AMP | AMP INCORPORATED Harrisburg, Pa. 17105 | TOOLING ASSISTANCE CENTER 1 800 722-1111 AMP FAX 1 800 522-6752 | APPLICATION SPECIFICATION | 114-6049

REV	REASON

CHAMP*
.050 HIGH DENSITY
CONNECTOR

ENGINEERING RELEASE DATE
7-8-92

APPROVAL
BILL CHANDLER

1. INTRODUCTION

This specification covers the requirements for application of AMP* CHAMP .050 High Density Plug and Receptacle Connector Assemblies to a printed circuit (pc) board. The connectors are available in 140 through 300 position sizes. Figure 1 shows product features and terminology that will be used throughout this specification.

NOTE *All dimensions in this specifications are in millimeters [with inch equivalents in brackets.]*

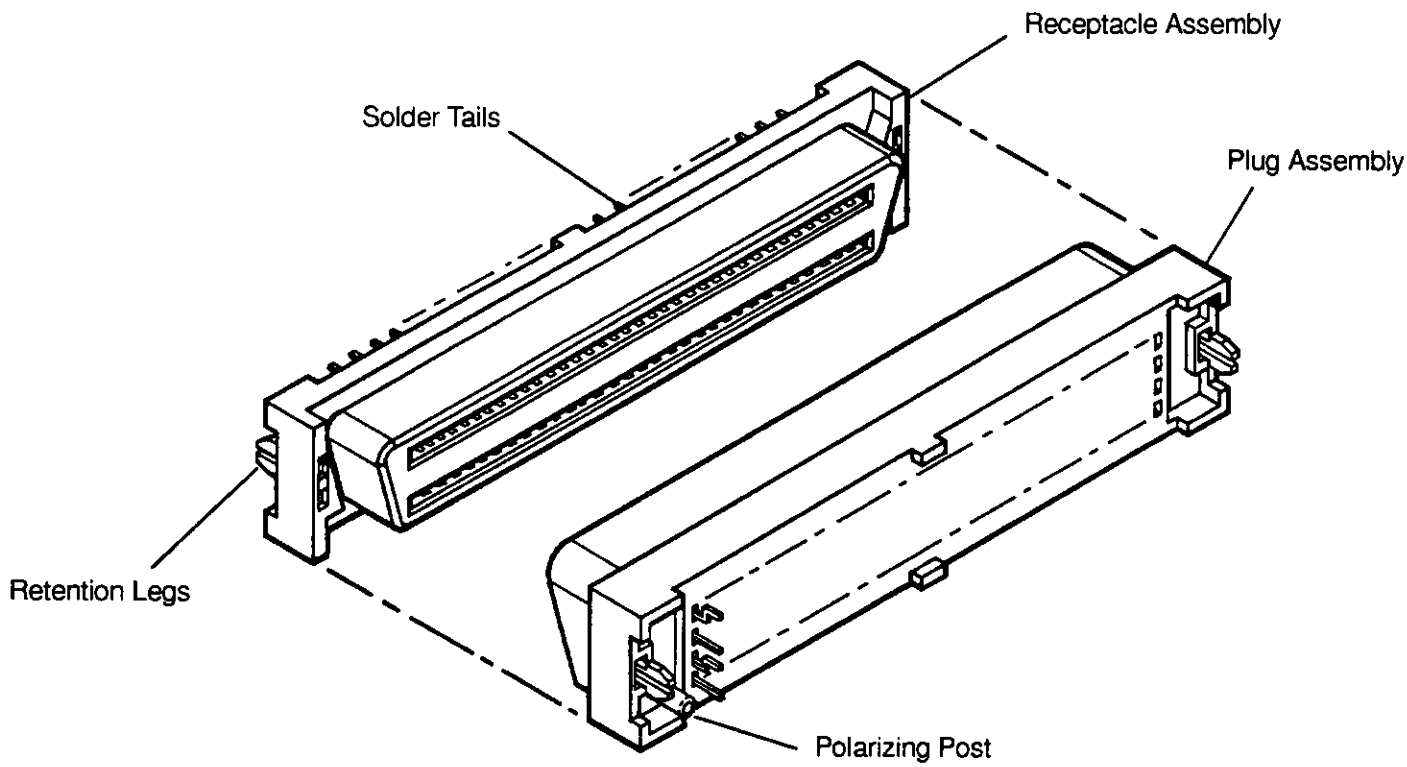

Fig. 1. Product Features 92AS-43

2. REFERENCE MATERIAL

2.1. Customer Assistance

Reference Part Number 557095 and Product Code 0925 are assigned to the CHAMP .050 High Density Connectors. 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, etc.) or after purchase, by calling the TOOLING ASSISTANCE CENTER number at the top of this page.

2.2. Engineering 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.

2.3. Product Specification

AMP Product Specification 108-1367 provides performance criteria for these connectors.

2.4. Instructional Material

AMP Corporate Bulletin No. 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

3.1. Printed Circuit (pc) Board

A. Material

The board should be glass/epoxy material; less dimensionally-stable material may present problems when inserting the components.

B. Thickness

The connectors may be installed on 0.8 to 1.6 [.031 to .063] thick pc boards. Board thickness may vary depending upon application; however, solder tail length becomes important for wave soldering operation. A recommended minimum of 1.02 [.040] solder tail should protrude through the pc board.

3.2. PC Board Layout

PC board layout shall be as shown in Figure 2.

RECEPTACLE ASSEMBLY

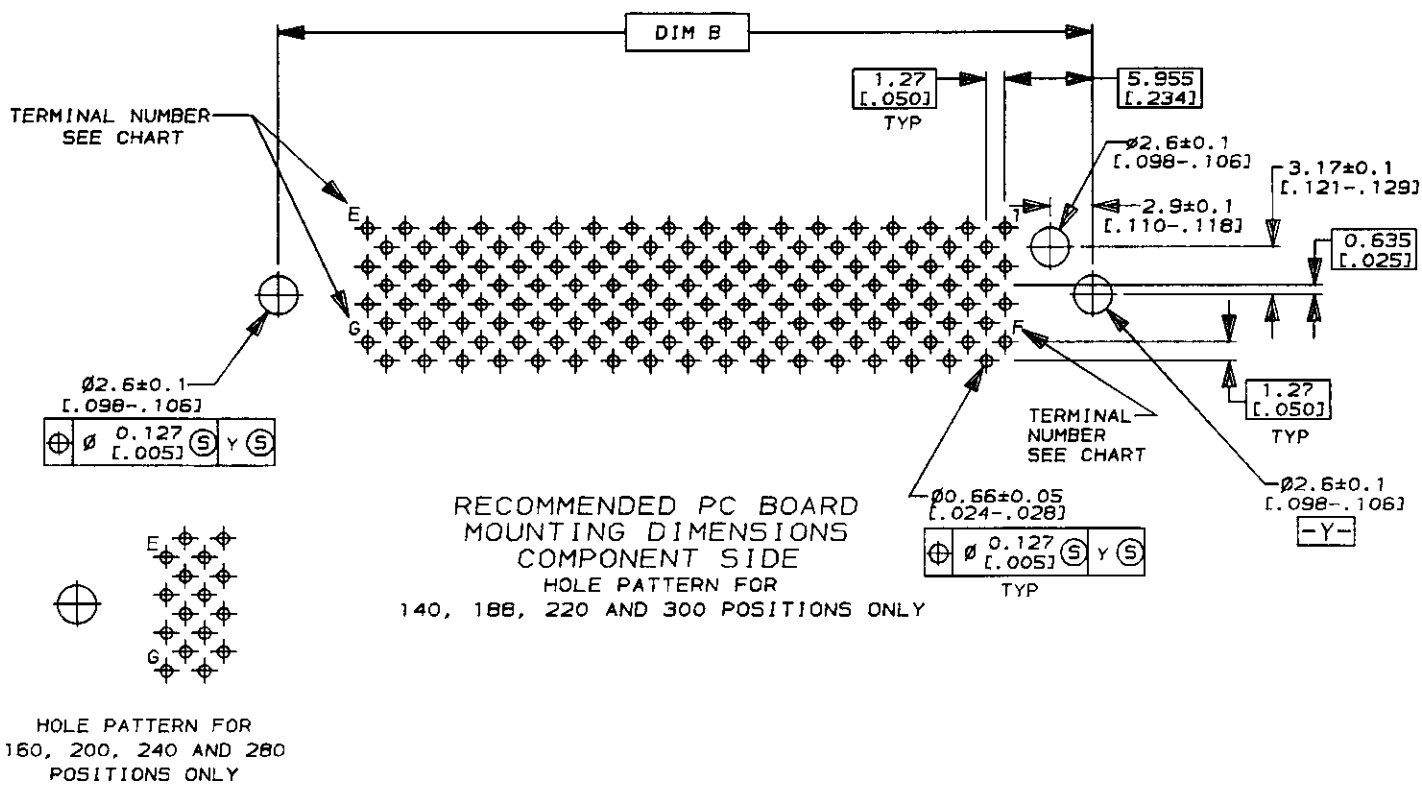

Fig. 2. PC Board Layouts (cont'd)

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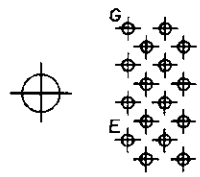
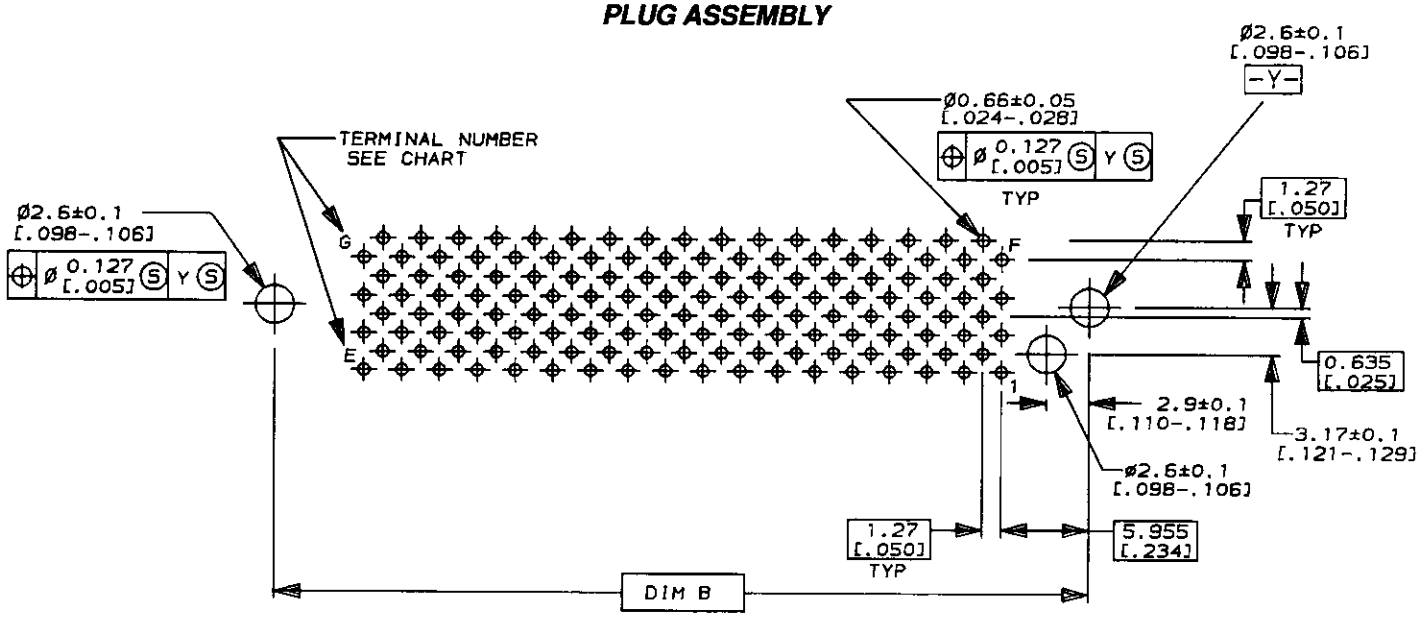
NO. OF POS	DIM. B	TERMINAL NUMBER		
		E	F	G
140	55.09 [2.169]	35	106	140
160	61.44 [2.419]	40	121	160
188	70.33 [2.769]	47	142	188
200	74.14 [2.919]	50	151	200
220	80.49 [3.169]	55	166	220
240	86.84 [3.419]	60	181	240
280	99.54 [3.919]	70	211	280
300	105.89 [4.169]	75	226	300



HOLE PATTERN FOR
160, 200, 240 AND 280
POSITIONS ONLY

PLUG ASSEMBLY



RECOMMENDED PC BOARD
MOUNTING DIMENSIONS
COMPONENT SIDE
HOLE PATTERN FOR
140, 188, 220 AND 300 POSITIONS ONLY

Fig. 2. PC Board Layouts (end)

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3.3. Polarization

The connector is inherently polarized. The keystone configuration of the mating face prohibits the accidental inversion of a mating connector. The polarizing post on the bottom of the plug and receptacle housing assures positive alignment on the pc board.

3.4. Retention Legs

The connector can be secured to the pc board prior to soldering by utilizing the board retention legs shown in Figure 3.

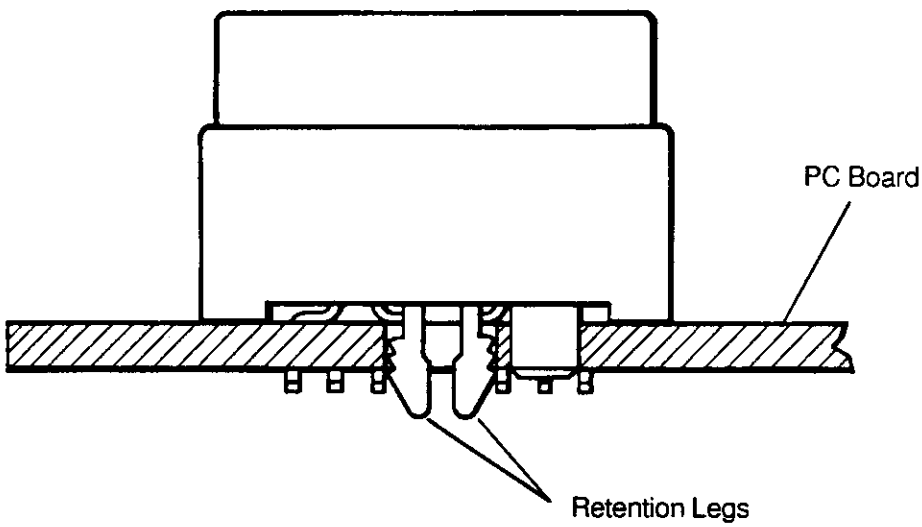

Fig. 3. Retention Legs 92AS-44

3.5. Soldering

A. Flux Selection

The solder tails and attaching hardware must be fluxed prior to soldering with rosin base flux. Selection of the proper flux will depend on the type of printed circuit board and other components mounted on the board. Additionally, the flux will have to be compatible with the wave solder line, manufacturing, and safety requirements.

B. Soldering Guide Lines

Refer to paragraph 2.4 for instructional material that is available for establishing soldering guidelines.

C. Cleaning

After soldering, removal of fluxes, residues, and activators is necessary. Consult with the supplier of the solder and flux for the recommended cleaning solvents. The following is a listing of common cleaning solvents that will not affect the connectors for a period of five minutes at 40°C [105°F]

1,1,1-Trichloroethane	Freon TMS■	Freon TF■
Prelete●	Freon TA■	Freon TMC■
Allied Genesolv■■	Freon TE■	

● Trademark of London Chemical Co., Inc.
■ Trademark of E.I. DuPont de Nemours & Co., Inc.
■■ Trademark of Allied-Signal, Inc.

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

NOTE *If you have a particular solvent that is not listed, contact an AMP field engineer by calling the AMP TOOLING ASSISTANCE CENTER number on page 1.*

D. Drying

When drying cleaned assemblies and printed circuit boards, make certain that temperature limitations of –48°C to +40°C [–55°F to +105°F] are not exceeded. Excessive temperatures may cause housing degradation.

3.6. Repair

The connectors should be checked immediately after soldering to be sure the housing is properly seated. If not, the solder can be removed and the header reseated and resoldered. However, if there is any, damage to the terminals or the housing, the connector must be removed and replaced with a new one.

4. MATING DIMENSIONS

The dimensions in Figure 4 are required to assure full mating of connectors. This dimension must be considered when determining the method of mounting and the thickness of the pc board when the connector is to be mounted.

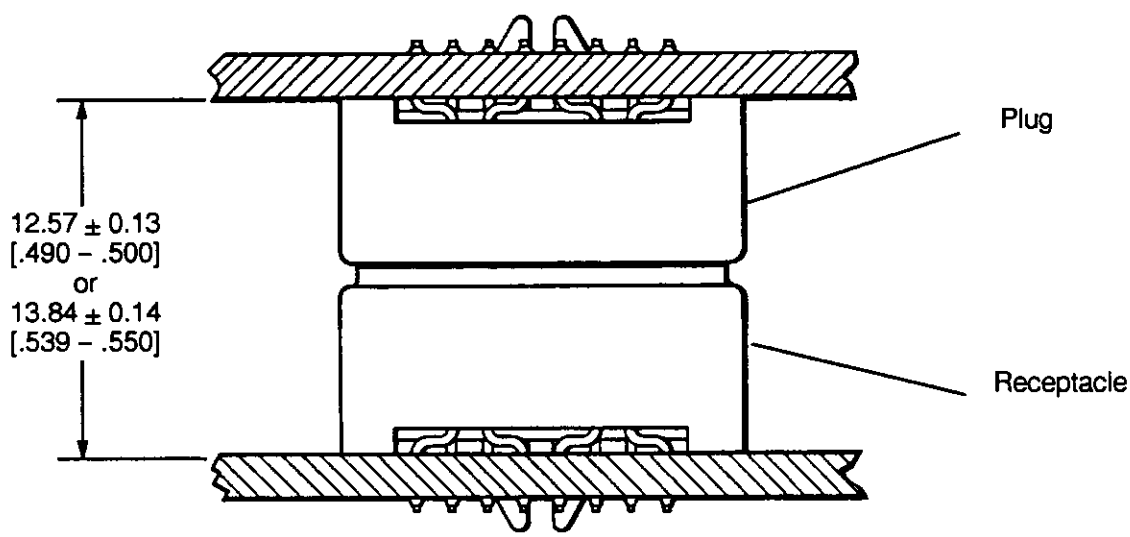

Fig. 4. Mating 92AS–45

5. QUALIFICATIONS

The AMP CHAMP .050 High Density Connectors are UL recognized and CSA certified.

6. TOOLING

A pc board support must be used to support the board while allowing contacts to pass through freely. Board supports are customer-supplied.

7. VISUAL AID

Figure 5 depicts typical CHAMP .050 High Density Connectors after they have been installed and soldered onto a pc board. The illustration show visual conditions that production personnel should check to ensure a proper installation.

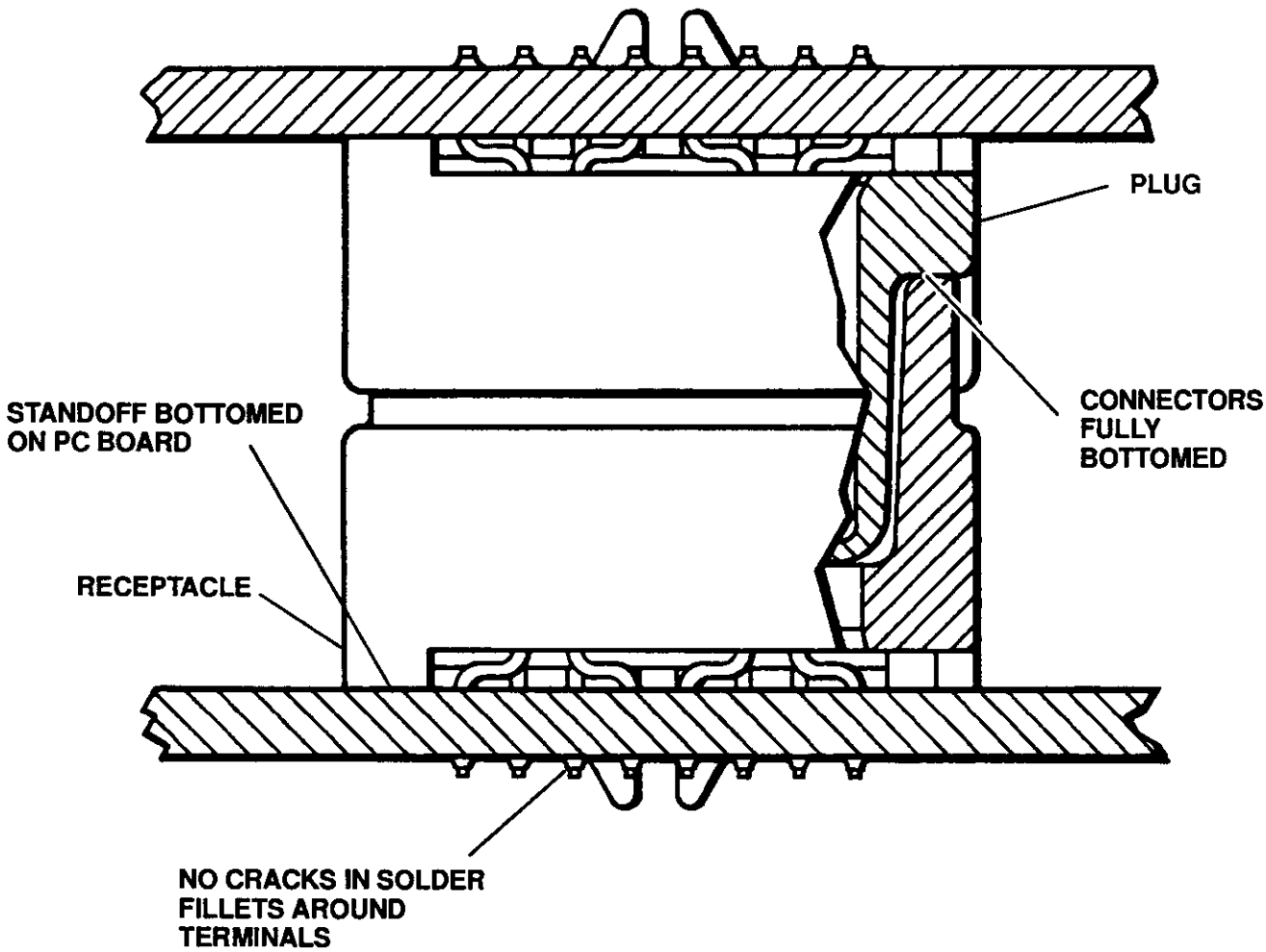

FIG. 5. VISUAL AID 92AS-46