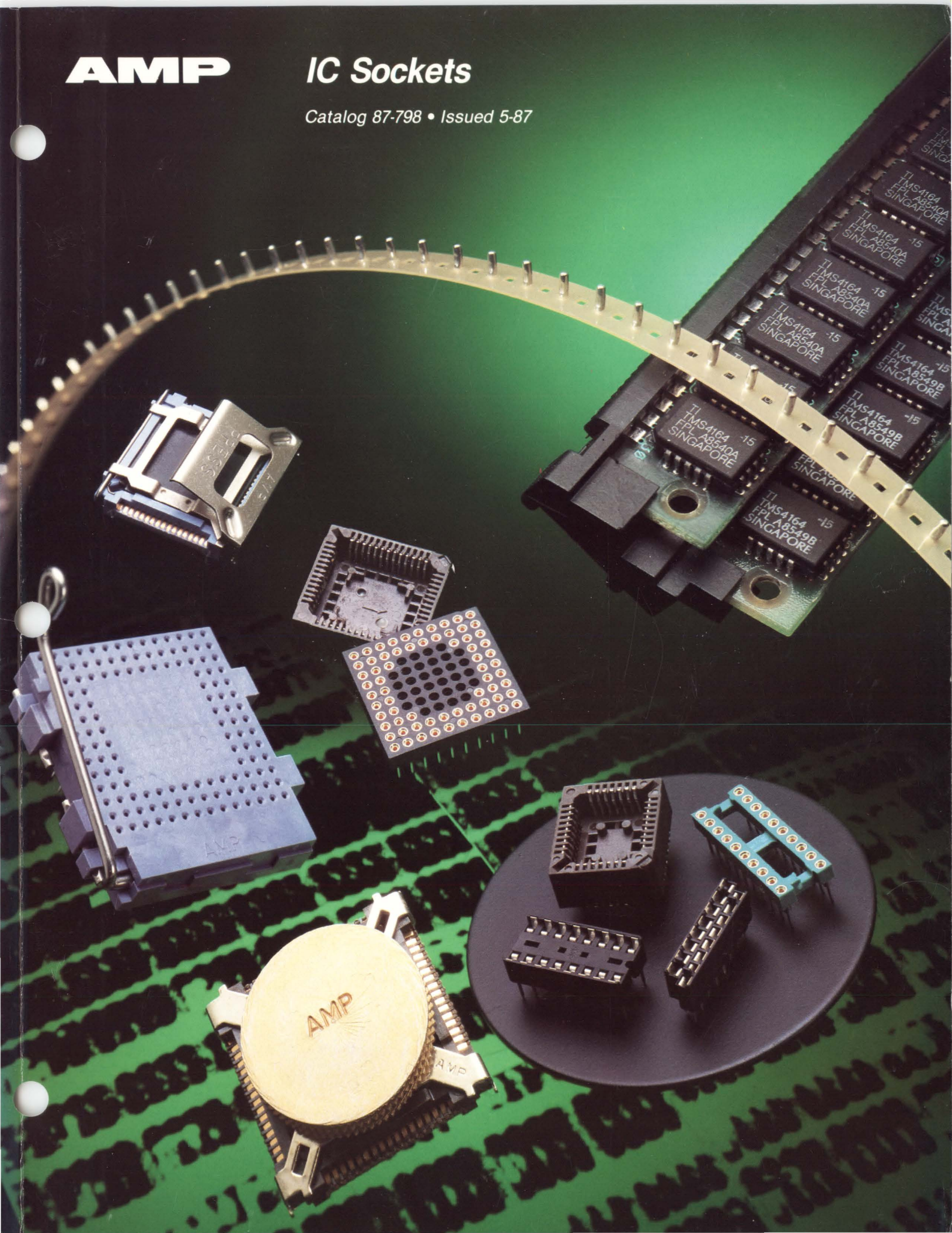
AMP

IC Sockets

Catalog 87-798 • Issued 5-87



IC Sockets

Introduction

Complex printed circuits are too valuable to risk direct soldering to expensive integrated circuits (IC's). Socketing is the answer, and while the use of sockets obviously involves additional costs, it offers advantages that not only prove cost effective in the long run, but also simplify board design and manufacture. Some of these advantages are:

Repairability. The ability to remove socketed chip carriers easily aids trouble-shooting and repair.

Lower service costs. Substituting a good chip for a bad one is less costly than substituting a good board for a bad one.

Reprogramming. Simple change of chips, such as ROM's or EPROM's allow circuits to be reprogrammed. Again, the pluggability provided by sockets simplifies the task.

Future expansion. Sockets can be provided for future expansion of function.

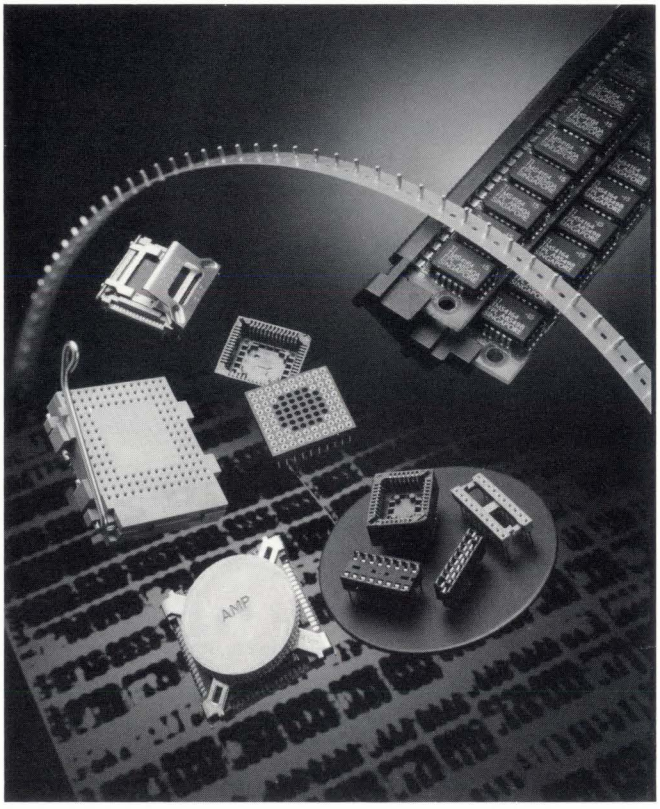
Factory testing and burn-in. Testing a bare unmounted chip is not acceptable, therefore socketing is required.

Replacement of early-life failures. Advanced state-of-the-art chips, whose life cycle is still in the beginning of the learning curve, can have a high failure rate. Such failures often occur during burn-in of assembled equipment before shipment. The ability to plug a new chip into a socket is a boon.

Manufacturing ease. During the startup of equipment, new IC packages are often not available in full quantity. Socketing allows assembly to proceed through testing by reusing on-hand chips. When late deliveries arrive, new chips can be plugged in, and the equipment shipped.

AMP has kept pace with IC technology by designing sockets to handle all popular forms of IC's including DIP's, SIP's, ZIP's as well as sockets for PLCC, LCCC and PGA packages.

For your convenience, this catalog is arranged in two main sections—Production Sockets and Burn-In and Test Sockets. In addition, we have provided an easy-to-use Semiconductor-to-AMP Socket Cross Reference (see page 126) which lists the most common devices by manufacturer, part number and description, including number of contact pins, and shows AMP part numbers of appropriate square and DIP sockets.



Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents. Metric symbols used are:
N (Newton)
C (Celsius)

Specifications subject to change. Consult AMP Incorporated for latest design specifications.

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IC Sockets
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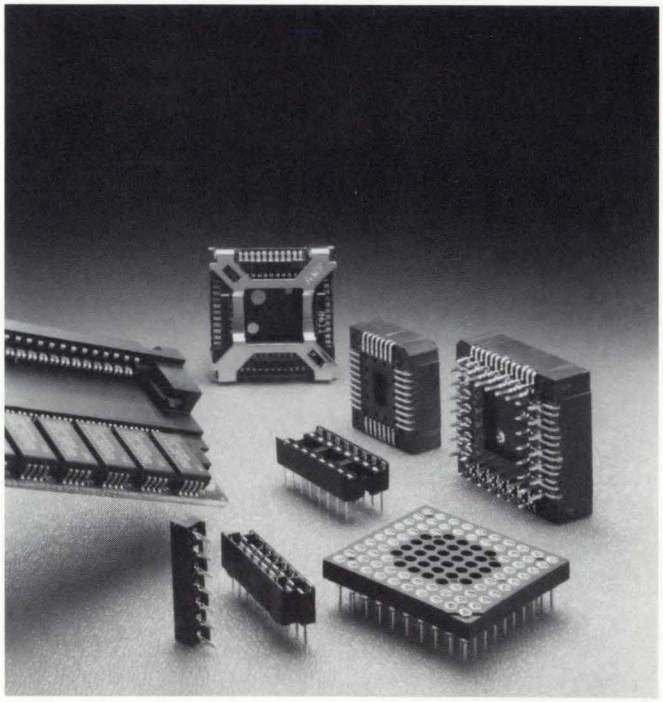
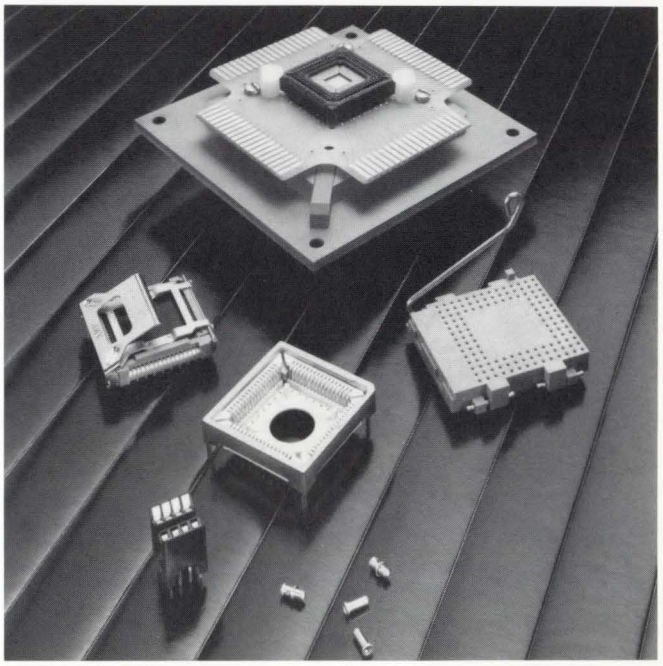
PRODUCTION SOCKETS



BURN-IN AND TEST SOCKETS



IC Sockets–
Product Selection Guide

AMP Socket	Type of Device	No. of Positions	Row-to-Row Spacing	Contact Centerline(s)
DIPLOMATE DL (Dual Leaf)	DIP	6-64	**.300** [7.62], **.400** [10.16] **.600** [15.24], **.900** [22.86]	**.100** [2.54]
DIPLOMATE SL (Single Leaf)	DIP Skinny DIP	8-40	**.300** [7.62], **.400** [10.16] **.600** [15.24]	**.100** [2.54]
Drawn Spring Low Profile	DIP	6-40	**.300** [7.62], **.400** [10.16] **.600** [15.24]	**.100** [2.54]
DIPLOMATE LF (Low Force)	DIP	24-64	**.600** [15.24], **.900** [22.86]	**.100** [2.54]
DIPLOMATE OTC (Over-the-Capacitor)	DIP	16	**.300** [7.62]	**.100** [2.54]
DIPLOMATE DL (Dual Leaf)	SIP	8-30	–	**.100** [2.54]
DIPLOMATE SL (Single Leaf)	SIP	3-15	–	**.100** [2.54]
Drawn Spring (Low Profile)	SIP	20 & 32 (Breakaway)	–	**.100** [2.54]
DIPLOMATE ZP (Zig-Zag)	ZIP	16-28	**.100** [2.54]	**.100** [2.54]
DIPLOMATE SIMM	SIM Modules	22-42	**.300** [7.62], **.400** [10.16] **.500** [12.7]	**.100** [2.54]
HPT & NPG (Square)	PLCC	28-84	–	**.100** [2.54] **.050** [1.27]
Gold-Gold System (Square)	PLCC	20-84	–	**.100** [2.54] **.050** [1.27]
HPT & NPG (Rectangular)	PLCC	32	–	**.100** [2.54] **.050** [1.27]
Low Height	LCCC	44-100	–	**.100** [2.54]
Universal High Speed	LCCC	68-164	–	**.150** [3.81]
Low Profile Drawn Spring	PGA	64-289	–	**.100** [2.54]
LIF (Low Insertion Force)	PGA	64-289	–	**.100** [2.54]
ZIF (Zero Insertion Force)	PGA	64-400	–	**.100** [2.54]
Miniature Spring	DIP Skinny DIP SIP, PGA	Unlimited	–	–
DIPLOMATE HT (High Temperature)	DIP	8-64	**.300** [7.62], **.400** [10.16] **.600** [15.24], **.700** [17.78] **.900** [22.86], **1.100** [27.94]	**.100** [2.54]
ZIF-Lock (Zero Insertion Force)	DIP	14-40	**.300** [7.62], **.600** [15.24]	**.100** [2.54]
LIF Type Low Profile	PLCC	20-68	–	**.100** [2.54]
SO-J Type	PLCC (SO-J)	26	–	**.050** [1.27]
Reusable Receptacles	DIP Skinny DIP SIP, PGA	Unlimited	–	–
Test Socket Assemblies	PLCC LCCC	20-220	–	**.025** [0.64]

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Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Mounting Styles	Contact Material	Contact Plating(s)	Height Above Pc Board	Type of Socket	Substrate Material	Page No.
Thru-Board	Beryllium Copper Phosphor Bronze	Tin Gold	**.210** [5.33]	Production	Ceramic Plastic	8
Thru-Board	Beryllium Copper Phosphor Bronze Copper Alloy	Tin	**.185** [4.7]	Production	Ceramic Plastic	11
Thru-Board	Beryllium Copper	Tin Gold	**.175** [4.44]	Production	Ceramic Plastic	14
Thru-Board	Beryllium Copper Phosphor Bronze	Tin Gold	**.233** [5.92]	Production	Ceramic Plastic	17
Thru-Board	Beryllium Copper Phosphor Bronze	Tin	**.210** [5.33]	Production	Ceramic Plastic	19
Thru-Board	Beryllium Copper Phosphor Bronze	Tin Gold	**.210** [5.33]	Production	Plastic	21
Thru-Board	Beryllium Copper Phosphor Bronze	Tin Gold	**.160** [4.06]	Production	Plastic	23
Thru-Board	Beryllium Copper	Tin Gold	**.171** [4.34]	Production	Plastic	25
Thru-Board	Phosphor Bronze	Tin	**.255** [6.48]	Production	Plastic	27
Thru-Board	Beryllium Copper	Tin Gold	**.510** [12.95]	Production	–	29
Thru-Board Surface Mt.	Phosphor Bronze	Tin Gold	**.360** [9.14] Max.	Production	Plastic	33
Thru-Board Surface Mt.	Beryllium Copper	Gold	**.320** [8.13]	Production	Plastic	41
Thru-Board Surface Mt.	Phosphor Bronze	Tin Gold	**.330** [8.39] Max.	Production	Plastic	45
Thru-Board	Beryllium Copper	Gold	**.350** [8.89] Max.	Production Burn-In	Ceramic	49
Surface Mt.	Phosphor Bronze	Gold	**.230** [5.84]	Production	Ceramic	54
Thru-Board	Beryllium Copper	Gold	**.175** [4.44]	Production	Ceramic Plastic	57
Thru-Board	Beryllium Copper	Gold	**.280** [7.11]	Production	Ceramic Plastic	60
Thru-Board	Beryllium Copper	Gold	**.336** [8.53] Max.	Production Burn-In	Ceramic Plastic	62
Thru-Board	Beryllium Copper	Tin Gold	**.022** [0.56]	Production	Ceramic Plastic	65
Thru-Board	Beryllium Copper	Gold	**.570** [14.48]	Burn-In	Ceramic Plastic	79
Thru-Board	Beryllium Copper	Tin Gold	**.500** [12.7] Max.	Burn-In	Ceramic Plastic	84
Thru-Board	Beryllium Copper	Nickel- Boron	**.335** [8.51]	Burn-In	Plastic	86
Thru-Board	Beryllium Copper Phosphor Bronze Beryllium Nickel	Nickel- Boron	**.335** [8.51]	Burn-In	Plastic	91
Thru-Board	Beryllium Copper	Tin Gold	**.035** [0.89]	Burn-In	Ceramic Plastic	97
–	Phosphor Bronze Beryllium Copper	Gold	–	Test	Ceramic Plastic	99

Production Sockets
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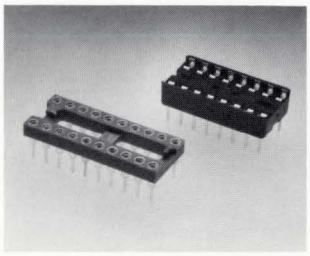

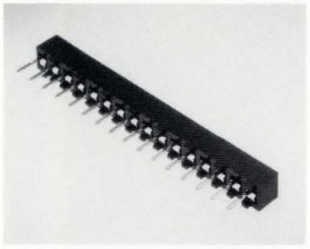

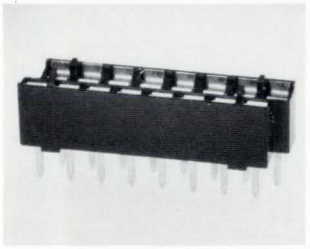

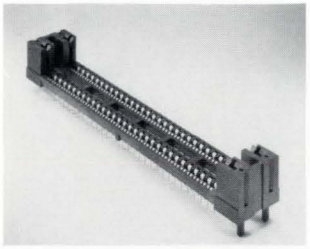

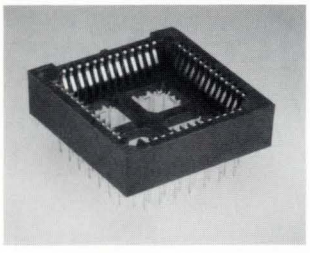

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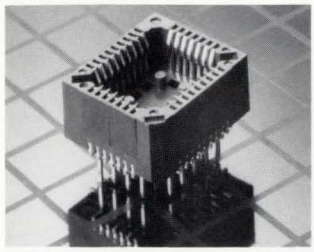
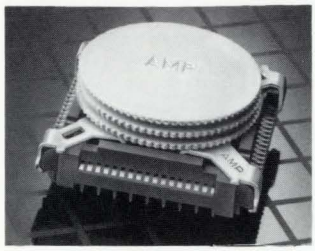
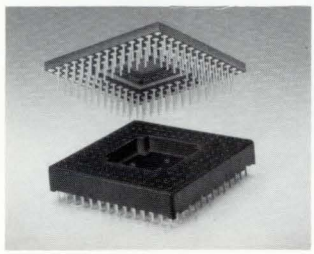


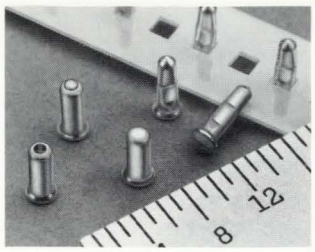
Rectangular Sockets for PLCC Packages



Square Sockets for LCCC Packages



Square Sockets for PGA Packages



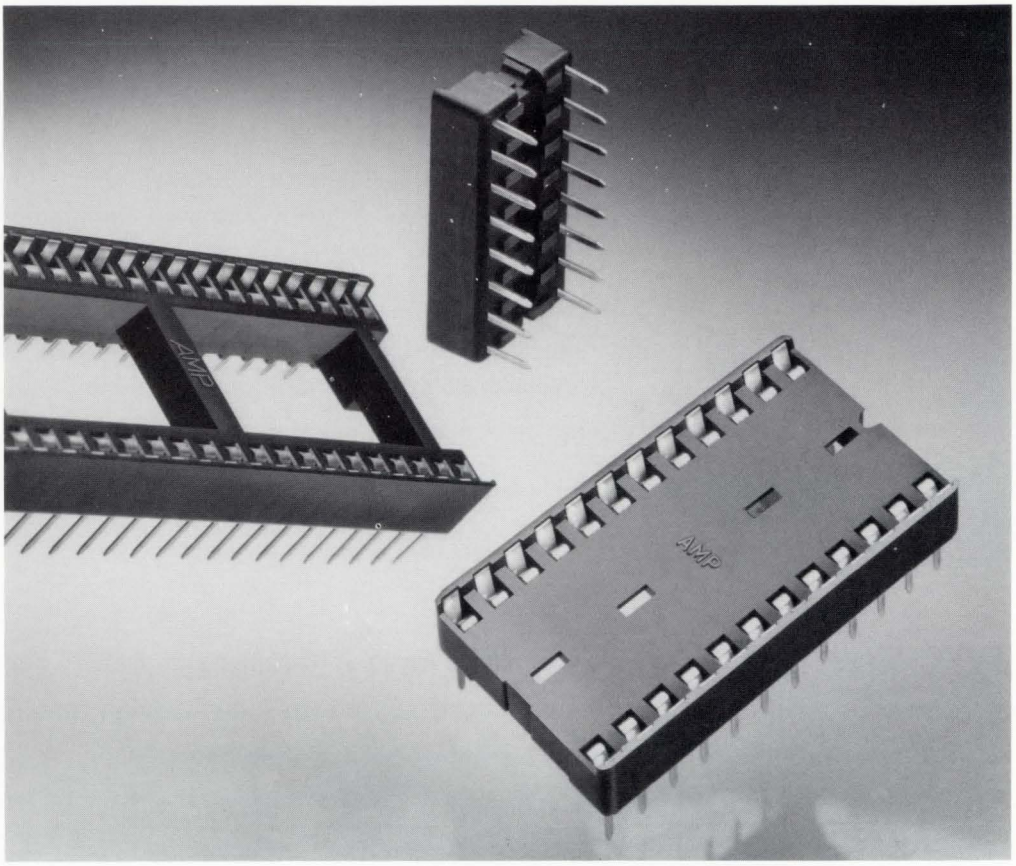
DIP Sockets

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

DIPLOMATE Dual Leaf (DL) Contact Sockets (Closed and Open Frame)

Features

- Low Profile—.210 [5.33] above pc board
- Dual wiping contacts
- Face wipe contacts for high reliability and constant, low resistance
- Anti-overstress prevents contact damage
- Large target area, with tapered lead-in ramps, for easy DIP insertion
- "True Closed Bottom" inhibits solder wicking and flux contamination
- Stackable end-to-end and side-to-side ("brickwalling") for high board density
- Housing standoffs and slots facilitate board cleaning
- Family of 6 through 64 positions
- Retention style tails or straight solder tails
- Visual polarization
- Designed for automatic machine insertion—DIP-to-socket or socket-to-board (tube loaded)
- Tin or gold plated phosphor bronze or beryllium copper contacts
- Designed to meet EIA RS-415, MIL-S-83734 and stringent computer specifications
- Meets the material requirements of Table 23.1 of UL 1410 Standard for Television Receivers and Video Products
- Recognized under the Component Program of Underwriters Laboratories Inc., File E28476

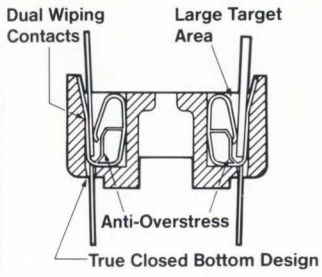


The DIPLOMATE Dual Leaf (DL) DIP socket family provides high quality at low cost with superior handling characteristics. It is available in 6 through 64 position sizes with dual wiping contacts in tin or gold plating over beryllium copper or economical phosphor bronze. The large target area of the contacts and tapered side ramps in the housing insure easy entry of a DIP package. Internal anti-overstress walls prevent contact damage. The housings are compatible with commercially available automatic insertion equipment for socket-to-board or DIP-to-socket applications. These stackable housings feature a "True Closed Bottom" design which prevents solder or flux wicking at class 1 conditions of EIA 486.

Standoffs provide board clearance for proper cleaning after soldering. Sockets are available with straight solder tails for clinching and are "true positioned" for automatic insertion into the pc board. Solder tails with retention feature, for self-retention in the pc board during handling and flow soldering, are available for hand insertion.

Housings are constructed from self-extinguishing glass-filled polyester, 94V-O rated material and meet the material requirements of Table 23.1 of UL 1410 Standard for Television Receivers and Video Products.

The DIPLOMATE (DL) DIP socket family meets the requirements of EIA RS415, MIL-S-83734 and the most stringent specifications of main-frame computer manufacturers.



Performance Characteristics

Rating:
250 VAC

Contact Resistance:
20 milliohms max. (initial),
30 milliohms max. (after test)

Dielectric Withstanding Voltage:
1000 VRMS min.

Insulation Resistance:
5000 megohms min.

Capacitance:
0.5 picofarad max.

Operating Temperature:
−55° C to +105° C (tin), −55° C to +125° C (gold)

Vibration:
10-2000-10 Hz in 20 minutes at .06 [1.52] or 15 G's for 3 sweeps in each of 3 axes

Shock:
100 G's sawtooth, 6 shocks

Engaging Force: 340 grams [3.33 N] max. (.013 [0.33] pin)

Separating Force: 25 grams [.24 N] (.008 [0.2] pin)

DIP Sockets
(Continued)

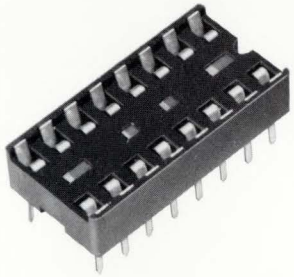
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

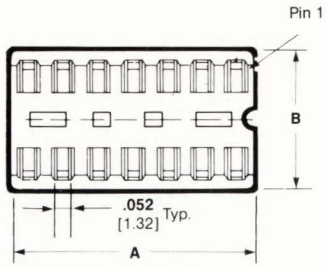
DIPLOMATE Dual Leaf (DL) Contact Sockets (Closed Frame)

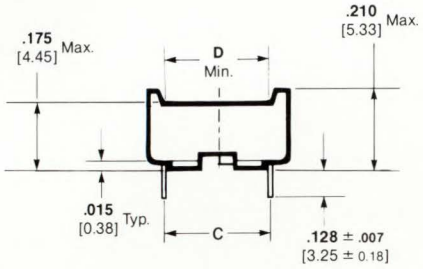
Sockets accept .008-.014 [0.2-0.36] thick IC leads

Material and Finish:

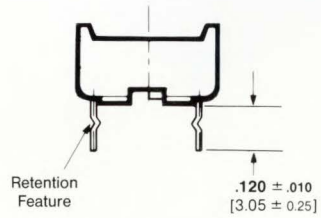
Housings—Glass-filled thermoplastic, 94V-0 rated, black



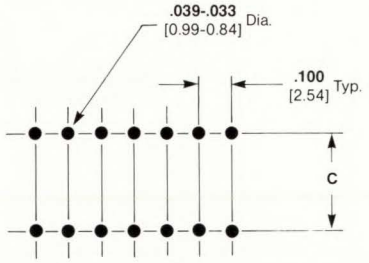




Sockets with Straight Solder Tails



Sockets with Retention Feature Solder Tails



Recommended Mounting Dimensions

Note: 6- and 8-Position sockets have "True Closed Bottom" design which allows no solder or flux wicking at class 1 conditions of EIA 486.

No. of Pos.	Dimensions				Part Numbers[1]							
					Sockets with Straight Solder Tails				Sockets with Retention Feature			
					Beryllium Copper		Phosphor Bronze		Beryllium Copper		Phosphor Bronze	
	A	B	C	D	Tin-Lead Plate	.000030 [0.00076][2] Gold Plate	Tin-Lead Plate	.000015 [0.00038][2] Gold Plate	Tin-Lead Plate	.000030 [0.00076][2] Gold Plate	Tin-Lead Plate	.000015 [0.00038][2] Gold Plate
6	.295 7.49	.394 10.01	.300 7.62	.320 8.13	2-641296-1	2-641296-2	2-641296-3	2-641296-4	2-641259-1	2-641259-2	2-641259-3	2-641259-4
8	.395 10.03	.394 10.01	.300 7.62	.320 8.13	2-640463-1	2-640463-2	2-640463-3	2-640463-4	2-641260-1	2-641260-2	2-641260-3	2-641260-4
14	.695 17.65	.394 10.01	.300 7.62	.320 8.13	2-640357-1	2-640357-2	2-640357-3	2-640357-4	2-641261-1	2-641261-2	2-641261-3	2-641261-4
16	.795 20.19	.394 10.01	.300 7.62	.320 8.13	2-640358-1	2-640358-2	2-640358-3	2-640358-4	2-641262-1	2-641262-2	2-641262-3	2-641262-4
18	.895 22.73	.394 10.01	.300 7.62	.320 8.13	2-640359-1	2-640359-2	2-640359-3	2-640359-4	2-641263-1	2-641263-2	2-641263-3	2-641263-4
20	.995 25.27	.394 10.01	.300 7.62	.320 8.13	2-640464-1	2-640464-2	2-640464-3	2-640464-4	2-641264-1	2-641264-2	2-641264-3	2-641264-4
22	1.095 27.81	.494 12.55	.400 10.16	.420 10.67	2-640360-1	2-640360-2	2-640360-3	2-640360-4	2-641265-1	2-641265-2	2-641265-3	2-641265-4
24	1.195 30.35	.694 17.63	.600 15.24	.620 15.75	2-640361-1	2-640361-2	2-640361-3	2-640361-4	2-641266-1	2-641266-2	2-641266-3	2-641266-4
28	1.395 35.43	.694 17.63	.600 15.24	.620 15.75	2-640362-1	2-640362-2	2-640362-3	2-640362-4	2-641267-1	2-641267-2	2-641267-3	2-641267-4
40	1.995 50.67	.694 17.63	.600 15.24	.620 15.75	2-640379-1	2-640379-2	2-640379-3	2-640379-4	2-641268-1	2-641268-2	2-641268-3	2-641268-4

[1]All parts are packaged in plastic tubes. ONLY sockets with straight solder tails are recommended for automatic insertion. Sockets with retention feature are packaged in plastic tubes for handling and storage convenience ONLY.

[2]Gold thickness in contact area; tin-lead plate on solder tails.

DIP Sockets
(Continued)

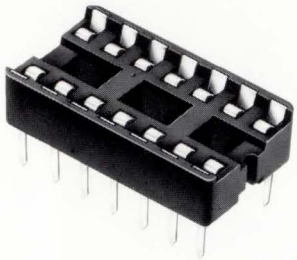
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

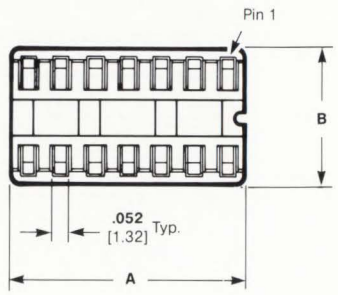
DIPLOMATE Dual Leaf (DL) Contact Sockets (Open Frame)

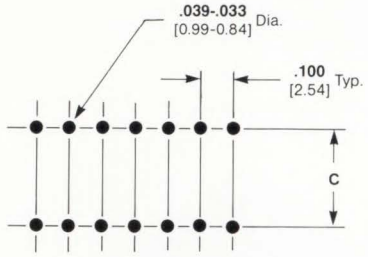
Sockets accept .008-.014 [0.2-0.36] thick IC leads

Material and Finish:

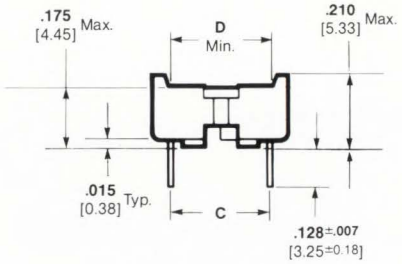
Housings—Glass-filled thermoplastic, 94V-0 rated, black



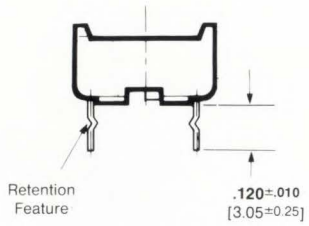




Recommended Mounting Dimensions



Sockets with Straight Solder Tails



Sockets with Retention Feature Solder Tails

Note: All socket positions have "True Closed Bottom" design which allows no solder or flux wicking at class 1 conditions of EIA 486.

No. of Pos.	Dimensions				Part Numbers[1]							
					Sockets with Straight Solder Tails				Sockets with Retention Feature			
					Beryllium Copper		Phosphor Bronze		Beryllium Copper		Phosphor Bronze	
	A	B	C	D	Tin-Lead Plate	.000030 [0.00076][2] Gold Plate	Tin-Lead Plate	.000015 [0.00038][2] Gold Plate	Tin-Lead Plate	.000030 [0.00076][2] Gold Plate	Tin-Lead Plate	.000015 [0.00038][2] Gold Plate
14	.695 17.65	.394 10.01	.300 7.62	.320 8.13	2-641599-1	2-641599-2	2-641599-3	2-642599-4	2-641609-1	2-641609-2	2-641609-3	2-641609-4
16	.795 20.19	.394 10.01	.300 7.62	.320 8.13	2-641600-1	2-641600-2	2-641600-3	2-641600-4	2-641610-1	2-641610-2	2-641610-3	2-641610-4
18	.895 22.73	.394 10.01	.300 7.62	.320 8.13	2-641601-1	2-641601-2	2-641601-3	2-641601-4	2-641611-1	2-641611-2	2-641611-3	2-641611-4
20	.995 25.27	.394 10.01	.300 7.62	.320 8.13	2-641602-1	2-641602-2	2-641602-3	2-641602-4	2-641612-1	2-641612-2	2-641612-3	2-641612-4
22	1.095 30.35	.494 10.01	.400 7.62	.420 8.13	2-641603-1	2-641603-2	2-641603-3	2-641603-4	2-641613-1	2-641613-2	2-641613-3	2-641613-4
24	1.195 30.35	.394 10.01	.300 7.62	.320 8.13	2-641932-1	2-641932-2	2-641932-3	2-641932-4	2-641933-1	2-641933-2	2-641933-3	2-641933-4
24	1.195 30.35	.694 17.63	.600 15.24	.620 15.75	2-641604-1	2-641604-2	2-641604-3	2-641604-4	2-641614-1	2-641614-2	2-641614-3	2-641614-4
28	1.395 35.43	.694 17.63	.600 15.24	.620 15.75	2-641605-1	2-641605-2	2-641605-3	2-641605-4	2-641615-1	2-641615-2	2-641615-3	2-641615-4
32	1.595 40.51	.694 17.63	.600 15.24	.620 15.75	644018-1	644018-2	644018-3	644018-4	–	–	–	–
40	1.995 50.67	.694 17.63	.600 15.24	.620 15.75	2-641606-1	2-641606-2	2-641606-3	2-641606-4	2-641616-1	2-641616-2	2-641616-3	2-641616-4
48	2.395 60.83	.694 17.63	.600 15.24	.620 15.75	2-643574-1	2-643574-2	2-643574-3	2-643574-4	2-643576-1	2-643576-2	2-643576-3	2-643576-4
64	3.215 81.66	1.024 26.01	.900 22.86	.920 23.37	643575-1	643575-2	643575-3	643575-4	643577-1	643577-2	643577-2	643577-4

[1]All parts except 64 position are packaged in plastic tubes. ONLY sockets with straight solder tails are recommended for automatic insertion. Sockets with retention feature are packaged in plastic tubes for handling and storage convenience ONLY.

[2]Gold thickness in contact area; tin-lead plate on solder tails.

Note: 64-position socket is **not** side-to-side or end-to-end stackable.

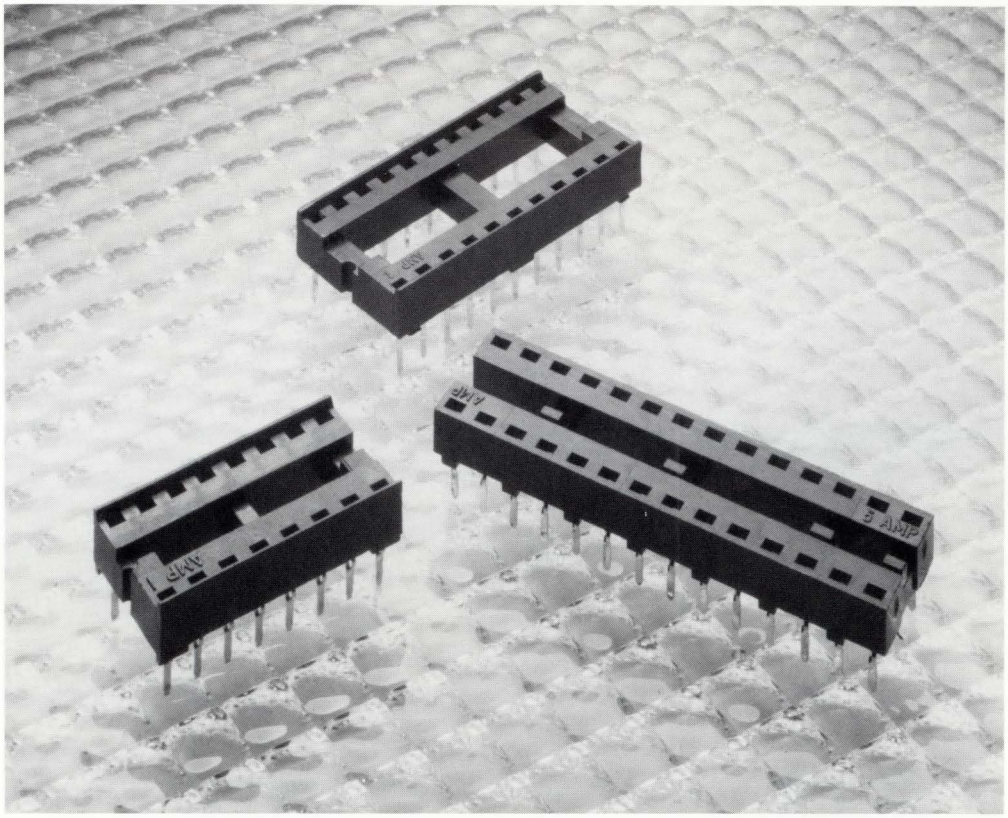
DIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

DIPLOMATE Single Leaf (SL) Contact Sockets (Open Frame)

Features

- Low Profile—.185 [4.7] above pc board
- Low cost
- Housings are made of self-extinguishing glass-filled polyester, 94V-0 rated
- IC sockets accept rectangular leads up to .015x.030 [0.38x0.76]
- Housings have wide chamfered lead cavities for easy IC insertion
- DIP sockets accept 8- through 40-position IC's
- One-piece housings
- One-piece contacts
- Standoffs at the board interface provide clearance for proper cleaning after soldering
- Standard and military versions available
- Flat top style available for socketing "Skinny DIP" packages
- Face wipe contacts for high reliability and constant, low resistance
- Anti-overstress prevents contact damage
- Stackable end-to-end and side-to-side ("brickwalling") for high board density
- Visual polarization
- Designed to meet EIA RS415 and stringent computer specifications
- Meets the material requirements of Table 23.1 of UL 1410 Standard of Television Receivers and Video Products
- Recognized under the Component Program of Underwriters Laboratories Inc., File E28476

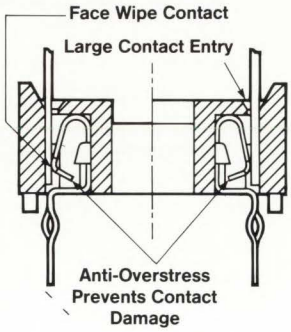


Low cost DIPLOMATE Single Leaf (SL) DIP sockets come in Standard, and Military styles. A Flat Top version is also available in 24 and 28 positions which allows socketing of "Skinny DIP" packages.

Available in 8 through 40 positions, these low profile sockets are provided with contacts made from tin plated beryllium copper, phosphor bronze or copper alloy materials. By design, the contacts are anti-wicking and anti-bridging. Built-in contact stops provide anti-over-stress to prevent contact damage.

One-Piece housings are made of UL 94V-0 self-extinguishing glass-filled polyester and feature wide chamfered lead cavities for easy IC insertion.

Military sockets are qualified to MIL-S-83734.



Performance Characteristics

Rating:
250 VAC

Contact Resistance:
20 milliohms max. (initial),
30 milliohms max. (after test)

Dielectric Withstanding Voltage:
1000 VRMS min.

Insulation Resistance:
10,000 megohms min.

Capacitance:
1.0 picofarad max.

Operating Temperature:
−55°C to +105°C (tin) (BeCu or PhBz), −55°C to +85°C (tin) (copper alloy)

Vibration:
10-2000-10 Hz in 20 minutes at .06 [1.52] or 15 G's for 3 sweeps in each of 3 axes

Shock:
100 G's sawtooth, 6 shocks

Engaging Force:
340 grams [3.33 N] max. (.013 [0.33] pin)

Separating Force:
15 grams [.15 N] (.008 [0.2] pin)

DIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

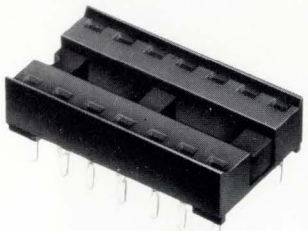
Chart contains dimensions in inches over millimetres.

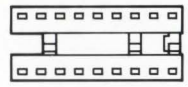
DIPLOMATE Single Leaf (SL) Contact Sockets—Standard (Open Frame)

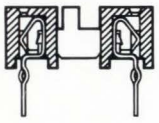
Sockets accept .008-.015 [0.2-0.38] thick x .030 [0.76] max. wide rectangular leads

Material and Finish:

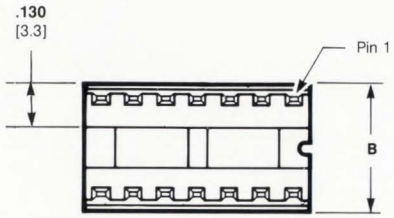
Housing—Glass-filled thermoplastic, 94V-0 rated, black

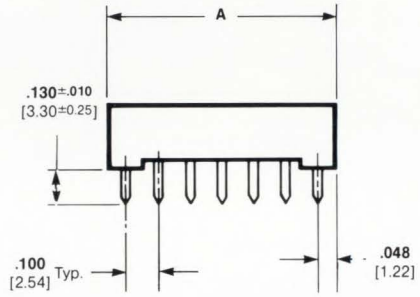


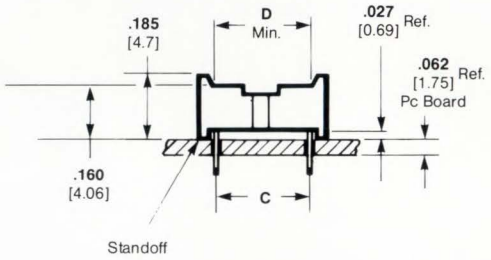




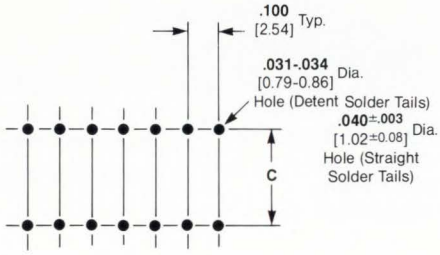
Flat Top Style 24 and 28 Positions[2]



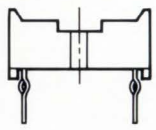




Sockets with Straight Solder Tails



Recommended Mounting Dimensions



Sockets with Detent Solder Tails

Description	No. of Pos.	Dimensions A	B	C	D	Part Numbers[1] Beryllium Copper Tin Plating	Phosphor Bronze Tin Plating	Copper Alloy Tin Plating
w/detents	8	**.397** 10.08	**.390** 9.91	**.300** 7.62	**.320** 8.13	2-641866-1	2-641866-3	2-641866-5
wo/detents						2-643290-1	2-643290-3	2-643290-5
w/detents	14	**.697** 17.70	**.390** 9.91	**.300** 7.62	**.320** 8.13	2-641867-1	2-641867-3	2-641867-5
wo/detents						2-643291-1	2-643291-3	2-643291-5
w/detents	16	**.797** 20.24	**.390** 9.91	**.300** 7.62	**.320** 8.13	2-641868-1	2-641868-3	2-641868-5
wo/detents						2-643292-1	2-643292-3	2-643292-5
w/detents	18	**.897** 22.78	**.390** 9.91	**.300** 7.62	**.320** 8.13	2-641869-1	2-641869-3	2-641869-5
wo/detents						2-643293-1	2-643293-3	2-643293-5
w/detents	20	**.997** 25.32	**.390** 9.91	**.300** 7.62	**.320** 8.13	2-641870-1	2-641870-3	2-641870-5
wo/detents						2-643294-1	2-643294-3	2-643294-5
w/detents	22	**1.097** 27.86	**.490** 12.45	**.400** 10.16	**.420** 10.67	2-641871-1	2-641871-3	2-641871-5
wo/detents						2-643295-1	2-643295-3	2-643295-5
w/detents	24	**1.197** 30.4	**.690** 17.53	**.600** 15.24	**.620** 15.75	2-641872-1	2-641872-3	2-641872-5
wo/detents						2-643296-1	2-643296-3	2-643296-5
Flat Top[2] w/detents		**1.197** 30.4	**.390** 9.91	**.300** 7.62	**.320** 8.13	643541-1	643541-3	–
w/detents	28	**1.397** 35.48	**.690** 17.53	**.600** 15.24	**.620** 15.75	2-641873-1	2-641873-3	2-641873-5
wo/detents						2-643297-1	2-643297-3	2-643297-5
Flat Top[2] w/detents		**1.397** 35.48	**.390** 9.91	**.300** 7.62	**.320** 8.13	643543-1	643543-3	–
w/detents	40	**1.997** 50.72	**.690** 17.53	**.600** 15.24	**.620** 15.75	2-641874-1	2-641874-3	2-641874-5
wo/detents						2-643298-1	2-643298-3	2-643298-5

[1]All parts except 24- and 28-position Flat Top are packaged in plastic tubes. ONLY part numbers without detents are recommended for automatic insertion. Part numbers with detents are packaged in plastic tubes for handling and storage convenience ONLY.

[2]Allows socketing of "Skinny DIP" packages.

DIP Sockets
(Continued)

Dim• nsioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

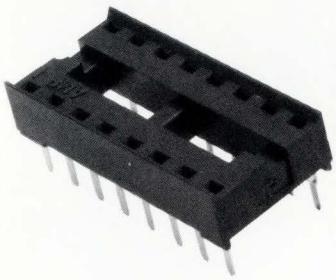
DIPLOMATE Single Leaf (SL) Contact Sockets—Military (Open Frame)

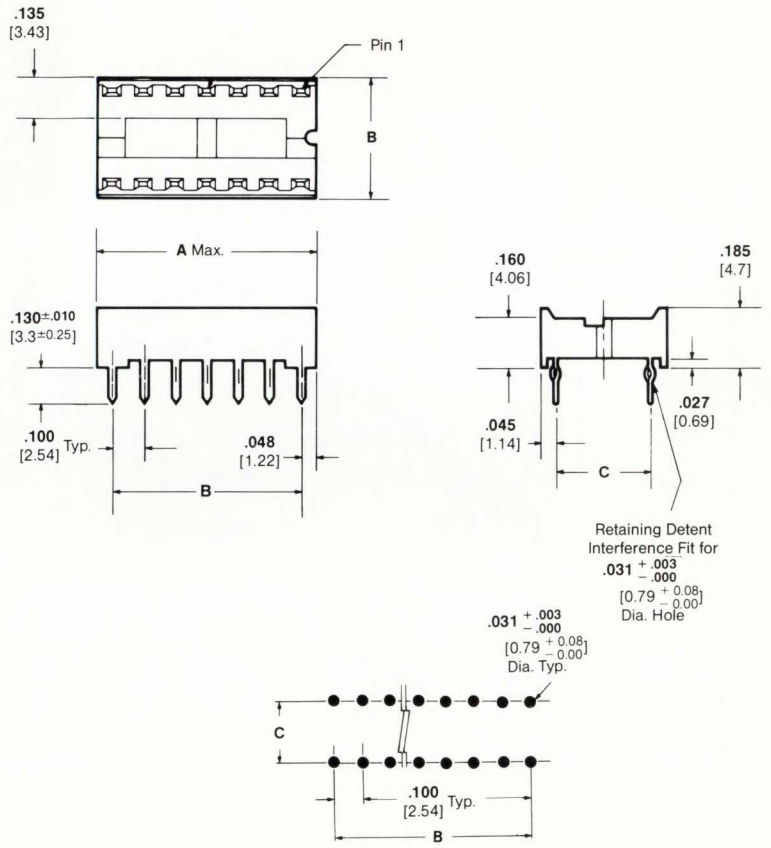
Sockets accept .008-.015 [0.2-0.38] thick x .030 [0.76] max. wide rectangular leads

Material and Finish:

Contacts—Beryllium copper, .000030 [0.00076] gold over .000040 [0.00102] nickel

Housing—Glass-filled thermoplastic, 94V-0 rated, black





Recommended Mounting Dimensions

No. of Pos.	Dimensions A	B	C	D	Military Part No. M83734/	AMP Part No.
8	.400 10.16	.300 7.62	.300 7.62	.390 9.91	2-013	643474-2
14	.700 17.78	.600 15.24	.300 7.62	.390 9.91	3-013	643475-2
16	.800 20.32	.700 17.78	.300 7.62	.390 9.91	4-013	643476-2
18	.900 22.86	.800 20.32	.300 7.62	.390 9.91	5-013	643477-2
20	1.000 25.4	.900 22.86	.300 7.62	.390 9.91	13-013	643478-2
22	1.100 27.94	1.000 25.4	.400 10.16	.490 12.45	6-013	643479-2
24	1.200 30.48	1.100 27.94	.600 15.24	.690 17.53	8-013	643480-2
28	1.400 35.56	1.300 33.02	.600 15.24	.690 17.53	7-013	643481-2
40	2.000 50.8	1.900 48.26	.600 15.24	.690 17.53	10-013	643482-2

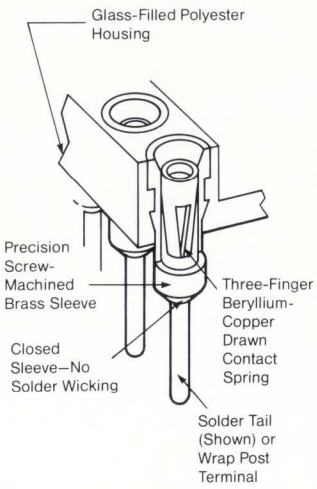
DIP Sockets
(Continued)

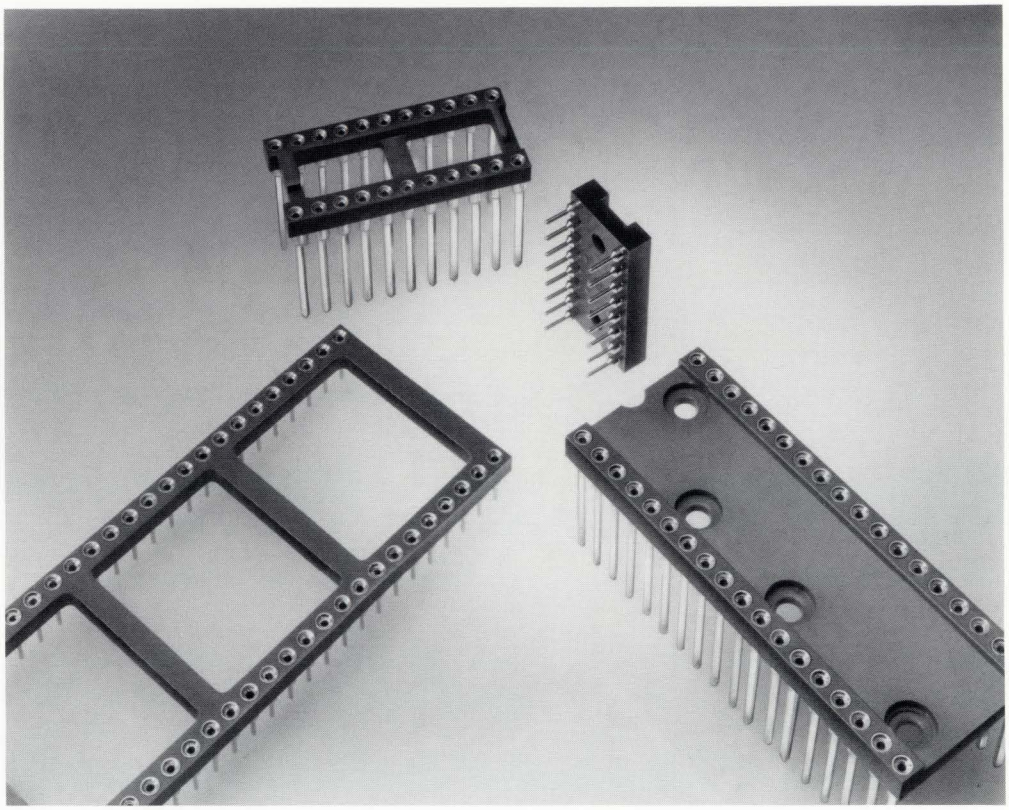
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Drawn Spring Contact Low Profile Sockets (Closed and Open Frame)

Features

- Seamless drawn beryllium copper contact
- Gold plated or tin plated contacts for lead compatibility
- Accepts rectangular leads .009-.014 [0.23-0.36] x .015-.021 [0.38-0.53] and .100 [2.54] minimum pin length
- Brass screw-machined sleeves in solder tail or wrap post (2 or 3 high) configurations
- Sleeves available with tin or gold plating
- Housing material is UL 94V-0 rated
- Available in .300 [7.62], .400 [10.16], .600 [15.24] and .900 [22.86] row-to-row centers on .100 [2.54] centerline
- Low profile—height above board is .175 [4.44] for solder tail mounting
- Operating temperature for sockets with tin plated springs is −40°C to +105°C, and −55°C to +125°C for gold plated springs
- Sockets meet the requirements of MIL-S-83505/2, MIL-S-83734D and MIL-STD-1130B
- Sockets are X-Y stackable (brickwall)





These low profile closed and open frame DIP sockets feature three-finger spring contacts which are made from precision drawn beryllium copper. The proven reliability of this three-finger design for rectangular leads is equal to that of machined spring contacts, but without the added cost. Sleeves are fabricated from brass and assembled into polyester housings with a flammability rating of UL 94V-0.

The three-fingered spring contact, with tapered entry and wiping action, minimizes connector mating force and maximizes the electrical integrity of the interface with the rectangular leads of the mating DIP package. The screw-machined sleeves eliminate the potential of flux contamination and solder wicking. Plating combinations of gold or tin plated sleeves and spring contacts are standard.

These low profile sockets are provided in a choice of solder tail (.175 [4.44]) and 2- or 3-high wrap post configurations with popular sizes from 6 through 64 positions available.

Performance Characteristics

Contact Rating:
3 amperes

Contact Resistance:
20 milliohms max. (initial)

Operating Temperature:
−55°C to +125°C—Gold plated springs
−40°C to +105°C—Tin plated springs

Insertion Force[1]:
5.0 oz. [1.390 N] avg. nom.

Withdrawal Force[1]:
1.0 oz. [0.278 N] avg. nom.

Durability:
10 cycles @ 10 milliohms max. change per MIL-STD-1344, Method 2016

Insulation Resistance:
$1x10^5$ megohms @ 500 VDC per MIL-STD-1344, Method 3003

Dielectric Withstanding Voltage:
1000 rms VAC per MIL-STD-1344, Method 3001

[1]Measured with a polished steel pin .018 [0.46] dia.

Test Conditions

Temperature Life:
1000 hours @ 125°C for gold plated contact springs;
1000 hours @ 105°C for tin plated contact springs

Thermal Shock:
MIL-STD-1344, Method 1003, Cond. B, −55°C to +125°C for gold plated contact springs; −40°C to +105°C for tin plated contact springs

Temperature/Humidity Cycling:
MIL-STD-1344, Method 1002, Cond. A, 10 cycles

Vibration:
MIL-STD-1344, Method 2005, Cond. III, 15 G's max.

Shock:
MIL-STD-1344, Method 2004, Cond. I, 100 G's @ 6 milliseconds, sawtooth wave form

DIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimetres.

Drawn Spring Contact Low Profile Sockets (Closed Frame)

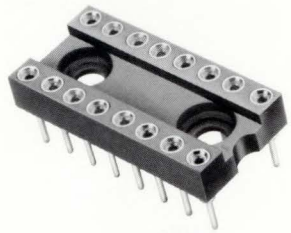
Sockets accept rectangular leads .009-.014 [0.23-0.36] x .015-.021 [0.38-0.53].

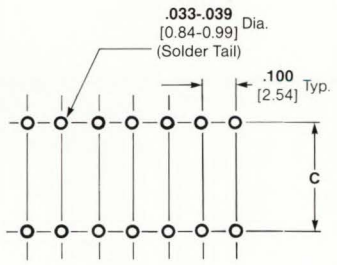
Material and Finish:

Housings—Glass-filled polyester per MIL-M-24519, 94V-0 rated, (black)

Contacts—Beryllium copper per Federal Specification QQ-C-533 with gold plating per MIL-G-45204, Type 2 Grade C or tin plating per MIL-P-81728 over copper per MIL-C-14550 (see charts right for thicknesses)

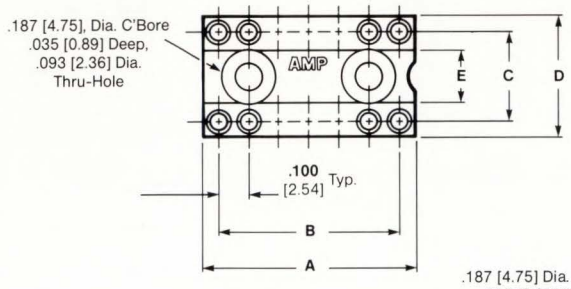
Sleeves—Brass per Federal Specification QQ-B-626 with gold plating per MIL-G-45204, Type 2 Grade C or tin plating per MIL-P-81728 over nickel per Federal Specification QQ-N-290 (see charts right for thicknesses)



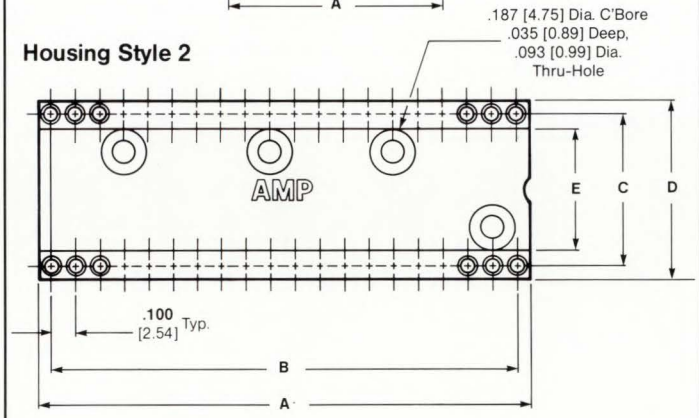


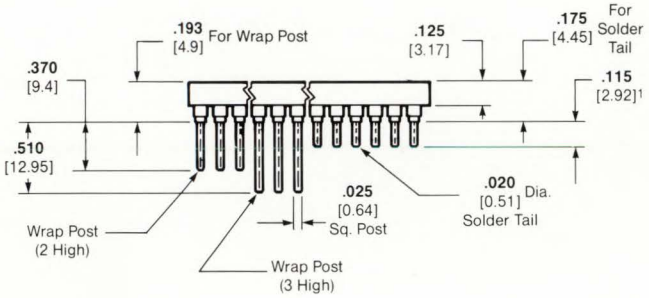
Recommended Mounting Dimensions

Housing Style 1



Housing Style 2





1Accommodates .031-.062 [0.79-1.57] pc board thicknesses.

Contact Platings and Thicknesses

Solder Tail

Plating Combination	Spring	Sleeve
Gold-Gold	.000030 [0.00076] Gold over .000030 [0.00076] Nickel	.000010 [0.00025] Gold over .000030 [0.00076] Nickel
Gold-Tin	.000030 [0.00076] Gold over .000030 [0.00076] Nickel	.000150 [0.00381] Tin over .000030 [0.00076] Nickel
Tin-Tin	.000100 [0.00254] Tin over .000050 [0.00127] Copper	.000150 [0.00381] Tin over .000030 [0.00076] Nickel

Wrap Post

Plating Combination	Spring	Sleeve
Gold-Gold	.000030 [0.00076] Gold over .000030 [0.00076] Nickel	.000010 [0.00025] Gold over .000030 [0.00076] Nickel
Gold-Tin	.000030 [0.00076] Gold over .000030 [0.00076] Nickel	.000150 [0.00381] Tin over .000030 [0.00076] Nickel
Tin-Tin	.000100 [0.00254] Tin over .000050 [0.00127] Copper	.000150 [0.00381] Tin over .000030 [0.00076] Nickel

No. of Pos.	Housing Style	Dimensions					Solder Tail Plating Combinations			Wrap Post—2 High Plating Combinations			Wrap Post—3 High Plating Combinations		
		A	B	C	D	E	Gold-Gold	Gold-Tin	Tin-Tin	Gold-Gold	Gold-Tin	Tin-Tin	Gold-Gold	Gold-Tin	Tin-Tin
6	1	.295 7.99	.200 5.08	.300 7.62	.395 10.03	.175 4.45	916080-1	916080-2	916080-3	916170-1	916170-2	916170-3	916140-1	916140-2	916140-3
8	1	.395 10.03	.300 7.62	.300 7.62	.395 10.03	.175 4.45	916080-4	916080-5	916080-6	916170-4	916170-5	916170-6	916140-4	916140-3	916140-6
14	1	.695 17.65	.600 15.24	.300 7.62	.395 10.03	.175 4.45	916083-1	916083-2	916083-3	916173-1	916173-2	916173-3	916143-1	916143-2	916143-3
16	1	.795 20.19	.700 17.78	.300 7.62	.395 10.03	.175 4.45	916083-4	916083-5	916083-6	916173-4	916173-5	916173-6	916143-4	916143-5	916143-6
18	1	.895 22.73	.800 20.32	.300 7.62	.395 10.03	.175 4.45	916083-7	916083-8	916083-9	916173-7	916173-8	916173-9	916143-7	916143-8	916143-9
20	1	.995 25.27	.900 22.86	.300 7.62	.395 10.03	.175 4.45	1-916083-0	1-916083-1	1-916083-2	1-916173-0	1-916173-1	1-916173-2	1-916143-0	1-916143-1	1-916143-2
22	1	1.095 27.81	1.000 25.4	.400 10.10	.495 12.57	.275 6.99	916086-1	916086-2	916086-3	916176-1	916176-2	916176-3	916146-1	916146-2	916146-3
24	1	1.195 30.35	1.100 27.94	.400 10.10	.495 12.57	.275 6.99	916086-4	916086-5	916086-6	916176-4	916176-5	916176-6	916146-4	916146-5	916146-6
24	2	1.195 30.25	1.100 27.94	.600 15.4	.695 17.65	.475 12.07	916088-1	916088-2	916088-3	916178-1	916178-2	916178-3	916148-1	916148-2	916148-3
28	2	1.135 28.83	1.300 33.02	.600 15.4	.695 17.65	.475 12.07	916088-4	916088-5	916088-6	916178-4	916178-5	916178-6	916148-4	916148-5	916148-6
40	2	1.995 50.67	1.900 48.26	.600 15.4	.695 17.65	.475 12.07	916090-1	916090-2	916090-3	916180-1	916180-2	916180-3	916150-1	916150-2	916150-3

DIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Drawn Spring Contact Low Profile Sockets (Open Frame)

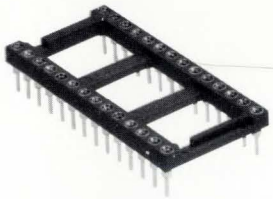
Sockets accept rectangular leads .009-.014 [0.23-0.36] x .015-.021 [0.38-0.53].

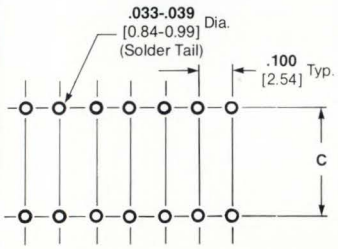
Material and Finish:

Housings—Glass-filled polyester per MIL-M-24519, 94V-0 rated, (black)

Contacts—Beryllium copper per Federal Specification QQ-C-533 with gold plating per MIL-G-45204, Type 2 Grade C or tin plating per MIL-P-81728 over copper per MIL-C-14550 (see charts on page 15 for thicknesses)

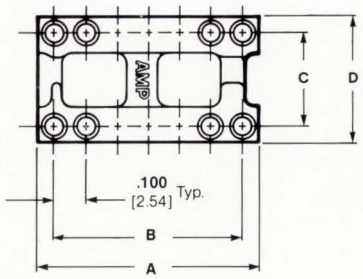
Sleeves—Brass per Federal Specification QQ-B-626 with gold plating per MIL-G-45204, Type 2 Grade C or tin plating per MIL-P-81728 over nickel per Federal Specification QQ-N-290 (see charts on page 15 for thicknesses)



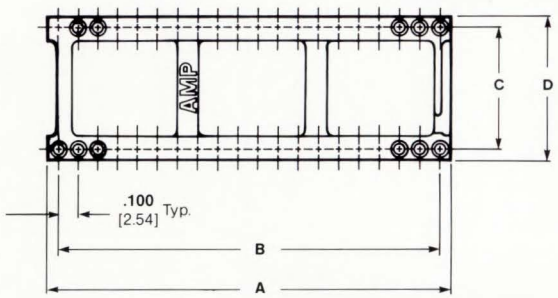


Recommended Mounting Dimensions

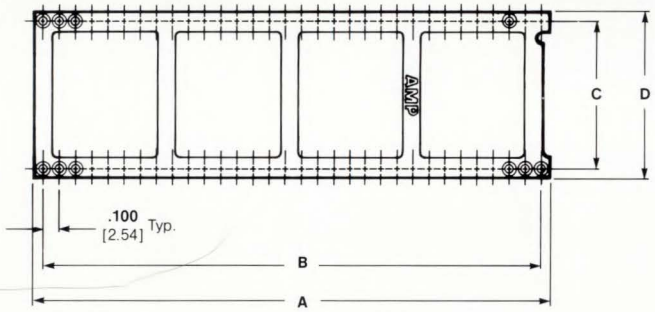
Housing Style 1

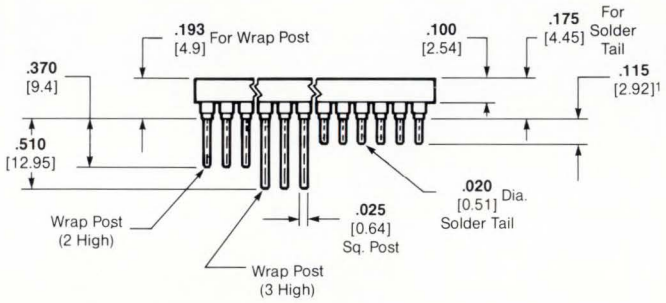


Housing Style 2



Housing Style 3





1Accommodates .031-.062 [0.79-1.57] pc board thicknesses.

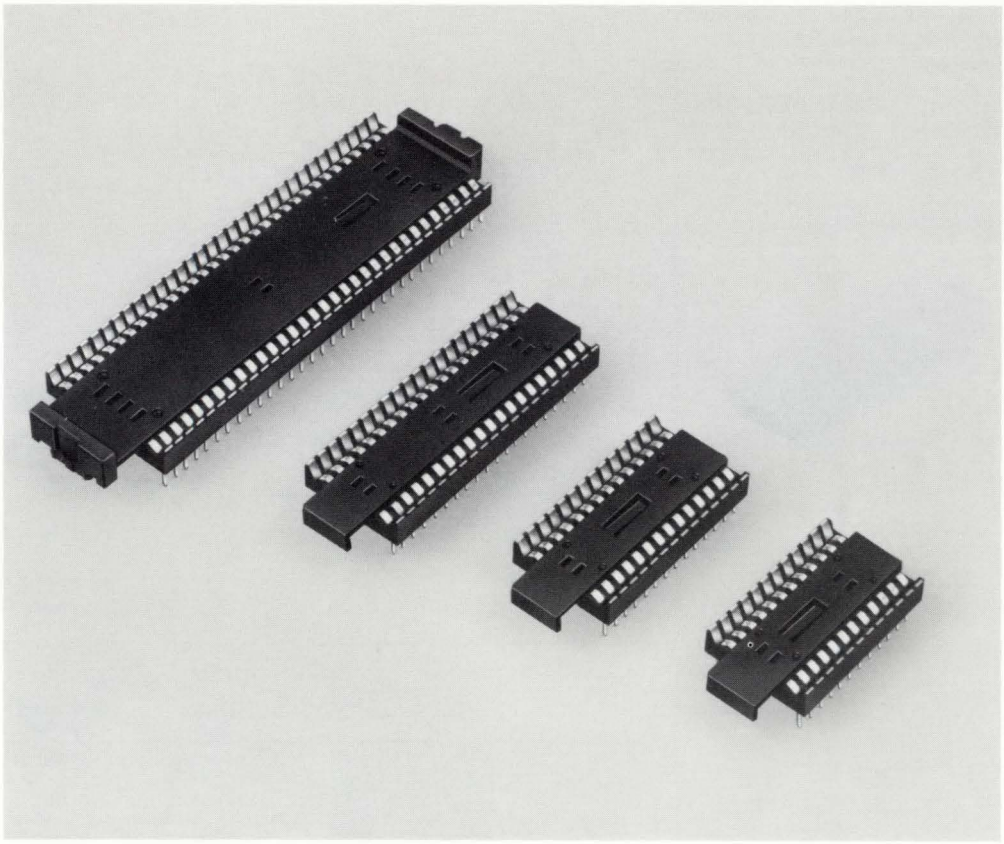
Contact Platings and Thicknesses for Solder Tail and Wrap Post Contacts
—See Charts on Page 15

No. of Pos.	Housing Style	Dimensions A	B	C	D	Solder Tail Plating Combinations Gold-Gold	Gold-Tin	Tin-Tin	Wrap Post—2 High Plating Combinations Gold-Gold	Gold-Tin	Tin-Tin	Wrap Post—3 High Plating Combinations Gold-Gold	Gold-Tin	Tin-Tin
8	1	.395 10.03	.300 7.62	.300 7.62	.395 10.03	916091-1	916091-2	916091-3	916181-1	916181-2	916181-3	916151-1	916151-2	916151-3
14	1	.695 17.65	.600 15.24	.300 7.62	.395 10.03	916093-1	916093-2	916093-3	916183-1	916183-2	916183-3	916153-1	916153-2	916153-3
16	1	.795 20.19	.700 17.78	.300 7.62	.395 10.03	916093-4	916093-5	916093-6	916183-4	916183-5	916183-6	916153-4	916153-5	916153-6
18	1	.895 22.23	.800 20.32	.300 7.62	.395 10.03	916093-7	916093-8	916093-9	916183-7	916183-8	916183-9	916153-7	916153-8	916153-9
20	1	.995 25.27	.900 22.86	.300 7.62	.395 10.03	1-916093-0	1-916093-1	1-916093-2	1-916183-0	1-916183-1	1-916183-2	1-916153-0	1-916153-1	1-916153-2
22	1	1.095 27.81	1.000 25.4	.400 10.10	.495 12.57	916096-1	916096-2	916096-3	916186-1	916186-2	916186-3	916156-1	916156-2	916156-3
24	1	1.195 30.25	1.100 27.94	.300 7.62	.395 10.03	1-916093-3	1-916093-4	1-916093-5	1-916183-3	1-916183-4	1-916183-5	1-916153-3	1-916153-4	1-916153-5
24	2	1.195 30.25	1.100 27.94	.600 15.4	.695 17.65	916098-1	916098-2	916098-3	916188-1	916188-2	916188-3	916158-1	916158-2	916158-3
28	2	1.395 35.43	1.300 33.02	.600 15.4	.695 17.65	916098-4	916098-5	916098-6	916188-4	916188-5	916188-6	916158-4	916158-5	916158-6
40	2	1.995 50.67	1.900 48.26	.600 15.4	.695 17.65	916098-7	916098-8	916098-9	916188-7	916188-8	916188-9	916158-7	916158-8	916158-9
48	2	2.395 60.83	2.300 58.42	.600 15.4	.695 17.65	1-916098-0	1-916098-1	1-916098-2	1-916188-0	1-916188-1	1-916188-2	1-916158-0	1-916158-1	1-916158-2
64	3	3.195 81.15	3.100 78.74	.900 22.86	.995 25.27	916102-1	916102-2	916102-3	916192-1	916192-2	916192-3	916162-1	916162-2	916162-3

DIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

DIPLOMATE Low Force (LF) Sockets



Features

- Low insertion/extraction forces—zero insertion force for side brazed ceramic DIP's
- Low Profile—.233 [5.92] above pc board
- Available in 24, 28, 40 and 48 positions on .600 [15.24] centerlines with tool-less actuation and 64 positions on .900 [22.86] centerline with screwdriver (1/8 [3.18] diameter slotted) actuation
- Tin or duplex gold plated beryllium copper or phosphor bronze contacts available
- Plastic parts are self-extinguishing, glass-filled polyester with 94V-0 rated material
- Large target area with tapered lead-in for manual or machine loading of DIP's
- Dual wiping contacts
- Face wipe contacts with high normal force provide high reliability and constant low contact resistance
- Closed bottom inhibits solder wicking and flux contamination
- Housing standoffs facilitate board cleaning
- Designed to meet EIA RS-415 MIL-S-83734 and stringent computer specifications
- Meets material requirements of Table 23.1 of UL 1410 Standard for Television Receivers and Video Products
- Recognized under the Components Program of Underwriters Laboratories Inc., File 28476

The DIPLOMATE Low Force (LF) family of DIP Sockets provides a means of reducing DIP leg damage while maintaining high quality at low cost with superior handling characteristics. Low insertion and extraction forces, in fact, zero force for the side brazed ceramic DIP's are combined with high normal forces by way of a unique camming arrangement. It is available in 24, 28, 40 and 48 positions on .600 [15.24] centerlines with tool-less actuation and 64 position on .900 [22.86] centerline with screwdriver actuation.

Dual face wipe contacts are available in beryllium copper or economy phosphor bronze with a choice of tin or duplex gold plating. They provide a very large target area with tapered lead-in to facilitate both manual and machine loading of the DIP's. In addition, the flat at the top eliminates the possibility of inadvertently inserting a lead behind the stationary wall of the contact.

The housings feature a closed bottom design to inhibit solder wicking and flux contamination. Standoffs provide board clearance for proper cleaning after soldering.

The plastic parts are constructed from self-extinguishing glass-filled polyester, 94V-0 rated material and meet the material requirements of Table 23.1 of UL 1410 Standard for Television Receivers and Video Products.

In addition, DIPLOMATE LF sockets meet the requirements of EIA RS415, MIL-S-83734 and the most stringent specifications of main-frame computer manufacturers.

Performance Characteristics

Rating:
250 VAC

Contact Resistance:
20 milliohms max. (initial),
30 milliohms max. (after test)

Dielectric Withstanding Voltage:
1000 VRMS min.

Insulation Resistance:
5000 megohms min.

Capacitance:
1.0 picofarad max.

Operating Temperature:
−50°C to +105°C (tin), −55°C to +125°C (gold)

Vibration:
10-2000-10 Hz in 20 minutes at .06 [1.52] or 15 G's for 3 sweeps in each of 3 axes

Shock:
100 G's for 6 milliseconds sawtooth, 3 shocks with DIP package down

High Temperature Life:
100°C for 120 days

Cycle Life:
200 cycles min.

Contact Retention:
1.0 lb [4 N] min.

DIP Sockets
(Continued)

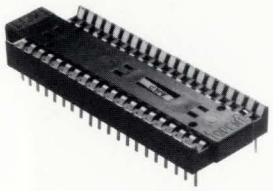
Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

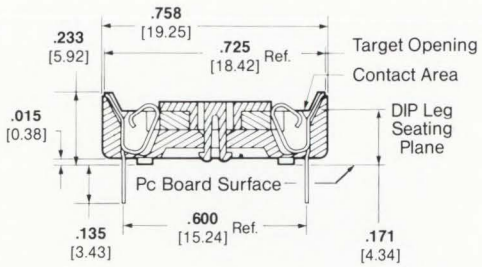
DIPLOMATE 24-, 28-, 40- and 48-Position Low Force (LF) Sockets

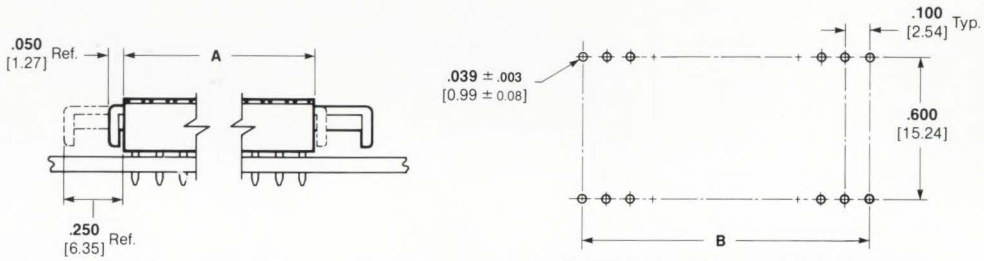
Accepts .008-.015 [0.2-0.38] thick leads

Material and Finish:

Housing and Cams—Glass-filled polyester, 94V-0 rated, black



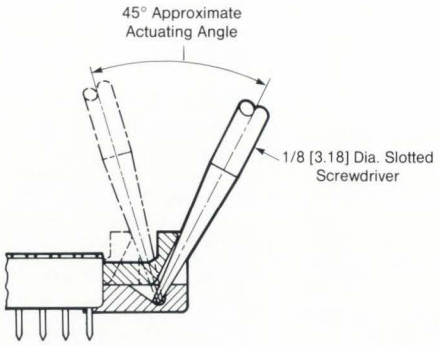




Recommended Mounting Dimensions

No. of Pos.	Dimensions		Part Numbers			
			Beryllium Copper		Phosphor Bronze	
	A	B	Tin-Lead Plate	.000030 [0.00076][1] Gold Plate	Tin-Lead Plate	.000030 [0.00076][1] Gold Plate
24	**1.196** 30.38	**1.100** 27.94	641893-1	641893-2	641893-3	641893-4
28	**1.396** 35.46	**1.300** 33.02	641894-1	641894-2	641894-3	641894-4
40	**1.996** 50.7	**1.900** 48.26	641895-1	641895-2	641895-3	641895-4
48	**2.396** 60.86	**2.300** 58.42	643287-1	643287-2	643287-3	643287-4

[1]Gold thickness in contact area; gold flash on solder tails.

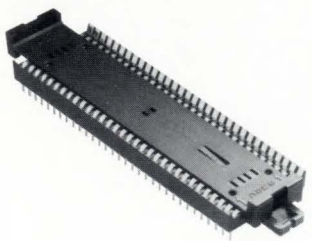


DIPLOMATE 64-Position Low Force (LF) Sockets

Accepts .008-.015 [0.2-0.38] thick leads

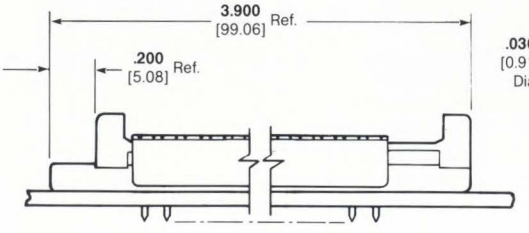
Material and Finish:

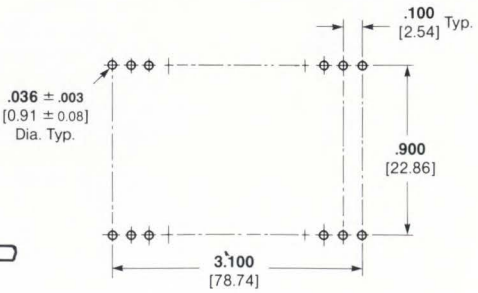
Housing and Cams—Glass-filled polyester, 94V-0 rated, black



Beryllium Copper		Phosphor Bronze	
Tin-Lead Plate	.000030 [0.00076][1] Gold Plate	Tin-Lead Plate	.000030 [0.00076][1] Gold Plate
643007-1	643007-2	643007-3	643007-4

[1]Gold thickness in contact area; gold flash on solder tails.





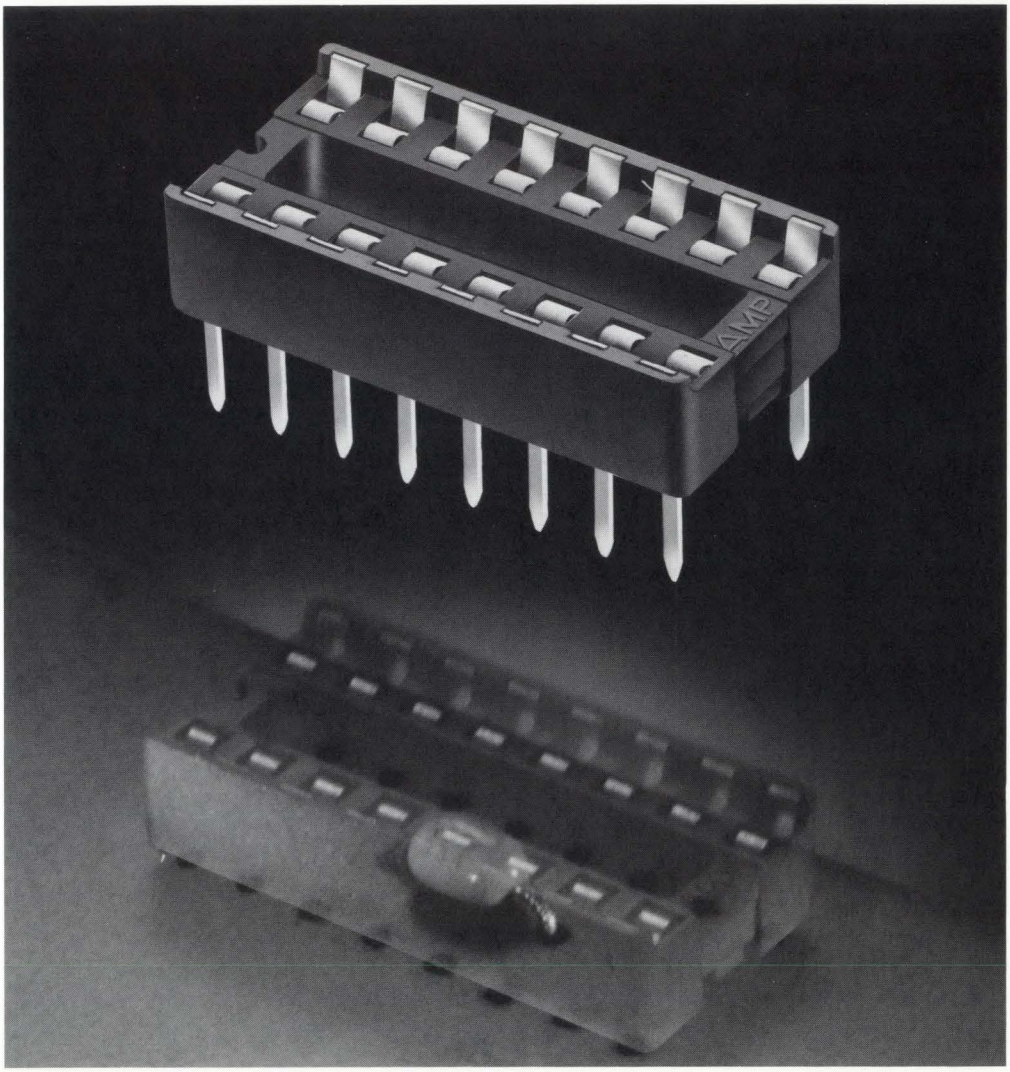
DIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

DIPLOMATE Over The Capacitor (OTC) Socket

Features

- Inserted manually or automatically directly over the capacitor
- Packaged in tubes for standard automatic or X/Y axis stacking (brickwall) which affords greater packaging density
- Large target area with lead-in ramp for easy insertion
- Anti-overstress prevents contact damage
- Dual wiping contacts
- Low profile
- Windowed seating plane facilitates heat dissipation and allows visual inspection of traces, solder joints and ease of capacitor repair or replacement
- Custom design possible for special pin-in, pin-out of decoupling capacitor by board layout
- "True" closed bottom design (Sealed Type) meets the most severe conditions of EIA 486 Class 1 Specifications (antiflux/solder wicking of pluggable electric components)
- Glass filled thermoplastic housing with 94V-0 rating



The DIPLOMATE Over The Capacitor (OTC) Socket is designed to meet the needs of OEM manufactures of memory boards for computer hardware equipment or enhancement (add-on) printed circuit board fabricators. It is currently produced in 16 positions, however, other sizes can be made available by contacting AMP Incorporated for details.

The OTC socket does not house an integral capacitor, but fits over the board mounted capacitor. This allows design flexibility, custom decoupling for the IC device mounted in the OTC socket. The OTC Socket is inserted, manually or automatically, directly over the capacitor which is manually or automatically inserted into the printed circuit board. The ported or windowed seating plane facilitates heat dissipation and allows the user to visually inspect solder joints and access the capacitor for repairs.

The OTC Socket is available in 22 inch tubes which are convenient for manual insertion and are compatible with all major automatic insertion equipment for standard and "brickwall" (X/Y Axis) type insertion for maximum board density. The socket housing material is glass filled thermoplastic (black) with 94V-0 rating. For more pertinent information on plating, see the chart on the reversed side.

AMP's DIPLOMATE OTC socket is designed to make effective and economical use of available pc board area. For additional information concerning your particular design requirements, please consult AMP Incorporated.

DIP Sockets
(Continued)

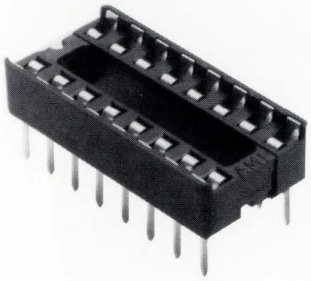
Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

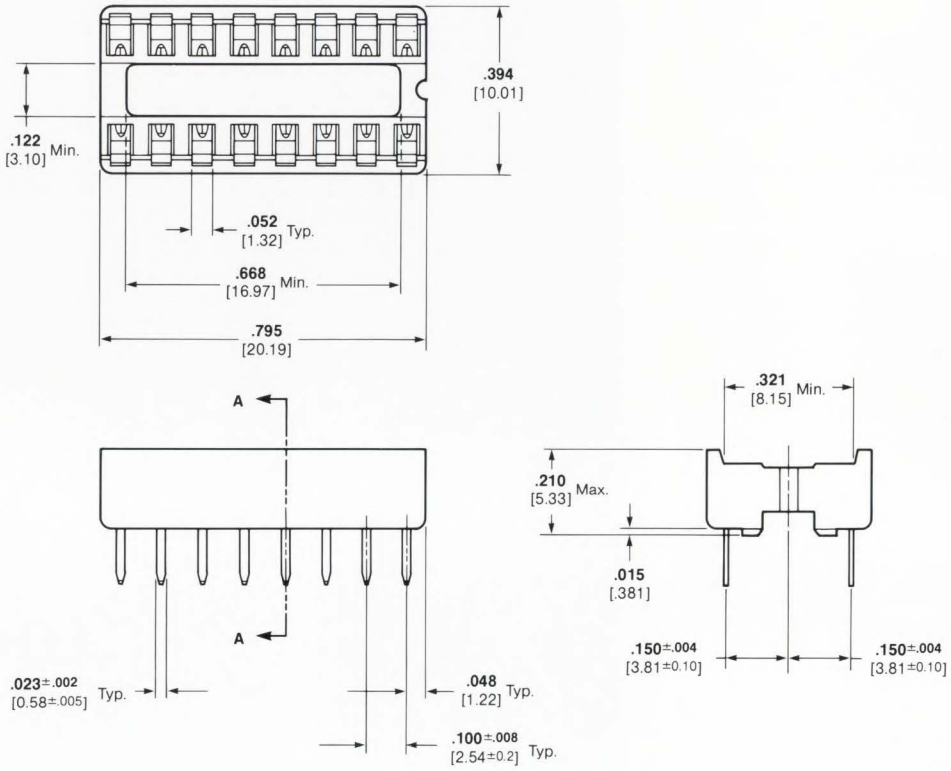
DIPLOMATE Over The Capacitor (OTC) Socket

Receptacle accepts .008-.014 [0.2-0.36] thick I.C. lead

Material and Finish:

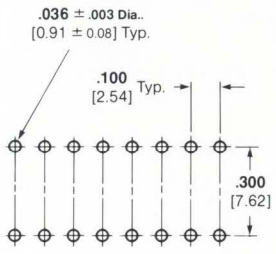
Glass-filled thermoplastic, 94V-0 rated, black



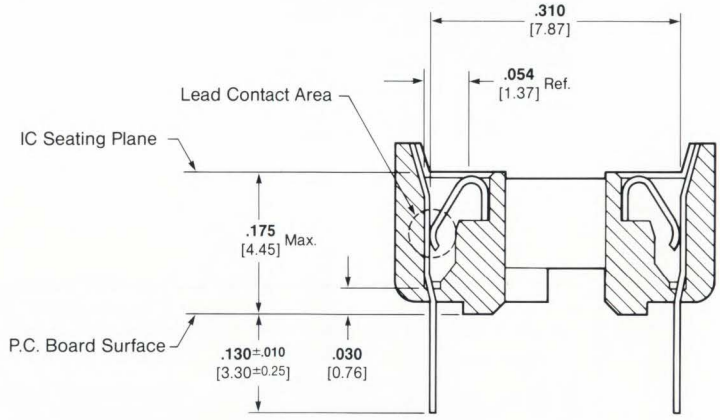


Recommended IC Leg Length:

1) .100 [2.54] Min. for a reliable contact surface.
2) .120 [3.05] Max. to allow IC body to seat on socket.
3) Longer leads may be used, but IC cannot be fully seated on seating plane.



Recommended Mounting Hole Pattern



Section A-A

Position	Description	Packaging	Part Number
16	Tin Plated Beryllium Copper	Tube Loaded	2-644100-1
16	Tin Plated Phosphor Bronze	Tube Loaded	2-644100-3

Note: 18-position sockets can be made available; contact AMP Incorporated for information.

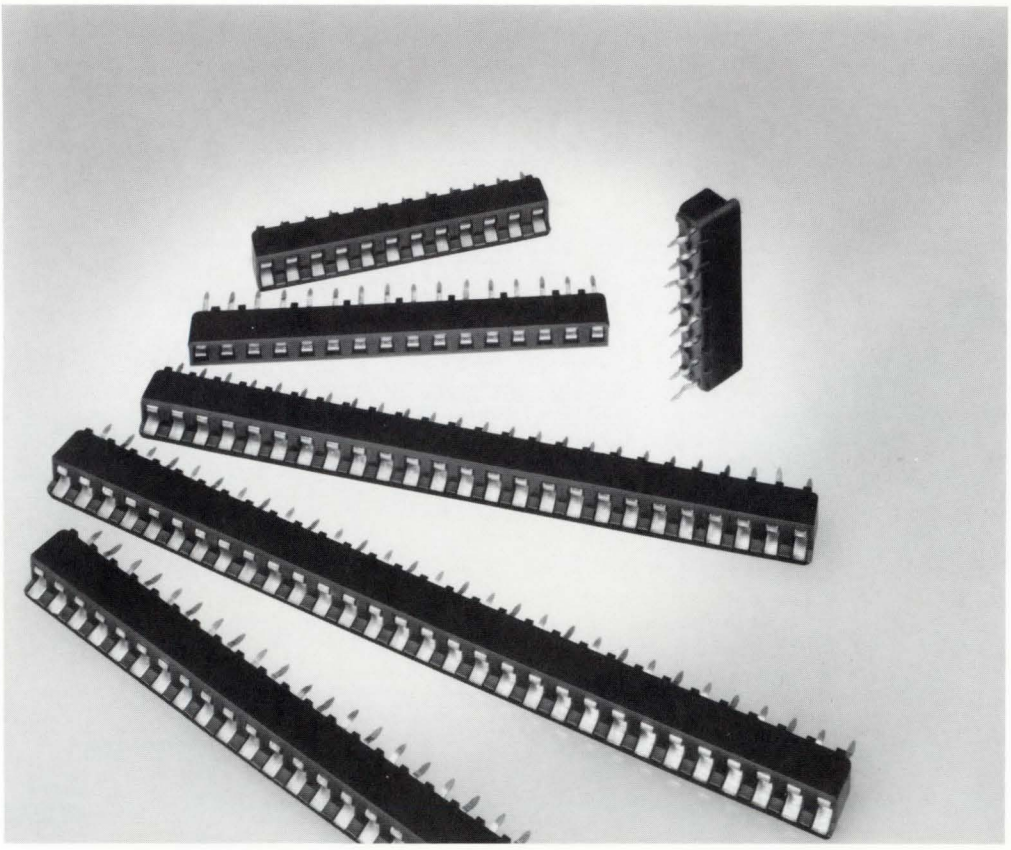
SIP Sockets

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

DIPLOMATE Dual Leaf (DL) Contact Sockets

Features

- Low Profile—.210 [5.33] above pc board
- Dual wiping contacts
- Face wipe contacts for high reliability and constant, low resistance
- Anti-overstress prevents contact damage
- Large target area, with tapered lead-in ramps, for easy SIP insertion
- "True Closed Bottom" inhibits solder wicking and flux contamination
- Stackable end-to-end and side-to-side ("brickwalling") for high board density
- Housing standoffs and slots facilitate board cleaning
- Family of 8 through 30 positions
- Retention style tails
- Visual polarization
- Tin or gold plated phosphor bronze or beryllium copper contacts
- Designed to meet EIA RS-415, MIL-S-83734 and stringent computer specifications
- Meets the material requirements of Table 23.1 of UL 1410 Standard for Television Receivers and Video Products
- Recognized under the Component Program of Underwriters Laboratories Inc., File E28476



The DIPLOMATE Dual Leaf (DL) SIP socket family provides high quality at low cost with superior handling characteristics. It is available in 8 through 30 position sizes with dual wiping contacts in tin or gold plating over beryllium copper or economical phosphor bronze. The large target area of the contacts and tapered side ramps in the housing insure easy entry of a SIP package. Internal anti-overstress walls prevent contact damage. Stackable housings feature a "True Closed Bottom" design which prevents solder or flux wicking at class 1 conditions of EIA 486.

Standoffs provide board clearance for proper cleaning after soldering. Sockets are available with retention feature solder tails for self-retention in the pc board during handling and flow soldering. All solder tails are "true positioned" for automatic insertion into the pc board.

Housings are constructed from self-extinguishing glass-filled polyester, 94V-O rated material and meet the material requirements of Table 23.1 of UL 1410 Standard for Television Receivers and Video Products.

The DIPLOMATE (DL) SIP socket family meets the requirements of EIA RS415, MIL-S-83734 and the most stringent specifications of main-frame computer manufacturers.

Performance Characteristics

Rating:
250 VAC

Contact Resistance:
20 milliohms max. (initial),
30 milliohms max. (after test)

Dielectric Withstanding Voltage:
1000 VRMS min.

Insulation Resistance:
5000 megohms min.

Capacitance:
0.5 picofarad max.

Operating Temperature:
−55°C to +105°C (tin), −55°C to +125°C (gold)

Vibration:
10-2000-10Hz in 20 minutes at .06 [1.52] or 15G's for 3 sweeps in each of 3 axes

Shock:
100G's sawtooth, 6 shocks

Engaging Force: 340 grams [3.33 N] max. (.013 [0.33] pin)

Separating Force:
25 grams [.24 N] (.008 [0.2] pin)

SIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

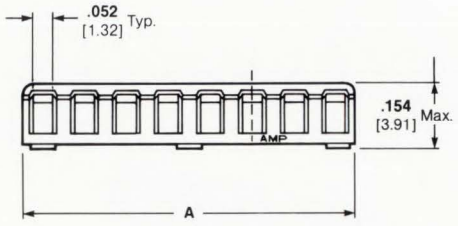
Chart contains dimensions in inches over millimetres.

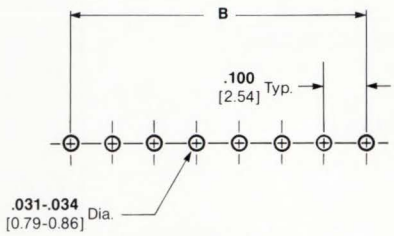
DIPLOMATE Dual Leaf (DL) Contact Sockets

Accepts .008-.015 [0.2-0.38] thick x .030 [0.76] max. wide rectangular leads

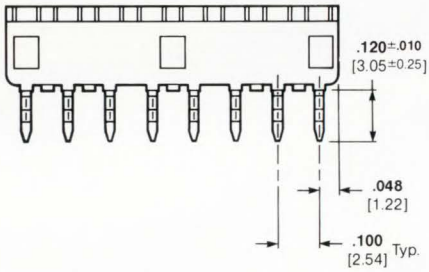
Material and Finish:

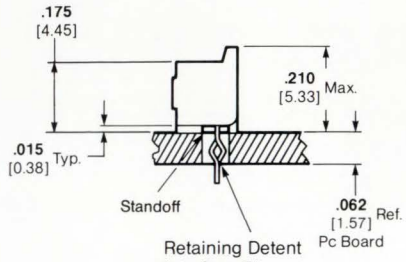
Housing—Glass-filled thermoplastic, 94V-0 rated, black





Recommended Mounting Dimensions





No. of Pos.	Dimensions		Part Numbers			
			Beryllium Copper		Phosphor Bronze	
	A	B	Tin-Lead Plate	.000015 [0.00038] Gold Plate	Tin-Lead Plate	.000015 [0.00038] Gold Plate
8	.795 20.19	.700 17.78	643640-1	643640-2	643640-3	643640-4
9	.895 22.73	.800 20.32	643641-1	643641-2	643641-3	643641-4
10	.995 25.27	.900 22.86	643642-1	643642-2	643642-3	643642-4
11	1.095 27.81	1.000 25.4	643643-1	643643-2	643643-3	643643-4
12	1.195 30.35	1.100 27.94	643644-1	643644-2	643644-3	643644-4
13	1.295 32.89	1.200 30.48	643645-1	643645-2	643645-3	643645-4
14	1.395 35.43	1.300 33.02	643646-1	643646-2	643646-3	643646-4
15	1.495 37.97	1.400 35.56	643647-1	643647-2	643647-3	643647-4
16	1.595 40.51	1.500 38.1	643648-1	643648-2	643648-3	643648-4
17	1.695 43.05	1.600 40.64	643649-1	643649-2	643649-3	643649-4
18	1.795 45.59	1.700 43.18	643650-1	643650-2	643650-3	643650-4
19	1.895 48.13	1.800 45.72	643651-1	643651-2	643651-3	643651-4
20	1.995 50.57	1.900 48.26	643652-1	643652-2	643652-3	643652-4
21	2.095 53.21	2.000 50.8	643653-1	643653-2	643653-3	643653-4
22	2.195 55.75	2.100 53.34	643654-1	643654-2	643654-3	643654-4
23	2.295 58.29	2.200 55.88	643655-1	643655-2	643655-3	643655-4
24	2.395 60.83	2.300 58.42	643656-1	643656-2	643656-3	643656-4
25	2.495 63.37	2.400 60.96	643657-1	643657-2	643657-3	643657-4
26	2.595 65.91	2.500 63.5	643658-1	643658-2	643658-3	643658-4
27	2.695 68.45	2.600 66.04	643659-1	643659-2	643659-3	643659-4
28	2.795 70.99	2.700 68.58	643660-1	643660-2	643660-3	643660-4
29	2.895 73.53	2.800 71.12	643661-1	643661-2	643661-3	643661-4
30	2.995 76.07	2.900 73.66	643662-1	643662-2	643662-3	643662-4

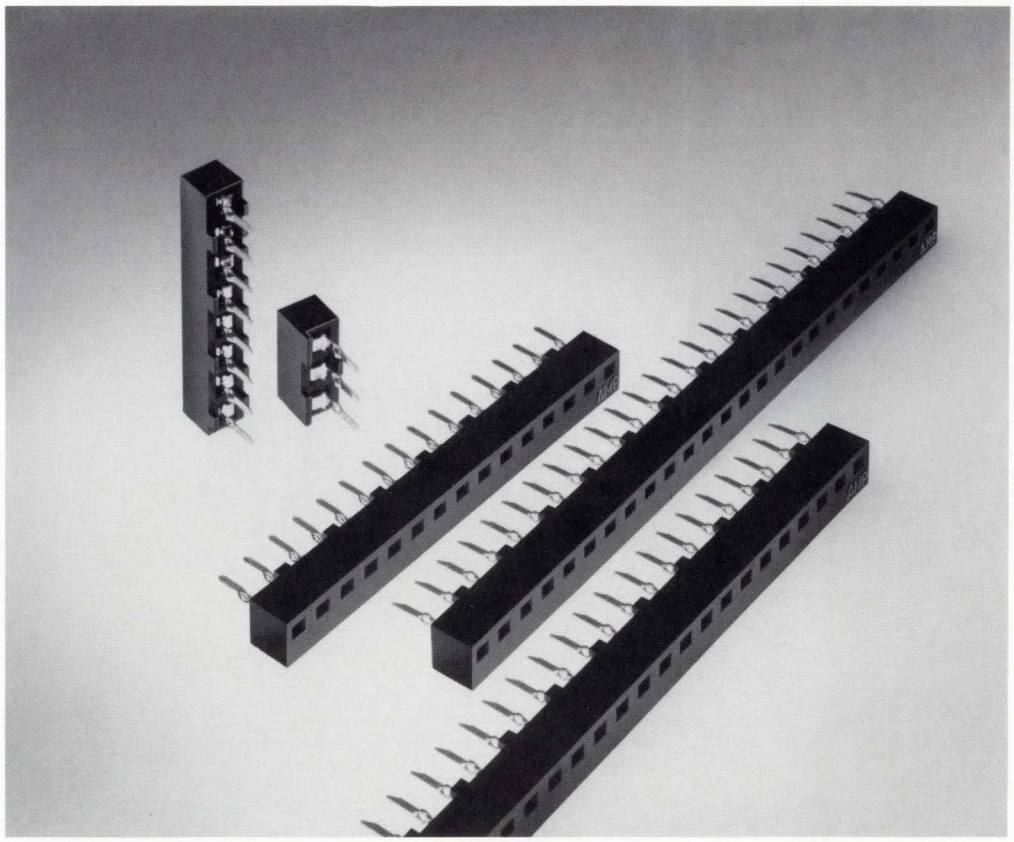
SIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

DIPLOMATE Single Leaf (SL) Contact Sockets

Features

- Low Profile—.160 [4.06] above pc board
- Low cost
- Housings are made of self-extinguishing glass-filled polyester, 94V-0 rated
- IC sockets accept rectangular leads up to .015 x .030 [0.38 x 0.76]
- Housings have wide chamfered lead cavities for easy IC insertion
- SIP sockets accept 3- through 25-position IC's
- One-piece housings
- One-piece contacts
- Standoffs at the board interface provide clearance for proper cleaning after soldering
- Standard and military versions available
- Allows custom patterns
- Face wipe contacts for high reliability and constant, low resistance
- Anti-overstress prevents contact damage
- Stackable end-to-end and side-to-side ("brickwalling") for high board density
- Visual polarization
- Designed to meet EIA RS415 and stringent computer specifications
- Meets the material requirements of Table 23.1 of UL 1410 Standard of Television Receivers and Video Products
- Recognized under the Component Program of Underwriters Laboratories Inc., File E28476



Low cost DIPLOMATE Single Leaf (SL) SIP sockets come in 3 through 25 positions. These low profile sockets are provided with contacts made from tin or gold plated beryllium copper, or tin plated phosphor bronze materials.

By design, the contacts are anti-wicking and anti-bridging. Built-in contact stops provide anti-overstress to prevent contact damage.

One-Piece housings are made of UL 94V-0 self-extinguishing glass-filled polyester and feature wide chamfered lead cavities for easy IC insertion.

Performance Characteristics

Rating:
250 VAC

Contact Resistance:
20 milliohms max. (initial), 30 milliohms max. (after test)

Dielectric Withstanding Voltage:
1000 VRMS min.

Insulation Resistance:
10,000 megohms min.

Capacitance:
1.0 picofarad max.

Operating Temperature:
−55°C to +105°C (tin) (BeCu or PhBz), −55°C to +85°C (tin) (copper alloy)

Vibration:
10-2000-10Hz in 20 minutes at .06 [1.52] or 15G's for 3 sweeps in each of 3 axes

Shock:
100G's sawtooth, 6 shocks

Engaging Force:
340 grams [3.33 N] max. (.013 [0.33] pin)

Separating Force:
15 grams [.15 N] (.008 [0.2] pin)

SIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

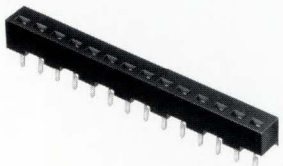
Chart contains dimensions in inches over millimetres.

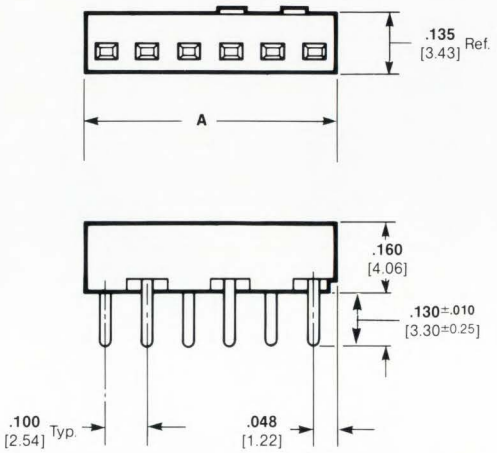
DIPLOMATE Single Leaf (SL) Contact Sockets

Accepts .008-.015 [0.2-0.38] thick x .030 [0.76] wide rectangular leads

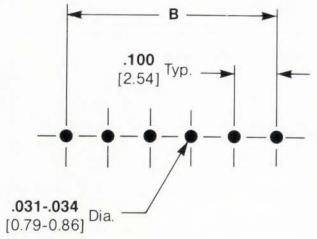
Material and Finish:

Housing—Glass-filled thermoplastic, 94V-0 rated, black

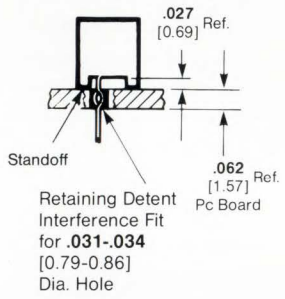




Note: End-to-end stackable



Recommended Mounting Dimensions



No. of Pos.	Dimensions		Part Numbers		
			Beryllium Copper		Phosphor Bronze
	A	B	Tin-Lead Plate	.000030 [0.00076] Gold Plate	Tin-Lead Plate
3	.297 7.54	.200 5.08	643103-1	643103-2	643103-3
4	.397 10.08	.300 7.62	643104-1	643104-2	643104-3
5	.497 12.62	.400 10.16	643105-1	643105-2	643105-3
6	.597 15.16	.500 12.7	643106-1	643106-2	643106-3
7	.697 17.7	.600 15.24	643107-1	643107-2	643107-3
8	.797 20.24	.700 17.78	643108-1	643108-2	643108-3
9	.897 22.78	.800 20.32	643109-1	643109-2	643109-3
10	.997 25.32	.900 22.86	643110-1	643110-2	643110-3
11	1.097 27.86	1.000 25.4	643111-1	643111-2	643111-3
12	1.197 30.4	1.100 27.94	643112-1	643112-2	643112-3
13	1.297 32.94	1.200 30.48	643113-1	643113-2	643113-3
14	1.397 35.48	1.300 33.02	643114-1	643114-2	643114-3
15	1.497 38.02	1.400 35.56	643115-1	643115-2	643115-3
16	1.597 40.56	1.500 38.1	643116-1	643116-2	643116-3
17	1.697 43.1	1.600 40.64	643117-1	643117-2	643117-3
18	1.797 45.64	1.700 43.18	643118-1	643118-2	643118-3
20	1.997 50.72	1.900 48.26	643119-1	643119-2	643119-3
21	2.097 53.26	2.000 50.8	643120-1	643120-2	643120-3
22	2.197 55.8	2.100 53.34	643121-1	643121-2	643121-3
23	2.297 58.34	2.200 55.88	643122-1	643122-2	643122-3
24	2.397 60.88	2.300 58.42	643123-1	643123-2	643123-3
25	2.497 63.42	2.400 60.96	643124-1	643124-2	643124-3

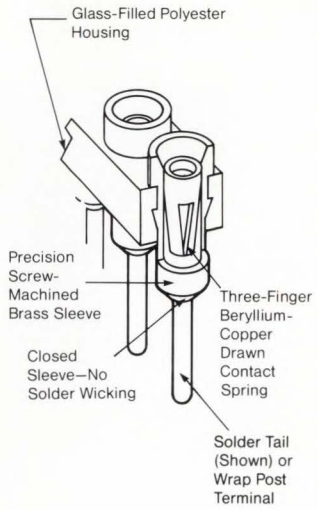
SIP Sockets
(Continued)

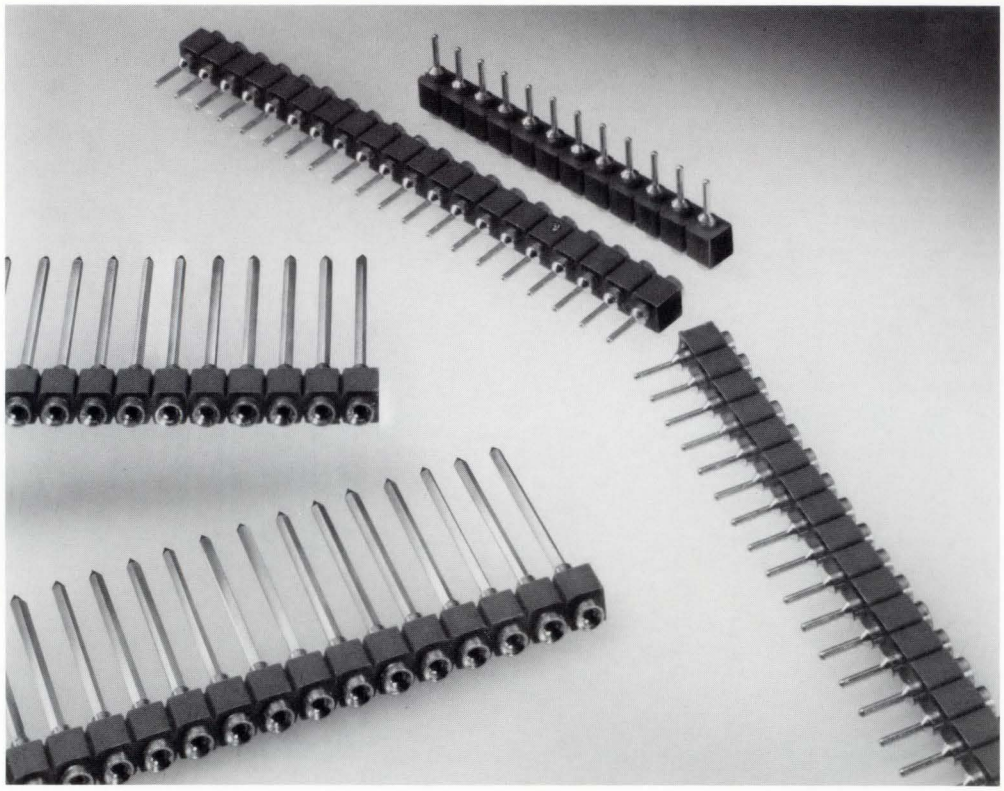
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Drawn Spring Contact Low Profile Sockets (Breakaway Type)

Features

- Seamless drawn beryllium copper contact
- Gold plated or tin plated contacts for lead compatibility
- Accepts rectangular leads .009-.014 [0.23-0.36] x .015-.021 [0.38-0.53] and .100 [2.54] minimum pin length
- Brass screw-machined sleeves in solder tail or wrap post (2 or 3 high) configurations
- Sleeves available with tin or gold plating
- Housing material is UL 94V-0 rated
- Low profile—height above board is .175 [4.44] for solder tail mounting
- Operating temperature for sockets with tin plated springs is −40°C to +105°C, and −55°C to +125°C for gold plated springs
- Sockets meet the requirements of MIL-S-83505/2, MIL-S-83734D and MIL-STD-1130B





These low profile SIP sockets feature three-finger spring contacts which are made from precision drawn beryllium copper. The proven reliability of this three-finger design for rectangular leads is equal to that of machined spring contacts, but without the added cost. Sleeves are fabricated from brass and assembled into polyester housings with a flammability rating of UL 94V-0.

The three-fingered spring contact, with tapered entry and wiping action, minimizes connector mating force and maximizes the electrical integrity of the interface with the rectangular leads of the mating SIP package. The screw-machined sleeves eliminate the potential of flux contamination and solder wicking. Plating combinations of gold or tin plated sleeves and spring contacts are standard.

These low profile sockets are provided in a choice of solder tail (.175 [4.44]) and 2- or 3-high wrap post configurations with 20 and 32 positions available. Housings are designed to break apart, allowing any number of size variations.

Performance Characteristics

Contact Rating:
3 amperes

Contact Resistance:
20 milliohms max. (initial)

Operating Temperature:
−55°C to +125°C—Gold plated springs
−40°C to +105°C—Tin plated springs

Insertion Force[1]:
5.0 oz. [1.390 N] avg. nom.

Withdrawal Force[1]:
1.0 oz. [0.278 N] avg. nom.

Durability:
10 cycles @ 10 milliohms max. change per MIL-STD-1344, Method 2016

Insulation Resistance:
1×10^5 megohms @ 500 VDC per MIL-STD-1344, Method 3003

Dielectric Withstanding Voltage:
1000 rms VAC per MIL-STD-1344, Method 3001

[1]Measured with a polished steel pin .018 [0.46] dia.

Test Conditions

Temperature Life:
1000 hours @ 125°C for gold plated contact springs; 1000 hours @ 105°C for tin plated contact springs

Thermal Shock:
MIL-STD-1344, Method 1003, Cond. B, −55°C to +125°C for gold plated contact springs; −40°C to +105°C for tin plated contact springs

Temperature/Humidity Cycling:
MIL-STD-1344, Method 1002, Cond. A, 10 cycles

Vibration:
MIL-STD-1344, Method 2005, Cond. III, 15 G's max.

Shock:
MIL-STD-1344, Method 2004, Cond. I, 100 G's @ 6 milliseconds, sawtooth wave form

SIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Drawn Spring Contact Low Profile Sockets (Breakaway Type)

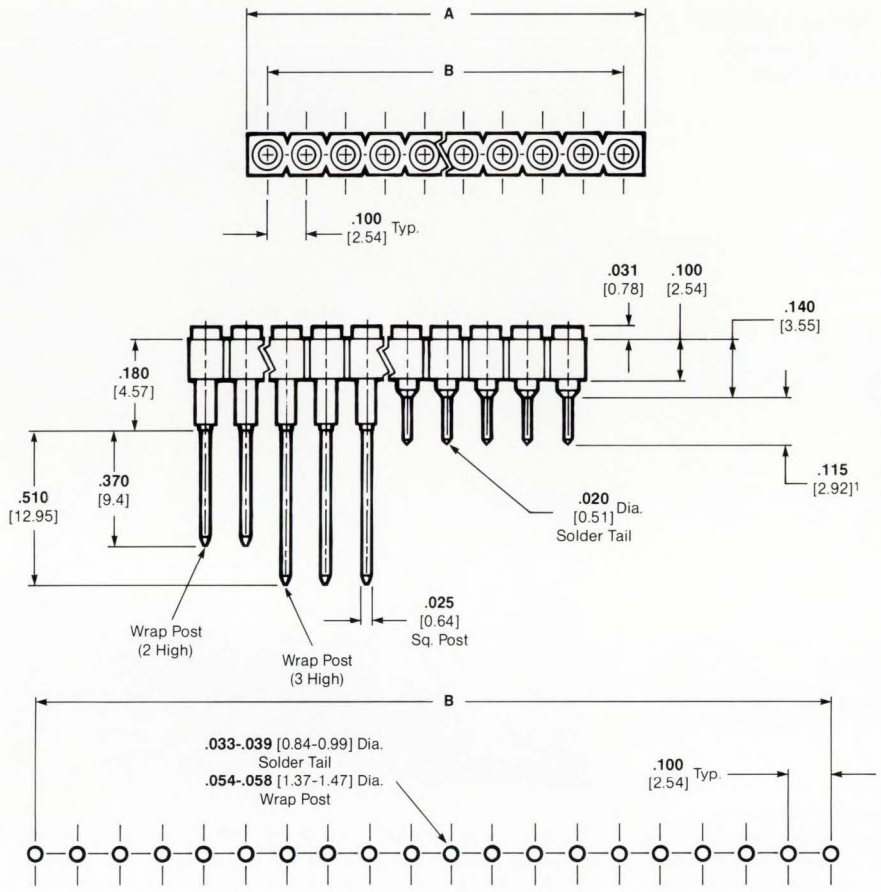
Sockets accept rectangular leads .009-.014 [0.23-0.36] .015-.021 [0.38-0.53].

Material and Finish:

Housings—Glass-filled polyester per MIL-M-24519, 94V-0 rated, (black)

Contacts—Beryllium copper per Federal Specification QQ-C-533 with gold plating per MIL-G-45204, Type 2 Grade C over nickel per Federal Specification QQ-N-290 or tin plating per MIL-P-81728 over copper plating per MIL-C-14550 (see charts below for thicknesses)

Sleeve—Brass per Federal Specification QQ-B-626 with gold plating per MIL-G-45204, Type 2 Grade C or tin plating per MIL-P-81728 over nickel per Federal Specification QQ-N-290 (see charts below for thicknesses)



Recommended Mounting Dimensions

[1]Accommodates .031-.062 [0.79-1.57] pc board thicknesses.

No. of Pos.	Dimensions		Solder Tail Plating Combinations			Wrap Post—2 High Plating Combinations			Wrap Post—3 High Plating Combinations		
	A	B	Gold-Gold	Gold-Tin	Tin-Tin	Gold-Gold	Gold-Tin	Tin-Tin	Gold-Gold	Gold-Tin	Tin-Tin
20	**2.000** 50.8	**1.900** 48.26	916054-1	916054-2	916054-3	916055-1	916055-2	916055-3	916056-1	916056-2	916056-3
32	**3.200** 81.28	**3.100** 78.74	916054-4	916054-5	916054-6	916055-4	916055-5	916055-6	916056-4	916056-5	916056-6

Contact Platings and Thicknesses

Solder Tail

Plating Combination	Spring	Sleeve
Gold-Gold	.000030 [0.00076] Gold over .000030 [0.00076] Nickel	.000010 [0.00025] Gold over .000030 [0.00076] Nickel
Gold-Tin	.000030 [0.00076] Gold over .000030 [0.00076] Nickel	.000150 [0.00381] Tin over .000030 [0.00076] Nickel
Tin-Tin	.000100 [0.00254] Tin over .000050 [0.00127] Copper	.000150 [0.00381] Tin over .000030 [0.00076] Nickel

Wrap Post

Plating Combination	Spring	Sleeve
Gold-Gold	.000030 [0.00076] Gold over .000030 [0.00076] Nickel	.000010 [0.00025] Gold over .000030 [0.00076] Nickel
Gold-Tin	.000030 [0.00076] Gold over .000030 [0.00076] Nickel	.000150 [0.00381] Tin over .000030 [0.00076] Nickel
Tin-Tin	.000100 [0.00254] Tin over .000050 [0.00127] Copper	.000150 [0.00381] Tin over .000030 [0.00076] Nickel

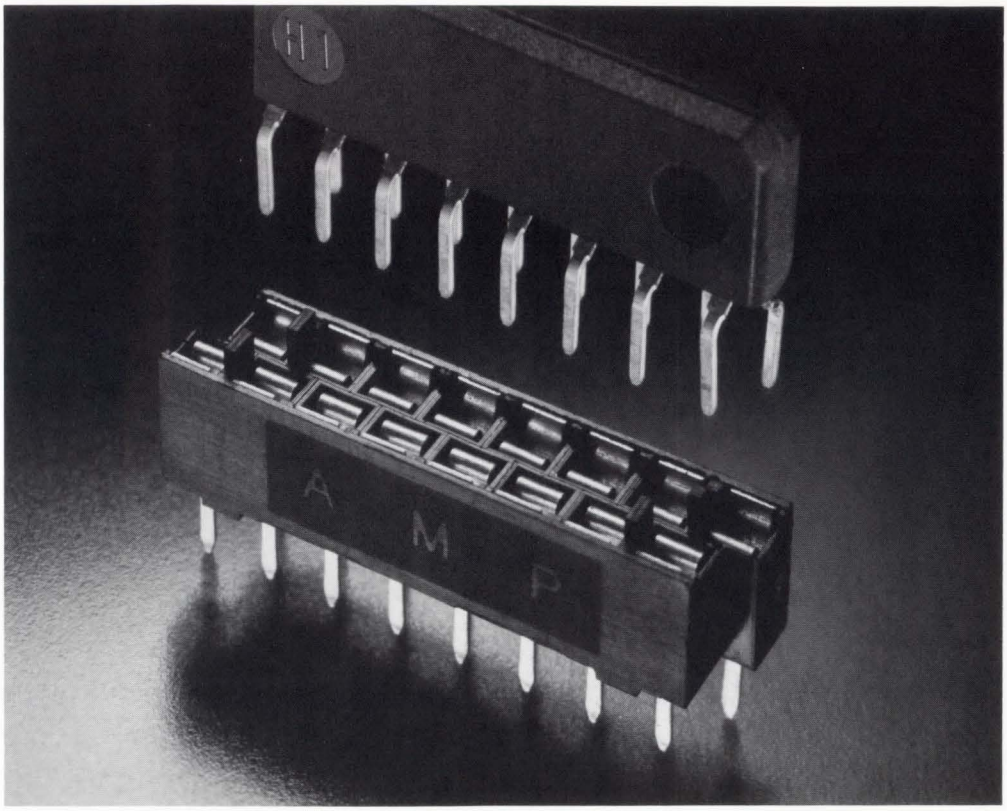
ZIP Sockets

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

DIPLOMATE Zig-Zag Package (ZP) Sockets

Features

- Proven Dual Leaf (DL) contact design
- Large lead-in for easy insertion
- Dual wiping contacts
- Anti-overstress prevents contact damage
- End-to-end and side-to-side stackable (brickwalling) for high board density
- Solder tails are "true positioned" for automatic insertion into the pc board
- "True Closed Bottom" design inhibits solderwicking and flux contamination
- IC package insertion stop prevents package over-insertion
- .015 [0.38] pc board standoffs for undersocket cleaning clearance



AMP DIPLOMATE ZP Sockets are a reliable and low-cost means for socketing popular ZIP IC packages used in microprocessor and add-on pc boards. ZP sockets have "true position" solder tails to assure across-the-board capability with all major producers of automatic insertion equipment. The anti-flux and anti-solder wicking "true closed bottom" design meets the requirements of EIA 486, Class 1.

Sockets are end-to-end and side-to-side stackable on .050 [1.27] and .200 [5.08] centers respectively, allowing for high-density packaging. A large target area allows easy IC insertion while the designed-in package insertion stop prevents damage to the IC leads. Electrical contact is excellent due to the redundant design of the dual leaf contacts.

Performance Characteristics

Rating:
250 VAC at 1 ampere, max.

Contact Resistance:
20 milliohms max. (initial),
10 milliohms max. (after test)

Dielectric Withstanding Voltage:
1.0 KVAC

Insulation Resistance:
10,000 megohms min., initial

Capacitance:
0.5 picofarad max.

Operating Temperature:
−55°C to +105°C (tin), −55°C to +125°C (gold)

Vibration:
10-55-10Hz in 1 minute at .06 [1.52] total excursion

Shock:
100G's sawtooth, 3 shocks in each direction

Engaging Force:
340 grams [3.33 N] max.

Separating Force:
25 grams [.24 N] min.

Contact Retention:
340 grams Min.

ZIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

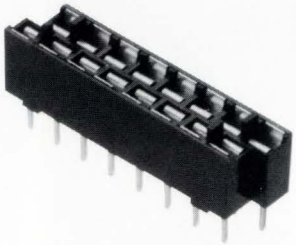
Chart contains dimensions in inches over millimetres.

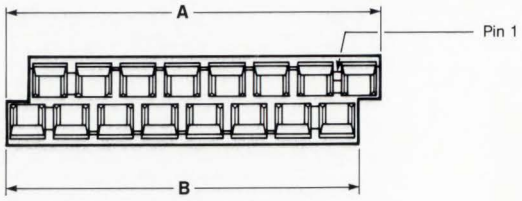
DIPLOMATE Zig-Zag Package (ZP) Sockets

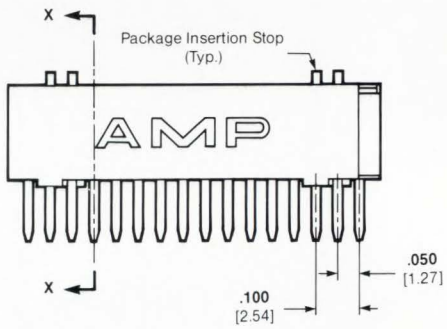
Accepts .008-.015 [0.2-0.38] thick x .030 [0.76] max. wide rectangular leads

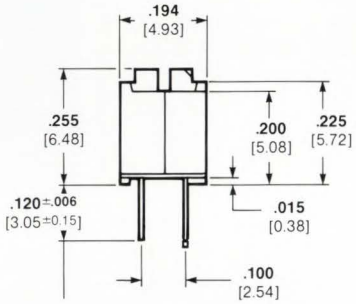
Material and Finish:

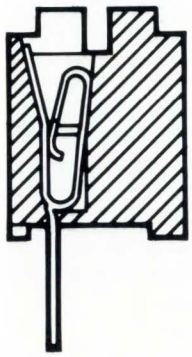
Housing—Glass-filled thermoplastic
Contacts—Phosphor bronze, pre-tin-lead plated



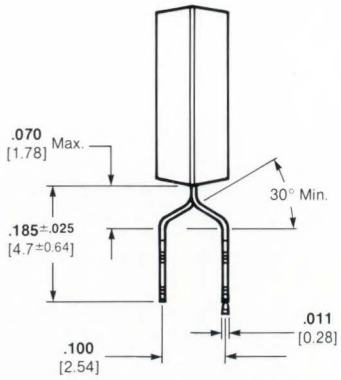




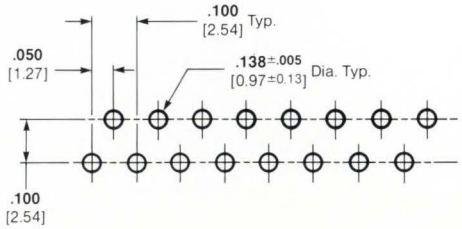




Section X-X



Recommended Leg Configuration



Recommended Mounting Dimensions

No. of Pos.	Dimensions A	Dimensions B	Part Number
16	.845 21.46	.795 20.19	2-382006-3
20	1.045 26.54	.995 25.27	2-382007-3
24	1.245 31.62	1.195 30.45	2-382008-3
28	1.445 36.7	1.395 35.43	2-382009-3

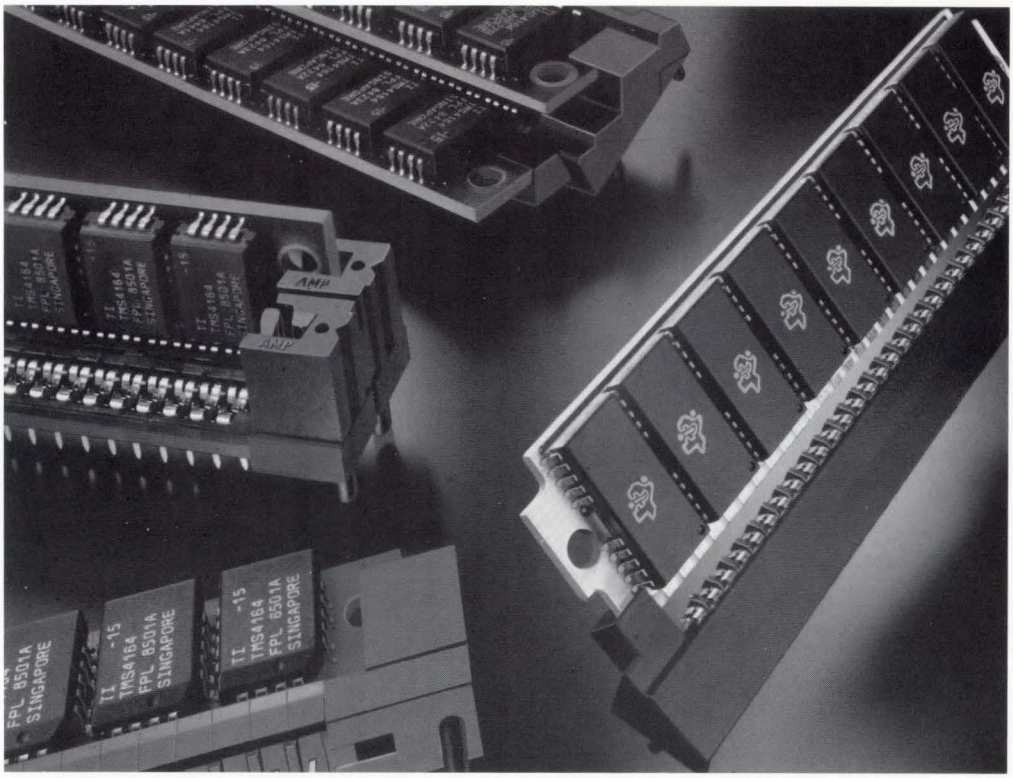
SIMM Sockets

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

DIPLOMATE SIMM Sockets for Leadless Single, In-Line Memory Modules

Features—General

- Various circuit sizes available
- Low overall and mated height profiles
- Redundant contact system
- High normal force interface
- Contact anti-overstress design
- Closed bottom design
- Standoffs for flux removal
- Accepts .050±.003 [1.27±0.08] module thicknesses
- Heat resistant housing material
- Simple insertion/extraction of board
- Designed for robotic assembly methods
- Gold plating option
- Provides high density packaging
- Allows for module upgrading
- Permits simple repair and maintenance
- No special tools required for insertion/extraction
- Low applied cost



The new line of AMP DIPLOMATE SIMM Sockets provides the interface between printed circuit boards and single in-line memory (SIM) modules that represent state-of-the-art high density packaging in electronic systems. The modules may be of the JEDEC standard type or may be custom hybrid units as required by the application. The package method can increase memory density by a factor of three or more and allows versatility in the utilization of board space. Socketing of the modules protects the sensitive IC chips during solder process operations and allows future upgrades of the system as well as providing ease of maintenance and repair.

The AMP DIPLOMATE SIMM Socket product line is comprised of two basic styles—Standard Vertical and Low Profile (Angled). Each style is offered in various circuit sizes and has unique advantages for the intended applications.

All the AMP DIPLOMATE SIMM sockets utilize a high force, computer-designed dual cantilever beam contact. This contact features redundant electrical interfaces, a broad module thickness tolerance, controlled wiping action and an anti-overstress retaining wall. Selective gold plating is an option if required by the application.

The socket housings are molded of a high temperature thermoplastic material and feature robotic locator details, board standoffs and a closed bottom design to inhibit solder and flux wicking.

Other product sizes and variations of AMP DIPLOMATE SIMM sockets can be made available. Contact AMP Incorporated for details.

Performance Characteristics

Voltage/Current:
250 VAC at 1 ampere max.

Operating Temperature:
−55° to 105°C (85°C continuous)

Insulation Resistance (Dry Circuit):
20 milliohms max. initial

Dielectric Withstanding Voltage:
1.0 KVAC

Insulation Resistance:
10,000 megohms min. initial

Capacitance:
1.0 picofarads max.

SIMM Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

DIPLOMATE SIMM Standard Vertical Sockets

Materials and Finish:

Housing–Polyphenylene sulfide, glass filled, UL 94V-0 or Liquid Crystal Polymer (LCP), glass filled, UL 94V-0

Contact–Beryllium copper, bright tin-lead or gold plating

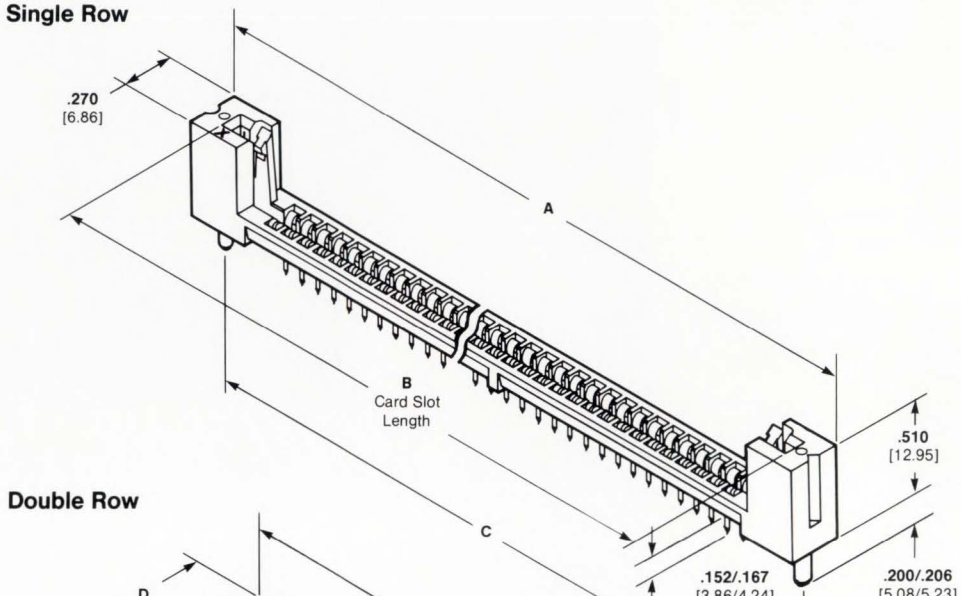
Features

- Accepts standard JEDEC modules
- Single and double row styles available
- 22, 30, 35 and 42 positions available in single row versions; 30 positions available in double row version[1]
- Card guides for mechanical stability
- Positive latch retention
- Polarization of socket to board
- Polarization of module to socket
- Robotic pick-up detail
- Versions for mounting on .300 [7.62] or .400 [10.16] row-to-row centers

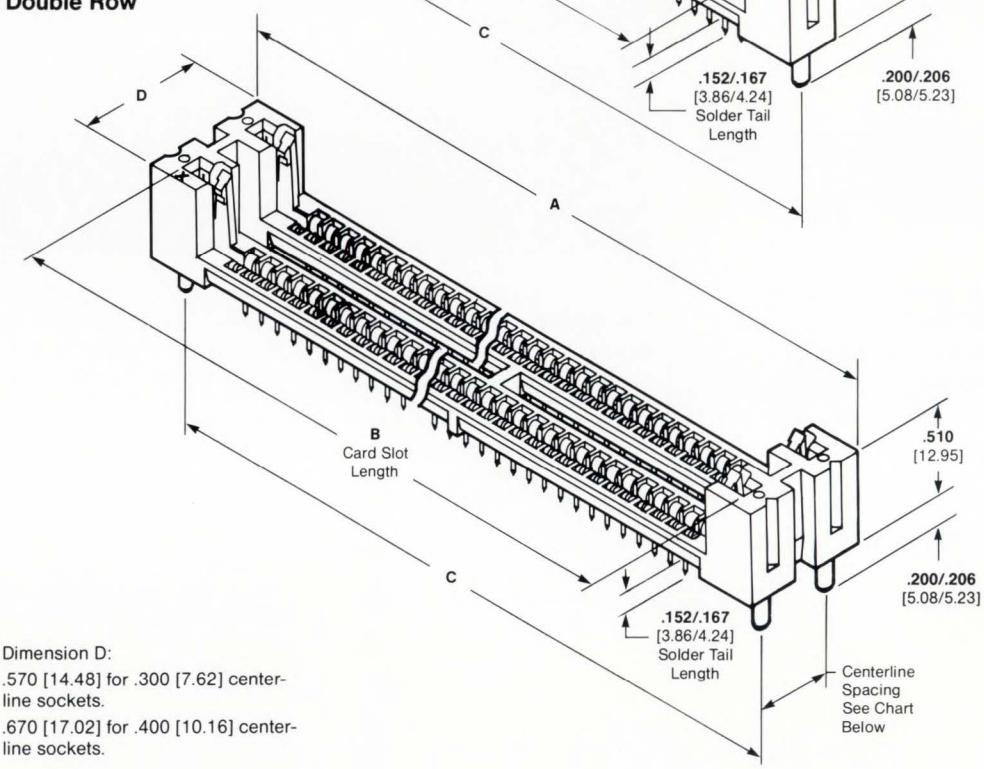
Benefits

- Provides maximum packaging density for standard JEDEC modules
- Vertical design simplifies assembly and board design

Single Row



Double Row



Dimension D:
.570 [14.48] for .300 [7.62] centerline sockets.
.670 [17.02] for .400 [10.16] centerline sockets.

No. of Pos.	Dimensions A	B	C	Part Numbers[1] Single Row Loose Piece Tin[2]	Gold[3]	Single Row Slide Tray[4] Tin[2]	Gold[3]	Double Row .300 [7.72] Centerline Slide Tray[4] Tin[2]	Gold[3]	Double Row .400 [10.16] Centerline Slide Tray[4] Tin[2]	Gold[3]
22	**3.000** 76.2	**2.714** 68.94	**2.850** 72.39	643922-1	643922-2	–	–	–	–	–	–
30	**3.800** 96.52	**3.514** 89.26	**3.650** 92.71	643930-1	643930-2	2-643930-1	2-643930-2	2-382230-1	2-382230-2	2-382330-1	2-382330-2
35	**4.300** 109.22	**4.014** 101.96	**4.150** 105.41	643935-1	643935-2	–	–	–	–	–	–
42	**5.000** 127	**4.714** 119.74	**4.850** 123.19	643942-1	643942-2	–	–	–	–	–	–

[1]Other sizes and variations can be made available upon request. Note: See page 32 for module layout and pc board patterns.
[2]Bright tin-lead plate.
[3].000030 [0.00076] thick gold plate.
[4]Packaged in slide tray for robotic assembly.

SIMM Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

DIPLOMATE SIMM Low Profile (Angled) Sockets

Materials and Finish:

Housing—Polyphenylene sulfide, glass filled, UL 94V-0 or Liquid Crystal Polymer (LCP), glass filled, UL 94V-0

Contact—Beryllium copper, bright tin-lead or gold plating

Features

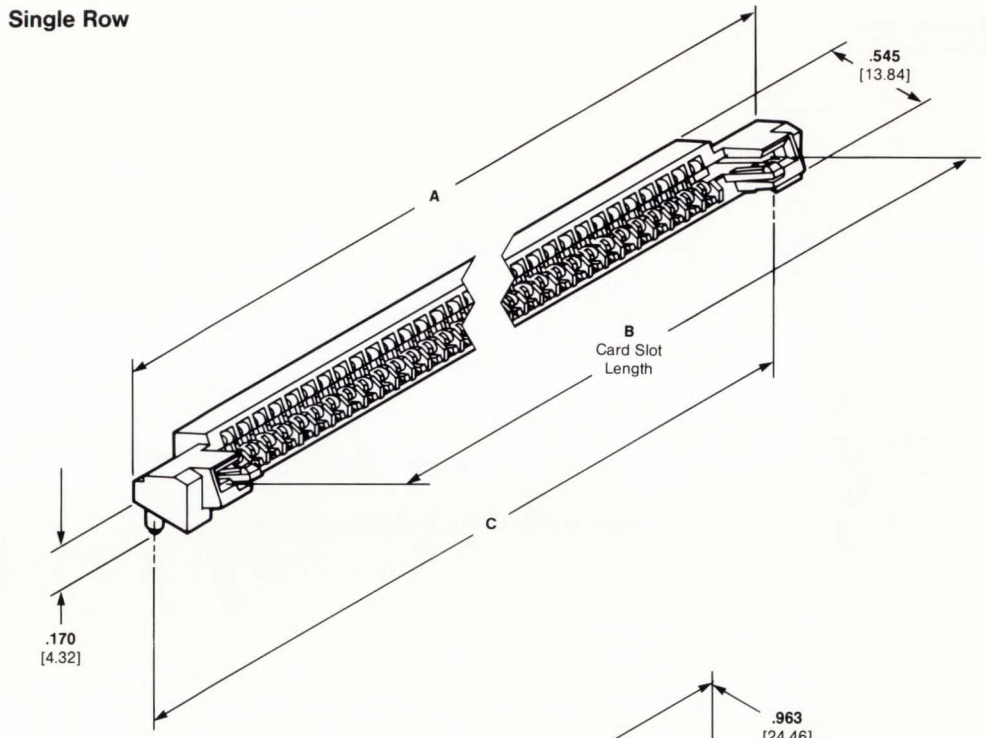
- Accepts standard JEDEC modules
- Card guides for mechanical stability
- Positive retention
- Polarization of socket to board
- Polarization of module to socket
- Slanted module mounting for low height
- Single and double row styles available
- Grip areas provided for robotic interface
- Mounts on .400 [10.16] (single row versions) or .500 [12.7] (double row versions) row-to-row centers

Benefits

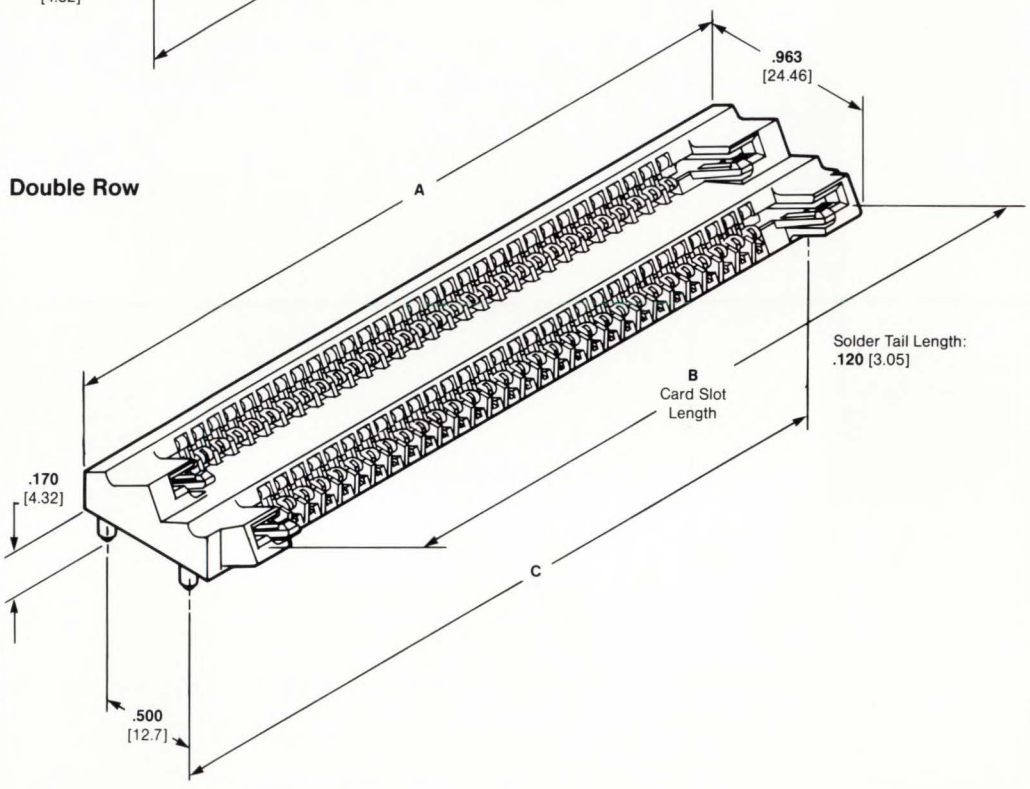
- Provides optimum efficiency of height versus board space
- Allows retrofit of SIMM packaging into applications using .750 [19.05] board-to-board spacing

Note: See page 32 for module layout and pc board patterns.

Single Row



Double Row



No. of Pos.	Dimensions			Part Numbers[1]			
				Single Row Slide Tray[4]		Double Row Slide Tray[4]	
	A	B	C	Tin[2]	Gold[3]	Tin[2]	Gold[3]
30	**3.800** 96.52	**3.514** 82.26	**3.650** 92.71	2-382030-1	2-382030-2	2-382130-1	2-382130-2
35	**4.300** 109.22	**4.014** 101.96	**4.150** 105.41	382035-1	–	–	–
42	**5.000** 127	**4.714** 119.74	**4.850** 123.19	382042-1	–	–	–

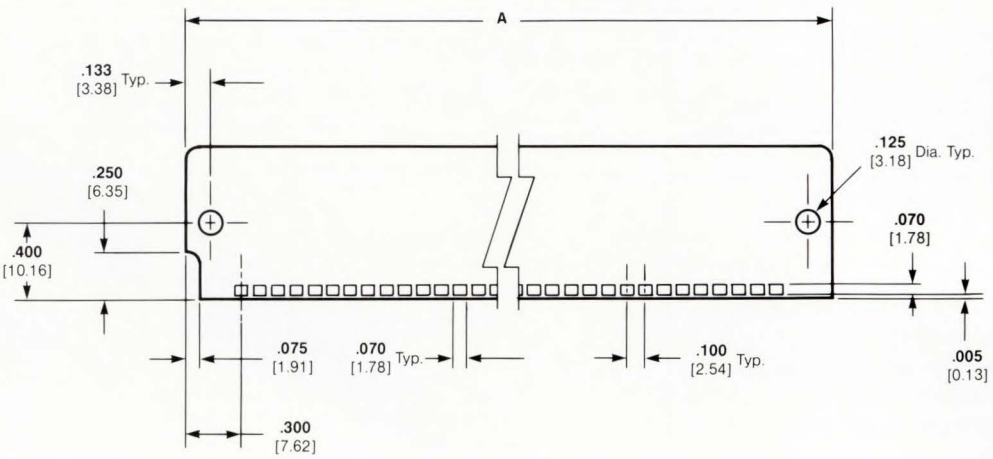
[1]Other sizes and variations can be made available upon request.
[2]Bright tin-lead plate.
[3].000030 [0.00076] thick gold plate.
[4]Packaged in slide tray for robotic assembly.

SIMM Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimetres.

Recommended Module Layout

No of Pos.	Dimension A
22	**2.700** 68.58
30	**3.500** 88.9
35	**4.000** 101.6
42	**4.700** 119.38



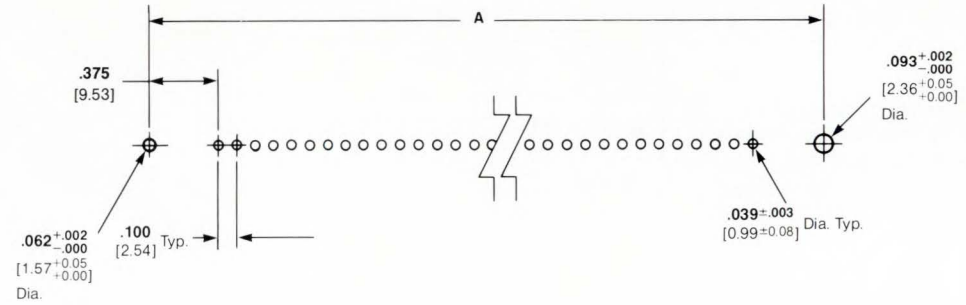
Thickness: .050±.003 [1.27± 0.08] across pads.

Pc Board Hole Patterns

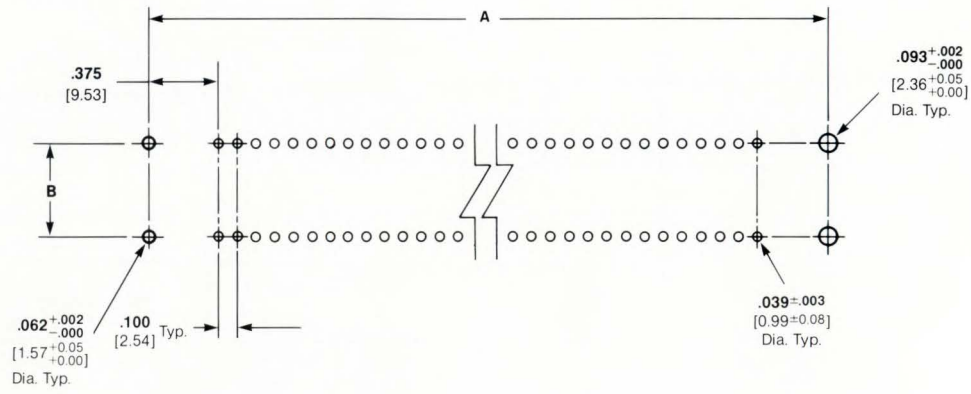
No of Pos.	Dimension A Standard Vertical and Low Profile Sockets
22	**2.850** 72.39
30	**3.650** 92.71
35	**4.150** 101.41
42	**4.850** 123.19

Dimension B:
.300 [7.62], .400 [10.16] or .500 [12.7] depending on center-line spacing of socket.

Single Row Sockets



Double Row Sockets



Square Sockets for PLCC Packages

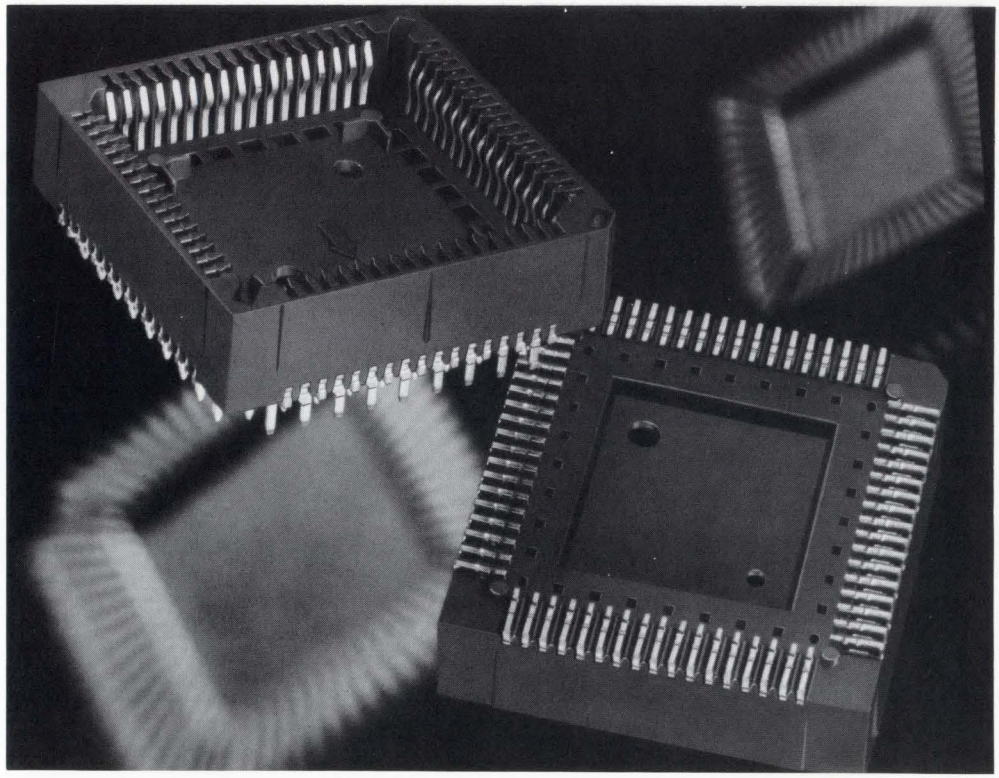
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

High Pressure Tin (HPT) Sockets

Normal Pressure Gold (NPG) Sockets

Features

- Two versions available: Solder tail on .100 [2.54] grid and surface mount on .050 [1.27] centers per JEDEC pc board patterns
- Overall height above pc board with plastic chip carrier installed is .340 [8.64] for surface mount sockets or .360 [9.14] for solder tail sockets with contact standoff
- Visual aids for easy registration
- Contact design permits short electrical path
- Easy access probing with chip carrier installed
- Rigid solder tails resist damage during handling
- Simple hand tools for chip carrier socket mounting and chip carrier removal
- Standoffs for cleaning and heat dissipation
- 200 grams (HPT Sockets) and 100 grams (NPG Sockets) normal force per contact
- Staggered-height solder tails facilitate installation on pc board



AMP High Pressure Tin (HPT) and Normal Pressure Gold (NPG) Chip Carrier Sockets accept JEDEC plastic chip carriers with tin plated or gold plated leads respectively on .050 [1.27] centers. These dependable sockets are available in either solder tail or surface mount versions. The solder tail design allows through-hole board mounting on .100 [25.4] centers. The surface mount design allows vapor reflow board surface mounting on .050 [1.27] centers.

The high normal forces created by the unique contact design allows reliable mating of tin or gold plated leads on plastic chip carriers. The contact design also provides a very short electrical path between the chip carrier lead and pc board.

The sockets provide visual indicators for locating Pin No. 1, and polarizing features to control the insertion of chip carriers.

Solder tail sockets may be quickly positioned and installed on a pc board with a simple alignment tool. Surface mount sockets are supplied without locator posts or with fluted post positioners for positive location in the pc board. Extraction tools are available to smoothly withdraw chip carriers from the sockets.

AMP HPT and NPG Chip Carrier Sockets are designed to make effective and economical use of available pc board area for plastic chip carriers with high pin counts. Consult AMP Incorporated for additional information concerning your particular design requirements.

Performance Characteristics

Contact Resistance:
3.0 milliohms max. change after any test sequence with a 15 milliohm max. final resistance

Capacitance (Adjacent Contact):
1.0 picofarad max.

Inductance (Self):
5.0 nh max. at 500 KHz

Insulation Resistance:
$1x10^4$ megohms min.

Dielectric Withstanding Voltage:
600 VAC for 1.0 minute

Test Conditions

Thermal Shock:
AMP Spec. 109-22, −55°C to +125°C

Vibration:
AMP Spec. 109-21-3, Cond. C, 15 G's max., 10-2000-10 Hz

Shock:
AMP Specification 109-26-9, Cond 1, 100 G's

Temperature/Humidity (Method III):
AMP Spec. 109-23, Cond. B, 10 cycles (+25°C to +125°C) at 90° RH

Corrosion (Industrial Mixed Flowing Gas):
AMP Spec. 109-85-3

Square Sockets for PLCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

HPT Sockets and NPG Sockets with Solder Tails

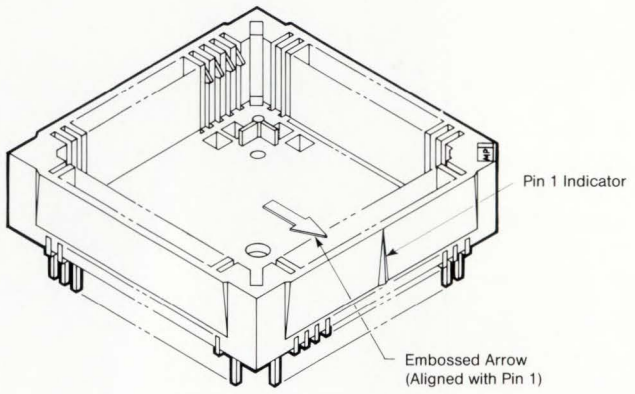
Material and Finish:

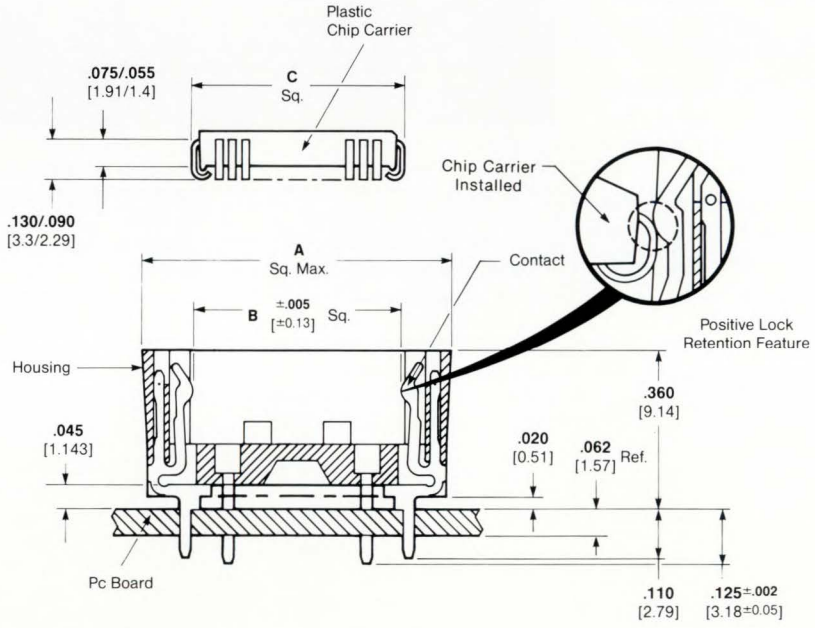
Housing—Polyphenylene sulfide, 40% glass-filled, UL 94V-0 rated, 220°C

Contacts—Phosphor bronze

Plating—HPT Sockets: 93% tin/7% lead over nickel on entire contact; NPG Sockets: .000030 [0.00076] gold at interface with gold flash on entire contact

Note: Other housing and contact materials are available; consult AMP Incorporated.





No. of Pos.	Dimensions			Part Numbers	
	A	B	C	HPT Sockets	NPG Sockets
28	**.685** 17.4	**.459** 11.66	**.495/.485** 12.57/12.32	821581-1	821581-2
44	**.885** 22.48	**.659** 16.74	**.695/.685** 17.65/17.4	821575-1	821575-2
52	**.985** 25.02	**.759** 19.28	**.795/.785** 20.19/19.94	821551-1	821551-2
68	**1.185** 30.1	**.959** 24.36	**.995/.985** 25.27/25.02	821574-1	821574-2
84	**1.385** 35.18	**1.159** 29.44	**1.195/1.185** 30.35/30.1	821573-1	821573-2

Replacement Contacts (loose piece)[1]:
HPT Sockets—Part No. 821685 (inner), Part No. 821686 (outer)

[1] After soldering, housing can be removed and contacts can be replaced.

Square Sockets for PLCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

HPT Sockets and NPG Sockets for Surface Mounting

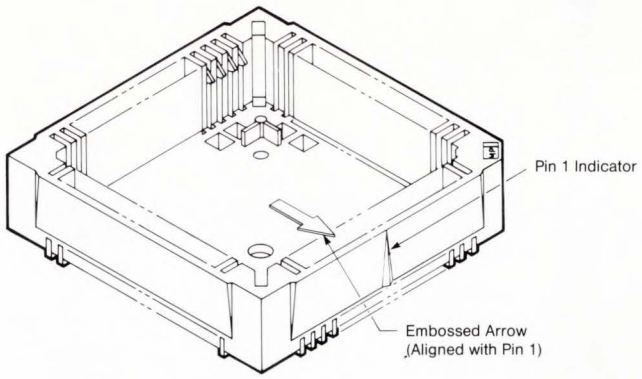
Material and Finish:

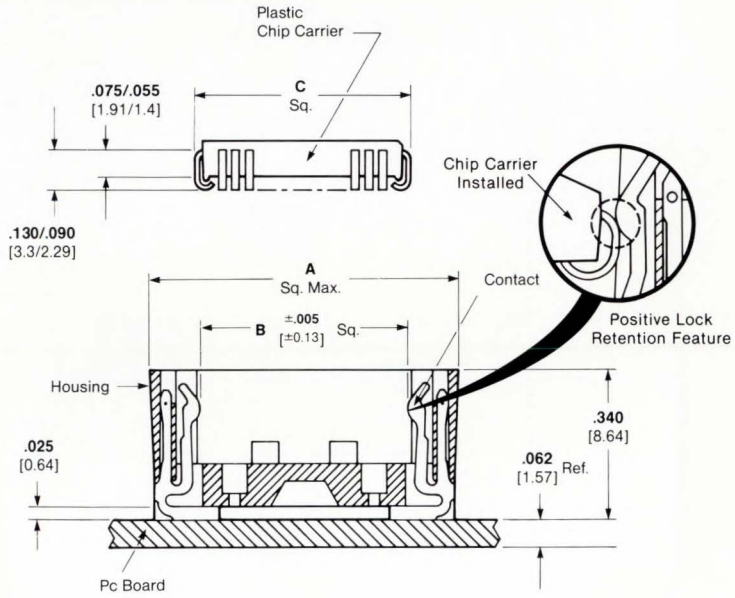
Housing—Polyphenylene sulfide, 40% glass-filled, UL 94V-0 rated, 220°C

Contacts—Phosphor bronze

Plating—HPT Sockets: 93% tin/7% lead over nickel on entire contact; NPG Sockets: .000030 [0.00076] gold at interface with gold flash on entire contact

Note: Other housing and contact materials are available; consult AMP Incorporated.





No. of Pos.	Dimensions			Part Numbers			
				HPT Sockets		NPG Sockets	
	A	B	C	Standard	Fluted Positioners[2]	Standard	Fluted Positioners[2]
28	**.685** 17.4	**.459** 11.66	**.495/.485** 12.57/12.32	821579-1	–	821579-2	–
44	**.885** 22.48	**.659** 16.74	**.695/.685** 17.65/17.4	821548-1	821738-1	821548-2	821738-2
52	**.985** 25.02	**.759** 19.28	**.795/.785** 20.19/19.94	821550-1	821737-1	821550-2	821737-2
68	**1.185** 30.1	**.959** 24.36	**.995/.985** 25.27/25.02	821542-1	821736-1	821542-2	821736-2
84	**1.385** 35.18	**1.159** 29.44	**1.195/1.185** 30.35/30.1	821546-1	821735-1	821546-2	821735-2

Replacement Contacts (loose piece)[1]:
HPT Sockets—Part No. 821687

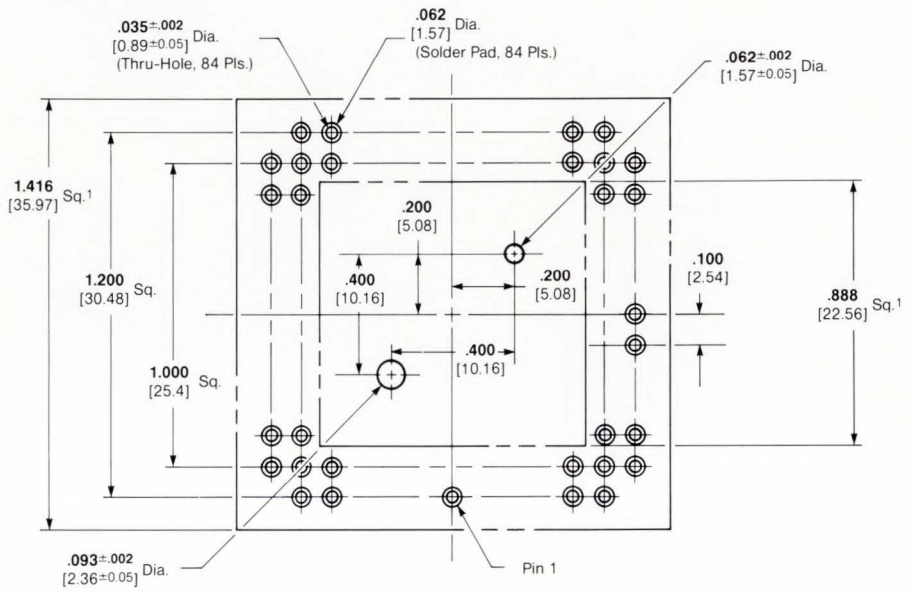
[1]After soldering, housing can be removed and contacts can be replaced.
[2]Fluted positioners provide positive location in the pc board.

Square Sockets for PLCC Packages
(Continued)

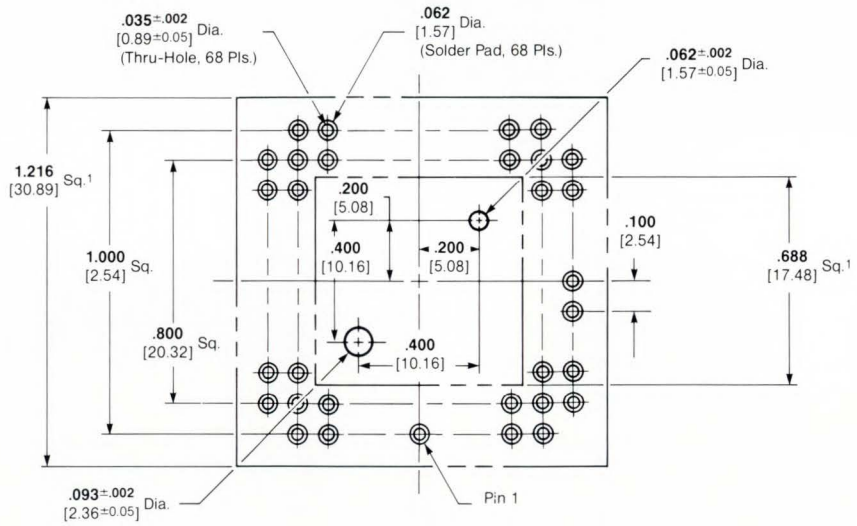
Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

HPT Sockets and NPG Sockets

Recommended Pc Board Hole Patterns for Solder Tail Sockets



84 Position



68 Position

[1]No additional via. holes recommended between indicated dimensions.

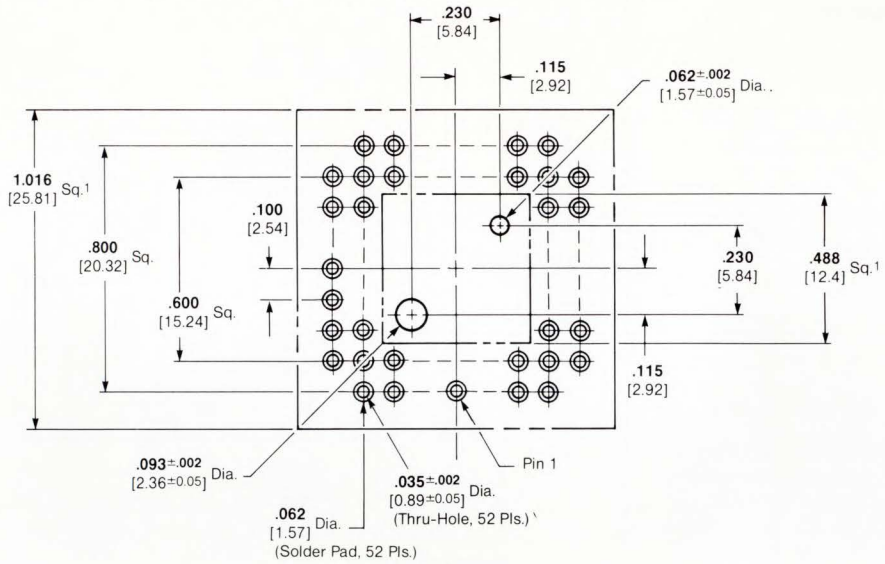
Notes: 1. Pc board hole patterns are shown from top (socket side) of pc board.
2. These JEDEC pc board hole patterns are for .100 [2.54] grid thru-holes.
3. These pc board hole patterns are not to be used for manufacturing layouts. For more detailed layout specifications, order AMP customer drawings using the base (series) no. of the socket nos. listed on page 34.

Square Sockets for PLCC Packages
(Continued)

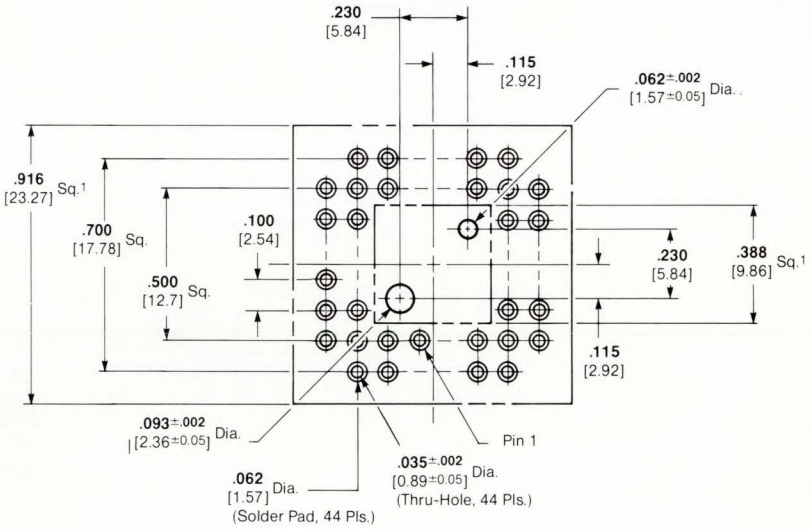
Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

HPT Sockets and NPG Sockets

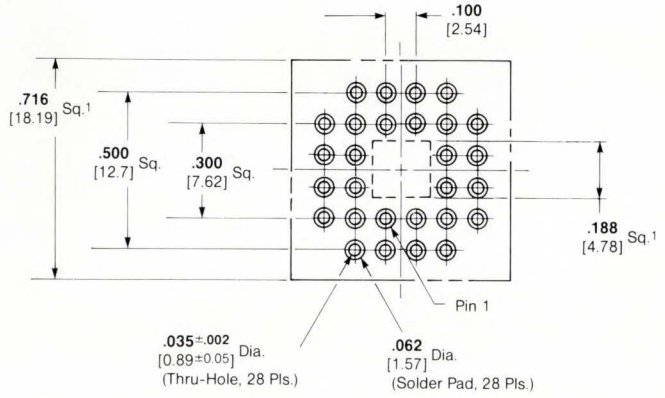
Recommended Pc Board Hole Patterns for Solder Tail Sockets



52 Position



44 Position



28 Position

[1]No additional via. holes recommended between indicated dimensions.

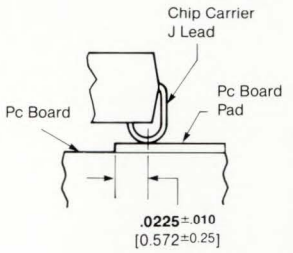
Notes: 1. These JEDEC pc board hole patterns are for .100 [2.54] grid thru-holes.

2. These pc board hole patterns are not to be used for manufacturing layouts. For more detailed layout specifications, order AMP customer drawings using the base (series) no. of the socket nos. listed on page 34.

Square Sockets for PLCC Packages
(Continued)

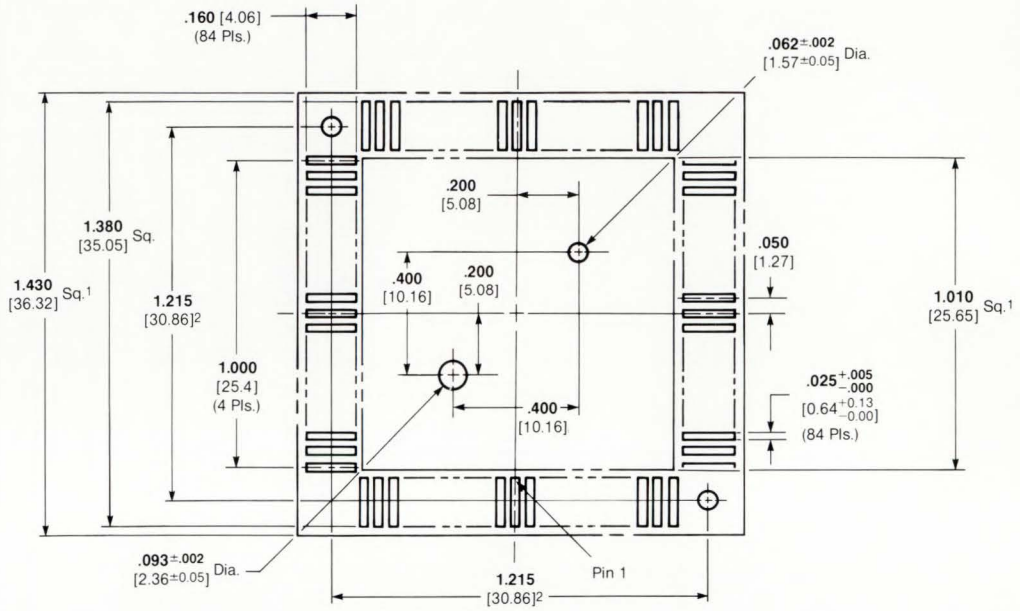
Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

HPT Sockets and NPG Sockets

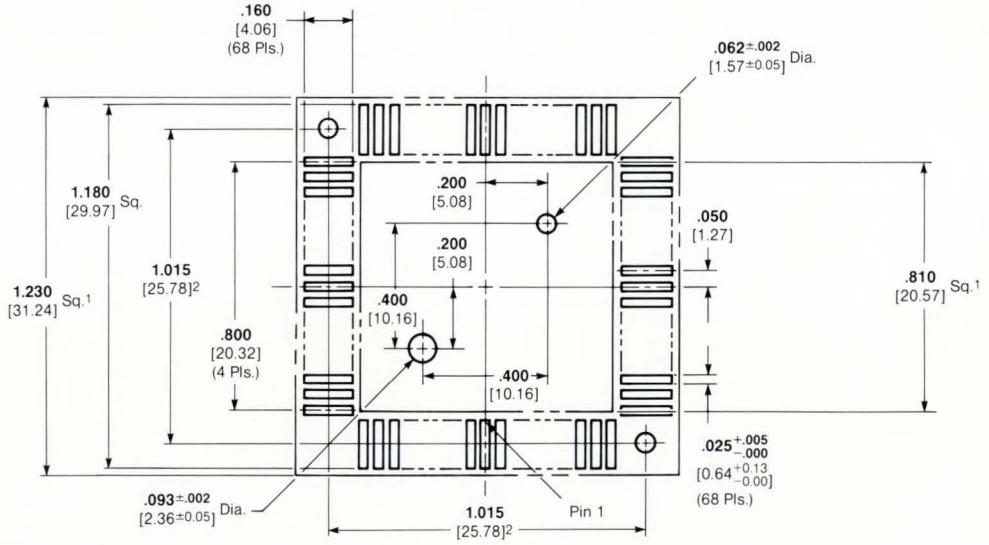


These pc board patterns are common for mounting both chip carriers and chip carrier sockets. For a mounted chip carrier, the centerline of the J leads is located on the pc board pads at the dimension shown above.

Recommended Pc Board Patterns for Surface Mount Sockets



84 Position



68 Position

[1]No additional via. holes recommended between indicated dimensions.

[2]These holes are required for sockets with fluted positioners.

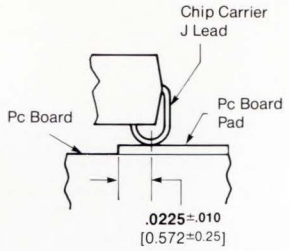
Notes: 1. These JEDEC pc board patterns are for surface mount pads on .050 [1.27] centers.

2. These pc board patterns are not to be used for manufacturing layouts. For more detailed layout specifications, order AMP customer drawings using the base (series) no. of the socket nos. listed on page 35.

Square Sockets for PLCC Packages
(Continued)

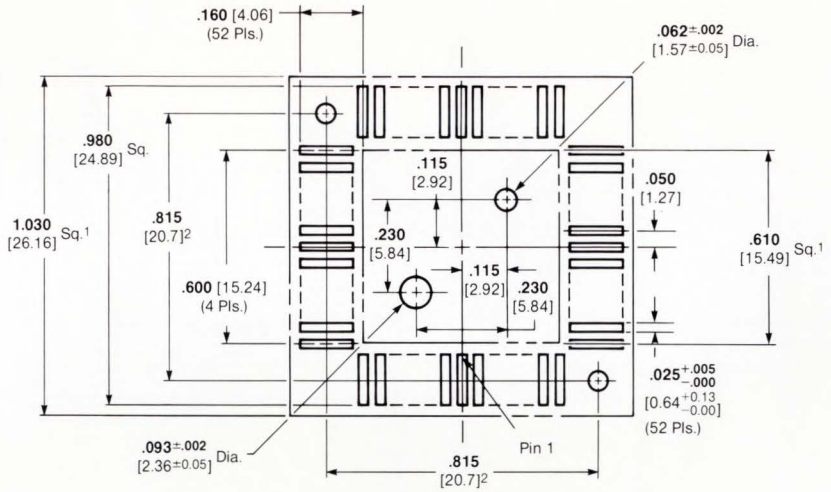
Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

HPT Sockets and NPG Sockets

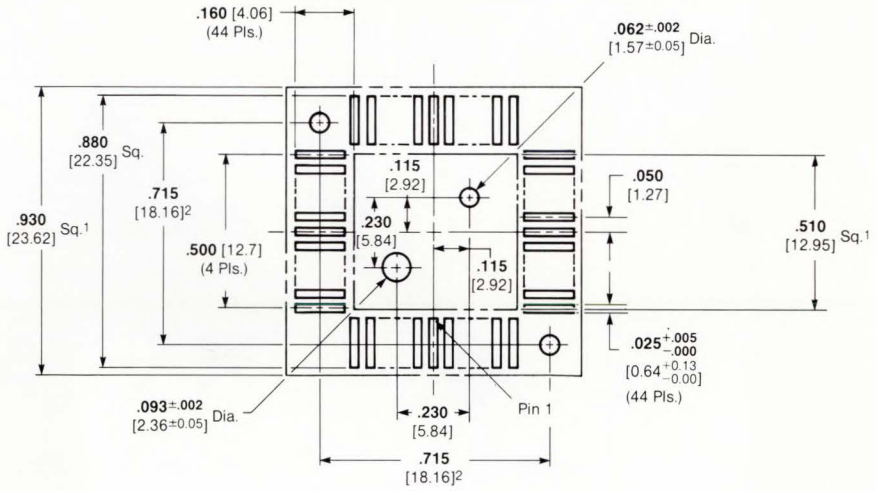


These pc board patterns are common for mounting both chip carriers and chip carrier sockets. For a mounted chip carrier, the centerline of the J leads is located on the pc board pads at the dimension shown above.

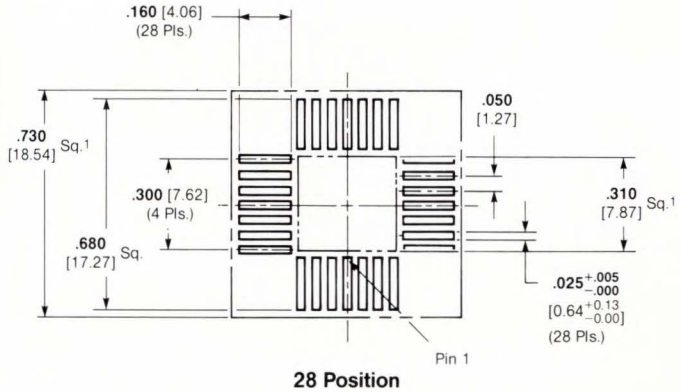
Recommended Pc Board Patterns for Surface Mount Sockets



52 Position



44 Position



28 Position

[1] No additional via. holes recommended between indicated dimensions.

[2] These holes are required for sockets with fluted positioners.

Notes: 1. These JEDEC pc board hole patterns are for surface mount pads on .050 [1.27] centers.

2. These pc board patterns are not to be used for manufacturing layouts. For more detailed layout specifications, order AMP customer drawings using the base (series) no. of the socket nos. listed on page 35.

Square Sockets for PLCC Packages
(Continued)

HPT Sockets and NPG Sockets

Alignment, Extraction and Housing Removal Tools

AMP alignment tools are used for installing solder tail sockets onto pc boards. The extraction tools provide a quick and easy method of removing the chip carriers from solder tail and surface mount sockets. Housing removal tools remove plastic housing for easy inspection of surface mount solder joints.

Extraction Tools

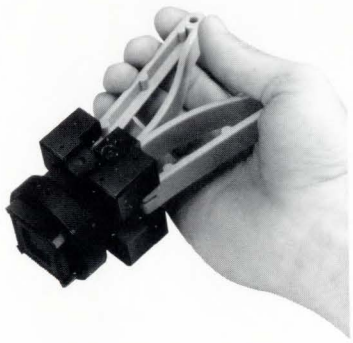
No. of Pos.	Extraction Tool No.
44	821591-1
52	821648-1
68	821566-1
84	821590-1

Extraction Tool

No. of Pos.	Extraction Tool No.
28	821598-1

Alignment Tools

No. of Pos.	Alignment Tool No.
44 & 52	821663-1
68 & 84	68381-1



Housing Removal Tools

No. of Pos.	Removal Tool No.
52	821732-1
68	821730-1
84	821733-1

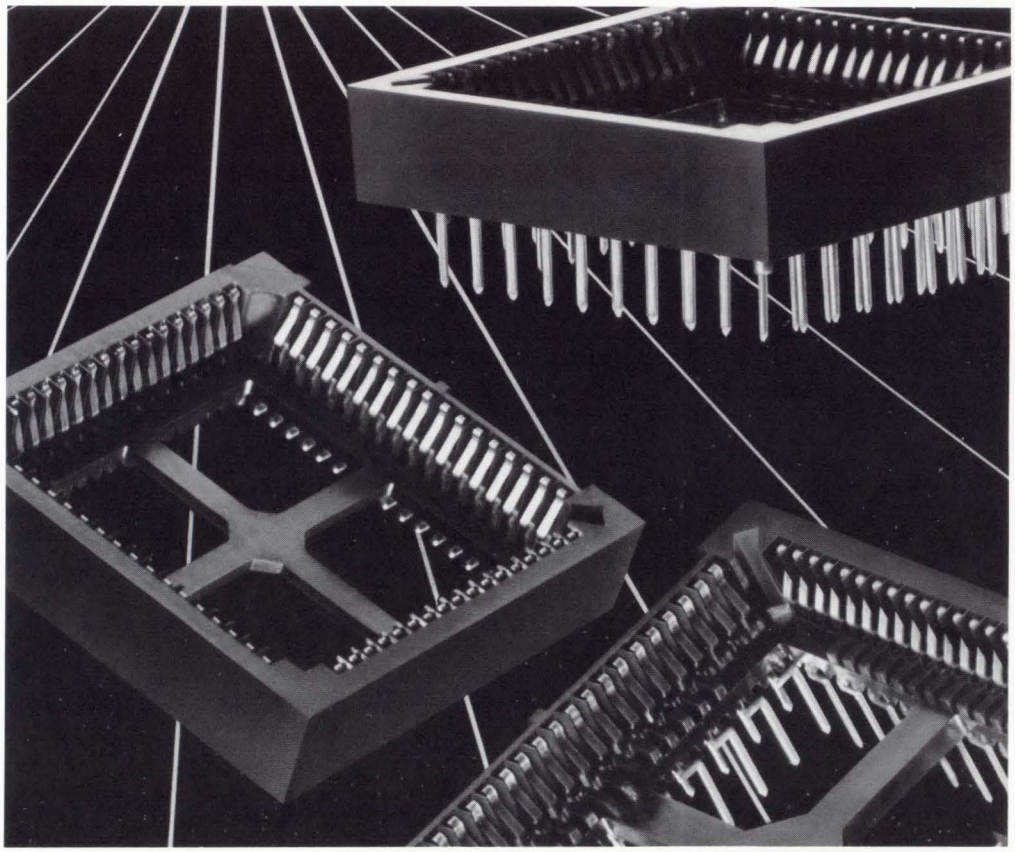
Square Sockets for PLCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Gold-Gold System Sockets

Features:

- Accepts JEDEC, Type A, leaded chip carriers
- Two versions available—solder tail on .100 [2.54] centers and surface mount on .050 [1.27] centers
- Overall height above pc board with plastic chip carrier installed is .320 [8.13] max.
- Polarized for easy registration
- Easy access probing with chip carrier installed
- Hard gold on surface engages plastic chip carrier with option of either gold flash or tin-lead plating on solder legs
- Slots accept chip carrier extractor
- Standoffs for cleaning and heat dissipation
- Inner and outer rows of solder tails on different levels to facilitate installation to the pc board
- 100 grams minimum normal force per contact
- Operating temperature of −40°C to +85°C



AMP Gold-Gold System Chip Carrier Sockets are designed to accept JEDEC, Type A leaded plastic chip carriers with gold plated leads on .050 [1.27] centerlines. They are available in either solder tail or surface mount versions, and can be supplied in 20 through 84 contact positions.

The solder tail sockets are designed for through-hole pc board mounting on .100 [2.54] centers, while the surface mount versions allow state-of-the-art vapor reflow soldering onto the surface of the pc board on .050 [1.27] centers. Both of these socket styles present a low profile when mounted with a plastic chip carrier installed, permitting dense mounting of pc boards.

Normal forces created by the sockets' unique contact design establish reliable mating of the gold-plated leads on the plastic chip carrier. The sockets have polarizing features which allow rapid and reliable insertion of the chip carriers. An extraction tool is available for smooth and easy removal of the chip carrier from the socket.

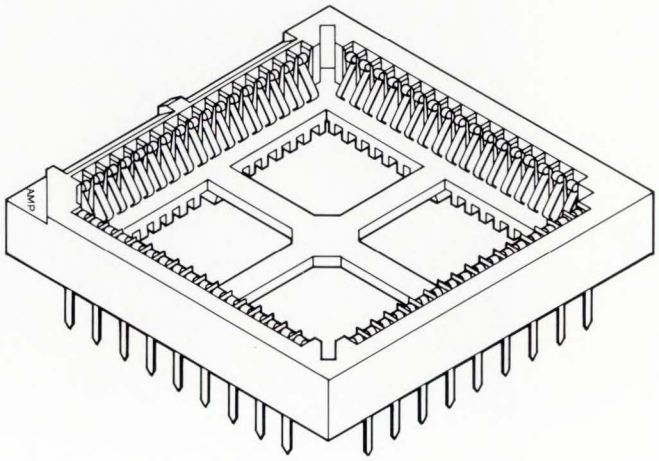
These AMP chip carrier sockets are designed to make effective use of existing pc board area for high count packages. Contact AMP Incorporated for additional information concerning particular design requirements.

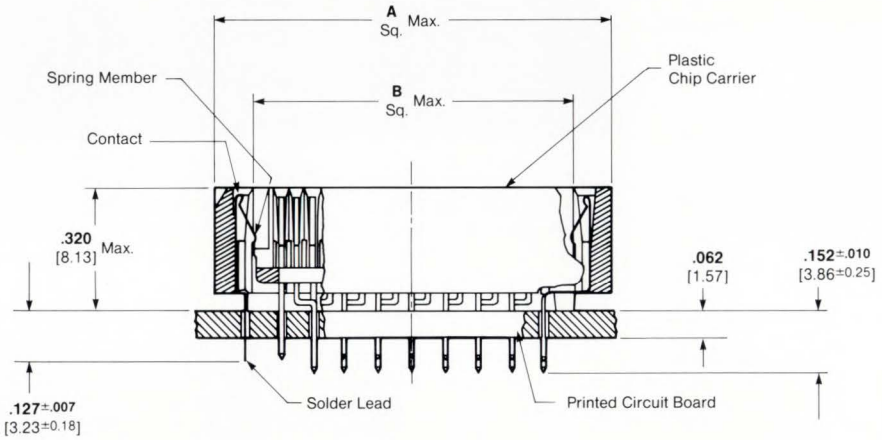
Square Sockets for PLCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Gold-Gold System Sockets

Solder Tail





Assembly Detail

No. of Pos.	Dimensions		Part Numbers	
			Contact Area Plating—.000030 [0.00076] Gold	
	A	B	Gold Flash over .000030 [0.00076] Nickel Plating on Solder Legs	93-7 Tin-Lead over .000030 [0.00076] Nickel Plating on Solder Legs
20	**.570** 14.48	**.375** 9.53	641745-1	641745-2
28	**.670** 17.02	**.457** 11.61	641746-1	641746-2
44	**.870** 22.1	**.657** 16.69	641747-1	641747-2
52	**.970** 24.64	**.757** 19.23	641748-1	641748-2
68	**1.170** 29.72	**.959** 24.36	641749-1	641749-2
84	**1.380** 35.05	**1.159** 29.44	643066-1	643066-2

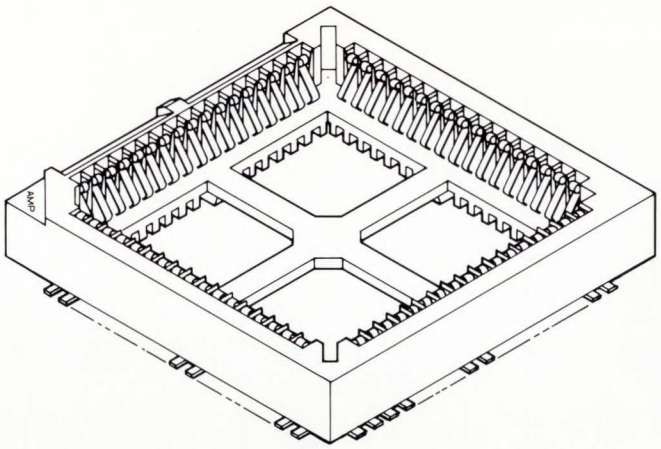
Note: Other sizes can be made available. Contact AMP Incorporated for Information.

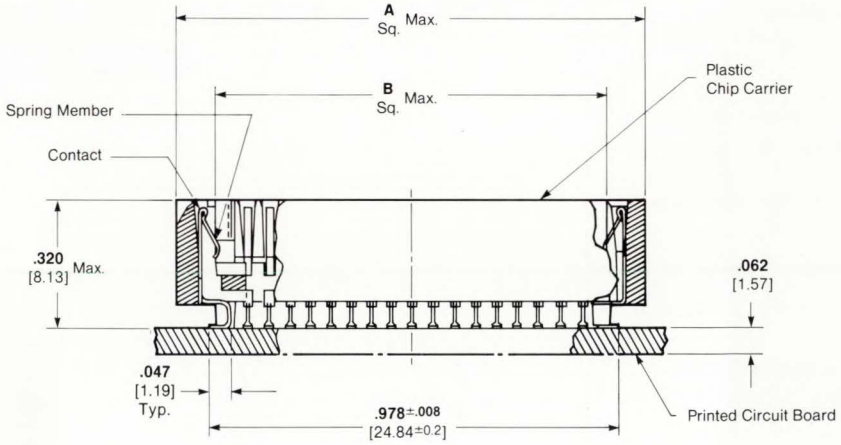
Square Sockets for PLCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Gold-Gold System Sockets

Surface Mount





Assembly Detail

No. of Pos.	Dimensions		Part Numbers	
			Contact Area Plating—.000030 [0.00076] Gold	
	A	B	Gold Flash over .000030 [0.00076] Nickel Plating on Solder Legs	93-7 Tin-Lead over .000030 [0.00076] Nickel Plating on Solder Legs
20	.570 14.48	.375 9.53	643057-1	643057-2
28	.670 17.02	.457 11.61	641444-1	641444-2
44	.870 22.1	.657 16.69	641343-1	641343-2
52	.970 24.64	.757 19.23	643058-1	643058-2
68	1.170 29.72	.959 24.36	641345-1	641345-2
84	1.380 35.05	1.159 29.44	643151-1	643151-2

Note: Other sizes can be made available. Contact AMP Incorporated for Information.

Square Sockets for PLCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

Gold-Gold System Sockets

Performance Characteristics

Contact Resistance:
7.5 milliohms maximum change after any test sequence with a 20 milliohm maximum final resistance

Capacitance (Adjacent Contact):
0.5 picofarad, max.

Inductance (Self):
5.0 nH, max. @ 500 KHz

Inductance (Mutual):
1.0 nH, max. @ 500 KHz

Insulation Resistance:
Initial—1 x 10^4 megohms, min.
Final—1000 megohms, min.

Dielectric Withstanding Voltage:
500 VAC for 1 minute

Test Conditions

Thermal Shock:
AMP Spec. 109-22, −55°C to +85°C

Vibration:
AMP Spec. 109-21-3, Cond. C, 15 G's, max.

Shock:
AMP Spec. 109-26-9, Cond. 1, 100 G's

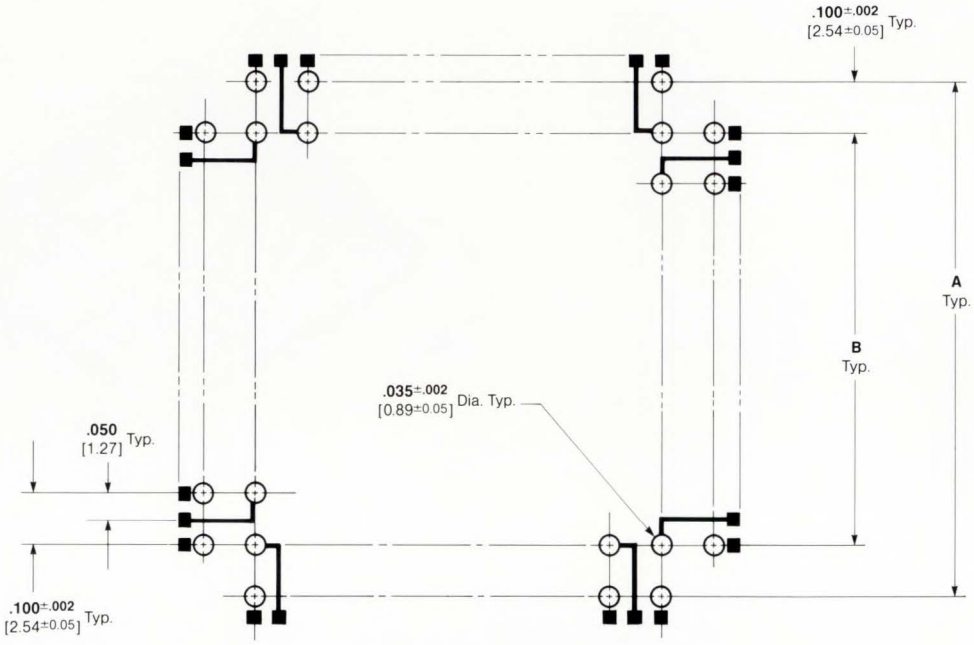
Temperature/Humidity:
AMP Spec. 109-23, Cond. B, 10 cycles, +25°C to +65°C @ 95% RH

Corrosion (Industrial Gas):
AMP Spec. 109-37, Method 2, 24 hrs. @ 1% SO_2

Materials

Housing:
Polyphenylene Sulfide, 40% glass-filled, UL 94V-0, 220°C

Contacts:
Beryllium copper with hard gold over nickel plating in contact area and either gold flash or tin-lead plating in soldering area



Suggested Printed Circuit Board Pad or Hole Pattern

No. of Pos.	Dimensions	
	A	B
20	.400 10.16	.200 5.08
28	.500 12.7	.300 7.62
44	.700 17.78	.500 12.7
52	.800 20.32	.600 15.24
68	1.000 25.4	.800 20.32
84	1.200 30.48	1.000 25.4

Extraction Tools

Part Numbers:
274321-1 (20 through 52 positions)
821509-1 (68 and 84 positions)

Rectangular Sockets for PLCC Packages

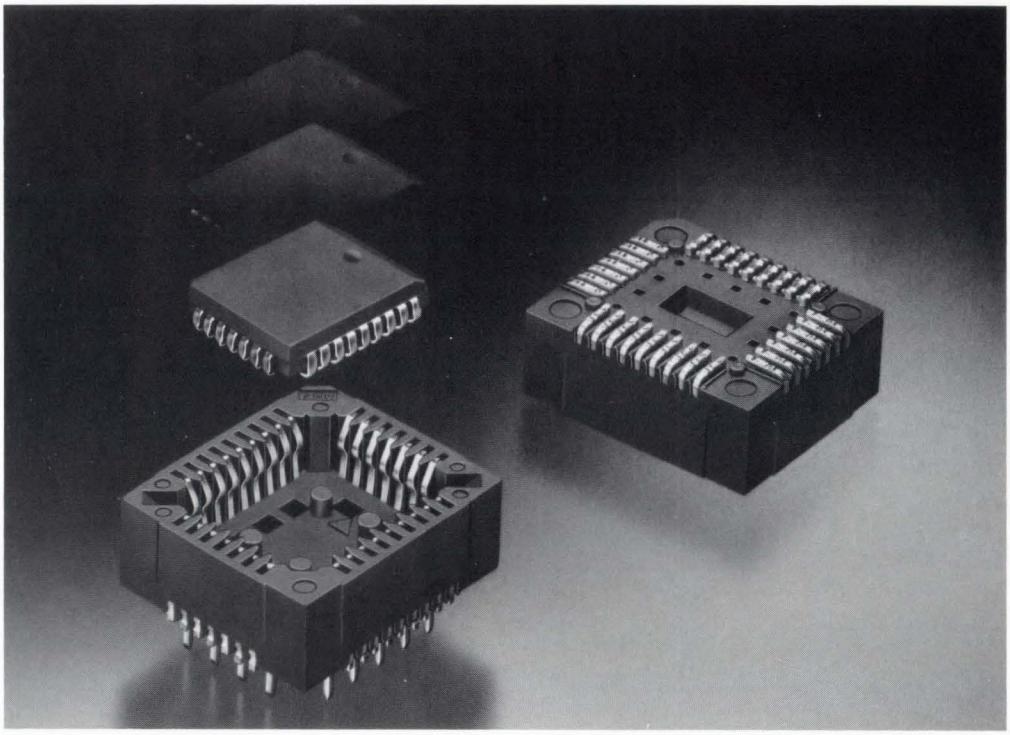
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

High Pressure Tin (HPT) Sockets

Normal Pressure Gold (NPG) Sockets

Features

- Accepts JEDEC E-PROM plastic leaded chip carriers (PLCC's) with "J" leads on .050 [1.27] centers
- Two versions available: solder tail on .100 [2.54] grid and surface mount on .050 [1.27] centers
- Overall height above pc board (with PLCC installed) is .310 [7.87] for surface mount version and .330 [8.38] for solder tail version with standoffs
- Visual aids for locating Pin No. 1, with or without PLCC installed
- Polarizing feature to ensure correct insertion of PLCC
- Contact design which provides short electrical path
- Normal force per contact: 100 grams minimum for NPG socket and 200 grams minimum for HPT sockets
- Positive lock contacts for retaining installed PLCC
- Sturdy solder tails that resist damage during handling
- Staggered-height solder tails that facilitate socket installation on pc board
- Standoffs for cleaning and heat dissipation
- Easy access probing with PLCC installed
- Individual contacts replaceable after soldering to pc board
- Simple extraction tool available for removing PLCC



These 32-position rectangular sockets are designed to accept an E-PROM plastic leaded chip carrier (PLCC) conforming to JEDEC Registered Outline MO-052-AE.

The AMP HPT and NPG Rectangular Chip Carrier Sockets are available in solder tail and surface mount versions. The socket's height above the board, compared to square HPT and NPG Chip Carrier Sockets, has been reduced by .010 [0.25] on the solder tail version and .030 [0.76] on the surface mount version. Both versions use phosphor bronze contacts plated with tin or gold and provide high normal forces, as well as a very short electrical path between the carrier lead and the pc board. Also, contacts are designed to be "free-standing" in socket grooves after soldering. This allows solder joints to be inspected and individual contacts to be replaced by simply removing the socket housing.

The solder tail contacts are equipped with sturdy legs (.020 [0.51] sq.) making them virtually immune to damage during normal handling. The legs are designed in two lengths for "staggered-height" insertion into a pc board—the inner row serves as a lead-in for the outer row. Additional features inherited from the standard HPT and NPG socket family are: visual indexing and polarization to facilitate correct insertion of the chip carrier; socket housings that allow easy access for probing with the chip carrier installed; and positive lock contacts for retaining the chip carrier when installed in the socket. Chip carriers can be removed by use of a simple extraction tool.

The AMP 32-position HPT and NPG sockets make effective and economical use of available pc board area for plastic chip carriers. For additional information concerning your particular design requirements, consult AMP Incorporated.

Performance Characteristics

Contact Resistance:
3.0 milliohms max. change after any test sequence with a 15 milliohm max. final resistance

Capacitance (Adjacent Contact):
1.0 picofarad max.

Inductance (Self):
5.0 nh max. at 500 KHz

Inductance (Mutual):
1.0 nh max. at 500 KHz

Insulation Resistance:
1×10^4 megohms min.

Dielectric Withstanding Voltage:
600 VAC for 1.0 minute

Test Conditions

Thermal Shock:
AMP Spec. 109-22, −55°C to +125°C

Vibration:
AMP Spec. 109-21-3, Cond. C, 15 G's max., 10-2000-10 Hz

Shock:
AMP Spec. 109-26-9, Cond. 1, 100 G's

Temperature/Humidity (Method III):
AMP Specification 109-23, Cond. B, 10 cycles (+25°C to +125°C) at 90% RH

Corrosion (Industrial Mixed Flowing Gas):
AMP Spec. 109-85-3

Rectangular Sockets for PLCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

HPT Sockets and NPG Sockets with Solder Tails

Material and Finish:

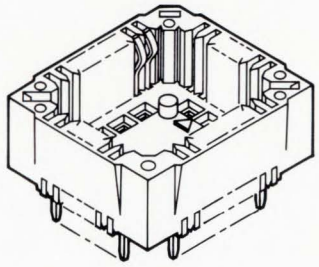
Housing—Polyphenylene sulfide, 40% glass-filled, UL 94V-0 rated, 220°C

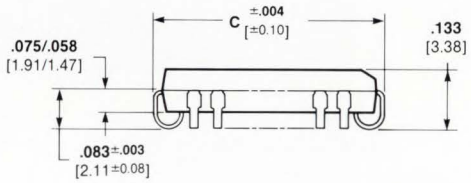
Contacts—Phosphor bronze

Plating—HPT Sockets: 93% tin/7% lead over nickel on entire contact; NPG Sockets: .000030 [0.00076] gold at interface with gold flash on entire contact

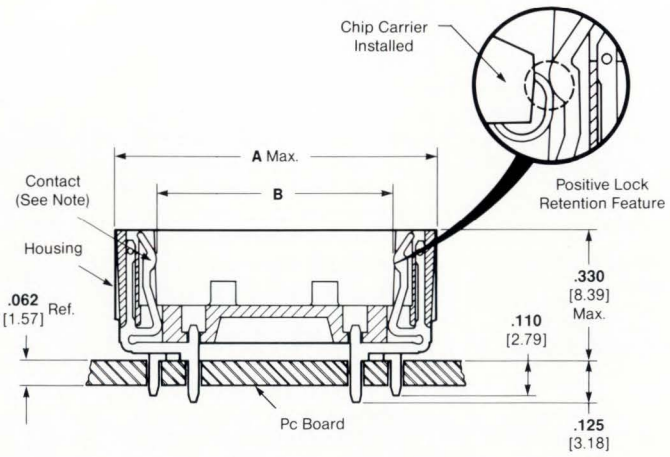
Note: Other housing and contact materials are available; consult AMP Incorporated.

32 Positions





E-PROM Plastic Leaded Chip Carrier (PLCC) (Not Supplied by AMP)



Note: After soldering, housing can be removed and contacts can be replaced.

No. of Pos.	Dimensions						Part Numbers	
	A		B		C		HPT Sockets	NPG Sockets
	Long	Short	Long	Short	Long	Short		
32	.785 19.94	.685 17.4	.563 14.3	.463 11.76	.589 14.96	.489 12.42	821665-1	821665-2

Rectangular Sockets for PLCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

HPT Sockets and NPG Sockets for Surface Mounting

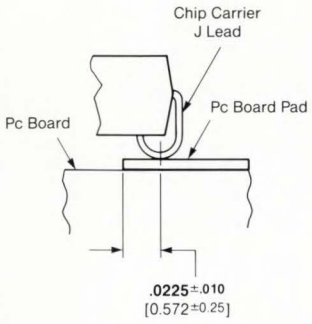
Material and Finish:

Housing—Polyphenylene sulfide, 40% glass-filled, UL 94V-0 rated, 220°C

Contacts—Phosphor bronze

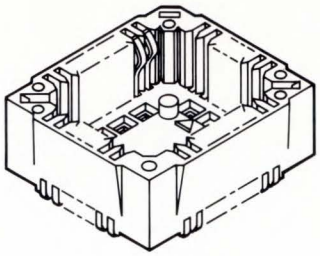
Plating—HPT Sockets: 93% tin/7% lead over nickel on entire contact; NPG Sockets: .000030 [0.00076] gold at interface with gold flash on entire contact

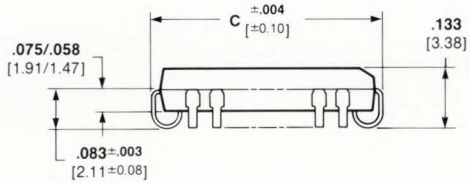
Note: Other housing and contact materials are available; consult AMP Incorporated.



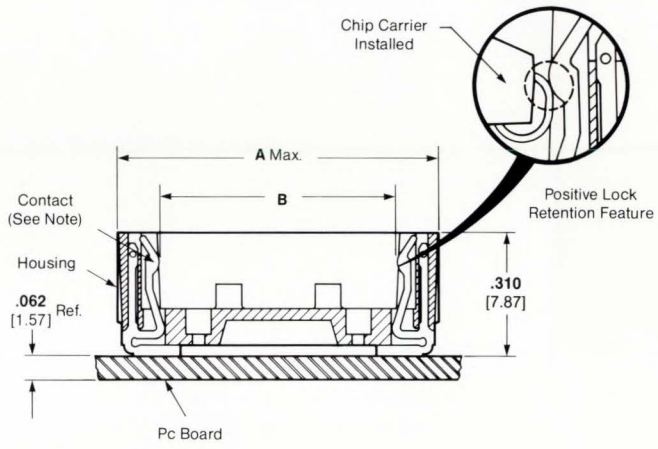
This pc board pattern is common for mounting both chip carriers and chip carrier sockets. For a mounted chip carrier, the centerline of the J leads is located on the pc board pads at the dimension shown above.

32 Positions





E-PROM Plastic Leaded Chip Carrier (PLCC)
(Not Supplied by AMP)



Note: After soldering, housing can be removed and contacts can be replaced.

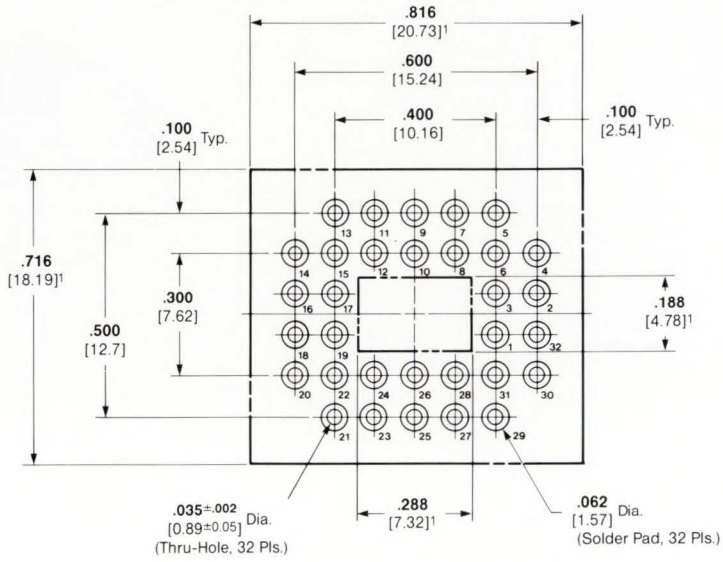
No. of Pos.	Dimensions						Part Numbers	
	A		B		C		HPT Sockets	NPG Sockets
	Long	Short	Long	Short	Long	Short		
32	.785 19.94	.685 17.4	.563 14.3	.463 11.76	.589 14.96	.489 12.42	821664-1	821664-2

Rectangular Sockets for PLCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

HPT Sockets and NPG Sockets

Recommended Pc Board Hole Pattern for Solder Tail Sockets

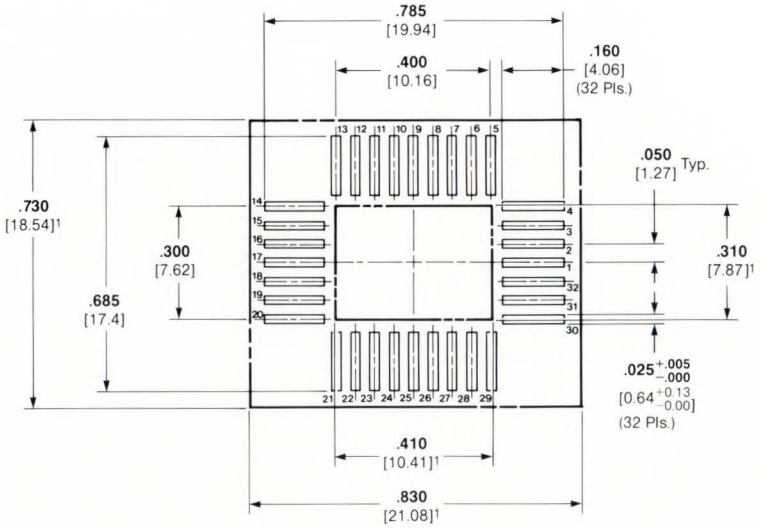


32 Position

1No additional via. holes recommended between indicated dimensions.

Notes: 1. Pc board hole pattern is shown from top (socket side) of pc board.
2. This JEDEC pc board hole pattern is for .100 [2.54] grid thru-holes.
3. This pc board hole pattern is not to be used for manufacturing layouts. For more detailed layout specifications, order AMP customer drawing no. 821665.

Recommended Pc Board Pattern for Surface Mount Sockets



32 Position

1No additional via. holes recommended between indicated dimensions.

Notes: 1. This JEDEC pc board pattern is for surface mount pads on .050 [1.27] centers.
2. This pc board pattern is not to be used for manufacturing layouts. For more detailed layout specifications, order AMP customer drawing no. 821664.

Extraction Tool
Part No. 821646-4

This extraction tool provides a quick and easy method of removing chip carriers from solder tail and surface mount chip carrier sockets.

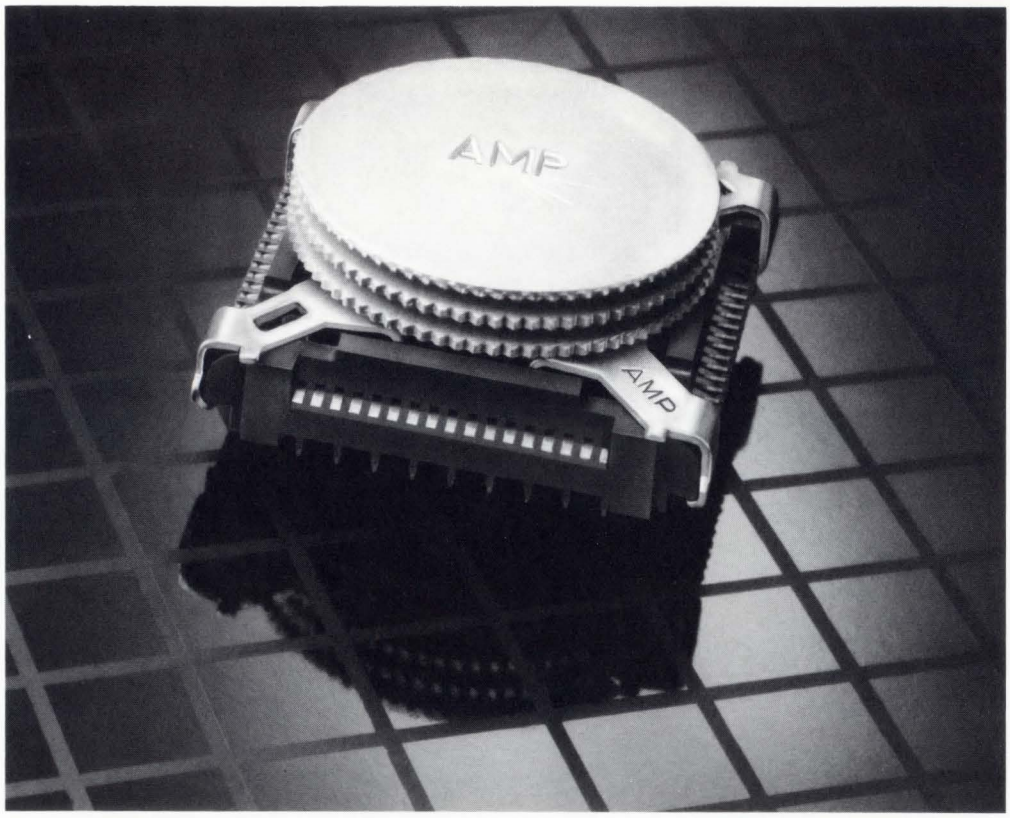
Square Sockets for LCCC Packages

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Low Height Chip Carrier Sockets

Features

- Accepts JEDEC Type A, Type B and Type D leadless ceramic substrates
- Overall height above pc board with substrate installed —.275 [6.99] max. (44 through 84 positions); .350 [8.89] max. (100 positions)
- Substrate cover is profiled to accommodate heat sinks
- Heat sinks and heat sink/cover assemblies are available for 68-position socket
- Substrated registered by three corner notches
- Contact solder tails on .100 [2.54] square grid
- Solder tail lengths available in .110 [2.79] or .140 [3.56]
- Connector and substrate polarizing features
- Duplex plated contacts
- Easy access probing with substrate installed
- Cover attached with no tools and removed with screw driver
- Simple hand tool available to speed installation to pc board
- 150°C temperature rating —suitable for burn-in applications; also see page 94
- 68-position socket is emulator compatible



AMP Low Height Chip Carrier Sockets accept the JEDEC Type A, Type B and Type D leadless ceramic substrates and contain important features required in today's high density electronic systems.

These dependable sockets are available in several solder tail versions and require only a minimum of installation height, with the substrate installed. Socket design permits mounting printed circuit boards on .500 [12.7] centers.

The snap-on cover exposes maximum substrate area for cooling and provides clearance for heat sinks that may be attached to the substrate. The cover is easily installed and removed with no tools needed for installation and only a screw driver required for removal.

For additional heat dissipation, snap-on heat sinks and preassembled heat sink/cover assemblies are available from AMP for the 68-position socket.

The substrate is registered in the connector by means of three inward molded projections with a thruster clip contacting the one beveled corner. The socket is registered to the pc board by means of a molded polarizing post in one corner. An optional insertion tool speeds installation in the board.

The Low Height Chip Carrier Socket is designed to make effective use of existing pc board area for high pin count packages. Contact AMP Incorporated for additional information concerning particular design requirements.

Square Sockets for LCCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Low Height Chip Carrier Sockets

Performance Characteristics

Contact Resistance:
10 milliohms maximum change after any test sequence with a 25 milliohm maximum final resistance

Capacitance (Adjacent Contact):
0.5 picofarad

Inductance (Self):
Short Contact—7 nh @ 1 MHz
Long Contact—9 nh @ 1 MHz

Inductance (Mutual):
3 nh @ 1 MHz

Insulation Resistance:
$1x10^8$ megohms

Breakdown Voltage:
1.0 Kv

Test Conditions

Heat Age:
1000 hours @ 150°C

Thermal Shock:
MIL-STD-1344, Method 1003, Cond. A, −65°C to +85°C

Moisture Resistance:
MIL-STD-1344, Method 1002, Type II

Vibration:
MIL-STD-1344, Method 2005, Cond. IV, 20G's max.

Shock:
MIL-STD-1344, Method 2004, Cond. C, 100 G's

Temperature/Humidity:
85°C, 85% RH

Materials

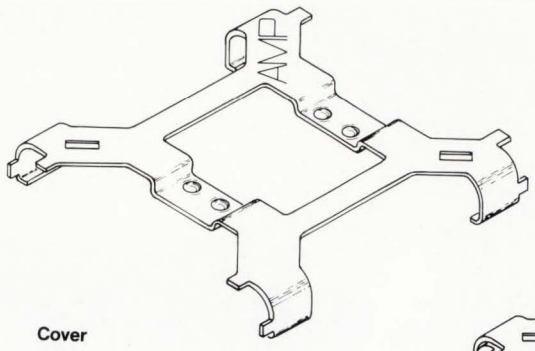
Housing:
Polyphenylene sulfide, glass-filled

Contacts:
Beryllium copper with gold over nickel plating in substrate area and tin-lead over nickel in solder tail area

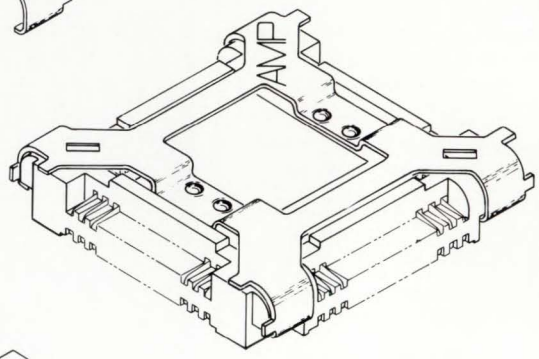
Cover:
Steel with tin-lead plating

Thruster Clip:
Stainless Steel

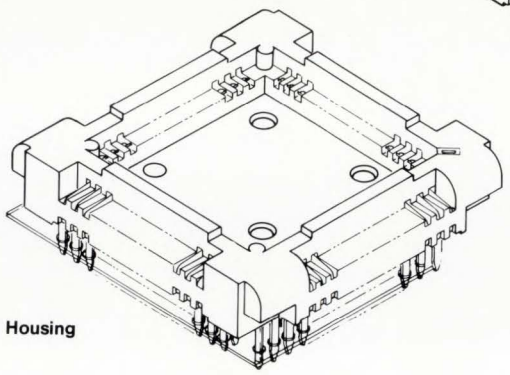
44-, 52-, 68-, 84- and 100-Position Socket Assemblies (Shipped without cover installed)



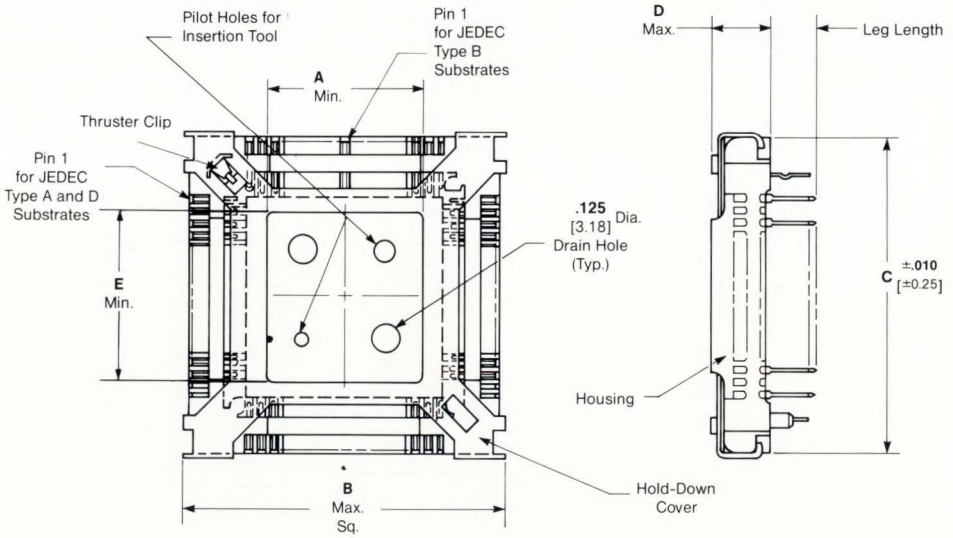
Cover



Assembly



Housing



No. of Pos.	Dimensions					Leg Length				Cover
						.140 [3.65]		.110 [2.79]		
	A	B	C	D	E	Assembly with Cover	Assembly without Cover	Assembly with Cover	Assembly without Cover	
44	**.470** 11.94	**1.050** 26.67	**.995** 25.25	**.275** 6.99	**.425** 10.8	55232-1	55234-1	55232-2	55234-2	55233-2
52	**.530** 13.46	**1.150** 29.21	**1.095** 27.81	**.275** 6.99	**.525** 13.34	55227-1	55229-1	55227-2	55229-2	55228-2
68	**.675** 17.15	**1.365** 34.67	**1.295** 32.89	**.275** 6.99	**.685** 17.4	55159-1	55162-1	55159-2	55162-2	55161-2
84	**.855** 21.72	**1.560** 39.62	**1.495** 37.97	**.275** 6.99	**.890** 22.61	55225-1	55226-1	55225-2	55226-2	55224-2
100	**.950** 24.13	**1.775** 45.09	**1.695** 43.05	**.350** 8.89	**1.045** 26.54	55219-1	55220-1	55219-2	55220-2	55221-2

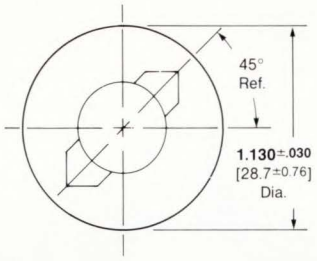
Square Sockets for LCCC Packages
(Continued)

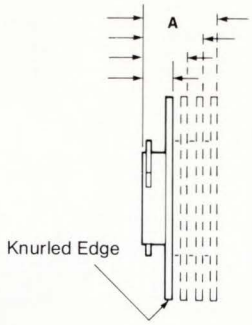
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

Low Height Chip Carrier Sockets

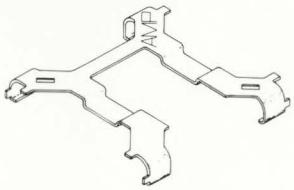
Heat Sink Assemblies for 68-Position Socket





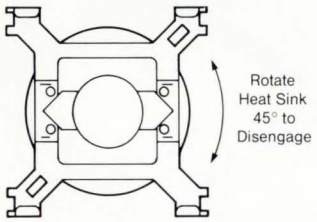
No. of Fins	A Max. Ht.	Part Number
1	.175 4.45	55357-1
2	.255 6.48	55357-2
3	.335 8.51	55357-3
4	.415 10.54	55357-4

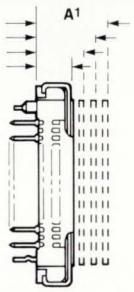
68-Position Cover for Use with Emulator Cable (Cannot be used with heat sinks)



Part No. 55478-4

Heat Sink/Cover Assemblies for 68-Position Socket





Heat Sink/Cover Assembly		
No. of Fins	A1 Max. Ht.	Part Number
1	.375 9.53	55358-1
2	.455 11.56	55358-2
3	.535 13.59	55358-3
4	.615 15.62	55358-4

Note: Thermal paste may be used to fill voids created by warpage of the ceramic substrate; however, the system will perform well without thermal paste in low power applications.

[1] Maximum assembled height above pc board.

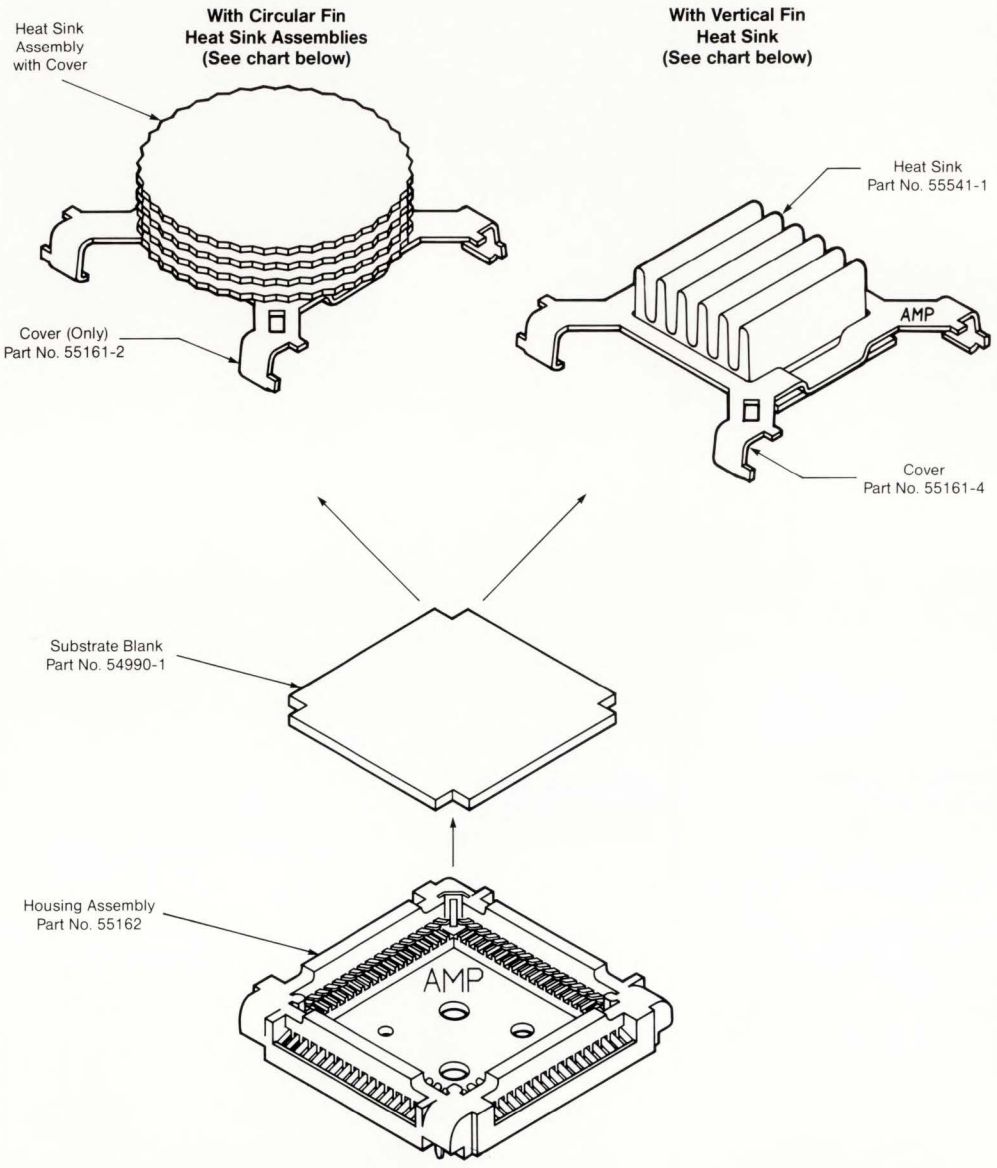
Square Sockets for LCCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

Low Height Chip Carrier Sockets

68-Position Socket Assemblies
Shipped fully assembled with cover and heat sink



Assemblies with Circular Fin Heat Sinks

No. of Circular Heat Sink Fins	Max. Assembled Height Above Pc Board	Part Numbers Leg Length .140 [3.56]	Part Numbers Leg Length .110 [2.79]
0	**.275** 6.99	55365-1	55365-2
1	**.375** 9.53	55539-1	55539-2
2	**.455** 11.56	55540-1	55540-2
3	**.535** 13.59	55668-1	55668-2
4	**.615** 15.62	55523-1	55523-2

Assemblies with Vertical Fin Heat Sinks

Max. Assembled Height Above Pc Board	Part Numbers Leg Length .140 [3.56]	Part Numbers Leg Length .110 [2.79]
.520 13.21	55531-1	55531-2

Square Sockets for LCCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

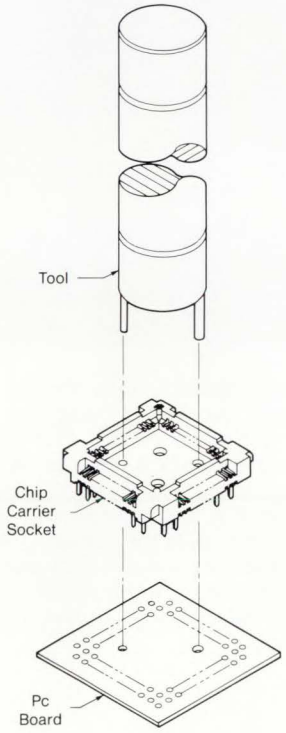
Charts contain dimensions in inches over millimetres.

Low Height Chip Carrier Sockets

Insertion Tools

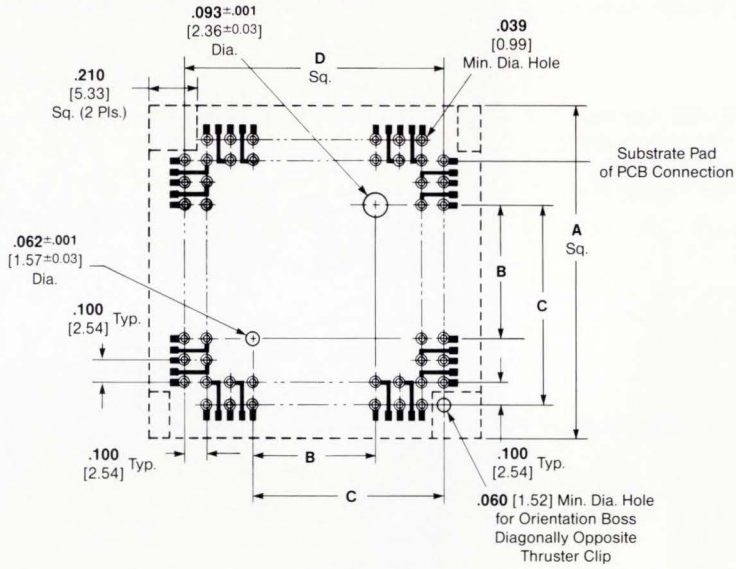
44 and 52 Positions
Part No. 68382-1

68 and 100 Positions
Part No. 68381-1



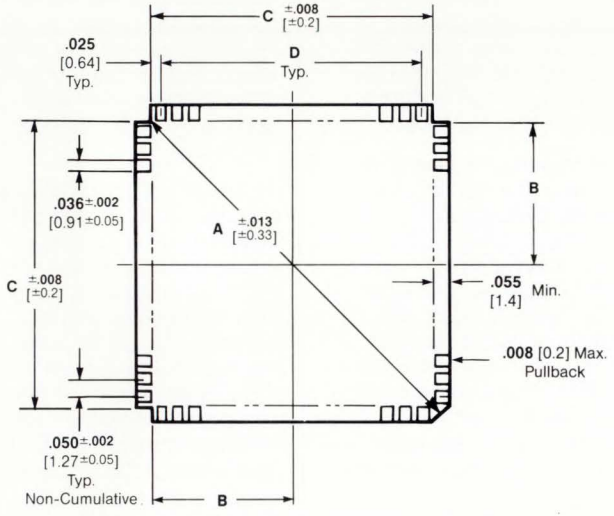
Note: Substrate pad plating to be .00008 [0.002] min. thk. pore-free gold over .00010 [0.0025] min. thk. nickel or equivalent.

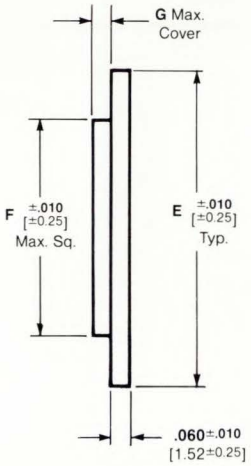
Printed Circuit Board Layout (Connector Side)



No. of Pos.	A	B	C	D
44	**.995** 25.27	**.300** 7.62	**.500** 12.7	**.700** 17.78
52	**1.095** 27.81	**.300** 7.62	**.500** 12.7	**.800** 20.32
68	**1.295** 32.89	**.400** 10.16	**.700** 17.78	**1.000** 25.4
84	**1.495** 37.97	**.400** 10.16	**.800** 20.32	**1.200** 30.48
100	**1.695** 43.06	**.400** 10.16	**.950** 24.13	**1.400** 35.56

Substrate Specifications





No. of Pos.	A	B	C	D	E	F JEDEC Type A	F JEDEC Type B	G
44	**.832** 21.13	**.275** 6.99	**.550** 13.97	**.500** 12.7	**.650** 16.51	**.480** 12.19	**.330** 8.38	**.060** 1.52
52	**.963** 24.46	**.325** 8.26	**.650** 16.51	**.600** 15.24	**.750** 19.05	**.550** 13.97	**.440** 11.18	**.060** 1.52
68	**1.247** 31.67	**.425** 10.08	**.850** 21.59	**.800** 20.32	**.950** 24.13	**.750** 19.05	**.650** 16.51	**.060** 1.52
84	**1.530** 38.86	**.525** 13.34	**1.050** 26.67	**1.000** 25.4	**1.150** 29.21	**.950** 24.13	**.830** 21.08	**.060** 1.52
100	**1.812** 46.02	**.625** 15.88	**1.250** 31.75	**1.200** 30.48	**1.350** 34.29	**1.150** 29.21	**.920** 23.36	**.120** 3.05

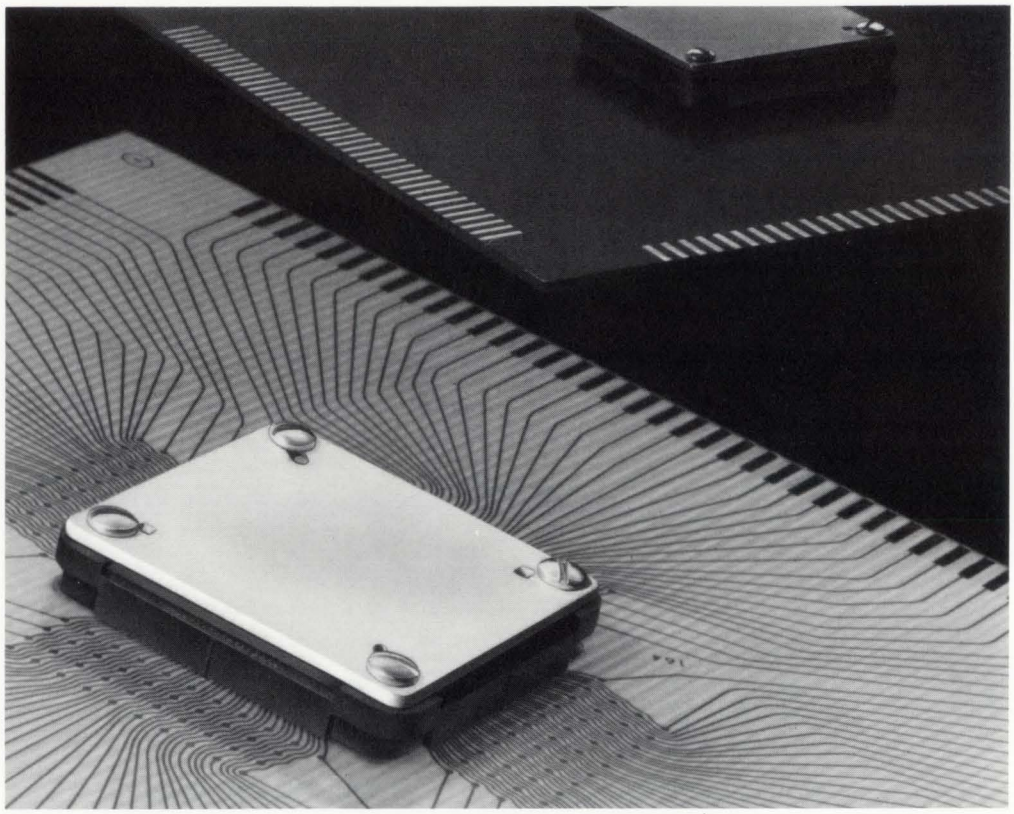
Square Sockets for LCCC Packages

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Universal Ceramic High Speed Chip Carrier Sockets

Features

- Accepts JEDEC leadless type A ceramic chip carriers with nominal .950 [24.13] square outside dimension
- Overall height above pc board—.230 [5.84]
- Surface mounted on .020 [0.51], .025 [0.64], .040 [1.02] or .050 [1.27] centerlines
- Four projections on housing orient socket to pc board footprint
- Optional copper-clad invar cover designed to accept a finned heat sink
- Contact exerts a force of 200 grams minimum on the chip carrier contact face
- Very low inductance insured by contact design which shunts current directly to pc board



AMP High Speed Chip Carrier Sockets accept the JEDEC leadless type A ceramic chip carriers having a nominal .950 [24.13] square outside dimension. Housings are available for 68, 84, 132, 156 and 164 position chip carriers.

The socket is designed to be surface mounted to a printed circuit board. The housing, molded of 40% glass-filled, polyphenylene sulfide material, has slots which loosely retain the individual flat contacts in position for soldering. The printed circuit board must be manufactured with a .003 [0.08] solder resist with windows to match the footprint of the socket contacts. This .003 [0.08] deep pocket at each contact point is filled with solder paste for soldering the contact by vapor phase reflow techniques.

The housing is secured to the pc board by four screws, inserted from the reverse side of the board. The back-up plate and associated insulator serve to stiffen the pc board. To insure correct orientation of the housing to the socket footprint, the bottom of the housing has four projections which engage the four windows in the solder resist coating of the printed circuit board.

The installed chip carrier is retained in the socket by a cover and four screws. A bias spring inserted into the housing bears against the index corner of the ceramic chip carrier and locates the carrier against three steel pins in the housing to ensure proper registration of the carrier with the socket contacts. An optional copper-clad invar cover, designed to accept a finned heat sink, can be made available, or one of many commercially available heat sinks can be soldered or glued to the standard cover plate.

Each individual flat contact exerts a force of 200 grams (nominal) on the chip carrier contact face, resulting in a low resistance interconnection. The contact adds very low inductance to the circuit path (about 1.4 nH), hence the name "high speed" contact. The low inductance value makes the socket especially suitable for very high speed circuitry in state-of-the art digital equipment.

Square Sockets for LCCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

Universal Ceramic High Speed Chip Carrier Sockets

Materials and Finish:

Housing—Polyphenylene sulfide, 40% glass-filled[1]

Chip Carrier Nest—Polyphenylene sulfide, 40% glass-filled[1]

Chip Carrier Orientation Pins—Steel

Contacts—Phosphor bronze with gold over nickel plating in substrate area and tin-lead over nickel on solder feet

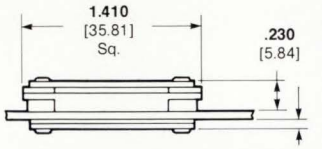
Bias Spring—Phosphor Bronze

Insulator—G-10—Glass-filled epoxy

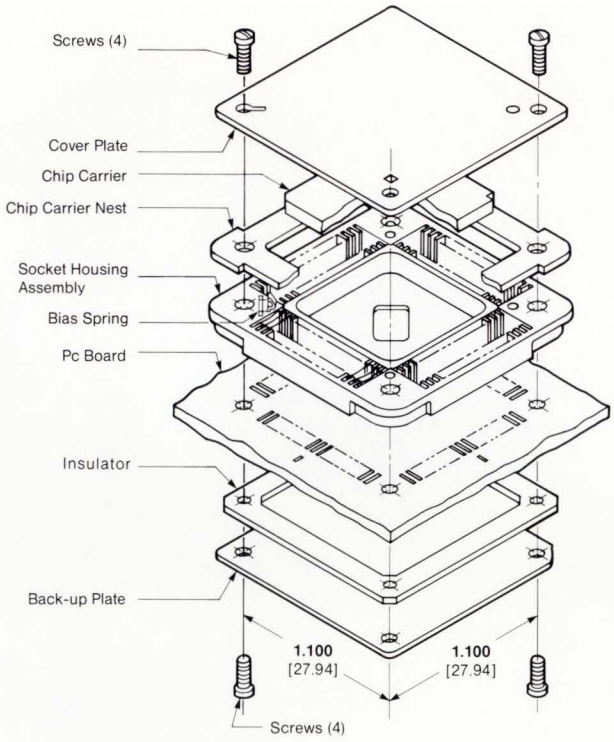
Back-up Plate—Copper-clad invar or stainless steel

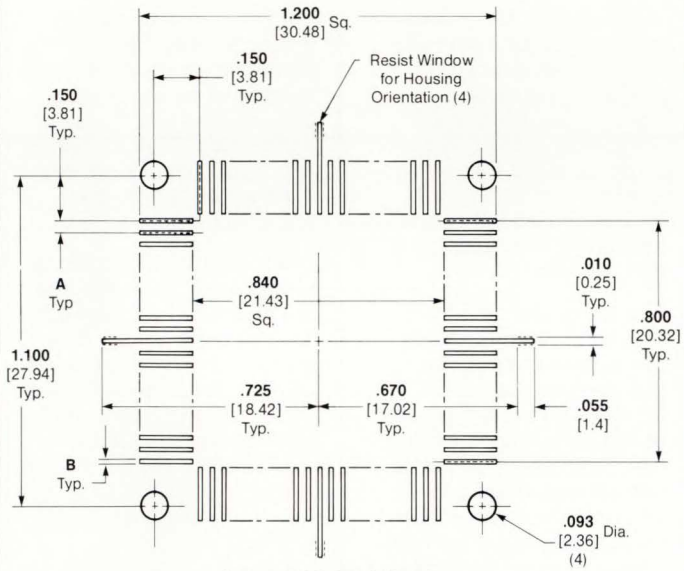
Screws—Stainless steel

[1]UL 94V-0
UL temperature rating: 220°C



Assembly Detail





Suggested Printed Circuit Board Layout

No. of Pos.	Dimensions A	Dimensions B	Part Number
68	.050 1.27	.012 0.3	821516-1
84	.040 1.02	.012 0.3	821517-1
132	.025 0.64	.012 0.3	821518-1
156	.020 0.51	.010 0.25	821519-1
164	.020 0.51	.010 0.25	821520-1

Performance Characteristics

Contact Resistance (Dry Circuit, Low Level):
10 milliohms maximum increase between initial and subsequent measurements

Capacitance:
0.5 picofarad max. (calculated)

Insulation Resistance:
Initial—5,000 megohms min.
Final—1,000 megohms min

Dielectric Withstanding Voltage:
Initial—1,000 VAC, 60 Hz for one minute
Final—900 VAC, 60 Hz

Test Conditions

Thermal Shock:
25 cycles @ −65C to +85°C

Vibration:
20 G's max., 10-2000 Hz, 100 milliamps

Physical Shock:
100 G's half-sine in 6 milliseconds; 3 shocks in each direction applied along three mutually perpendicular planes—total 18 shocks

Temperature/Humidity:
10 cycles, +25°C to +65°C @ 95% RH with low cold shock @ −10C

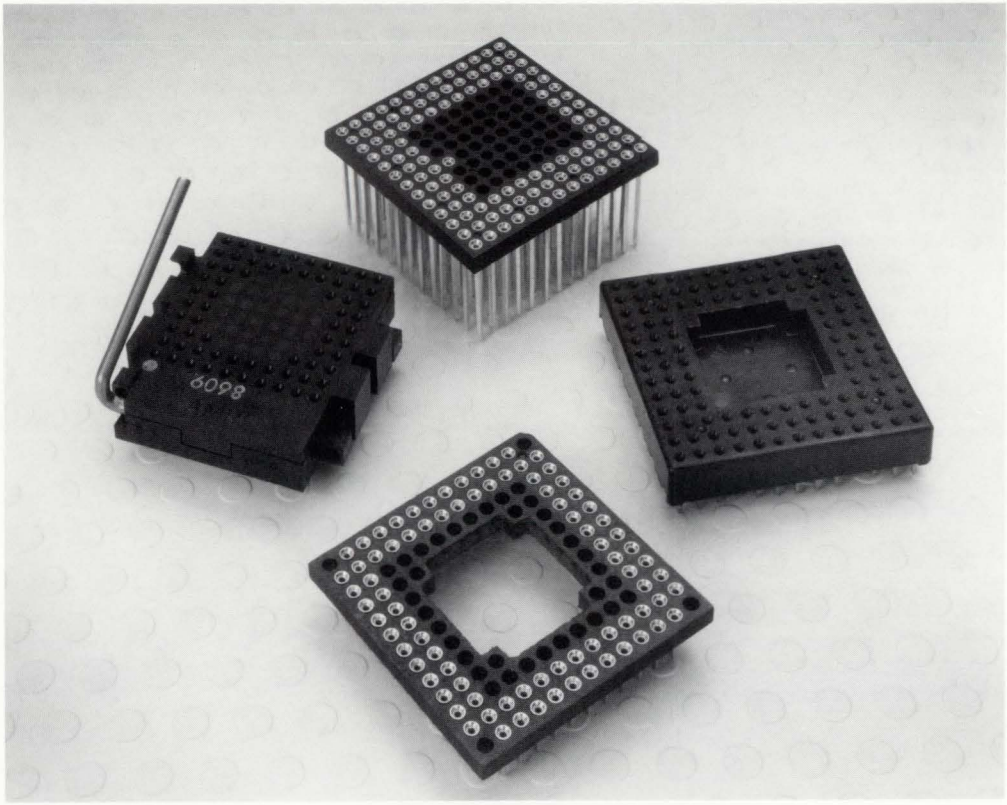
Durability:
50 cycles

Square Sockets for PGA Packages

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

General Features

- Grid patterns on .100 [2.54] centers
- Designed to occupy a minimum of pc board area
- Circuit cavity lead-in facilitates substrate loading
- Controlled contact entry minimizes the chance of deformed substrate pins
- Gold plated contact areas provide system integrity
- Accepts .016-.020 [0.41-0.51] diameter pins
- Housing material is UL 94V-0 rated



AMP Pin Grid Array Sockets make it easy to install and remove high pin count pin grid array substrate packages. Three designs are available including low profile sockets with drawn spring contacts, low insertion force (LIF) sockets and zero insertion force (ZIF) sockets.

The low profile sockets feature four-finger spring contacts made from precision-drawn beryllium copper. The proven reliability of this design is equal to machined spring contacts without the added cost. The brass screw-machined sleeves are assembled into closed or open frame polyester housings. The drawn four-finger contact, with tapered entry and wiping action, minimizes connector mating force and maximizes the electrical integrity of the interface with the round leads of the mating pin grid array package. The screw-machined sleeves eliminate the potential of flux contamination and solder wicking. Plating combinations of gold or tin plated sleeves with gold plated spring contacts are standard. These low profile sockets are provided in a choice of solder tail (.175 [4.44] height) and 2- or 3-high wrap post configurations with grid sizes from 10x10 to 17x17.

The low force (LIF) sockets are compact in design and are preloaded with low friction contacts. LIF sockets are available in two versions: LIF-P sockets have beryllium copper contacts and LIF-S sockets have contacts made from phosphor bronze. These sockets are supplied with grid sizes from 10x10 to 17x17.

Zero insertion force (ZIF) sockets feature a free moving cam, which when in the open position allows the substrate pins to be inserted and extracted without force. In the closed position, the normally closed contacts maintain a constant pressure on the substrate pins. These sockets come in grid sizes from 10x10 to 20x20 and 25x25.

All AMP Pin Grid Array Sockets are designed to occupy a very minimum of pc board space.

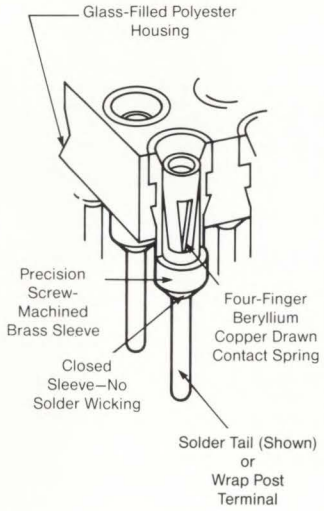
Square Sockets for PGA Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

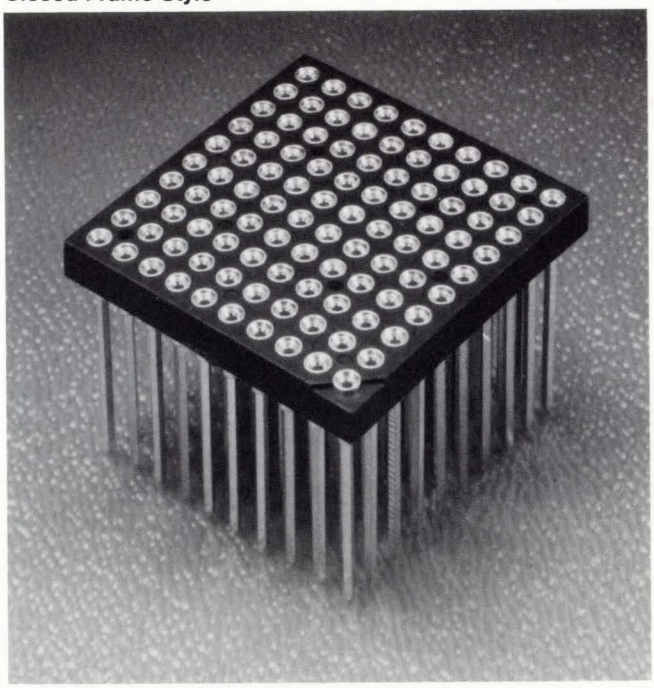
Low Profile Sockets with Drawn Spring Contacts

Features

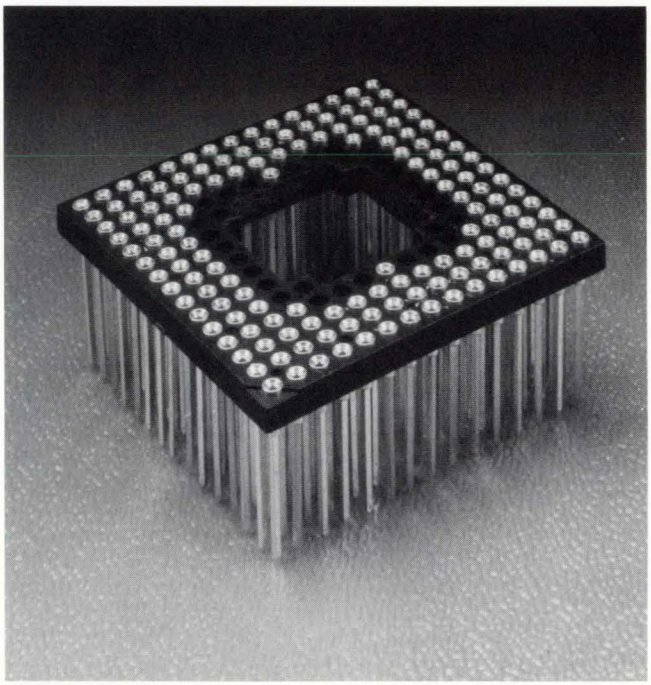
- Seamless drawn beryllium copper contact
- Gold plated spring contacts for PGA compatibility
- Accepts .016-.020 [0.40-0.51] diameter pins and .110 [2.79] minimum pin length
- Brass screw-machined sleeves in solder tail and 2- or 3-high wrap post configurations
- Sleeves available with tin or gold plating
- Low profile height of .175 [4.44] allows .400 [10.16] pc board spacing between boards for solder tail sockets
- Selectively assembled open and closed frame housings available
- Operating temperature from −55°C to +125°C
- Available in a variety of grid sizes and loading patterns from 10x10 to 17x17
- Wrap post sockets meet the requirements of MIL-S-83505/1
- Solder tail sockets meet the requirements of MIL-S-83505/2



Closed Frame Style



Open Frame Style



Performance Characteristics

Contact Rating:
3 amperes

Contact Resistance:
15 milliohms (initial) max.

Operating Temperature:
−55°C to +125°C

Insertion Force[1]:
5.0 oz. [1.390 N] avg. nom.

Withdrawal Force[1]:
1.0 oz. [0.278N] avg. nom.

Retention Force:
7.5 lb. [33.36 N]/contact

Durability:
10 cycles @ 10 milliohms max. change, MIL-STD-1344, Method 2016

Insulation Resistance:
$1x10^5$ megohms @ 500 VDC, MIL STD-1344, Method 3003

Dielectric Withstanding Voltage:
1000 RMS VAC, MIL-STD-1344, Method 3001

Test Conditions

Temperature Life:
1000 hours @ 125°C

Thermal Shock:
MIL-STD-1344, Method 1003, Cond. B, −55°C to +125°C

Temperature/Humidity Cycling:
MIL-STD-1344, Method 1002, Cond. A, 10 cycles

Vibration:
MIL-STD-1344, Method 2005, Cond. III, 15 G's max.

Shock:
MIL-STD-1344, Method 2004, Cond. I, 100 G's @ 6 milliseconds—sawtooth wave form

Materials

Housings:
Glass-filled polyester per MIL-M-24519, 94V-O rated

Sleeve:
Brass per QQ-C-533

Plating:
Tin per MIL-P-81728
Gold per MIL-G-45204, type 2 grade C
Nickel per QQ-N-290

[1]Measured with a polished steel pin, .018 [0.46] Dia.

Square Sockets for PGA Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Low Profile Sockets with Drawn Spring Contacts

Contact Platings and Thicknesses

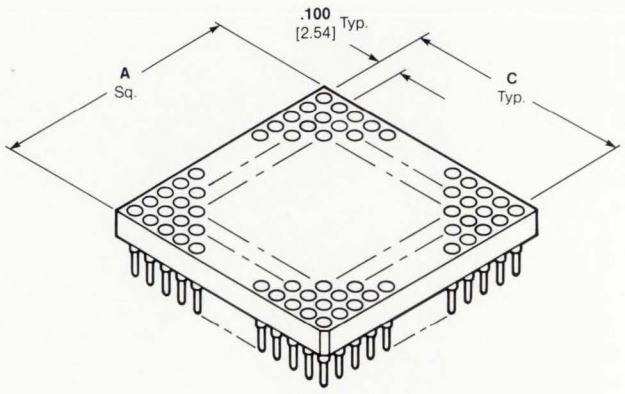
Solder Tail

Plating Combination	Spring	Sleeve
Gold-Tin	.000030 [0.00076] Gold over .000030 [0.00076] Nickel	.000150 [0.00381] Tin over .000030 [0.00076] Nickel
Gold-Gold	.000030 [0.00076] Gold over .000030 [0.00076] Nickel	.000010 [0.00025] Gold over .000030 [0.00076] Nickel

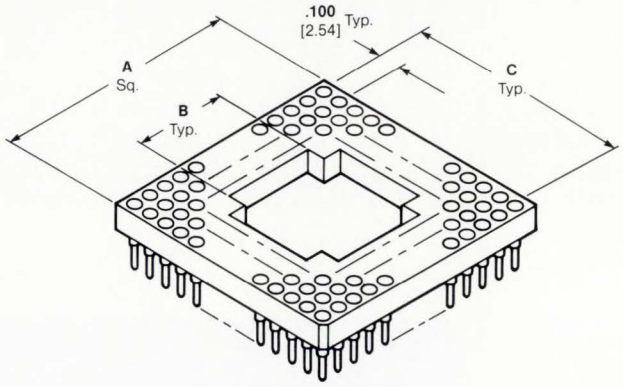
Wrap Post

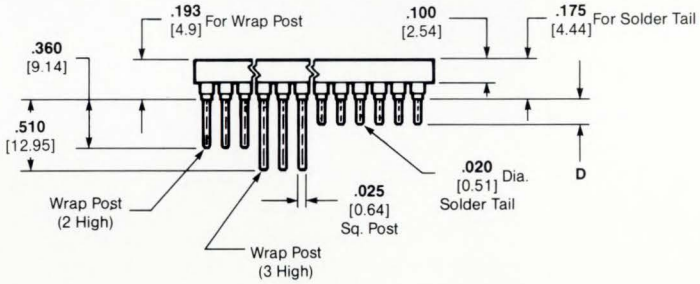
Plating Combination	Spring	Sleeve
Gold-Tin	.000030 [0.00076] Gold over .000030 [0.00076] Nickel	.000150 [0.00381] Tin over .000030 [0.00076] Nickel
Gold-Gold	.000030 [0.00076] Gold over .000030 [0.00076] Nickel	.000010 [0.00025] Gold over .000030 [0.00076] Nickel

Closed Frame



Open Frame





Grid Size	No. of Pos.	Grid Pattern Page[1]	Housing Style	Dimensions A	Dimensions B	Dimensions C	Dimensions D[2]	Solder Tail Plating Combinations Gold-Tin	Solder Tail Plating Combinations Gold-Gold	Wrap Post—2 High Plating Combinations Gold-Tin	Wrap Post—2 High Plating Combinations Gold-Gold	Wrap Post—3 High Plating Combinations Gold-Tin	Wrap Post—3 High Plating Combinations Gold-Gold
10x10	100	108	Closed	**1.050** 26.67	–	**.900** 22.86	**.115** 2.92	916110-1	916110-2	916120-1	916120-2	916130-1	916130-2
10x10	64	108	Open	**1.050** 26.67	**.350** 8.89	**.900** 22.86	**.115** 2.92	916110-3	916110-4	916120-3	916120-4	916130-3	916130-4
10x10	68	108	Open	**1.050** 26.67	**.350** 8.89	**.900** 22.86	**.115** 2.92	916110-5	916110-6	916120-5	916120-6	916130-5	916130-6
10x10	84	108	Open	**1.050** 26.67	**.350** 8.89	**.900** 22.86	**.115** 2.92	916110-7	916110-8	916120-7	916120-8	916130-7	916130-8
10x10	65	108	Open	**1.050** 26.67	**.350** 8.89	**.900** 22.86	**.115** 2.92	916110-9	1-916110-0	916120-9	1-916120-0	916130-9	1-916130-0
11x11	121	110	Closed	**1.150** 26.67	–	**1.000** 25.4	**.115** 2.92	916111-1	916111-2	916121-1	916121-2	916131-1	916131-2
11x11	68	109	Open	**1.150** 26.67	**.450** 11.43	**1.000** 25.4	**.115** 2.92	916111-3	916111-4	916121-3	916121-4	916131-3	916131-4
11x11	69	109	Open	**1.150** 26.67	**.450** 11.43	**1.000** 25.4	**.115** 2.92	916111-5	916111-6	916121-5	916121-6	916131-5	916131-6
11x11	84	110	Open	**1.150** 26.67	**.450** 11.43	**1.000** 25.4	**.115** 2.92	916111-7	916111-8	916121-7	916121-8	916131-7	916131-8
11x11	85	110	Open	**1.150** 26.67	**.450** 11.43	**1.000** 25.4	**.115** 2.92	916111-9	1-916111-0	916121-9	1-916121-0	916131-9	1-916131-0

[1]Refer to these pages for grid pattern information.
[2]Solder Tail length.

Square Sockets for PGA Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

Low Profile Sockets with Drawn Spring Contacts (Continued)

Grid Size	No. of Pos.	Grid Pattern Page[1]	Housing Style	Dimensions				Solder Tail Plating Combinations		Wrap Post—2 High Plating Combinations		Wrap Post—3 High Plating Combinations	
				A	B	C	D[2]	Gold-Tin	Gold-Gold	Gold-Tin	Gold-Gold	Gold-Tin	Gold-Gold
12x12	144	111	Closed	**1.250** 31.75	–	**1.100** 27.94	**.115** 2.92	916112-1	916112-2	916122-1	916122-2	916132-1	916132-2
12x12	108	111	Open	**1.250** 31.75	**.550** 13.97	**1.100** 27.94	**.115** 2.92	916112-3	916112-4	916122-3	916122-4	916132-3	916132-4
13x13	169	114	Closed	**1.350** 34.29	–	**1.200** 30.48	**.115** 2.92	916113-1	916113-2	916123-1	916123-2	916133-1	916133-2
13x13	85	111	Open	**1.350** 34.29	**.650** 16.51	**1.200** 30.48	**.115** 2.92	916113-3	916113-4	916123-3	916123-4	916133-3	916133-4
13x13	88	112	Open	**1.350** 34.29	**.650** 16.51	**1.200** 30.48	**.115** 2.92	916113-5	916113-6	916123-5	916123-6	916133-5	916133-6
13x13	101	112	Open	**1.350** 34.29	**.650** 16.51	**1.200** 30.48	**.115** 2.92	916113-7	916113-8	916123-7	916123-8	916133-7	916133-8
13x13	114	112	Open	**1.350** 34.29	**.650** 16.51	**1.200** 30.48	**.115** 2.92	916113-9	1-916113-0	916123-9	1-916123-0	916133-9	1-916133-0
13x13	114	112	Open	**1.350** 34.29	**.650** 16.51	**1.200** 30.48	**.135** 3.43	1-916113-1	1-916113-2	916123-9	1-916123-0	916133-9	1-916133-0
13x13	120	113	Open	**1.350** 34.29	**.650** 16.51	**1.200** 30.48	**.115** 2.92	1-916113-3	1-916113-4	1-916123-1	1-916123-2	1-916133-1	1-916133-2
13x13	121	113	Open	**1.350** 34.29	**.650** 16.51	**1.200** 30.48	**.115** 2.92	1-916113-5	1-916113-6	1-916123-3	1-916123-4	1-916133-3	1-916133-4
13x13	124	113	Open	**1.350** 34.29	**.650** 16.51	**1.200** 30.48	**.115** 2.92	1-916113-7	1-916113-8	1-916123-5	1-916123-6	1-916133-5	1-916133-6
13x13	125	113	Closed	**1.350** 34.29	–	**1.200** 30.48	**.115** 2.92	1-916113-9	2-916113-0	1-916123-7	1-916123-8	1-916133-7	1-916133-8
13x13	132	114	Closed	**1.350** 34.29	–	**1.200** 30.48	**.115** 2.92	2-916113-1	2-916113-2	1-916123-9	2-916123-0	1-916133-9	2-916133-0
13x13	133	114	Closed	**1.350** 34.29	–	**1.200** 30.48	**.115** 2.92	2-916113-3	2-916113-4	2-916123-1	2-916123-2	2-916133-1	2-916133-2
14x14	196	116	Closed	**1.450** 36.83	–	**1.300** 33.02	**.115** 2.92	916114-1	916114-2	916124-1	916124-2	916134-1	916134-2
14x14	132	115	Open	**1.450** 36.83	**.750** 19.05	**1.300** 33.02	**.115** 2.92	916114-3	916114-4	916124-3	916124-4	916134-3	916134-4
14x14	135	115	Open	**1.450** 36.83	**.750** 19.05	**1.300** 33.02	**.115** 2.92	916114-5	916114-6	916124-5	916124-6	916134-5	916134-6
15x15	225	117	Closed	**1.550** 39.37	–	**1.400** 35.56	**.115** 2.92	916115-1	916115-2	916125-1	916125-2	916135-1	916135-2
15x15	89	116	Open	**1.550** 39.37	**.650** 16.51	**1.400** 35.56	**.115** 2.92	916115-3	916115-4	916125-3	916125-4	916135-3	916135-4
15x15	144	116	Open	**1.550** 39.37	**.650** 16.51	**1.400** 35.56	**.115** 2.92	916115-5	916115-6	916125-5	916125-6	916135-5	916135-6
15x15	145	116	Open	**1.550** 39.37	**.650** 16.51	**1.400** 35.56	**.115** 2.92	916115-7	916115-8	916125-7	916125-8	916135-7	916135-8
15x15	149	116	Open	**1.550** 39.37	**.650** 16.51	**1.400** 35.56	**.115** 2.92	916115-9	1-916115-0	916125-9	1-916125-0	916135-9	1-916135-0
15x15	149	116	Open	**1.550** 39.37	**.650** 16.51	**1.400** 35.56	**.115** 2.92	1-916115-1	1-916115-2	1-916125-1	1-916125-2	1-916135-1	1-916135-2
15x15	149	116	Open	**1.550** 39.37	**.650** 16.51	**1.400** 35.56	**.135** 3.43	1-916115-3	1-916115-4	916125-9	1-916125-0	916135-9	1-916135-0
15x15	156	117	Open	**1.550** 39.37	**.650** 16.51	**1.400** 35.56	**.135** 3.43	1-916115-5	1-916115-6	1-916125-3	1-916125-4	1-916135-3	1-916135-4
15x15	179	117	Open	**1.550** 39.37	**.650** 16.51	**1.400** 35.56	**.115** 2.92	1-916115-7	1-916115-8	1-916125-5	1-916125-6	1-916135-5	1-916135-6
15x15	181	117	Closed	**1.550** 39.37	–	**1.400** 35.56	**.115** 2.92	1-916115-9	2-916115-0	1-916125-7	1-916125-8	1-916135-7	1-916135-8
15x15	181	117	Closed	**1.550** 39.37	–	**1.400** 35.56	**.135** 3.43	2-916115-1	2-916115-2	1-916125-7	1-916125-8	1-916135-7	1-916135-8
17x17	289	119	Closed	**1.750** 44.45	–	**1.600** 40.64	**.115** 2.92	916117-1	916117-2	916127-1	916127-2	916137-1	916137-2
17x17	169	118	Open	**1.750** 44.45	**.650** 16.51	**1.600** 40.64	**.115** 2.92	916117-3	916117-4	916127-3	916127-4	916137-3	916137-4
17x17	209	119	Open	**1.750** 44.45	**.650** 16.51	**1.600** 40.64	**.115** 2.92	916117-5	916117-6	916127-5	916127-6	916137-5	916137-6
17x17	225	119	Open	**1.750** 44.45	**.650** 16.51	**1.600** 40.64	**.115** 2.92	916117-7	916117-8	916127-7	916127-8	916137-7	916137-8

[1]Refer to these pages for grid pattern information.
[2]Solder Tail length.

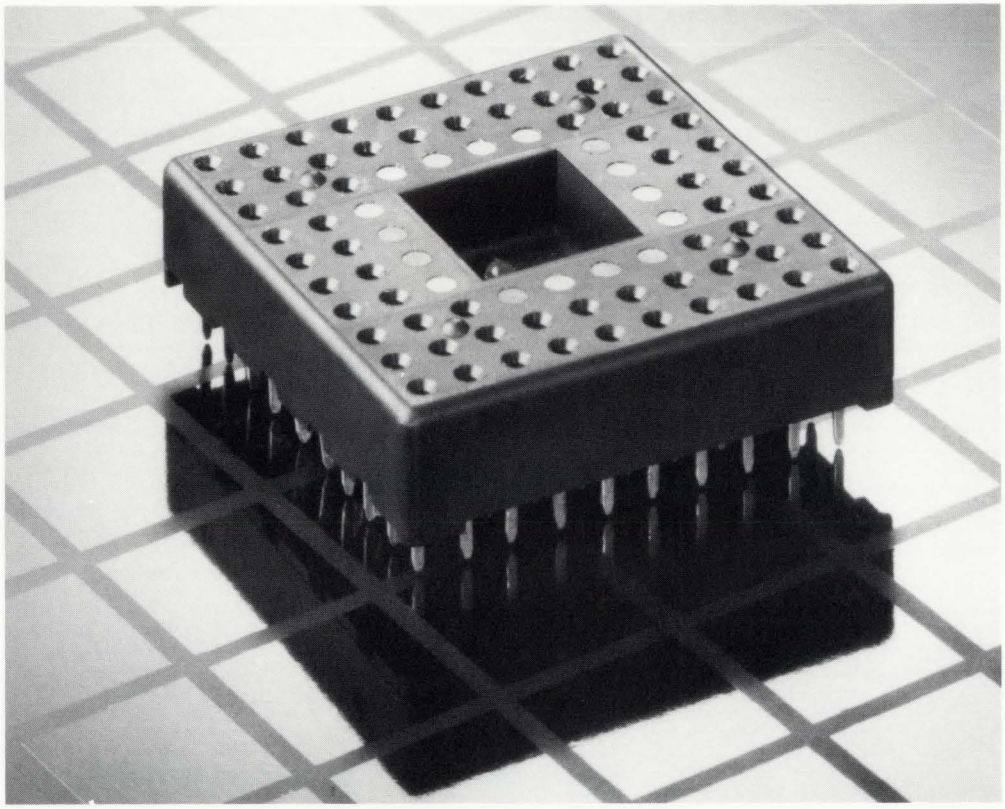
Square Sockets for PGA Packages
(Continued)

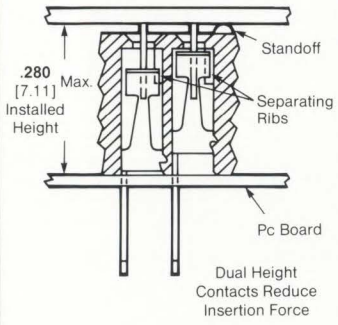
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Low Insertion Force (LIF) Sockets

Features

- Uses the same board area as the substrate
- Preloaded contacts of dual height reduce force to install and remove substrate
- Materials suitable for 105°C max. environments
- Installed socket height equals .280 [7.11] max. which allows .500 [12.7] spacing between pc boards
- Two gold plated surfaces contact the substrate pins
- Solder leg lengths accommodate 1/16, 3/32 or 1/8 [1.59, 2.38 or 3.18] thick pc boards
- Sockets are packaged in tubes for automatic handling





Side Sectional View

Performance Characteristics

Contact Resistance:
15 milliohms max. (Initial)
25 milliohms max. (Final)

Capacitance (Adjacent Contact):
1 picofarad max.

Inductance (Mutual):
2 nh @ 1MHz typ.

Insulation Resistance:
5,000 megohms min.

Dielectric Withstanding Voltage:
1000 Volts

Contact Normal Force:
75 grams typ.

Pin Insertion Force[1]:
50 grams typ.

Pin Retention Force[2]:
15 grams min.

Minimum Operating Cycles:
10

[1]Value obtained using an .018 [0.46] diameter steel pin.
[2]Value obtained using an .016 [0.41] diameter steel pin.

Test Conditions

Heat Age:
33 days @ 105°C

Thermal Shock:
MIL-STD-1344, Method 1003, Cond. A, −65°C to +105°C

Temperature/Humidity Cycling:
MIL-STD-1344, Method 1002, Type II

Vibration:
MIL-STD-1344, Method 2005, Cond. IV, 20 G's max.

Shock:
MIL-STD-1344, Method 2004, Cond. C, 100 G's @ 6 milliseconds

Note: Contact resistance will not exceed the final value after testing at these specified conditions.

Materials

Housing:
Glass-filled polyester

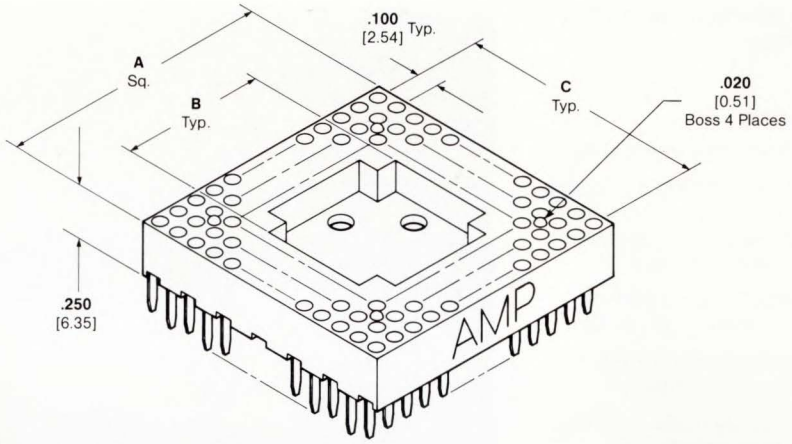
Contacts:
Beryllium copper (LIF-P)
Phosphor Bronze (LIF-S)

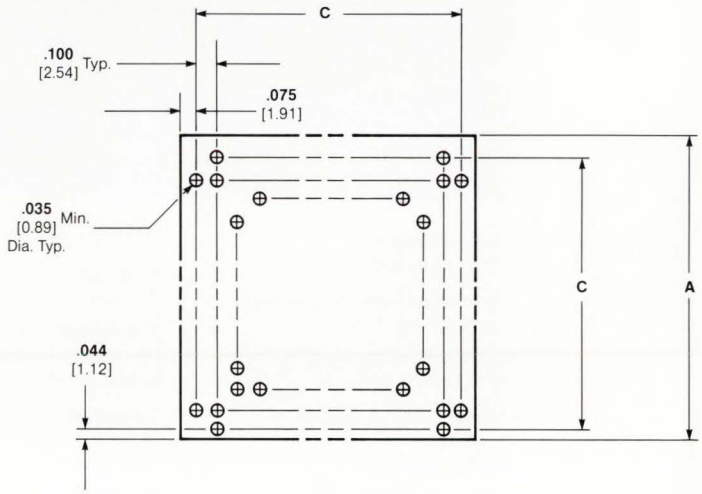
Plating:
Contacts—Gold-over-nickel
Solder Leg—Tin/lead

Square Sockets for PGA Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

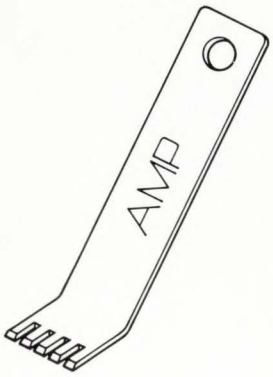
Low Insertion Force (LIF) Sockets





Pc Board Hole Pattern

Extraction Tool
Part No. 58113-1 (Metal)
Part No. 58113-2 (Plastic)



Grid Size	No. of Pos.	Dimensions A	Dimensions B	Dimensions C	Solder Tail Length	Part Numbers LIF-P[1]	Part Numbers LIF-S[2]
10x10	64 Thru 100	**1.050** 26.67	**.350** 8.89	**.900** 22.86	See page 108 for grid patterns, solder tail length and part numbers.		
11x11	65 Thru 121	**1.150** 29.21	**.450** 11.43	**1.000** 25.4	See pages 109 & 110 for grid patterns, solder tail length and part numbers.		
12x12	84 Thru 108	**1.250** 31.75	**.550** 13.97	**1.100** 27.94	See page 111 for grid patterns, solder tail length and part numbers.		
13x13	84 Thru 169	**1.350** 34.29	**.650** 16.51	**1.200** 30.48	See pages 112-114 for grid patterns, solder tail length and part numbers.		
14x14	95 Thru 196	**1.450** 36.83	**.750** 19.05	**1.300** 33.02	See pages 115 & 116 for grid patterns, solder tail length and part numbers.		
15x15	89 Thru 225	**1.550** 39.97	**.650** 16.51	**1.400** 35.56	See pages 116 & 117 for grid patterns, solder tail length and part numbers.		
17x17	167 Thru 289	**1.750** 44.45	**.650** 16.51	**1.600** 40.64	See pages 118 & 119 for grid patterns, solder tail length and part numbers.		

[1]Beryllium copper contacts
[2]Phosphor bronze contacts

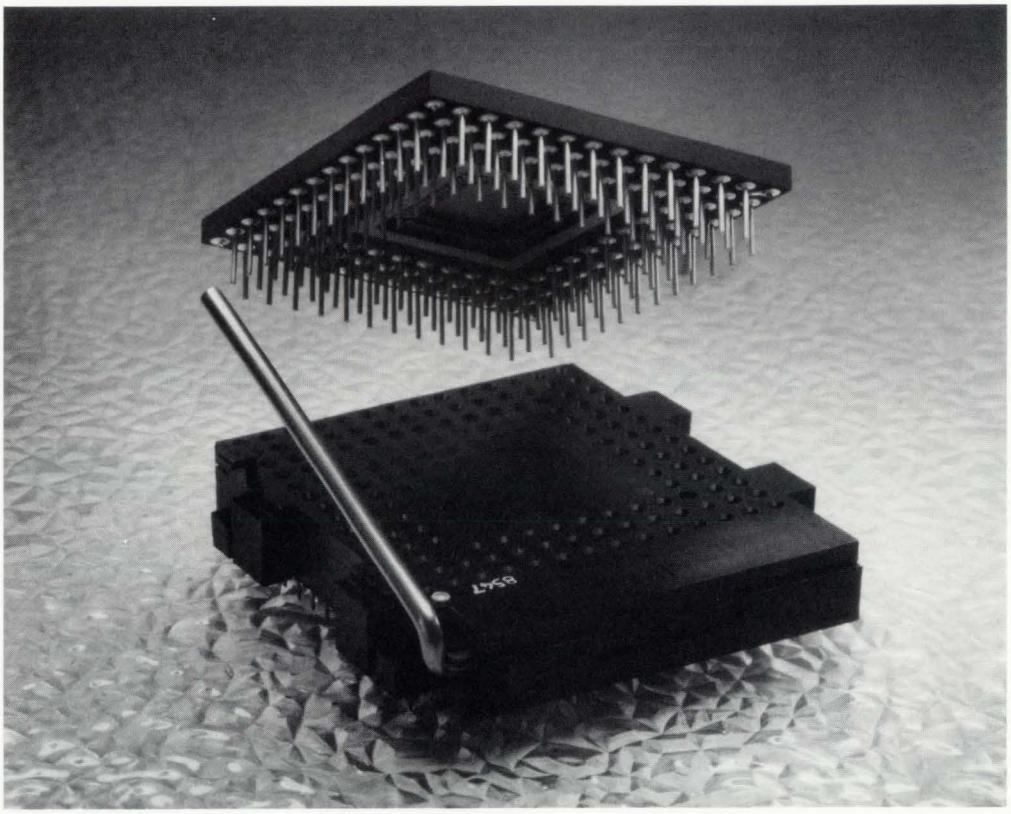
Square Sockets for PGA Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Zero Insertion Force (ZIF) Sockets

Features

- Operated by integral cam
- Installation height (closed height) is .290 [7.37] which allows .500 [12.7] spacing between pc boards
- Contact wiping occurs during closing sequence
- Materials suitable for 105°C environments
- Two gold plated surfaces contact substrate pins
- Solder leg lengths accommodate 1/16, 3/32, or 1/8 [1.59, 2.38 or 3.18] thick pc boards



Performance Characteristics

Contact Resistance (Initial):
15 milliohms max.

Contact Resistance (Final):
25 milliohms max.

Capacitance (Adjacent Contact):
1 picofarad max.

Inductance (Mutual):
2 nh @ 1 MHz typ.

Insulation Resistance:
5,000 megohms min.

Dielectric Withstanding Voltage:
1,000 volts

Contact Normal Forces:
60 grams typ.

Pin Retention Force[1]:
15 grams min.

Handle Actuation Torque (In Oz./100 Contacts Typ.):
Closing Cycle—16
Opening Cycle—12

Minimum Operating Cycles:
50

[1]Value obtained using an .016 [0.41] diameter steel pin.

Test Conditions

Heat Age:
33 days @ 105°C

Thermal Shock:
MIL-STD-1344, Method 1003, Cond. A, −65°C to +105°C

Temperature/Humidity Cycling:
MIL-STD-1344, Method 1002, Type II

Vibration:
MIL-STD-1344, Method 2005, Cond. IV, 20 G's max.

Shock:
MIL-STD-1344, Method 2004, Cond. C, 100 G's @ 8 milliseconds

Note: Contact resistance will not exceed the final value after testing at these specified conditions.

Materials

Housing:
Glass-filled polyester

Contacts:
Beryllium copper

Plating:
Contacts—Gold-over-nickel
Solder Leg—Tin/lead

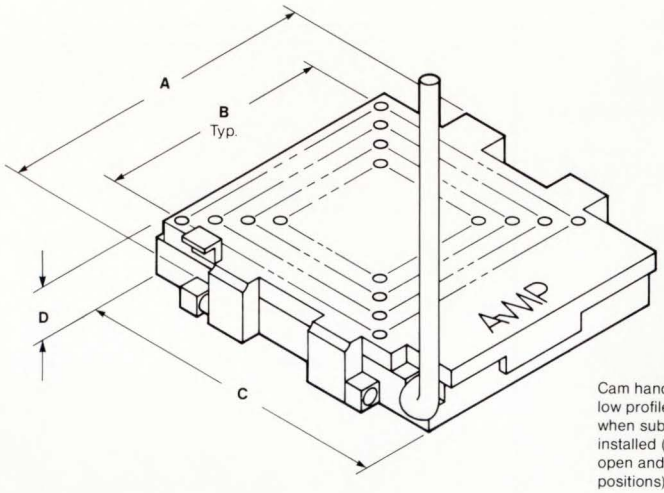
Actuator Handle:
Stainless steel

Assembly Pins:
Stainless steel

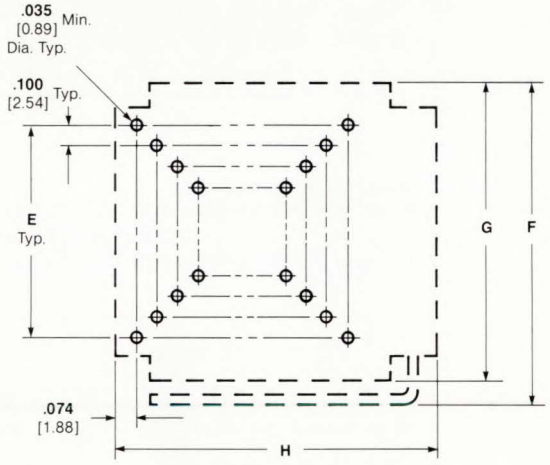
Square Sockets for PGA Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Zero Insertion Force (ZIF) Sockets



Cam handle locks in low profile position when substrate is installed (handle UP for open and DOWN for closed positions).



Suggested Printed Circuit Board Layout

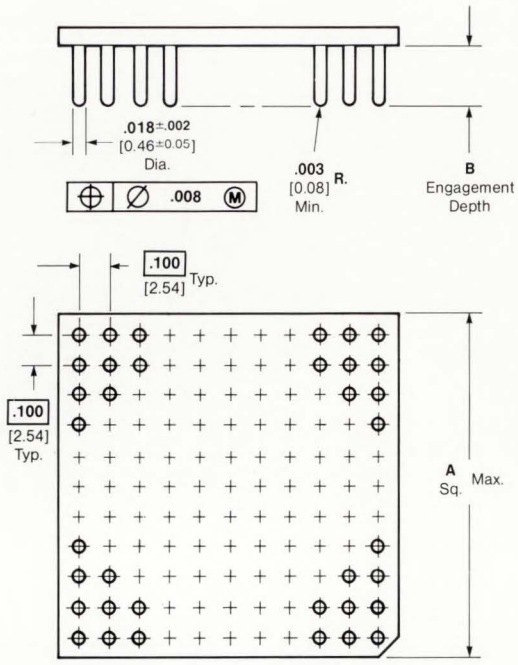
Grid Size	No. of Pos.	Dimensions A	B	C	D	E	F	G	H	Solder Tail Length	Part Number
10x10	64 Thru 100	**1.300** 33.02	**.900** 22.86	**1.300** 33.02	**.290** 7.37	**.900** 22.86	**1.325** 33.66	**1.313** 33.35	**1.356** 34.44	See page 108 for grid patterns, solder tail length and part numbers.	
11x11	65 Thru 121	**1.400** 35.56	**1.000** 25.4	**1.425** 36.2	**.290** 7.37	**1.000** 25.4	**1.425** 36.2	**1.413** 35.89	**1.496** 37.1	See pages 109 & 110 for grid patterns, solder tail length and part numbers.	
12x12	84 Thru 144	**1.500** 38.1	**1.100** 27.94	**1.525** 38.74	**.290** 7.37	**1.100** 27.94	**1.525** 38.74	**1.513** 38.43	**1.596** 40.54	See page 111 for grid patterns, solder tail length and part numbers.	
13x13	84 Thru 169	**1.600** 40.64	**1.200** 30.48	**1.625** 41.25	**.290** 7.37	**1.200** 30.48	**1.625** 41.28	**1.613** 40.97	**1.698** 43.08	See pages 111-114 for grid patterns, solder tail length and part numbers.	
14x14	95 Thru 196	**1.700** 43.18	**1.300** 33.02	**1.725** 43.82	**.290** 7.37	**1.300** 33.02	**1.725** 43.82	**1.713** 43.51	**1.796** 45.62	See pages 115 & 116 for grid patterns, solder tail length and part numbers.	
15x15	89 Thru 225	**1.840** 46.74	**1.400** 35.56	**1.928** 48.97	**.336** 8.53	**1.400** 38.1	**1.884** 47.85	**1.853** 47.07	**1.945** 49.40	See pages 116 & 117 for grid patterns, solder tail length and part numbers.	
16x16	155 Thru 256	**1.940** 49.28	**1.500** 38.1	**2.028** 51.51	**.336** 8.53	**1.500** 38.1	**1.983** 50.37	**1.953** 49.61	**2.045** 51.94	See page 118 for grid patterns, solder tail length and part numbers.	
17x17	289	**2.040** 51.82	**1.600** 40.64	**2.148** 54.56	**.336** 8.53	**1.600** 40.64	**2.083** 52.91	**2.053** 52.15	**2.145** 54.48	See page 119 for grid patterns, solder tail length and part numbers.	
18x18	223 Thru 324	**2.140** 54.36	**1.700** 43.18	**2.248** 57.18	**.336** 8.53	**1.700** 43.18	**2.183** 55.45	**2.153** 54.69	**2.280** 57.91	See page 119 for grid patterns, solder tail length and part numbers.	
19x19	257 & 361	**2.240** 56.9	**1.800** 45.72	**2.348** 59.64	**.336** 8.53	**1.800** 45.72	**2.283** 57.99	**2.253** 57.23	**2.380** 60.45	See page 120 for grid patterns, solder tail length and part numbers.	
20x20	400	**2.340** 59.44	**1.900** 48.26	**2.448** 62.18	**.336** 8.53	**1.900** 48.26	**2.383** 60.53	**2.353** 59.77	**2.480** 62.99	See page 120 for grid patterns, solder tail length and part numbers.	

Square Sockets for PGA Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Substrate Design Requirements

- Polarization can be accomplished by adding or eliminating pins
- Tips of pins must be free of burrs
- Gold plated pins



B–Engagement Depth:
Low Profile Sockets–.100/.145 [2.54/3.68] Solder Tail
.100/.158 [2.54/4.01] Wrap Post
LIF and ZIF Sockets–.125/.210 [3.18/5.33][1]

Grid Size	A		
	Low Profile	LIF	ZIF
10x10	**1.050** 26.56	**1.080** 27.43	**1.080** 27.43
11x11	**1.150** 29.09	**1.180** 29.98	**1.180** 29.98
12x12	**1.250** 31.62	**1.280** 32.51	**1.280** 32.51
13x13	**1.350** 34.15	**1.380** 35.05	**1.380** 35.05
14x14	**1.450** 36.68	**1.480** 37.59	**1.480** 37.59
15x15	**1.550** 39.21	**1.620** 41.15	**1.620** 41.15
16x16	–	–	**1.720** 43.69
17x17	**1.750** 44.27	**1.820** 46.23	**1.820** 46.23
18x18	–	–	**1.920** 48.77
19x19	–	–	**2.020** 51.31
20x20	–	–	**2.120** 53.85

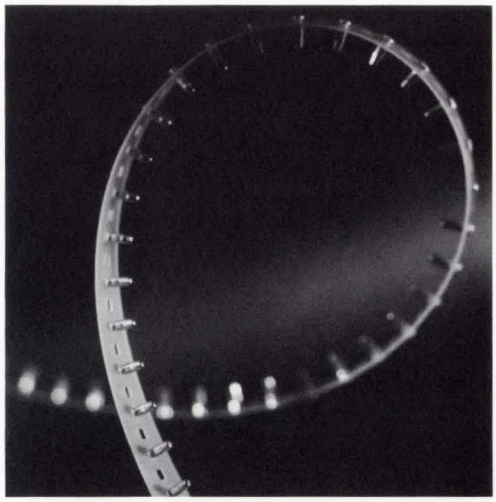
[1]Dimension shown is for substrates without standoffs. Housings designed to clear substrate standoffs can be made available.

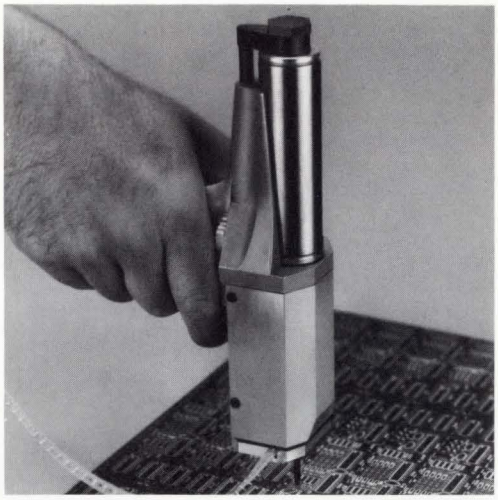
Miniature Spring Sockets

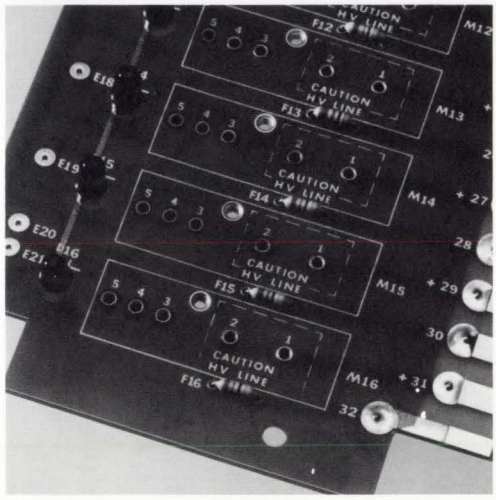
Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

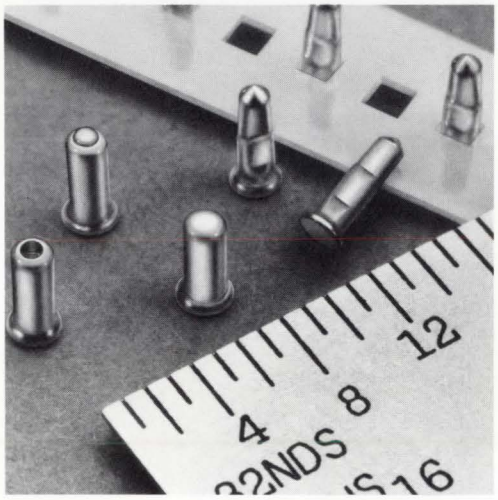
Features

- Five different hole size series (.040 to .101 [1.02 to 2.57]) available to accommodate a pin diameter range of .010 to .065 [0.25 to 1.65] and board thicknesses of .031 to .125 [0.79 to 3.18]
- Low profile head height of .022 [0.56] allows greater board-to-board clearance
- Small head diameters allow centerline spacing as close as .100 [2.54]
- Bellmouth design provides easy insertion of leads
- Helical spring design will accept round, square or rectangular leads without socket orientation
- Tin or gold plated springs available for compatibility of mating leads
- Two basic design configurations available—flat bottom sockets with closed, open and knockout bottom designs and bullet nose sockets
- Hand held, bench mounted and computerized insertion equipment available









The AMP Miniature Spring Socket System is composed of a series of eyelets, each utilizing a permanently secured helical spring design which will accept round, square or rectangular leads interchangeably in a diameter range of .010 to .065 [0.25 to 1.65].

This pluggable, low profile system allows tighter board stacking and increased printed circuit board clearance with pin densities up to .100 [2.54] grid spacing. Since AMP Miniature Spring Sockets are a pluggable system, the damage to components and conductive patterns normally experienced through excessive temperatures in hand or wave soldering operations is eliminated. The use of these sockets will allow continued production when components are not readily available and will permit easy replacement of components in prototype work, production, field installation, repair and updating equipment.

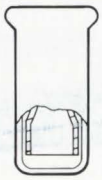
The final element of the Miniature Spring Socket System is the broad range of application tooling available to support the various manufacturing levels. The tooling consists of a pneumatic hand insertion tool capable of inserting 2000 polyester strip mounted sockets per hour; bench machines for loose piece and polyester strip products, with insertion rates of up to 3000 sockets per hour; and fixed head insertion equipment adaptable to commercially available numerically controlled equipment for high volume application of polyester strip mounted sockets (up to 9000 insertions per hour).

Miniature Spring Sockets
(Continued)

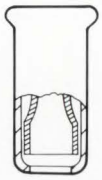
Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Flat Bottom Sockets (Loose Piece, Nylon Strip or Mounting Wafer)
See pages 68 thru 71.

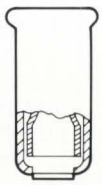
Closed Bottom Design
Compatible with hand and wave soldering. Avaliable loose piece (pages 68 & 69), on single row in-line nylon strip of specific lengths for direct insertion into a pc board (page 70) and in mounting wafers (page 71).



Open Bottom Design
Hand soldered and used in feed-thru applications. Available loose piece only (pages 68 & 69).

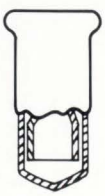


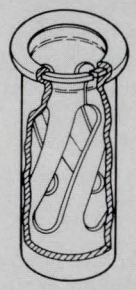
Knockout Bottom Design
Compatible with hand and wave soldering. Presheared bottom can be easily removed with the AMP knockout plug tool as required for feed-thru applications. Available loose piece only (pages 68 & 69).



Bullet Nose Sockets (Loose Piece, Polyester Strip or Nylon Strip)
See pages 72 & 73.

Bullet Nose Design
Can be hand or wave soldered. Design allows greater positional tolerance on bench and numerically controlled machines. Also compatible with the AMP pneumatic hand tool. Available loose piece (page72), on polyester strip for high volume rapid insertion (page 72) and on single row in-line nylon strip of specific lengths for direct insertion into a pc board (page 73).



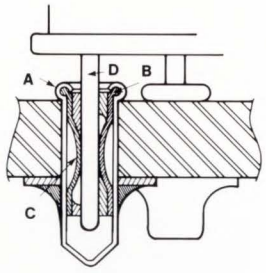


Cutaway View of Typical Miniature Spring Socket

Miniature Spring Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Design Benefits



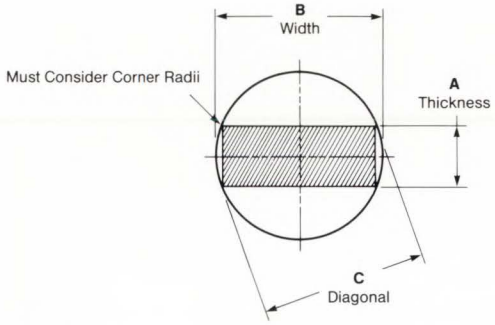
A. Flared tip acts as a stop. Large bellmouth provides easy insertion of component leads.

B. Stable, low resistance connection provided by precisely controlled crimp.

C. Helical spring members maintain consistent pressure to hold component leads in place and permit maximum conductivity.

D. Component leads (round, square or rectangluar) are firmly retained in cup by helical spring members.

Rectangular (or Square) Pin Equivalents



$$C = \sqrt{A^2 + B^2}$$

1. The component lead size of a rectangular or square pin should have a diagonal dimension equivalent to the recommended round lead diameter.
2. When calculating C, A and B tolerances must be considered so that C does not exceed the recommended round lead diameter.

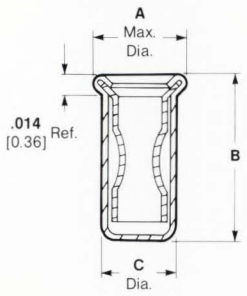
Miniature Spring Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

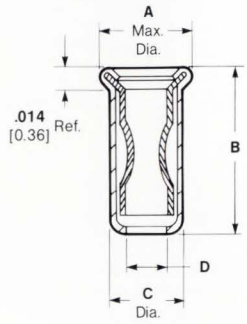
Chart contains dimensions in inches over millimetres.

Flat Bottom Sockets

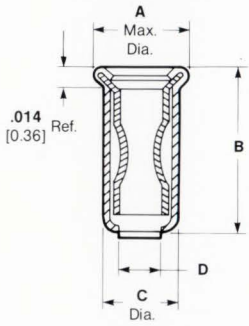
Closed Bottom



Open Bottom



Knockout Bottom*



*See page 76 for knockout plug tool.

Material:
Spring—Beryllium copper
Eyelet—Copper

Series 1 (Hole Size $.041^{\pm.002}$ $[1.04^{\pm0.05}]$—Semi-Automatic Insertion; $.040^{+.004}_{-.000}$ $[1.02^{+0.10}]$—Hand Insertion with Commercially Available Pin Vise)

Pin Dia. Range	Dimensions				Finish		Part Numbers		
	A	B	C	D	Spring	Eyelet	Closed Bottom	Open Bottom	Knockout Bottom
.010-.013 0.25-0.33	.059 1.50	.142 3.61	.038 0.97	.023 0.58	Gold[1]	Gold[3]	2-330808-2•	4-330808-2•	3-330808-2
					Gold[1]	Tin	5-330808-0•	5-330808-4•	5-330808-1
					Tin	Tin	2-330808-1	4-330808-1	3-330808-1
					Gold[2]	Tin	9-330808-0•	–	–
.013-.020 0.33-0.51	.059 1.50	.168 4.26	.038 0.97	.023 0.58	Gold[1]	Gold[3]	50935 •	50935-6	50935-3
					Gold[1]	Tin	50935-1•	50935-7•	50935-4
					Tin	Tin	50935-2•	50935-8	50935-5
					Gold[2]	Tin	50935-9•	–	–
.013-.020 0.33-0.51	.059 1.50	.142 3.61	.038 0.97	.023 0.58	Gold[1]	Gold[3]	2-330808-8•	4-330808-8•	3-330808-8•
					Gold[1]	Tin	6-330808-5•	5-330808-6•	5-330808-3•
					Tin	Tin	2-330808-7•	4-330808-7•	3-330808-7•
					Gold[2]	Tin	9-330808-1•	–	–
.018-.020 0.46-0.51	.059 1.50	.142 3.61	.038 0.97	.023 0.58	Gold[1]	Gold[3]	7-330808-3•	6-330808-7•	7-330808-0•
					Gold[1]	Tin	7-330808-4•	6-330808-9•	7-330808-1
					Tin	Tin	7-330808-5•	6-330808-8•	7-330808-2•
					Gold[2]	Tin	9-330808-2•	–	–

Series 2 (Hole Size $.052^{+.003}_{-.002}$ $[1.32^{+0.08}_{-0.05}]$—Semi-Automatic Insertion; $.052^{+.004}_{-.000}$ $[1.02^{+0.10}]$—Hand Insertion with Commercially Available Pin Vise)

Pin Dia. Range	Dimensions				Finish		Part Numbers		
	A	B	C	D	Spring	Eyelet	Closed Bottom	Open Bottom	Knockout Bottom
.018-.021 0.46-0.53	.070 1.78	.138 3.51	.050 1.27	.030 0.76	Gold[1]	Gold[3]	2-331272-2•	3-331272-8•	3-331272-0•
					Gold[1]	Tin	2-331272-3•	3-331272-9•	3-331272-1
					Tin	Tin	2-331272-1•	3-331272-7•	2-331272-9
					Gold[2]	Tin	331272-1•	–	–
.014-.026 0.36-0.66	.070 1.78	.260 6.60	.050 1.27	.030 0.76	Gold[1]	Gold[3]	50863-4•	50863	50863-2
					Gold[1]	Tin	50863-5•	50863-1•	50863-3•
					Tin	Tin	50863-8•	50863-6•	50863-7•
					Gold[2]	Tin	1-50863-0	–	–
.022-.025 0.56-0.64	.070 1.78	.138 3.51	.050 1.27	.030 0.76	Gold[1]	Gold[3]	2-331272-6•	4-331272-2	3-331272-4
					Gold[1]	Tin	2-331272-7•	4-331272-3	3-331272-5•
					Tin	Tin	2-331272-5•	4-331272-1	3-331272-3•
					Gold[2]	Tin	331272-2•	–	–
.014-.026 0.36-0.66	.070 1.78	.178 4.52	.050 1.27	.030 0.76	Gold[1]	Gold[3]	50462-6•	50462	50462-3•
					Gold[1]	Tin	50462-8•	50462-2	50462-5
					Tin	Tin	50462-7•	50462-1•	50462-4•
					Gold[2]	Tin	1-50462-4•	–	–

•Immediate delivery items.
1.000050 [0.00127] gold plating.
2.000030 [0.00076] gold plating.
3Gold flash.

Miniature Spring Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Flat Bottom Sockets (Continued)

Series 3 (Hole Size .059-.062 [1.49-1.56]—Semi-Automatic Insertion; $.063^{+.004}_{-.000}$ [$1.6^{+0.10}$]—Hand Insertion with Commercially Available Pin Vise)

Pin Dia. Range	Dimensions				Finish		Part Numbers		
	A	B	C	D	Spring	Eyelet	Closed Bottom	Open Bottom	Knockout Bottom
.022-.025 0.56-0.64	.080 2.03	.138 3.51	.061 1.55	.037 0.94	Gold[1]	Gold[3]	1-331677-7•	2-331677-5	2-331677-8
					Gold[1]	Tin	3-331677-7•	2-331677-0•	3-331677-6•
					Tin	Tin	1-331677-6•	1-331677-9•	3-331677-5•
					Gold[2]	Tin	7-331677-0•	–	–
.026-.029 0.66-0.74	.080 2.03	.138 3.51	.061 1.55	.037 0.94	Gold[1]	Gold[3]	1-331677-1•	2-331677-7•	3-331677-0•
					Gold[1]	Tin	3-331677-8•	2-331677-4•	3-331677-2•
					Tin	Tin	1-331677-0•	2-331677-3	3-331677-1
					Gold[2]	Tin	6-331677-9	–	–
.026-.033 0.66-0.84	.080 2.03	.257 6.53	.061 1.55	.037 0.94	Gold[1]	Gold[3]	50864 •	50864-4•	50864-2•
					Gold[1]	Tin	50864-1•	50864-5•	50864-3•
					Tin	Tin	50864-6•	50864-8•	50864-7•
					Gold[2]	Tin	1-50864-3•	–	–
.030-.033 0.76-0.84	.080 2.03	.138 3.51	.061 1.55	.037 0.94	Gold[1]	Gold[3]	1-331677-4•	2-331677-6•	2-331677-9•
					Gold[1]	Tin	1-331677-8•	2-331677-2•	3-331677-4•
					Tin	Tin	1-331677-3•	2-331677-1•	3-331677-3
					Gold[2]	Tin	7-331677-1•	–	–

Series 4 (Hole Size $.072^{+.004}_{-.003}$ [$1.83^{+1.10}_{-0.08}$]—Semi-Automatic Insertion; $.072^{+.004}$ [$1.83^{+0.10}$]—Hand Insertion with Commercially Available Pin Vise)

Pin Dia. Range	Dimensions				Finish		Part Numbers		
	A	B	C	D	Spring	Eyelet	Closed Bottom	Open Bottom	Knockout Bottom
.030-.033 0.76-0.84	.089 2.26	.143 3.63	.070 1.78	.045 1.14	Gold[1]	Gold[3]	332070 •	1-332070-2•	1-332070-5
					Gold[1]	Tin	1-332070-9•	2-332070-5•	3-332070-1•
					Tin	Tin	1-332070-8•	2-332070-4•	3-332070-0•
					Gold[2]	Tin	3-332070-9•	–	–
.034-.037 0.86-0.94	.089 2.26	.143 3.63	.070 1.78	.045 1.14	Gold[1]	Gold[3]	1-332070-0•	1-332070-3•	1-332070-6
					Gold[1]	Tin	2-332070-1•	2-332070-7•	3-332070-3
					Tin	Tin	2-332070-0•	2-332070-6	3-332070-2
					Gold[2]	Tin	4-332070-0•	–	–
.034-.041 0.86-1.04	.089 2.26	.260 6.60	.070 1.78	.046 1.17	Gold[1]	Gold[3]	50865 •	50865-4•	50865-2•
					Gold[1]	Tin	50865-5•	50865-3•	50865-1•
					Tin	Tin	50865-8•	50865-6•	50865-7•
					Gold[2]	Tin	1-50865-0•	–	–
.037-.040 0.94-1.02	.089 2.26	.143 3.63	.070 1.78	.045 1.14	Gold[1]	Gold[3]	1-332070-1•	1-332070-4•	1-332070-7•
					Gold[1]	Tin	2-332070-3•	2-332070-9•	3-332070-5•
					Tin	Tin	2-332070-2•	2-332070-8•	3-332070-4•
					Gold[2]	Tin	4-332070-1•	–	–

Series 5 (Hole Size $.101^{\pm.003}$ [$2.57^{\pm0.08}$]—Semi-Automatic Insertion; $.103^{+.004}_{-.000}$ [$2.62^{+0.10}$]—Hand Insertion with Commercially Available Pin Vise)

Pin Dia. Range	Dimensions				Finish		Part Numbers		
	A	B	C	D	Spring	Eyelet	Closed Bottom	Open Bottom	Knockout Bottom
.042-.049 1.07-1.24	.118 3.0	.288 7.31	.101 2.57	.068 1.73	Gold[1]	Gold[3]	50871-4•	50871	–
					Gold[1]	Tin	50871-5•	50871-1	50871-3•
					Tin	Tin	50871-8•	50871-6•	50871-7
					Gold[2]	Tin	2-50871-7•	–	–
.050-.057 1.27-1.45	.118 3.0	.288 7.31	.101 2.57	.068 1.73	Gold[1]	Gold[3]	1-50871-3	50871-9	–
					Gold[1]	Tin	1-50871-4	1-50871-0•	1-50871-2•
					Tin	Tin	1-50871-7•	1-50871-5•	–
					Gold[2]	Tin	2-50871-8•	–	–
.056-.065 1.42-1.65	.118 3.0	.288 7.31	.101 2.57	.068 1.73	Gold[1]	Gold[3]	2-50871-2•	1-50871-8•	–
					Gold[1]	Tin	2-50871-3•	1-50871-9•	2-50871-1•
					Tin	Tin	2-50871-6•	2-50871-4•	–
					Gold[2]	Tin	2-50871-9	–	–

•Immediate delivery items.
[1].000050 [0.00127] gold plating.
[2].000030 [0.00076] gold plating.
[3]Gold flash.

Miniature Spring Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

Flat Bottom Sockets
(Continued)

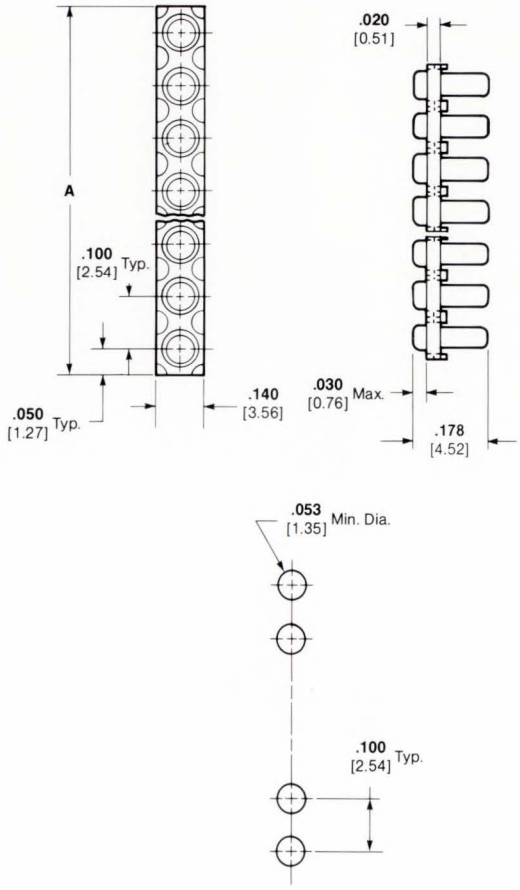
Closed Bottom Sockets on Single Row In-Line Nylon Strip

Material:

Wafer—Nylon, natural color
Spring—Beryllium Copper
Eyelet—Copper

Finish:

Spring—Tin or .000050 [0.00127] thick gold plated
Eyelet—Tin plated



Recommended Mounting Hole Pattern

Pin Range: **Length**—.110-.165 [2.79-4.19]
Diameter—.014-.026 [0.36-0.66]

Refer to page 67 for square and rectangular pin size equivalents.

No. of Sockets Per Strip	Dim. A	Part Numbers	
		Tin Plated Spring	Gold Plated Spring
1000	**100** 25.40	–	645831-1•
20	**2.000** 50.8	645925-5	645831-5•
18	**1.800** 45.72	–	645831-4
14	**1.400** 35.56	645925-4	1-645831-1
12	**1.200** 30.48	645925-1	645831-3•
10	**1.000** 25.4	645925-3	–
9	**.900** 22.86	–	645831-2
8	**.800** 20.32	645925-2	645831-7•
7	**.700** 17.78	–	645831-6

•Immediate delivery items.

Miniature Spring Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Flat Bottom Sockets
(Continued)

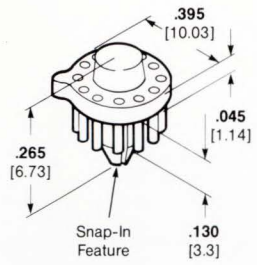
Closed Bottom Sockets in Mounting Wafers

Material:

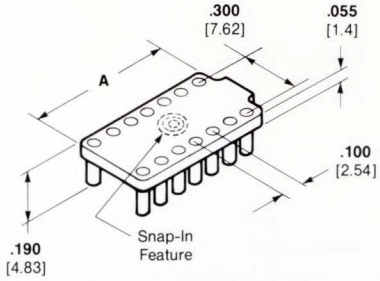
Wafer—Nylon
Spring—Beryllium copper
Eyelet—Copper

Finish:

Spring—Tin or .000050 [0.00127] thick gold plated
Eyelet—Tin or gold flash



For TO-5 Cans



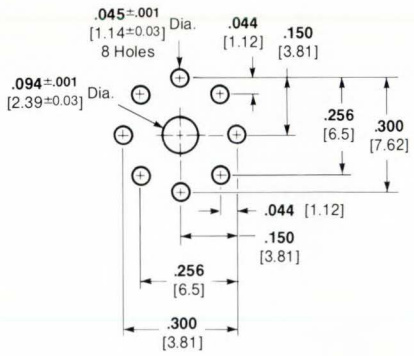
For In-Line Modules

Type	Pin Dia.	Module Size	Wafer Color	Dim. A	Spring Finish	Eyelet Finish	Part Number
TO-5 Can	.013-.020 0.33-0.51	8-Pos.	Yellow	–	Tin	Tin	50502-6
					Gold	Gold	50502-7
					Gold	Tin	50502-8•
		10-Pos.	Red	–	Tin	Tin	50480-6
					Gold	Gold	50480-7
					Gold	Tin	50480-8
In-Line Module	.014-.026 0.36-0.66	14-Pos.	Yellow	.730 18.54	Tin	Tin	50477-7•
					Gold	Gold	50477-6•
					Gold	Tin	50477-8•
		16-Pos.	Red	.830 21.08	Tin	Tin	50486-7•
					Gold	Gold	50486-6
					Tin	Tin	50486-8

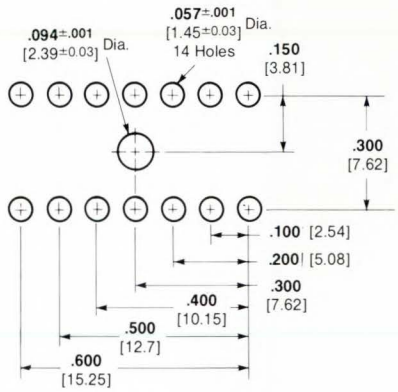
•Immediate delivery items.

Mounting Dimensions
(Tolerances are ±.002 [±0.05] unless otherwise specified.

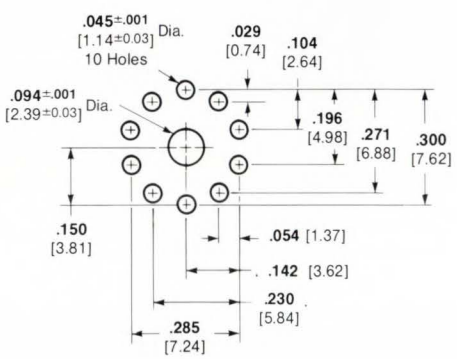
8-Position TO-5 Can



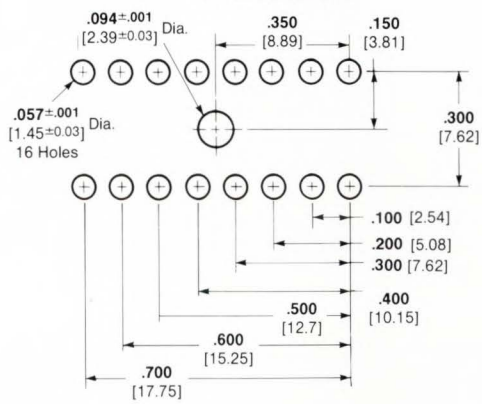
14-Position In-Line



10-Position TO-5 Can



16-Position In-Line

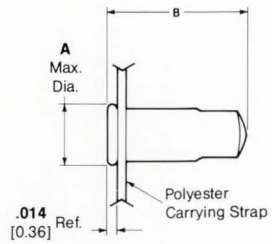


Miniature Spring Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Bullet Nose Sockets

Sockets, Loose Piece and on Polyester Strip



Material:
Spring—Beryllium Copper
Eyelet—Copper

Finish:
Spring—Tin or .000030 [0.00076] thick gold plated
Eyelet—Tin plated

Series 1 (Hole Size .042$^{\pm.003}$ [1.07$^{\pm0.08}$]—Semi-Automatic Insertion; .043$^{\pm.002}$ [1.09$^{\pm0.05}$]—Loose Piece Hand Insertion)

Pin Dia. Range	Dimensions A	Dimensions B	Finish Spring	Finish Eyelet	Part Numbers Loose Piece W/O Sealant	Polyester Strip W/Sealant 50,000 Per Reel	Polyester Strip W/Sealant 10,000 Per Reel	Polyester Strip W/O Sealant 50,000 Per Reel	Polyester Strip W/O Sealant 10,000 Per Reel
.012-.018 0.30-0.45	**.066** 1.67	**.158** 4.01	Gold	Tin	645945-5	645947-5	1-645947-5	645948-5	1-645948-5
			Tin	Tin	645945-4	645947-4	1-645947-4	645948-4	1-645948-4
.012-.021 0.30-0.53	**.066** 1.67	**.184** 4.64	Gold	Tin	645946-2	645949-2•	1-645949-2	645950-2	1-645950-2
			Tin	Tin	645946-1	645949-1	1-645949-1	645950-1	1-645950-1
.015-.021 0.38-0.53	**.066** 1.67	**.158** 4.01	Gold	Tin	645945-2	645947-2•	1-645947-2	645948-2	1-645948-2
			Tin	Tin	645945-1	645947-1	1-645947-1	645948-1	1-645948-1

Series 2 (Hole Size .052$^{\pm.003}$ [1.32$^{\pm0.08}$]—Semi-Automatic Insertion; .053$^{\pm.003}$ [1.35$^{\pm0.08}$]—Loose Piece Hand Insertion)

Pin Dia. Range	Dimensions A	Dimensions B	Finish Spring	Finish Eyelet	Part Numbers Loose Piece W/O Sealant	Polyester Strip W/Sealant 50,000 Per Reel	Polyester Strip W/Sealant 10,000 Per Reel	Polyester Strip W/O Sealant 50,000 Per Reel	Polyester Strip W/O Sealant 10,000 Per Reel
.020-.026 0.50-0.66	**.075** 1.91	**.158** 4.01	Gold	Tin	645951-2	645953-2•	1-645953-2	645954-2	1-645954-2
			Tin	Tin	645951-1	645953-1	1-645953-1	645954-1	1-645954-1
.014-.026 0.35-0.66	**.075** 1.91	**.184** 4.67	Gold	Tin	645952-2	645955-2•	1-645955-2	645956-2	1-645956-2
			Tin	Tin	645952-1	645955-1	1-645955-1	645956-1	1-645956-1
.014-.022 0.35-0.55	**.075** 1.91	**.158** 4.01	Gold	Tin	645951-5	645953-5•	1-645953-5	645954-5	1-645954-5
			Tin	Tin	645951-4	645953-4	1-645953-4	645954-4	1-645954-4

Series 3 (Hole Size .063$^{\pm.003}$ [1.6$^{\pm0.08}$]—Semi-Automatic Insertion; .064$^{\pm.002}$ [1.63$^{\pm0.05}$]—Loose Piece Hand Insertion)

Pin Dia. Range	Dimensions A	Dimensions B	Finish Spring	Finish Eyelet	Part Numbers Loose Piece W/O Sealant	Polyester Strip W/Sealant 50,000 Per Reel	Polyester Strip W/Sealant 10,000 Per Reel	Polyester Strip W/O Sealant 50,000 Per Reel	Polyester Strip W/O Sealant 10,000 Per Reel
.028-.033 0.71-0.84	**.080** 2.03	**.290** 7.37	Gold	Tin	645988-2	645986-2	1-645986-2	645990-2	1-645990-2
			Tin	Tin	645988-1	645986-1	1-645986-1	645990-1	1-645990-1

Series 4 (Hole Size .072$^{\pm.003}$ [1.83$^{\pm0.08}$]—Semi-Automatic Insertion; Loose Piece Hand Insertion Not Recommended)

Pin Dia. Range	Dimensions A	Dimensions B	Finish Spring	Finish Eyelet	Part Numbers Loose Piece W/O Sealant	Polyester Strip W/Sealant 50,000 Per Reel	Polyester Strip W/Sealant 10,000 Per Reel	Polyester Strip W/O Sealant 50,000 Per Reel	Polyester Strip W/O Sealant 10,000 Per Reel
.037-.041 0.94-1.04	**.089** 2.26	**.260** 6.6	Gold	Tin	645500-1	645501-1	1-645501-1	645502-1	1-645502-1
			Tin	Tin	645500-2	645501-2	1-645501-2	645502-2	1-645502-2

Series 5 (Hole Size .104$^{\pm.003}$ [2.64$^{\pm0.08}$]—Semi-Automatic Insertion; .105$^{\pm.002}$ [2.67$^{\pm0.05}$]—Loose Piece Hand Insertion)

Pin Dia. Range	Dimensions A	Dimensions B	Finish Spring	Finish Eyelet	Part Numbers Loose Piece W/O Sealant	Polyester Strip W/Sealant 25,000 Per Reel	Polyester Strip W/Sealant 10,000 Per Reel	Polyester Strip W/O Sealant 25,000 Per Reel	Polyester Strip W/O Sealant 10,000 Per Reel
.042-.049 1.07-1.24	**.120** 3.05	**.308** 7.82	Gold	Tin	645980-2	645991-2	1-645991-2	645979-2	1-645979-2
			Tin	Tin	645980-1	645991-1	1-645991-1	645979-1	1-645979-1

•Immediate delivery items.

Miniature Spring Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

Bullet Nose Sockets
(Continued)

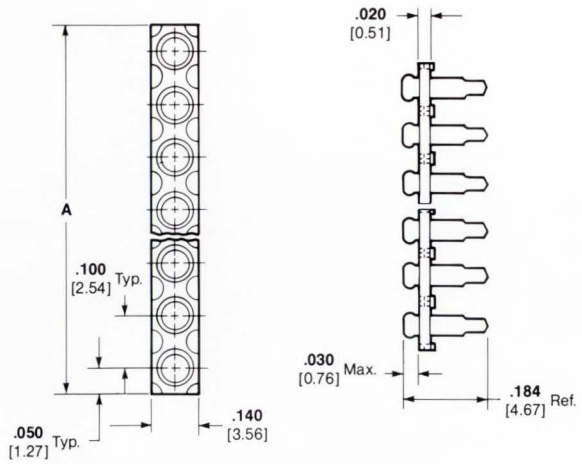
Sockets on Single Row In-Line Nylon Strip

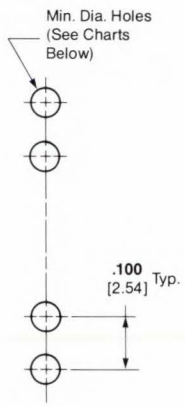
Material:

Wafer—Nylon, natural color
Spring—Beryllium copper
Eyelet—Copper

Finish:

Spring—Tin or .000030 [0.00076] thick gold plated
Eyelet—Tin plated





Recommended Mounting Hole Pattern

Series 1 (Hole Size .043 [1.09] Min.)

Pin Range: Length—.100-.170 [2.54-4.32]

Diameter—.012-.021 [0.30-0.53]

Refer to page 67 for square and rectangular pin size equivalents.

No. of Sockets Per Strip	Dim. A	Part Numbers	
		Tin Plated Spring	Gold Plated Spring
1000	**100** 25.40	645982-1•	645982-8•
20	**2.000** 50.8	645982-7	1-645982-4
15	**1.500** 38.1	645982-6	1-645982-3
12	**1.200** 30.48	645982-5	1-645982-2
10	**1.000** 25.4	645982-4	1-645982-1
8	**.800** 20.32	645982-3	1-645982-0
7	**.700** 17.78	645982-2	645982-9

•Immediate delivery items.

Series 2 (Hole Size .053 [1.35] Min.)

Pin Range: Length—.100-.170 [2.54-4.32]

Diameter—.014-.026 [0.36-0.66]

Refer to page 67 for square and rectangular pin size equivalents.

No. of Sockets Per Strip	Dim. A	Part Numbers	
		Tin Plated Spring	Gold Plated Spring
1000	**100** 25.40	645983-1•	645983-8•
20	**2.000** 50.8	645983-7	1-645983-4
15	**1.500** 38.1	645983-6	1-645983-3
12	**1.200** 30.48	645983-5	1-645983-2
10	**1.000** 25.4	645983-4	1-645983-1
8	**.800** 20.32	645983-3	1-645983-0
7	**.700** 17.78	645983-2	645983-9

•Immediate delivery items.

Miniature Spring Sockets
(Continued)

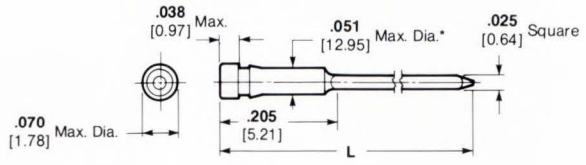
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

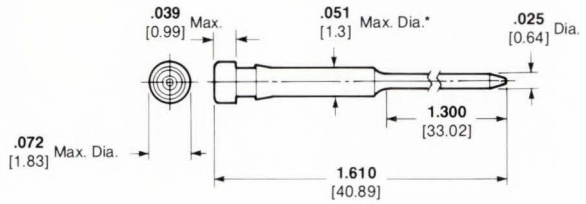
Special Application

Material:

Spring—Beryllium copper
Sleeve—Brass



Style A



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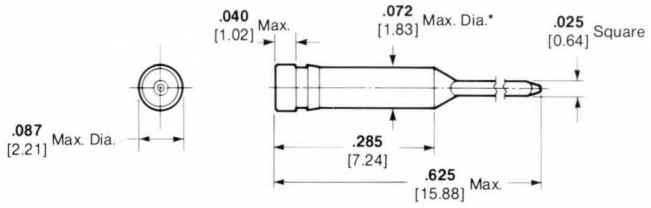

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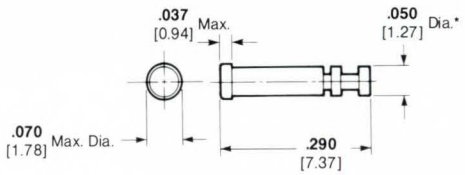
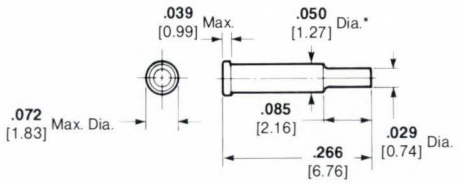
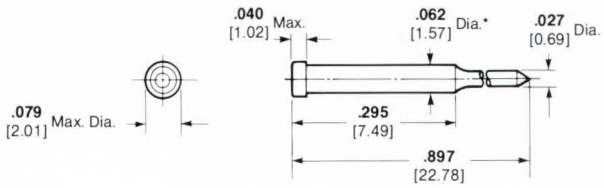


Style D



Style E



Style F

*Hole diameter should be appropriate diameter +.001 to +.004 [0.025 to 0.10].

Miniature Spring Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

Special Application
(Continued)

Style	Pin Dia. Range	Description	Dim. L	Finish		Part Number
				Spring	Eyelet/Sleeve	
A	**.016-.022 x .008-.015** [0.41-0.56 x 0.20-0.38] Tab or **.014-.026** [0.36-0.66] Pin	With **.025 x .025** [0.64 x 0.64] Sq. Post	**.725** 18.42	Gold[1]	Gold[2]	116026-1•
				Gold[2]	Gold[3]	116026-7
			.744 18.90	Gold[1]	Tin	116026-2
B	**.014-.026** [0.36-0.66]	With **.025** [0.64] Dia. Post	–	Gold[1]	Gold[2]	116230-1
				Gold[2]	Gold[3]	116230-3
C	**.034-.041** [0.86-1.04]	With **.025 x .025** [0.64 x 0.64] Sq. Post	–	Gold[2]	Tin	52120 •
				Tin	Tin	52120-1•
D	**.022-.025** [0.56-0.64]	With Solder Turret	–	Gold[1]	Gold[2]	332223
E	**.018-.021** [0.46-0.53]	With Standoff	–	Gold[1]	Tin	331810 •
F	**.026-.029** [0.69-0.76]	With **.027** [0.69] Dia. Post	–	Gold[1]	Gold[2]	332353
				Gold[2]	Gold[3]	332353-1•

•Immediate delivery items.
1.000050 [0.00127] gold plating.
2.000030 [0.00076] gold plating.
3.000010 [0.00025] gold plating.

Typical Applications:

Styles A & C—.025 [0.64] square posts for wrap-type and feed-thru applications.
Style B —.025 [0.64] diameter posts for feed-thru applications.
Style D—Wire post for solder applications
Style E—Above board sockets
Style F—.027 [0.69] diameter feed-thru

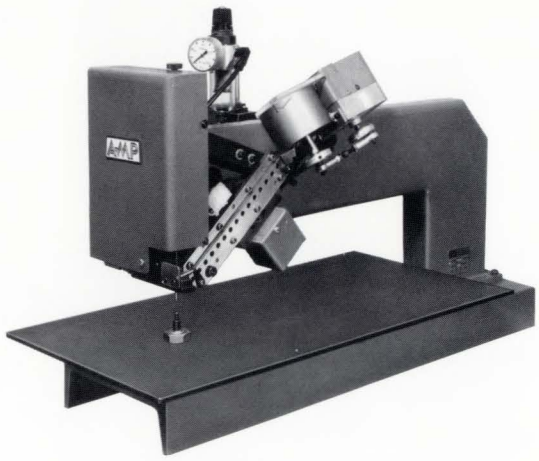
Miniature Spring Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

Insertion Tooling for Loose Piece Flat Bottom and Bullet Nose Sockets

This bench mounted, semi-automatic machine is capable of inserting 3000 sockets per hour into panels with predrilled holes of .038 to .101 [0.97 to 2.56] in diameter and of virtually any pattern configuration. The machine can accommodate board thicknesses from .031 to .125 [0.79 to 3.18].



Semi-Automatic Insertion Machine

Semi-Automatic Insertion Machine

Machine No.	Use with Socket Series
682127-2	1
682127-3	2
682127-4	3
682127-5	4
682127-6	5

Knockout Plug Tool

This AMP tool is used to remove the presheared bottom of flat bottom sockets (knockout bottom design) for feed-thru applications.

Knockout Plug Tool
Part No. 69729

Pin Dia. Range	Tip Part Number
.010-.026 [0.25-0.66]	69728
.022-.033 [0.56-0.84]	69728-1
.030-.041 [0.76-1.04]	69728-2
.042-.065 [1.07-1.65]	69728-3

Miniature Spring Sockets
(Continued)

Insertion Tooling for Bullet Nose Sockets on Polyester Strip

AMP pneumatic hand tools are capable of inserting up to 2000 miniature spring sockets per hour.

The U-Sertor semi-automatic bench machine is capable of inserting up to 3000 sockets per hour.

The AMP automatic insertion head used on a variety of commercially available numerically controlled positioning systems is capable of inserting 14,000 sockets per hour per head.

Pneumatic Hand Tool

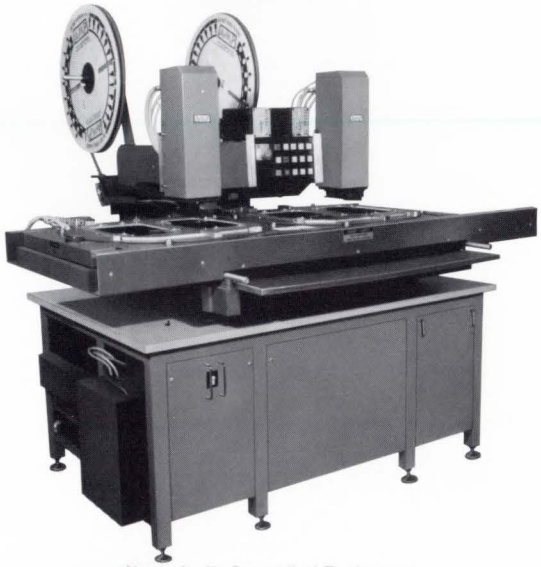
Pneumatic Hand Tool

Hand Tool Part No.	Used with Socket Series
59940-1	1
59940-2	2
59940-3	3
59940-4	4
59940-5	5

U-Sertor Semi-Automatic Bench Machine

U-Sertor Semi-Automatic Bench Machine

Machine No.	Used with Socket Series
817917-1	1
817917-2	2
817917-3	3
817917-4	4
817917-5	5



Numerically Controlled Equipment

Numerically Controlled Equipment

Part Number:

Insertion Heads—804149[1]

[1]Various interface kits are available. Consult AMP Incorporated for applicable part numbers.

Burn-In and Test Sockets
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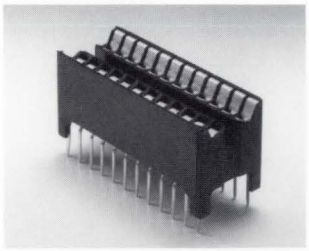
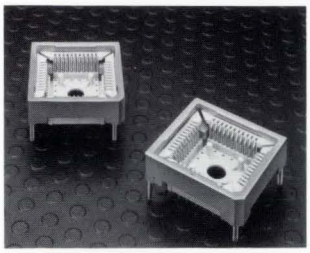
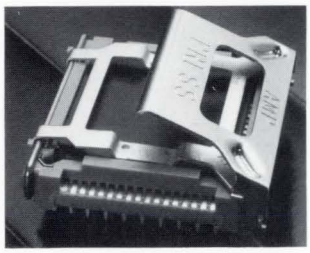
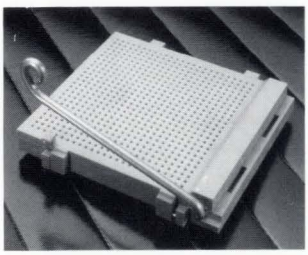
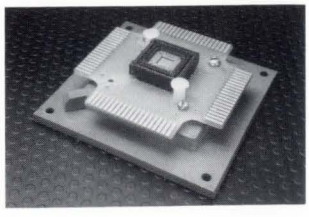










AMP INCORPORATED, HARRISBURG, PA 17105 • PHONE: 717-564-0100 TWX: 510-657-4110

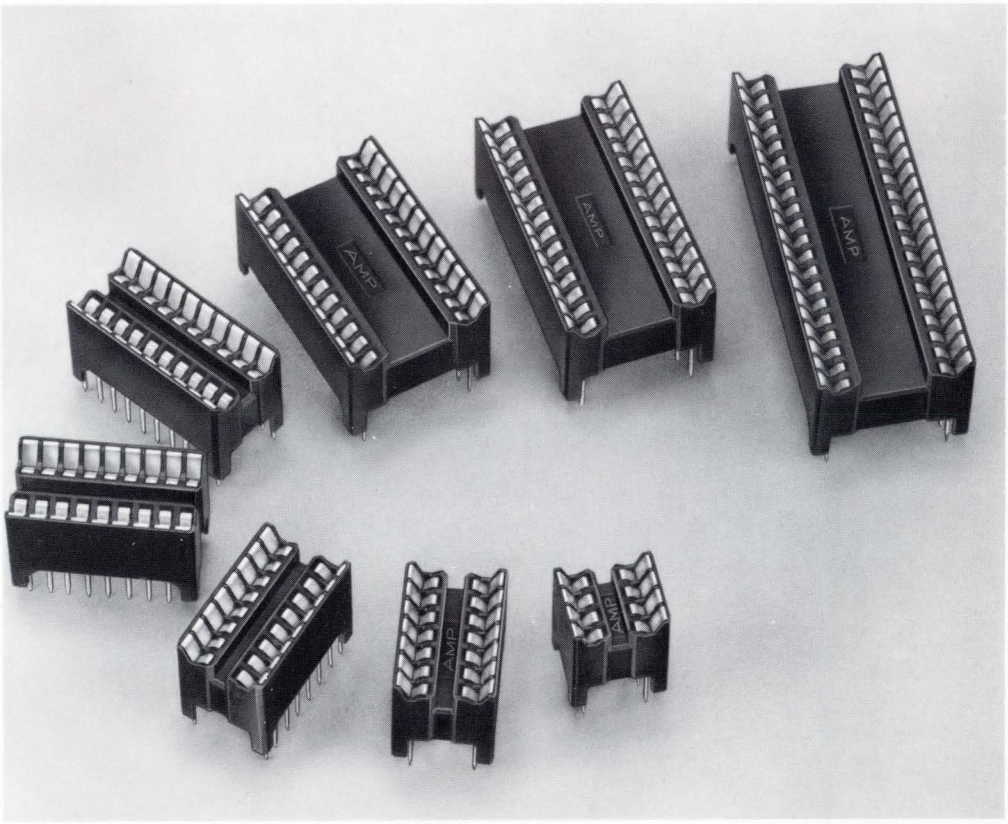
DIP Sockets

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

DIPLOMATE High Temperature (HT) Sockets

Features

- Service temperatures to 150°C (continuous)
- Dual face wiping contacts (metal-to-metal-to-metal)
- Low insertion/extraction forces
- High four-corner standoffs facilitate board cleaning
- Gold plated mating surfaces and tin plated soldering surfaces
- Generous undersocket clearance for component mounting
- Industry standard sword slot with drain holes for sword unloading
- Large target area with tapered lead-in for manual or machine loading
- Available in .300 [7.62], .400 [10.16], .600 [15.24], .700 [17.78], .900 [22.86] and 1.000 [25.4] wide footprints
- Available in 8 through 64 positions
- Anti-overstress design prevents contact damage
- Designed to meet EIA RS-364, MIL-STD-202 and MIL-S-1344 test specifications



DIPLOMATE High Temperature (HT) Burn-In Sockets are designed with all the features necessary to meet your specific needs.

The target area is wide, yet it offers a foolproof lead-in that prevents accidental mismating. The contacts have an anti-overstress design which prevents physical damage caused by misuse. Contact material is beryllium copper and withstands oven temperatures up to 150°C. Contacts are .000030 [0.00076] thick gold plated on the mating surfaces.[1]

Contact legs are tin plated for ease of soldering and prevention of solder-bath contamination.

Housing standoffs are .150 [3.81] high on the four corners. This maximizes the clearance for both under socket component mounting and inspection and cleaning. A sword-removal slot* that is compatible with standard sword configurations is provided. This slot has chamfered lead-in edges and unobstructed surfaces for easy operation. Housings are molded of polyphenylene sulfide which is UL 94V-0 rated and can resist temperatures up to 240°C. The narrow width permits mounting as close as .500 [12.7] centerlines for .300 [7.62] sockets and .800 [20.32] centerlines for .600 [15.24] sockets.

Contacts have dual wiping surfaces for redundancy and reliability. They are low force—approximately 2 ounces insertion force per contact. Replacement of individual contacts can be accomplished without removal of entire socket.

The .300 [7.62] and .400 [10.16] burn-in sockets are available in 8, 14, 16, 18, 20 and 24 positions; the .600 [15.25] and .700 [17.78] sockets are available in 24, 28, .40 and 48 positions; and the .900 [22.86] and 1.000 [25.4] sockets are available in 64 positions. All sizes are available with standard leg spacing (.300 [7.62] and .600 [15.24]), and wide leg spacing (.400 [10.16] and .700 [17.78]).

[1].000010 [0.0003] thick optional depending upon customer requirements.

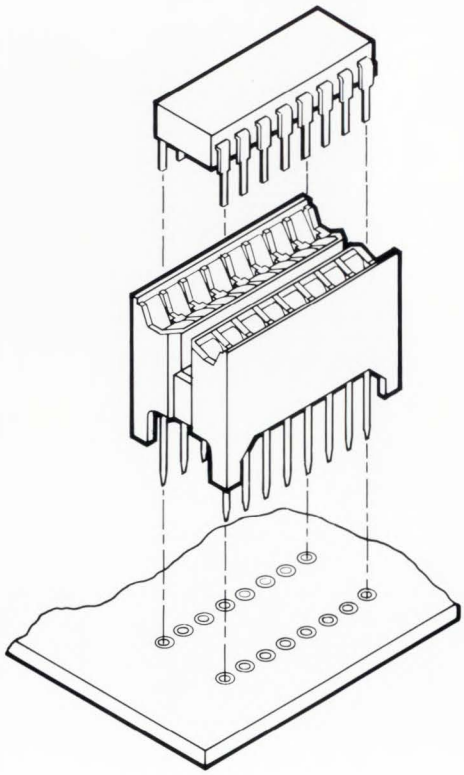
DIP Sockets
(Continued)

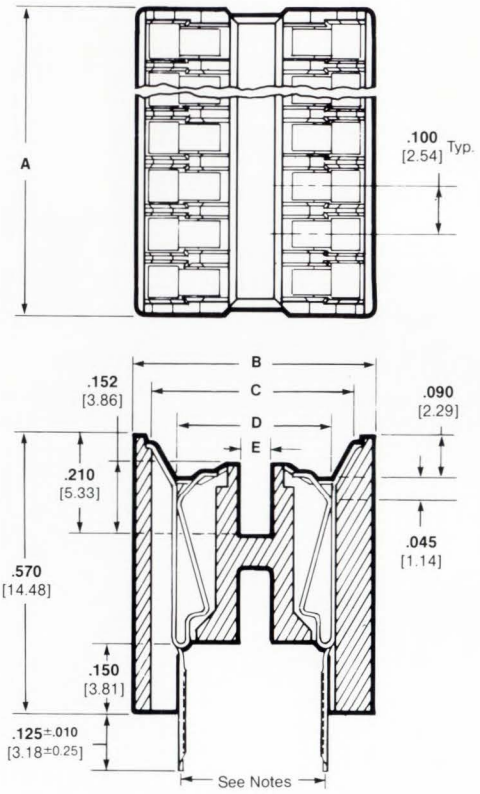
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

DIPLOMATE High Temperature (HT) Sockets

Material and Finish:

Housing—Polyphenylene sulfide, UL 94V-0 rated
Contact—Beryllium copper, duplex plated





Performance Characteristics

Contact Resistance:
10 milliohms max. (initial)
30 milliohms max. (after conditioning)

Insulation Resistance:
1.5×10^{14} ohms min.

Capacitance:
1 picofarad max.

Dielectric Breakdown Voltage:
1000 volts min.

Engaging Force:
65 grams max. per pin

Separating Force:
10 grams min. per pin

Service Temperature:
150°C max., continuous

Contact Retention:
300 grams

Description	No. of Pos.	Dimensions					Part Numbers			
							.000030 [0.00076] Gold Plated		.000010 [0.00025] Gold Plated	
		A	B	C	D	E	Narrow Leg	Wide Leg	Narrow Leg	Wide Leg
.300 [7.62] and .400 [10.18] Burn-In Socket	8	.416 10.57	.495 12.32	.425 10.08	.320 8.13	.080 2.03	641706-2	641716-2	641706-4	641716-4
	14	.716 18.19	.495 12.32	.425 10.8	.320 8.13	.080 2.03	641707-2	641717-2	641707-4	641717-4
	16	.816 20.73	.495 12.32	.425 10.8	.320 8.13	.080 2.03	641708-2	641718-2	641708-4	641718-4
	18	.916 23.27	.495 12.32	.425 10.8	.320 8.13	.080 2.03	641709-2	641719-2	641709-4	641719-4
	20	1.016 25.81	.495 12.32	.425 10.8	.320 8.13	.080 2.03	641710-2	641720-2	641710-4	641720-4
	24	1.216 30.89	.495 12.32	.425 10.8	.320 8.13	.080 2.03	643261-2	643263-2	643261-4	643263-4
.600 [15.24] and .700 [17.78] Socket	24	1.216 30.89	.795 20.19	.725 18.42	.620 15.75	.340 8.64	641712-2	641722-2	641712-4	641722-4
	28	1.416 35.97	.795 20.19	.725 18.42	.620 15.75	.340 8.64	641713-2	641723-2	641713-4	641723-4
	40	2.016 51.21	.795 20.19	.725 18.42	.620 15.75	.340 8.64	641714-2	641724-2	641714-4	641724-4
	48	2.416 61.37	.795 20.19	.725 18.42	.620 15.75	.340 8.64	643309-2	643311-2	643309-4	643311-4
.900 [22.86] and 1.000 [25.4] Socket	64	3.216 81.69	1.115 28.32	1.015 26.04	.920 23.37	.640 16.26	643310-2	643312-2	643310-4	643312-4

Notes: 1. For narrow leg part numbers—.300 [7.62], .600 [15.24] and .900 [22.86] (all dimensions ±.020 [0.51]).
2. For wide leg part numbers—.400 [10.16], .700 [17.78] and 1.000 [25.4] (all dimensions ±.020 [0.51]).
3. 22- and 32-position sockets in .600 [15.24] and .700 [17.78] wide footprints can be made available; contact AMP Incorporated for information.

DIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

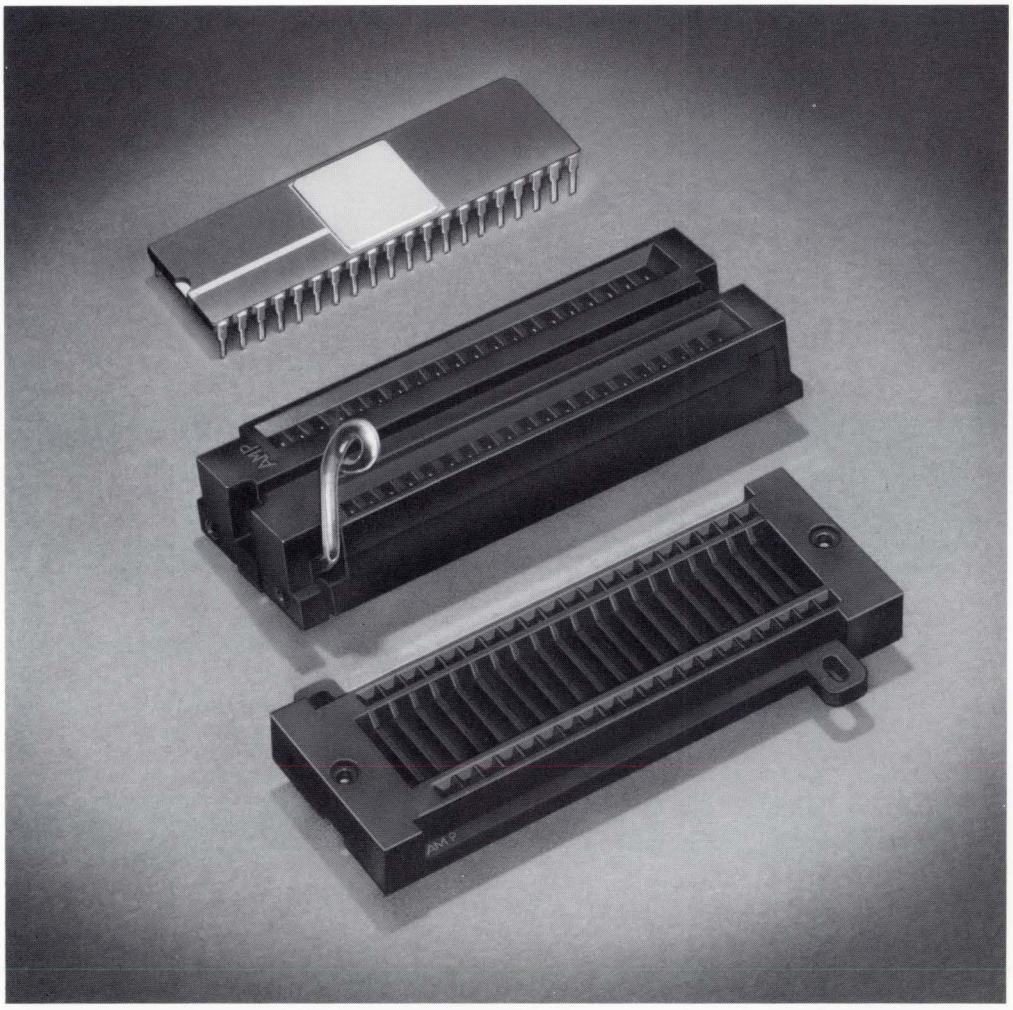
ZIF-Lock (Zero Insertion Force) Connectors and Header Sockets

Features—Connector

- Normally closed contacts omit dependence on plastic housing to sustain contact forces
- Contacts available in tin-lead plated or selective gold plated versions
- Actuation effective for 25,000 cycles, minimum (1000 cycles at 150°C for burn-in applications)
- Handles available in up "on" or down "on" versions
- True zero insertion and withdrawal force characteristics
- Wide entry angle accommodates misaligned DIP device legs
- Can be gang actuated
- DIP device cannot be inserted when connector is closed, preventing leg damage
- Positive lock actuation ensures DIP device containment and stops accidental opening
- Height compatible for use in existing equipment
- Can be directly soldered to pc board or used with matching header
- Available in 14 through 40 positions

Features—Header

- Housing heights of .270 [6.86] and .500 [12.7]
- Polyethersulfone housing can be used to 105°C with tin-lead plated contacts
- Integral threaded screw inserts
- Wrap-type legs available
- Available in 14 through 40 positions
- Accommodates entire line of ZIF-Lock Connectors



The AMP line of ZIF-Lock Connectors and matching Header Sockets offers test and burn-in capabilities for ceramic and plastic dual in-line packages.

ZIF-Lock Connectors provide true zero insertion and withdrawal force characteristics for over 25,000 operations. The unique, "normally closed" beryllium copper contacts are available in tin-lead or gold plate and are not dependent on the plastic housing to sustain contact forces. Connectors may be soldered directly to the pc board or used with the appropriate header socket. Also the units are height compatible with existing equipment.

The connectors feature a choice of vertical or horizontal cam-action handles which allow the mounting freedom required for gang actuation. A positive locking feature insures containment of the DIP device and prevents accidental opening. In addition, the DIP device cannot be inserted with the contact system closed, preventing possible leg damage.

ZIF-Lock connectors are available in standard pin positions from 14 through 20 on .300 [7.62] centers and in 24, 28 and 40 positions on .600 [15.24] centers. Header Sockets are available to accommodate the entire family of ZIF-Lock Connectors.

DIP Sockets
(Continued)

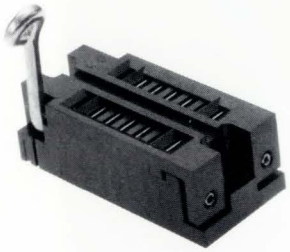
Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

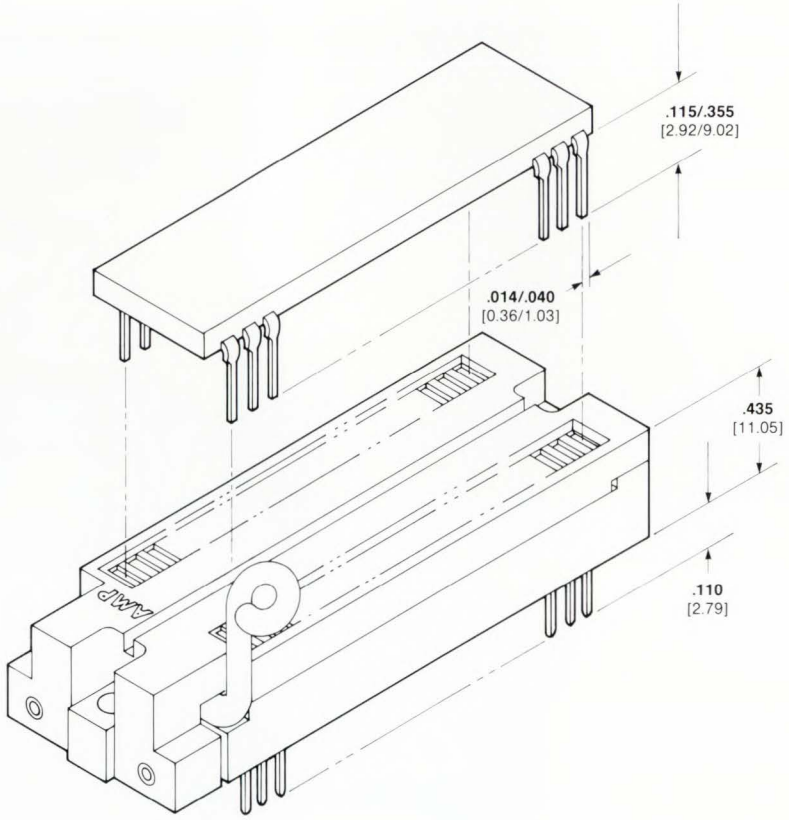
ZIF-Lock (Zero Insertion Force) Connectors

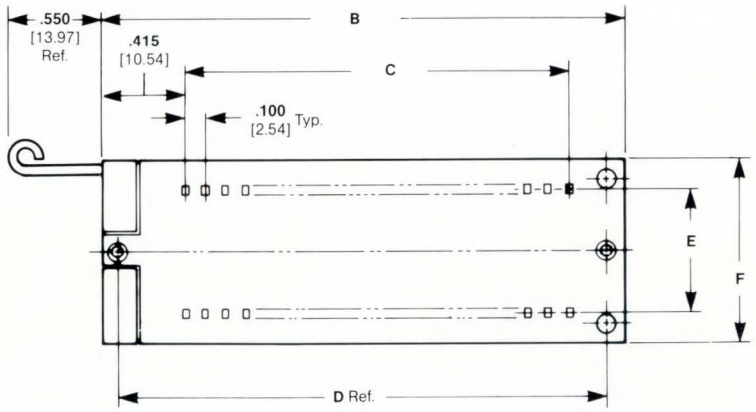
Material and Finish:

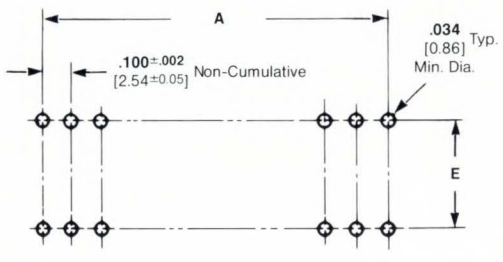
Body—Polyethersulfone[1]

Contacts—Beryllium copper CA 172 with 93-7 bright tin-lead plating or selective gold plating[2] over nickel with tin-lead plated legs









Printed Circuit Board Layout

[1] Can be used to 105°C with tin-lead plated contacts or 150°C with selective gold plated contacts.
[2] Selective gold recommended for burn-in applications.

DIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

ZIF-Lock (Zero Insertion Force) Connectors

No. of Pos.	Dimensions A	B	C	D	E	F	Plating	Color	Temp. °C	Handle "ON" Position	Part Number
14	.600 15.24	1.290 32.77	.600 15.24	1.115 28.32	.300 7.62	.595 15.11	Tin-Lead	Black	105	Up	55173-3
							Gold	Black	150	Up	55173-4
							Tin-Lead	Black	105	Down	55173-5
							Gold	Black	150	Down	55173-6
16	.700 17.78	1.390 35.31	.700 17.78	1.125 28.58	.300 7.62	.595 15.11	Tin-Lead	Black	105	Up	55174-3
							Gold	Black	150	Up	55174-4
							Tin-Lead	Black	105	Down	55174-5
							Gold	Black	150	Down	55174-6
18	.800 20.32	1.490 37.85	.800 20.32	1.315 33.4	.300 7.62	.595 15.11	Tin-Lead	Black	105	Up	55175-3
							Gold	Black	150	Up	55175-4
							Tin-Lead	Black	105	Down	55175-5
							Gold	Black	150	Down	55175-6
20	.900 22.86	1.590 40.39	.900 22.86	1.415 35.94	.300 7.62	.595 15.11	Tin-Lead	Black	105	Up	55176-3
							Gold	Black	150	Up	55176-4
							Tin-Lead	Black	105	Down	55176-5
							Gold	Black	150	Down	55176-6
24	1.100 27.94	1.790 45.47	1.100 27.94	1.615 41.02	.600 15.24	.895 22.73	Tin-Lead	Black	105	Up	54993-3
							Gold	Black	150	Up	54993-4
							Tin-Lead	Black	105	Down	54993-5
							Gold	Black	150	Down	54993-6
28	1.300 33.02	1.990 50.55	1.300 33.02	1.815 46.1	.600 15.24	.895 22.73	Tin-Lead	Black	105	Up	54994-3
							Gold	Black	150	Up	54994-4
							Tin-Lead	Black	105	Down	54994-5
							Gold	Black	150	Down	54994-6
40	1.900 48.26	2.590 65.79	1.900 48.26	2.415 61.34	.600 15.24	.895 22.73	Tin-Lead	Black	105	Up	54995-3
							Gold	Black	150	Up	54995-4
							Tin-Lead	Black	105	Down	54995-5
							Gold	Black	150	Down	54995-6

DIP Sockets
(Continued)

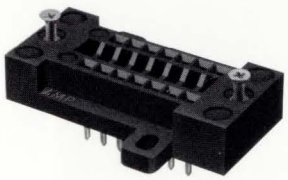
Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

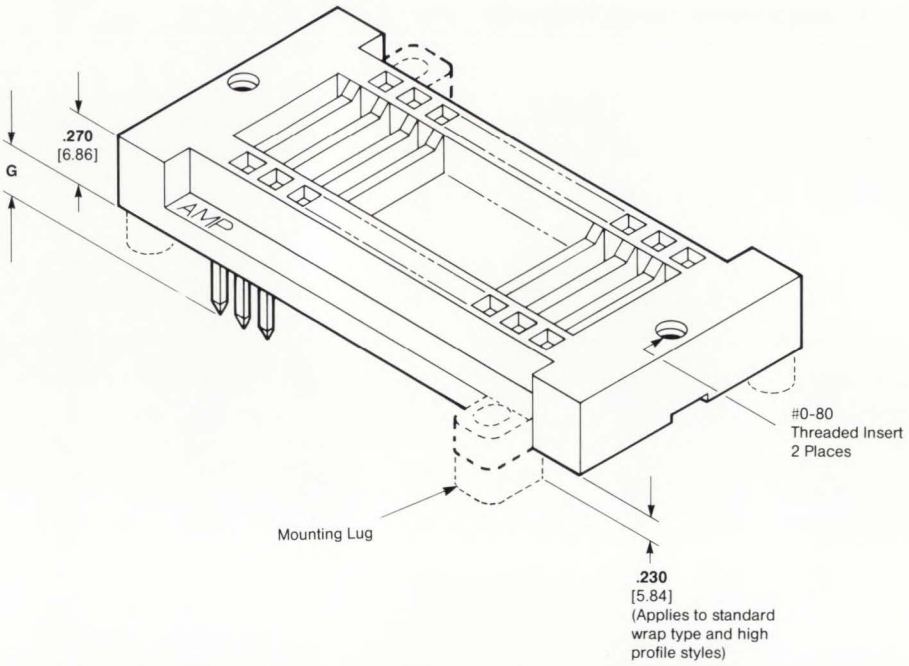
Header Socket for ZIF-Lock Connectors

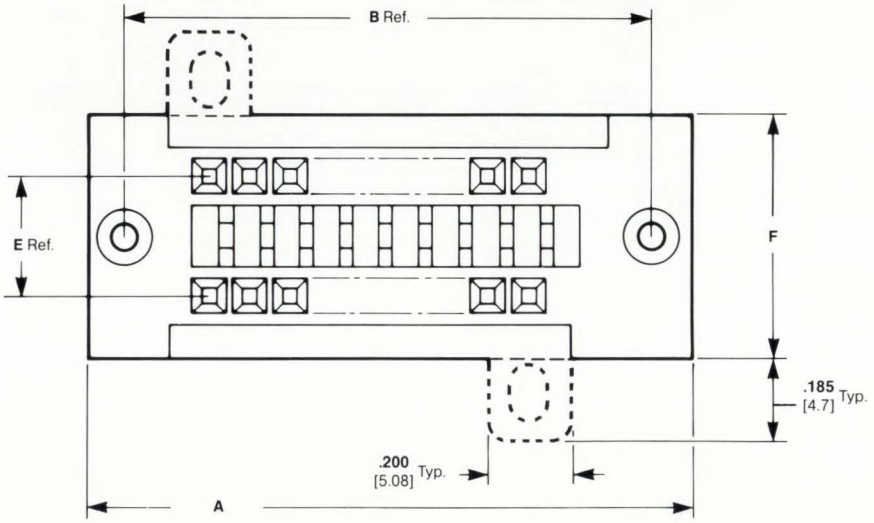
Material and Finish:

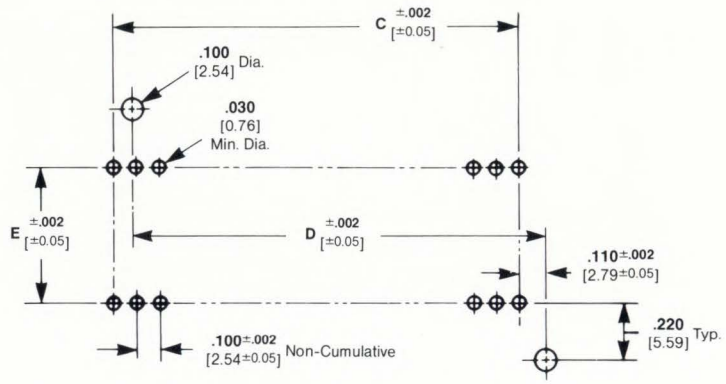
Body—Polyethersulfone, black

Contacts—Beryllium copper with 93-7 bright tin-lead plating









Printed Circuit Board Layout

DIP Sockets
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.

Header Socket for ZIF-Lock Connectors

No. of Pos.	Dimensions							Style	Part Number
	A	B	C	D	E	F	G		
14	**1.290** 32.77	**1.115** 28.32	**.600** 15.24	**.600** 15.24	**.300** 7.62	**.595** 15.11	**.180** 4.57	Standard 180	55202-1
							.410 10.41	Wrap Type 410	55202-2
							.410 10.41	High Profile 410	55202-3
							.300 7.62	Lugless 300	55202-4
16	**1.390** 35.31	**1.215** 30.86	**.700** 17.78	**.700** 17.78	**.300** 7.62	**.595** 15.11	**.180** 4.57	Standard 180	55203-1
							.410 10.41	Wrap Type 410	55203-2
							.410 10.41	High Profile 410	55203-3
							.300 7.62	Lugless 300	55203-4
18	**1.490** 37.85	**1.315** 33.4	**.800** 20.32	**.800** 20.32	**.300** 7.62	**.595** 15.11	**.180** 4.57	Standard 180	55204-1
							.410 10.41	Wrap Type 410	55204-2
							.410 10.41	High Profile 410	55204-3
							.300 7.62	Lugless 300	55204-4
20	**1.590** 40.39	**1.415** 35.94	**.900** 22.87	**.900** 22.87	**.300** 7.62	**.595** 15.11	**.180** 4.57	Standard 180	55205-1
							.410 10.41	Wrap Type 410	55205-2
							.410 10.41	High Profile 410	55205-3
							.300 7.62	Lugless 300	55205-4
24	**1.790** 45.47	**1.615** 41.02	**1.100** 27.94	**1.100** 27.94	**.600** 15.24	**.895** 22.73	**.180** 4.57	Standard 180	55206-1
							.410 10.41	Wrap Type 410	55206-2
							.410 10.41	High Profile 410	55206-3
							.300 7.62	Lugless 300	55206-4
28	**1.990** 50.55	**1.815** 46.1	**1.300** 33.02	**1.300** 33.02	**.600** 15.24	**.895** 22.73	**.180** 4.57	Standard 180	55207-1
							.410 10.41	Wrap Type 410	55207-2
							.410 10.41	High Profile 410	55207-3
							.300 7.62	Lugless 300	55207-4
40	**2.590** 65.79	**2.415** 61.34	**1.900** 48.26	**1.900** 48.26	**.600** 15.24	**.895** 22.73	**.180** 4.57	Standard 180	55208-1
							.410 10.41	Wrap Type 410	55208-2
							.410 10.41	High Profile 410	55208-3
							.300 7.62	Lugless 300	55208-4

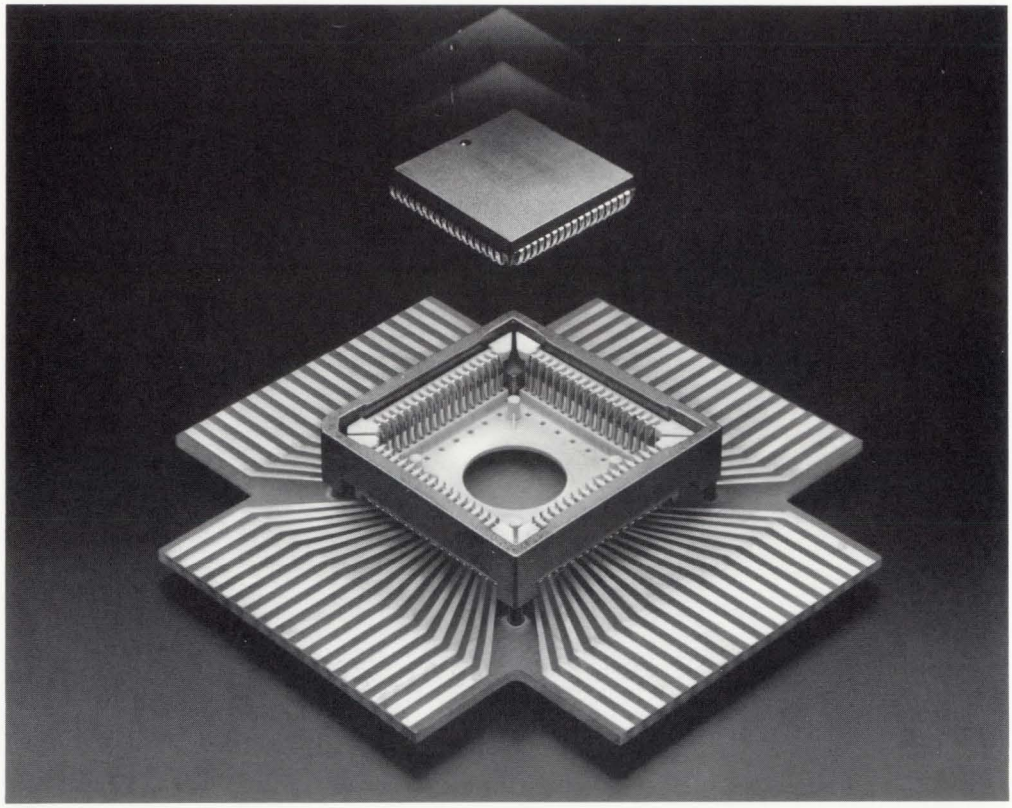
Burn-In Sockets for PLCC Packages

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

LIF-Type Low Profile Sockets

Features

- Low insertion force (LIF) socket
- Low profile—.335 [8.51] above pc board
- Accepts plastic leaded chip carriers in conformance with JEDEC Specification MO-047AA-AH
- Liquid Crystal Polymer (LCP) housing, rated for continuous use up to 200°C
- Contacts are made of beryllium copper (150°C)
- Nickel boron contact plating with other platings available
- LIF-style locking frame allows low insertion force, positive ejection, facilitates manual and auto-loading/unloading, and improves heat exchange
- Automatic contact wipe design with minimum deformation of "J" lead
- Visual "designator" on locking frame identifies position 1 pin
- Allows easy access probing using .015 [0.38] diameter probes
- Conventionally loaded socket provides "live-bug" insertion
- Repairable contacts
- Socket provides "free zone" area for mounting components
- 5000 cycles minimum insertion life



AMP LIF-Type Low Profile Burn-In Sockets for PLCC packages are available in 20 through 68 position solder tail configurations. (Other sizes can be made available upon request.) They accept square, plastic chip carriers with J-leads on .050 [1.27] centerlines. The design is ideally suited for high volume burn-in applications as well as high performance requirements at elevated temperatures and humidity conditions.

The housing is made from Liquid Crystal Polymer (LCP), which has a high insulation resistance and is rated for use up to 200°C. Contacts are available in beryllium copper (150°C). Standard contact plating is nickel boron with other platings available upon request.

A unique metal locking frame allows for very low insertion force during package insertion and high contact normal force during burn-in. The design provides positive ejection of chip carriers after burn-in, thus eliminating the need for auxiliary extraction methods such as air suction or extraction pins. It also facilitates both automatic loading and unloading of chip carriers, and improves heat exchange.

The design of the assembly permits easy access for probing for "shorts" and "opens", and allows individual replacement of damaged contacts by removal of the locking frame and housing. The housing's contact cavity insures positive alignment when reinstalled together with the locking frame.

AMP INCORPORATED, HARRISBURG, PA 17105 • PHONE: 717-564-0100 TWX: 510-657-4110

Burn-In Sockets for PLCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

LIF-Type Low Profile Sockets

Performance Characteristics

Termination Resistance (Dry circuit, low level):
30 milliohms max. initial
$\triangle R$ = 20 milliohms max.

Insulation Resistance:
10,000 megohms min. initial

Capacitance:
1 picofarad max.

Insertion Life:
5,000 cycles min. with nickel boron plating

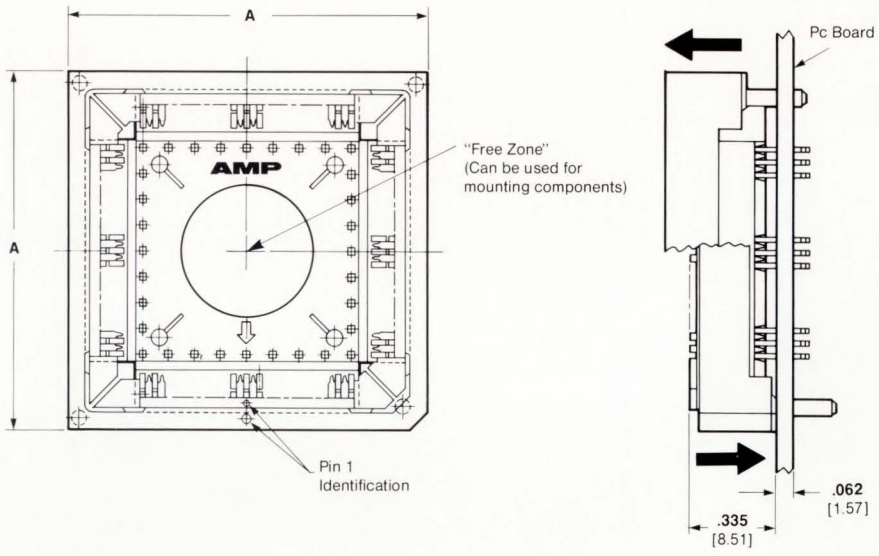
Materials

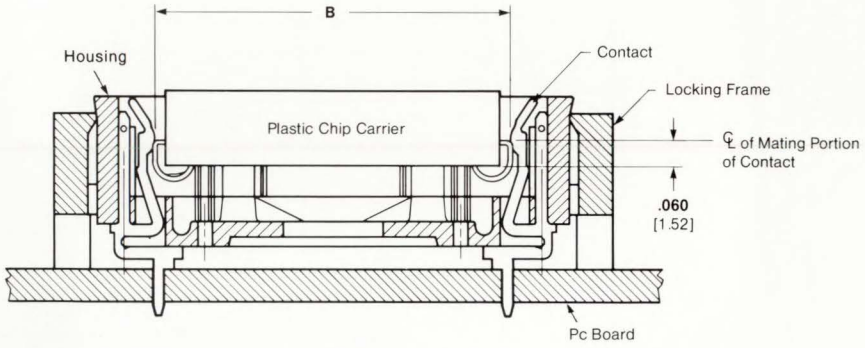
Housing:
Liquid Crystal Polymer (Poly-Benzoate-Naphthoate), UL94V-0 rating 200°C continuous

Locking Frame:
Copper iron alloy, electroless nickel plating

Contacts:
Beryllium copper (150°C)

Standard Contact Plating:
Nickel boron (others available upon request)





Cross Section View

No. of Positions	Dimensions		Contact Material—.020 [0.51] Thick[1]
	A	B	Beryllium Copper 150°C
20	**.795** 19.94	**.395/.385** 10.03/9.78	3-821682-3
28	**.885** 22.48	**.495/.485** 12.57/12.32	3-821682-0
44	**1.085** 27.56	**.695/.685** 17.65/17.40	2-821682-4
52	**1.185** 30.1	**.795/.785** 20.19/19.94	1-821682-8
68	**1.385** 35.18	**.995/.985** 25.27/25.02	821682-6

[1]Standard contact plating is nickel boron.
Other platings can be made available upon request.

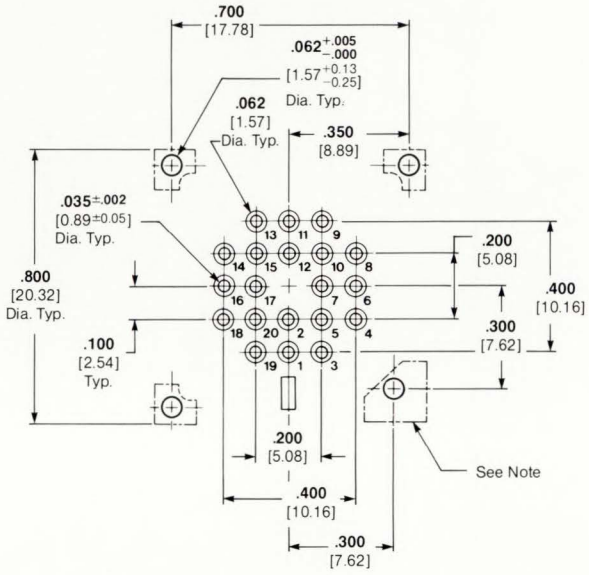
Burn-In Sockets for PLCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

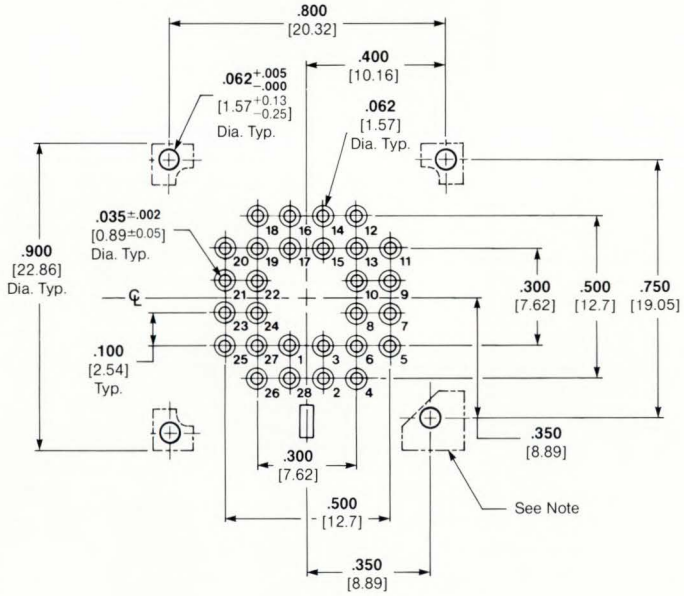
LIF-Type Low Profile Sockets

Recommended Pc Board Hole Patterns (Top View)

20 Positions



28 Positions



Note: Exposed traces are not permitted in these areas (4 places).

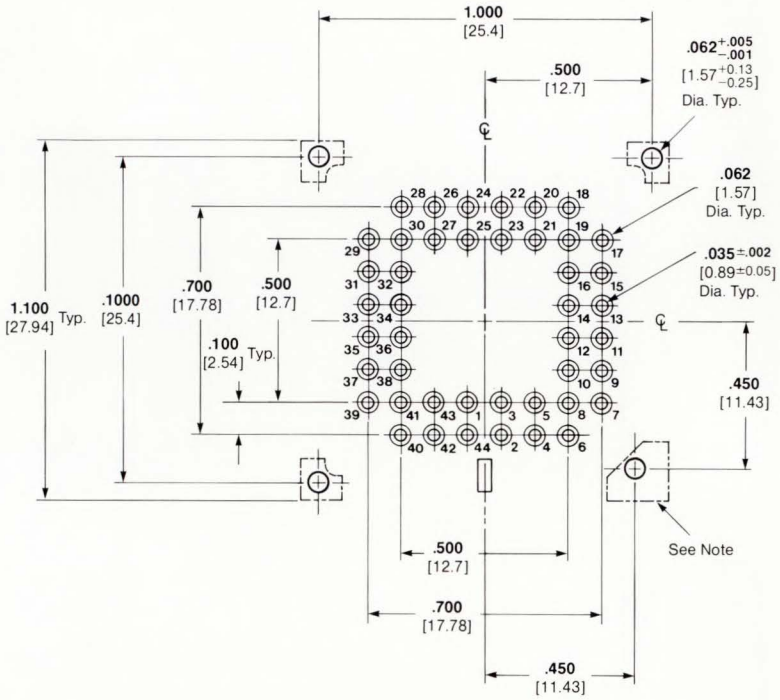
Burn-In Sockets for PLCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

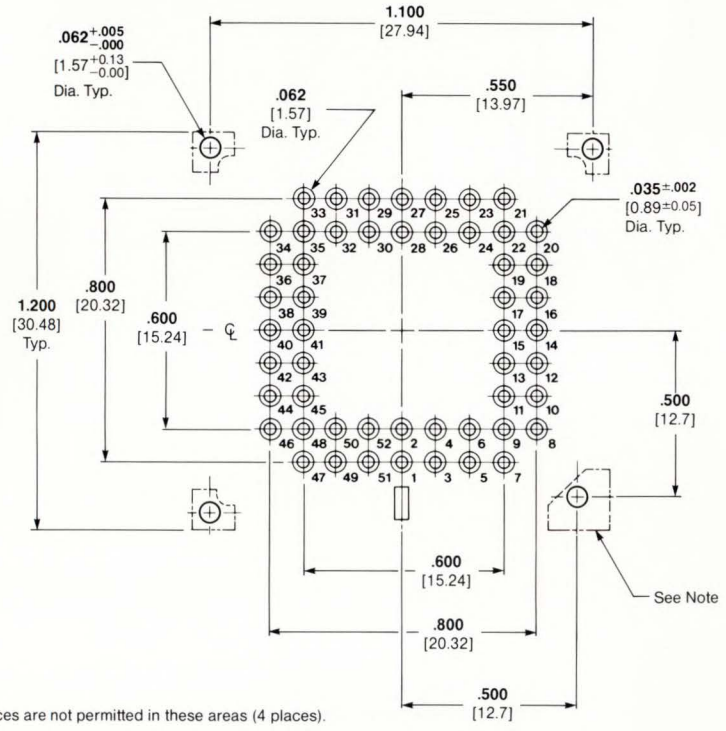
LIF-Type Low Profile Sockets

Recommended Pc Board Hole Patterns (Top View)

44 Positions



52 Positions



Note: Exposed traces are not permitted in these areas (4 places).

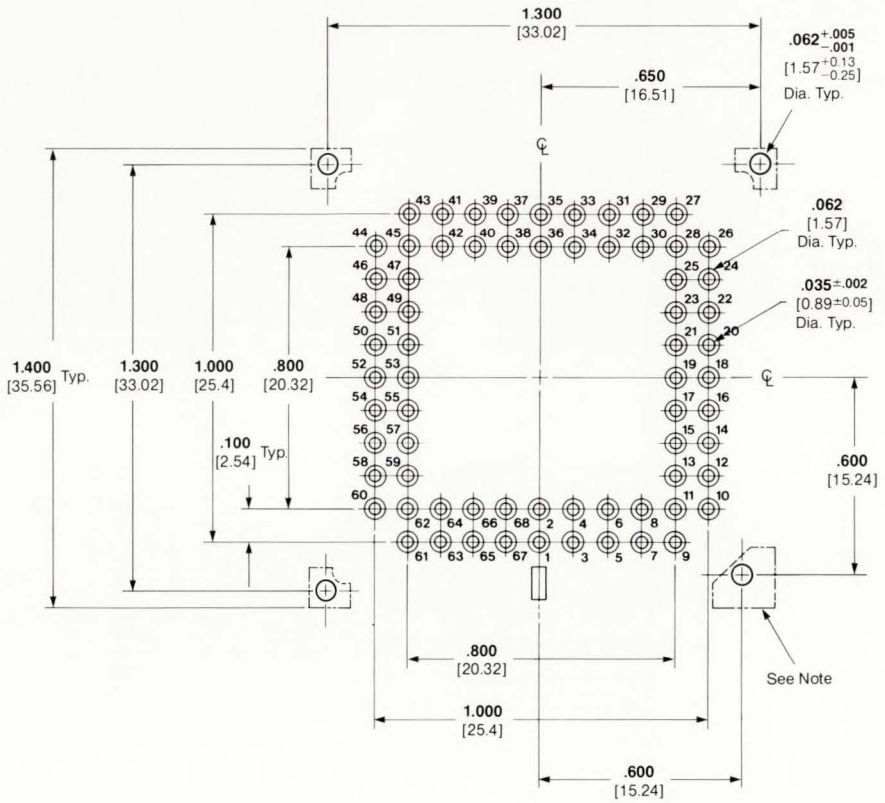
Burn-In Sockets for PLCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

LIF-Type Low Profile Sockets

68 Positions

Recommended Pc Board Hole Patterns (Top View)



Note: Exposed traces are not permitted in these areas (4 places).

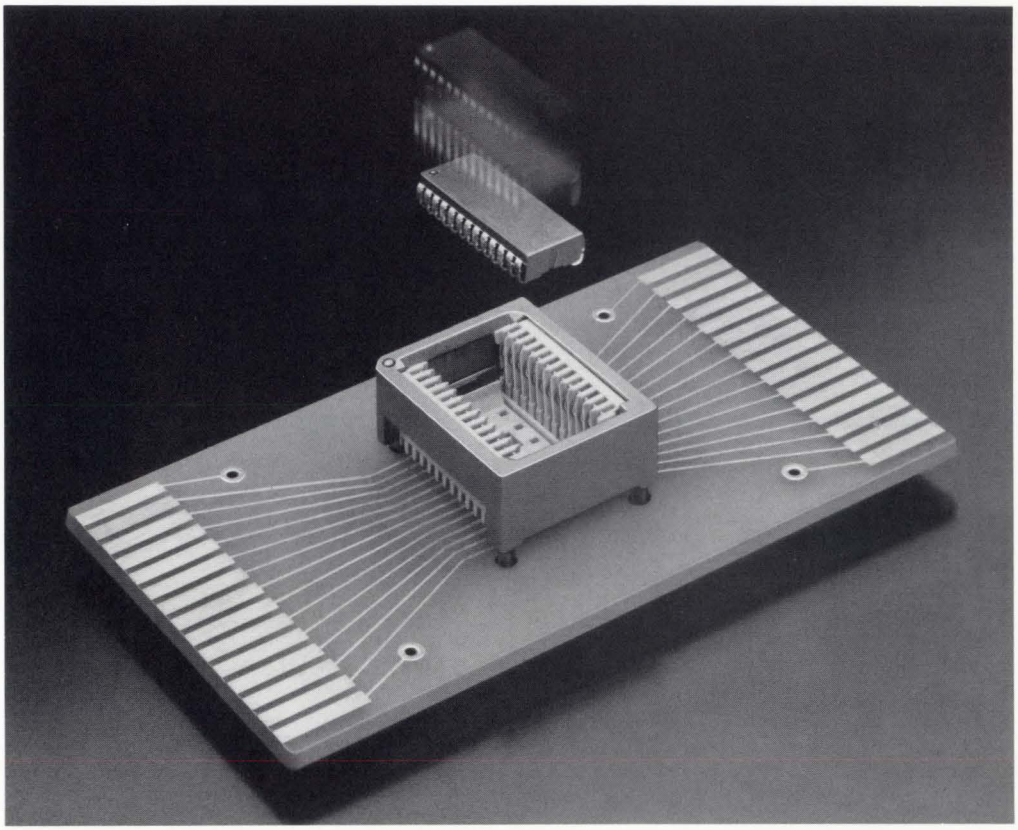
Burn-In Sockets for PLCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Socket for SO-J Packages

Features

- Accepts JEDEC plastic chip carriers on .050 centerlines
- LCP (Liquid Crystal Polymer) housing for 200°C burn-in
- LIF-style locking frame allows low insertion force, positive ejection, facilitates manual and auto-loading/unloading and improves heat exchange
- 5000 cycle minimum insertion life
- Repairable contacts
- "Live bug" insertion of device
- Contacts available in beryllium copper (150°C)
- Standard plating is nickel boron—others available
- Low profile of .335 [8.51] above pc board
- Optional heat-stake post secures connector to pc board during soldering, and acts as additional polarizing feature
- Automatic contact wipe design with minimum deformation of "J" lead
- Designator on metal locking frame identifies Pin No. 1
- Easy access probing for "opens" or "shorts" with .015 [0.30] diameter probes



This member of AMP's family of LIF Burn-In Test Sockets is designed specifically to accommodate the SO-J package. It is currently produced in a 26-position solder tail socket, however other sizes can be made available by contacting AMP Incorporated for details.

Like other AMP Burn-In Sockets, the SO-J is designed for superior performance under prolonged and elevated temperature and humidity conditions. The housing material is Liquid Crystal Polymer (LCP) and is rated for continuous use up to 200°C. For more pertinent information on electrical and mechanical characteristics, see page 93.

The locking frame allows low insertion forces during package insertion and high normal forces during burn-in because of its unique camming action. It also provides positive ejection of the device after burn-in thus eliminating the need for auxiliary extraction methods, such as air suction or extraction pins. The metal locking frame also improves heat exchange.

The socket/contact design permits easy contact repairability. The metal locking frame and housing can be removed and a replacement contact installed into the housing. The housing contact cavity insures positive alignment when reinstalled together with the locking frame. Consequently, the cost of replacing an entire socket assembly is avoided.

The socket assembly footprint meets the JEDEC standards. The unique design provides contact wipe during "live bug" insertion of the device, and insures high normal contact force sufficient to establish an electrical/mechanical interface with minimum deformation of the "J" leads.

As with all AMP Burn-In Sockets, the SO-J LIF Socket presents, in one package, a combination of design features ideally suited to burn-in applications.

AMP's SO-J sockets are designed to make effective and economical use of available pc board area. For additional information concerning your particular design requirements, please consult AMP Incorporated.

Burn-In Sockets for PLCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Socket for SO-J Packages

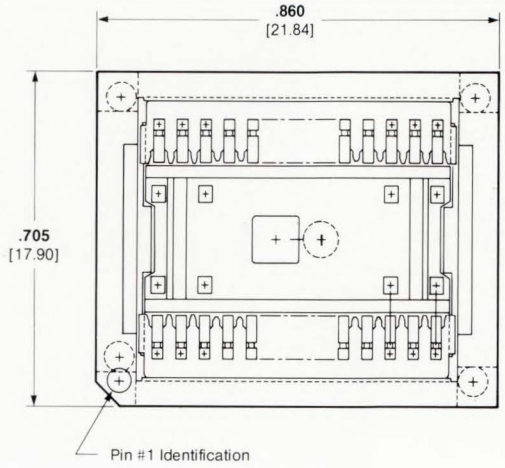
Materials and Finish:

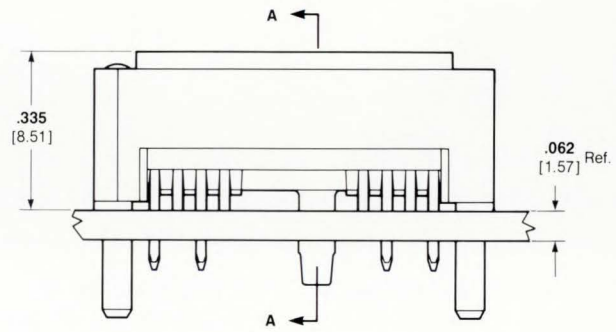
Contacts—Beryllium copper (150°C)

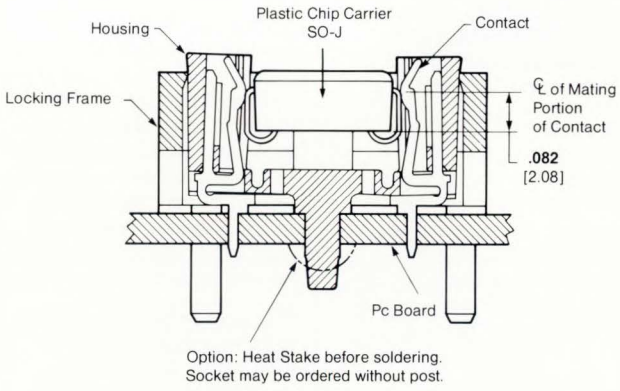
Standard Contact Plating—Nickel boron (others available upon request).

Housing—Liquid Crystal Polymer (Poly-Benzoate Naphthoate) UL 94V-0 Rating 200°C continuous

Locking Frame—Copper iron alloy, electroless nickel plating

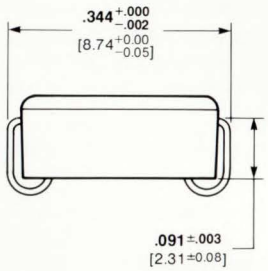






Cross Section View A-A

Plastic Chip Carrier SO-J



26 Position Socket

Contact Material .020 [0.51]	Part Numbers	
	With Heat-Stake Post	Without Heat-Stake Post
Beryllium Copper	821710-2	2-821710-6

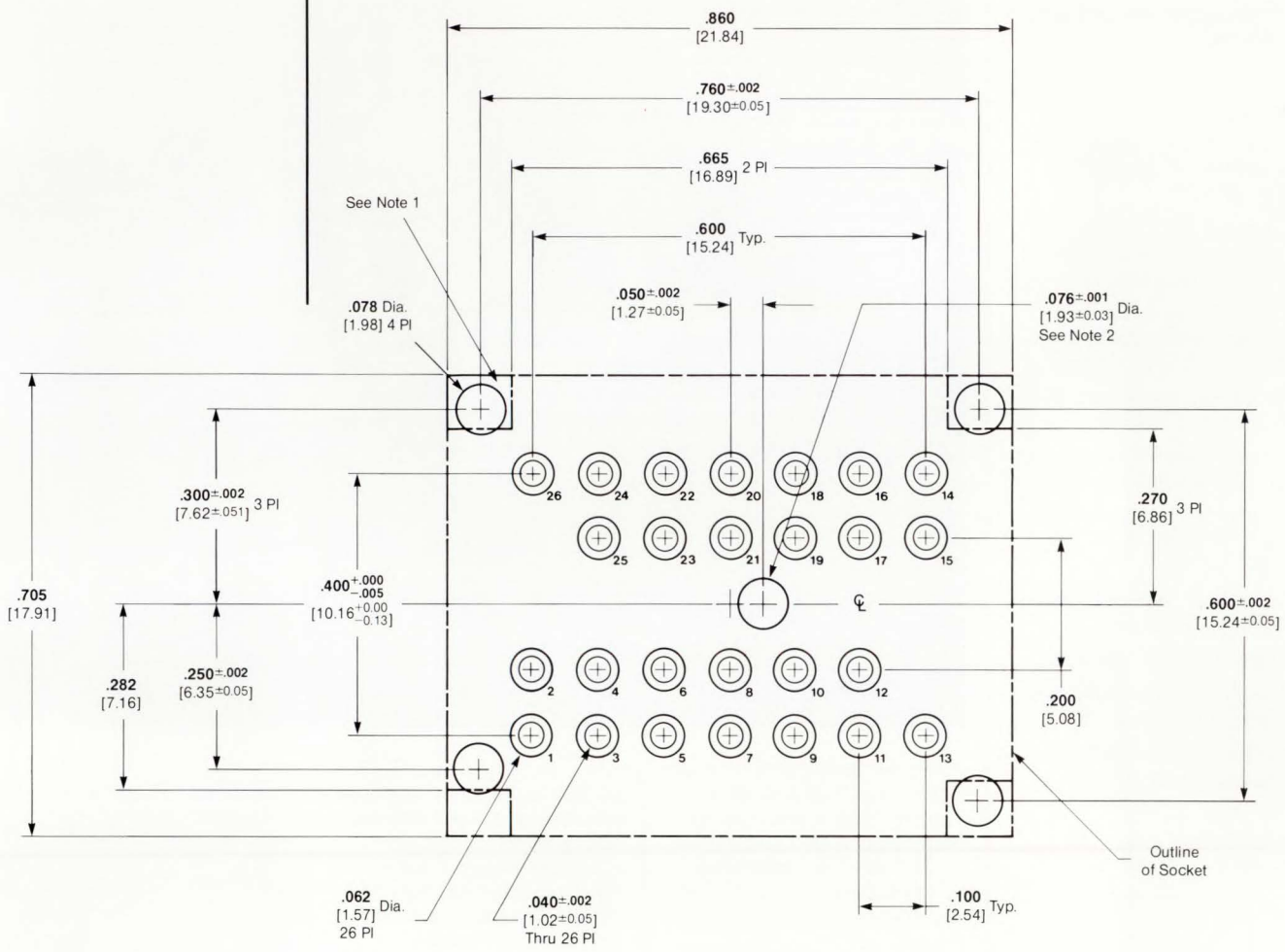
Note: Distance between contacts in free position is .340 [8.64].

Burn-In Sockets for PLCC Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Sockets for SO-J Packages

PC Board Pattern
26 Position



Notes:
1. Location of locking frame stand-offs.
2. Hole not needed when ordering socket without post.

Performance Characteristics

Termination Resistance (Dry Circuit, low level):
30 milliohms maximum initial R=20 milliohms maximum.

Insulation Resistance:
10,000 megohms minimum, initial.

Capacitance:
1 picofarad maximum

Insertion Life:
5000 cycles minimum with nickel boron plating

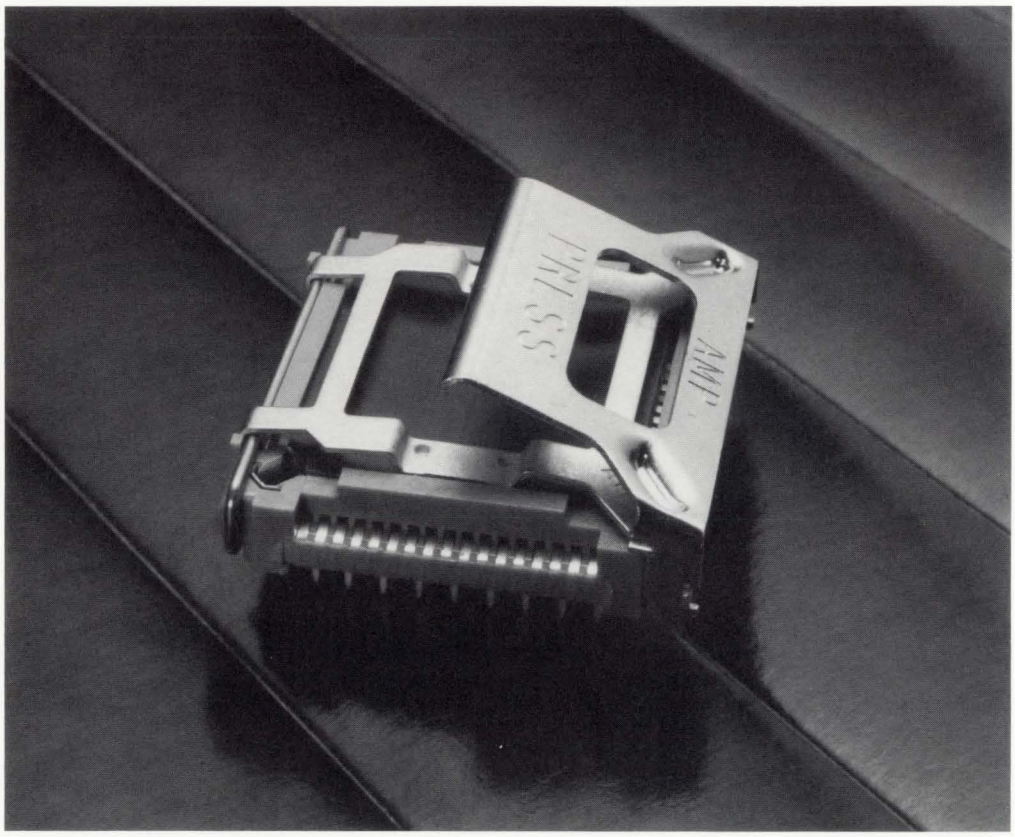
Burn-In Sockets for LCCC Packages

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Low Height Chip Carrier Sockets
(See pages 49 through 53 for specifications and part numbers.)

Features

- 150°C temperature rating —suitable for burn-in applications
- Accepts JEDEC Type A, Type B and Type D leadless ceramic substrates
- Overall height above pc board with substrate installed—.512 [13] max.
- Substrate registered by three corner notches
- Contact solder tails on .100 [2.54] square grid
- Solder tail lengths available in .110 [2.79] or .140 [3.56]
- Connector and substrate polarizing features
- Duplex plated contacts
- Easy access probing with substrate installed
- Cover attached with no tools and removed with press-to-release tab
- 68-position socket is emulator compatible



AMP Low Height Chip Carrier Sockets accept the JEDEC Type A, Type B and Type D leadless ceramic substrates and contain important features required in today's high density electronic systems.

These dependable sockets are available in several solder tail versions and require only a minimum of installation height, with the substrate installed. Socket design permits mounting printed circuit boards on .600 [15.24] centers.

The snap-on cover exposes maximum substrate area to accept type B ceramic substrates. The cover is easily installed and removed with no tools needed for installation and for removal.

The substrate is registered in the connector by means of three inward molded projections with a thruster clip contacting the one beveled corner. The socket is registered to the pc board by means of a molded polarizing post in one corner.

The Low Height Chip Carrier Socket is designed to make effective use of existing pc board area for high pin count packages. Contact AMP Incorporated for additional information concerning particular design requirements.

Special Hinged Low Height Chip Carrier Socket—68 Positions

Part No. 55532-1

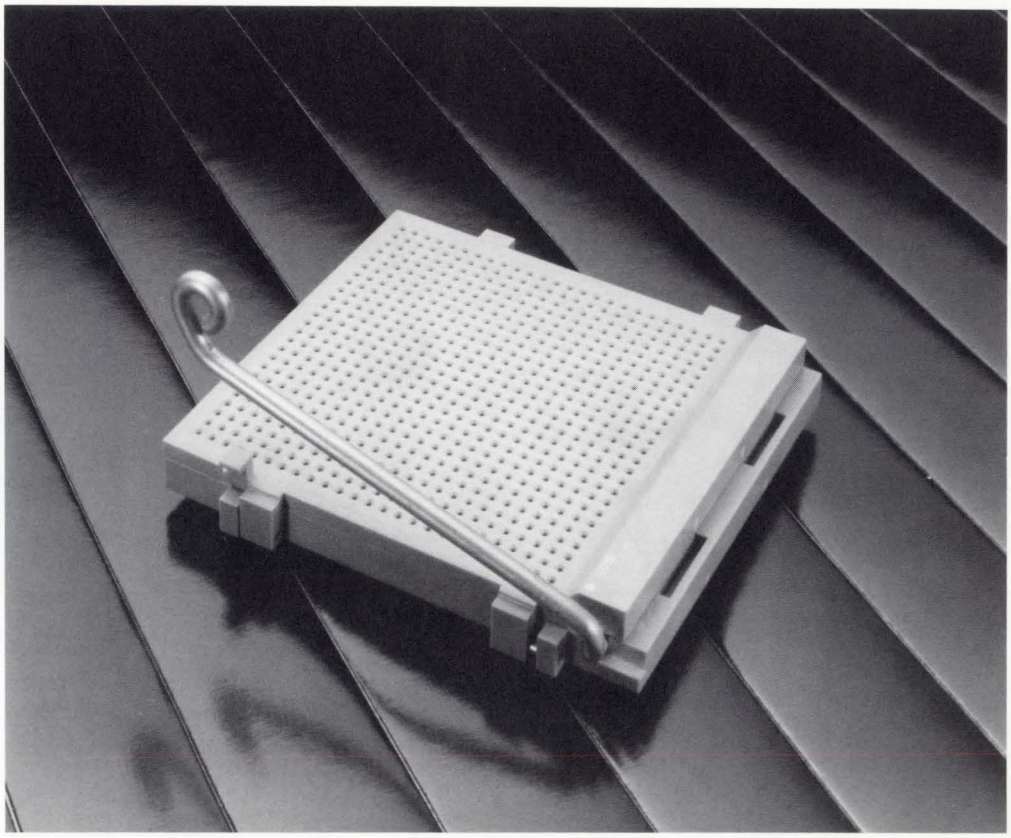
Burn-In Sockets for PGA Packages

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Zero Insertion Force (ZIF) Sockets

Features

- Operated by integral cam
- Contact wiping occurs during closing sequence
- Materials suitable for 150°C max.
- Two gold-plated surfaces contact the substrate pins
- Allows .500 [12.7] spacing between printed circuit boards
- Solder leg lengths accommodate 1/16, 3/32, 1/8 [1.59, 2.38, 3.18] thick pc boards



AMP Zero Insertion Force (ZIF) Sockets for Pin Grid Array Substrates make it easy to install and remove high-pin-count pin grid array substrate packages.

The Burn-In ZIF Socket features a free-moving cam. In the open position, this cam allows the substrate pins to be inserted and extracted without force. When the cam is in the closed position, the normally closed contacts maintain a constant pressure on the substrate pins.

Housings are made from glass-filled polyethersulfone material and will withstand burn-in environments up to 150°C.

Performance Characteristics

Contact Resistance (Initial):
15 milliohms max.

Contact Resistance (Final):
25 milliohms max.

Capacitance (Adjacent Contact):
1 picofarad max.

Inductance (Mutual):
2 nh @ 1 MHz typ.

Insulation Resistance:
5,000 megohms min.

Dielectric Withstanding Voltage:
1,000 volts

Contact Normal Forces:
60 grams typ.

Pin Retention Force[1]:
15 grams min.

Handle Actuation Torque (In Oz./100 Contacts (Typ.):
Closing Cycle—16
Opening Cycle—12

Minimum Operating Cycles:
1000

[1] Value obtained using an .016 [0.41] diameter steel pin.

Test Conditions

Heat Age:
33 days @ 105°C

Thermal Shock:
MIL-STD-1344, Method 1003, Cond. A, −65°C to +105°C

Temperature/Humidity Cycling:
MIL-STD-1344, Method 1002, Type II

Vibration:
MIL-STD-1344, Method 2005, Cond. IV, 20 G's max.

Shock:
MIL-STD-1344, Method 2004, Cond. C, 100 G's @ 8 milliseconds

Note: Contact resistance will not exceed the final value after testing at these specified conditions.

Materials

Housing:
Glass-filled polyethersulfone

Contacts:
Beryllium copper

Plating:
Contacts—Gold-over-nickel
Solder Leg—Tin/lead

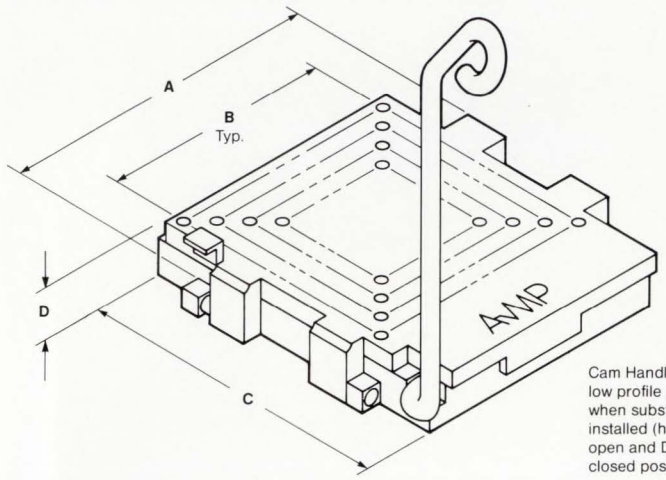
Actuator Handle:
Stainless steel

Assembly Pins:
Stainless steel

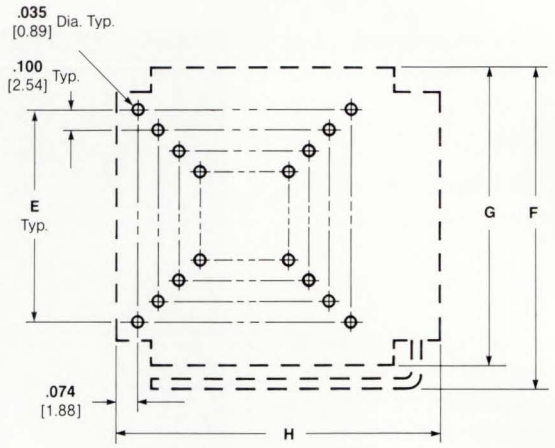
Burn-In Sockets for PGA Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Chart contains dimensions in inches over millimetres.

Zero Insertion Force (ZIF) Sockets (Continued)



Cam Handle locks in low profile position when substrate is installed (handle UP for open and DOWN for closed positions)



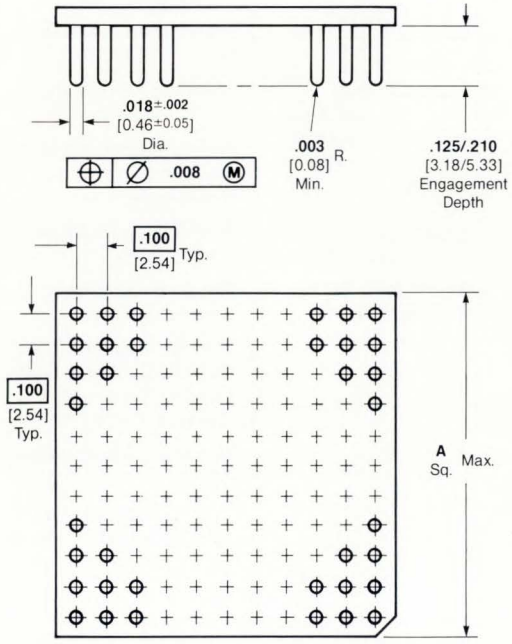
Suggested Printed Circuit Board Layout

Grid Size	No. of Pos.	Dimensions A	B	C	D	E	F	G	H	Solder Tail Length	Part Number
10x10	64 Thru 100	**1.300** 33.02	**.900** 22.86	**1.300** 33.02	**.290** 7.37	**.900** 22.86	**1.325** 33.66	**1.313** 33.35	**1.356** 34.44	See page 108 for grid patterns, solder tail length and part numbers.	
11x11	68 Thru 121	**1.400** 35.56	**1.000** 25.4	**1.425** 36.2	**.290** 7.37	**1.000** 25.4	**1.425** 36.2	**1.413** 35.89	**1.496** 37.1	See pages 109 & 110 for grid patterns, solder tail length and part numbers.	
12x12	144	**1.500** 38.1	**1.100** 27.94	**1.525** 38.74	**.290** 7.37	**1.100** 27.94	**1.525** 38.74	**1.513** 38.43	**1.596** 40.54	See page 111 for grid patterns, solder tail length and part numbers.	
13x13	84 Thru 169	**1.600** 40.64	**1.200** 30.48	**1.625** 41.25	**.290** 7.37	**1.200** 30.48	**1.625** 41.28	**1.613** 40.97	**1.696** 43.08	See pages 111-114 for grid patterns, solder tail length and part numbers.	
14x14	95 Thru 196	**1.700** 43.18	**1.300** 33.02	**1.725** 43.82	**.290** 7.37	**1.300** 33.02	**1.725** 43.82	**1.713** 43.51	**1.796** 45.62	See pages 115 & 116 for grid patterns, solder tail length and part numbers.	
15x15	144 Thru 225	**1.840** 46.74	**1.400** 35.56	**1.928** 48.97	**.336** 8.53	**1.400** 38.1	**1.884** 47.85	**1.853** 47.07	**1.945** 49.40	See pages 116 & 117 for grid patterns, solder tail length and part numbers.	
16x16	155 Thru 256	**1.940** 49.28	**1.500** 38.1	**2.028** 51.51	**.336** 8.53	**1.500** 38.1	**1.983** 50.37	**1.953** 49.61	**2.045** 51.94	See page 118 for grid patterns, solder tail length and part numbers.	
18x18	223 and 324	**2.140** 54.36	**1.700** 43.18	**2.248** 57.1	**.336** 8.53	**1.700** 43.18	**2.183** 55.45	**2.153** 54.69	**2.280** 57.91	See page 119 for grid patterns, solder tail length and part numbers.	
25x25	625	**3.000** 76.2	**2.400** 60.96	**3.170** 80.52	**.386** 9.80	**2.400** 60.96	**3.173** 80.59	**3.013** 79.53	**3.335** 84.71	See page 120 for grid pattern, solder tail length and part numbers.	

Substrate Design Requirements

- Polarization is to be accomplished by eliminating or adding pin(s)
- Tips of pins must be free of burrs
- Engagement depth to be .125 [3.18] min. to .210 [5.33] max. (without substrate standoffs[1]
- Pins to be gold plated

[1] Housing designs that clear substrate standoffs can be made available. Contact AMP Incorporated for information.



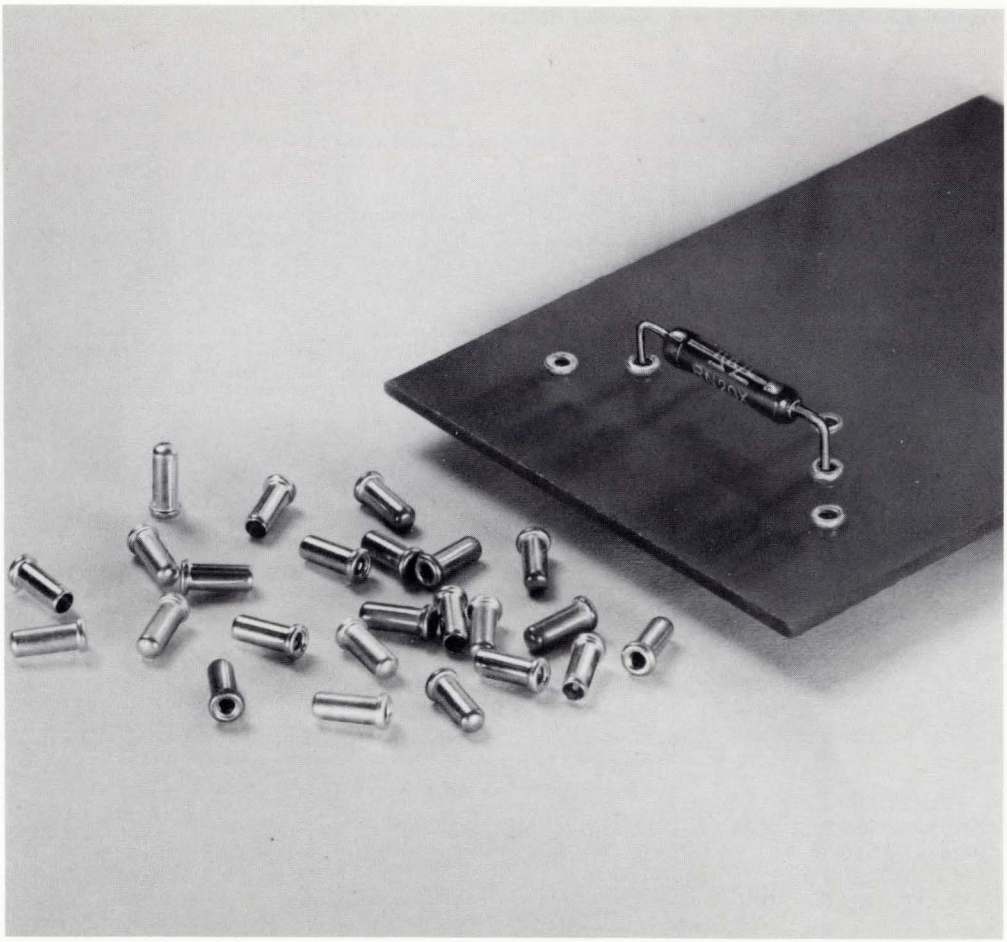
Grid Size	A
10x10	**1.080** 27.43
11x11	**1.180** 29.98
12x12	**1.280** 32.51
13x13	**1.380** 35.05
14x14	**1.480** 37.59
15x15	**1.620** 41.15
16x16	**1.720** 43.69
18x18	**1.920** 48.77
25x25	**2.620** 66.55

Reusable Receptacles for Component Testing

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Features

- Variety of test receptacles is available
- Receptacles help prevent heat damage to pc boards and components during burn-in and bread-boarding evaluation
- Receptacles accept component leads in ranges .018-.040 [0.46-1.02]; .036-.051 [0.91-1.3]; and .036-.054 [0.91-1.37]
- Receptacles eliminate need for soldering components directly to the board
- Board components can be inserted and extracted at least 100 times
- Application tooling provides high speed insertion (see page 98)



AMP Reusable Receptacles for testing and mounting printed circuit board components are available in standard open and closed bottom versions, an economy closed bottom version and a stand-off version. These receptacles extend the life of pc boards as well as components and protect them from damage during burn-in and bread-boarding. The receptacles eliminate individual soldering of each component lead into the circuit layout. Testing is accomplished by hand insertion of component leads.

Each receptacle consists of a drawn copper cup, flared at one end to facilitate entry of a component lead. The flared lip retains the receptacle at the proper position in the pc board. A beryllium copper spring, plated with tin or gold over nickel, holds the component lead in position and exerts uniform pressure to maintain conductivity.

The standard receptacles, both open and closed bottom types, feature gold-plated cups. The cups for the economy and stand-off versions are tin-lead plated. Spacers are tin-lead plated brass.

A hole diameter of .089 [2.26] is required for mounting. Once installed, these receptacles accept component leads from .018-.054 [0.46-1.37] without deterioration of performance over an extended period.

Retention values are maintained best when a receptacle is used for repeated acceptance of component leads of the same size as those previously inserted or larger.

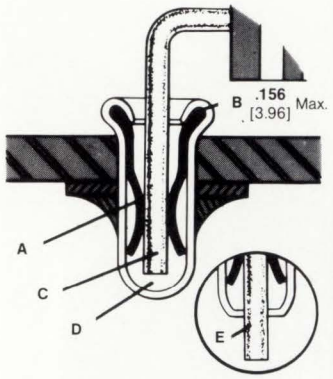
Among the applications for which these receptacles are used are: (1) for prototype work in arranging components on pc boards; (2) as a quick and reliable socket for testing transistors, resistors, diodes, capacitors and other components at the prototype stage; (3) when selecting among various components with different electrical values; and (4) as a module connector when receptacles are inserted in a pattern to accept the leads of the module, providing plug-and-remove mounting for modular circuits.

Reusable Receptacles for Component Testing
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Charts contain dimensions in inches over millimetres.

Typical Application



A. Receptacle spring member assures true readings by maintaining uniform pressure to create maximum conductivity and hold component leads in place.

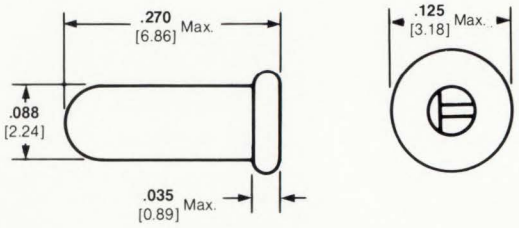
B. Flared lip acts as a stop for the socket and creates a bellmouth entry for easy insertion of component leads.

C. Receptacles firmly retain component leads in three ranges: .018-.040 [0.46-1.02]; .036-.051 [0.19-1.3]; and .036-.054 [0.91-1.37].

D. Drawn copper cup in all sizes and styles is inserted into .089 [2.26] mounting hole.

E. Open-end styles are available for lead feed-through.

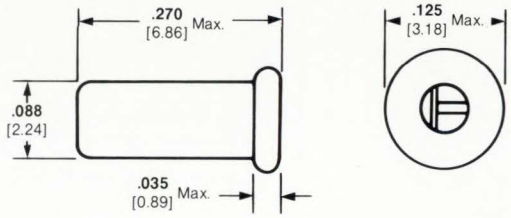
Closed Bottom



Accepts Lead Size	Finish		Part Number
	Cup	Spring	
.018-.040 0.46-1.02	Gold[1]	Gold[1]	380598-1
	Tin-Lead	Gold[1]	380598-2
	Tin-Lead	Tin-Lead	380598-3
	Tin-Lead	Gold[2]	380598-4
	Gold[2]	Gold[2]	380598-5
.036-.051 0.91-1.3	Tin-Lead	Tin-Lead	1-380758-0
	Tin-Lead	Gold[1]	1-380758-1
.036-.054 0.91-1.37	Tin-Lead	Tin-Lead	640039-1

1.000030 [0.00076] gold plating over nickel plating.
2.000050 [0.00127] gold plating over nickel plating.

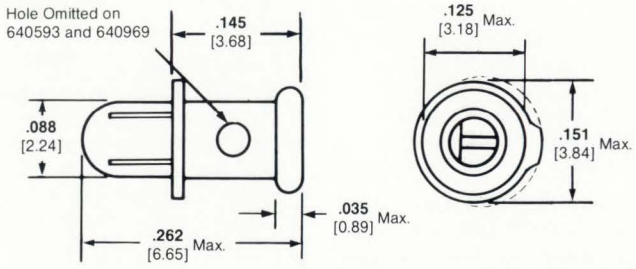
Open Bottom



Accepts Lead Size	Finish		Part Number
	Cup	Spring	
.018-.040 0.46-1.02	Gold[1]	Gold[1]	380635-1
	Tin-Lead	Gold[1]	380635-2
	Gold[2]	Gold[2]	380635-3
	Tin-Lead	Gold[2]	380635-4
	Tin-Lead	Tin-Lead	380635-5
.036-.054 0.91-1.37	Tin-Lead	Tin-Lead	640206-1
	Tin-Lead	Gold[1]	640206-2

1.000030 [0.00076] gold plating over nickel plating.
2.000050 [0.00127] gold plating over nickel plating.

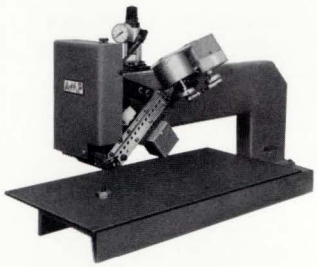
Stand-Off



Accepts Lead Size	Finish		Part Number
	Cup	Spring	
.018-.040 0.46-1.02	Tin-Lead	Gold[1]	1-380737-0
	Tin-Lead	Tin-Lead	640593-1
	Tin-Lead	Gold[2]	640959-1

1.000030 [0.00076] gold plating over nickel plating.
2.000050 [0.00127] gold plating over nickel plating.

Application Tooling



Insertion Machine

This bench mounted semi-automatic machine loads loose piece receptacles into virtually any pattern of predrilled holes at rates up to 3000 per hour.

Its basic design offers ease of operation, eliminates extensive operator training, reduces the possibility of human error and assures long, trouble-free service. It accommodates board thicknesses of .062-.125 [1.57-3.18]. Adjusting the machine for a different board thickness requires one simple adjustment and is accomplished with a minimum of downtime.

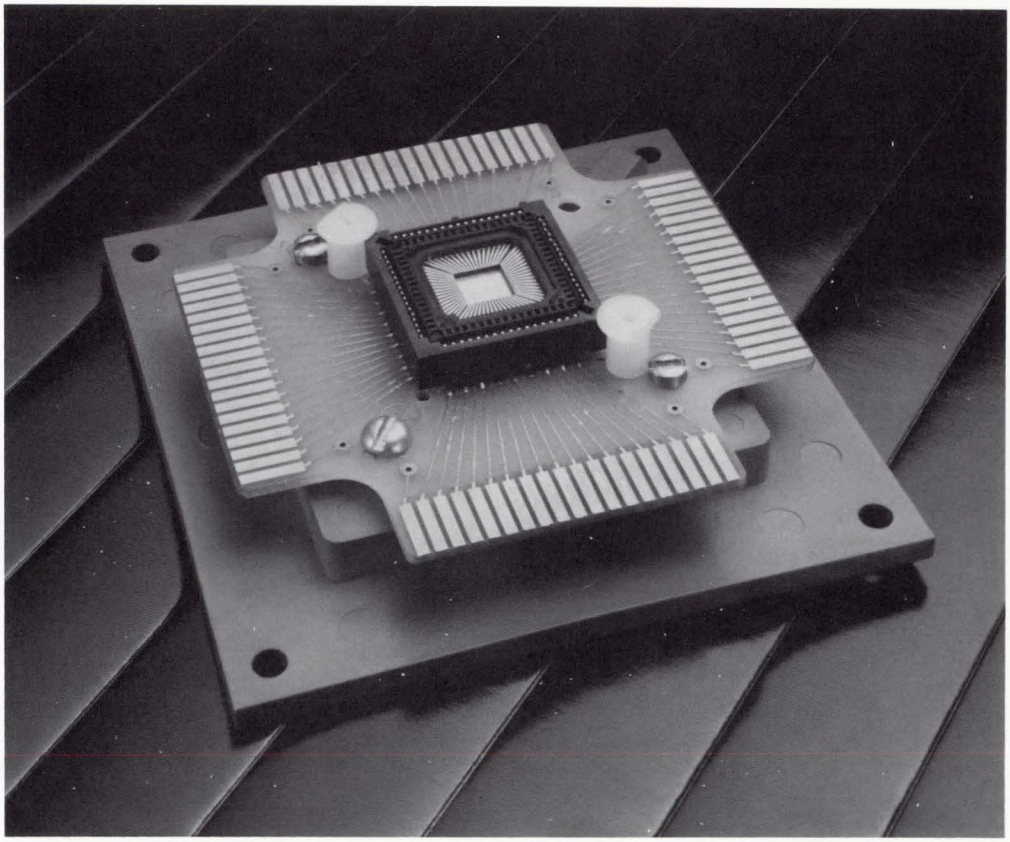
Test Socket Assemblies for Square Chip Carrier Packages

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Leaded Gold-Gold System Sockets[1] (Plastic or Ceramic)

Features

- A test socket for plastic or ceramic chip carriers with gold plated J-leads on .050 [1.27] centerlines in conformance with JEDEC leaded Type A format[2]
- Available in 20, 28, 44, 52, 68 and 84 positions
- Easy manual loading of chip carrier
- Plunger/ejector system facilitates chip carrier removal
- Replaceable test socket
- Uses double-sided board for four-point testing
- Gold/Gold System—gold plated chip carrier leads, socket contacts and pads on printed circuit board



This assembly is designed primarily for in-house testing of Type A ceramic chip carriers with gold plated J-leads. The assembly accepts J-leads on .050 [1.27] centerlines in conformance with JEDEC format. AMP premolded packages[1] and other plastic chip carriers with J-leads are also accepted[2]. These assemblies are available in 20, 28, 44, 52, 68 and 84 positions, and are intended to be used at room temperature.

The test assembly is comprised of a receptacle gold/gold test socket connected to a double-sided printed circuit board which is attached to a polyester molded base. To facilitate easy removal of the chip carrier after testing, an ejector mechanism has been incorporated into the fixture base. The double-sided printed circuit board, with gold plated pads, permits four-point testing and fits standard AMP card edge connectors.

To make the test socket replaceable, the legs are not soldered in, but inserted into AMP Miniature Spring Sockets which are mounted into the pc board. Once the socket is in position, swivel hold-down knobs are rotated to extend over the socket's edge, locking it in place.

AMP's Test Socket Assembly for the Gold-Gold System is a compact, convenient, easy-to-use solution to in-house testing of J-leaded chip carriers.

[1] See page 105 for Premolded Plastic Chip Carriers.

[2] Range of dimensional tolerances are slightly different for plastic versus ceramic chip carriers.

Test Socket Assemblies for Square Chip Carrier Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Leaded Gold-Gold System Sockets[1]

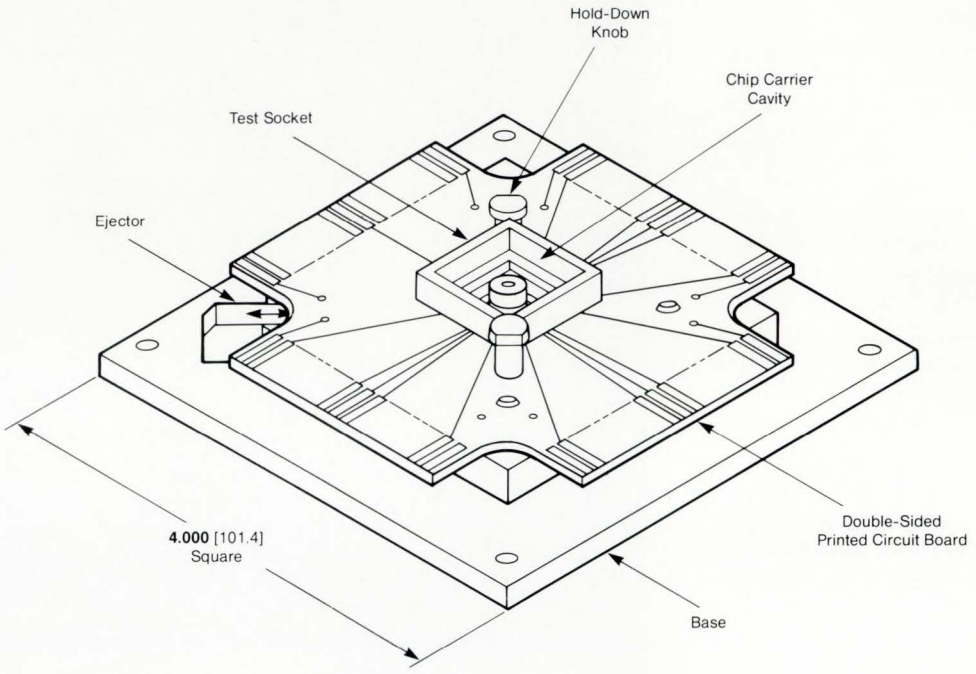
Materials and Finish:

Socket Housing—Glass-filled polyphenylene sulfide

Socket Contacts—Phosphor bronze plated with .000030 [0.00076] min. thk. gold

Printed Circuit Board—G-10 with gold plated pads

Base—Polyester molded



No. of Positions	Test Socket Assembly Part No.	Printed Circuit Board Edge Connector[2]
20	821521-5	2-583717-3
28	821521-6	583717-1
44	821521-2	583717-3
52	821521-3	583717-3
68	821521-1	3-583717-1
84	821521-4	2-583717-5

[2]Edge Connector Contact Part No. 583616-9

Note: Test socket assemblies for High Pressure Tin (HPT) Sockets (page 33) can be made available for 28, 44, 52, 68 and 84 position chip carriers. Consult AMP Incorporated for details.

[1]See page 105 for Premolded Plastic Chip Carriers.

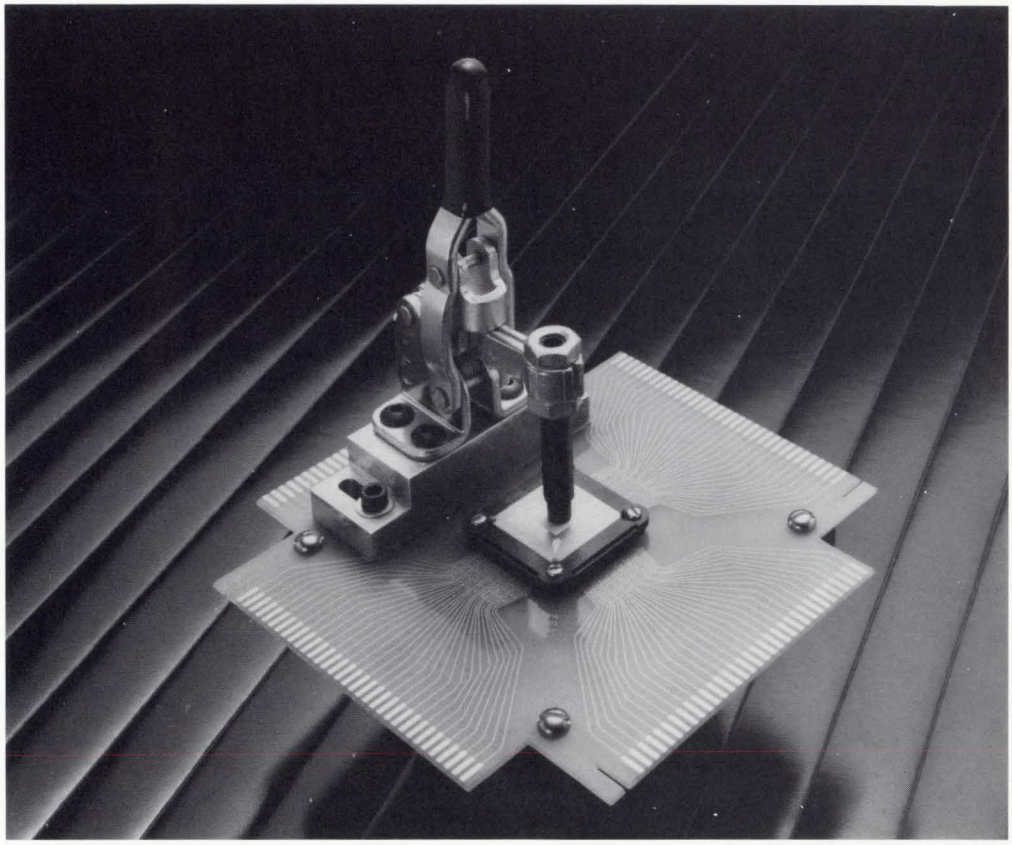
Test Socket Assemblies for Square Chip Carrier Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Leadless Ceramic Sockets

Features

- Small, simple, convenient, in-house test fixture
- Accommodates JEDEC Type A leadless ceramic chip carriers with .950 [24.13] square outside dimension
- Separate test fixtures are dedicated to a given lead/spacing configuration—68, 84, 132 and 164 positions
- Easy to use—manually operated unit provides positive ejection of tested parts
- Design tailored to take advantage of commercially available toggle clamp and Standard AMP Card Edge Connectors and AMP Universal High Speed Sockets
- Adjustable hold-down force
- Test assembly usually uses a single-sided printed circuit board, but a double-sided board can be substituted for four-point testing



This assembly accommodates JEDEC Type A leadless .950 [24.13] square ceramic chip carriers. It is designed to be a small, easy-to-use, manually operated, in-house test fixture. It is intended for use at room temperature.

The test socket assembly consists of a universal high speed test socket, a pc board, a levered clamping unit with an adjustable force steel toggle clamp, a spring socket cavity to provide ejection of the ceramic chip carrier and a polyvinyl chloride base.

The socket is soldered to the pc board, which is mounted to the base. The pc board is usually single-sided, but can be double-sided if four-point testing is desired. Also mounted to the pc board and base is the clamping unit, which is positioned so that the toggle clamp is directly over the socket cavity.

Test assemblies are available for .050 [1.27] centerline (68 position) and .025 [0.64] centerline (132 position) ceramic chip carriers. Test assemblies for .040 [1.02] centerline (84 position) and .020 (0.51) centerline (164 position) ceramic chip carriers can be made available. Contact AMP Incorporated for details.

Test Socket Assemblies for Square Chip Carrier Packages
(Continued)

Dimensioning:
Dimensions are in inches over millimetres.
Values in brackets are metric equivalents.

Leadless Ceramic Sockets

Materials and Finish:

Socket Housing—Glass-filled polyphenylene sulfide

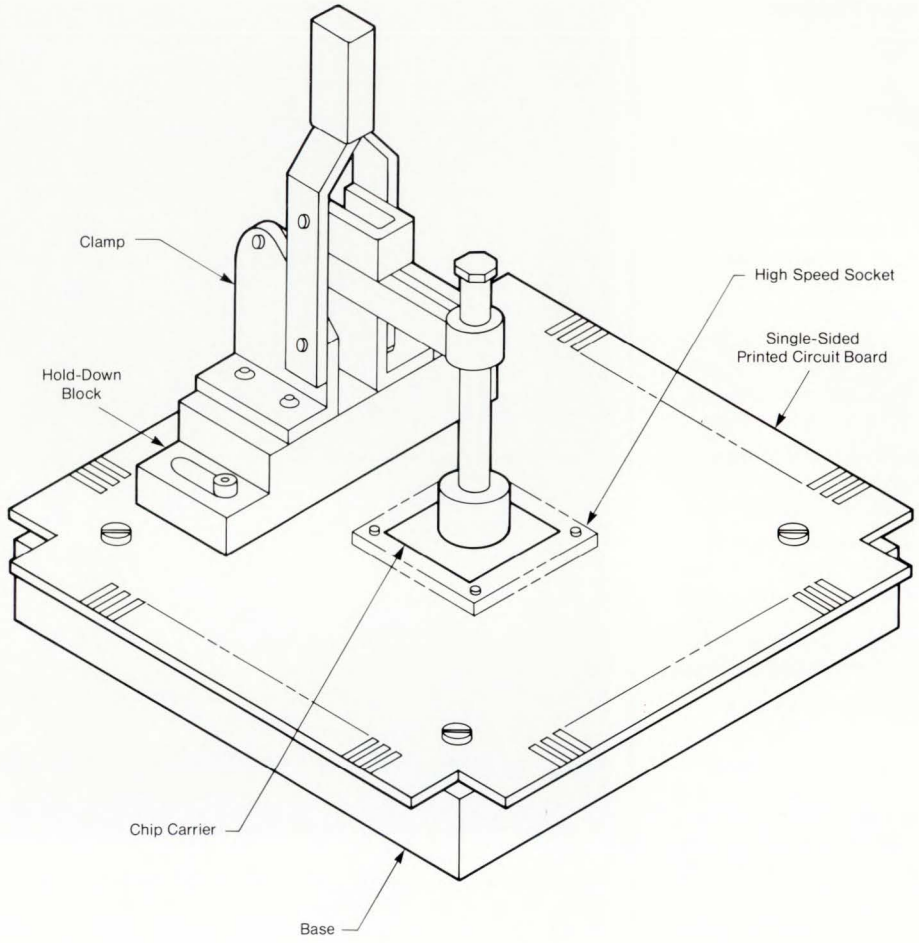
Socket Contacts—Phosphor bronze or beryllium copper plated with .000030 [0.00076] min. thk. gold

Clamp—Steel

Screws—Stainless Steel

Printed Circuit Board—G-10 with gold plated pads

Base—Polyvinyl chloride



No. of Positions	Test Socket Assembly Part No.	Printed Circuit Board Edge Connector[1]
68	821565-2	3-583717-1
132	821565-1	3-583717-6

[1]Edge Connector Contact Part No. 583616-9

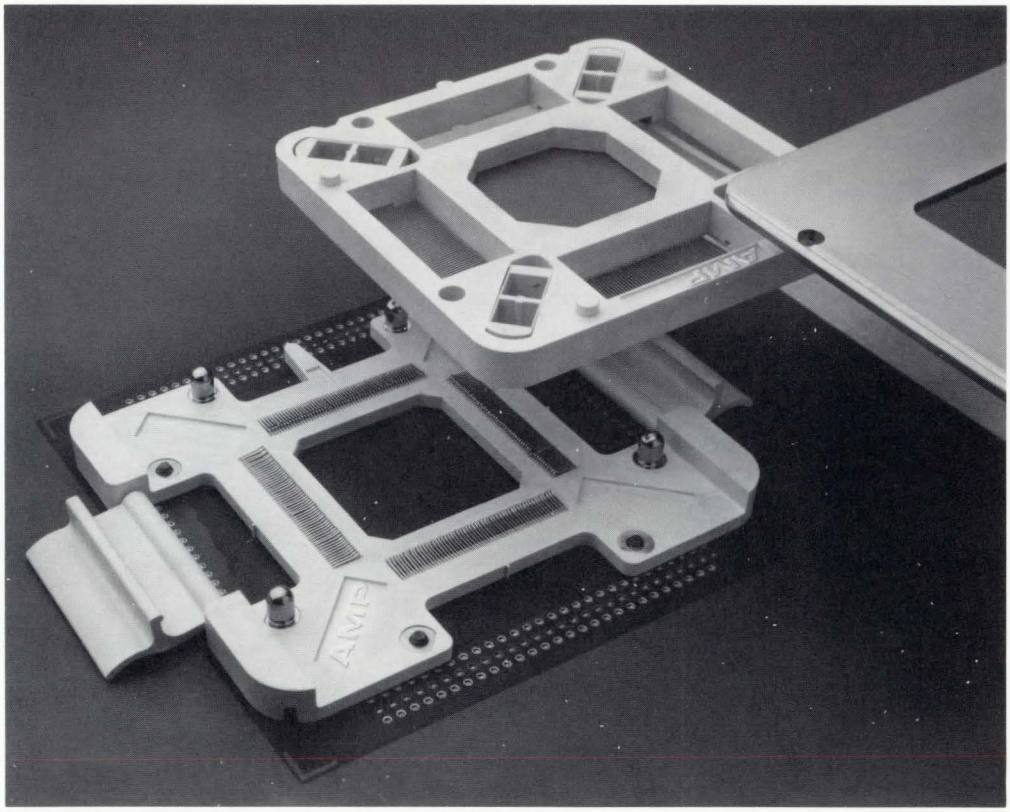
Test Socket Assemblies for Square Chip Carrier Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

High Speed Leaded Ceramic Socket with Protective Handler

Features

- Protective handler serves 3 major functions:
  1. Protects chip carrier in transport from manufacturer to customer and in subsequent operations
  2. Serves as fixturing during actual testing of circuitry
  3. Is part of fixturing for lead cutoff and forming operations
- Molded from Liquid Crystal Polymer (LCP), a plastic with high performance characteristics under elevated temperatures and humidity conditions
- Molded-in visual index and polarizing features to facilitate proper chip carrier orientation
- Four positive-locking latches secure ceramic chip carrier in socket
- Leads supported individually in separate comb-like grooves, protecting them prior to forming
- Stackable design
- Quick latch system for locking chip carrier and protective handler to the test socket assembly



The 220-Position High Speed Chip Carrier Test Device with Protective Handler will accommodate 1.500 [38.1] square ceramic chip carriers having up to 220 leads on .025 [0.64] centerlines.

Each Test Device Assembly consists of four major components:

The **top metal plate** holds the protective handler in place and enhances mechanical strength.

The **protective handler,** which encases the ceramic chip carrier, may be purchased separately or as part of the overall Test Device Assembly. It provides chip carrier protection during transportation from the manufacturers' location, in normal handling and during subsequent processing operations. This same protective handler then becomes an integral part of the fixturing during testing and lead trimming operations. It has a molded-in visual index indicating "position 1" for proper chip carrier orientation. In addition, comb-like grooves support the individual leads while corner-mounted positive locking latches hold the chip carrier securely in place.

The **socket** itself is designed primarily as a test socket to house high-speed, low inductance contacts (usually gold-over-nickel plated beryllium copper). However, the socket can also be mounted directly onto a system board.

The **bottom metal plate** is designed to stiffen the printed circuit board.

Polarizing features, in the form of metal hardware and plastic standoffs, assure correct assembly of the component layers. The assembly is locked together by two hinged clamps attached to opposite sides of the socket housing, which snap into grooves in the top metal plate.

To meet the requirements for high temperature and humidity test environments, all non-metal components of the socket assembly are molded from Liquid Crystal Polymer (LCP), known for its superior performance characteristics under such conditions.

Test Socket Assemblies for Square Chip Carrier Packages
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

High Speed Leaded Ceramic Socket with Protective Handler

Test Device Assembly[1] Part No. 821680-1

Protective Handler Part No. 821679-1

Performance Characteristics

Characteristic Impedance:
50 ohms ± 5%

Line-to-Line Resistance:
200 megohms

Capacitive Load (Max.):
.5 picofarads between adjacent contacts

Contact Resistance:
15 milliohms, 20 milliohms max.

Current Carrying:
1 ampere max.

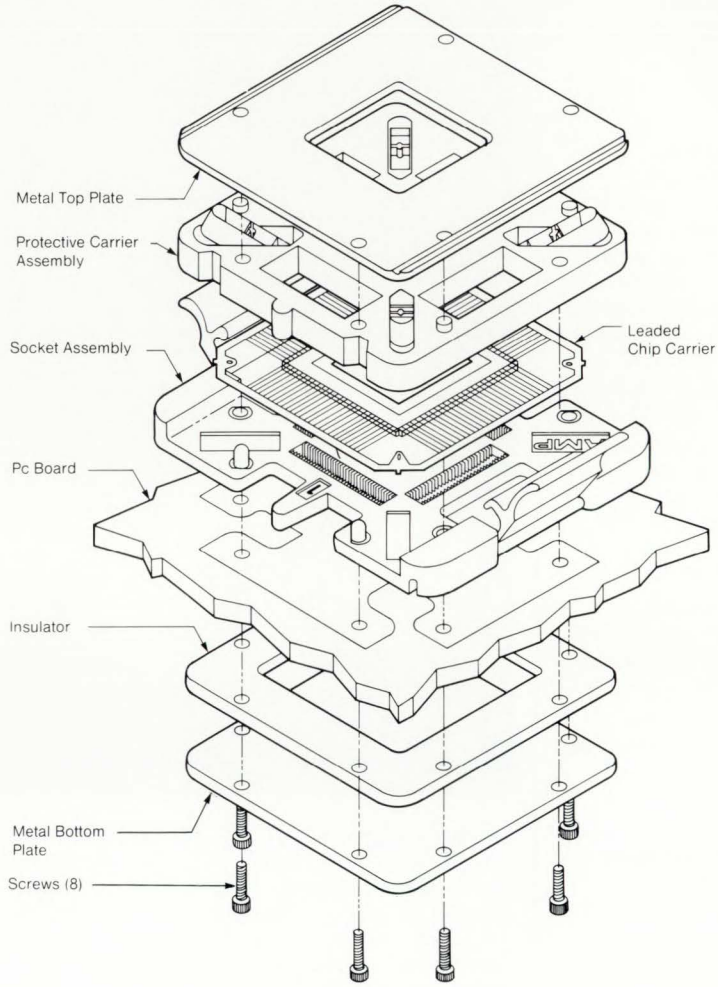
Materials and Finish:

Housing—Liquid crystal polymer (LCP)

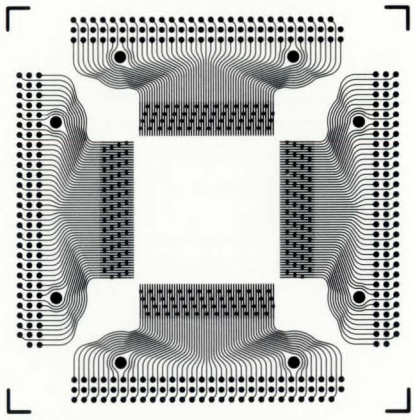
Contacts—Beryllium copper with .000050 [0.00127] gold over .000050 [0.00127] nickel plating

Top and Bottom Plates—Nickel plated steel

Guide Pins—Nickel plated brass



Suggested Printed Circuit Board Layout[2]



[1] Includes all parts shown above-right, except pc board and leaded chip carrier.

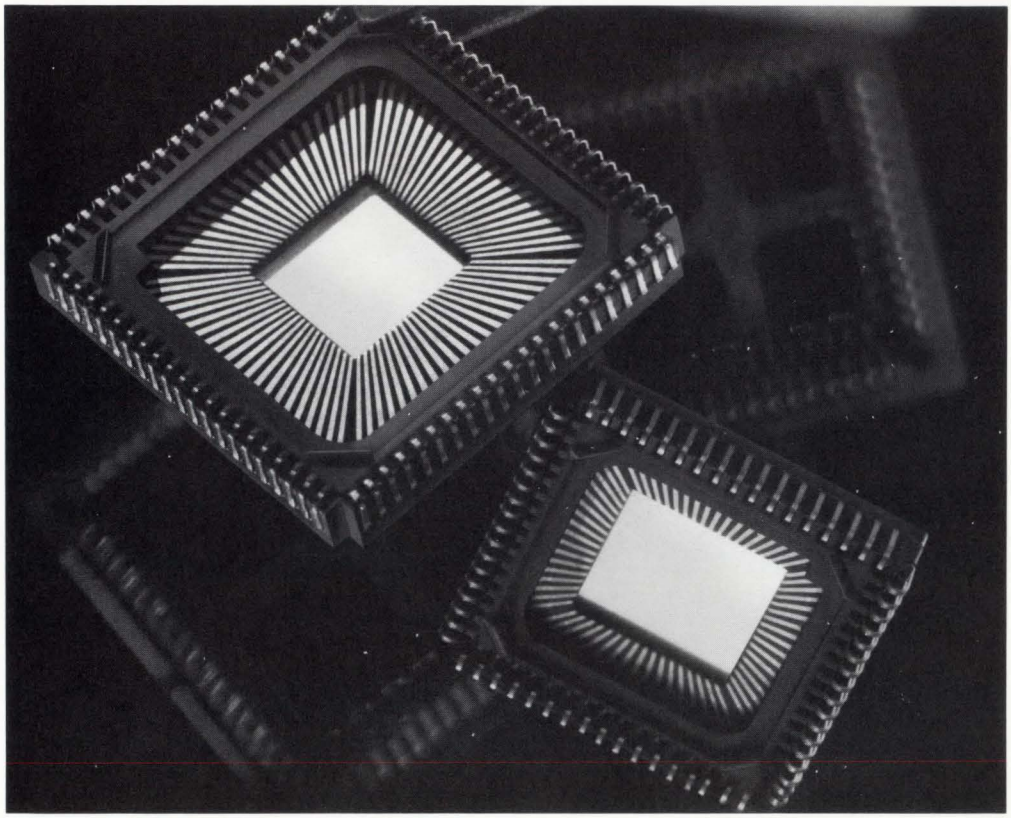
[2] For dimensions, contact AMP Incorporated.

Premolded Plastic Chip Carrier

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Features

- Eliminates the need for expensive in-house molding, plating, trimming and lead forming
- Shortest wirebonds possible by changing cavity size to fit the chip on the production line
- Facilitates heat sink attachment for better thermal management—2°C/Watt thermal resistance at junction to case
- "Cavity-down" and "cavity-up" mounting available
- Lower lead inductance—1.4 nH
- Less mass and less stress in high vibration environments
- Conforms to JEDEC envelope for .050 [1.27] centerline leaded Type A chip carriers
- Compliant leads facilitate economical and reliable surface mounting
- Supplied with a heat stacked aluminum base; optionally available without a base
- May be socketed or soldered directly onto substrate
- About 3:1 reduction in space over DIP Packages
- Interchangeable with many post-molded packages
- Facilitates use of silicone encapsulants for increased reliability



The AMP Premolded Plastic Chip Carrier is a user oriented package that requires only assembly and closure to form the final product. AMP Chip Carriers can be designed into several forms including the popular quad package which has been tooled to the JEDEC format. With leads on .050 [1.27] centerlines, this package is available in 28, 44, 52, 68 and 84 positions.

A "cavity-down" mounting configuration positions the chip's active surface facing the printed circuit board. The back side of the chip, which is the primary heat transfer surface, is attached to the substrate (metal or ceramic) for low thermal resistance and forced air cooling, with heat sinks if desired. "Cavity up" configurations, which are especially suited to EPROM packages, are also available.

The compliant lead compensates for deformation caused by thermal mismatch of the chip carrier mounting substrate. In addition, leads have low mass and good tolerance to stress in high vibration environments, and they offer low inductance (1.4 nH).

The chip cavity facilitates encapsulation with silicone compounds which remain soft after full polymerization. This insures internal compliance and minimal stress build-up inside the package due to the difference in thermal expansion of the various elements. The silicone compound also forms a chemical bond to the surface of the IC chip to prevent corrosion.

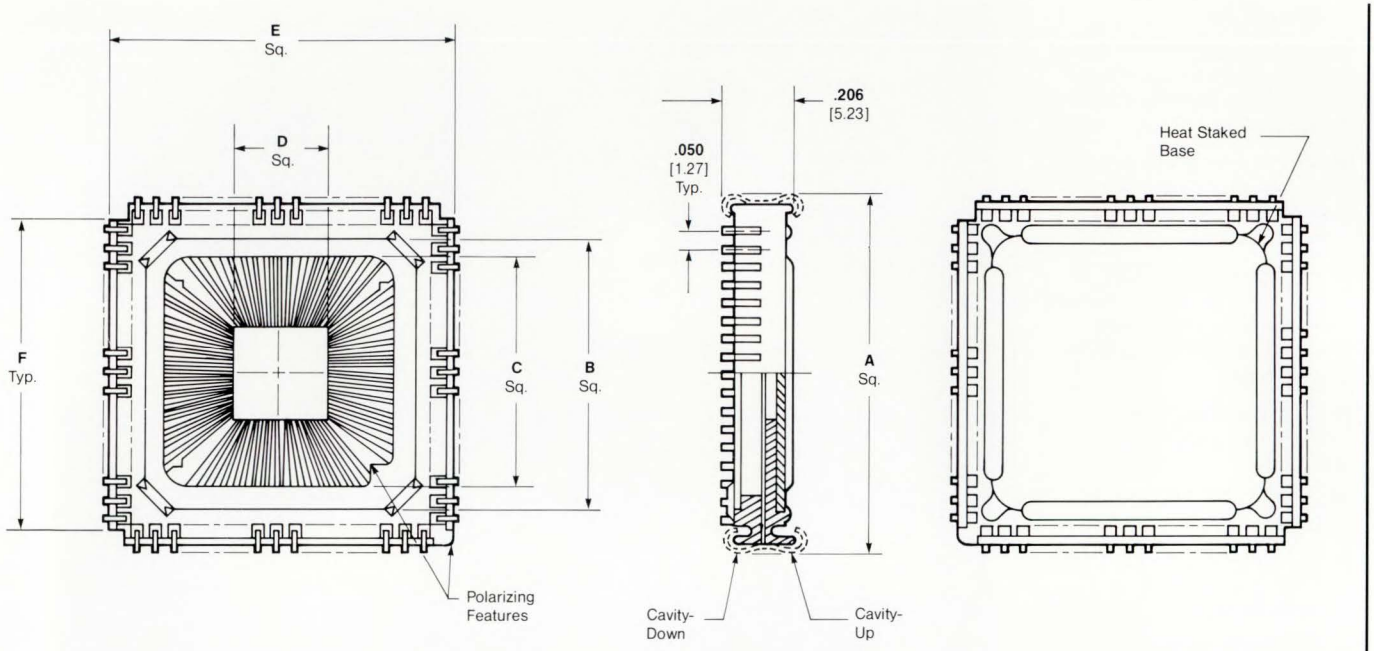
With only simple tooling adaptation, these plastic chip carriers can be processed using existing commercial die bond, wire bond, encapsulation or cover attachment equipment.

AMP Premolded Plastic Chip Carriers are a particularly important form of premolded package. They provide very high density packaging of LSI circuits and lend themselves to efficient manufacturing, offering fundamental solutions to major problems in the field of microelectronic packaging.

Premolded Plastic Chip Carrier
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.



Materials and Finish

Lead Frame:
Copper alloy 194—temper 2

Duplex plating—.000020 [0.00051] gold in the inner cavity and tin-lead on the outer leads

Housing:
Polyphenylene sulfide, 40% glass filled, UL 94V-0 rated

Bases and Covers:
Standard base—Aluminum alloy 6061-T6

Standard cover—400 series stainless steel

No. of Positions[1]	Dimensions						Part Numbers with Base	
	A	B	C	E	F	D[2]	Cavity Up	Cavity Down
28	**.482** 12.24	**.310** 7.82	**.260** 6.6	**.450** 11.43	**.350** 8.89	**.200** 5.08	821555-4	821555-3
44	**.683** 17.35	**.474** 12.04	**.394** 10.01	**.650** 16.51	**.550** 13.97	**.250** 6.35	821556-6	821556-5
						.300 7.62	821556-8	821556-7
52	**.783** 19.89	**.590** 14.99	**.480** 12.19	**.750** 19.05	**.650** 16.51	**.300** 7.62	821554-4	821554-3
68	**.984** 24.99	**.750** 19.05	**.630** 16	**.950** 24.13	**.850** 21.59	**.300** 7.62	1-821504-2	821504-9
						.380 9.65	1-821504-3	1-821504-0
						.400 10.16	1-821504-5	1-821504-6
						.430 10.92	1-821504-4	1-821504-1
84	**1.180** 29.97	**.970** 24.64	**.850** 21.59	**1.150** 29.21	**1.050** 26.67	**.390** 9.91	821507-3	821507-4

[1]Other chip carrier sizes and configurations can be made available. Contact AMP Incorporated for information.

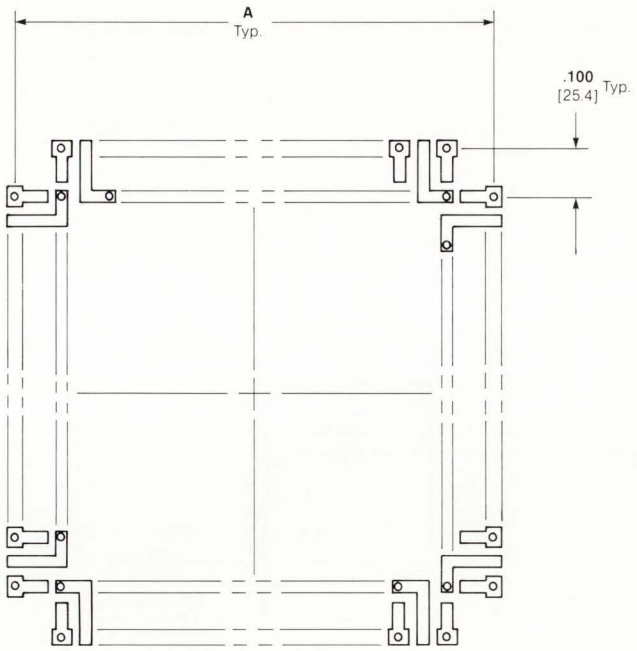
[2]Other hole sizes can be made available up to the maximum sizes shown:
28 Position—.200 [5.08]
44 Position—.335 [8.51]
52 Position—.420 [10.67]
68 Position—.570 [14.48]
84 Position—.790 [20.07]

Note: Loose piece parts are supplied in shipping tubes. The number per tube varies depending on part size.

Premolded Plastic Chip Carrier
(Continued)

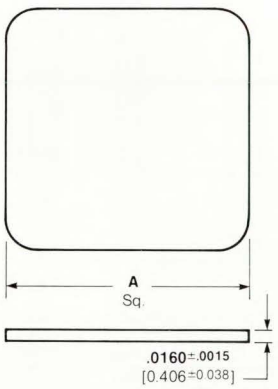
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Chart contains dimensions in inches over millimetres.



Suggested Printed Circuit Board Pattern

Standard Covers[1] (Stainless Steel)



No. of Positions	A	Part No.
28	**.306** 7.77	821557-1
44	**.467** 11.86	821539-1
52	**.585** 14.86	821538-1
68	**.745** 18.92	821503-1
84	**.965** 24.51	821531-1

[1]Must be purchased separately.

No. of Pos.	Dimension A
28	**.500** 12.7
44	**.700** 17.78
52	**.800** 20.32
68	**1.000** 25.4
84	**1.200** 30.48

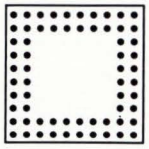
Application Tooling

Heat Staking Machine Part No. 58021-1

PGA Patterns

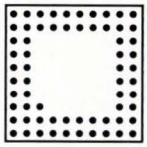
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Charts contain dimensions in inches over millimetres.



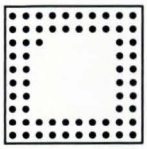
10x10
64 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	58	Tin	.115 2.92	916110-3
LP	58	Gold	.115 2.92	916110-4
LP	58	WP2[2]	.370 9.4	916120-3
LP	58	WP2[3]	.370 9.4	916120-4
LP	58	WP3[2]	.510 12.95	916130-3
LP	58	WP3[3]	.510 12.95	916130-4
LIF-P	61	Tin	.110 2.79	55270-4
LIF-S	61	Tin	.110 2.79	916220-3
ZIF	63	Tin	.110 2.79	55280-2
ZBI	96	Tin	.110 2.79	55380-5



10x10
65 Positions
Type I

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZIF	63	Tin	.110 2.79	55280-1
ZIF	63	Tin	.170 4.32	55280-5
ZBI	96	Tin	.110 2.79	55380-3

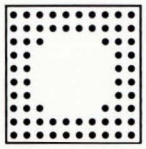


10x10
65 Positions
Type II

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	58	Tin	.115 2.92	916110-9
LP	58	Gold	.115 2.92	1-916110-0
LP	58	WP2[2]	.370 9.4	916120-9
LP	58	WP2[3]	.370 9.4	1-916120-0
LP	58	WP3[2]	.510 12.95	916130-9
LP	58	WP3[3]	.510 12.95	1-916130-0
LIF-P	61	Tin	.110 2.79	55270-1

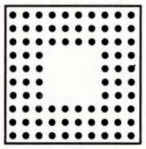
Legend:
LP—Low Profile (Screw machine contacts)
LIF-P—Low Insertion Force (Premium)
LIF-S—Low Insertion Force (Standard)
ZIF—ZIF Production
ZBI—ZIF Burn-In
WP2—Wrap Post (2-High)
WP3—Wrap Post (3-High)

[1]Refer to these pages for product information.
[2]Platings are gold spring/tin sleeve.
[3]Platings are gold spring/gold sleeve.



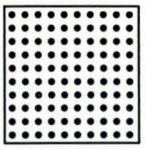
10x10
68 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	58	Tin	.115 2.92	916110-5
LP	58	Gold	.115 2.92	916110-6
LP	58	WP2[2]	.370 9.4	916120-5
LP	58	WP2[3]	.370 9.4	916120-6
LP	58	WP3[2]	.510 12.95	916130-5
LP	58	WP3[3]	.510 12.95	916130-6
LIF-P	61	Tin	.110 2.79	55270-3
LIF-S	61	Tin	.110 2.79	916220-2
ZIF	63	Tin	.110 2.79	55280-3
ZBI	96	Tin	.110 2.79	55380-2



10x10
84 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	58	Tin	.115 2.92	916110-7
LP	58	Gold	.115 2.92	916110-8
LP	58	WP2[2]	.370 9.4	916120-7
LP	58	WP2[3]	.370 9.4	916120-8
LP	58	WP3[2]	.510 12.95	916130-7
LP	58	WP3[3]	.510 12.95	916130-8
LIF-P	61	Tin	.110 2.79	55270-2
LIF-S	61	Tin	.110 2.79	916220-1
ZIF	63	Tin	.110 2.79	55280-4
ZBI	96	Tin	.110 2.79	55380-4

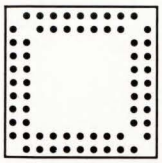


10x10
100 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	58	Tin	.115 2.92	916110-1
LP	58	Gold	.115 2.92	916110-2
LP	58	WP2[2]	.370 9.4	916120-1
LP	58	WP2[3]	.370 9.4	916120-2
LP	58	WP3[2]	.510 12.95	916130-1
LP	58	WP3[3]	.510 12.95	916130-2
LIF-P	61	Tin	.110 2.79	55270-5
LIF-S	61	Tin	.110 2.79	916220-4
ZIF	63	Tin	.110 2.79	1- 55280-0
ZBI	96	Tin	.110 2.79	55380-1

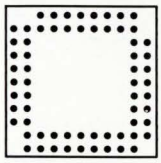
PGA Patterns
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimetres.



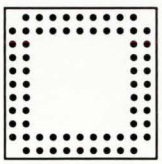
11x11
65 Positions
Type I

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZIF	63	Tin	.110 2.79	55281-1



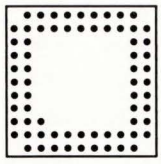
11x11
65 Positions
Type II

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	55271-1



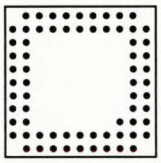
11x11
68 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	58	Tin	.115 2.92	916111-3
LP	58	Gold	.115 2.92	916111-4
LP	58	WP2[2]	.370 9.4	916121-3
LP	58	WP2[3]	.370 9.4	916121-4
LP	58	WP3[2]	.510 12.95	916131-3
LP	58	WP3[3]	.510 12.95	916131-4
LIF-P	61	Tin	.110 2.79	55271-4
LIF-P	61	Tin	.170 4.32	1- 55271-1
LIF-S	61	Tin	.110 2.79	916221-3
ZIF	63	Tin	.110 2.79	55281-2
ZBI	96	Tin	.110 2.79	55381-4



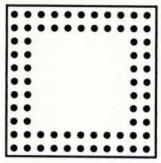
11x11
69 Positions
Type I

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	58	Tin	.115 2.92	916111-5
LP	58	Gold	.115 2.92	916111-6
LP	58	WP2[2]	.370 9.4	916121-5
LP	58	WP2[3]	.370 9.4	916121-6
LP	58	WP3[2]	.510 12.95	916131-5
LP	58	WP3[3]	.510 12.95	916131-6
LIF-P	61	Tin	.110 2.79	55271-5
LIF-S	61	Tin	.110 2.79	916221-4
ZIF	63	Tin	.110 2.79	55281-3
ZBI	96	Tin	.110 2.79	55381-5



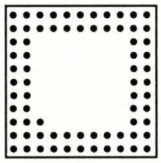
11x11
69 Positions
Type II

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZBI	96	Tin	.110 2.79	55381-2



11x11
72 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	1-55271-0



11x11
73 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	1-55271-3

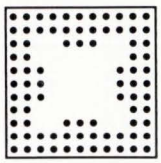
Legend:
LP—Low Profile (Screw machine contacts)
LIF-P—Low Insertion Force (Premium)
LIF-S—Low Insertion Force (Standard)
ZIF—ZIF Production
ZBI—ZIF Burn-In
WP2—Wrap Post (2-High)
WP3—Wrap Post (3-High)

[1]Refer to these pages for product information.
[2]Platings are gold spring/tin sleeve.
[3]Platings are gold spring/gold sleeve.

PGA Patterns
(Continued)

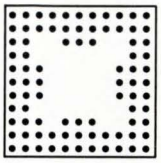
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Charts contain dimensions in inches over millimetres.



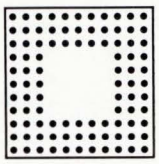
11x11 84 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	58	Tin	.115 2.92	916111-7
LP	58	Gold	.115 2.92	916111-8
LP	58	WP2[2]	.370 9.4	916121-7
LP	58	WP2[3]	.370 9.4	916121-8
LP	58	WP3[2]	.510 12.95	916131-7
LP	58	WP3[3]	.510 12.95	916131-8
LIF-P	61	Tin	.110 2.79	55271-2
LIF-S	61	Tin	.110 2.79	916221-1
ZBI	96	Tin	.110 2.79	55381-3



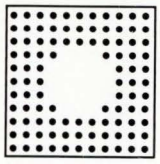
11x11 85 Positions Type I

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	58	Tin	.115 2.92	916111-9
LP	58	Gold	.115 2.92	1-916111-0
LP	58	WP2[2]	.370 9.4	916121-9
LP	58	WP2[3]	.370 9.4	1-916121-0
LP	58	WP3[2]	.510 12.95	916131-9
LP	58	WP3[3]	.510 12.95	1-916131-0
LIF-P	61	Tin	.110 2.79	55271-3
LIF-P	61	Tin	.140 3.56	55271-6
LIF-P	61	Tin	.170 4.32	55271-8
LIF-S	61	Tin	.110 2.79	916221-2
ZIF	63	Tin	.110 2.79	55281-4
ZBI	96	Tin	.110 2.79	55381-6



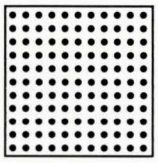
11x11 96 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	1-55271-2



11x11 100 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZIF	63	Tin	.110 2.79	55281-6



11x11 121 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	58	Tin	.115 2.92	916111-1
LP	58	Gold	.115 2.92	916111-2
LP	58	WP2[2]	.370 9.4	916121-1
LP	58	WP2[3]	.370 9.4	916121-2
LP	58	WP3[2]	.510 12.95	916131-1
LP	58	WP3[3]	.510 12.95	916131-2
LIF-P	61	Tin	.110 2.79	55271-9
ZIF	63	Tin	.170 4.32	55281-5
ZIF	63	Tin	.110 2.79	1- 55281-0
ZBI	96	Tin	.110 2.79	55381-1

Legend:
LP—Low Profile (Screw machine contacts)
LIF-P—Low Insertion Force (Premium)
LIF-S—Low Insertion Force (Standard)
ZIF—ZIF Production
ZBI—ZIF Burn-In
WP2—Wrap Post (2-High)
WP3—Wrap Post (3-High)

[1]Refer to these pages for product information.
[2]Platings are gold spring/tin sleeve.
[3]Platings are gold spring/gold sleeve.

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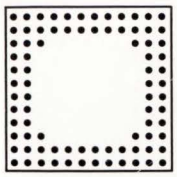
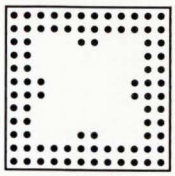
PGA Patterns
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimetres.



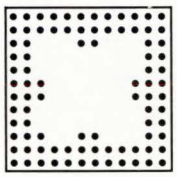
12x12
84 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	55272-5



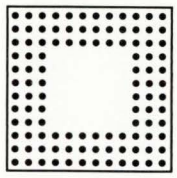
12x12
88 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	55272-2



12x12
89 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	55272-3
LIF-P	61	Tin	.170 4.32	55272-4

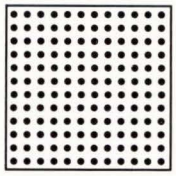


12x12
108 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916112-3
LP	59	Gold	.115 2.92	916112-4
LP	59	WP2[2]	.370 9.4	916122-3
LP	59	WP3[3]	.370 9.4	916122-4
LP	59	WP3[2]	.510 12.95	916132-3
LP	59	WP3[3]	.510 12.95	916132-4
LIF-P	61	Tin	.110 2.79	55272-1
ZIF	96	Tin	.110 2.79	55282-1

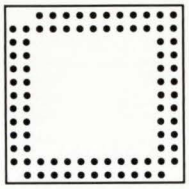
Legend:
LP–Low Profile (Screw machine contacts)
LIF-P–Low Insertion Force (Premium)
LIF-S–Low Insertion Force (Standard)
ZIF–ZIF Production
ZBI–ZIF Burn-In
WP2–Wrap Post (2-High)
WP3–Wrap Post (3-High)

[1]Refer to these pages for product information.
[2]Platings are gold spring/tin sleeve.
[3]Platings are gold spring/gold sleeve.



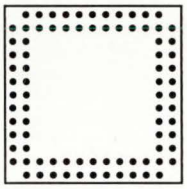
12x12
144 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916112-1
LP	59	Gold	.115 2.92	916112-2
LP	59	WP2[2]	.370 9.4	916122-1
LP	59	WP2[3]	.370 9.4	916122-2
LP	59	WP3[2]	.510 12.95	916132-1
LP	59	WP3[3]	.510 12.95	916132-2
ZIF	63	Tin	.110 2.79	1-55282-0
ZBI	96	Tin	.110 2.79	55382-1



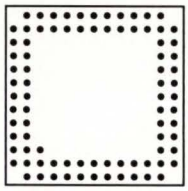
13x13
84 Positions
Type I

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	1-55273-1
ZIF	63	Tin	.110 2.79	1-55283-1
ZBI	96	Tin	.110 2.79	55383-8



13x13
84 Positions
Type II

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	1-55273-5
ZIF	63	Tin	.110 2.79	1-55283-3

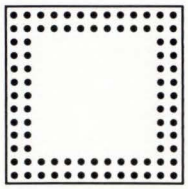


13x13
85 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916113-3
LP	59	Gold	.115 2.92	916113-4
LP	59	WP2[2]	.370 9.4	916123-3
LP	59	WP2[3]	.370 9.4	916123-4
LP	59	WP3[2]	.510 12.95	916133-3
LP	59	WP3[3]	.510 12.95	916133-4
LIF-P	61	Tin	.110 2.79	55273-7
LIF-S	61	Tin	.110 2.79	916223-6
ZIF	63	Tin	.110 2.79	55283-7
ZBI	96	Tin	.110 2.79	55383-5

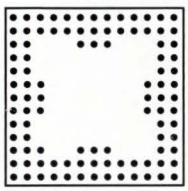
PGA Grid Patterns
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimetres.



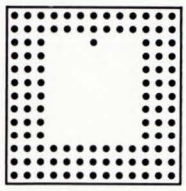
13x13
88 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916113-5
LP	59	Gold	.115 2.92	916113-6
LP	59	WP2[2]	.370 9.4	916123-5
LP	59	WP2[3]	.370 9.4	916123-6
LP	59	WP3[2]	.510 12.95	916133-5
LP	59	WP3[3]	.510 12.95	916133-6
LIF-P	61	Tin	.110 2.79	1-55273-0
LIF-S	61	Tin	.110 2.79	916223-8
ZIF	63	Tin	.110 2.79	55283-9
ZBI	96	Tin	.110 2.79	55383-7



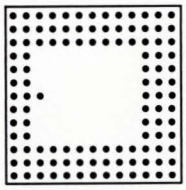
13x13
101 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916113-7
LP	59	Gold	.115 2.92	916113-8
LP	59	WP2[2]	.370 9.4	916123-7
LP	59	WP2[3]	.370 9.4	916123-8
LP	59	WP3[2]	.510 12.95	916133-7
LP	59	WP3[3]	.510 12.95	916133-8
LIF-P	61	Tin	.110 2.79	55273-5
LIF-S	61	Tin	.110 2.79	916223-5
ZIF	63	Tin	.110 2.79	55283-5
ZBI	96	Tin	.110 2.79	55383-2



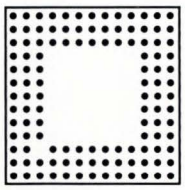
13x13
114 Positions
Type I

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916113-9
LP	59	Gold	.115 2.92	1-916113-0
LP	59	Tin	.135 3.43	1-916113-1
LP	59	Gold	.135 3.43	1-916113-2
LP	59	WP2[2]	.370 9.4	916123-9
LP	59	WP2[3]	.370 9.4	1-916123-0
LP	59	WP3[2]	.510 12.95	916133-9
LP	59	WP3[3]	.510 12.95	1-916133-0
ZIF	63	Tin	.110 2.79	55283-4
ZBI	96	Tin	.110 2.79	55383-3



13x13
114 Positions
Type II

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	55273-3
LIF-P	61	Tin	.140 3.56	1-55273-6
LIF-S	61	Tin	.110 2.79	916223-3



13x13
119 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	1-55273-3
ZIF	63	Tin	.110 2.79	55283-1
ZIF	63	Tin	.170 4.32	55283-3

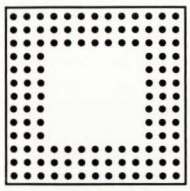
Legend:
LP—Low Profile (Screw machine contacts)
LIF-P—Low Insertion Force (Premium)
LIF-S—Low Insertion Force (Standard)
ZIF—ZIF Production
ZBI—ZIF Burn-In
WP2—Wrap Post (2-High)
WP3—Wrap Post (3-High)

[1]Refer to these pages for product information.
[2]Platings are gold spring/tin sleeve.
[3]Platings are gold spring/gold sleeve.

PGA Grid Patterns
(Continued)

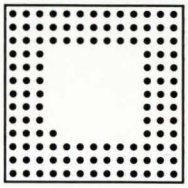
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Charts contain dimensions in inches over millimetres.



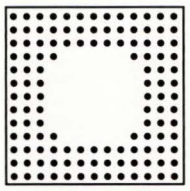
13x13
120 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	1-916113-3
LP	59	Gold	.115 2.92	1-916113-4
LP	59	WP2[2]	.370 9.4	1-916123-1
LP	59	WP2[3]	.370 9.4	1-916123-2
LP	59	WP3[2]	.510 12.95	1-916133-1
LP	59	WP3[3]	.510 12.95	1-916133-2
LIF-P	61	Tin	.110 2.79	55273-1
LIF-S	61	Tin	.110 2.79	916223-1



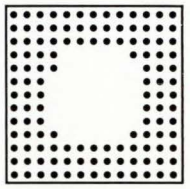
13x13
121 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	1-916113-5
LP	59	Gold	.115 2.92	1-916113-6
LP	59	WP2[2]	.370 9.4	1-916123-3
LP	59	WP2[3]	.370 9.4	1-916123-4
LP	59	WP3[2]	.510 12.95	1-916133-3
LP	59	WP3[3]	.510 12.95	1-916133-4
LIF-P	61	Tin	.110 2.79	55273-2
LIF-P	61	Tin	.140 3.56	55273-6
LIF-S	61	Tin	.110 2.79	916223-2
ZIF	63	Tin	.110 2.79	55283-2
ZBI	96	Tin	.110 2.79	55383-4



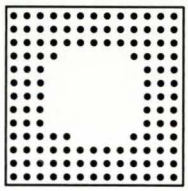
13x13
124 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	1-916113-7
LP	59	Gold	.115 2.92	1-916113-8
LP	59	WP2[2]	.370 9.4	1-916123-5
LP	59	WP2[3]	.370 9.4	1-916123-6
LP	59	WP3[2]	.510 12.95	1-916133-5
LP	59	WP3[3]	.510 12.95	1-916133-6
LIF-P	61	Tin	.110 2.79	55273-4
LIF-S	61	Tin	.110 2.79	916223-4
ZIF	63	Tin	.110 2.79	55283-6
ZIF	63	Tin	.110 2.79	55583-2[4]
ZBI	96	Tin	.110 2.79	55573-3



13x13
125 Positions
Type I

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZBI	96	Tin	.110 2.79	55383-6



13x13
125 Positions
Type II

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	1-916113-9
LP	59	Gold	.115 2.92	2-916113-0
LP	59	WP2[2]	.370 9.4	1-916123-7
LP	59	WP2[3]	.370 9.4	1-916123-8
LP	59	WP3[2]	.510 12.95	1-916133-7
LP	59	WP3[3]	.510 12.95	1-916133-8
LIF-P	61	Tin	.110 2.79	55273-8
LIF-S	61	Tin	.110 2.79	916223-7
ZIF	63	Tin	.110 2.79	55283-8

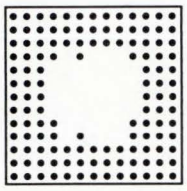
Legend:
LP—Low Profile (Screw machine contacts)
LIF-P—Low Insertion Force (Premium)
LIF-S—Low Insertion Force (Standard)
ZIF—ZIF Production
ZBI—ZIF Burn-In
WP2—Wrap Post (2-High)
WP3—Wrap Post (3-High)

[1]Refer to these pages for product information.
[2]Platings are gold spring/tin sleeve.
[3]Platings are gold spring/gold sleeve.
[4]Use with Motorola 68461.

PGA Grid Patterns
(Continued)

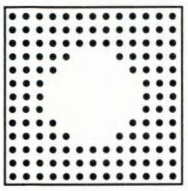
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Charts contain dimensions in inches over millimetres.



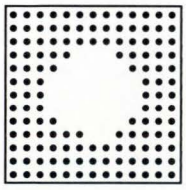
13x13
128 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	2-916113-5
LP	59	WP3[2]	.510 12.95	2-916133-3
LIF-P	61	Tin	.110 2.79	1-552273-8[4]
LIF-S	61	Tin	.110 2.79	1-916223-1
ZBI	96	Tin	.110 2.79	1-55383-1[4]



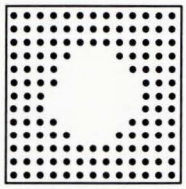
13x13
132 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	2-916113-1
LP	59	Gold	.115 2.92	2-916113-2
LP	59	WP2[2]	.370 9.4	1-916123-9
LP	59	WP2[3]	.370 9.4	2-916123-0
LP	59	WP3[2]	.510 12.95	1-916133-9
LP	59	WP3[3]	.510 12.95	2-916133-0
LIF-P	61	Tin	.110 2.79	1-55273-4
LIF-S	61	Tin	.110 2.79	1-916223-0
ZIF	63	Tin	.110 2.79	1-55283-4
ZBI	96	Tin	.110 2.79	1-55383-0



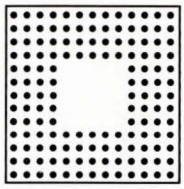
13x13
133 Positions
Type I

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	2-916113-3
LP	59	Gold	.115 2.92	2-916113-4
LP	59	WP2[2]	.370 9.4	2-916123-1
LP	59	WP2[3]	.370 9.4	2-916123-2
LP	59	WP3[2]	.510 12.95	2-916133-1
LP	59	WP3[3]	.510 12.95	2-916133-2
LIF-P	61	Tin	.110 2.79	1-55273-2
LIF-S	61	Tin	.110 2.79	916223-9
ZIF	63	Tin	.110 2.79	1-55283-2
ZBI	96	Tin	.110 2.79	55383-9



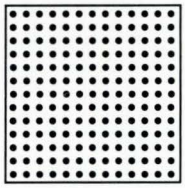
13x13
133 Positions
Type II

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZIF	63	Tin	.110 2.79	1-55283-6



13x13
144 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	1-55273-7
ZIF	63	Tin	.110 2.79	1-55283-5



13x13
169 Positions

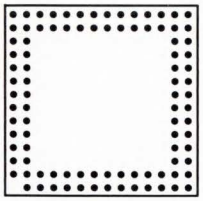
Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916113-1
LP	59	Gold	.115 2.92	916113-2
LP	59	WP2[2]	.370 9.4	916123-1
LP	59	WP2[3]	.370 9.4	916123-2
LP	59	WP3[2]	.510 12.95	916133-1
LP	59	WP3[3]	.510 12.95	916133-2
LIF-P	61	Tin	.110 2.79	55273-9
ZIF	63	Tin	.110 2.79	1-55283-0
ZBI	96	Tin	.110 2.79	55383-1

Legend:
LP—Low Profile (Screw machine contacts)
LIF-P—Low Insertion Force (Premium)
LIF-S—Low Insertion Force (Standard)
ZIF—ZIF Production
ZBI—ZIF Burn-In
WP2—Wrap Post (2-High)
WP3—Wrap Post (3-High)

[1]Refer to these pages for product information.
[2]Platings are gold spring/tin sleeve.
[3]Platings are gold spring/gold sleeve.
[4]Use with Motorola 68030.

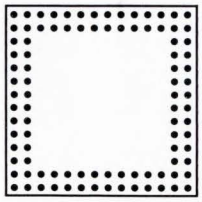
PGA Grid Patterns
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimetres.



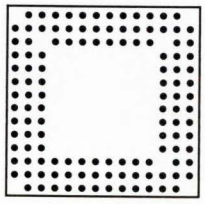
14x14
95 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	55274-4
ZIF	63	Tin	.110 2.79	55284-5
ZBI	96	Tin	.110 2.79	55384-4



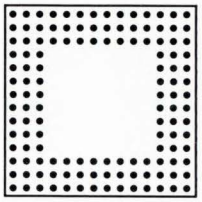
14x14
96 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	55274-6



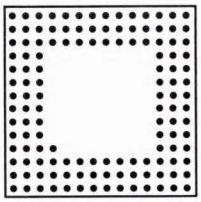
14x14
125 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	55274-7



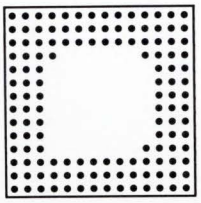
14x14
132 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916114-3
LP	59	Gold	.115 2.92	916114-4
LP	59	WP2[2]	.370 9.4	916124-3
LP	59	WP2[3]	.370 9.4	916124-4
LP	59	WP3[2]	.510 12.95	916134-3
LP	59	WP3[3]	.510 12.95	916134-4
LIF-P	61	Tin	.110 2.79	55274-1
LIF-S	61	Tin	.110 2.79	916224-1
ZIF	63	Tin	.110 2.79	55284-1
ZIF	63	Tin	.110 2.79	55583-14
ZBI	96	Tin	.110 2.79	55384-1



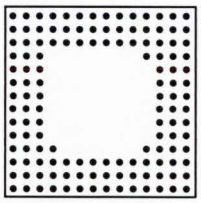
14x14
133 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	55274-5



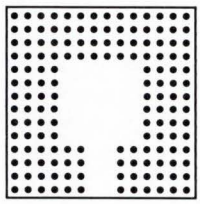
14x14
135 Positions
Type I

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZIF	63	Tin	.110 2.79	55284-2
ZIF	63	Tin	.140 3.56	55284-3
ZIF	63	Tin	.170 4.32	55284-4



14x14
135 Positions
Type II

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916114-5
LP	59	Gold	.115 2.92	916114-6
LP	59	WP2[2]	.370 9.4	916124-5
LP	59	WP2[3]	.370 9.4	916124-6
LP	59	WP3[2]	.510 12.95	916134-5
LP	59	WP3[3]	.510 12.95	916134-6
LIF-P	61	Tin	.110 2.79	55274-2



14x14
152 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZBI	96	Tin	.110 2.79	55384-3

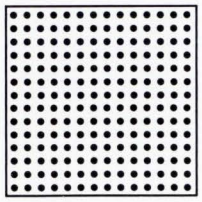
Legend:
LP–Low Profile (Screw machine contacts)
LIF-P–Low Insertion Force (Premium)
LIF-S–Low Insertion Force (Standard)
ZIF–ZIF Production
ZBI–ZIF Burn-In
WP2–Wrap Post (2-High)
WP3–Wrap Post (3-High)

[1]Refer to these pages for product information.
[2]Platings are gold spring/tin sleeve.
[3]Platings are gold spring/gold sleeve.
[4]Use with Intel 80386.

PGA Grid Patterns
(Continued)

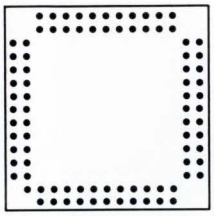
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Charts contain dimensions in inches over millimetres.



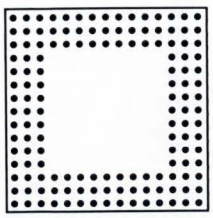
14x14
196 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916114-1
LP	59	Gold	.115 2.92	916114-2
LP	59	WP2[2]	.370 9.4	916124-1
LP	59	WP2[3]	.370 9.4	916124-2
LP	59	WP3[2]	.510 12.95	916134-1
LP	59	WP3[3]	.510 12.95	916134-2
LIF-P	61	Tin	.110 2.79	55274-3
ZIF	63	Tin	.110 2.79	1-55284-0
ZBI	96	Tin	.110 2.79	55384-1



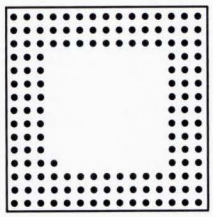
15x15
89 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916115-3
LP	59	Gold	.115 2.92	916115-4
LP	59	WP2[2]	.370 9.4	916125-3
LP	59	WP2[3]	.370 9.4	916125-4
LP	59	WP3[2]	.510 12.95	916135-3
LP	59	WP3[3]	.510 12.95	916135-4
LIF-P	61	Tin	.110 2.79	55275-6



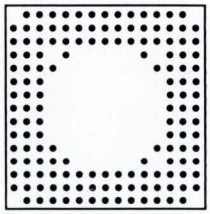
15x15
144 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916115-5
LP	59	Gold	.115 2.92	916115-6
LP	59	WP2[2]	.370 9.4	916125-5
LP	59	WP2[3]	.370 9.4	916125-6
LP	59	WP3[2]	.510 12.95	916135-5
LP	59	WP3[3]	.510 12.95	916135-6
LIF-P	61	Tin	.110 2.79	55275-1
LIF-P	61	Tin	.140 3.56	55275-5
LIF-S	61	Tin	.110 2.79	916025-1
ZIF	63	Tin	.140 3.56	55285-1
ZBI	96	Tin	.140 3.56	55385-5



15x15
145 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916115-7
LP	59	Gold	.115 2.92	916115-8
LP	59	WP2[2]	.370 9.4	916125-7
LP	59	WP2[3]	.370 9.4	916125-8
LP	59	WP3[2]	.510 12.95	916135-7
LP	59	WP3[3]	.510 12.95	916135-8
LIF-P	61	Tin	.110 2.79	55275-4
LIF-S	61	Tin	.110 2.79	916025-3
ZIF	63	Tin	.140 3.56	55285-2
ZBI	96	Tin	.140 3.56	55385-3



15x15
149 Positions
Type I

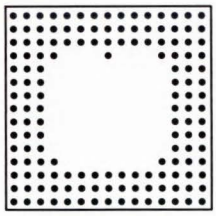
Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916115-9
LP	59	Gold	.115 2.92	1-916115-0
LP	59	Tin	.135 3.43	1-916115-3
LP	59	Gold	.135 3.43	1-916115-4
LP	59	WP2[2]	.370 9.4	916125-9
LP	59	WP2[3]	.370 9.4	1-916125-0
LP	59	WP3[2]	.510 12.95	916135-9
LP	59	WP3[3]	.510 12.95	1-916135-0
LIF-P	61	Tin	.110 2.79	55275-3
LIF-P	61	Tin	.140 3.56	1-55275-3
LIF-S	61	Tin	.110 2.79	916025-2
ZIF	63	Tin	.140 3.56	55285-4
ZBI	96	Tin	.140 3.56	55385-2

Legend:
LP—Low Profile (Screw machine contacts)
LIF-P—Low Insertion Force (Premium)
LIF-S—Low Insertion Force (Standard)
ZIF—ZIF Production
ZBI—ZIF Burn-In
WP2—Wrap Post (2-High)
WP3—Wrap Post (3-High)

[1] Refer to these pages for product information.
[2] Platings are gold spring/tin sleeve.
[3] Platings are gold spring/gold sleeve.

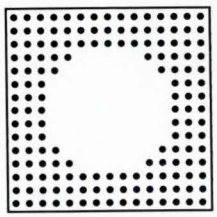
PGA Grid Patterns
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimetres.



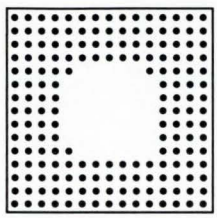
15x15
149 Positions
Type II

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	1-916115-1
LP	59	Gold	.115 2.92	1-916115-2
LP	59	WP2[2]	.370 9.4	1-916125-1
LP	59	WP2[3]	.370 9.4	1-916125-2
LP	59	WP3[2]	.510 12.95	1-916135-1
LP	59	WP3[3]	.510 12.95	1-916135-2
LIF-P	61	Tin	.110 2.79	1-55275-1
LIF-S	61	Tin	.110 2.79	916025-5



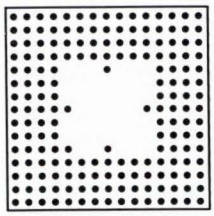
15x15
156 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	1-916115-5
LP	59	Gold	.115 2.92	1-916115-6
LP	59	WP2[2]	.370 9.4	1-916125-3
LP	59	WP2[3]	.370 9.4	1-916125-4
LP	59	WP3[2]	.510 12.95	1-916135-3
LP	59	WP3[3]	.510 12.95	1-916135-4
LIF-P	61	Tin	.140 3.56	1-55275-2
LIF-S	61	Tin	.110 2.79	916025-6



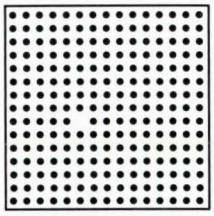
15x15
179 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	1-916115-7
LP	59	Gold	.115 2.92	1-916115-8
LP	59	WP2[2]	.370 9.4	1-916125-5
LP	59	WP2[3]	.370 9.4	1-916125-6
LP	59	WP3[2]	.510 12.95	1-916135-5
LP	59	WP3[3]	.510 12.95	1-916135-6
LIF-P	61	Tin	.110 2.79	55275-2



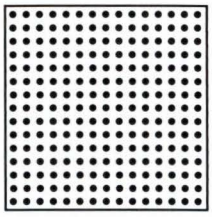
15x15
181 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	1-916115-9
LP	59	Gold	.115 2.92	2-916115-0
LP	59	Tin	.135 3.43	2-916115-1
LP	59	Gold	.135 3.43	2-916115-2
LP	59	WP2[2]	.370 9.4	1-916125-7
LP	59	WP2[3]	.370 9.4	1-916125-8
LP	59	WP3[2]	.510 12.95	1-916135-7
LP	59	WP3[3]	.510 12.95	1-916135-8
LIF-P	61	Tin	.110 2.79	55275-8
LIF-P	61	Tin	.140 3.56	55275-9
LIF-P	61	Tin	.170 4.32	1-55275-0
LIF-S	61	Tin	.110 2.79	916025-4
ZIF	63	Tin	.140 3.56	55285-3
ZBI	96	Tin	.140 3.56	55385-4



15x15
224 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	1-55275-4



15x15
225 Positions

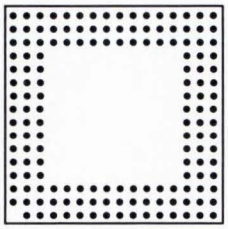
Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916115-1
LP	59	Gold	.115 2.92	916115-2
LP	59	WP2[2]	.370 9.4	916125-1
LP	59	WP2[3]	.370 9.4	916125-2
LP	59	WP3[2]	.510 12.95	916135-1
LP	59	WP3[3]	.510 12.95	916135-2
LIF-P	61	Tin	.110 2.79	55275-7
ZIF	63	Tin	.140 3.56	1-55285-0
ZBI	96	Tin	.140 3.56	55385-1

Legend:
LP—Low Profile (Screw machine contacts)
LIF-P—Low Insertion Force (Premium)
LIF-S—Low Insertion Force (Standard)
ZIF—ZIF Production
ZBI—ZIF Burn-In
WP2—Wrap Post (2-High)
WP3—Wrap Post (3-High)

[1] Refer to these pages for product information.
[2] Platings are gold spring/tin sleeve.
[3] Platings are gold spring/gold sleeve.

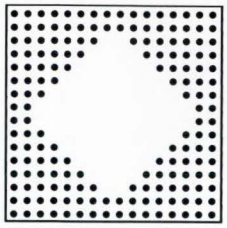
PGA Grid Patterns
(Continued)

Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimetres.



16x16
155 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZIF	63	Tin	.140 3.56	55286-4
ZBI	96	Tin	.140 3.56	55386-2

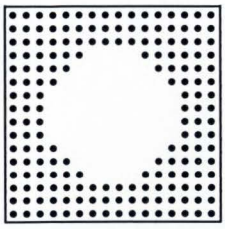


16x16
172 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZIF	63	Tin	.140 3.56	55286-5

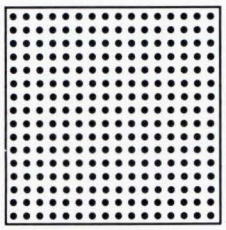
16x16
173 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZIF	63	Tin	.140 3.56	55286-2
ZIF	63	Tin	.170 4.32	55286-3



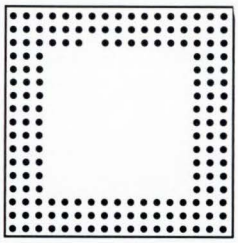
16x16
180 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZIF	63	Tin	.140 3.56	55286-1



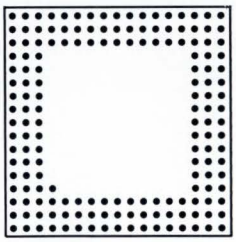
16x16
256 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZIF	63	Tin	.140 3.56	1-55286-0
ZBI	96	Tin	.140 3.56	55386-1



17x17
167 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LIF-P	61	Tin	.110 2.79	55589-3



17x17
169 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916117-3
LP	59	Gold	.115 2.92	916117-4
LP	59	WP2[2]	.370 9.4	916127-3
LP	59	WP2[3]	.370 9.4	916127-4
LP	59	WP3[2]	.510 12.95	916137-3
LP	59	WP3[3]	.510 12.95	916137-4
LIF-P	61	Tin	.110 2.79	55589-5
LIF-S	61	Tin	.110 2.79	916027-3

Legend:
LP—Low Profile (Screw machine contacts)
LIF-P—Low Insertion Force (Premium)
LIF-S—Low Insertion Force (Standard)
ZIF—ZIF Production
ZBI—ZIF Burn-In
WP2—Wrap Post (2-High)
WP3—Wrap Post (3-High)

[1]Refer to these pages for product information.
[2]Platings are gold spring/tin sleeve.
[3]Platings are gold spring/gold sleeve.

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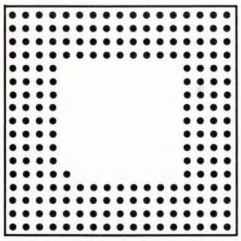
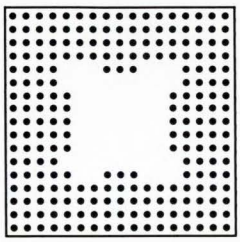
PGA Grid Patterns
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.
Charts contain dimensions in inches over millimetres.



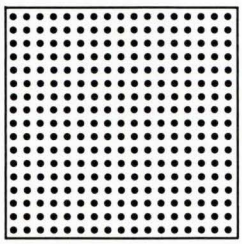
17x17
209 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916117-5
LP	59	Gold	.115 2.92	916117-6
LP	59	WP2[2]	.370 9.4	916127-5
LP	59	WP2[3]	.370 9.4	916127-6
LP	59	WP3[2]	.510 12.95	916137-5
LP	59	WP3[3]	.510 12.95	916137-6
LIF-P	61	Tin	.110 2.79	55589-2
LIF-S	61	Tin	.110 2.79	916027-1



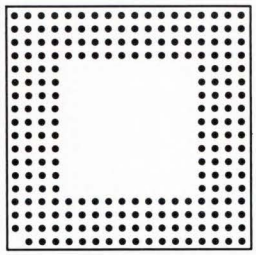
17x17
225 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916117-7
LP	59	Gold	.115 2.92	916117-8
LP	59	WP2[2]	.370 9.4	916127-7
LP	59	WP2[3]	.370 9.4	916127-8
LP	59	WP3[2]	.510 12.95	916137-7
LP	59	WP3[3]	.510 12.95	916137-8
LIF-P	61	Tin	.110 2.79	55589-4
LIF-S	61	Tin	.110 2.79	916027-2



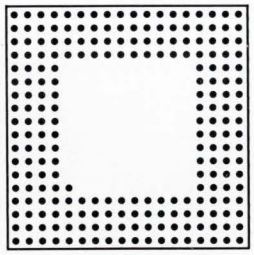
17x17
289 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
LP	59	Tin	.115 2.92	916117-1
LP	59	Gold	.115 2.92	916117-2
LP	59	WP2[2]	.370 9.4	916127-1
LP	59	WP2[3]	.370 9.4	916127-2
LP	59	WP3[2]	.510 12.95	916137-1
LP	59	WP3[3]	.510 12.95	916137-2
LIF-P	61	Tin	.140 3.56	55589-1
ZIF	63	Tin	.140 3.56	1-55287-0



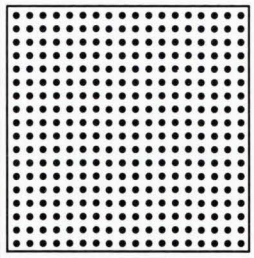
18x18
223 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZIF	63	Tin	.140 3.56	55288-3
ZBI	96	Tin	.140 3.56	55388-2



18x18
225 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZIF	63	Tin	.110 2.79	55288-2
ZIF	63	Tin	.170 4.32	55288-1



18x18
324 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZIF	63	Tin	.140 3.56	1-55288-0
ZBI	96	Tin	.140 3.56	55388-1

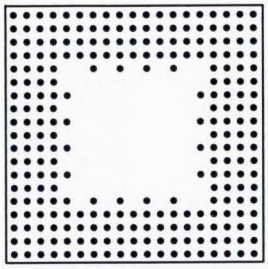
Legend:
LP—Low Profile (Screw machine contacts)
LIF-P—Low Insertion Force (Premium)
LIF-S—Low Insertion Force (Standard)
ZIF—ZIF Production
ZBI—ZIF Burn-In
WP2—Wrap Post (2-High)
WP3—Wrap Post (3-High)

[1]Refer to these pages for product information.
[2]Platings are gold spring/tin sleeve.
[3]Platings are gold spring/gold sleeve.

PGA Grid Patterns
(Continued)

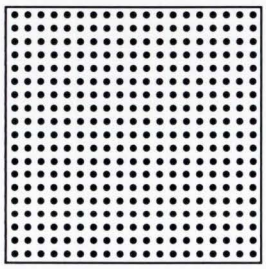
Dimensioning:
Dimensions are in inches and millimetres. Values in brackets are metric equivalents.

Charts contain dimensions in inches over millimetres.



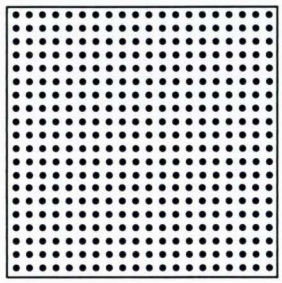
19x19
257 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZIF	63	Tin	.140 3.56	55289-1



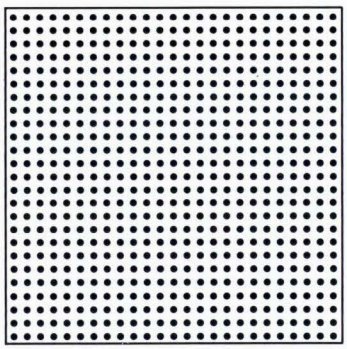
19x19
361 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZIF	63	Tin	.140 3.56	1-55289-0



20x20
400 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZIF	63	Tin	.140 3.56	1-55290-0



25x25
625 Positions

Style	Page[1]	Terminal		Socket Number
		Type	Length	
ZBI	96	Tin	.110 2.79	55565-1

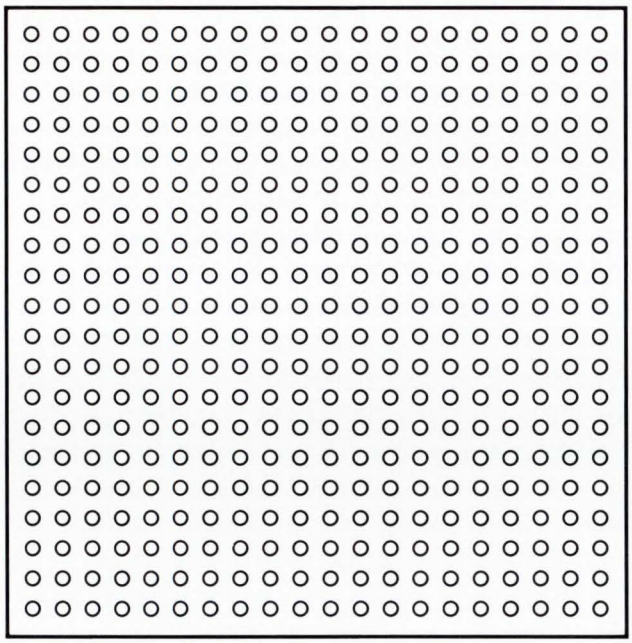
Legend:
ZIF—ZIF Production
ZBI—ZIF Burn-In

[1] Refer to these pages for product information.

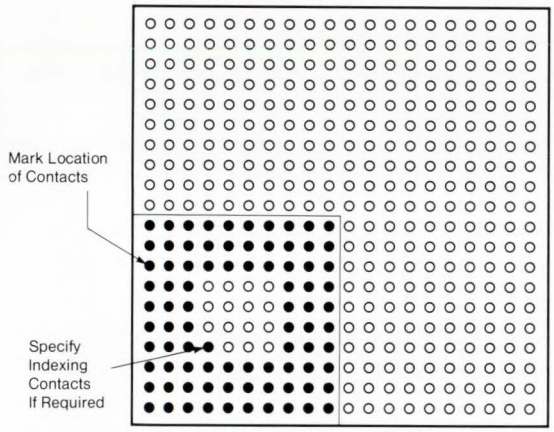
PGA Grid Patterns
(Continued)

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Custom Pattern (Design Your Own)



Note: .100 [2.54] Grid



Specify Socket Style and Solder Leg Length

Technical Documents

A variety of technical documents is available for your use:

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-1066—DIPLOMATE DL DIP and SIP Sockets (Production)
108-1074—DIPLOMATE SL DIP and SIP Sockets (Production)
108-53000—Drawn Spring Contact DIP and SIP Sockets for Tin Plated Springs (Production)
108-53001—Drawn Spring Contact DIP and SIP Sockets for Gold Plated Springs (Production)
108-1073—DIPLOMATE LF DIP Sockets (Production)
108-1071—DIPLOMATE HT DIP Sockets (Burn-In)
108-1089—DIPLOMATE ZP ZIP Sockets (Production)
108-1085—DIPLOMATE SIMM Sockets (Production)
108-38000—HPT Sockets for PLCC Packages (Production)
108-38001—Gold-Gold System Sockets for PLCC Packages (Production)
108-11031—Low Height Sockets for LCCC Packages (Production and Burn-In)
108-53002—Drawn Spring Contact Sockets for PGA Packages (Production)
108-11032—LIF Sockets for PGA Packages (Production)
108-11033—ZIF Sockets for PGA Packages (Production and Burn-In)
108-14008—Miniature Spring Sockets (Production)
108-14021—Miniature Spring Sockets on Polyester Strip (Production)
108-11036—ZIF-Lock Connectors (Burn-In)
108-38003—LIF-Type Low Profile Sockets for PLCC Packages (Burn-In)

Application Specifications describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

114-1036—DIPLOMATE SIMM Sockets
114-26004—Miniature Spring Sockets on Polyester Strip

Instruction Sheets provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.

IS 2111—Miniature Spring Socket Mounting Wafer
IS 2117—Miniature Spring Socket Knockout Plug Tool
IS 6779—HPT Sockets Alignment Tool 68381-1
IS 6875—HPT Sockets Alignment Tool 821663-1
IS 9081—HPT Sockets Extraction Tools
IS 6956—HPT Housing Removal Tool
IS 6987—HPT Replacement Contact Procedures
IS 9046—Gold-Gold System Sockets Extraction Tool
IS 6957—HPT Rectangular Sockets Extraction Tool
IS 6875—Low Height Chip Carrier Sockets Insertion Tool (44 & 52 Positions)
IS 6779—Low Height Chip Carrier Sockets Insertion Tool (68-100 Positions)
IS 9020—Extraction Tools for LIF PGA Sockets

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Glossary

Dimensioning:
Dimensions are in inches and millimetres.
Values in brackets are metric equivalents.

Brickwalling—Sockets designed to stack end-to-end and side-to-side on continuous row and pin centerline patterns.

Burn-In—Operation of a circuit or equipment to stabilize components and pre-screen for failures.

Ceramic Substrate—Thin, flat, fired ceramic part to hold an IC chip (usually beryllium oxide or aluminum oxide).

Chip—A small piece of silicon or other material that is a complete semiconductor device or integrated circuit.

Chip Carrier—A ceramic or plastic package that carries an IC.

DIP—Dual In-Line Package IC: A family of rectangular integrated circuit flat packages that have leads on the two longer sides. Package material is plastic or ceramic.

Emulator—Piece of test apparatus which emulates or imitates the function of a particular chip.

EPROM—Eraseable Programmable Read-Only Memory: Information stored in this memory package can be erased by ultraviolet light beam and reprogrammed repeatedly.

Handler—A carrier that protects a chip during transport from the manufacturer to the customer. It may be employed during test and burn-in and during lead cut-off and forming operations.

Heat Sink—A mass of metal attached to a chip carrier or socket for the purpose of dissipating heat.

High Speed Socket—AMP ceramic chip carrier socket: "High Speed" refers to the short signal path which results from the short effective electrical length of the contact.

HPT—High Pressure Tin: An AMP PLCC socket which promotes high normal forces between socket contacts and PLCC contacts.

Integrated Circuit (IC)—A semiconductor circuit combining many electronic components on a single substrate, usually silicon.

JEDEC—Joint Electron Devices Engineering Council: A group that establishes standards for the electronics industry.

J-Lead—J-shaped leads on chip carriers: Can be surface-mounted directly to pc board or plugged into a socket which is then mounted to pc board, usually on .050 [1.27] centers.

LCCC—Leadless Ceramic Chip Carrier: Has input and output pads on its perimeter.

LIF—Low Insertion Force: Sockets that require only a minimum of force to insert a chip carrier.

Microelectronics—The area of electronics that deals with components of miniature size, usually those found on a single chip.

Microprocessor—An integrated circuit that provides, in one chip, functions equivalent to those contained in the central processing unit of a computer.

NPG—Normal Pressure Gold: An AMP PLCC socket with average normal forces between socket contacts and PLCC contacts.

Package—A device that includes a chip mounted on a carrier and sealed.

PGA Socket—Pin Grid Array: An AMP socket that accepts large, high pin count pin grid array packages.

PLCC—Plastic Leaded Chip Carrier: Popular chip carrier package.

Retention Solder Tails—Designed with a detent or "crook" to hold socket firmly in pc board for soldering.

ROM—Read-Only Memory: A device in which information is stored permanently during the manufacturing process.

Semiconductor—An element that has electrical conductivity less than that of a conductor, such as copper, and greater than that of an insulator, such as glass.

SIMM—Single In-Line Memory Module: An array of memory chips on a small pc board with a single row of IO contacts.

SIP—Single In-Line Package IC: A DIP-like package but with only one row of leads.

Skinny DIP—24- & 28-position DIP devices with .300 [7.62] row-to-row centerlines.

SO-J—Small Outline—J-Lead: A small DIP package with J-shaped leads for surface mounting or socketing.

Substrate—The material on which or within which the elements of an integrated circuit are fabricated. These can be plastic, ceramic or glass for mechanical support and insulation, while semiconductor and ferrite substrates can provide the electrical functions.

Surface Mount—Chip carriers and sockets that are designed to mount to the surface of a pc board.

Through-Board—Chip carriers and sockets that are equipped with tails which extend through holes in a pc board.

True Closed Bottom—Sockets with sealed-style housing cavities for preventing wicking of solder, flux and cleaning solutions.

True Positioned Solder Tails—Socket tails are perfectly perpendicular with socket body for easy, no damage insertion into pc board.

ZIF—Zero Insertion Force: Sockets that require no force to insert a chip carrier. Usually accomplished through movable contacts.

ZIP—Zig-Zag In-Line Package: A DIP package that has all leads on one edge in a zig-zag pattern and mounts in a vertical plane.

Numerical Index

Note:
This numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

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Numerical Index
(continued)

Note:
This numerical index lists all cataloged parts by base (series) no. only. Complete part nos. (with prefixes and/or suffixes) are shown on the page(s) indicated.

Cross Reference — Semiconductor to AMP Socket

SQUARE

Legend:

LHCC — Low Height Chip Carrier Socket
UNIV. HIGH SPEED — Universal Ceramic Chip Carrier Socket
HPT — High Pressure Tin Socket
STD. LIF-PGA — Standard Low Insertion Force Pin Grid Array Socket
PREM. LIF-PGA — Premium Low Insertion Force Pin Grid Array Socket
ZIF-PGA — Zero Insertion Force Pin Grid Array Socket
BURN-IN PGA/PLCC — Burn-in Pin Grid Array Socket/Plastic Leaded Chip Carrier Socket
SKT., LOW PROF. PGA —Socket, Low Profile Pin Grid Array

MANUFACTURER	PART NUMBER	DESCRIPTION	PACKAGE	I/O	LHCC	UNIV. HIGH SPEED	HPT	STD. LIF-PGA	PREM. LIF-PGA	ZIF-PGA	BURN-IN PGA/PLCC	SKT., LOW PROF. PGA SOLDER-TAIL	SKT., LOW PROF. PGA WRAP 3-HIGH
ALTERA	EP1800	EPLD	PLCC	68			821574-1				832682-6		
AMD	AMPAL16HD8	PAL	PLCC	20			821815-1				3-821682-1		
AMD	AMPAL16H8	PAL	PLCC	20			821815-1				3-821682-1		
AMD	AMPAL16LD8	PAL	PLCC	20			821815-1				3-821682-1		
AMD	AMPAL16L8	PAL	PLCC	20			821815-1				3-821682-1		
AMD	AMPAL16R4	PAL	PLCC	20			821815-1				3-821682-1		
AMD	AMPAL16R6	PAL	PLCC	20			821815-1				3-821682-1		
AMD	AMPAL16R8	PAL	PLCC	20			821815-1				3-821682-1		
AMD	AM29325	32 BIT FPP	PGA 15X15	144*				916225-3	55275-4			916115-7	916135-7
AMD	AM29334	DUAL-ACC REG FILE	PGA 13X13	120				916223-1	55273-1			1-916113-3	1-916133-1
AMD	CA2068		LCCC/B	68	55159-2								
AMD	J8253A	COUNTER TIMER	PLCC	28			821581-1						
AMD	J8255A	PRG PRPHL INTERF	PLCC	44			821575-1				2-821682-4		
AMD	3500 SERIES	SCL	PGA 17X17	169				916227-3	55589-5			916117-3	916137-3
AMD	80186	16 BIT MP	LCCC/A	68	55159-2	821516-1							
AMD	80186	16 BIT MP	PGA 11X11	68				916221-3	55271-4	55281-2	55381-4	916111-3	916131-3
AMD	80186	16 BIT MP	PLCC	68			821574-1				821682-6		
AMD	80286	16/32 BIT MP	LCCC/A	68	55159-2	821516-1							
ANALOG DEVICES	ADSP1012	CO PROCESSOR	PGA 11X11	68				916221-3	55271-4			916111-3	916131-3
ANALOG DEVICES	ADSP1024	CO PROCESSOR	PGA 11X11	84				916221-3	55271-2			916111-7	916131-7
ANALOG DEVICES	ADSP-1009/10A	MULT/ACCUM	PGA 11X11	68				916221-3	55271-4			916111-3	916131-3
ANALOG DEVICES	ADSP-1016A	MULT	PGA 11X11	68				916221-3	55271-4			916111-3	916131-3
ANALOG DEVICES	ADSP-3210	F.P. MULT	PGA 13X13	100*				916223-5	55273-5			916113-7	916133-7
ANALOG DEVICES	ADSP-3220	F.P. ALU	PGA 15X15	144*				916225-3	55275-4			916113-7	916135-7
AT&T	DSP32	DSP	PGA 11X17	100					55488-1				
AT&T	32100	32 BIT MP	PGA 11X21	132					55487-1				
AT&T	32100	32 BIT MP	PGA 13X13	132*				916223-9	1-55273-2	1-55283-2	55383-9	2-916113-3	2-916133-1
AT&T	32101	MEM. MANG. UNIT	PGA 11X21	132					55487-1				
AT&T	32101	MEM. MANG. UNIT	PGA 13X13	132*				916223-9	1-55273-2	1-55283-2	55383-9	2-916113-3	2-916133-1
AT&T	32103	RAM	PGA 11X21	132					55487-1				
AT&T	32103	RAM	PGA 13X13	132*				916223-9	1-55273-2	1-55283-2	55383-9	2-916113-3	2-916133-1
AT&T	32104	DMA CONTROLLER	PGA 11X21	132					55487-1				
AT&T	32104	DMA CONTROLLER	PGA 13X13	132*				916223-9	1-55273-2	1-55283-2	55383-9	2-916113-3	2-916133-1
AT&T	32106	MATH ACCEL.	PGA 11X17	100					55488-1				
AT&T	32106	MATH ACCEL.	PGA 13X13	124*				916223-7	55273-8	55283-8	55383-6	1-916113-9	1-916133-7
FAIRCHILD	FGC6000	SCL	PGA 15X15	181				916225-4	55275-9	55285-3	55385-4	2-916115-1	1-916135-7
FAIRCHILD	FGE2500	SCL	PGA 15X15	156				916225-6	1-55275-2			1-916115-5	1-916135-3
HONEYWELL	HE2000	SCL	PGA 16X16	173						55286-2			
HONEYWELL	HM3500	SCL	PGA 14X14	152							55384-3		
INTEL	108517-001	MPC	PGA 15X15	149				916225-5	1-55275-1			1-916115-1	1-916135-1
INTEL	27C256	E PROM	PLCC, RECT	32			821665-1						
INTEL	27C64	E PROM	PLCC, RECT	32			821665-1						
INTEL	27128	E PROM	PLCC, RECT	32			821665-1						
INTEL	27512/3	E PROM	PLCC, RECT	32			821665-1						
INTEL	80C31	8 BIT MP	PLCC	44			821575-1				2-821682-4		
INTEL	80C51	8 BIT MP	PLCC	44			821575-1				2-821682-4		
INTEL	80186	16 BIT MP	LCCC/A	68	55159-2	821516-1							
INTEL	80186	16 BIT MP	PGA 11X11	68				916221-3	55271-4	55281-2	55381-4	916111-3	916131-3
INTEL	80188	16 BIT MP	PGA 11X11	68				916221-3	55271-4	55281-2	55381-4	916111-3	916131-3
INTEL	80188	16 BIT MP	LCCC/A	68	55159-2	821516-1							
INTEL	80286	16/32 BIT MP	LCCC/A	68	55159-2	821516-1							
INTEL	80286	16/32 BIT MP	PGA 11X11	68				916221-3	55271-4	55281-2	55381-4	916111-3	916131-3
INTEL	80386	32 BIT MP	PGA 14X14	132				916224-1	55274-1	55583-1	55573-2	916114-3	916134-3
INTEL	8051/8031	8 BIT MP	PLCC	44			821575-1				2-821682-4		
INTEL	8052/8032	8 BIT MP	PLCC	44			821575-1				2-821682-4		
INTEL	8096/8097	16 BIT MC	PLCC	68			821574-1				821682-6		
INTEL	8096/8097	16 BIT MC	PGA 11X11	68				916221-3	55271-4	55281-2	55381-4	916111-3	916131-3
INTEL	82786	CO PROCESSOR	PGA 13X13	88				916223-8	1-55273-0	55283-9	55383-7	916113-5	916133-5
INTEL	8396/7	16 BIT MC	PLCC	68			821574-1				821682-6		
INTEL	8396/7	16 BIT MC	PGA 11X11	68				916221-3	55271-4	55281-2	55381-4	916111-3	916131-3
LSI LOGIC	AB	PACKAGE SCL	LCCC/A	68	55159-2	821516-1							
LSI LOGIC	AK	PACKAGE SCL	LCCC/B	68	55159-2								
LSI LOGIC	AL	PACKAGE SCL	LCCC/A	84	55571-2								
LSI LOGIC	AM	PACKAGE SCL	LCCC/B	84	55225-2								
LSI LOGIC	FA	PACKAGE SCL	PGA 10X10	64				916220-3	55270-4	55280-2	55380-5	916110-3	916130-3
LSI LOGIC	FB	PACKAGE SCL	PGA 11X11	68*				916221-4	55271-5	55281-3	55381-5	916111-5	916131-5
LSI LOGIC	FC	PACKAGE SCL	PGA 11X11	84*				916221-2	55271-3	55281-4	55381-6	916111-9	916131-9
LSI LOGIC	FD	PACKAGE SCL	PGA 13X13	120*				916223-2	55273-2	55283-2	55383-4	1-916113-5	1-916133-3
LSI LOGIC	FE	PACKAGE SCL	PGA 15X15	144*				916225-3	55275-4	55285-2	55385-3	916115-7	916135-7
LSI LOGIC	FF	PACKAGE SCL	PGA 15X15	180*				916225-4	55275-9	55285-3	55385-4	2-916115-2	1-916135-7
LSI LOGIC	FG	PACKAGE SCL	PGA 13X13	100*				916223-5	55273-5	55283-5	55383-2	916113-7	916133-7
LSI LOGIC	FH	PACKAGE SCL	PGA 14X14	132				916224-1	55274-1	55284-1	55384-2	916114-3	916134-3
LSI LOGIC	LCA10000	SCL	PGA 17X17	225				916227-2	55589-4			916117-7	916137-7
LSI LOGIC	L64032	F.P. MULT	PGA 14X14	132				916224-1	55274-1	55284-1	55384-2	916114-3	916134-3
MOSTEK	GA1000D	SCL	PGA 11X11	68*				916221-4	55271-5	55281-3	55381-5	916111-5	916131-5

*Package contains 1 additional pin for polarization (i.e. 120 actually 121).

MANUFACTURER	PART NUMBER	DESCRIPTION	PACKAGE	I/O	LHCC	UNIV. HIGH SPEED	HPT	STD. LIF-PGA	PREM. LIF-PGA	ZIF-PGA	BURN-IN PGA/PLCC	SKT., LOW PROF. PGA SOLDER-TAIL	SKT., LOW PROF. PGA WRAP 3-HIGH
MOSTEK	GA2000D	SCL	PGA 11X11	84*				916221-2	55271-3	55281-4	55381-6	916111-9	916131-9
MOSTEK	GA3000D	SCL	PGA 13X13	100*				916223-5	55273-5	55283-5	55383-2	916113-7	916133-7
MOSTEK	GA4000D	SCL	PGA 13X13	120*				916223-2	55273-2	55283-2	55383-4	1-916113-5	1-916133-3
MOSTEK	GB1000D	SCL	PLCC	44			821575-1				2-821682-4		
MOSTEK	GB10000D	SCL	PGA 17X17	208*				916227-1	55589-2			916117-5	916137-5
MOSTEK	GB2000D	SCL	PLCC	52			821551-1						
MOSTEK	GB2000D	SCL	PLCC	68			821574-1				821682-6		
MOSTEK	GB6000D	SCL	PGA 15X15	144*				916225-3	55275-4	55285-2	55385-3	916115-7	916135-7
MOSTEK	GB8000D	SCL	PGA 15X15	180*				916225-4	55275-9	55285-3	55385-4	2-916115-1	1-916135-7
MOSTEK	68200	16 BIT MP	PGA 11X11	84*				916221-2	55271-3	55281-4	55381-6	916111-9	916131-9
MOTOROLA	MCA 1200	SCL	LCCC/A	68	55159-2	821516-1							
MOTOROLA	MCA 2500	SCL	PGA 15X15	149				916225-2	55275-3		55573-1	916115-9	916135-9
MOTOROLA	MCA 2800	SCL	PGA 15X15	149				916225-2	55275-3		55573-1	916115-9	916135-9
MOTOROLA	MCA 600	SCL	LCCC/A	68	55159-2	821516-1							
MOTOROLA	68HC11	16 BIT MP	PLCC	52			821551-1						
MOTOROLA	68000	16/32 BIT MP	PGA 10X10	68				916220-2	55270-3	55280-3	55380-2	916110-5	916130-5
MOTOROLA	68000	16/32 BIT MP	LCCC/B	68	55159-2								
MOTOROLA	68000	16/32 BIT MP	PLCC	68			821574-1				821682-6		
MOTOROLA	68010	16/32 BIT MP	PGA 10X10	68				916220-2	55270-3	55280-3	55380-2	916110-5	916130-5
MOTOROLA	68010	16/32 BIT MP	LCCC/A	68	55159-2	821516-1							
MOTOROLA	68010	16/32 BIT MP	PLCC	68			821574-1				821682-6		
MOTOROLA	68012	16 BIT MP	PGA 10X10	84				916220-1	55270-2	55280-4	55380-4	916110-7	916130-7
MOTOROLA	68012	16 BIT MP	PLCC	84			821573-1						
MOTOROLA	68020	32 BIT MP	PGA 13X13	114				11916223-3	55273-3	55283-4	55383-3	916113-9	916133-9
MOTOROLA	68030	32 BIT MP	PGA 13X13	128				1-916223-1	1-55273-8		1-55383-1	2-916133-3	2-916133-3
MOTOROLA	68440	DUAL DMA	PGA 10X10	68				916220-2	55270-3	55280-3	55380-2	916110-5	916130-5
MOTOROLA	68442	EXP DUAL DMA	PGA 10X10	68				916220-2	55270-3	55280-3	55380-2	916110-5	916130-5
MOTOROLA	68450	DMA CONTROLLER	PGA 10X10	68				916220-2	55270-3	55280-3	55380-2	916110-5	916130-5
MOTOROLA	68451	MEMORY MGMT	PGA 10X10	68				916220-2	55270-3	55280-3	55380-2	916110-5	916130-5
MOTOROLA	68461	MEMORY	PGA 13X13	124				916223-4	55273-4	55583-2	55573-3	1-916113-7	1-916133-5
MOTOROLA	68824	BUS CONTROLLER	PGA 10X10	84				916220-1	55270-2	55280-4	55380-4	916110-7	916130-7
MOTOROLA	68851	PMMU	PGA 13X13	132				1-916223-0	1-55273-4	1-55283-4		2-916113-1	1-916133-9
MOTOROLA	68881	CO-PROCESSOR	PGA 10X10	68				916220-2	55270-3	55280-3	55380-2	916110-5	916130-5
NAT'L SEMI	E68B	PACKAGE SCL	LCCC/B	68	55159-2								
NAT'L SEMI	NS32032	16/32 BIT MP	LCCC/A	68	55159-2	821516-1							
NAT'L SEMI	NS32032	32 BIT MP	PLCC	68			821574-1				821682-6		
NAT'L SEMI	NS32032	MMU	PLCC	68			821574-1				821682-6		
NAT'L SEMI	NS32081	FPU	PLCC	28			821581-1						
NAT'L SEMI	NS32106	16/32 BIT MP	PLCC	68			821574-1				821682-6		
NAT'L SEMI	NS32201	TCU	PLCC	28			821581-1						
NAT'L SEMI	NS32203	ICU	PLCC	44			821575-1				2-821682-4		
NAT'L SEMI	NS32332	32 BIT MP	PGA 13X13	85				916223-6	55273-7	55283-7	55383-5	916113-3	916133-3
NAT'L SEMI	NS32332	32 BIT MP	PLCC	84			821573-1						
NAT'L SEMI	SCX6232	SCL	LCCC/B	68	55159-2								
NAT'L SEMI	U124A	PACAKGE SCL	PGA 13X13	124				916223-4	55273-4	55283-6	55573-3	1-916113-7	1-916133-5
NAT'L SEMI	U172A	PACKAGE SCL	PGA 16X16	172						55286-5			
NAT'L SEMI	U68A AND B	PACKAGE SCL	PGA 10X10	68				916220-2	55270-3	55280-3	55380-2	916110-5	916130-5
NAT'L SEMI	U84B	PACKAGE SCL	PGA 10X10	84				916220-1	55270-2	55280-4	55380-4	916110-7	916130-7
NAT'L SEMI	V28A	PACKAGE	PLCC	28			821581-1						
NAT'L SEMI	V44A	PACKAGE SCL	PLCC	44			821575-1				2-821682-4		
NAT'L SEMI	V68A	PACKAGE SCL	PLCC	68			821574-1				821682-6		
NAT'L SEMI	V84A	PACKAGE	PLCC	84			821573-1						
NEC	UPD70208	16 BIT MP	LCCC/A	68	55159-2	821516-1							
SIEMENS	SAB80286	16 BIT MP	LCCC/A	68	55159-2	821516-1							
SIEMENS	SAB80286	16 BIT MP	PGA 11X11	68				916221-3	55271-4	55281-2	55381-4	916111-3	916131-3
SIEMENS	SAB80515/35	8 BIT MC	PLCC	68			821574-1				821682-6		
SIEMENS	SAB82258	ADMA CONTROL	LCCC/A	68	55159-2	821516-1							
T.I.	SMJ32020	DSP	PLCC	68			821574-1				821682-6		
T.I.	TIBPALR19L8	REG. PAL	PLCC	28			821581-1				2-821682-8		
T.I.	TIBPALR19R4	REG. PAL	PLCC	28			821581-1				2-821682-8		
T.I.	TIBPALR19R6	REG. PAL	PLCC	28			821581-1				2-821682-8		
T.I.	TIBPALR19R8	REG. PAL	PLCC	28			821581-1				2-821682-8		
T.I.	TIBPALT19L8	LATCH PAL	PLCC	28			821581-1				2-821682-8		
T.I.	TIBPALT19R4	LATCH PAL	PLCC	28			821581-1				2-821682-8		
T.I.	TIBPALT19R6	LATCH PAL	PLCC	28			821581-1				2-821682-8		
T.I.	TIBPALT19R8	LATCH PAL	PLCC	28			821581-1				2-821682-8		
T.I.	TIBPAL16L8-12	IMPACT PAL	PLCC	20			821815-1				3-821682-1		
T.I.	TIBPAL16L8-15	IMPACT PAL	PLCC	20			821815-1				3-821682-1		
T.I.	TIBPAL16L8-25	LOW POWER PAL	PLCC	20			821815-1				3-821682-1		
T.I.	TIBPAL16R4-12	IMPACT PAL	PLCC	20			821815-1				3-821682-1		
T.I.	TIBPAL16R4-15	IMPACT PAL	PLCC	20			821815-1				3-821682-1		
T.I.	TIBPAL16R4-25	LOW POWER PAL	PLCC	20			821815-1				3-821682-1		
T.I.	TIBPAL16R6-12	IMPACT PAL	PLCC	20			821815-1				3-821682-1		
T.I.	TIBPAL16R6-15	IMPACT PAL	PLCC	20			821815-1				3-821682-1		
T.I.	TIBPAL16R6-25	LOW POWER PAL	PLCC	20			821815-1				3-821682-1		
T.I.	TIBPAL16R8-12	IMPACT PAL	PLCC	20			821815-1				3-821682-1		
T.I.	TIBPAL16R8-15	IMPACT PAL	PLCC	20			821815-1				3-821682-1		
T.I.	TIBPAL16R8-25	LOW POWER PAL	PLCC	20			821815-1				3-821682-1		
T.I.	TIBPAL20L10-20	E/OR PAL	PLCC	28			821581-1				2-821682-8		
T.I.	TIBPAL20L8-15	IMPACT PAL	PLCC	28			821581-1				2-821682-8		

*Package contains 1 additional pin for polarization (i.e. 120 actually 121).

MANUFACTURER	PART NUMBER	DESCRIPTION	PACKAGE	I/O	LHCC	UNIV. HIGH SPEED	HPT	STD. LIF-PGA	PREM. LIF-PGA	ZIF-PGA	BURN-IN PGA/PLCC	SKT., LOW PROF. PGA SOLDER-TAIL	SKT., LOW PROF. PGA WRAP 3-HIGH
T.I.	TIBPAL20R4-15	IMPACT PAL	PLCC	28			821581-1				2-821682-8		
T.I.	TIBPAL20R6-15	IMPACT PAL	PLCC	28			821581-1				2-821682-8		
T.I.	TIBPAL20R8-15	IMPACT PAL	PLCC	28			821581-1				2-821682-8		
T.I.	TIBPAL20X10-20	E/OR PAL	PLCC	28			821581-1				2-821682-8		
T.I.	TIBPAL20X4-20	E/OR PAL	PLCC	28			821581-1				2-821682-8		
T.I.	TIBPAL20X8-20	E/OR PAL	PLCC	28			821581-1				2-821682-8		
T.I.	TI32032T-2	32 BIT MP	PGA 11X11	68				916221-3	55271-4	55281-2	55381-4	916111-3	916131-3
T.I.	TI32032T-2	32 BIT MP	PLCC	68			821574-1				821682-6		
T.I.	TMS32010	DSP	PLCC	44			821575-1				2-821682-4		
T.I.	TMS32020	DSP	PGA 11X11	68				916221-3	55271-4	55281-2	55381-4	916111-3	916131-3
T.I.	TMS38030	SYS INTERFACE	PGA 10X10	100				916220-4	55270-5	1-55280-0	55380-1	916110-1	916130-1
VTI	VL86C010	32 BIT MC	LCCC/B	84	55225-2								
WEITEK	WTL1164/5	CO PROCESSOR	PGA 11X11	68				916221-3	55271-4			916111-3	916131-3
WEITEK	WTL1164/5	CO PROCESSOR	LCCC/A	68	55159-2	821516-1							
WEITEK	1032/1033	FPM/ALU	LCCC/A	68	55159-2	821516-1							
WEITEK	1232/1233	FPM/ALU	PGA 11X11	68				916221-3	55271-4			916111-3	916131-3
WEITEK	1232/1233	FPM/ALU	LCCC/A	68	55159-2	821516-1							
WEITEK	2010	MULT/ACC	PGA 11X11	68				916221-3	55271-4			916111-3	916131-2
WEITEK	2010	MULT/ACC	LCCC/A	68	55159-2	821516-1							
WEITEK	2264/2265	FPM/D/ALU	PGA 15X15	144				916225-1	55275-1	55285-1	55385-5	916115-5	916135-5
WEITEK	7137	32 BIT INT PROC	PGA 15X15	144				916225-1	55275-1	55285-1	55385-5	916115-5	916135-5

DIP

LEGEND: **SL** — Single Leaf DIPLOMATE Socket
DL — Dual Leaf DIPLOMATE Socket
LF — Low Force DIPLOMATE Socket
HT — High Temperature DIPLOMATE Socket
ZIF-LOCK — Zero Insertion Force DIP Socket
SKT., LOW PROF. PGA — Socket, Low Profile Pin Grid Array

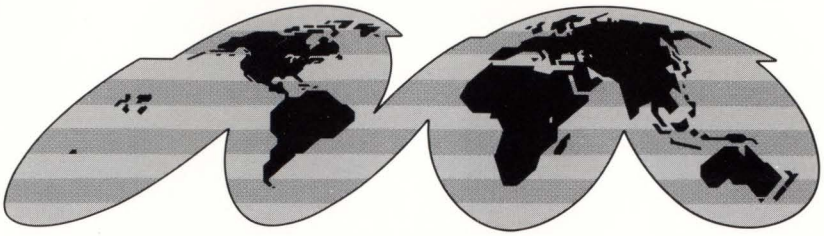
MANUFACTURER	PART NUMBER	DESCRIPTION	PACKAGE	I/O	SL	DL	LF	HT	ZIF-LOCK	SKT., LOW PROF. PGA SOLDER-TAIL	SKT., LOW PROF. PGA WRAP 3-HIGH
ANALOG DEVICES	ADSP-1009/10A	MULT/ACCUM	DIP	64		643575	643007	643310		916102	916162
ANALOG DEVICES	ADSP-1012	CO PROCESSOR	DIP	64		643575	643007	643310		916102	916162
ANALOG DEVICES	ADSP-1016A	MULT	DIP	64		643575	643007	643310		916102	916162
FUJITSU	MBL8086	8 BIT MP	DIP	40	641874	640379	641895	641714	54995-1	916098	916158
FUJITSU	MBL8088	8 BIT MP	DIP	40	641874	640379	641895	641714	54995-1	916098	916158
FUJITSU	MBM27128	128K EPROM	DIP	28	641873	640362	641894	641713	54994-1	916098	916158
FUJITSU	MBM27256	256K EPROM	DIP	28	641873	640362	643894	641713	54994-1	916098	916158
FUJITSU	MBM2764	64K EPROM	DIP	28	641873	640362	643894	641713	54994-1	916098	916158
FUJITSU	MB81256-15P	256K DRAM	DIP	16	641868	640358		641708	55174-1	916093	916153
FUJITSU	MB8264A-15P	64K DRAM	DIP	16	641868	640358		641708	55174-1	916093	916153
FUJITSU	MB8416A-15LP	16K RAM	DIP	24	641872	640361	641893	641712	54993-1	916098	916158
FUJITSU	MB8464-15LP	64K RAM	DIP	24	641872	640361	641893	641712	54993-1	916098	916158
INTEL	27010	U.V. EPROM	DIP	32		644018		644002			
INTEL	27011	P.A. EPROM	DIP	28	641873	640362	641894	641713	54994-1	916098	916158
INTEL	27210	WW / U.V. EPROM	DIP	40	641874	640379	641895	641714	54995-1	916098	916158
INTEL	8086	8 BIT MP	DIP	40	641874	640379	641895	641714	54995-1	916098	916158
INTEL	8088	8 BIT MP	DIP	40	641874	640379	641895	641714	54995-1	916098	916158
MOSTEK	68200	16 BIT MP	DIP	48		643574	643287	643309		916098	916158
MOSTEK	68201/44	16 BIT MP	DIP	48		643574	643287	643309		916098	916158
MOTOROLA	68HC11	16 BIT MP	DIP	48		643574	643287	643309		916098	916158
MOTOROLA	68000	16/32 BIT MP	DIP	64		643575	643007	643310		916102	916162
MOTOROLA	68010	16/32 BIT MP	DIP	64		643575	643007	643310		916102	916162
NAT'L SEMI	D20A	PACKAGE SCL	DIP (GOLD)	20	641870	640464		641710	55176-6	916093	916153
NAT'L SEMI	D28C	PACKAGE SCL	DIP (GOLD)	28	641873	640362	643894	641713	54994-6	916098	916158
NAT'L SEMI	D40C	PACKAGE SCL	DIP (GOLD)	40	641874	640379	641895	641714	54995-6	916098	916158
NAT'L SEMI	J40A	PACKAGE SCL	DIP (GOLD)	40	641874	640379	641895	641714	54995-5	916098	916158
NAT'L SEMI	N20A	PACKAGE SCL	DIP (GOLD)	20	641870	640464		641710	55176-5	916093	916153
NAT'L SEMI	N28B	PACKAGE SCL	DIP (GOLD)	28	641873	640362	641894	641713	54994-5	916098	916158
NAT'L SEMI	N40A	PACKAGE SCL	DIP (GOLD)	40	641874	640379	641895	641714	54995-5	916098	916158
T.I.	TMS32010	DSP	DIP	40	641874	640379	641895	641714	54995-1	916098	916158
T.I.	9650	PARA I.O. PORTS	DIP	40	641874	640379	641895	641714	54995-1	916098	916158
T.I.	9914A	PARA I.O. PORTS	DIP	40	641874	640379	641895	641714	54995-1	916098	916158
WEITEK	WTL11645	CO PROCESSOR	DIP	64		643575	643007	643310		916102	916162
WEITEK	1232/1233	FPM/ALU	DIP	64		643575	643007	643310		916102	916162
WEITEK	2010	MULT/ACCUM	DIP	64		643575	643007	643310		916102	916162
ZILOG	Z8000	16 BIT MP	DIP	40	641874	640379	641895	641714	54995-1	916098	916158
ZILOG	Z8000	16 BIT MP	DIP	48		643574	643287	643309		916098	916158
ZILOG	Z8100	16 BIT MP	DIP	64		643575	643007	643310		916102	916162

NOTES:

1. Dash numbers (suffix) matrix for DIP-SL, DL and LF (Note -4 in LF is PHBR/30mm Gold)
   -1 BECU/Tin -3 PHBR/Tin
   -2 BECU/30mm Gold -4 PHBR/10mm Gold

2. Dash numbers (suffix) matrix for DIP-HT
   -2 BECU/30mm Gold
   -4 BECU/10mm Gold

3. Dash numbers (suffix) matrix for socket, Low Profile sleeve plating combinations
   -1 BECU Gold Plated Spring; Gold Body
   -2 BECU Gold Plated Spring; Tin Body
   -3 BECU Tin Plated spring; Tin Body



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