER▲	ALPHA⊞
Type RMA (Mildly Activated)	Mild	Noncorrosive	185/197	611
Center (Activated)	Medium	May be Corrosive	1544, 1545, 1547	711, 809, 811

▲Trademark of MacDonald & Co. ⊞ Designation of Alpha Metals Inc.

Figure 7

C. Cleaning

After soldering, removal of fluxes, residues, and activators is necessary. Consult with the supplier of the solder and flux for recommended cleaning solvents. The following is a listing of common cleaning solvents that will not affect the sockets. The sockets will be unaffected by any of these solvents for 5 minutes at 40.6°C [105°F].

Cleaners must be free of dissolved flux and other contaminants. We recommend cleaning with the pc board on its edge. If using an aqueous cleaner, we recommend standard equipment such as a soak–tank or an automatic in–line machine. See Figure 8.

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 8

DANGER *Consideration must be given to toxicity and other safety requirements recommended by the solvent manufacturer. Trichloroethylene and Methylene Chloride can be used with no harmful affect to the sockets; 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, contact the Product Information number at the bottom of page 1.*

D. Drying

When drying clean assemblies and pc boards, air drying of is recommended. Temperature for the sockets should not exceed –18.1 to 40.6°C [–55 to 105°F]. Degradation of the sockets could result from extreme temperatures.

E. Checking Installed Socket

All solder joints should conform to those specified in AMP Workmanship Specification 101–21. The socket must seat on the pc board to the dimensions shown in Figure 9.

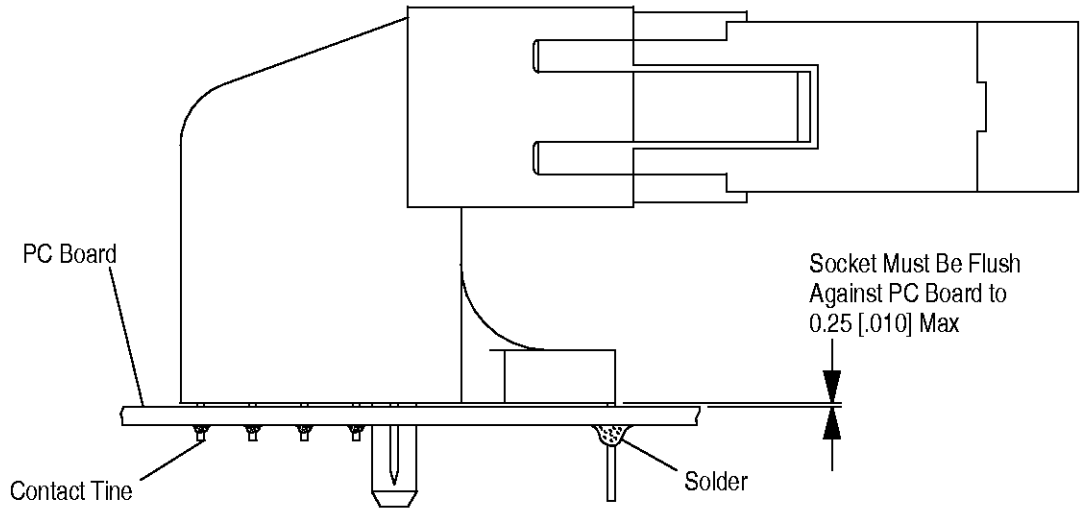

Figure 9

3.8. Socket Assembly Spacing

Care must be used to avoid interference between adjacent socket assemblies and/or other components. The information provided in Figure 10 is to ensure proper mating.

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

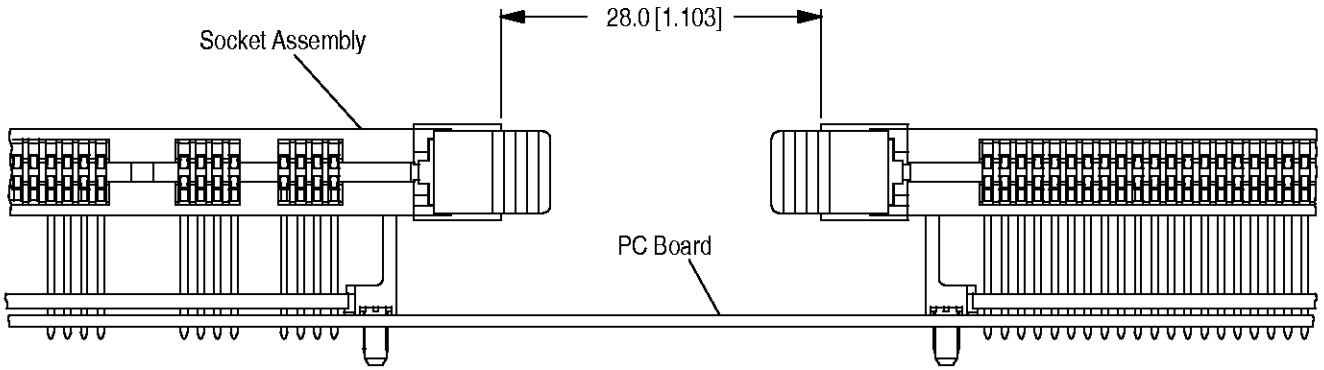

Figure 10

3.9. Repair/Replacement

Damaged contacts can not be repaired or removed from the socket housing. The entire socket will have to be removed by normal de–soldering methods and replaced with a new one.

4. QUALIFICATION

AMP Right–Angle DIMM II 168–Position Sockets are listed by Underwriters Laboratories Inc. (UL) under File Number E28476 and certified to the Canadian Standards Association (CSA) under File LR7189.

5. TOOLING

No special tooling is required for the installation or removal of Right–Angle DIMM II 168–Position Sockets.

6. VISUAL AID

Figure 11 shows a typical application of an AMP Right–Angle DIMM II 168–Position 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.

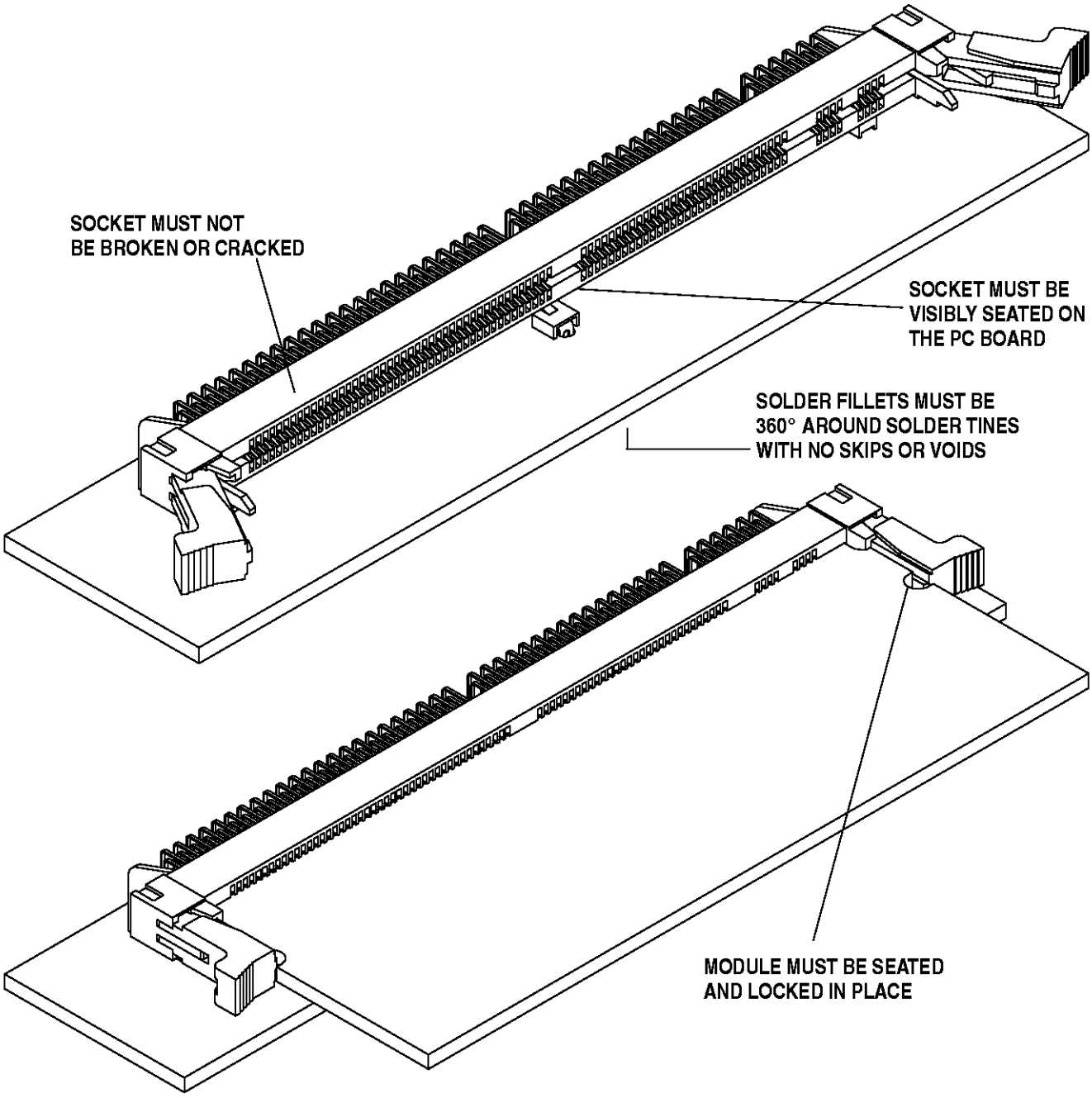

FIGURE 11. VISUAL AID