

Table of Contents

High Speed Board Level Connectors

MULTIGIG RT 2-R Ruggedized Connectors for VPX Applications 1-3 to 1-6
 Fortis Zd Connector 1-7, 1-8
 Mezalok Connector (High Reliability Mezzanine Connector) 1-9, 1-10

AMP MIL-Spec PCB Connectors

Introduction 1-11

Mini-Box .050 [1.27] Centerline Connectors

Introduction 1-12
 Mini-Box and Extended Mini-Box Assemblies 1-13 to 1-23
 Microminiature COAXICON Contacts for Hybrid Cavities 1-24
 Recommended Printed Circuit Board Layouts 1-25 to 1-27
 Keying Hardware 1-27
 4-Row Mini-Box Connectors 1-28, 1-29

AMP-HDI .075 [1.91] Staggered Centerline LRM Connectors

Introduction 1-30
 AMP-HDI 6-Row and 8-Row Connectors 1-31 to 1-35
 AMP-HDI Accessories and Shell Accessories 1-36, 1-37

Box .075 [1.91] Centerline Connectors

Introduction 1-38
 Assemblies, Receptacle and Pin Header 1-39 to 1-42
 Stacking Connectors 1-43
 Recommended Printed Circuit Board Layouts 1-44

Box .100 [2.54] Centerline Connectors

Introduction 1-45
 Assemblies, Receptacle and Pin Header 1-46 to 1-55
 Pin Housing and Assemblies for Crimp Contacts 1-56, 1-57
 Receptacle Housing and Assemblies for Crimp Contacts 1-58 to 1-60
 Assemblies, 3-Row and 4-Row 1-61 to 1-65
 Assemblies with Hybrid Cavities 1-66 to 1-69
 Microminiature COAXICON Contacts for Hybrid Cavities 1-70
 Recommended Printed Circuit Board Layouts 1-71 to 1-76
 Keying Hardware and Replacement Contacts for
 .075 [1.91] and .100 [2.54] Centerlines 1-77, 1-78

Box II Connectors

Vertical Receptacles with ACTION PIN Posts and Solder Post Contacts 1-79
 Horizontal Motherboard Stacking (Not Recommended for MFBL Applications) 1-80
 Assemblies, 4-Row, 3-Row, and 2-Row 1-81 to 1-84
 Recommended Printed Circuit Board Hole Layouts 1-85, 1-86
 ACTION PIN Press-Fit Contacts 1-87
 Application Tooling 1-88
 Hardware and Applications 1-89, 1-90

AMPMODU .100 [2.54] Centerline Connectors per MIL-C-55302

Introduction 1-91
 Receptacle Assemblies, Single Row and Double Row 1-92 to 1-97
 Special Double Row Receptacles 1-98

Table of Contents (Continued)

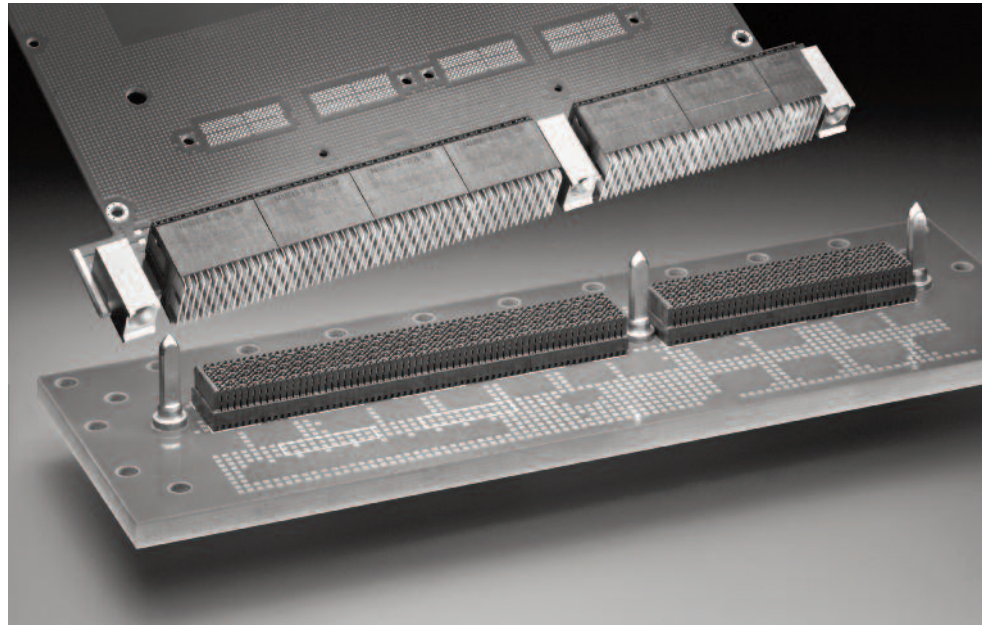
AMP-BLADE Two-Piece Printed Circuit Edge Connectors

Introduction	1-99
AMP-BLADE Connector for Snap-In Receptacle Contacts	1-100
Board Half Housing Pre-loaded with Blade Type Contacts	1-101, 1-102
Wire-Half Assemblies and Housings	1-103
Receptacle Housings for Crimp Snap-In Contacts	1-104
AMP-BLADE Connector Keying	1-105
Application Tooling	1-106

MULTIGIG RT 2-R Ruggedized Connectors for VPX Applications

Product Facts

- Quad-redundant contact system supports high levels of shock/vibration
- Compliant to VITA 46 for Open VPX applications
- Supports Ethernet, Fibre Channel, InfiniBand applications, PCIe and Serial RapidIO high speed protocols
- Modular, lightweight connector system
- Robust “pinless” interface
- Differential, single-ended and power
- Ruggedized guide hardware available
- Supports 0.8 inch card slot pitches
- VITA 46 compliance enables upgrade in existing VPX applications
- Can be combined with high power modules (VITA 62), RF modules (VITA 67) and Optical modules (VITA 66)



Description

TE's MULTIGIG RT 2-R ruggedized, light weight, high speed board-to-board-interconnect is compliant to VITA 46 standard. This connector system features a quad-redundant contact structure designed for high vibration levels.

Applications

Rugged embedded computing applications:

- Ground Defense
- Missile Defense
- Electronic Systems / C4ISR
- Space
- Commercial and Military Aerospace

Materials

Contacts: High performance copper alloy, plated 50 μ m Au over 50 μ m Ni in mating area, tin-lead on compliant pin tails

Housings: High temperature thermoplastic

Rugged Guide Hardware: Aluminum and passivated stainless steel

Mechanical

Operating Temperature: -55 to +105°C

Mating Force: 0.75 N [2.70 ozf] maximum per contact

Standards & Specifications

Compliant to VITA 46 (VPX)

Product Specification: 108-2072

Application Specification: 114-13056

Qualification Test Report: 501-544

Physical or other Properties

Tested to HALT (Highly accelerated life test) vibration levels (0.2G²/Hz) per VITA 72

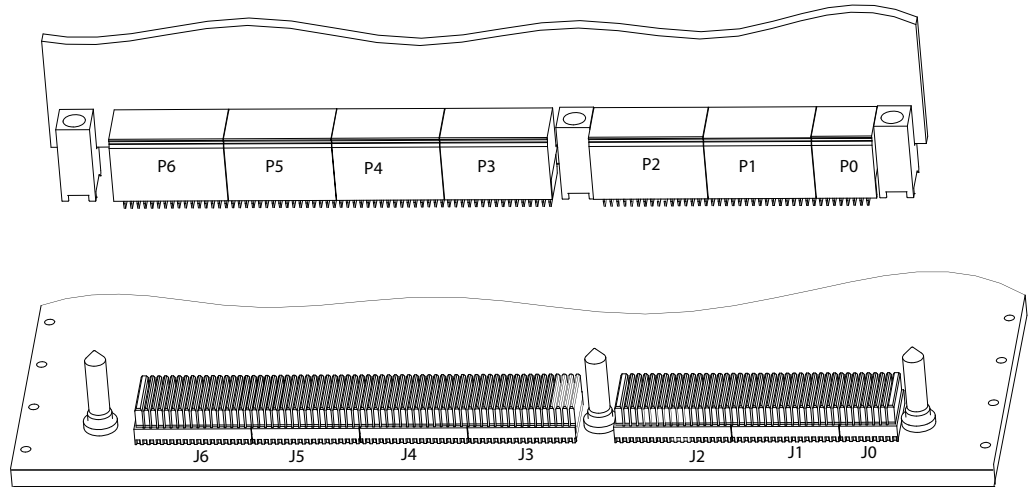
Connector modules available for 3U and 6U VPX slot profiles, including rear transition modules

Reliable press-fit termination, requiring only flat rock tooling

Lightest weight VPX connector system: mated set of connectors and guide hardware for typical module and backplane slots: 3U - 62.66g (2.21 oz); 6U - 140.26g (4.95 oz)

MULTIGIG RT 2-R Ruggedized Connectors for VPX Applications (Continued)

Part Configurations



Daughtercard

Module Position	Part No.	
	Ruggedized MULTIGIG RT 2-R (Extended Pad Wafers)	MULTIGIG RT 2 Connectors
PO	2102772-1	1410189-3
P1, P2, P3, Differential	2102771-1	1410187-3
P4, P5, P6 Single-Ended	2102847-1	1410190-3
Keying Guide Modules	2000713-X	1-1469492-X
	Machined 6061 Aluminum Guide Socket, w/ESD Contact	Standard (Zinc Die Cast) Guide Socket

See TE drawings for guide module and pin options.

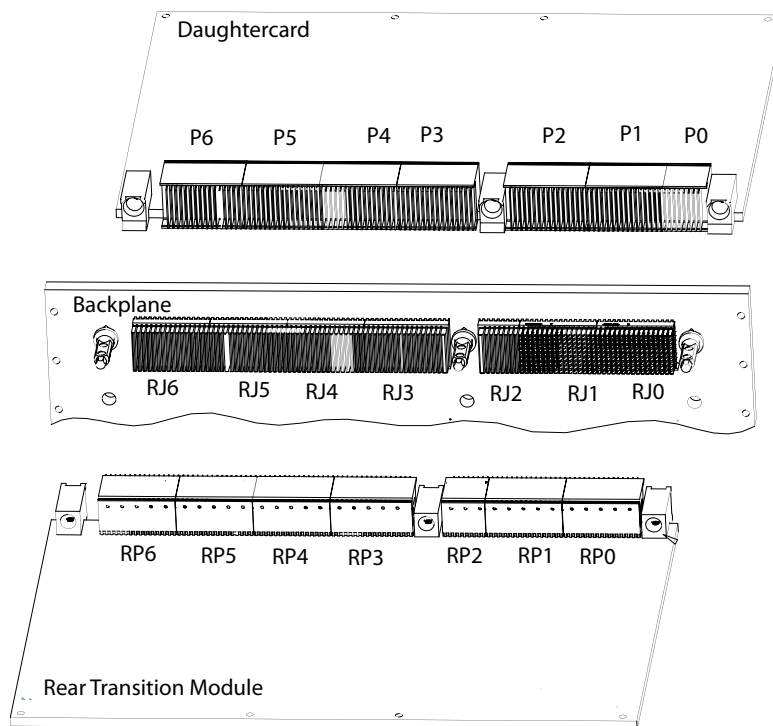
Backplane

Module Position	Part No.	
	Ruggedized MULTIGIG RT 2-R (Quad Redundant Contacts)	MULTIGIG RT 2 Connectors
JO	2102735-1	1410186-1
J1, J3, J4, J5	2102736-1	1410140-1
J2, J6	2102737-1	1410142-1
Keying Guide Pin	2000676-X	1-1469491-X
	Stainless Steel Guide Pin	Standard (Zinc Die Cast) Guide Pin

See TE drawings for guide module and pin options.

MULTIGIG RT 2-R Ruggedized Connectors for VPX Applications (Continued)

Part Configurations



Rear Transition Module

Module Position		Part No.	
MULTIGIG RT 2		Ruggedized MULTIGIG RT 2-R	
		(Extended Pad Wafers)	Connectors
RPO	Differential	2102773-1	1410968-3
	Differential & Single-Ended	2102774-1	1410975-3
RP1	Differential	2102849-1	1410970-3
	Single-Ended	2102775-1	1410971-3
RP2	Differential	2102848-1	1410972-3
	Single-Ended	2102774-1	1410975-3
RP3, RP4, RP5, RP6	Differential	2102847-1	1410190-3
	Single-Ended	2102847-1	1410190-3
Keying Guide Modules		2000713-X	1-1469492-X
		Machined 6061 Aluminum Guide Socket, w/ESD Contact	Standard (Zinc Die Cast) Guide Socket

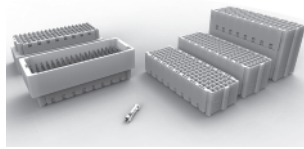
See TE drawings for guide module and pin options.

Rear Transition Backplane

Module Position		Part No.	
		Ruggedized MULTIGIG RT 2-R (Quad Redundant Contacts)	MULTIGIG RT 2 Connectors
RJO	See Note 1	2102768-1	1410964-1
	See Note 2	2102850-1	1410965-1
RJ1	See Note 3	2102736-1	1410140-1
	See Note 4	2102851-1	1410966-1
RJ2		2102735-1	1410186-1
RJ3		2102737-1	1410142-1
RJ4, RJ5, RJ6		2102736-1	1410140-1
Keying Guide Pin		2226127-1	1410956-1
		Stainless Steel Guide Pin	Standard (Zinc Die Cast) Guide Pin

Notes (Reference VITA 46.10; Observation 3-6):

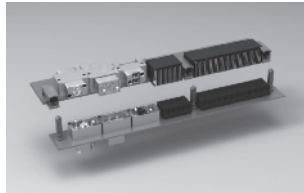
- Note 1:** 16 column shell, 15 columns of contacts
- Note 2:** 16 column shell, 7 columns of contacts present
- Note 3:** 16 column shell, 16 columns of contacts
- Note 4:** 16 column shell, 8 columns of contacts present

MULTIGIG RT 2-R Ruggedized Connectors for VPX Applications (Continued)**Associated VPX Solutions****MEZALOK Mezzanine Connectors (Compliant to VITA 61)**

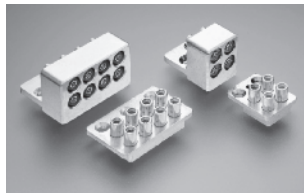
- Utilizes the proven, reliable MIL-55302 Mini-Box contact interface, with four points of contact
- Backwards compatible with XMC board footprint
- Accommodates 10mm, 12mm, 15mm and 18mm stack heights
- Solder ball SMT attach in SnPb and RoHS options
- 114 (6 x 19) positions and 60 (6 x 10) positions
- Protected "stub-proof" socket contacts w/superior signal integrity
- Exceptional solder joint reliability (1000+ cycles thermal shock)

**MULTI-BEAM XLE Power Connectors (Compliant to VITA 62)**

- 20A and 50A power contacts, plus signal contacts
- 3-beam high-conductivity-copper contact design allows for a greater angular misalignment between mating connectors and offers a lower mating force
- Slim guide sockets reduce the overall PCB footprint
- Vented housing allows for better heat dissipation
- Hot-plug capable

**Optical Modules (Compliant to VITA 66)**

- Light weight
- High bandwidth
- EMI immunity
- 3 fiber optic interface types available:
 - 66.1 has two MT ribbon ferrules up to 24 fibers each
 - 66.2 four ARINC 801 termini
 - 66.3 one expanded beam lensed insert with four fibers

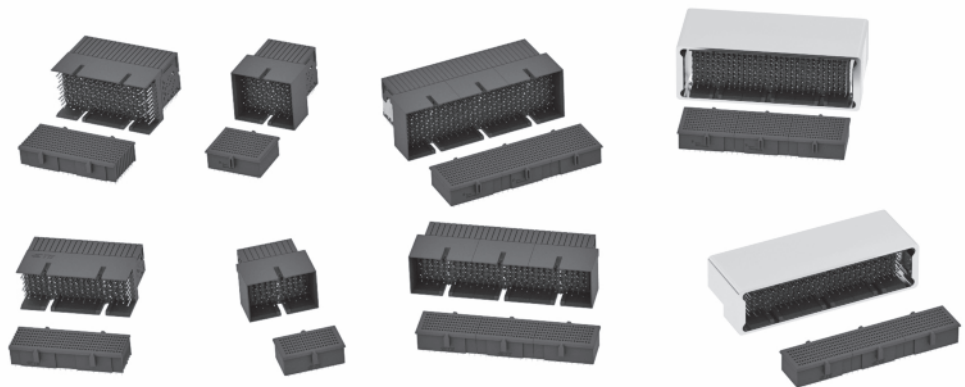
**RF Modules (Compliant to VITA 67)**

- Excellent channel-to-channel isolation and RF performance to 65 GHz
- Modular design permits application specific configuration with high RF contact count
- Float mounted jack maintains positive RF ground
- 240 center-to-center spacing
- 4 and 8 position modules are designed to meet the requirements of VITA 67.1 and VITA 67.2

Fortis Zd Connector

Product Facts

- Allows 10+ Gb/s data rates
- Extreme mechanical and electrical performance for the most demanding applications
- Modular design allows for user configurability and modular evolution
- M55302 heritage Mini-Box separable interface provides 4 points of contact
- Three options for application versatility, including standard, shielded and rugged metal shell
- 3-Pair and 2-Pair versions available to accommodate multiple slot pitches
- Space compatible materials
- Proven compliant pin board attach facilitates manufacturing efficiency, reparability, and superior electrical performance
- Staggered daughtercard pin field supports 2 level maintenance
- Protected pin field on backplane for reliability and durability



Description

Modular backplane connector system combining the highest performance mil/aero and commercial technologies in a user configurable platform.

Built to be the most robust and highest performance backplane connector.

Technical Documents

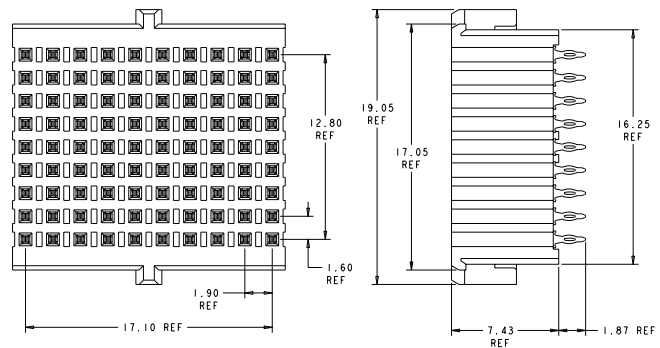
Product Specifications: 108-2409

Qualification Test Report: 501-752

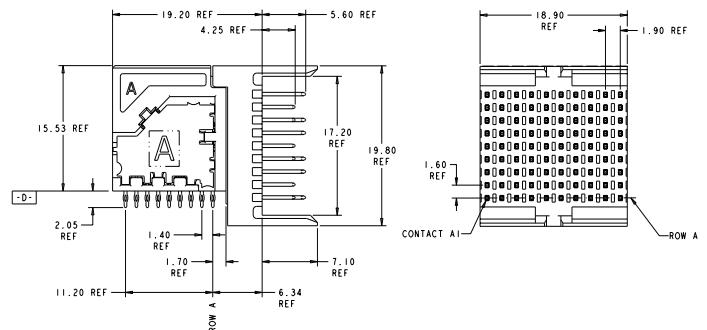
Application Specification: 114-13267

Product Dimensions

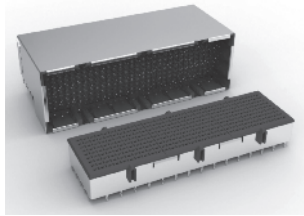
2000896-1 (3-pair, Vertical Center Module)



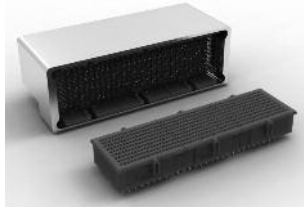
-1 (3-pair, Right-Angle Center Module)



Fortis Zd Connector (Continued)



3-Bay Shielded



3-Bay Metal Shell

Mechanical

Durability: 500 mating cycles
 Operating Temperature:
 -55 to +125°C
 Contact Engaging &
 Separating Force: 4.0 oz. max

Physical or Other Properties

10 and 20 column modules
 3-pair (9-row) and 2-pair (6-row) modules
 6U configuration offers 300 differential pairs
 Multi-bay shielded and rugged shell options
 6 row module enables 0.6" reduced form factor card pitch
 Modularity enables scalability for various card sizes

Materials

Contacts: High performance copper alloy
 Plated 50µin Au over 50µin Ni in mated contact area
 Tin/lead or tin (RoHS) on compliant tails
 Housings: High temperature thermoplastic
 Shell:
 Shield: Copper alloy
 Rugged shell: 6061 Aluminum with trivalent chromate conversion coating

Ordering Information

Size	Description	Right Angle Connector Modules ¹						Vertical Connector Modules ¹				
		10-col. left	10-col. center	20-col. center	10-col. right	10-col. full shroud	20-col. full shroud	10-col. end	10-col. center	20-col. center	10-col. full shroud	20-col. full shroud
2-pair	Differential	2102086	2102087	2102096	2102088	2102081	2102232	2102092	2102093	2102098	2102094	2102234
3-pair	Differential	2000890	2000891	2000903	2000892	2102155	2102159	2000895	2000896	2000905	2102157	2102161
3-pair ²	Single-Ended	2102314	2102315	2102316	2102317	2102318	2102319					

Size	Description	Shielded Right Angle Connector Modules						Shielded Vertical Connector Modules					
		10-col.	20-col.	30-col.	40-col.	50-col.	60-col.	10-col.	20-col.	30-col.	40-col.	50-col.	60-col.
3-pair	Differential	2102247-1	2102247-2	2102247-3	2102247-4	2102247-5	2102247-6	2102248-1	2102248-2	2102248-3	2102248-4	2102248-5	2102248-6
3-pair ²	Single-Ended	2102320-1	2102320-3	2102320-4	2102320-4	2102320-5	2102320-6						

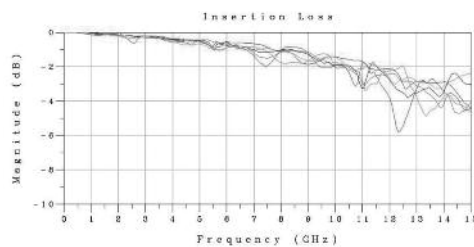
Size	Description	Rugged Shell for Right Angle Connector Modules					
		10-col.	20-col.	30-col.	40-col.	50-col.	60-col.
2-pair	Differential	2102114-1	2102114-2	2102114-3	2102114-4	2102114-5	2102114-6
3-pair	Differential	2102077-1	2102077-2	2102077-3	2102077-4	2102077-5	2102077-6

	VITA 46 Die Cast	VITA 46 Machined
Guide Pin	1469491	2000676
Guide Module	1469492	2000677 or 2000713

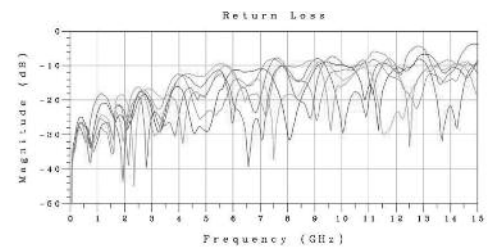
See drawings for dash number options.

- 1. -1 SnPb Tails, -2 Sn Tails
- 2. Single-Ended 3-pair uses the same vertical connector as differential 3-pair

Differential Insertion Loss



Differential Return Loss



Mezalok Connector (High Reliability Mezzanine Connector)

Product Facts

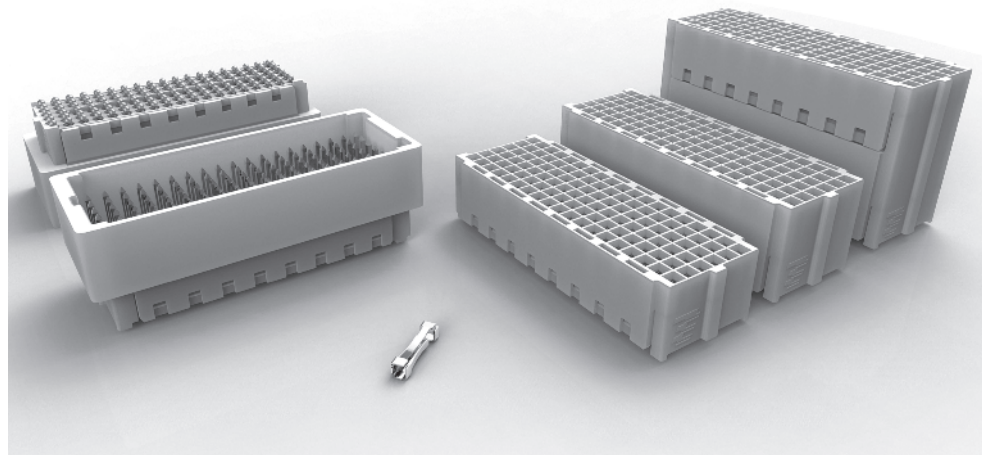
- Allows 10Gb/s and data rates
- 60, 114, and 320 positions
- Mini-Box contact system provides 4 points of contact for ultra reliability
- LCP plastic housings offer superior thermal stability and are low-outgassing
- Compliant BGA board attach supports standard surface mount processing and excellent thermal stability
- 114 position footprint compatible to XMC footprint and all dimensional constraints, VITA 61 compliant
- Stack heights from 10 mm to 18 mm

Technical Documents

Product Specifications:
108-2411

Qualification Test Report:
501-735

Application Specification:
114-13279



Description

Rugged surface mount mezzanine connector incorporating “super-redundant” Mini-Box contact system for separable interface.

Designed for 10 mm through 18 mm stack heights.

Applications

Stacking or mezzanine applications

114 position is designed to support VITA 61 XMC architecture as rugged alternative to VITA 42 XMC

60 and 320 position designed for custom architecture stacking applications

Mechanical

500 mating cycles durability
Mating force: 0.30 lb. max. times number of contacts

-65°C to +125°C operating temperature

Shock and vibration per VITA 47 requirements

Materials

Pin Assembly: LCP plastic housings, white in color

Socket Assembly: LCP plastic housings, white in color

Contacts: High Performance Copper Alloy, 50µ” Au in mating interface (Sn/Pb and SAC305 solder balls are available)

Standards & Specs

114 position conforms to requirement of VITA 61 (VITA 42 Alternate)

VITA 42 and VITA 61 are not intermateable, but are footprint and XMCarchitecture compatible

Application Tooling

Product is installed via standard BGA surface mount processes.

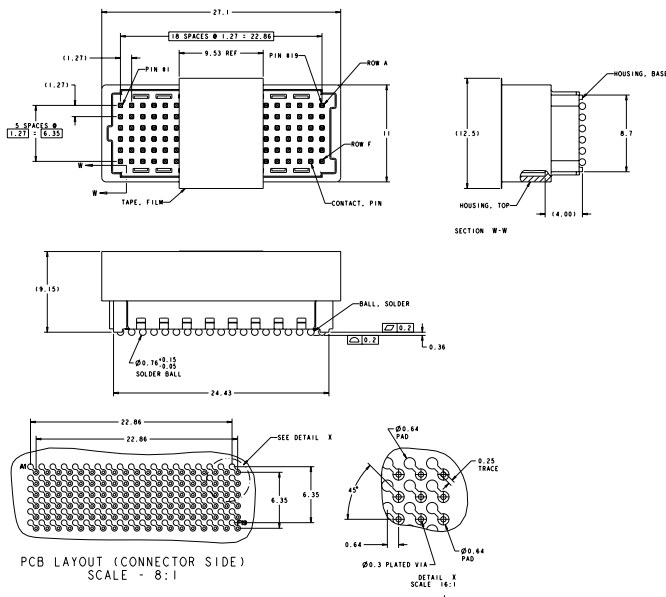
Mezalok Connector (High Reliability Mezzanine Connector) (Continued)



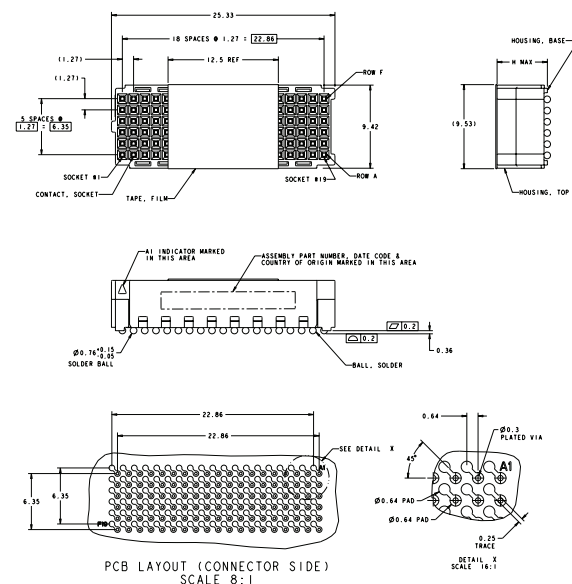
Mini-box contact

No. of Pos.	Interface	Mated Stack Height (mm)	Part No.	Contact Plating	BGA Solder
60	pin	10	2102079-1	1.27 um gold	tin-lead
			2102079-2	1.27 um gold	lead free
			2102079-3	0.76 um gold	tin-lead
			2102079-4	0.76 um gold	lead free
			2102080-1	1.27 um gold	tin-lead
			2102080-2	1.27 um gold	lead free
	socket	12	2102080-5	0.76 um gold	tin-lead
			2102080-6	0.76 um gold	lead free
			2102080-3	1.27 um gold	tin-lead
			2102080-4	1.27 um gold	lead free
			2102080-7	0.76 um gold	tin-lead
			2102080-8	0.76 um gold	lead free
114	pin	18	2102080-9	1.27 um gold	tin-lead
			1-2102080-0	1.27 um gold	lead free
			1-2102080-1	0.76 um gold	tin-lead
			1-2102080-2	0.76 um gold	lead free
			2102060-1	1.27 um gold	tin-lead
			2102060-2	1.27 um gold	lead free
	pin	10	2102060-3	0.76 um gold	lead free
			2102060-4	0.76 um gold	lead free
			2102061-1	1.27 um gold	tin-lead
			2102061-2	1.27 um gold	lead free
			2102061-5	0.76 um gold	tin-lead
			2102061-6	0.76 um gold	lead free
	socket	12	2102061-3	1.27 um gold	tin-lead
			2102061-4	1.27 um gold	lead free
			2102061-7	0.76 um gold	tin-lead
			2102061-8	0.76 um gold	lead free
			1-2102061-3	1.27 um gold	tin-lead
			1-2102061-4	1.27 um gold	lead free
socket	15	1-2102061-5	0.76 um gold	tin-lead	
		1-2102061-6	0.76 um gold	lead free	
		2102061-9	1.27 um gold	tin-lead	
		1-2102061-0	1.27 um gold	lead free	
		1-2102061-1	0.76 um gold	tin-lead	
		1-2102061-2	0.76 um gold	lead free	
320	pin	10	2102429-1	1.27 um gold	tin-lead
			2102429-2	1.27 um gold	lead free
			2102429-3	0.76 um gold	tin-lead
			2102429-4	0.76 um gold	lead free
			2102430-1	1.27 um gold	tin-lead
			2102430-2	1.27 um gold	lead free
	socket	18	2102430-5	0.76 um gold	tin-lead
			2102430-6	0.76 um gold	lead free
			2102430-9	1.27 um gold	tin-lead
			1-2102430-0	1.27 um gold	lead free
			1-2102430-1	0.76 um gold	tin-lead
			1-2102430-2	0.76 um gold	lead free

Pin — 2102060

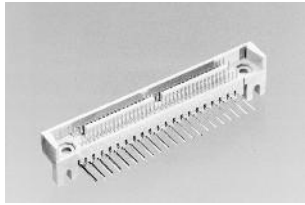


Socket — 2102061



Introduction

Mini-Box .050 [1.27] Centerline Connectors



Mini-Box Contact Connectors, per MIL-C-55302 are available in 2-row configurations with pin counts from 20 to 200 positions and uses the reliable 4-beam box contact and 4-row configurations up to 320 positions. The tighter centerline spacing, .050 x .150 [1.27 x 3.81] in 2-row, .050 x .100 [1.27 x 2.54] in 4-row, provides more pins within a specified distance and the staggered footprint allows for easier manufacturing of the pc boards.

Standard receptacles are thru-hole flow solder, surface mount, press fit tail and straddle mount. Standard pin headers are available in a choice of surface mount, straddle mount or right-angle configurations.

Extended receptacles are vertical thru-hole and pin headers are available in straddle mount or right-angle thru-hole versions.

In addition, Mini-Box 2-row connectors are available with 4 or 6 hybrid cavities which accept micro-miniature coax contacts or a choice of high voltage pin and socket contacts.

TE Connectivity Mini-Box connectors are also available in 4-row connector configurations. Vertical mount receptacle assemblies and pin headers with flexible circuit tails.

AMP-HDI .050 [1.27] and .075 [1.91] Centerline Connectors

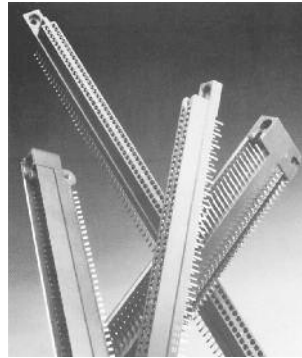


This family includes .050 [1.27] stacking connectors and 6 & 8 Row LRM (Line Replaceable Module) Connectors

Designed specifically to be the next generation, high density electronic packaging system, the AMP-HDI 6 Row, .075 [1.91] centerlines and 8 Row, .080 [2.03] centerlines, LRM Interconnection System meets applicable DSCC 89065 LRM specifications. This advanced system features high temperature plastic housings compatible with IR reflow solder techniques. Added advantage of the AMP-HDI LRM System is its capability of accepting MIL SPEC fiber optic contacts per MIL-T29504/5. Six-row configurations available in 306 contact positions. Eight-row configurations feature two 214 position plug halves which mate with one 428-position receptacle. This technological leader is offered with standard tin-lead plated solder tails and for those applications where maintaining a light weight system is a factor. The 8-row configuration is made available with weight saving, flexible film tails.

Equally important are Application Costs. The AMP-HDI LRM interconnection system offers advanced tooling that simplifies contact alignment to the pc board, substantially reducing overall applied labor costs.

.075 [1.91] & .100 [2.54] Centerline Box Contact Connectors

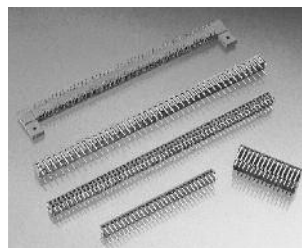


Box Contact Connectors with contacts on .075 [1.91] & .100 [2.54] centerline spacing are available in 2, 3 and 4-row configurations with pin counts up to 300 contact positions. Box contact connectors use this unique, reliable four-beam design which offers low applied cost while maintaining high reliability and performance.

Commercial military versions are available for both pin headers and receptacles.

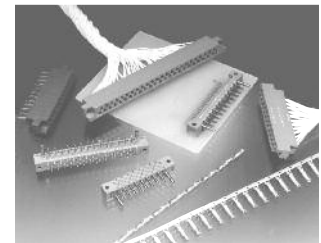
Box II vertical receptacles with ACTION PIN Posts and Solder Post Contacts are also available. When mated with AMP-HDI pin assemblies, these permit horizontal stacking of motherboards. 2, 3, and 4-row connector versions are available.

.100 [2.54] Centerline Connectors



AMPMODU Board-Mount Receptacle Assemblies

are qualified to MIL-C-55302, and provide a compact and versatile means of interconnecting today's complex electronic modules. Right-angle receptacle connectors mate with .025² [0.64²] posts, have dual cantilever spring contact design and built-in anti-overstress, duplex gold-over-nickel plating, and wide misalignment tolerances. Contacts are on .100 [2.54] centerlines, and are available in single or double row, blue diallyl phthalate housings. Assemblies will accommodate pcb .062 [1.57] or .093 [2.36] thick.



AMP-BLADE Two-Piece PC Edge Connectors

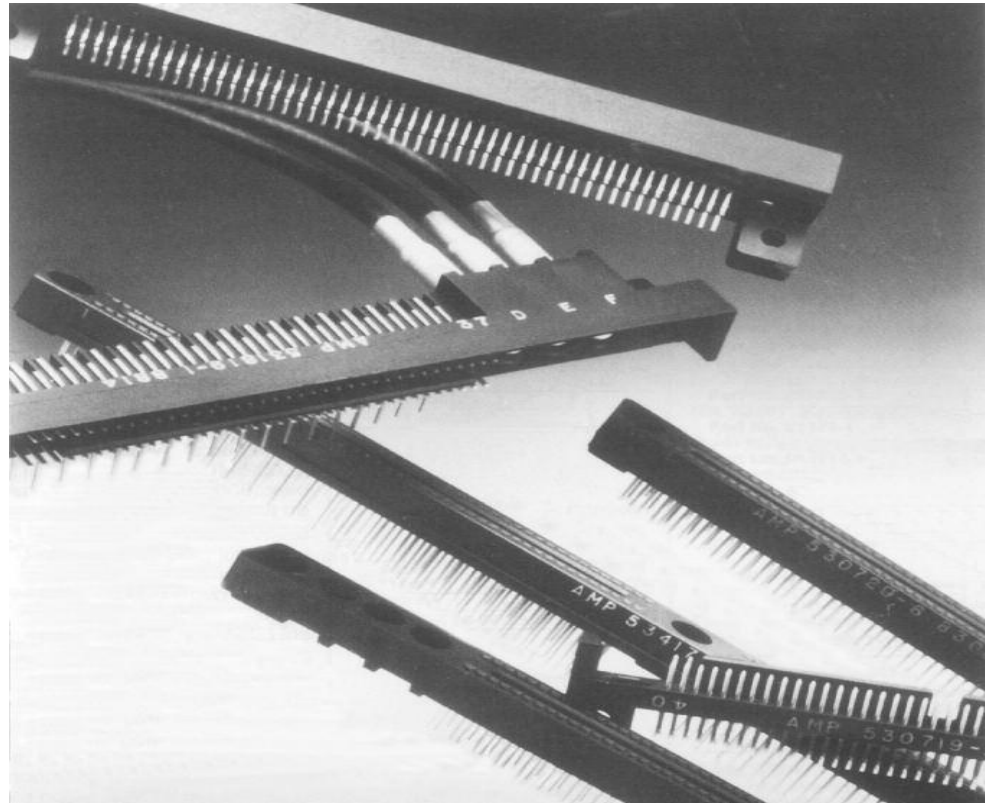
provide high levels of conductivity and reliability to meet the performance specifications of MIL-C-21097, and the design requirements of MIL-E-5400. Blade and receptacle contacts, on .100 [2.54] centerlines provide multiple areas of contact for maximum conductivity. Blade contacts are gold plated in the contact mating area, with tin-lead on the solder tails all over nickel underplate.

PC board housings are available with or without mounting hole while cable-mount connectors are designed for maximum versatility, and will accept a variety of receptacle contact designs.

Introduction

Product Facts

- Contacts are on .050 x .150 [1.27 x 3.81] centers
- Four-beam box-type receptacle contact design provides four areas of contact per connection
- Quad-beam contact redundancy makes it an excellent choice in high-vibration environments
- 2-row standard versions: 2 to 120 contact positions
- 2-row extended versions: 132 to 200 contact positions
- 4-row versions: 120 to 320 contact positions
- Sealed versions available
- Pin headers are available in straddle mount (with or without pin protectors) and right-angle versions (with pin protectors)
- Solder tails on receptacles and right-angle pin headers are staggered for easy access
- Hybrid connectors with coaxial and signal contacts available
- Qualified to MIL-C-55302/117, /118, /119
- 2 row and 4 row versions available



TE Connectivity Mini-Box .050 [1.27] centerline connectors are available in 2-row connector configurations having 20 to 128 contact positions in the standard version, and 132 to 200 contact positions in the extended version.

Standard Mini-Box receptacle assemblies are available with a choice of thru-hole, surface-mount or straddle mount solder tails. Standard Mini-Box pin headers are designed with surface-mount, straddle

mount, and thru-hole right-angle solder tails.

Extended receptacle assemblies are vertical-mount thru-hole configurations, and pin headers are in a choice of straddle mount or thru-hole versions.

A 4-row version for compact high count connections* is offered in thru-hole receptacle and straddle mount pin header configurations.

Mini-Box connectors are also available in four or six cavity hybrid configurations with 26 to 74-Mini-Box contacts.

Coaxial Cavities in the hybrid Mini-Box connectors will also accept high voltage pin or socket contacts with operating voltage up to 5KVDC.

External keying is an added feature of the TE Mini-Box connector family. External keys are used with receptacle assemblies and pin headers. Keys used in one end of each mated pair will yield eight keying combinations. If used in both ends sixty-four keying combinations are possible.

*up to 360 positions

Performance Characteristics

Rated Current — 1.5 amps per contact

Operating Temperature Range — -85° to 257°F [-65° to 125° C]

Maximum Mating Force — .3 lb. [.08N] per contact

Durability — 500 cycles of mating and unmating

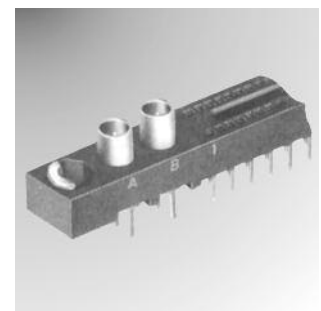
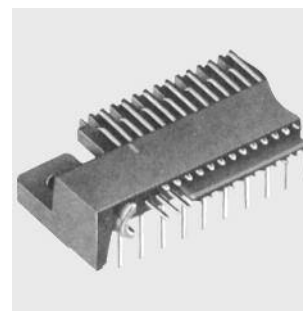
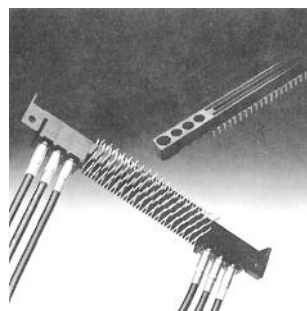
Dielectric Withstanding Voltage — 600 VAC at sea level, 150 VAC at 70,000 feet

Technical Documents

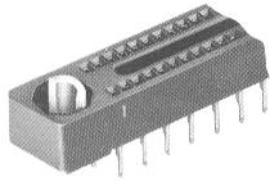
Product Specifications

108-9046 Connector Mini-Box Contact

108-1663 Connector Mini-Box Contact with Compliant Printed Wiring Board Termination



**Mini-Box Receptacle Assemblies for Flow Soldering —
MIL-C-55302 Qualified**



Housing Material — In accordance with MIL-M-24519 per MIL-C-55302. GLCP-30F, liquid crystal polymer

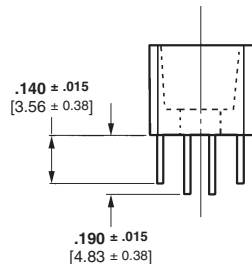
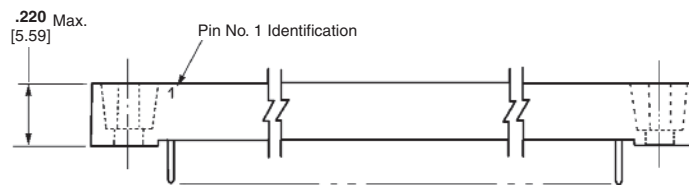
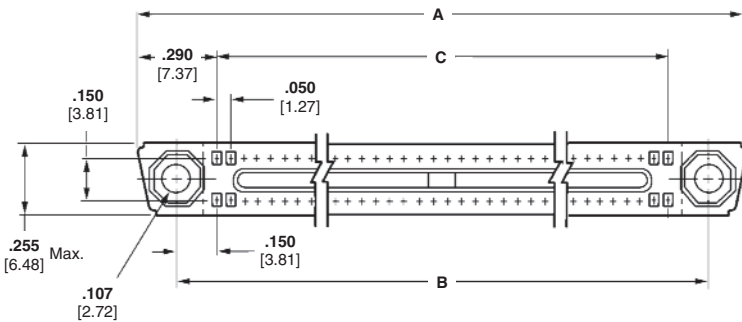
Contact Material and Finish — Commercial receptacle — Beryllium copper per QQ-C-533 or ASTM B768, or phosphor bronze per ASTM B103 plated .000030 [0.00076] min. gold in the mating area, .000100 [0.00254] min. tin-lead in the terminating area over .000030 [0.00076] min. nickel on the entire contact; Military receptacle — Beryllium copper per QQ-C-533 or ASTM B768, or phosphor bronze per ASTM B103 plated .000050 [0.00127] min. gold in the mating area, .000100 [0.00254] min. tin-lead in the terminating area over .000030 [0.00076] min. nickel on the entire contact

Related Product Data

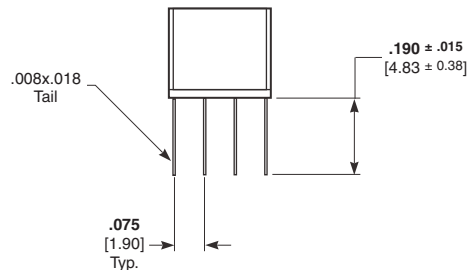
Mates with — Pin headers, pages 1-21 to 1-22

External Keying — page 1-30

Recommended PC Board Layout — page 1-28



530720 and 530745 Series



534175 Series

No. of Pos.	Dimensions			Assembly Part Nos.		Military Assembly Part Nos.		
	A	B	C	Commercial	Epoxy Sealed*	M55302/	Unsealed	Sealed
128	3.740 95.00	3.450 87.63	3.150 80.01	530720-9	534175-1	119-11	1-530745-1	2-530745-2
110	3.290 83.57	3.000 76.2	2.700 68.58	530720-8	534175-2	119-10	1-530745-0	2-530745-1
100	3.040 77.22	2.750 69.85	2.450 62.23	530720-7	534175-3	119-09	530745-9	2-530745-0
90	2.790 70.87	2.500 63.5	2.200 55.88	530720-6	534175-4	119-08	530745-8	1-530745-9
80	2.540 64.52	2.250 57.15	1.950 49.53	530720-5	534175-5	119-07	530745-7	1-530745-8
70	2.290 58.17	2.000 50.8	1.700 43.18	530720-4	534175-6	119-06	530745-6	1-530745-7
60	2.040 51.82	1.750 44.45	1.450 36.83	530720-3	534175-7	119-05	530745-5	1-530745-6
50	1.790 45.47	1.500 38.1	1.200 30.48	530720-2	534175-8	119-04	530745-4	1-530745-5
40	1.540 39.12	1.250 31.75	.950 24.13	530720-1	534175-9	119-03	530745-3	1-530745-4
30	1.290 32.77	1.000 25.4	.700 17.78	1-530720-0	1-534175-0	119-02	530745-2	1-530745-3
20	1.040 26.42	.750 19.05	.450 11.43	1-530720-1	1-534175-1	119-01	530745-1	1-530745-2

Note: Contact Align—Part Number 58107-1

*Same contact material and finish per military receptacle

**Mini-Box Receptacle Assemblies for Flow Soldering —
MIL-C-55302 Qualified (Continued)**
Vertical, Surface-Mount

Material and Finish

Housing — In accordance with MIL-M-24519 per MIL-C-55302. GLCP-30F, liquid crystal polymer, grey

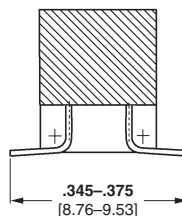
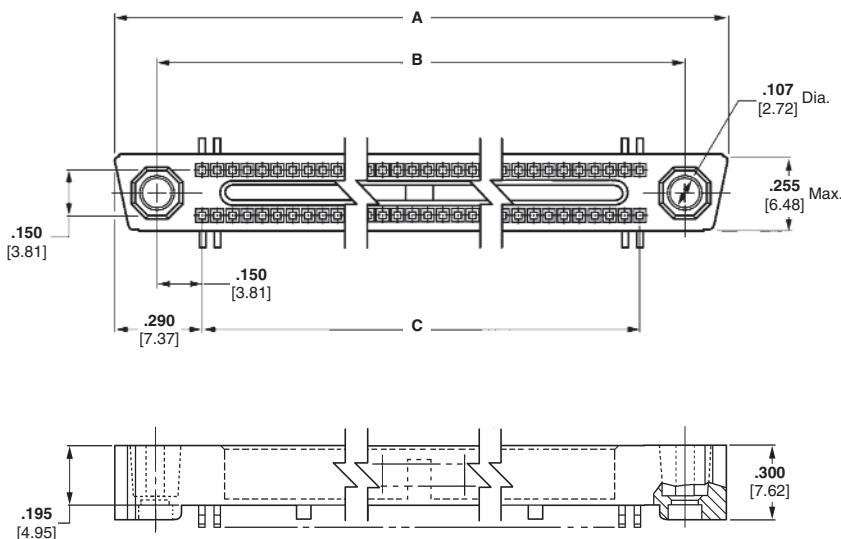
Contacts — Beryllium copper per QQ-C-533 or ASTM B768, or phosphor bronze per ASTM B103 plated .000050 [0.00127] min. gold in themating area, .000100 [0.00254] min. tin-lead in the terminating area, over .000030 [0.00076] min. nickel on the entire contact

Related Product Data

Mates with — Pin headers, pages 1-21 to 1-22

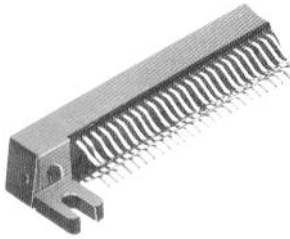
External Keying — page 1-30

Recommended PC Board Layout — page 1-28



No. of Pos.	Dimensions			Assembly Part No.
	A	B	C	
128	3.740 95.00	3.450 87.63	3.150 80.01	1-449599-1
110	3.290 83.57	3.000 76.20	2.700 68.58	1-449599-0
100	3.040 77.22	2.750 69.85	2.450 62.23	449599-9
90	2.790 70.87	2.500 63.50	2.200 55.88	449599-8
80	2.540 64.52	2.250 57.15	1.950 49.53	449599-7
70	2.290 58.17	2.000 50.80	1.700 43.18	449599-6
60	2.040 51.82	1.750 44.45	1.450 36.83	449599-5
50	1.790 45.47	1.500 38.10	1.200 30.48	449599-4
40	1.540 39.12	1.250 31.75	.950 24.13	449599-3
30	1.290 32.77	1.000 25.40	.700 17.78	449599-2
20	1.040 26.42	.750 19.05	.450 11.43	449599-1

Mini-Box Straddle Mount Receptacle Assemblies



Housing Material — Liquid crystal polymer

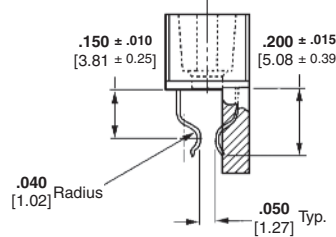
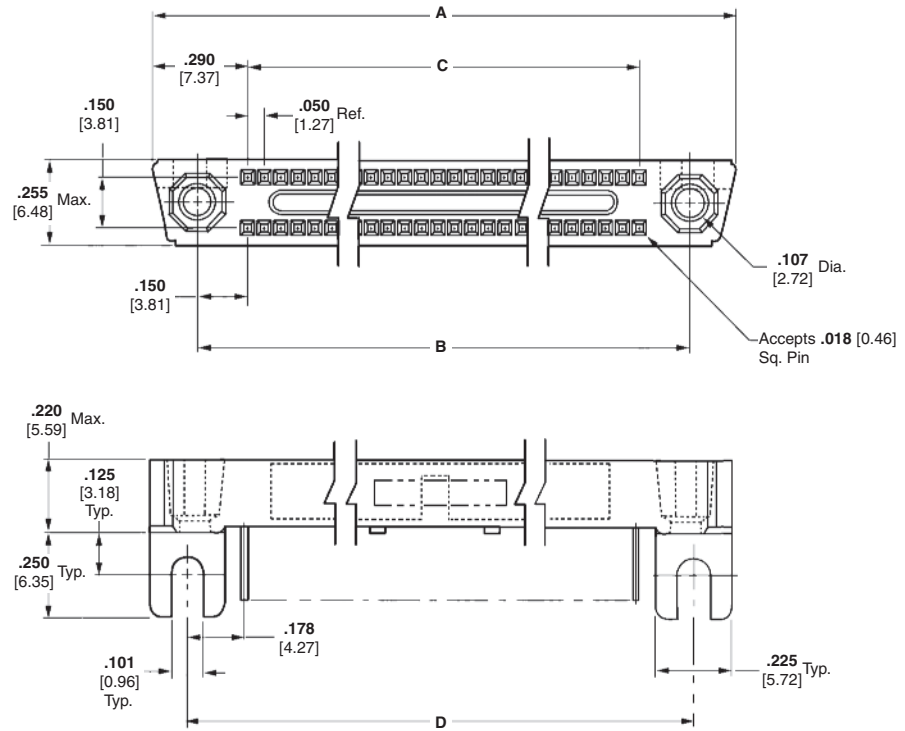
Contact Material and Finish — Beryllium copper per QQ-C-533 or ASTM B768, or phosphor bronze per ASTM B103 plated .000050 [0.00127] min. gold in the mating area, .000100 [0.00254] min. tin-lead in the terminating area over .000030 [0.00076] min. nickel on the entire contact

Related Product Data

Mates with — Pin headers, pages 1-21 to 1-22

External Keying — page 1-30

Recommended PC Board Layout — page 1-28



No. of Pos.	Dimensions				Assembly Part No.
	A	B	C	D	
128	3.740 95.00	3.450 87.63	3.150 80.01	3.505 89.03	445185-1
110	3.290 83.57	3.000 76.2	2.700 68.58	3.055 77.60	445185-2
100	3.040 77.22	2.750 69.85	2.450 62.23	2.805 71.25	445185-3
90	2.790 70.87	2.500 63.5	2.200 55.88	2.555 64.90	445185-4
80	2.540 64.52	2.250 57.15	1.950 49.53	2.305 58.55	445185-5
70	2.290 58.17	2.000 50.8	1.700 43.18	2.055 52.20	445185-6
60	2.040 51.82	1.750 44.45	1.450 36.83	1.805 45.85	445185-7
50	1.790 45.47	1.500 38.1	1.200 30.48	1.555 39.50	445185-8
40	1.540 39.12	1.250 31.75	.950 24.13	1.305 33.15	445185-9
30	1.290 32.77	1.000 25.4	.700 17.78	1.055 26.80	1-445185-0
20	1.040 26.42	.750 19.05	.450 11.43	.805 20.45	1-445185-1

Mini-Box Pin Header Assemblies

Vertical, Surface Mount



Material and Finish

Housing — In accordance with MIL-M-24519 per MIL-C-55302. GLCP-30F, liquid crystal polymer, grey

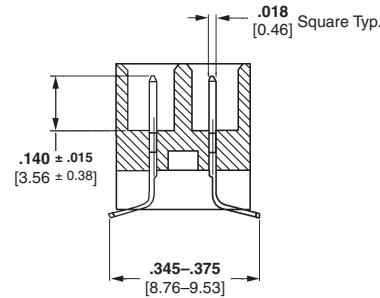
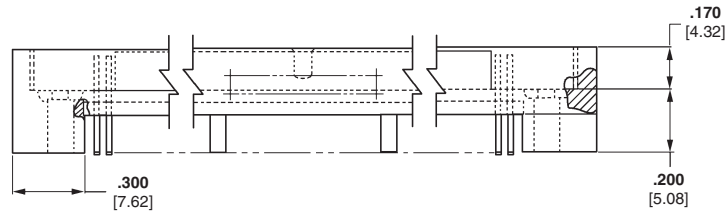
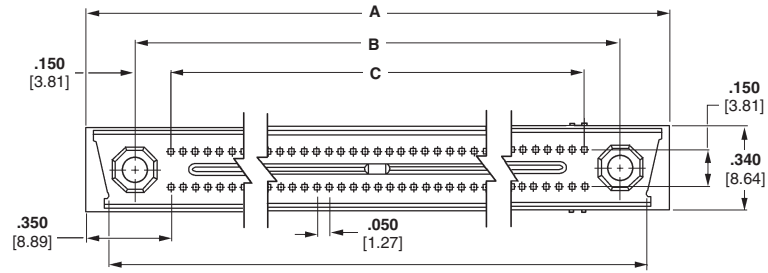
Contacts — Brass per QQ-B-626, plated .000050 [0.00127] min. gold in the mating area, .000100 [0.00254] min. tin-lead in the terminating area, over .000030 [0.00076] min. nickel on the entire contact

Related Product Data

Mates with — Receptacle assemblies, pages 1-18 to 1-20

External Keying — page 1-30

Recommended PC Board Layout — page 1-28



No. of Pos.	Dimensions			Assembly Part No.
	A	B	C	
128	3.850 97.79	3.450 87.63	3.150 80.01	447441-3
110	3.400 86.36	3.000 76.20	2.700 68.58	447441-1
100	3.150 80.01	2.750 69.85	2.450 62.23	447441-4
90	2.900 73.66	2.500 63.50	2.200 55.88	447441-5
80	2.650 67.31	2.250 57.15	1.950 49.53	447441-6
70	2.400 60.96	2.000 50.80	1.700 43.18	447441-2
60	2.150 54.61	1.750 44.45	1.450 36.83	447441-7
50	1.900 48.26	1.500 38.10	1.200 30.48	447441-8
40	1.650 41.91	1.250 31.75	.950 24.13	447441-9
30	1.400 35.56	1.000 25.40	.700 17.78	1-447441-0
20	1.150 29.21	.750 19.05	.450 11.43	1-447441-1

Mini-Box Pin Header Assemblies (Continued)

Related Product Data

Mates with — Receptacles, pages 1-21 to 1-22
External Keying — Page 1-30
Recommended PC Board Layout — Page 1-28

Commercial Pin Header Assemblies

Housing Material — In accordance with MIL-M-24519 per MIL-C-55302 GLCP-30F, liquid crystal polymer

.000100 [0.00254] min. tin-lead on the tail over .000050 [0.00127] min. nickel on the entire contact

Contact Material and Finish — Brass per QQ-B-626 plated .000030 [0.00076] min. gold in the contact area,

No. of Pos.	Dimensions			Style I Straddle Mount Part No.	Style II Straddle Mt. w/Pin Protect. Part No.	Style III Right-Angle Mount Part No.
	A	B	C			
128	3.850 97.79	3.600 91.44	3.150 80.01	530719-9	1-531122-1	530733-9
110	3.400 86.36	3.150 80.01	2.700 68.58	—	—	530733-8
100	3.150 80.01	2.900 73.66	2.450 62.23	530719-7	—	530733-7
90	2.900 73.66	2.650 67.31	2.200 55.88	530719-6	—	530733-6
80	2.650 67.31	2.400 60.96	1.950 49.53	530719-5	—	530733-5
70	2.400 60.96	2.150 54.61	1.700 43.18	530719-4	531122-6	530733-4
60	2.150 54.61	1.900 48.26	1.450 36.83	530719-3	531122-5	530733-3
50	1.900 48.26	1.650 41.91	1.200 30.48	530719-2	—	530733-2
40	1.650 41.91	1.400 35.56	.950 24.13	530719-1	—	530733-1
30	1.400 35.56	1.150 29.21	.700 17.78	—	—	1-530733-0
20	1.150 29.21	.900 22.86	.450 11.43	—	—	1-530733-1

Military Pin Header Assemblies — Qualified to MIL-C-55302

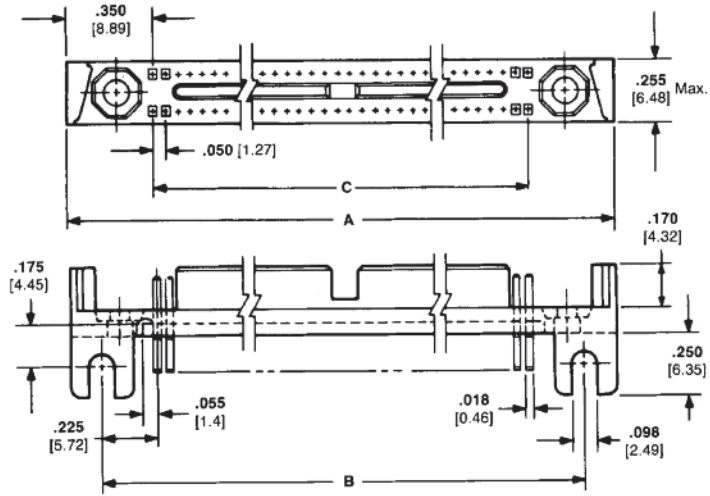
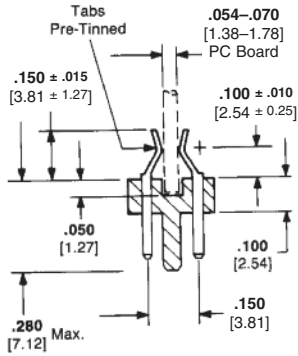
Housing Material — In accordance with MIL-C-55302

Contact Material and Finish — Brass per QQ-B-626 plated .000050 [0.00127] min. gold in the contact area, .000100 [0.00254] min. tin-lead on the tail over .000050 [0.00127] min. nickel on the entire contact.

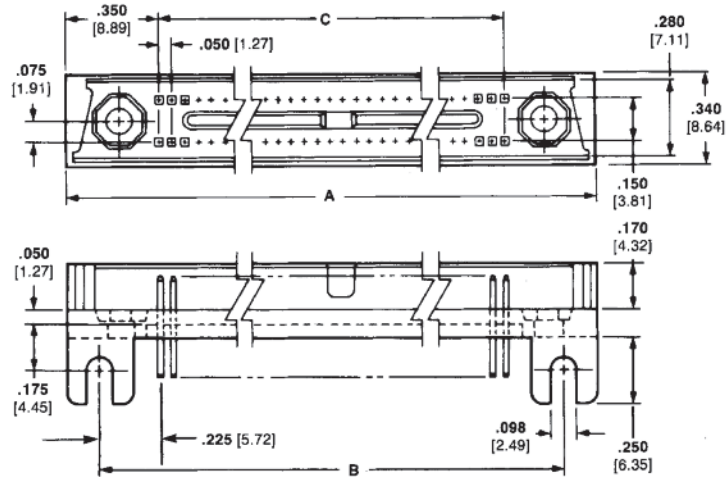
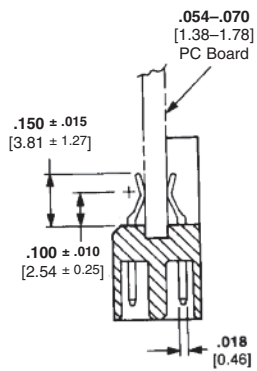
No. of Pos.	Dimensions			Style I - Straddle Mount		Style II - Straddle Mt. w/ Pin Protect.		Style III - Right-Angle	
	A	B	C	MIL-C-55302/	Part No.	MIL-C-55302/	Part No.	MIL-C-55302/	Part No.
128	3.850 97.79	3.600 91.44	3.150 80.01	118-11	2-530744-2	118-22	2-531803-2	117-11	2-530743-2
110	3.400 86.36	3.150 80.01	2.700 68.58	118-10	2-530744-1	118-21	2-531803-1	117-10	2-530743-1
100	3.150 80.01	2.900 73.66	2.450 62.23	118-09	2-530744-0	118-20	2-531803-0	117-09	2-530743-0
90	2.900 73.66	2.650 67.31	2.200 55.88	118-08	1-530744-9	118-19	1-531803-9	117-08	1-530743-9
80	2.650 67.31	2.400 60.96	1.950 49.53	118-07	1-530744-8	118-18	1-531803-8	117-07	1-530743-8
70	2.400 60.96	2.150 54.61	1.700 43.18	118-06	1-530744-7	118-17	1-531803-7	117-06	1-530743-7
60	2.150 54.61	1.900 48.26	1.450 36.83	118-05	1-530744-6	118-16	1-531803-6	117-05	1-530743-6
50	1.900 48.26	1.650 41.91	1.200 30.48	118-04	1-530744-5	118-15	1-531803-5	117-04	1-530743-5
40	1.650 41.91	1.400 35.56	.950 24.13	118-03	1-530744-4	118-14	1-531803-4	117-03	1-530743-4
30	1.400 35.56	1.150 29.21	.700 17.78	118-02	1-530744-3	118-13	1-531803-3	117-02	1-530743-3
20	1.150 29.21	.900 22.86	.450 11.43	118-01	1-530744-2	118-12	1-531803-2	117-01	1-530743-2

Mini-Box Pin Header Assemblies (Continued)

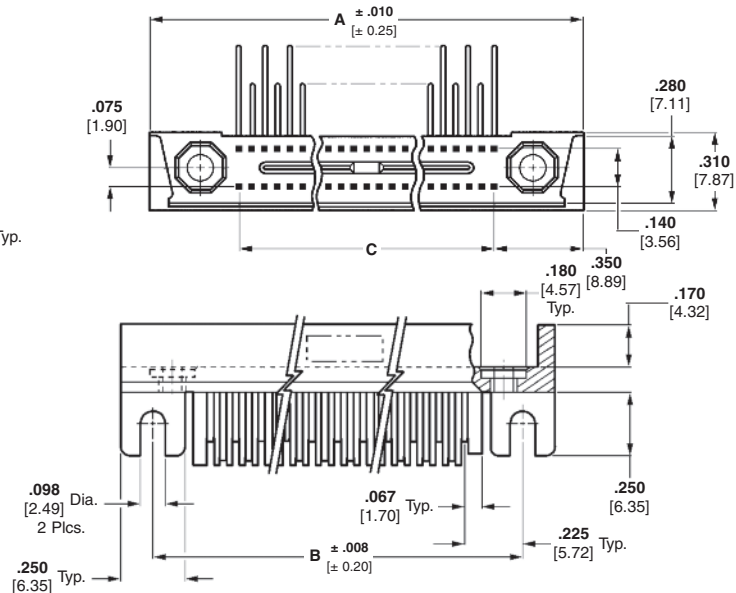
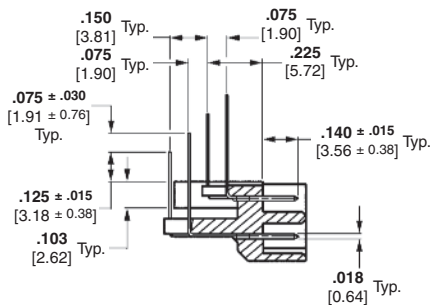
**Style I
Straddle Mount without
Pin Protectors**



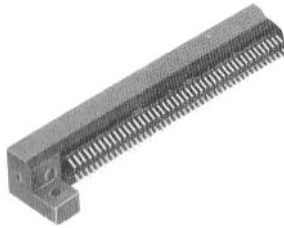
**Style II
Straddle Mount with
Pin Protectors**



**Style III
Right-Angle Mount**



Extended Mini-Box Receptacle Assemblies



Housing Material — Liquid crystal polymer

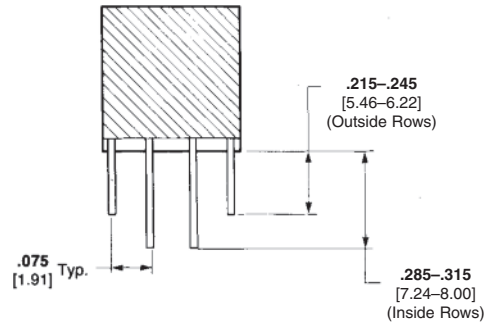
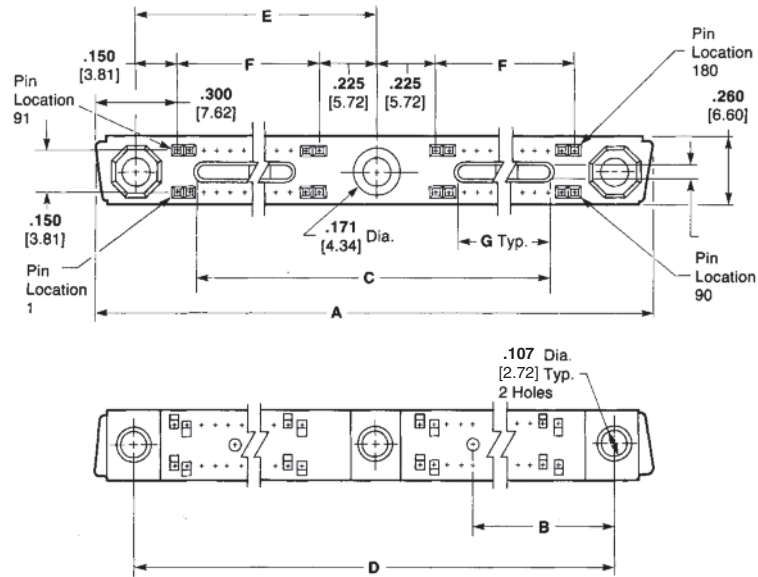
Contact Material and Finish — Beryllium copper per QQ-C-533 or ASTM B768, or phosphor bronze per ASTM B103 plated .000050 [0.00127] min. gold in the mating area, .000100 [0.00254] min. tin-lead in the terminating area over .000030 [0.00076] min. nickel on the entire contact

Related Product Data

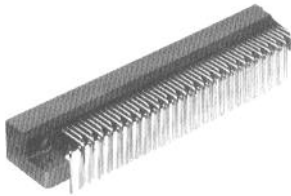
Mates with — Straddle mount pin header assembly, page 1-23, and right-angle pin header, page 1-24

External Keying — page 1-30

Recommended PC Board Layout — page 1-28



No. of Pos.	Dimensions							Assembly Part No.
	A	B	C	D	E	F	G	
200	5.950 151.13	1.413 35.89	5.200 132.08	5.650 143.51	2.825 71.76	2.450 62.23	2.300 58.42	534179-8
192	5.750 146.05	1.362 34.60	5.000 127.00	5.450 138.43	2.725 69.22	2.350 59.69	2.200 55.88	534179-7
180	5.450 138.43	1.287 32.69	4.700 119.38	5.150 130.81	2.575 65.41	2.200 55.88	2.050 52.07	534179-6
172	5.250 133.35	1.237 31.42	4.500 114.30	4.950 125.73	2.475 62.87	2.100 53.34	1.950 49.53	534179-5
160	4.950 125.73	1.162 29.52	4.200 106.68	4.650 118.11	2.325 59.06	1.950 49.53	1.800 45.72	534179-4
152	4.750 120.65	1.062 26.98	4.000 101.60	4.450 113.03	2.225 56.52	1.850 46.99	1.700 43.18	534179-3
140	4.450 113.03	1.037 26.34	3.700 93.98	4.150 105.41	2.075 52.71	1.700 43.18	1.550 39.37	534179-2
132	4.250 107.95	.987 25.07	3.500 88.90	3.950 100.33	1.975 50.17	1.600 40.64	1.450 36.83	534179-1

Extended Mini-Box Right-Angle Pin Header Assemblies
Style II


Housing Material — Liquid crystal polymer

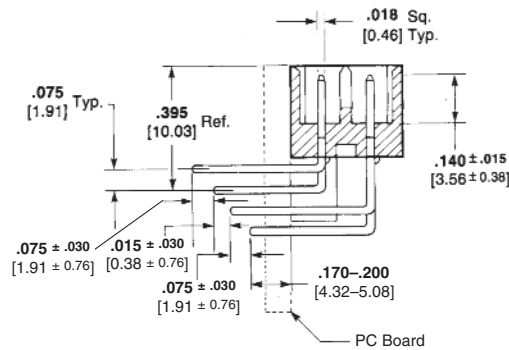
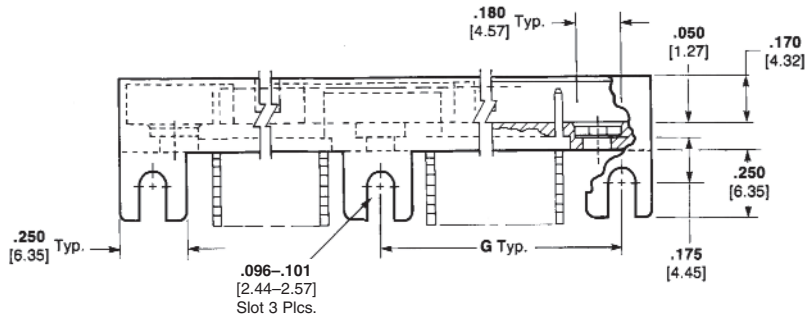
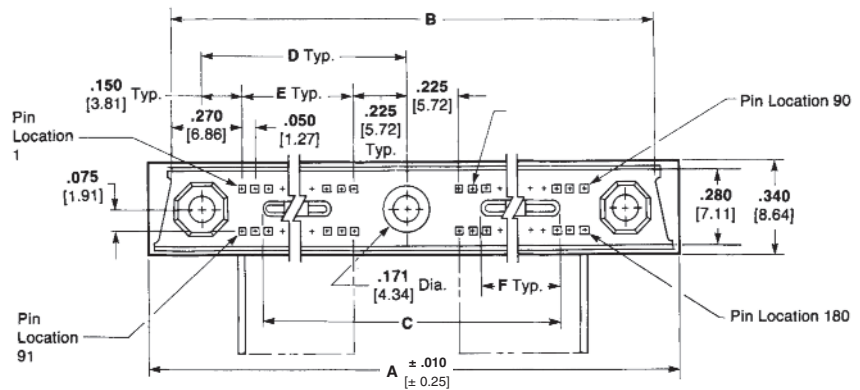
Contact Material and Finish — Brass per QQ-B-626 plated .000050 [0.00127] min. gold in the contact area, .000100 [0.00254] min. tin-lead on the tail over .000050 [0.00127] min. nickel on the entire contact

Related Product Data

Mates with — Receptacle assemblies, page 1-22

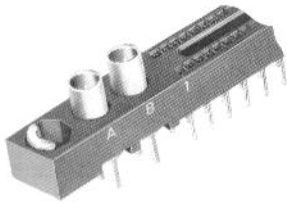
External Keying — page 1-30

Recommended PC Board Layout — page 1-26



No. of Pos.	Dimensions							Assembly Part No.
	A	B	C	D	E	F	G	
200	6.050 153.67	5.890 149.61	5.190 131.83	2.825 71.76	2.450 62.23	2.290 58.17	2.900 73.66	534688-8
192	5.850 148.60	5.690 144.53	4.990 126.75	2.725 69.22	2.350 59.69	2.190 55.63	2.800 71.12	534688-7
180	5.550 140.97	5.390 136.91	4.690 119.13	2.575 65.41	2.200 55.88	2.040 51.82	2.650 67.31	534688-1
172	5.350 135.89	5.190 131.83	4.490 114.00	2.475 62.87	2.100 53.34	1.940 49.28	2.550 64.77	534688-6
160	5.050 128.27	4.890 124.21	4.190 106.43	2.325 59.06	1.950 49.53	1.790 45.47	2.400 60.96	534688-5
152	4.850 123.19	4.690 119.13	3.990 101.35	2.225 56.52	1.850 46.99	1.690 42.93	2.300 58.42	534688-4
140	4.550 115.57	4.390 111.51	3.690 93.73	2.075 52.71	1.700 43.18	1.540 38.12	2.150 54.60	534688-3
132	4.350 110.49	4.190 106.43	3.490 88.65	1.975 50.17	1.600 40.64	1.440 36.58	2.050 52.07	534688-2

Mini-Box Receptacle Assemblies with 4 or 6 Hybrid Cavities



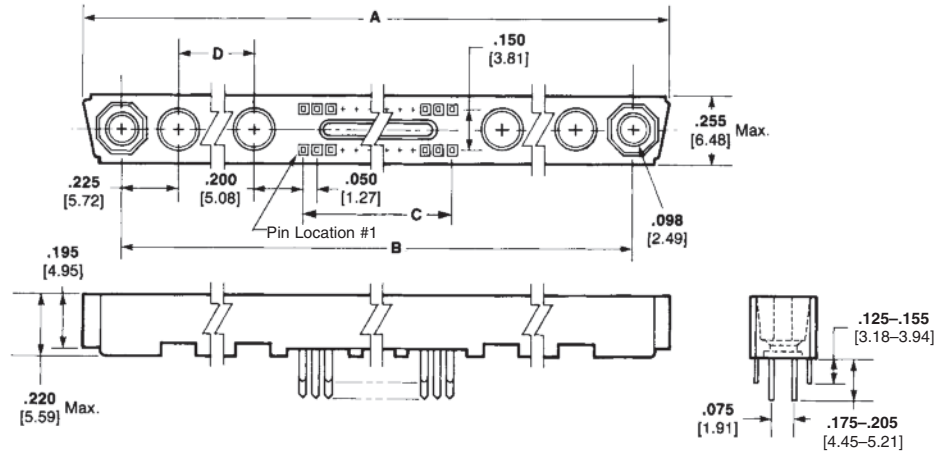
Housing Material — In accordance with MIL-C-55302

Contact Material and Finish — Beryllium copper per QQ-C-533 or ASTM B768, or phosphor bronze per ASTM B103 plated .000030 [0.00076] min. gold in the contact area, .000100 [0.00254] min. tin-lead in the termination area over .000030 [0.00076] min. nickel on the entire contact

Related Product Data

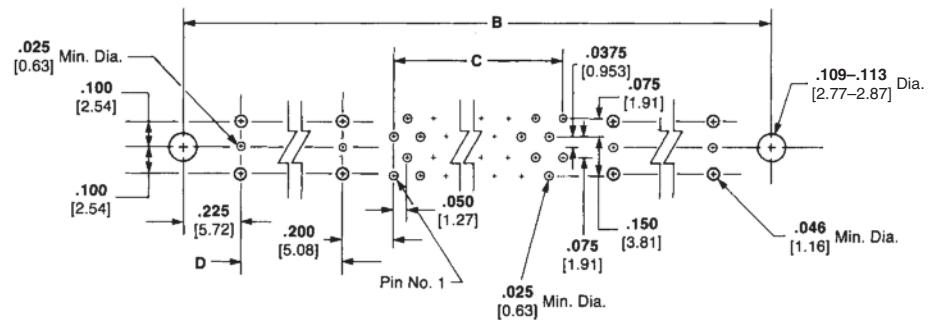
Mates with — Pin headers, page 1-26
External Keying — page 1-30

Other sizes and configurations available. Consult TE Connectivity.



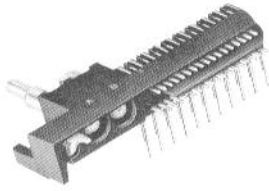
No. of Box Contact Pos.	No. of Coaxial Cavities	Dimensions				Assembly Part No.
		A	B	C	D	
90	4	3.740 95.00	3.450 87.63	2.200 55.88	.200 5.08	532797-1
74	6	3.740 95.00	3.450 87.63	1.800 45.72	.400 10.16	531820-1
36	6	2.790 70.87	2.500 63.5	.850 21.59	.400 10.16	531820-3
26	6	2.540 65.52	2.250 57.15	.600 15.24	.400 10.16	531820-2

Note: These receptacle assemblies accept coaxial contact—Vertical PC Board Mount Socket 227603-1



Recommended PC Board Layout

Mini-Box Right-Angle Pin Header Assemblies with 4 or 6 Hybrid Cavities



Housing Material — In accordance with MIL-C-55302

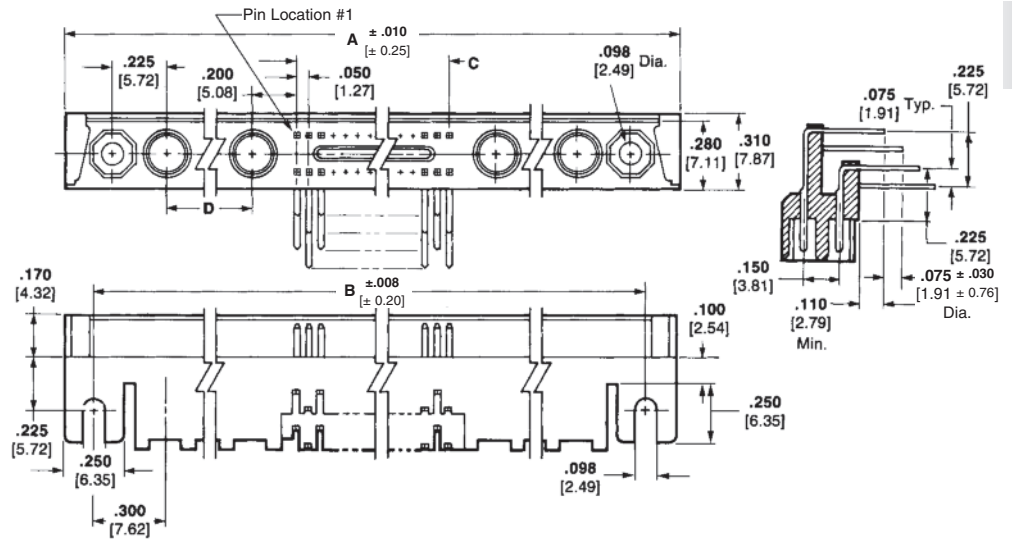
Contact Material and Finish — Brass per QQ-B-626 plated .000030 [0.00076] min. gold in the contact area, .000100 [0.00254] min. tin-lead on the post over .000030 [0.00076] min. nickel on the entire contact

Related Product Data

Mates with — Receptacles, page 1-25

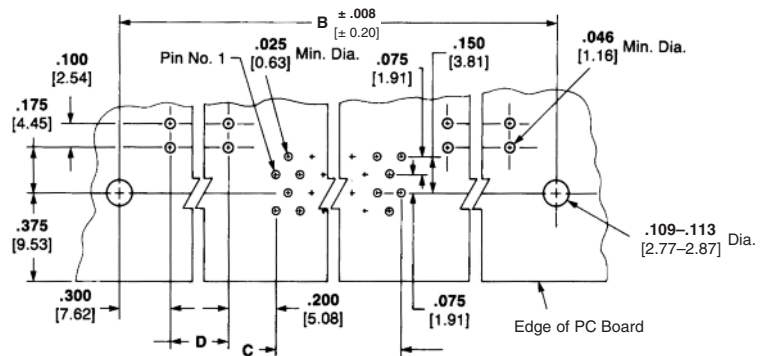
External Keying — page 1-30

Other sizes and configurations available. Consult TE Connectivity.



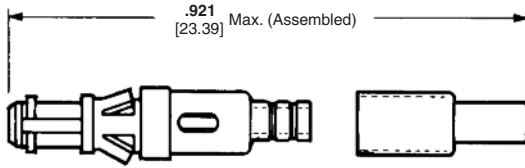
No. of Box Contact Pos.	No. of Coaxial Cavities	Dimensions				Assembly Part No.
		A	B	C	D	
90	4	3.850 97.79	3.600 91.44	2.200 55.88	.200 5.08	532796-1
74	6	3.850 97.79	3.600 91.44	1.800 45.72	.400 10.16	531819-1
36	6	2.900 73.66	2.650 67.31	.850 21.59	.400 10.16	531819-3
26	6	2.650 67.31	2.400 60.96	.600 15.24	.400 10.16	531819-2

Note: These pin header assemblies accept coaxial contacts—Vertical Cable Pin 227604-1 and Right-Angle PC Board Mount Pin 227602-1.

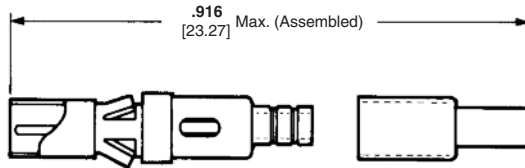


Recommended PC Board Layout

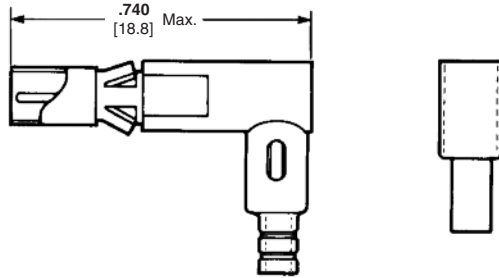
Microminiature COAXICON Contacts for Hybrid Cavities



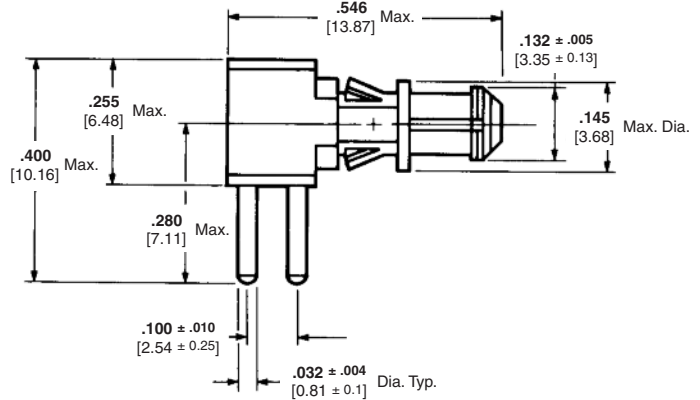
Cable Pin



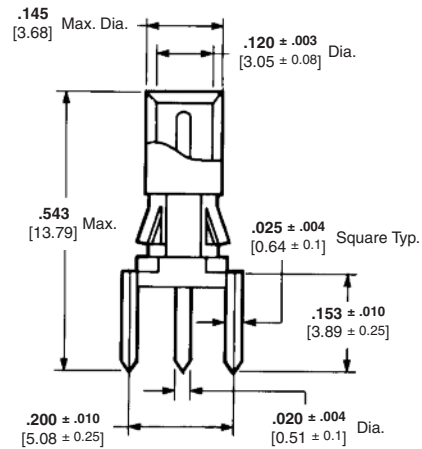
Cable Socket



Right-Angle Cable Socket



**Right-Angle Pin
for PC Board Application
Part Number 227602-1
Plated .000030 [0.00076] gold**



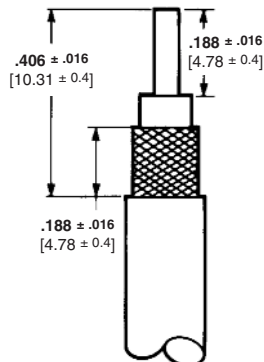
**Vertical Socket
for PC Board Application
Part Number 227603-1**

Cable Size	Contact Style	Part No.	Application Tool Part No.
RG 178/U Double Braid RG 196/U	Cable Pin	227604-1	220215-1
	Cable Socket	227605-1	
	Right-Angle Cable Socket	227606-1	

Extraction Tool Part Number 220216-1

Notes:

- Center contacts are plated with .000030 [0.00076] gold.
- For .125 [3.18] maximum thick pc boards.



Recommended Strip Length

Electrical Characteristics

- Nominal Impedance** — 50 ohms
- Frequency Range** — 0-2 GHz
- Maximum Operating Voltage (Sea Level)** — 150 VAC RMS

Mechanical Characteristics

- Operating Temperature Range** — -67°C to +257°F [-55°C to +125°C]
- Cable Retention** — 15 lb. [66.7N] min. (RG 178 type double braid)

Contact Materials

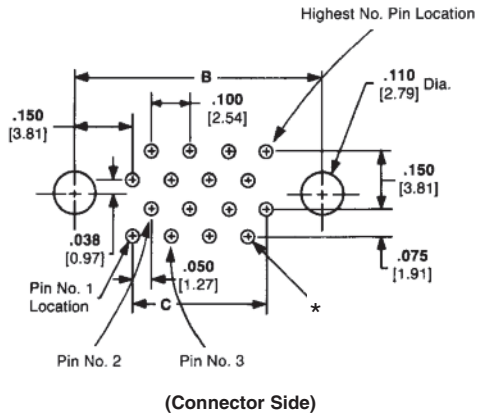
- Stainless Steel** — QQ-S-766
- Gold Plate** — MIL-G-45204
- Nickel Plate** — QQ-N-290
- Beryllium Copper** — QQ-C-530
- TEFLON TFE** — MIL-P-19468A
- Brass** — QQ-B-626

Ferrule Material

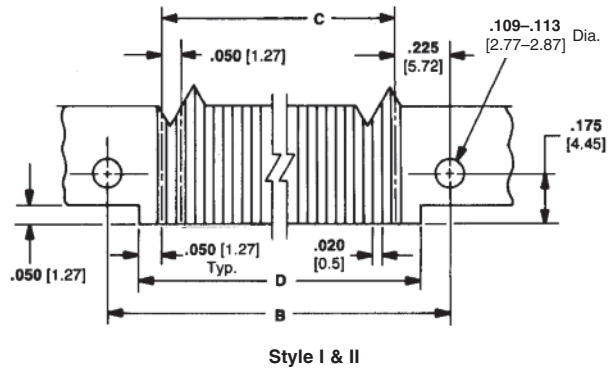
- Brass** — MIL-C-50, tin plate per MIL-T-10727
- TEFLON** — Trademark of E. I. DuPont de Nemours and Company

Mini-Box Connectors Recommended Printed Circuit Board Layouts

Receptacle Assemblies

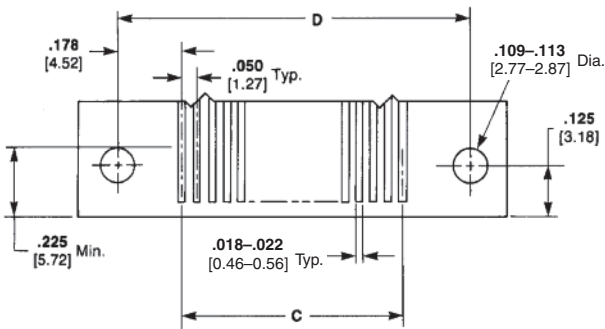


Pin Header Assemblies

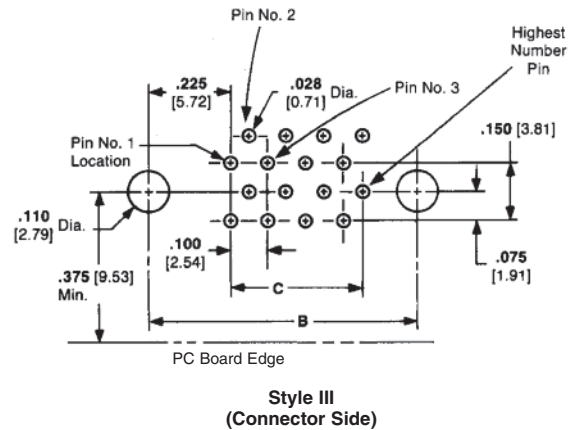


*Holes for solder type receptacle connectors should be .025 to .032 [0.64 to 0.81] dia. Holes for compliant tails should be manufactured as follows: .0320±.0010 [0.813±.025] drilled hole dia. (no. 67 drill), .0003 [0.008] min. tin-lead plating over .001 to .002 [0.025 to 0.051] thick copper on wall. Finished hole diameter to be .026 to .030 [0.66 to 0.76] after plating, .025 to .030 [0.64 to 0.76] after reflow.

Straddle Mount Receptacle Assemblies



Right-Angle Pin Header Assemblies

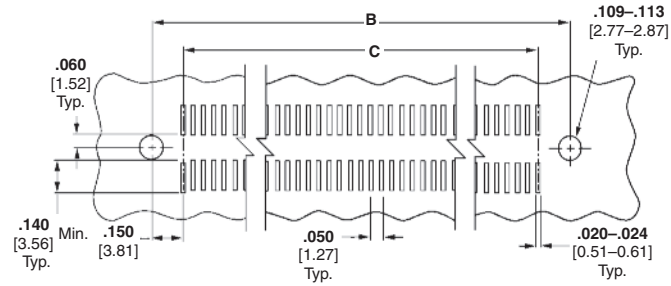


No. of Pos.	Dimensions		
	B	C	D
128	3.450 87.63	3.150 80.01	3.505 89.03
110	3.000 76.2	2.700 68.58	3.055 77.60
100	2.750 69.85	2.450 62.23	2.805 71.25
90	2.500 63.5	2.200 55.88	2.555 64.90
80	2.250 57.15	1.950 49.53	2.305 58.55
70	2.000 50.8	1.700 43.18	2.055 52.20
60	1.750 44.45	1.450 36.83	1.805 45.85
50	1.500 38.1	1.200 30.48	1.555 39.50
40	1.250 31.75	.950 24.13	1.305 33.15
30	1.000 25.4	.700 17.78	1.055 26.80
20	.750 19.05	.450 11.43	.805 20.45

No. of Pos.	Dimensions		
	B	C	D
128	3.600 91.44	3.150 80.01	3.250 82.55
110	3.150 80.01	2.700 68.58	2.800 71.12
100	2.900 73.66	2.450 62.23	2.550 64.77
90	2.650 67.31	2.200 55.88	2.300 58.42
80	2.400 60.96	1.950 49.53	2.050 52.07
70	2.150 54.61	1.700 43.18	1.800 45.72
60	1.900 48.26	1.450 36.83	1.550 39.37
50	1.650 41.91	1.200 30.48	1.300 33.02
40	1.400 35.56	.950 24.13	1.050 26.67
30	1.150 29.21	.700 17.78	.800 20.32
20	.900 22.86	.450 11.43	.550 13.97

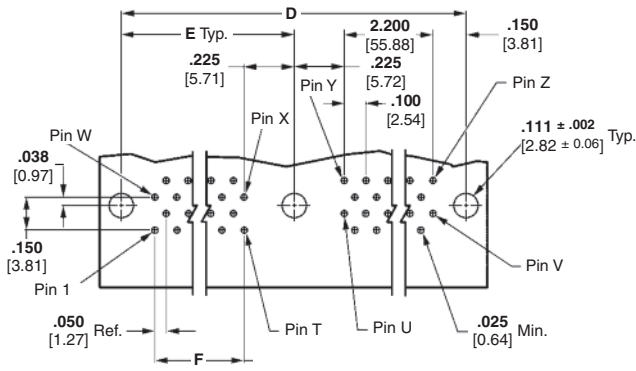
Mini-Box Connectors Recommended Printed Circuit Board Layouts (Continued)

Vertical Surface Mount
Receptacle and
Pin Header Assemblies

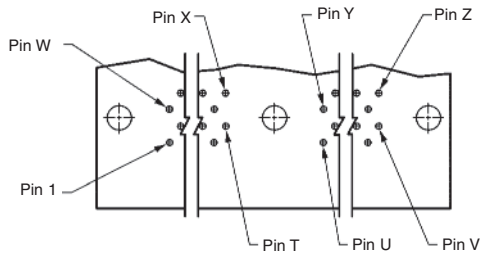


Extended Mini-Box Connectors Recommended Printed
Circuit Board Layouts (Connector Side of Board)

Receptacle Assemblies

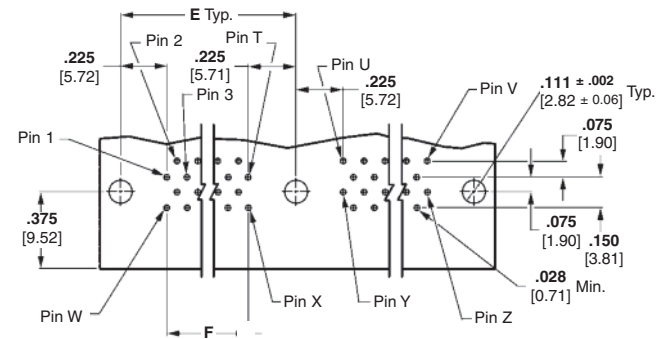


PC Layout I

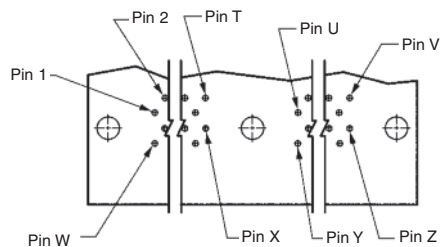


PC Layout II

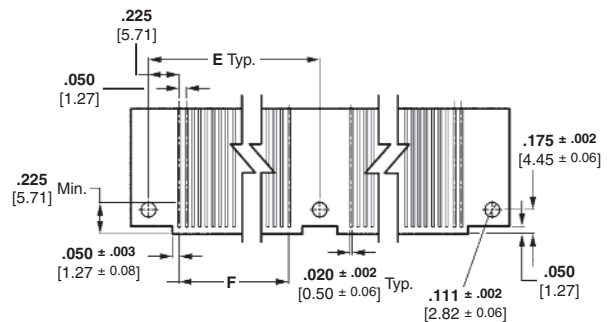
Pin Header Assemblies



Right-Angle—PC Layout I



Right-Angle—PC Layout II



Straddle Mount

Extended Mini-Box Connectors Recommended Printed Circuit Board Layouts (Connector Side of Board) (Continued)

Receptacles

PC Layout	Pin Locations						
	T	U	V	W	X	Y	Z
II	50	51	100	101	150	151	200
II	48	49	96	97	144	145	192
I	45	46	90	91	135	136	180
I	43	44	86	87	129	130	172
II	40	41	80	81	120	121	160
II	38	39	76	77	114	115	152
I	35	36	70	71	105	106	140
I	33	34	66	67	99	100	132

No. of Pos.	Dimensions		
	D	E	F
200	5.650	2.825	2.450
	143.51	71.76	62.23
192	5.450	2.725	2.350
	138.43	69.22	59.69
180	5.150	2.575	2.200
	130.81	65.41	55.88
172	4.950	2.475	2.100
	125.73	62.87	53.34
160	4.650	2.325	1.950
	118.11	59.06	49.53
152	4.450	2.225	1.850
	113.03	56.52	46.99
140	4.150	2.075	1.700
	105.41	52.71	43.18
132	3.950	1.975	1.600
	100.33	50.17	40.64

Pin Headers

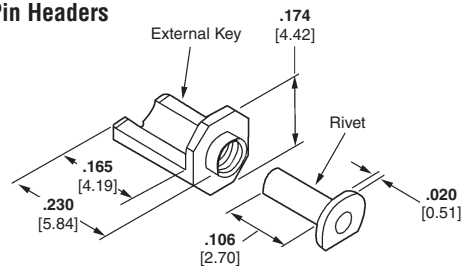
PC Layout	Pin Locations						
	T	U	V	W	X	Y	Z
II	50	51	100	101	150	151	200
II	48	49	96	97	144	145	192
I	45	46	90	91	135	136	180
I	43	44	86	87	129	130	172
II	40	41	80	81	120	121	160
II	38	39	76	77	114	115	152
I	35	36	70	71	105	106	140
I	33	34	66	67	99	100	132

No. of Pos.	Dimensions	
	F	E
200	2.450	2.900
	62.23	73.66
192	2.350	2.800
	59.69	71.12
180	2.200	2.650
	55.88	67.31
172	2.100	2.550
	53.34	64.77
160	1.950	2.400
	49.53	60.96
152	1.850	2.300
	46.99	60.96
140	1.700	2.150
	43.18	54.61
132	1.600	2.050
	40.64	52.07

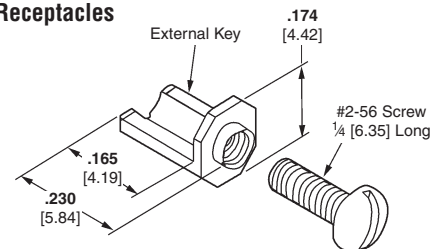
Mini-Box and Extended Mini-Box Connector Keying Hardware
External Keys

These external keys can be used with all the receptacle assemblies and with all the pin header assemblies. They are press fitted into position using tool number 91117-2. Keys used in one end of each mated pair will yield 8 keying combinations, and when used in both ends of the mated

pairs will yield 64 keying combinations. The No. 2-56 screws are used to mount keyed receptacles to a printed circuit board. See instruction sheet 408-7894 for details. Rivets can be used to retain keys in pin header assemblies. See instruction sheet 408-9240.

Pin Headers


External Key Kit Number 530721-4
 Kit includes 2 each of the following:
Keys — Part Number 530721-1
 Military Part Number M55302/31-06
Rivets — Part Number 534164-2
Material — Passivated Stainless Steel

Receptacles


External Key Kit Number 530721-3
 Kit includes 2 each of the following:
Keys — Part Number 530721-1
 Military Part Number M55302/31-06
#2-56 Screws, .250 [6.35] Long
Material — Passivated Stainless Steel

4-Row Mini-Box Connectors

Receptacle Assemblies, Vertical



Material and Finish

Housing — In accordance with MIL-M-24519 per MIL-C-55302. GLCP-30F, liquid crystal polymer, grey

Contacts — Beryllium copper per QQ-C-533 or ASTM B760, or phosphor bronze per ASTM B103 plated .000050 [0.00127] min. gold in the mating area, .000100 [0.00254] min. tin-lead in the terminating area, over .000030 [0.00076] min. nickel on the entire contact

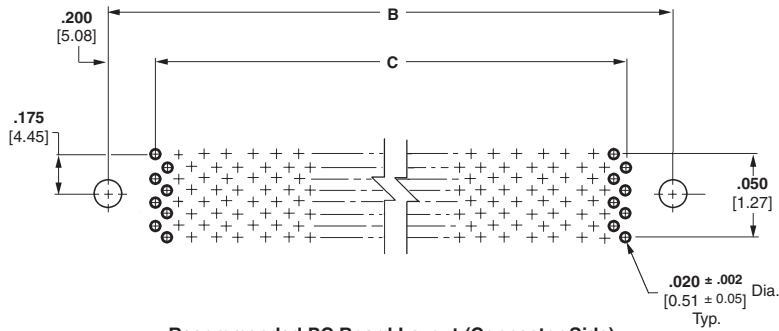
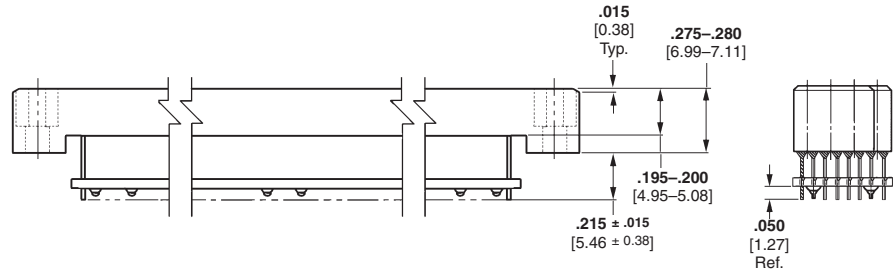
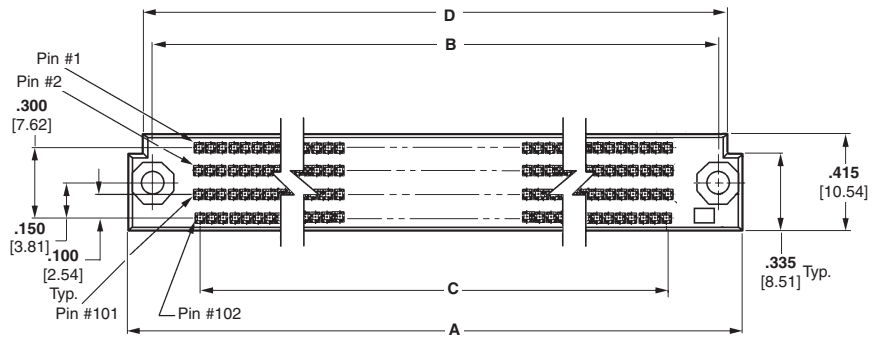
Related Product Data

Mates with — Pin headers, page 1-32

External Keying — page 1-30

Technical Documents

Product Specifications — 108-1551



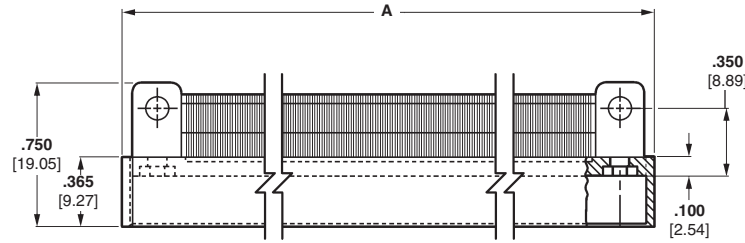
Recommended PC Board Layout (Connector Side)

No. of Pos.	Dimensions				Connector w/ Hardware*	Part No.
	A	B	C	D		
120	2.095 53.21	1.850 46.99	1.450 36.83	1.950 49.53	—	448445-1
152	2.495 63.37	2.250 57.15	1.850 46.99	2.350 59.69	449650-2	448445-4
200	3.095 78.61	2.850 72.39	2.450 62.23	2.950 74.93	—	448445-2
300	4.345 110.36	4.100 104.14	3.700 93.98	4.200 106.68	449650-1	448445-5
320	4.595 116.71	4.350 110.49	3.950 100.33	4.450 113.03	—	448445-3

* Hardware includes 2 each 531721-3 External Key Kit (See page 1-27)

4-Row Mini-Box Connectors (Continued)

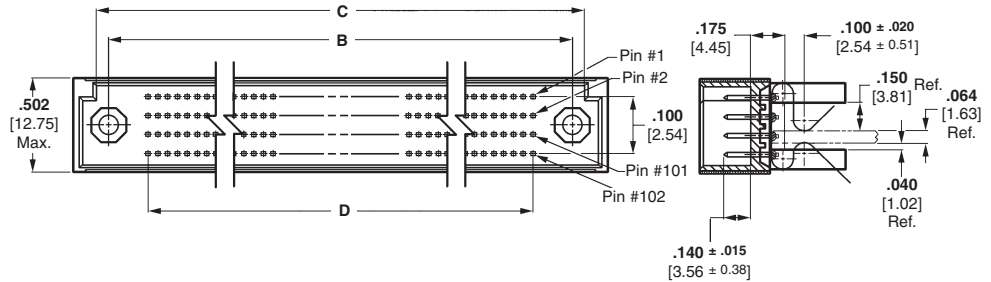
Pin Headers, with Flexible Circuit Terminations



Material and Finish

Housing — In accordance with MIL-M-24519 per MIL-C-55302. GLCP-30F, liquid crystal polymer, grey

Contacts — Brass per ASTM B36 plated .000050 [0.00127] min. gold in the mating area, .000100 [0.00254] min. tin-lead in the terminating area, over .000030 [0.00076] min. nickel on the entire contact with flexible circuits, 3.5 oz [99.23 g] beryllium copper per QQ-C-530 conductors with polyimide dielectric and acrylic adhesive



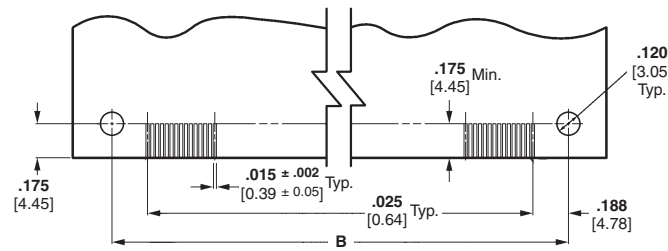
Related Product Data

Mates with — Receptacle assemblies, page 1-31

External Keying — page 1-30

Technical Documents

Product Specifications — 108-1551



Recommended PC Board Layout

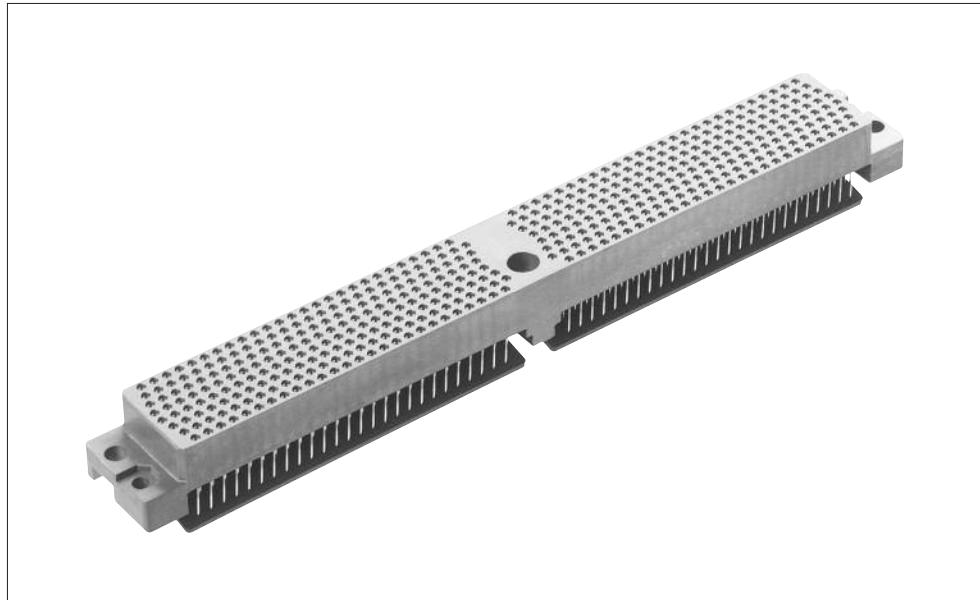
No. of Pos.	Dimensions				Connector w/ Hardware*	Part No.
	A	B	C	D		
120	2.210 56.13	1.850 46.99	1.975 50.17	1.450 36.83	—	448446-1
152	2.610 63.37	2.250 57.15	2.375 46.99	1.850 59.69	449619-2	448446-4
200	3.210 78.61	2.850 72.39	2.975 62.23	2.450 74.93	—	448446-2
300	4.460 110.36	4.100 104.14	4.225 93.98	3.700 106.68	449619-1	448446-5
320	4.710 116.71	4.350 110.49	4.475 100.33	3.950 113.03	—	448446-3

* Connector includes 2 each of 449601-1 Hardware Kit. Hardware Kit can also be purchased separately. Hardware Kit includes: external key, screw, spacers, e-ring and threaded spacer.

Introduction

Product Facts

- Two-piece high density, high performance connectors for printed circuit board use
- Four-beam box-type contact design provides four areas of contact per connection
- Available in 6-Row 306 position and 8-Row 428 position
- Receptacles designed for through-hole soldering
- Pins designed for surface mount card edge applications
- Guide posts provide proper alignment during mating
- Octagonal shape keys ensure proper mating
- Meets DSCC 89065 performance requirements



AMP-HDI 6 and 8 Row LRM (Line Replaceable Module) Connectors

Designed specifically to be the next generation, high density electronic packaging system, the AMP-HDI 6 Row, .075 [1.91] centerlines and 8 Row, .080 [2.03] centerlines, LRM Interconnection System meets all DSCC 89065 LRM specifications. This advanced system features high temperature plastic housings compatible with IR reflow solder techniques. Added advantage of the AMP-HDI LRM Connector System is its capability of accepting MIL SPEC fiber optic contacts per MIL-T29504/5. Six-row configurations available in 306 contact positions. Eight-row configurations feature two 214 position plug halves which mate with one 428-position receptacle. This technological leader is offered with standard tin-lead plated solder tails and for those applications where maintaining a light weight system is a factor. The 8-row configuration is made available with weight saving, flexible film tails.

Equally important are Application Costs. The AMP-HDI LRM Connector interconnection system offers advanced tooling that simplifies contact alignment to the pc board, substantially reducing overall applied labor costs.

Guide posts provide alignment for the connectors when mating. Shell accessories protect the pin assemblies from physical damage. Octagonal shape keys permit eight rotational positions assuring only the proper mating assembly can be inserted.

The connectors offer 6 row and 306 positions with 4 fiber optic ports capability or 8 rows with 428 positions.

Housings are made from Polyphenylene sulfide with duplex plated .000050 [.00127] min. gold beryllium copper contacts. The contact tails are tin-lead coated for easy soldering.

Technical Features

- Available Number of Positions** — 306 and 428
- Center Spacing** — .075 [1.91] and .080 [2.03]
- Housing Material** — Polyphenylene Sulfide per MIL-M-24519
- Contact Material** — Beryllium copper
- Contact Finish** — 50 μ in gold per MIL-G-45204
- Contact Dimension** — .008 [0.20] wide
- Current Rating** — 1 ampere
- Termination Resistance (Max.)** — 20 milliohms
- Connector Mating Force** — Less than 130 pounds
- Performance Characteristics**
- Dielectric Withstanding Voltage** — 600 VRMS
- Insulation Resistance** — 100 VDC, 1000 Megaohms
- Connector Mating/Unmating** — Less than 3 oz. per contact
- Durability** — 500 cycles
- Vibration** — MIL-STD-1344 per Method 2005 Condition V
- Physical Shock** — MIL-STD-1344 per Method 2004 Condition H (15G)
- Thermal Shock** — MIL-STD-1344 method 1003 cond A
- Temperature Humidity** — MIL-STD-1344 method 1002 Type II
- Technical Documents**
Instruction Sheet 408-4008

AMP-HDI 6-Row, 306-Position Connector

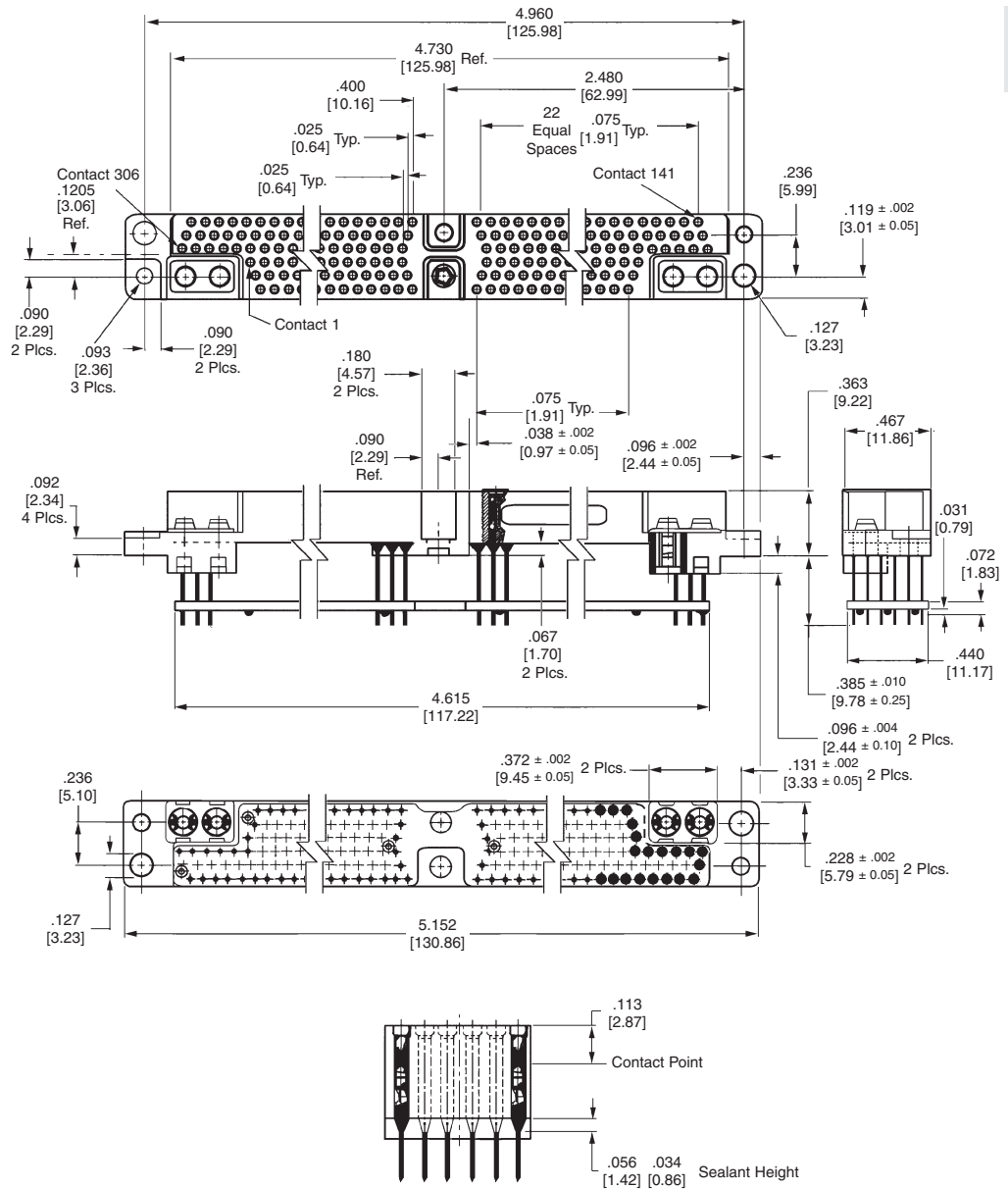
LRM Receptacle Connectors with Additional, 4-Position, Fiber Optic Contact Ports

Part Number 445270-1



Material and Finish:

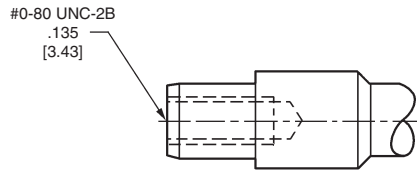
- Housing** — Polyphenylene sulfide, (PPS) per MIL-M-24519
- Contacts** — Beryllium copper, duplex plated .000050 [0.00127] min. gold in the mating area, .000100 [0.00254] min. tin-lead in the termination area per 5N60 or 5N63
- Sealant** — Epoxy, all 306 positions
- Insert Key** — Stainless steel, passivated
- Fiber Optic Seats** — Fluorosilicone rubber compound, blue
- Fiber Optic Clip** — Beryllium copper per QQ-C-533
- Interfacial Seal** — Fluorosilicone rubber compound, blue
- Guide Post and Ground** — Stainless steel, passivated
- Shell** — Aluminum per ASTM B 221-alloy 6061-T6, plated chromate per MIL-C-5541, Class 3 with **Captive Screws** — MS 246903-C7 modified



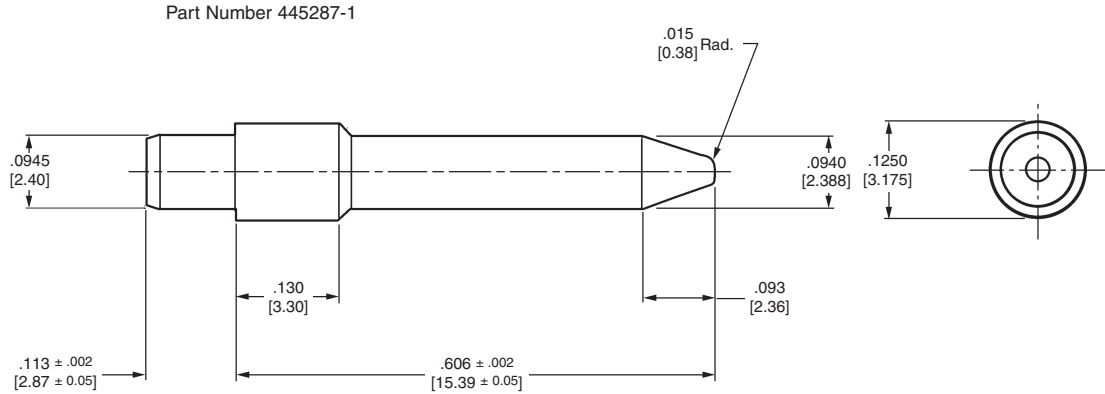
AMP-HDI 6-Row, 306-Position Connector (Continued)

LRM Receptacle Connectors with Additional, 4-Position, Fiber Optic Contact Ports

(Continued)

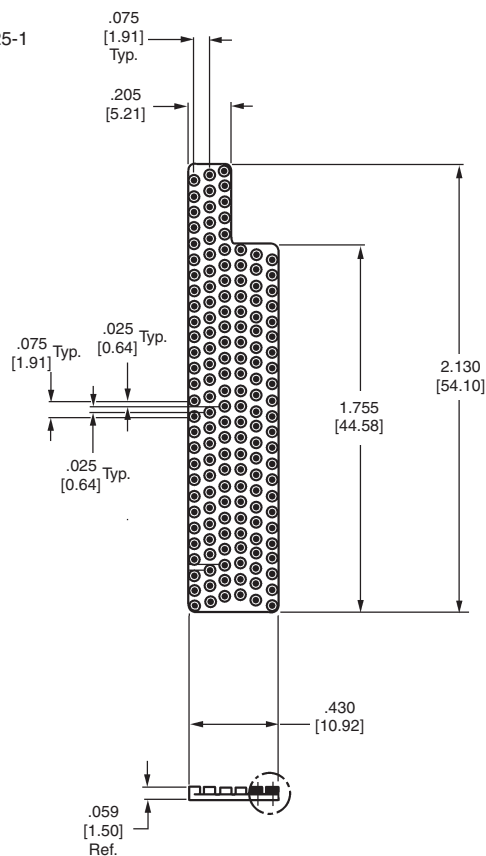


Part Number 445287-2

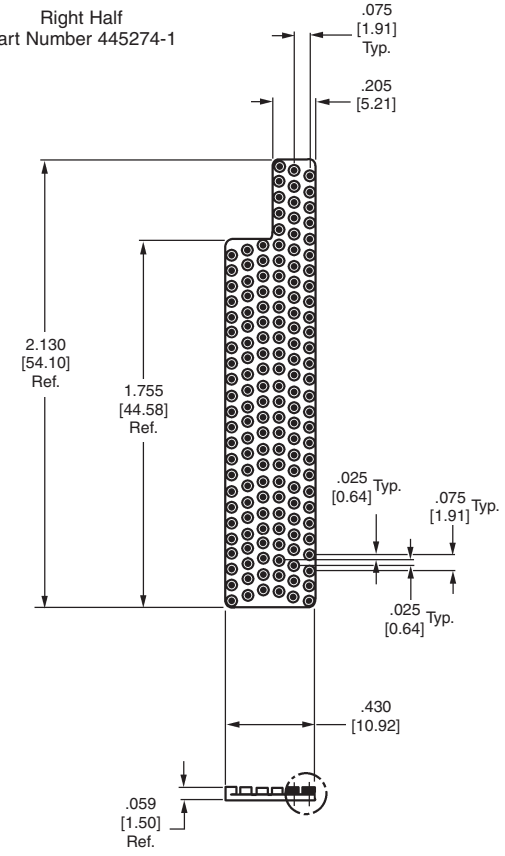


Guide Post

Left Half
Part Number 445525-1



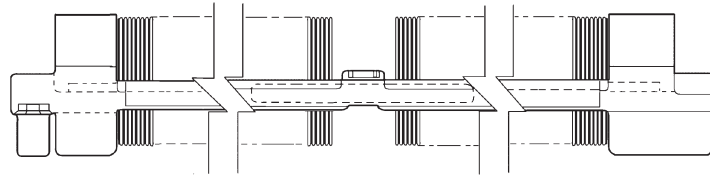
Right Half
Part Number 445274-1



Interfacial Sealing Gaskets

AMP-HDI 6-Row, 306-Position Connector (Continued)

LRM Plug Assembly with Additional, 4-Position, Fiber Optic Contacts
Part Number 445269-1

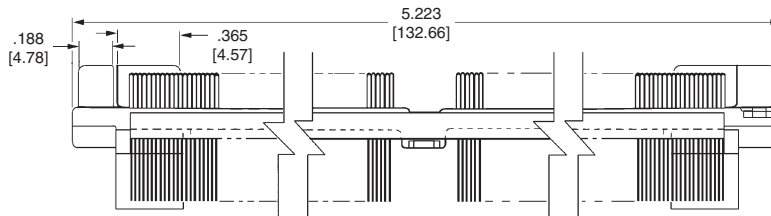
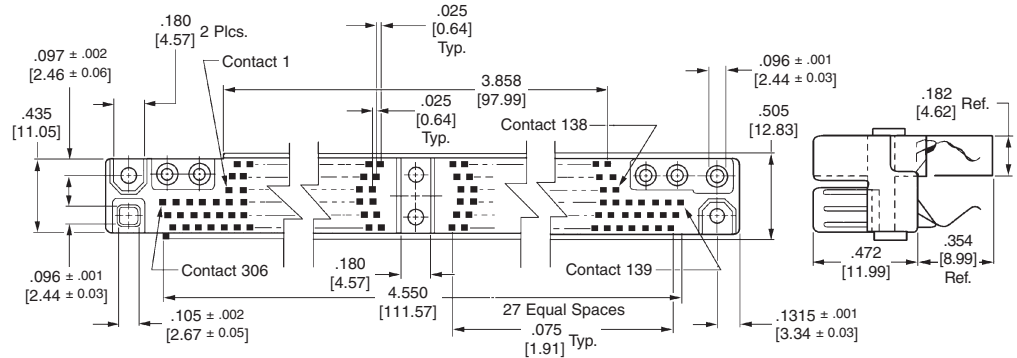


Material and Finish

Housing — Polyphenylene sulfide (PPS) per MIL-M-24519

Contacts — Beryllium copper, duplex .000050 [0.00127] min. gold in the mating area, .000100 [0.00254] min. tin-lead in the termination area per 5N60 or 5N63

Fiber Optic Contacts — Per MIL-T-29504/5 (are customer supplied)



AMP-HDI 8-Row, 428-Position Connector

LRM Motherboard Connector

Part Number 447447-1



Material and Finish

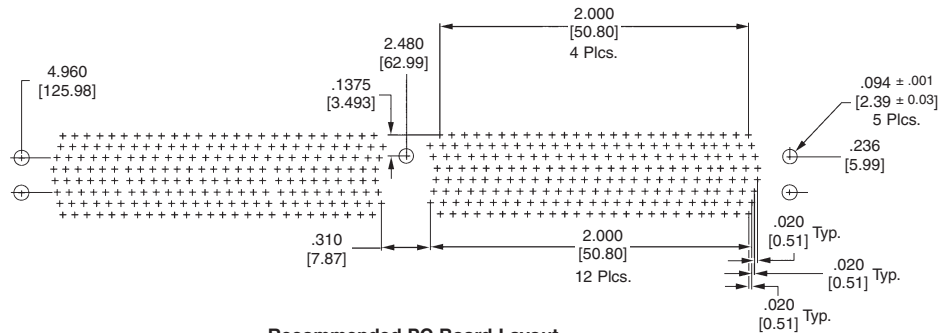
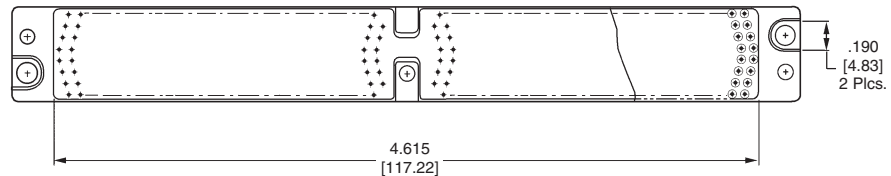
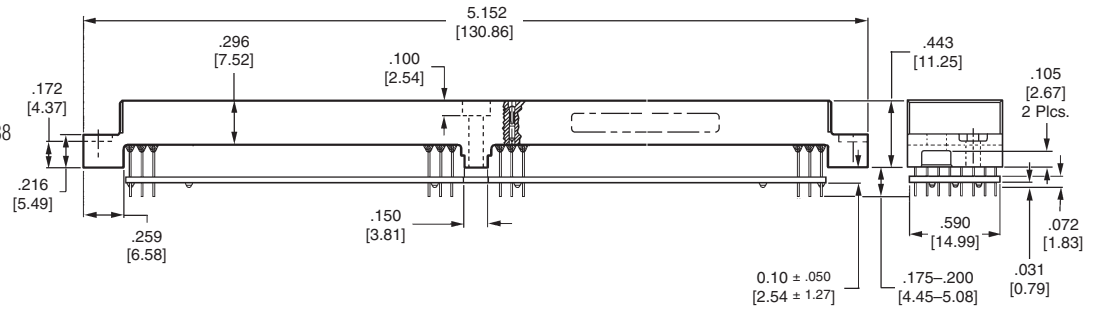
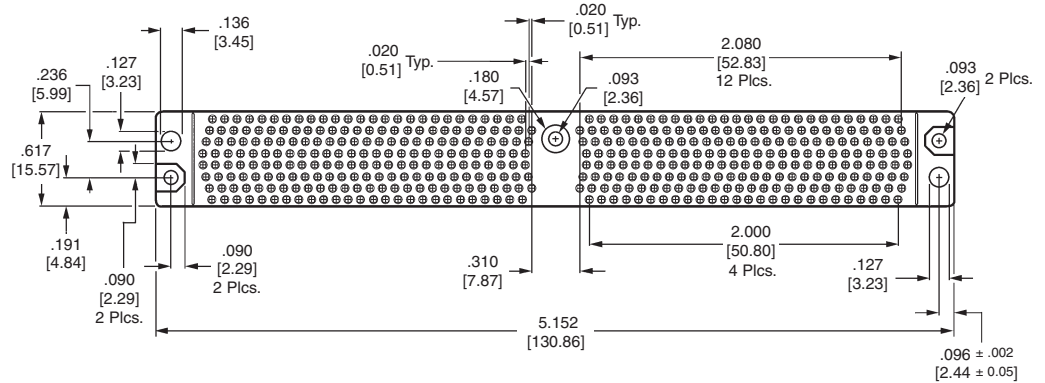
Housing — Polyphenylene sulfide per MIL-M-24519

Contacts — Beryllium copper, plated .000050 [0.00127] min. gold per MIL-G-45204 in the contact area, over .000050 [0.00127] min. on the entire contact per QQ-N-290

Related Product Data

Mates with — Pin headers, page 1-38

Available Hardware — External Keys, Guide Pins



Recommended PC Board Layout

AMP-HDI 8-Row, 428-Position Connector (Continued)

LRM Daughterboard Connector

Part Number 447444

Material and Finish

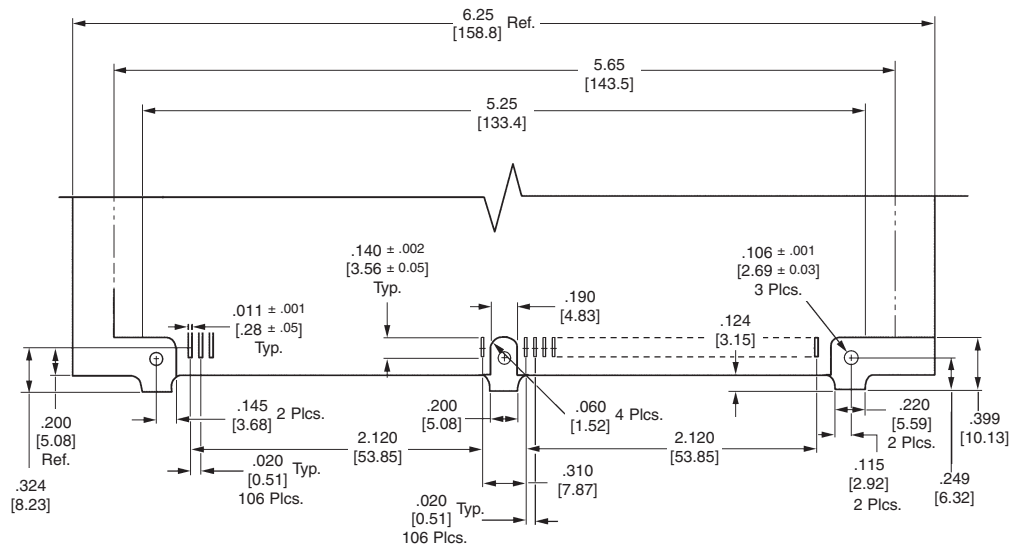
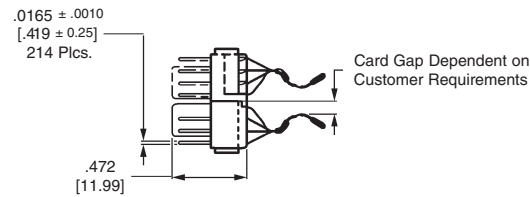
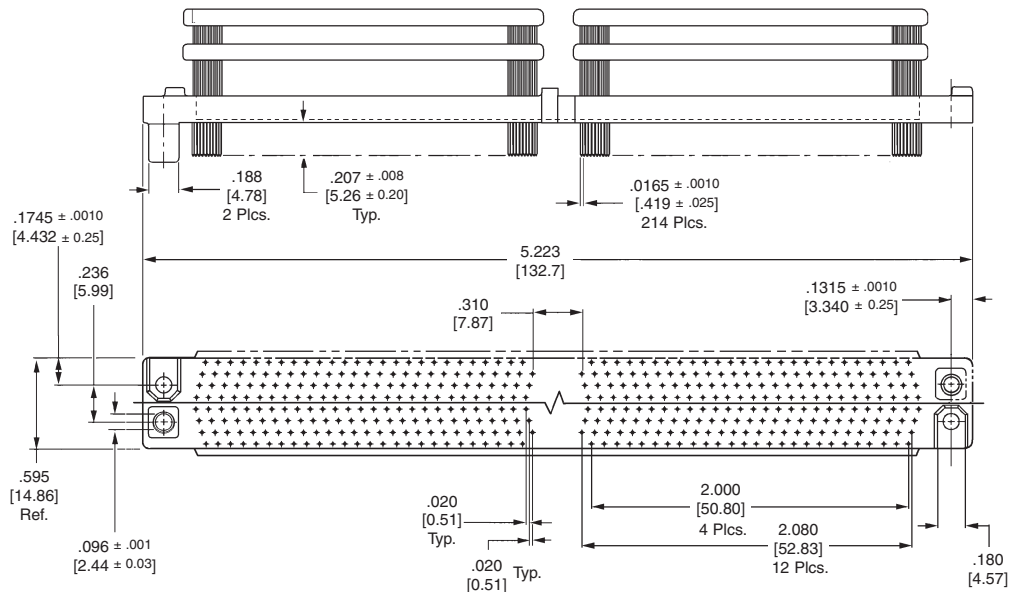
Housing — Polyphenylene sulfide per MIL-M-24519

Contacts — Beryllium copper, plated .000050 [0.00127] min. gold per MIL-G-45204 in the contact area, over .000050 [0.00127] min. on the entire contact per QQ-N-290

Related Product Data

Mates with — Receptacle, page 1-37

Available Hardware — Shell Assembly, Polarizing Keys



Recommended PC Board Layout

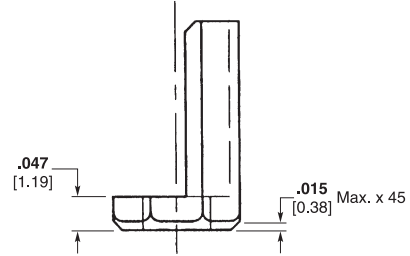
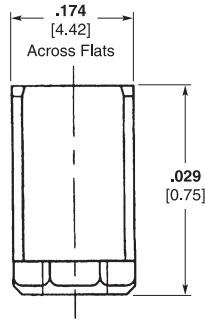
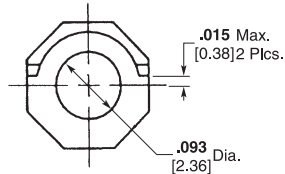
Plug Housing Assembly	Part Number	
Plug Half (214 Pos.)	B Side	447444-4
		447444-2
	A Side	447444-3
		447444-1

Note: 8-Row Housing Dim. (Typ.) — Plug, 5.223 [132.66] L x .585 [14.86] W x .472 [11.99] H.

AMP-HDI Connector Accessories

**External Key for
Part Number 445270 and
Part Number 447447**

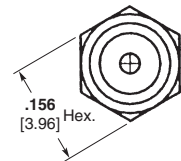
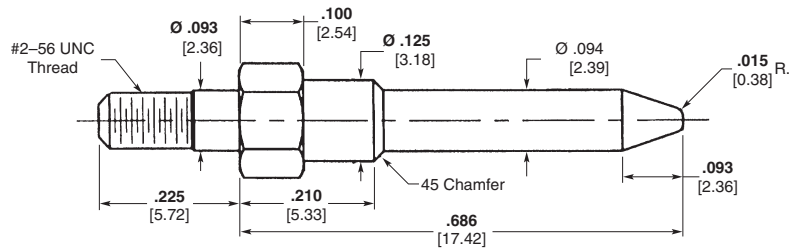
Material — Passivated stainless steel.
Fasten with 2-56 cap screw x .50" long
not included.



Part Number 445282-1

**Threaded Post Guide for
Part Number 445270 and
Part Number 447447**

Material — Passivated stainless steel.
Fasten with 2-56 nut not included.



Part Number 447448-1

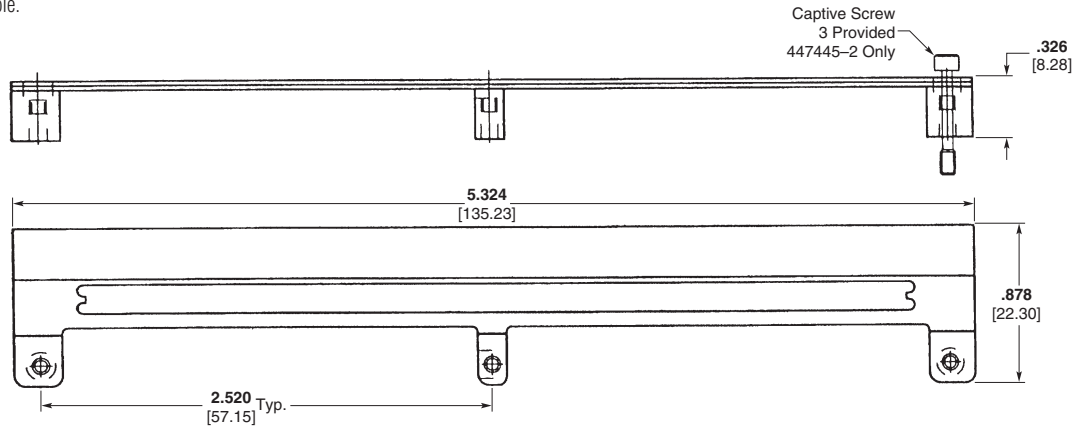
AMP-HDI Connector Shell Accessories

Protective Shell for Part Number 447444

Part Number 447445-2
Side "A" Shell With Captive Screws

Part Number 447446-2
Side "B" Shell Without Captive Screws

Material — Aluminum
Finish — Chromate conversion.
Special shell markings available.

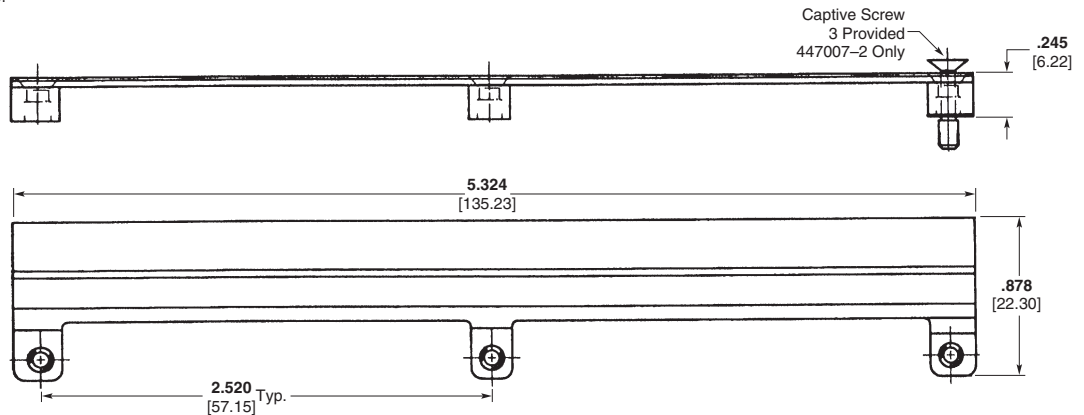


Protective Shell for Part Number 445269

Part Number 447007-2
Side "A" Shell With Captive Screws

Part Number 447006-2
Side "B" Shell Without Captive Screws

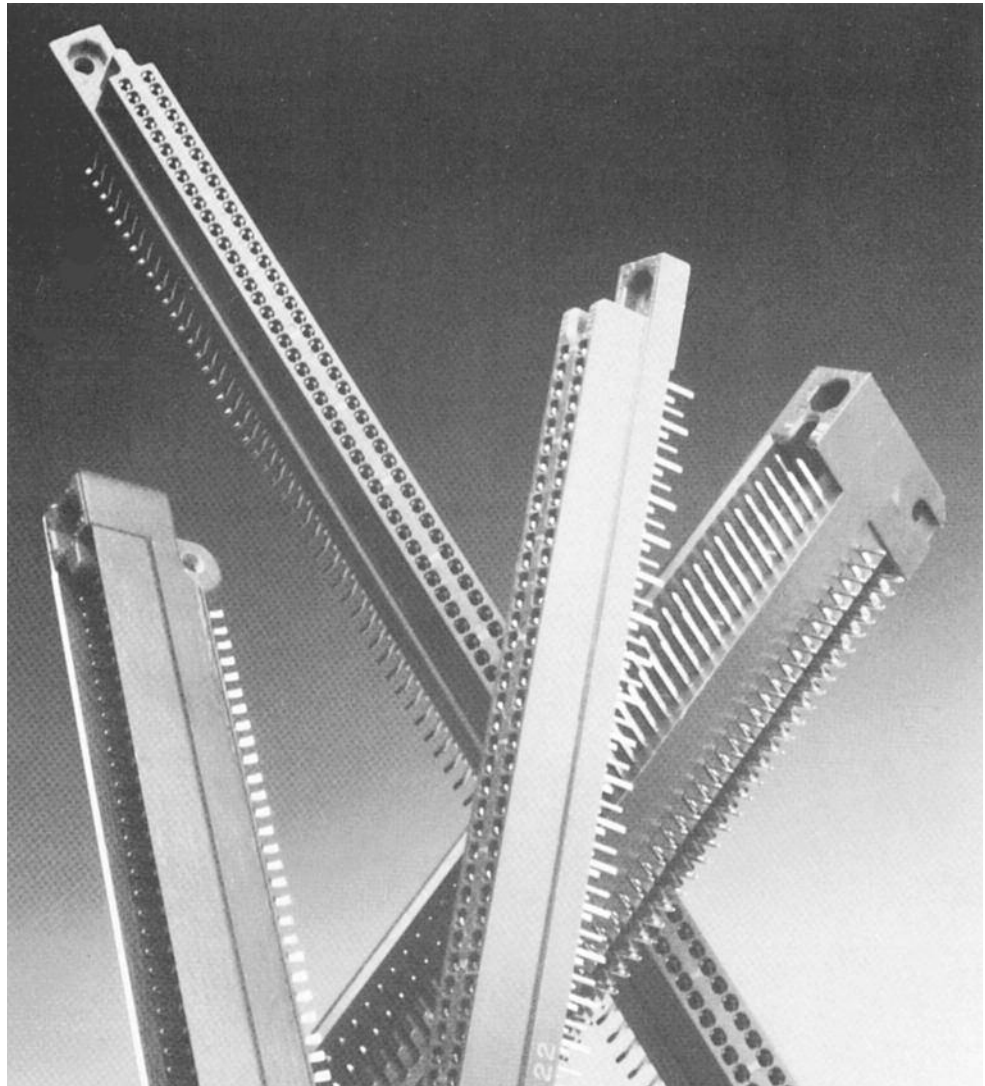
Material — Aluminum
Finish — Chromate conversion.
Special shell markings available.



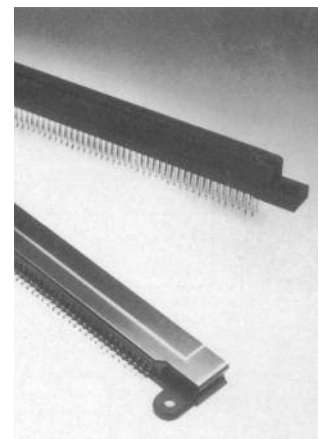
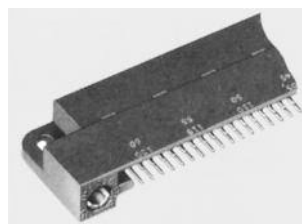
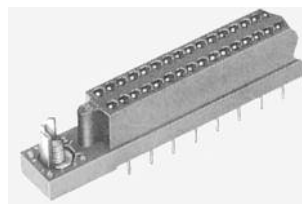
Introduction

Product Facts

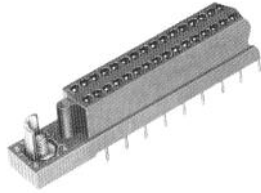
- Contacts are on .075 x .125 [1.91 x 3.18] centers
- Pin headers are provided with pin protectors
- Box receptacle contacts are available in flow solder, solder eyelet and straddle mount styles
- Qualified to MIL-C-55302/24, /25, /23, /156
- Four-beam box-type receptacle contact design provides four areas of contact per connection



The .075 [1.91] centerline Box Connector series is available in a 2-row configuration with pin counts from 10 to 180 positions and uses the reliable four-beam box contact. The tighter centerline spacing provides more pins within a specified distance and the staggered footprint allows for easier manufacturing of the printed circuit board.



Receptacle Assemblies for Flow Soldering — MIL-C-55302 Qualified



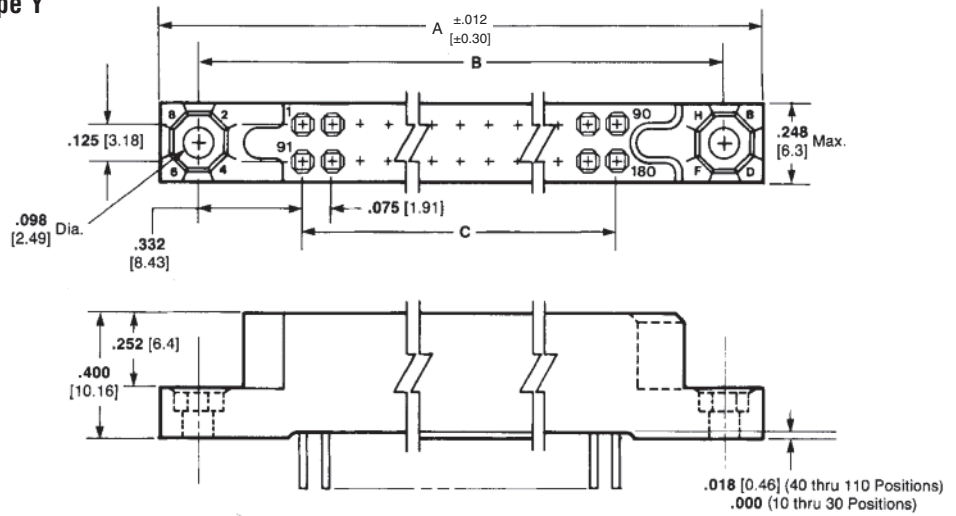
Related Product Data

Mates with — Pin Headers, pages 1-44 and 1-45

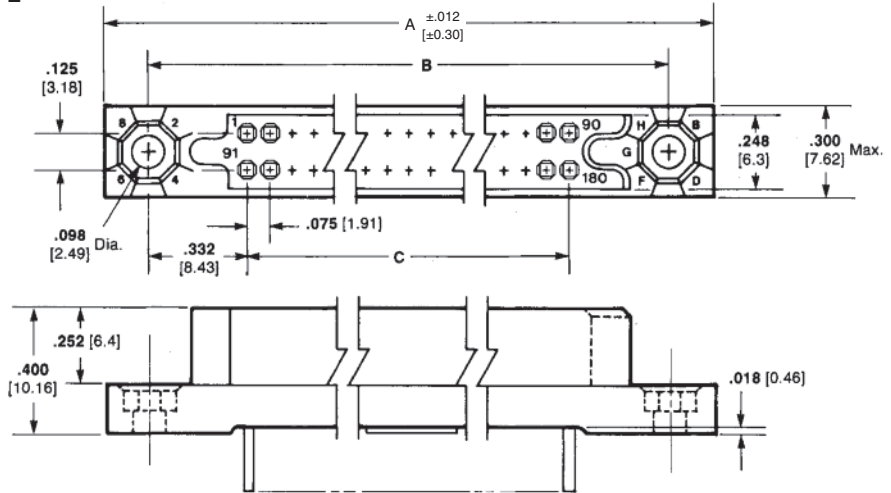
External Keying — page 1-80

Recommended PC Board Layout — page 1-47

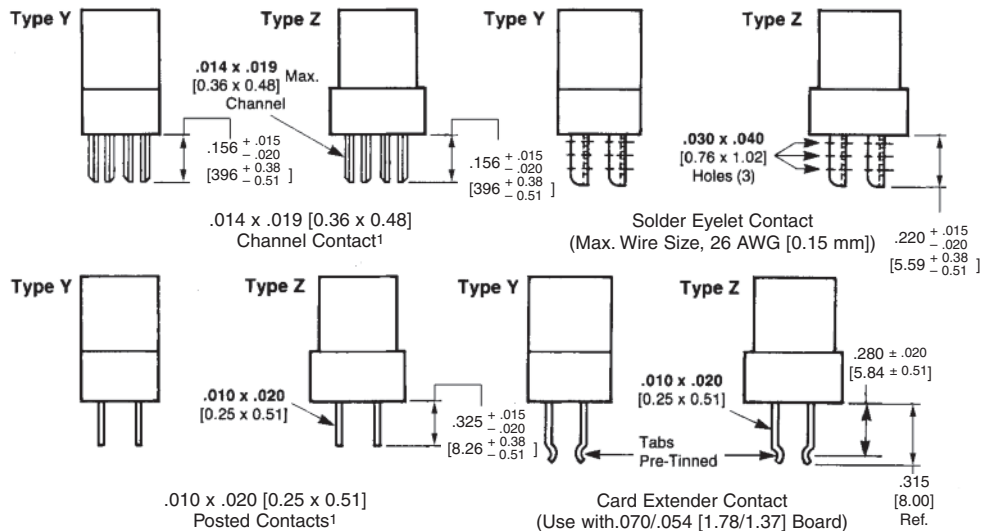
Type Y



Type Z



Contact Styles





Receptacle Assemblies for Flow Soldering — MIL-C-55302 Qualified (Continued)

Commercial Receptacle Assemblies

Housing Material—In accordance with MIL-C-55302 or MIL-M-24519 type GLCP-30F

Contact Material and Finish—Beryllium copper per QQ-C-533 or copper nickel silicon per ASTM B422 and ASTM B888

Channel Contact, Posted Contact and Card Extender Contact—Plated .000030 [0.00076] gold in contact area, .000100 [0.00254] tin-lead on the tails over .00030 [0.00076] nickel on the entire contact.

Solder Eyelet Contact—Plated .000030 [0.00076] gold in the contact area, .000100 [0.00254] tin-lead on the tails over .000030 [0.00076] nickel on the entire contact.

No. of Pos.	Housing Type	Dimensions			.014 x .019 [0.36 x 0.48] Channel Contacts		Solder Eyelet Contacts		.010 x .020 [0.25 x 0.51] Posted Contacts		Card Extender Contacts	
		A	B	C	AMP Part No.		AMP Part No.		AMP Part No.		AMP Part No.	
180	Z	7.630 193.8	7.340 186.44	6.675 169.55	531813-4		531811-4		531815-4		531817-4	
160	Z	6.880 174.75	6.590 167.39	5.925 150.5	531813-3		—		—		531817-3	
150	Z	6.505 165.23	6.215 157.86	5.550 140.97	531813-2		—		—		531817-2	
120	Z	5.380 136.65	5.090 129.29	4.425 112.4	—		531811-1		531815-1		531817-1	
100	Y	4.630 117.6	4.340 110.24	3.675 93.35	—		1-531810-0		—		1-531816-0	
80	Y	3.880 98.55	3.590 91.19	2.925 74.3	531812-8		531810-8		—		—	
50	Y	2.755 69.98	2.465 62.61	1.800 45.72	531812-5		531810-5		—		531816-5	
40	Y	2.380 60.45	2.090 53.09	1.425 36.2	531812-4		531810-4		—		531816-4	
30	Y	2.005 50.93	1.715 43.56	1.050 26.67	531812-3		—		—		531816-3	
10	Y	1.255 31.88	.965 24.51	.300 7.62	—		—		531814-1		—	

Military Receptacle Assemblies

Housing Material—In accordance with MIL-C-55302 or MIL-M-24519 type GLCP-30F

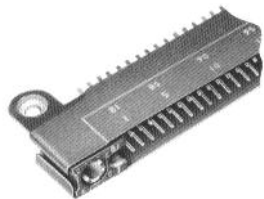
Contact Material and Finish—Beryllium copper per QQ-C-533

Channel Contact, Posted Contact and Card Extender Contact—Plated .000050 [0.00127] gold in the contact area, .000100 [0.00254] tin-lead on the tails over .000030 [0.00076] nickel on the entire contact.

Solder Eyelet Contact—Plated .000050 [0.00127] gold in the contact area, .000100 [0.00254] tin-lead on the tails over .000050 [0.00127] nickel on the entire contact.

No. of Pos.	Housing Type	Dimensions			.014 x .019 [0.36 x 0.48] Channel Contacts		Solder Eyelet Contacts		.010 x .020 [0.25 x 0.51] Posted Contacts		Card Extender Contacts	
		A	B	C	MIL-Part No. M55302/	AMP Part No.	MIL-Part No. M55302/	AMP Part No.	MIL-Part No. M55302/	AMP Part No.	MIL-Part No. M55302/	AMP Part No.
180	Z	7.630 193.8	7.340 186.44	6.675 169.55	25-29	531145-4	25-30	531146-4	25-31	531147-4	25-32	531148-4
160	Z	6.880 174.75	6.590 167.39	5.925 150.5	25-25	531145-3	25-26	531146-3	25-27	531147-3	25-28	531148-3
150	Z	6.505 165.23	6.215 157.86	5.550 140.97	25-21	531145-2	25-22	531146-2	25-23	531147-2	25-24	531148-2
120	Z	5.380 136.65	5.090 129.92	4.425 112.4	25-17	531145-1	25-18	531146-1	25-19	531147-1	25-20	531148-1
110	Y	5.005 127.13	4.715 119.76	4.050 102.87	24-85	1-531142-1	24-86	1-531129-1	24-87	1-531143-1	24-88	1-531144-1
100	Y	4.630 117.6	4.340 110.24	3.675 93.35	24-81	1-531142-0	24-82	1-531129-0	24-83	1-531143-0	24-84	1-531144-0
90	Y	4.255 108.08	3.965 100.71	3.300 83.82	24-77	531142-9	24-78	1-531129-2	24-79	531143-9	24-80	531144-9
80	Y	3.880 98.55	3.590 91.19	2.925 74.3	24-73	531142-8	24-74	531129-9	24-75	531143-8	24-76	531144-8
70	Y	3.505 89.03	3.215 81.66	2.550 64.77	24-69	531142-7	24-70	531129-8	24-71	531143-7	24-72	531144-7
60	Y	3.130 79.5	2.840 72.14	2.175 55.25	24-65	531142-6	24-66	531129-7	24-67	531143-6	24-68	531144-6
50	Y	2.755 69.98	2.465 62.61	1.800 45.72	24-61	531142-5	24-62	531129-6	24-63	531143-5	24-64	531144-5
40	Y	2.380 60.45	2.090 53.09	1.425 36.2	24-57	531142-4	24-58	531129-5	24-59	531143-4	24-60	531144-4
30	Y	2.005 50.93	1.715 43.56	1.050 26.67	24-53	531142-3	24-54	531129-4	24-55	531143-3	24-56	531144-3
20	Y	1.630 41.4	1.340 34.04	.675 17.15	24-49	531142-2	24-50	531129-3	24-51	531143-2	24-52	531144-2
10	Y	1.255 31.88	.965 24.51	.300 7.62	24-45	531142-1	24-46	531129-2	24-47	531143-1	24-48	531144-1

Straddle Mount Pin Header Assemblies with Anodized Pin Protectors — MIL-C-55302 Qualified



Related Product Data

Mates with — Receptacles, pages 1-42 and 1-43

External Keying — page 1-80

Recommended PC Board Layout — page 1-47

Commercial Pin Header Assemblies

Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 Type GLCP-30F

Pin Protector Material — Anodized aluminum per QQ-A-250/1

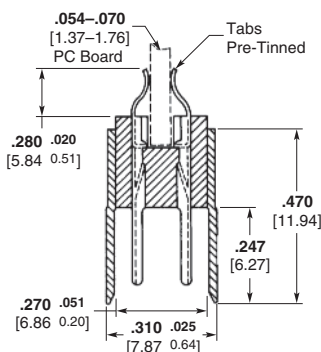
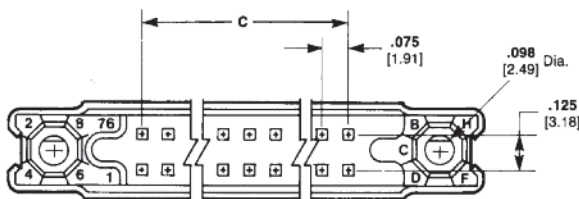
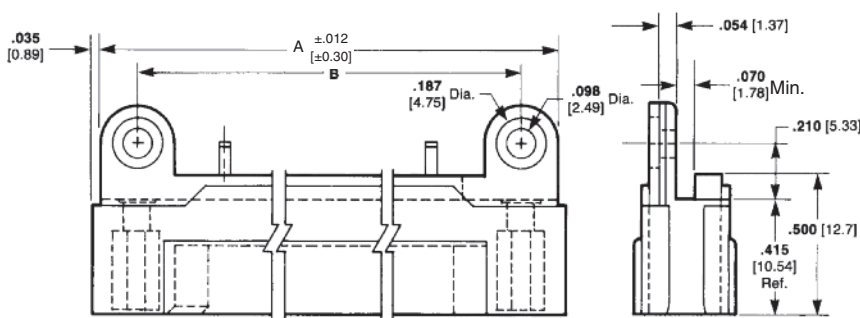
Contact Material and Finish — Brass per QQ-B-626 plated .000030 [0.00076] gold in the contact area, .000100 [0.00254] tin-lead on the tabs over .000050 [0.00127] nickel on the entire contact.

Military Pin Header Assemblies

Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 Type GLCP-30F

Pin Protector Material — Anodized aluminum per QQ-A-250/1

Contact Material and Finish — Brass per QQ-B-626 plated .000050 [0.00127] gold in the contact area, .000100 [0.00254] tin-lead on the tabs over .000050 [0.00127] nickel on the entire contact.



No. of Pos.	Dimensions			Military Pin Header	
	A	B	C	M55302/	AMP Part No.
180	7.630 193.8	7.340 186.44	6.675 169.55	23-30	530785-4
160	6.880 174.75	6.590 167.39	5.925 150.5	23-29	530785-5
150	6.505 165.23	6.215 157.86	5.550 140.97	23-28	530785-2
120	5.380 136.65	5.090 129.29	4.425 112.4	23-27	530785-6
110	5.005 127.13	4.715 119.76	4.050 102.87	23-26	530785-7
100	4.630 117.6	4.340 110.24	3.675 93.35	23-25	530785-8
90	4.255 108.08	3.965 100.71	3.300 83.82	23-24	1-530785-7
80	3.880 98.55	3.590 91.19	2.925 74.3	23-23	530785-9
70	3.505 89.03	3.215 81.66	2.550 64.77	23-22	1-530785-0
60	3.130 79.5	2.840 72.14	2.175 55.25	23-21	1-530785-1
50	2.755 69.98	2.465 62.61	1.800 45.72	23-20	1-530785-2
40	2.380 60.45	2.090 53.09	1.425 36.2	23-19	1-530785-3
30	2.005 50.93	1.715 43.56	1.050 26.67	23-18	1-530785-4
20	1.630 41.4	1.340 34.04	.675 17.15	23-17	1-530785-5
10	1.255 31.88	.965 24.51	.300 7.62	23-16	1-530785-6

**Right-Angle Pin Header Assemblies for Flow Soldering —
MIL-C-55302 Qualified**



Related Product Data

Mates with — Receptacles, pages 1-42 and 1-43

External Keying—page 1-80

Recommended PC Board Layout — page 1-47

Commercial Pin Header Assemblies

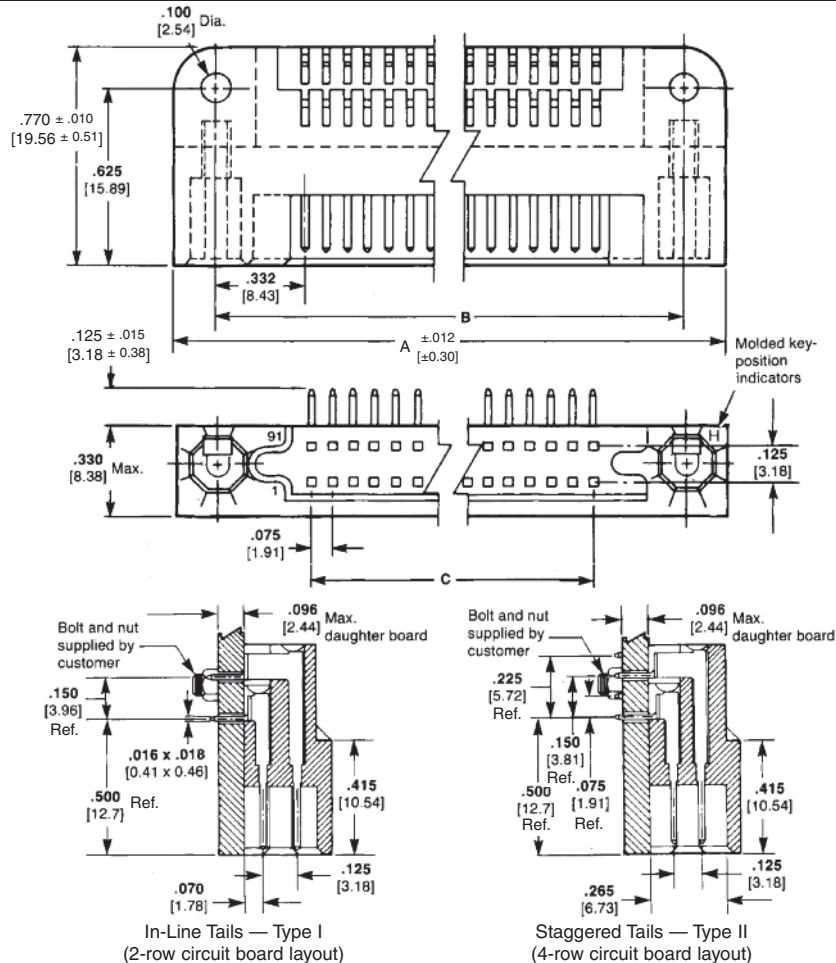
Housing Material — In accordance with MIL-C-55302

Contact Material and Finish — Brass per QQ-B-626 plated .000030 [0.00076] gold in the contact area, .000100 [0.00254] tin-lead on the tails over .000050 [0.00127] nickel on the entire contact

Military Pin Header Assemblies

Housing Material — In accordance with MIL-C-55302

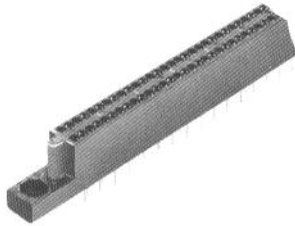
Contact Material and Finish — Brass per QQ-B-626 plated .000050 [0.00127] gold in the contact area, .000100 [0.00254] tin-lead on the tails over .000050 [0.00127] nickel on the entire contact



No. of Positions	Dimensions			In-line, Type I			Staggered, Type II		
	A	B	C	Commercial Part No.	MIL-Part No. M55302/	AMP MIL Part No.	Commercial Part No.	MIL-Part No. M55302/	AMP MIL Part No.
180	7.630 193.8	7.340 186.44	6.675 169.55	—	156-15	1-531719-5	1-531124-5	156-30	1-531720-5
160	6.880 174.75	6.590 167.39	5.925 150.5	1-531127-4	156-14	1-531719-4	—	156-29	1-531720-4
150	6.505 165.23	6.215 157.86	5.550 140.97	—	156-13	1-531719-3	1-531124-3	156-28	1-531720-3
120	5.380 136.65	5.090 129.29	4.425 112.4	—	156-12	1-531719-2	—	156-27	1-531720-2
110	5.005 127.13	4.715 119.76	4.050 102.87	—	156-11	1-531719-1	—	156-26	1-531720-1
100	4.630 117.6	4.340 110.24	3.675 93.35	—	156-10	1-531719-0	—	156-25	1-531720-0
90	4.255 108.08	3.965 100.71	3.300 83.82	—	156-09	531719-9	—	156-24	531720-9
80	3.880 98.55	3.590 91.19	2.925 74.3	—	156-08	531719-8	—	156-23	531720-8
70	3.505 89.03	3.215 81.66	2.550 64.77	—	156-07	531719-7	—	156-22	531720-7
60	3.130 79.5	2.840 72.14	2.175 55.25	—	156-06	531719-6	531124-6	156-21	531720-6
50	2.755 69.98	2.465 62.61	1.800 45.72	—	156-05	531719-5	531124-5	156-20	531720-5
40	2.380 60.45	2.090 53.09	1.425 36.2	—	156-04	531719-4	531124-4	156-19	531720-4
30	2.005 50.93	1.715 43.56	1.050 26.67	—	156-03	531719-3	531124-3	156-18	531720-3
20	1.630 41.4	1.340 34.04	.675 17.15	—	156-02	531719-2	—	156-17	531720-2
10	1.255 31.88	.965 24.51	.300 7.62	—	156-01	531719-1	—	156-16	531720-1

Stacking Connectors

Receptacle Assembly



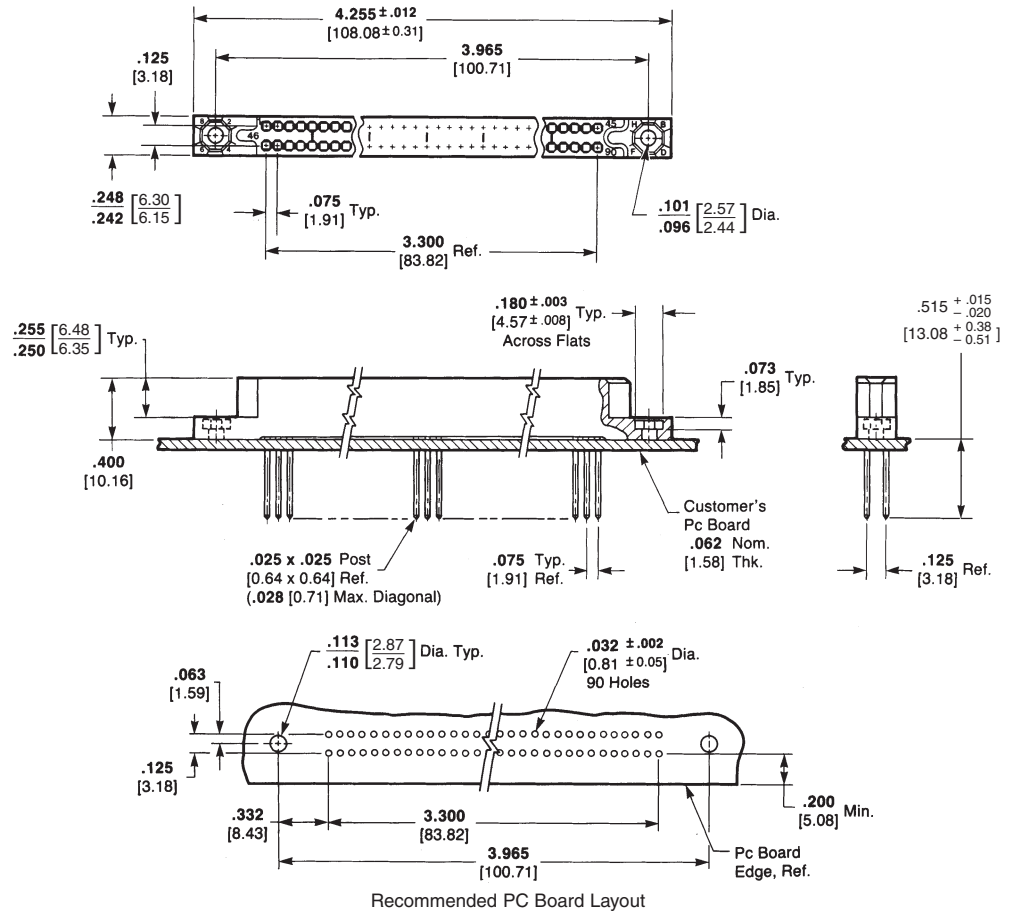
Housing Material — Blue Diallyl Phthalate or MIL-M-24519 Type GLCP-30F

Contact Material and Finish — Beryllium copper or copper nickel silicon per ASTM B422 and ASTM B888, plated gold .000050 [0.00127] thick all over nickel .000030 [0.00076] thick

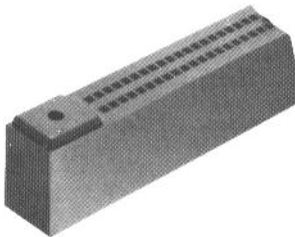
Related Product Data

Mates with — Pin Shroud Housing

External Keying — page 1-80



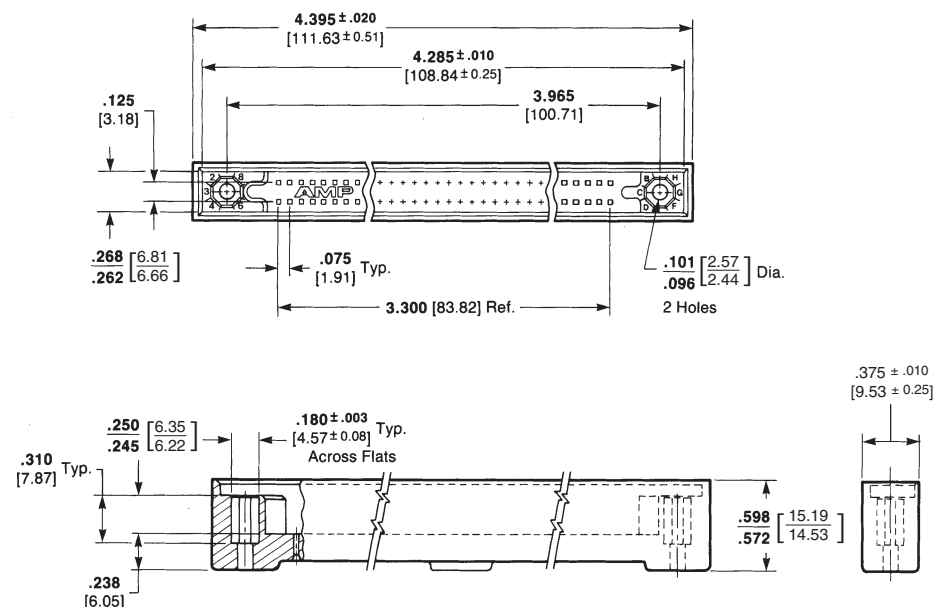
Pin Shroud Housing



Housing Material — Blue Polyester

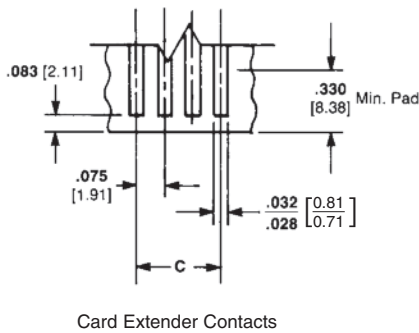
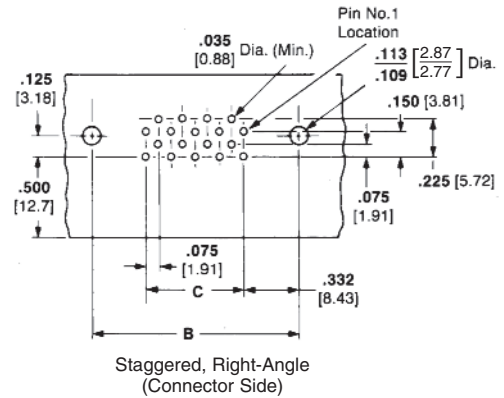
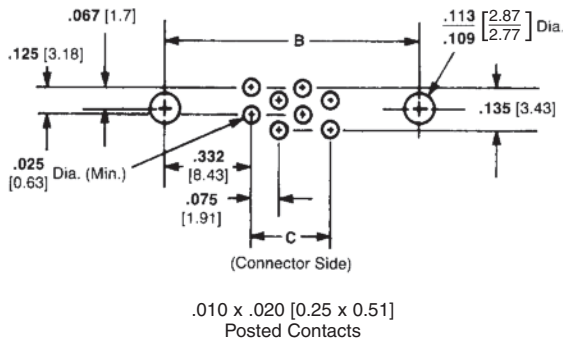
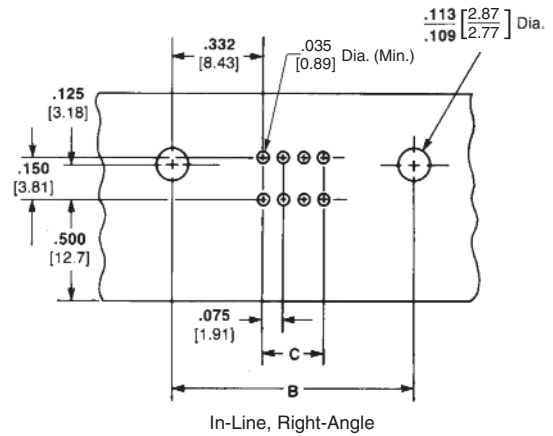
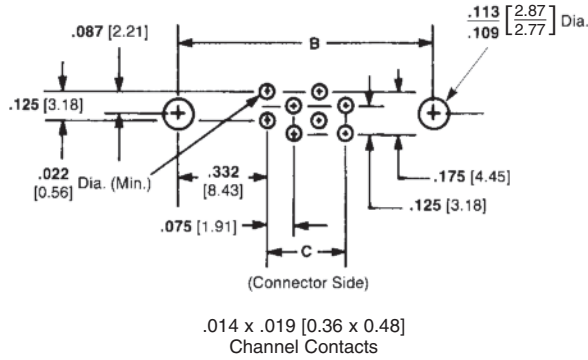
Related Product Data

Mates with — Receptacle Assembly



Recommended Printed Circuit Board Layouts

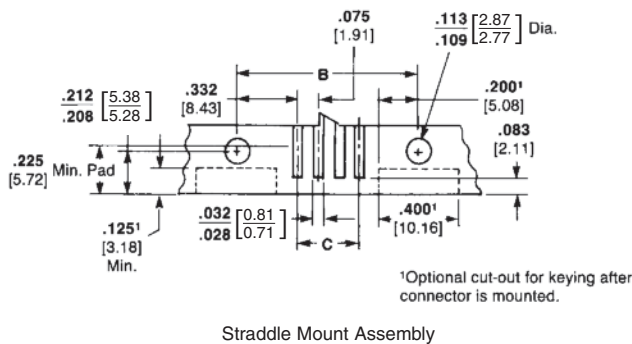
Receptacle Assemblies



No. of Pos.	Dimensions	
	B	C
180	7.340 186.44	6.675 169.55
160	6.590 167.39	5.925 150.5
150	6.215 157.86	5.550 140.97
120	5.090 129.29	4.425 112.4
110	4.715 119.76	4.050 102.87
100	4.340 110.24	3.675 93.35
90	3.965 100.71	3.300 83.82
80	3.590 91.19	2.925 74.3
70	3.215 81.66	2.550 64.77
60	2.840 72.14	2.175 55.25
50	2.465 62.61	1.800 45.72
40	2.090 53.09	1.425 36.2
30	1.715 43.56	1.050 26.67
20	1.340 34.04	.675 17.15
10	.965 24.51	.300 7.62

Note: These drawings are for reference only. Consult TE Connectivity for board layout details.

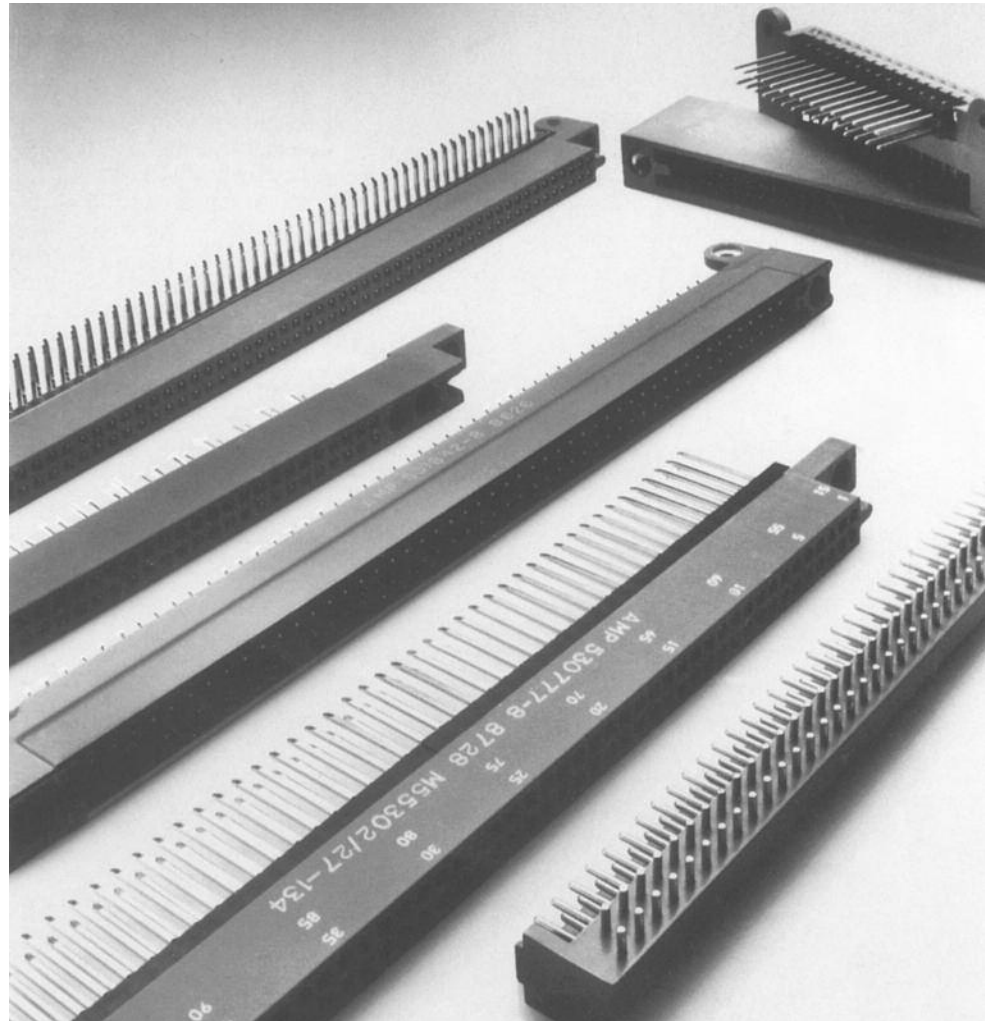
Pin Header Assemblies



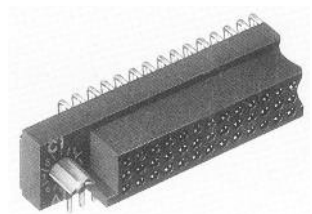
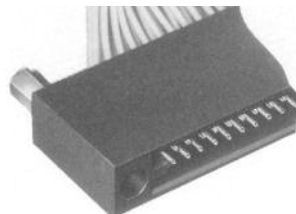
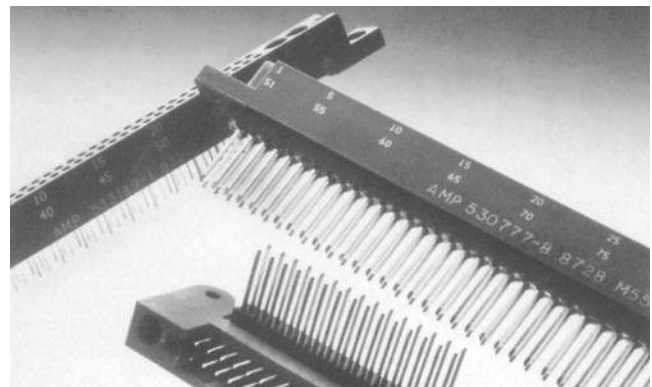
Introduction

Product Facts

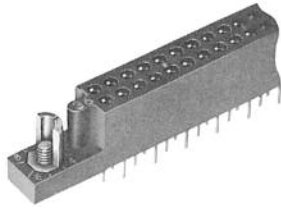
- Contacts are on .100 x .100 [2.54 x 2.54] centers
- Four-beam box-type contact design provides four areas of contact per connection
- Quad-beam redundancy offers high performance and reliability
- Sealed versions available
- Straddle mount pin headers have pretinned tabs for connection to daughter boards
- Pin headers are provided with pin protectors
- Straddle mount pin headers have replaceable contacts
- Box receptacle contacts are available in flow solder, solder eyelet, straddle mount, wrap-type and crimp styles
- Pin header assemblies are available in right-angle, straddle mount and crimp styles
- Solder tails are tin-lead plated for solderability
- Signal-coax mix connectors available
- Qualified to MIL-C-55302/26, /27, /110, /113, /129, /130



The .100 [2.54] Box Contact Connector series is available in 2, 3 and 4-row configurations with pin counts up to 300 positions. Each configuration uses the unique, very reliable four-beam box design which offers low applied cost while maintaining high performance and reliability. The ability to choose different sizes; housing materials; terminations; sealed versions; hybrids; etc. provides one with needed versatility in designing a system.



2-Row Receptacle Assemblies — MIL-C-55302 Qualified

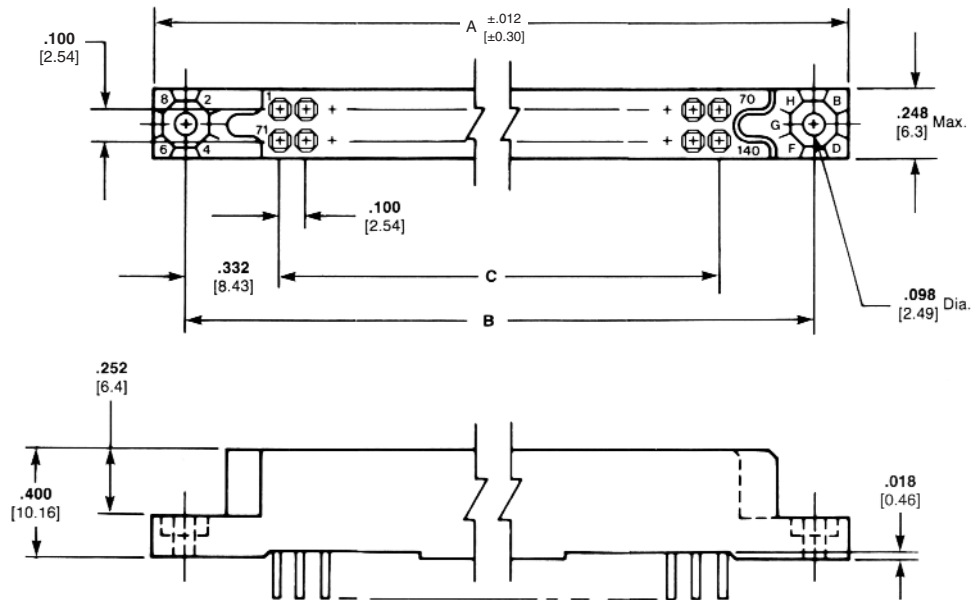


Related Product Data

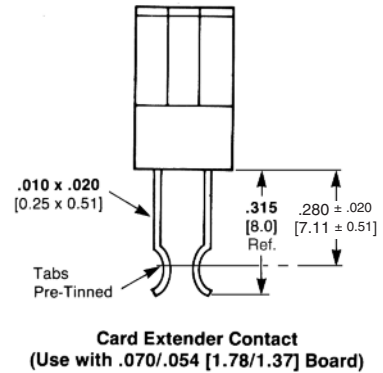
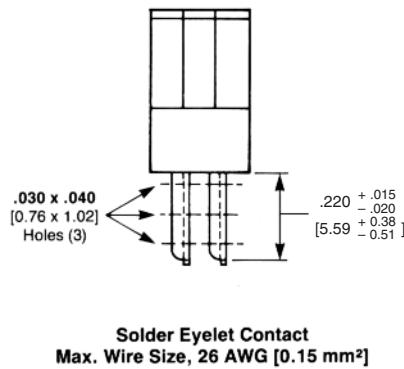
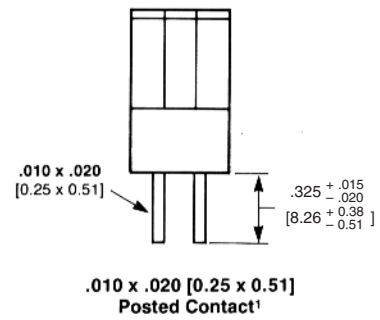
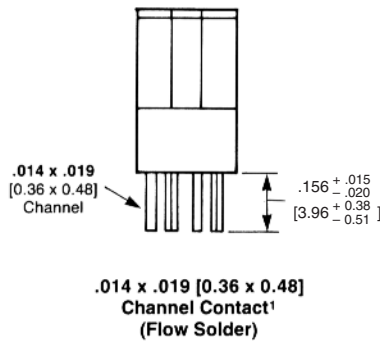
Mates with — Pin Headers and Assemblies, pages 1-56 to 1-60

External Keying — page 1-80

Recommended PC Board Layout — page 1-74



Contact Styles



¹ For flow solder application



2-Row Receptacle Assemblies — MIL-C-55302 Qualified (Continued)

Commercial Receptacle Assemblies

Housing Material — In accordance with MIL-C-55302

Contact Material and Finish — Beryllium copper or copper nickel silicon per ASTM B422 and ASTM B888

Channel Contact, Posted Contact and Card Extender Contact — Plated .000030 [0.00076] gold in contact area, .000100 [0.00254] tin-lead on the tails over .000030 [0.00076] nickel on the entire contact.

Solder Eyelet Contact — Plated .000030 [0.00076] gold in contact area, .000100 [0.00254] tin-lead on tails over .000030 [0.00076] nickel on the entire contact.

No. of Pos.	Dimensions			.014 x .019 [0.36 x 0.48] Channel Contacts AMP Part No.	.010 x .020 [0.25 x 0.51] Posted Contacts AMP Part No.	Solder Eyelet Contacts AMP Part No.	Card Extender Contacts AMP Part No.
	A	B	C				
140	7.855 199.52	7.565 192.15	6.900 175.26	1-531832-3	—*	—*	—*
134	7.555 191.90	7.265 184.53	6.600 167.64	—*	—*	1-531833-2	—*
130	7.355 186.82	7.065 179.45	6.400 162.56	—*	—*	—*	—*
120	6.855 174.12	6.565 166.75	5.900 149.86	—*	—*	—*	—*
110	6.355 161.42	6.065 154.05	5.400 137.16	531832-9	—*	—*	531835-9
100	5.855 148.72	5.565 141.35	4.900 124.46	531832-8	—*	—*	—*
90	5.355 136.02	5.065 128.65	4.400 111.76	—*	—*	—*	—*
80	4.855 123.32	4.565 115.95	3.900 99.06	—*	531834-6	—*	—*
70	4.355 110.62	4.065 103.25	3.400 83.36	—*	—*	—*	—*
60	3.855 97.92	3.565 90.55	2.900 73.66	—*	—*	531833-4	—*
50	3.355 85.22	3.065 77.85	2.400 60.96	—*	—*	—*	531835-3
40	2.855 72.52	2.565 65.15	1.900 48.26	—*	—*	—*	—*
30	2.355 59.82	2.065 52.4 5	1.400 35.56	—*	—*	—*	—*

* Part Numbers available upon request, contact TE Connectivity.

Military Receptacle Assemblies

Housing Material — In accordance with MIL-C-55302

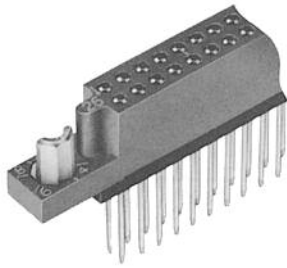
Contact Material and Finish — Beryllium copper or copper nickel silicon per ASTM B422 and ASTM B888

Channel Contact, Posted Contact and Card Extender Contact — Plated .000050 [0.00127] gold in contact area, .000100 [0.00254] tin-lead on the tails over .000030 [0.00076] nickel on the entire contact.

Solder Eyelet Contact — Plated .000050 [0.00127] gold in contact area, in accordance with MIL-C-55302 .000100 [0.00254] tin-lead on tails over .000050 [0.00127] nickel on the entire contact.

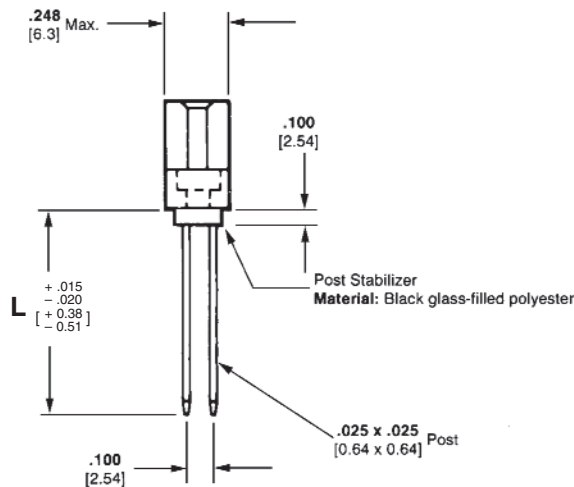
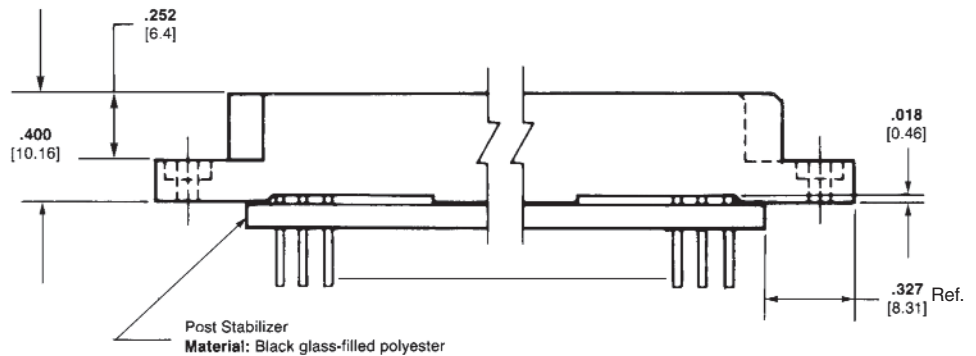
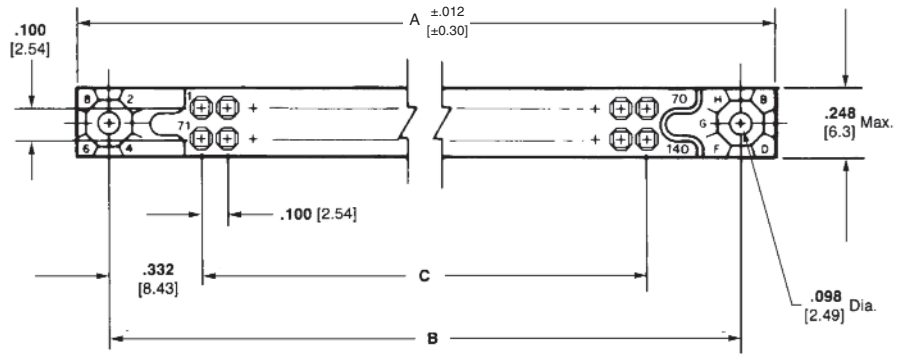
No. of Pos.	Dimensions			.014 x .019 [0.36 x 0.48] Channel Contacts		Solder Eyelet Contacts		.010 x .020 [0.25 x 0.51] Posted Contacts		Card Extender Contacts	
	A	B	C	MIL-Part No. M55302/	AMP Part No.	MIL-Part No. M55302/	AMP Part No.	MIL-Part No. M55302/	AMP Part No.	MIL-Part No. M55302/	AMP Part No.
140	7.855 199.52	7.565 192.15	6.900 175.26	27-193	2-530340-2	27-197	1-530758-3	27-201	1-530776-3	27-229	1-530782-3
134	7.555 191.90	7.265 184.53	6.600 167.64	27-192	2-530340-1	27-196	1-530758-2	27-200	1-530776-2	27-228	1-530782-2
130	7.355 186.82	7.065 179.45	6.400 162.56	27-191	2-530340-0	27-195	1-530758-1	27-199	1-530776-1	27-227	1-530782-1
120	6.855 174.12	6.565 166.75	5.900 149.86	27-190	1-530340-9	27-194	1-530758-0	27-198	1-530776-0	27-226	1-530782-0
110	6.355 161.42	6.065 154.05	5.400 137.16	27-99	530340-9	27-108	530758-9	27-117	530776-9	27-180	530782-9
100	5.855 148.72	5.565 141.35	4.900 124.46	27-98	530340-8	27-107	530758-8	27-116	530776-8	27-179	530782-8
90	5.355 136.02	5.065 128.65	4.400 111.76	27-97	530340-7	27-106	530758-7	27-115	530776-7	27-178	530782-7
80	4.855 123.32	4.565 115.95	3.900 99.06	27-96	530340-6	27-105	530758-6	27-114	530776-6	27-177	530782-6
70	4.355 110.62	4.065 103.25	3.400 83.36	27-95	530340-5	27-104	530758-5	27-113	530776-5	27-176	530782-5
60	3.855 97.92	3.565 90.55	2.900 73.66	27-94	530340-4	27-103	530758-4	27-112	530776-4	27-175	530782-4
50	3.355 85.22	3.065 77.85	2.400 60.96	27-93	530340-3	27-102	530758-3	27-111	530776-3	27-174	530782-3
40	2.855 72.52	2.565 65.15	1.900 48.26	27-92	530340-2	27-101	530758-2	27-110	530776-2	27-173	530782-2
30	2.355 59.82	2.065 52.45	1.400 35.56	27-91	530340-1	27-100	530758-1	27-109	530776-1	27-172	530782-1

**2-Row Receptacle Assemblies for Rack Mounting
with Posted Contacts (Wrap-Type) — MIL-C-55302 Qualified**



Related Product Data

Mates with — Pin Headers
Assemblies, pages 1-56 to 1-60
External Keying — page 1-80
Recommended PC Board Layout —
page 1-74



Post Length	No. of Terminals per Post		
	1 High	2 High	3 High
L	.405 10.29	.565 14.35	.725 18.42

Post Wrapping Information

Maximum wire size for wrapping a posted box terminal is 30 AWG [0.05mm²] (maximum insulated wire diameter, .019 [0.49mm]).

The following data can be used to determine bit and sleeve size:

Maximum Terminal Diagonal: .034 [0.87]
Minimum Terminal Diagonal: .031 [0.78]
Maximum Effective Radius: .067 [1.71]

Recommended Sleeve:

No. 507100¹

Recommended Bits:

No. 511208¹

No. 507063¹

¹Available from Gardner-Denver Co., Grand Haven, Michigan.

2-Row Receptacle Assemblies for Rack Mounting with Posted Contacts (Wrap-Type) — MIL-C-55302 Qualified (Continued)

Commercial Receptacle Assemblies

Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 Type GLCP-30F

1 Contact Material and Finish — Beryllium copper or copper nickel silicon per ASTM B422 and ASTM B888 plated .000030 [0.00076] gold in the contact area, .000100 [0.00254] tin-lead on the tails over .000030 [0.00076] nickel on the entire contact
2 Contact Material and Finish — Same as above except for tin on the tails

No. of Pos.	Dimensions			No. of Terminations Per Post			
	A	B	C	1 High Part No. ¹	2 High Part No. ¹	3 High Part No. ¹	3 High RoHS Part No. ²
140	7.855 199.52	7.565 192.15	6.900 175.26	—*	—*	—*	—
134	7.555 191.50	7.265 184.53	6.600 167.64	—*	—*	—*	—
130	7.355 186.82	7.065 179.45	6.400 162.56	—*	—*	—*	—
120	6.855 174.12	6.565 166.75	5.900 149.86	—*	—*	—*	—
110	6.355 161.42	6.065 154.05	5.400 137.16	—*	—*	531838-9	—
100	5.855 148.72	5.565 141.35	4.900 124.46	—*	531837-8	531838-8	5-531838-8
90	5.355 136.02	5.065 128.65	4.400 111.76	531836-7	—*	—*	—
80	4.855 123.32	4.565 115.95	3.900 99.06	—*	—*	531838-6	5-531838-6
70	4.355 110.62	4.065 103.25	3.400 86.36	—*	—*	—*	—
60	3.855 97.92	3.565 90.55	2.900 73.66	—*	—*	—*	—
50	3.355 85.22	3.065 77.85	2.400 60.96	531836-3	—*	531838-3	5-531838-3
40	2.855 72.52	2.565 65.15	1.900 48.26	—*	—*	—*	—
30	2.355 59.82	2.065 52.45	1.400 35.56	—*	—*	—*	—

* Part Numbers available upon request, contact TE Connectivity.

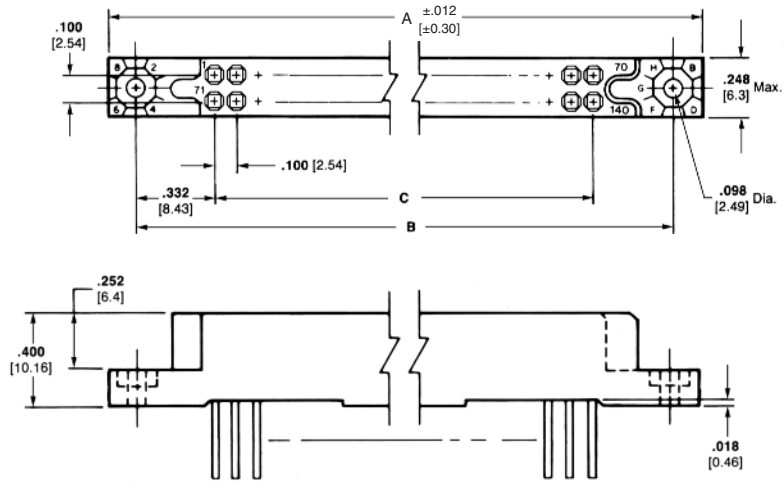
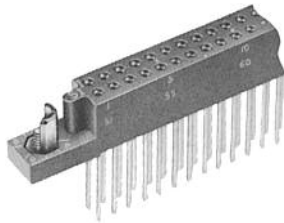
Military Receptacle Assemblies

Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 Type GLCP-30F

Contact Material and Finish — Beryllium copper or copper nickel silicon per ASTM B422 and ASTM B888 plated .000050 [0.00127] gold over .000030 [0.00076] nickel on the entire contact

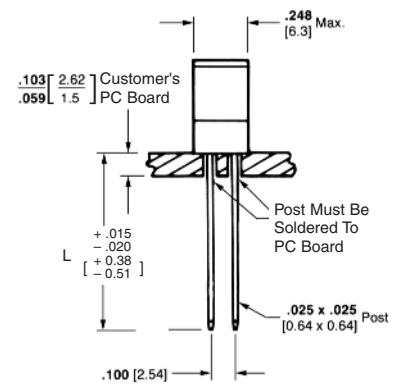
No. of Pos.	Dimensions			No. of Terminations Per Post					
	A	B	C	1 High		2 High		3 High	
				MIL-Part No.	AMP Part No.	MIL-Part No.	AMP Part No.	MIL-Part No.	AMP Part No.
140	7.855 199.52	7.565 192.15	6.900 175.26	M55302/27-213	—	M55302/27-209	1-530777-3	M55302/27-205	1-530763-3
134	7.555 191.50	7.265 184.53	6.600 167.64	M55302/27-212	1-530778-2	M55302/27-208	1-530777-2	M55302/27-204	1-530763-2
130	7.355 186.82	7.065 179.45	6.400 162.56	M55302/27-211	1-530778-1	M55302/27-207	1-530777-1	M55302/27-203	1-530763-1
120	6.855 174.12	6.565 166.75	5.900 149.86	M55302/27-210	1-530778-0	M55302/27-206	1-530777-0	M55302/27-202	1-530763-0
110	6.355 161.42	6.065 154.05	5.400 137.16	M55302/27-144	530778-9	M55302/27-135	530777-9	M55302/27-126	530763-9
100	5.855 148.72	5.565 141.35	4.900 124.46	M55302/27-143	530778-8	M55302/27-134	530777-8	M55302/27-125	530763-8
90	5.355 136.02	5.065 128.65	4.400 111.76	M55302/27-142	530778-7	M55302/27-133	530777-7	M55302/27-124	530763-7
80	4.855 123.32	4.565 115.95	3.900 99.06	M55302/27-141	530778-6	M55302/27-132	530777-6	M55302/27-123	530763-6
70	4.355 110.62	4.065 103.25	3.400 86.36	M55302/27-140	530778-5	M55302/27-131	530777-5	M55302/27-122	530763-5
60	3.855 97.92	3.565 90.55	2.900 73.66	M55302/27-139	530778-4	M55302/27-130	530777-4	M55302/27-121	530763-4
50	3.355 85.22	3.065 77.85	2.400 60.96	M55302/27-138	530778-3	M55302/27-129	530777-3	M55302/27-120	530763-3
40	2.855 72.52	2.565 65.15	1.900 48.26	M55302/27-137	530778-2	M55302/27-128	530777-2	M55302/27-119	530763-2
30	2.355 59.82	2.065 52.45	1.400 35.56	M55302/27-136	530778-1	M55302/27-127	530777-1	M55302/27-118	530763-1

2-Row Receptacle Assemblies for PC Solder Mount with Posted Contacts (Wrap-Type) — MIL-C-55302 Qualified



Related Product Data

- Mates with** — Pin Header Assemblies, pages 1-56 to 1-60
- External Keying** — page 1-80
- Post Wrapping Information** — page 1-51
- Recommended PC Board Layout** — page 1-74

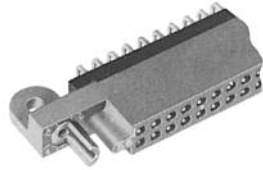


Military Receptacle Assemblies

- Housing Material** — In accordance with MIL-C-55302 or MIL-M-24519 Type GLCP-30F
- Contact Material and Finish** — Beryllium copper or copper nickel silicon per ASTM B422 and ASTM B888 plated .000050 [0.00127] gold over .000030 [0.00076] nickel on the entire contact.

No. of Pos.	Dimensions			No. of Terminations Per Post					
	A	B	C	1 High		2 High		3 High	
				MIL-Part No.	AMP Part No.	MIL-Part No.	AMP Part No.	MIL-Part No.	AMP Part No.
140	7.855 199.52	7.565 192.15	6.900 175.26	M55302/27-225	—	M55302/27-221	1-530780-3	M55302/27-217	1-530779-3
134	7.555 191.90	7.265 184.53	6.600 167.64	M55302/27-224	—	M55302/27-220	1-530780-2	M55302/27-216	1-530779-2
130	7.355 186.82	7.065 179.45	6.400 162.56	M55302/27-223	1-530781-1	M55302/27-219	1-530780-1	M55302/27-215	1-530779-1
120	6.855 174.12	6.565 166.75	5.900 149.86	M55302/27-222	—	M55302/27-218	1-530780-0	M55302/27-214	1-530779-0
110	6.355 161.42	6.065 154.05	5.400 137.16	M55302/27-171	530781-9	M55302/27-162	530780-9	M55302/27-153	530779-9
100	5.855 148.72	5.565 141.35	4.900 124.46	M55302/27-170	530781-8	M55302/27-161	530780-8	M55302/27-152	530779-8
90	5.355 136.02	5.065 128.65	4.400 111.76	M55302/27-169	530781-7	M55302/27-160	530780-7	M55302/27-151	530779-7
80	4.855 123.32	4.565 115.95	3.900 99.06	M55302/27-168	530781-6	M55302/27-159	530780-6	M55302/27-150	530779-6
70	4.355 110.62	4.065 103.25	3.400 86.36	M55302/27-167	530781-5	M55302/27-158	530780-5	M55302/27-149	530779-5
60	3.855 97.92	3.565 90.55	2.900 73.66	M55302/27-166	—	M55302/27-157	530780-4	M55302/27-148	530779-4
50	3.355 85.22	3.065 77.85	2.400 60.96	M55302/27-165	530781-3	M55302/27-156	530780-3	M55302/27-147	530779-3
40	2.855 72.52	2.565 65.15	1.900 48.26	M55302/27-164	530781-2	M55302/27-155	530780-2	M55302/27-146	530779-2
30	2.355 59.82	2.065 52.45	1.400 35.56	M55302/27-163	530781-1	M55302/27-154	530780-1	M55302/27-145	530779-1

2-Row Right-Angle Receptacle Assemblies with Posted Contacts (Wrap-Type)



Related Product Data

Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 Type GLCP-30F

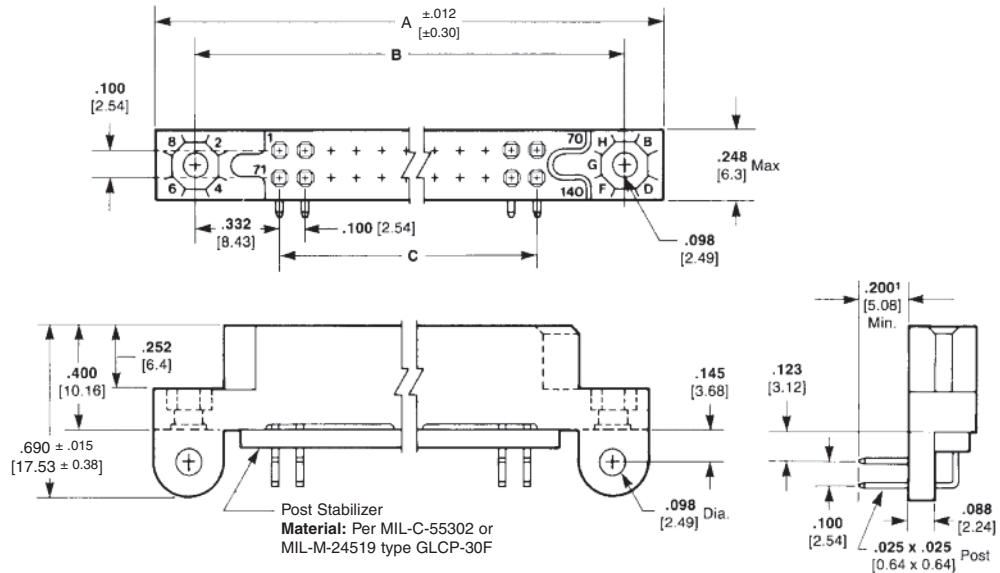
1 Contact Material and Finish — Beryllium copper or copper nickel silicon per ASTM B422 and ASTM B888 plated .000030 [0.00076] gold in the contact area, .000100 [0.00254] tin-lead on posts over .000030 [0.00076] nickel on the entire contact

2 Contact Material and Finish — Same as above except for tin on posts

Mates with — Pin Header Assemblies, pages 1-56 to 1-60

External Keying — page 1-80

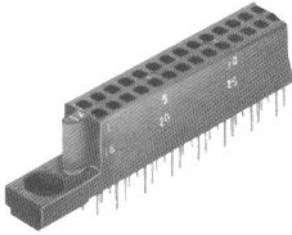
Recommended PC Board Layout — page 1-74



1The rows of posts will not be of equal length.

No. of Pos.	Dimensions			Part No.1	RoHS Part No.2
	A	B	C		
140	7.855 199.52	7.565 192.15	6.900 175.26	—	—
134	7.555 191.50	7.265 184.53	6.600 167.64	—	—
130	7.355 186.82	7.065 179.45	6.400 162.56	—	—
120	6.855 174.12	6.565 166.75	5.900 149.86	532469-4	—
110	6.355 161.42	6.065 154.05	5.400 137.16	1-532469-0	—
100	5.855 148.72	5.565 141.35	4.900 124.46	532469-9	5-532469-9
90	5.355 136.02	5.065 128.65	4.400 111.76	532469-3	5-532469-3
80	4.855 123.32	4.565 115.95	3.900 99.06	—	—
70	4.355 110.62	4.065 103.25	3.400 86.36	—	—
60	3.855 97.92	3.565 90.55	2.900 73.66	532469-2	—
50	3.355 85.22	3.065 77.85	2.400 60.96	—	—
40	2.855 72.52	2.565 65.15	1.900 48.26	532469-6	—
30	2.355 59.82	2.065 52.45	1.400 35.56	532469-5	—

2-Row Sealed Receptacle Connector



Housing Material — Per MIL-C-55302 or MIL-M-24519 type GLCP-30F

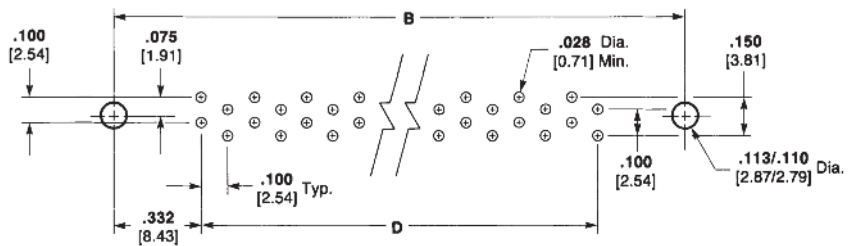
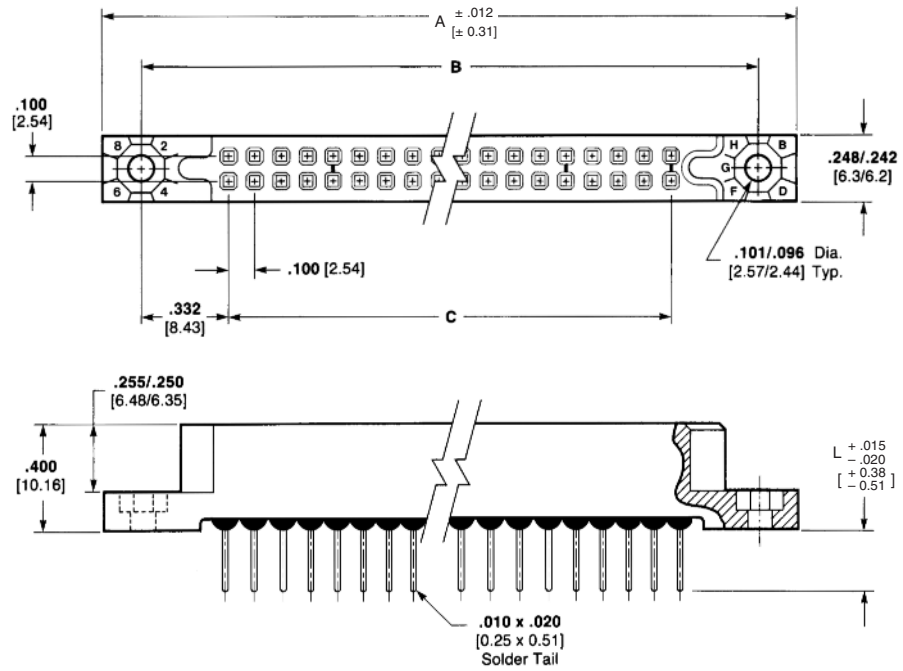
Contact Material and Finish — Beryllium copper or copper nickel silicon per ASTM B422 and ASTM B888 plated .000050 [0.00127] gold in the contact area, .000100 [0.00254] tin-lead on the solder tails over .000030 [0.00076] nickel on the entire contact

Related Product Data

Mates with — Pin Header Assemblies, pages 1-56 to 1-60

External Keying — page 1-80

Mating Sealed Pin Header Assembly — Part Number 532795

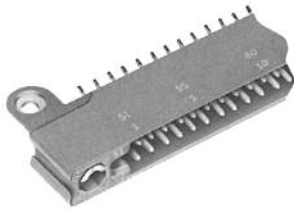


Recommended PC Board Layout

No. of Pos.	Dimensions				Part Nos. Dim. L	
	A	B	C	D	.156 [3.96]	.235 [5.97]
140	7.855 199.52	7.565 192.15	7.165 181.99	6.900 175.26	—*	—*
134	7.555 191.90	7.265 184.53	6.865 174.37	6.600 167.64	—*	—*
130	7.355 186.82	7.065 179.45	6.555 166.50	6.400 162.56	—*	—*
120	6.855 174.12	6.565 166.75	6.165 156.59	5.906 149.86	—*	—*
110	6.355 161.42	6.065 154.05	5.655 143.64	5.400 137.16	534195-9	534650-9
100	5.855 148.72	5.565 141.35	5.165 131.19	4.900 124.46	—*	—*
90	5.355 136.02	5.065 128.65	4.655 118.24	4.400 111.76	534195-7	—*
80	4.855 123.32	4.565 115.95	4.165 105.79	3.900 99.06	534195-6	—*
70	4.355 110.62	4.065 103.25	3.655 92.84	3.400 86.36	534195-5	—*
60	3.855 97.92	3.565 90.55	3.165 80.39	2.900 73.66	534195-4	—*
50	3.355 85.22	3.065 77.85	2.655 67.44	2.400 60.96	534195-3	—*
40	2.855 72.52	2.565 65.15	2.165 54.99	1.900 48.26	534195-2	—*
30	2.355 59.82	2.065 52.45	1.665 42.29	1.400 35.56	534195-1	—*

* Part Numbers available upon request, contact TE Connectivity.

2-Row Straddle Mount Pin Header Assemblies with Anodized Pin Protectors — MIL-C-55302 Qualified



Commercial Pin Header Assembly

Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 type GLCP-30F

Pin Protector Material — Anodized aluminum per QQ-A-250/1

Contact Material and Finish — Brass per QQ-B-626 plated .000030 [0.00076] gold in the contact area, .000100 [0.00254] tin-lead on the tabs over .000050 [0.00127] nickel on the entire contact

Military Pin Header Assembly

Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 type GLCP-30F

Pin Protector Material — Anodized aluminum per QQ-A-250/1

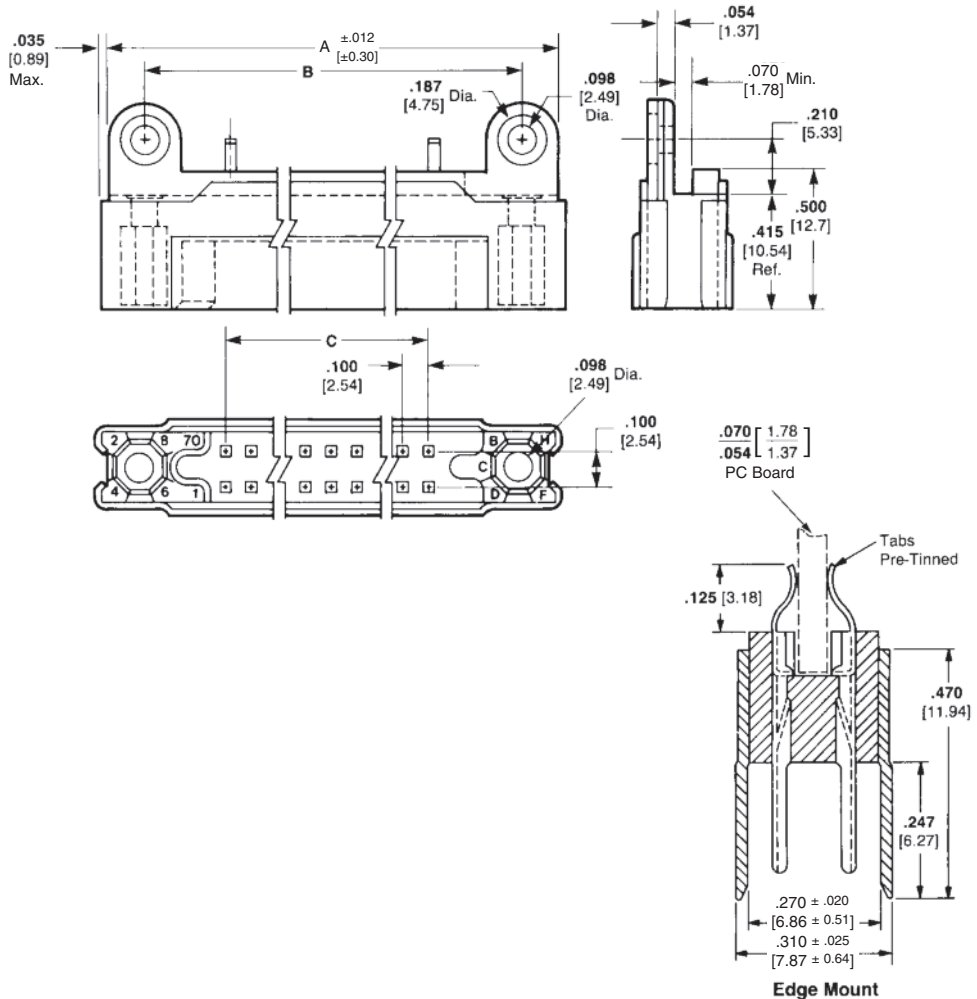
Contact Material and Finish — Brass per QQ-B-626 plated .000050 [0.00127] gold in the contact area, .000100 [0.00254] tin-lead on the tabs over .000050 [0.00127] nickel on the entire contact

Related Product Data

Mates with — Receptacles, pages 1-49 to 1-54, 1-61 and 1-62

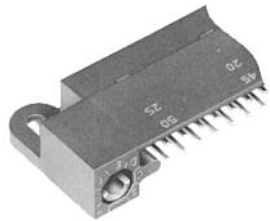
External Keying — page 1-80

Recommended PC Board Layout — page 1-75



No. of Pos.	Dimensions			Commercial Part No.	Military MIL Part No.	AMP Part No.
	A	B	C			
140	7.855 199.52	7.565 192.15	6.900 175.26	—	M55302/26-22	1-530761-5
134	7.555 191.50	7.265 184.53	6.600 167.64	—	M55302/26-21	530761-3
130	7.355 186.82	7.065 179.45	6.400 162.56	—	M55302/26-20	1-530761-4
120	6.855 174.12	6.565 166.75	5.900 149.86	—	M55302/26-19	1-530761-3
110	6.355 161.42	6.065 154.05	5.400 137.16	—	M55302/26-18	530761-5
100	5.855 148.72	5.565 141.35	4.900 124.46	531842-8	M55302/26-17	530761-6
90	5.355 136.02	5.065 128.65	4.400 111.76	531842-7	M55302/26-16	530761-7
80	4.855 123.32	4.565 115.95	3.900 99.06	531842-6	M55302/26-15	530761-4
70	4.355 110.62	4.065 103.25	3.400 86.36	—	M55302/26-14	530761-8
60	3.855 97.92	3.565 90.55	2.900 73.66	531842-4	M55302/26-13	530761-9
50	3.355 85.22	3.065 77.85	2.400 60.96	531842-3	M55302/26-12	1-530761-0
40	2.855 72.52	2.565 65.15	1.900 48.26	—	M55302/26-11	1-530761-1
30	2.355 59.82	2.065 52.45	1.400 35.56	—	M55302/26-10	1-530761-2

2-Row Right-Angle Pin Header Assemblies for Flow Soldering — MIL-C-55302 Qualified



Commercial Pin Header

1 Contact Material and Finish —

Brass per QQ-B-626 plated .000030 [0.00076] gold in the contact area, .000100 [0.00254] tin-lead on the tails over .000050 [0.00127] nickel on the entire contact

2 Contact Material and Finish —

Same as above except for tin on the tails

Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 type GLCP-30F

Military Pin Header

Contact Material and Finish — Brass per QQ-B-626 plated .000050 [0.00127] gold in the contact area, .000100 [0.00254] tin-lead on the tails over .000050 [0.00127] nickel on the entire contact

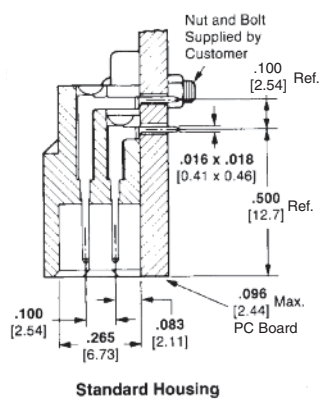
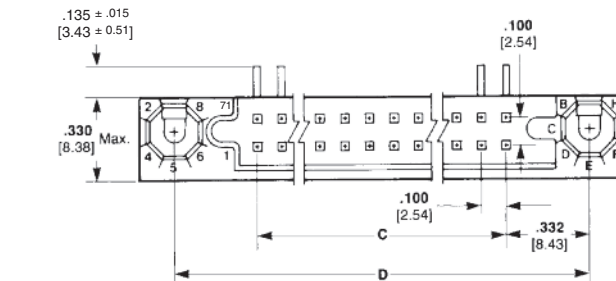
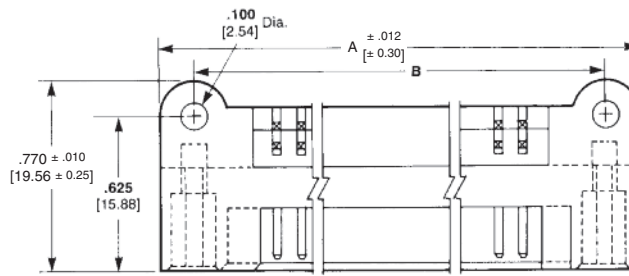
Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 type GLCP-30F

Related Product Data

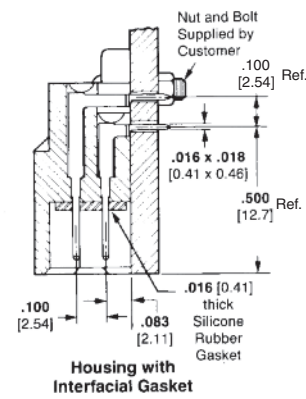
Mates with — Receptacles, pages 1-49 to 1-54, 1-61 and 1-62

External Keying — page 1-80

Recommended PC Board Layout — page 1-75



Standard Housing



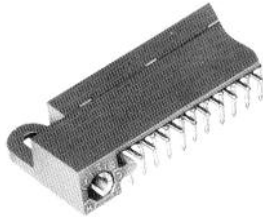
Housing with Interfacial Gasket

No. of Pos.	Dimensions				Standard Housing			Housing with Interfacial Gasket	
	A	B	C	D	Commercial Part No.	MIL Part No. M55302/	AMP Part No.	MIL Part No. M55302/	AMP Part No.
140	7.855 199.52	7.565 192.15	6.900 175.26	7.565 192.15	—	110-31	1-531721-3	110-35	1-531722-3
134	7.555 191.50	7.265 184.53	6.600 167.64	7.265 184.53	1-530942-21 6-530942-22	110-30	1-531721-2	110-34	1-531722-2
130	7.355 186.82	7.065 179.45	6.400 162.56	7.065 179.45	—	110-29	1-531721-1	110-33	1-531722-1
120	6.855 174.12	6.565 166.75	5.900 149.86	6.565 166.75	—	110-28	1-531721-0	110-32	1-531722-0
110	6.355 161.42	6.065 154.05	5.400 137.16	6.065 154.05	530942-91	110-18	531721-9	110-27	531722-9
100	5.855 148.72	5.565 141.35	4.900 124.46	5.565 141.35	530942-81 5-530942-82	110-17	531721-8	110-26	531722-8
90	5.355 136.02	5.065 128.65	4.400 111.76	5.065 128.65	530942-71	110-16	531721-7	110-25	531722-7
80	4.855 123.32	4.565 115.95	3.900 99.06	4.565 115.95	—	110-15	531721-6	110-24	531722-6
70	4.355 110.62	4.065 103.25	3.400 86.36	4.065 103.25	530942-51 5-530942-52	110-14	531721-5	110-23	531722-5
60	3.855 97.92	3.565 90.55	2.900 73.66	3.565 90.55	530942-41 5-530942-42	110-13	531721-4	110-22	531722-4
50	3.355 85.22	3.065 77.85	2.400 60.96	3.065 77.85	530942-31	110-12	531721-3	110-21	531722-3
40	2.855 72.52	2.565 65.15	1.900 48.26	2.565 65.15	530942-21	110-11	531721-2	110-20	531722-2
30	2.355 59.82	2.065 52.45	1.400 35.56	2.065 52.45	—	110-10	531721-1	110-19	531722-1

¹See Material and Finish above.

²See Material and Finish for RoHS Part Numbers above.

2-Row Right-Angle Pin Header Assemblies with Posted Contacts (Wrap-Type)



Related Product Data

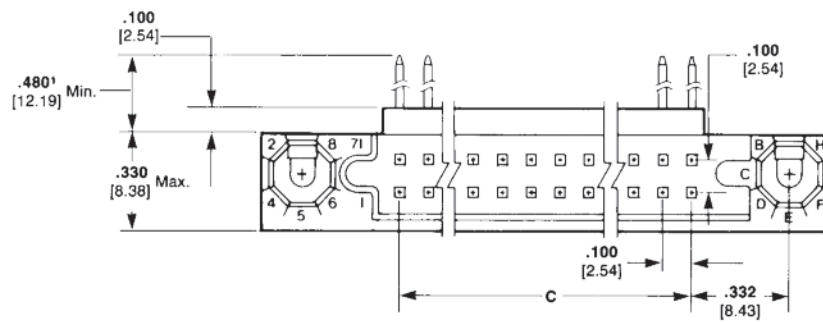
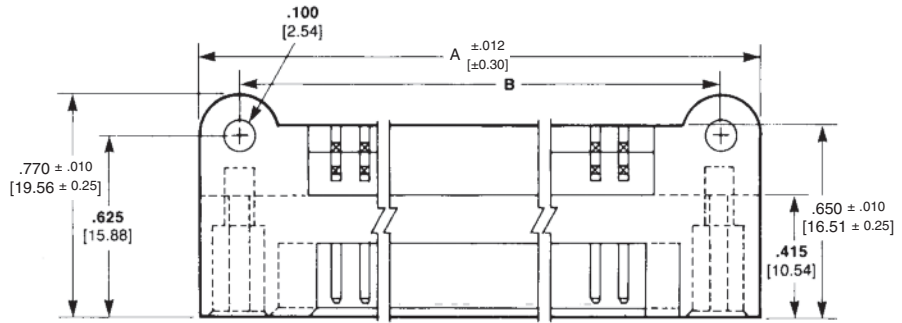
Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 type GLCP-30F

Contact Material and Finish — Phosphor bronze plated .000050 [0.00127] gold over .000030 [0.00076] nickel on the entire contact

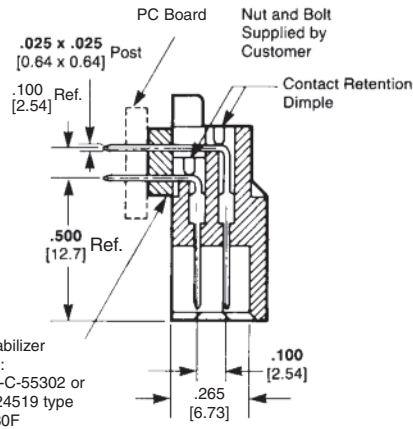
Mates with — Receptacles, pages 1-49 to 1-54, 1-61 and 1-62

External Keying — page 1-80

Recommended PC Board Layout — page 1-75



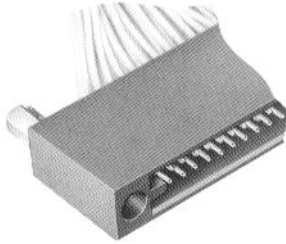
¹The two rows of posts will not be of equal length.



No. of Pos.	Dimensions			AMP Part No.
	A	B	C	
110	6.355 161.42	6.065 154.05	5.400 137.16	532488-9
90	5.355 136.02	5.065 128.65	4.400 111.76	532488-7
80	4.855 123.32	4.565 115.95	3.900 99.06	—
70	4.355 110.62	4.065 103.25	3.400 86.36	—
30	2.355 59.82	2.065 52.45	1.400 35.56	532488-1

2-Row Pin Housing and Assemblies for Crimp Contacts — MIL-C-55302 Qualified

Housing Assembly
(includes turnable jackscrews)



Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 type GLCP-30F

Jackscrew Material — Passivated stainless steel

Related Product Data

Mates with — Receptacle assemblies, pages 1-49 to 1-54, and receptacle housings, pages 1-61 and 1-62

Crimp Type Pin Contact

Material — Brass

Finish — .000050 [0.00127] gold over .000050 [0.00127] nickel

Wire Range — 26-22 AWG [0.12-0.4mm²]

Ins. Dia. Range — .036-.054 [0.91-1.37]



Extraction Tool —
Part Number 91156-1

Loose Piece

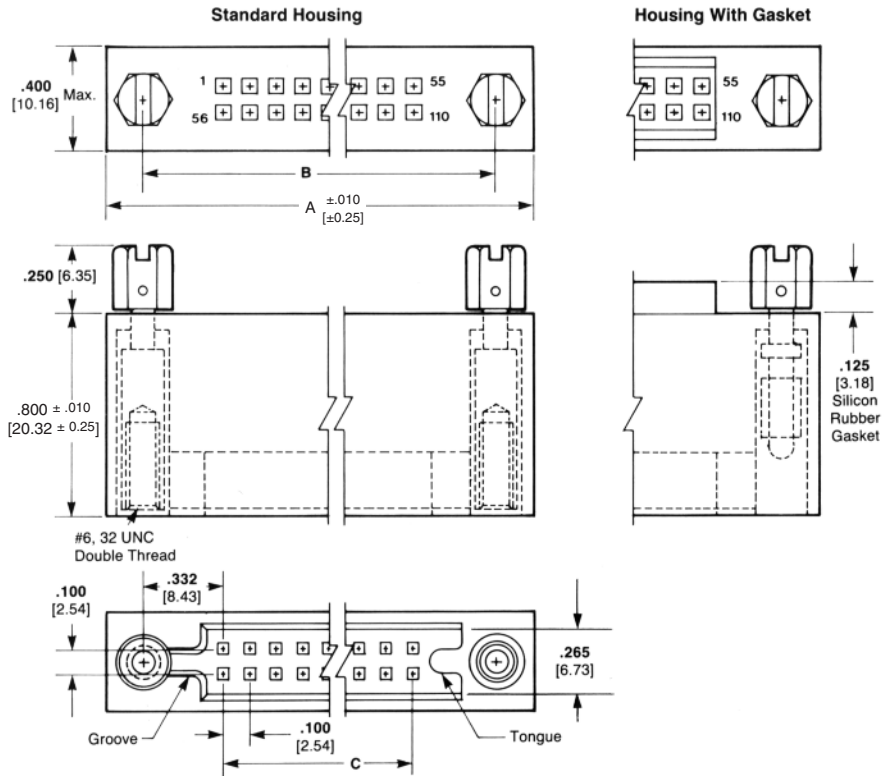
Military Part Number M55302/113-05
AMP Part Number 530750-5

Strip Form

Military Part Number M55302/113-06
AMP Part Number 530750-4

Tooling

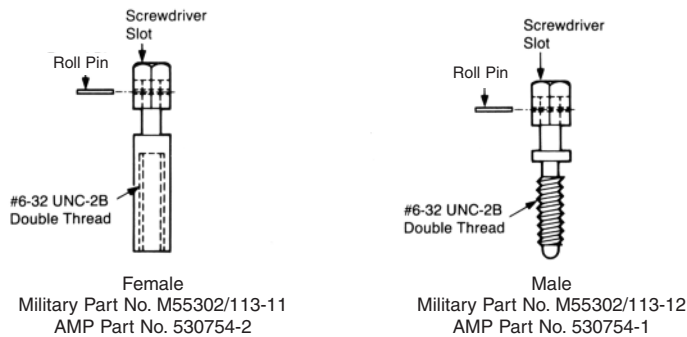
Hand Tool No. 90346-1 is used to apply the loose piece contacts (Hand tool instruction sheet 408-7820). For the application of strip contacts use the AMP-O-LECTRIC Machine with the applicator No. 466625-3. Other automated machines are available, consult TE Connectivity for specifications.



Turnable Jackscrews

Material — Passivated stainless steel

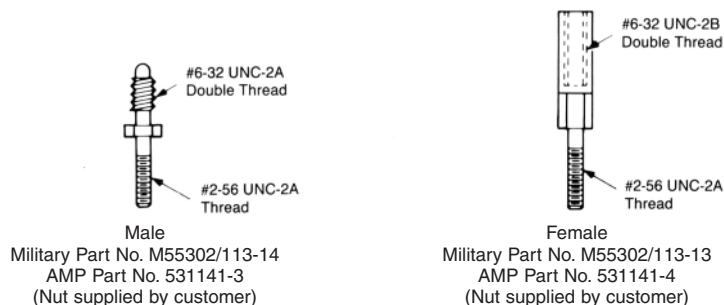
Note: To be used as replacement jackscrew for the pin housing assemblies shown above. They are not compatible with any other pin header assemblies.



Fixed Jackscrews

Material — Passivated stainless steel

Note: To be used with receptacle assemblies shown on pages 1-49 to 1-54 for mating with pin assemblies shown above.



**2-Row Pin Housing and Assemblies for Crimp Contacts —
MIL-C-55302 Qualified (Continued)**

Standard Housing

No. of Pos.	Dimensions			Housing Part Nos.		Turnable Jackscrew Combinations		Housing Assembly Part Nos. ¹		Kit Part Nos. ²	
	A	B	C	Military Part No. M55302/	AMP Part No.	Tongue End	Groove End	Military Part No. M55302/	AMP Part No.	Military Part No. M55302/	AMP Part No.
110	6.355 161.42	6.065 154.05	5.400 137.16	113-23	1-530753-8	Female	Female	113-84	3-530752-3	113-80	530755-5
						Male	Female	113-85	3-530752-4	113-81	530755-6
						Female	Male	113-86	3-530752-5	113-82	530755-7
						Male	Male	113-87	3-530752-6	113-83	530755-8
100	5.855 148.72	5.565 141.35	4.900 124.46	113-22	1-530753-6	Female	Female	113-76	2-530752-9	113-72	3-530755-3
						Male	Female	113-77	3-530752-0	113-73	3-530755-4
						Female	Male	113-78	3-530752-1	113-74	3-530755-5
						Male	Male	113-79	3-530752-2	113-75	3-530755-6
90	5.355 136.02	5.065 128.65	4.400 111.76	113-21	1-530753-4	Female	Female	113-68	2-530752-5	113-64	2-530755-9
						Male	Female	113-69	2-530752-6	113-65	3-530755-0
						Female	Male	113-70	2-530752-7	113-66	3-530755-1
						Male	Male	113-71	2-530752-8	113-67	3-530755-2
80	4.855 123.32	4.565 115.95	3.900 99.06	113-20	1-530753-2	Female	Female	113-60	2-530752-1	113-56	2-530755-5
						Male	Female	113-61	2-530752-2	113-57	2-530755-6
						Female	Male	113-62	2-530752-3	113-58	2-530755-7
						Male	Male	113-63	2-530752-4	113-59	2-530755-8
70	4.355 110.62	4.065 103.25	3.400 86.36	113-19	530753-2	Female	Female	113-07	530752-1	113-01	530755-1
						Male	Female	113-08	530752-2	113-02	530755-2
						Female	Male	113-09	530752-3	113-03	530755-3
						Male	Male	113-10	530752-4	113-04	530755-4
60	3.855 97.92	3.565 90.55	2.900 73.66	113-18	1-530753-0	Female	Female	113-52	1-530752-7	113-48	2-530755-1
						Male	Female	113-53	1-530752-8	113-49	2-530755-2
						Female	Male	113-54	1-530752-9	113-50	2-530755-3
						Male	Male	113-55	2-530752-0	113-51	2-530755-4
50	3.355 85.22	3.065 77.85	2.400 60.06	113-17	530753-8	Female	Female	113-44	1-530752-3	113-40	1-530755-7
						Male	Female	113-45	1-530752-4	113-41	1-530755-8
						Female	Male	113-46	1-530752-5	113-42	1-530755-9
						Male	Male	113-47	1-530752-6	113-43	2-530755-0
40	2.855 72.52	2.565 65.15	1.900 48.26	113-16	530753-6	Female	Female	113-36	530752-9	113-32	1-530755-3
						Male	Female	113-37	1-530752-0	113-33	1-530755-4
						Female	Male	113-38	1-530752-1	113-34	1-530755-5
						Male	Male	113-39	1-530752-2	113-35	1-530755-6
30	2.355 59.82	2.065 52.45	1.400 35.56	113-15	530753-4	Female	Female	113-28	530752-5	113-24	530755-9
						Male	Female	113-29	530752-6	113-25	1-530755-0
						Female	Male	113-30	530752-7	113-26	1-530755-1
						Male	Male	113-31	530752-8	113-27	1-530755-2

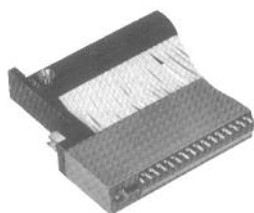
Housing with Gasket

No. of Pos.	Dimensions			Housing Part Nos.		Turnable Jackscrew Combinations		Housing Assembly Part Nos. ¹		Kit Part Nos. ²	
	A	B	C	Military Part No. M55302/	AMP Part No.	Tongue End	Groove End	Military Part No. M55302/	AMP Part No.	Military Part No. M55302/	AMP Part No.
110	6.355 161.42	6.065 154.05	5.400 137.16	113-89	530884-2	Female	Female	113-94	530885-5	113-102	530886-5
						Male	Female	113-95	530885-6	113-103	530886-6
						Female	Male	113-96	530885-7	113-104	530886-7
						Male	Male	113-97	530885-8	113-105	530886-8
70	4.355 110.62	4.065 103.25	3.400 86.36	113-88	530884-1	Female	Female	113-90	530885-1	113-98	530886-1
						Male	Female	113-91	530885-2	113-99	530886-2
						Female	Male	113-92	530885-3	113-100	530886-3
						Male	Male	113-93	530885-4	113-101	530886-4

¹Each Housing Assembly contains: A. 1 Housing. B. 2 Turnable Jackscrews installed (four combinations available, see table).

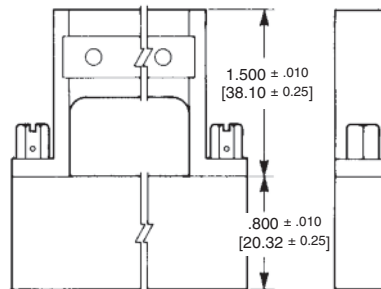
²Each Kit contains: A. 1 Housing Assembly with 2 Turnable Jackscrews installed (four combinations are available, see table). B. 2 Fixed Jackscrews to mate with Turnable Jackscrews (nuts included). These jackscrews are for installation on the mating receptacle housing. C. Loose Piece Contacts. Quantity is number of positions plus 5 extra.

Pin Housing Assembly with Strain Relief



Material

- Strain Relief** — Black glass-filled nylon
- Jackscrews** — Passivated stainless steel
- Housing** — Blue glass-filled polyester

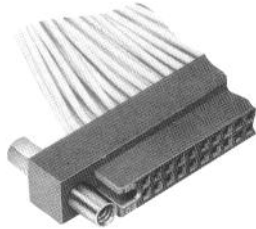


110 Position Housing and Strain Relief Kits

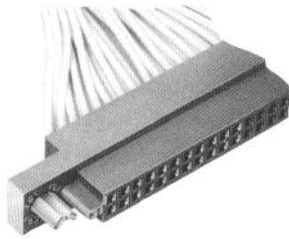
Tongue End	Groove End	Part No.
Female	Female	533194-1
Male	Female	—
Female	Male	—
Male	Male	533194-4

Other sizes can be made available, consult TE Connectivity.

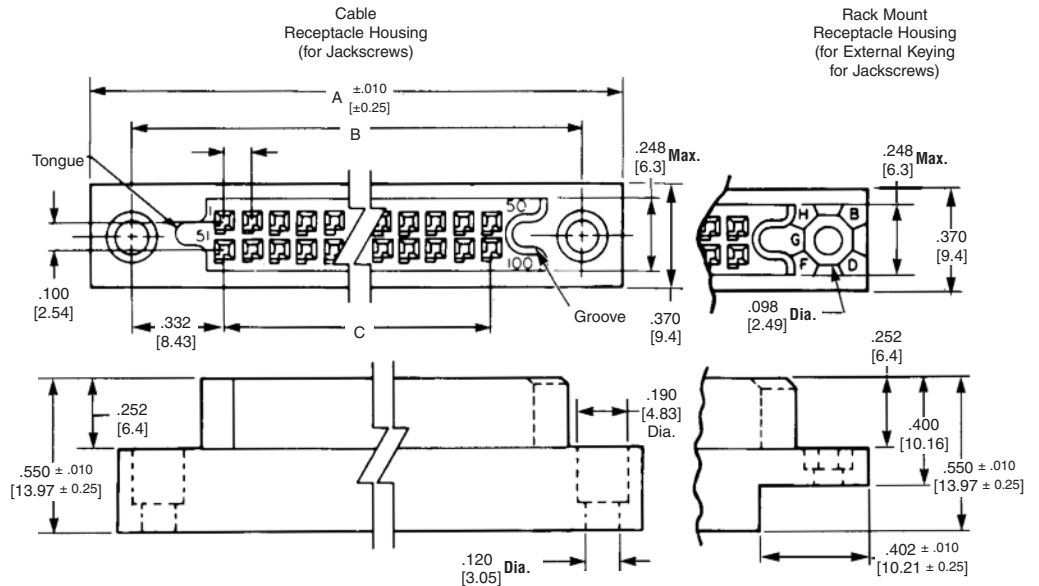
2-Row Receptacle Housing and Assemblies for Crimp Contacts



Cable Receptacle with Jackscrews



Rack Mount Receptacle with External Keying



Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 type GLCP-30F

Related Product Data

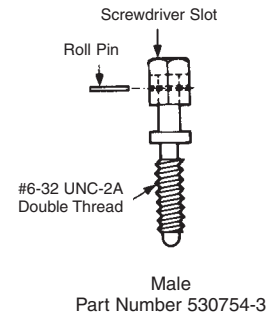
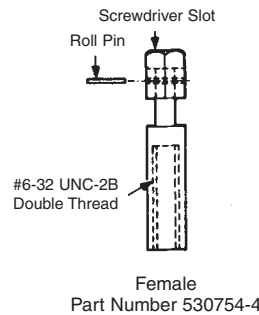
Mates with — Cable Receptacle Housings mate with Pin Housings on pages 1-56 to 1-60. Rack Mount Receptacle Housings mate with Pin Header Assemblies pages 1-56 to 1-60

External Keying — page 1-80

Turnable Jackscrews

Material — Passivated stainless steel

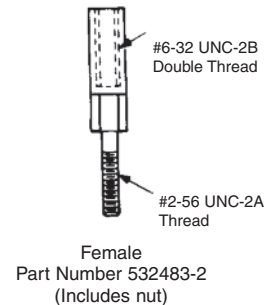
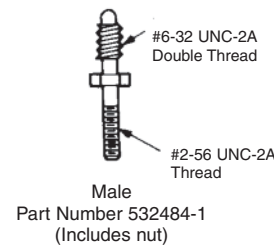
Note: To be used with the cable receptacle housings shown above. They are not compatible with other receptacle assemblies.



Fixed Jackscrews

Material — Passivated stainless steel

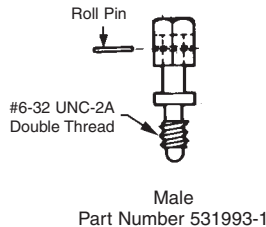
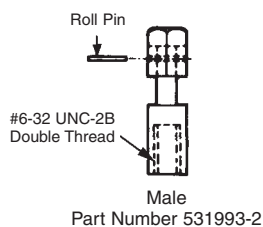
Note: For use with rack mount receptacles shown above.



Turnable Jackscrews

Material — Passivated stainless steel

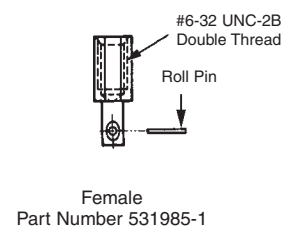
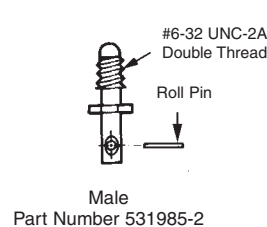
Note: For use with rack mount receptacles shown above.



Fixed Jackscrews

Material — Passivated stainless steel

Note: For use with external key type Right-Angle pin headers when mating with rack mount receptacle housings with turnable jackscrews shown to the left.



2-Row Receptacle Housing and Assemblies for Crimp Contacts (Continued)

No. of Pos.	Dimensions			Rack Mount Housing Part No.	Cable Housing Part No.	Jackscrews Combinations ¹		Cable Housing with Jackscrews Part No.
	A	B	C			Groove End	Tongue End	
110	6.355	6.065	5.400	1-531802-7	1-531840-7	Male	Male	—
	161.42	154.05	137.16			Female	Female	3-531841-3
100	5.855	5.565	4.900	1-531802-5	1-531840-5	Male	Male	—
						Female	Female	—
						Male	Female	—
						Female	Male	3-531841-0
80	4.855	4.565	3.900	—	1-531840-1	Male	Male	—
						Female	Female	2-531841-1
70	4.355	4.065	3.400	531802-9	531840-9	Male	Male	—
						Female	Female	—
60	3.855	3.565	2.900	531802-7	531840-7	Male	Male	—
						Male	Female	—
						Female	Female	—
50	3.355	3.065	2.400	531802-5	531840-5	Male	Male	1-531841-2
						Male	Female	—
						Female	Male	—
						Female	Female	—
40	2.855	2.565	1.900	531802-3	531840-3	Male	Male	—
						Female	Male	—
						Female	Female	—
30	2.355	2.065	1.400	531802-1	531840-1	Male	Male	531841-4
						Male	Female	531841-3
						Female	Male	—

¹Jackscrews supplied with assemblies 531841 are 530754-4, female, and 530754-3, male, shown on page 1-61.

Crimp Type Receptacle Contacts

Material — Phosphor bronze

Finish — Gold over nickel
(See chart for gold thickness)



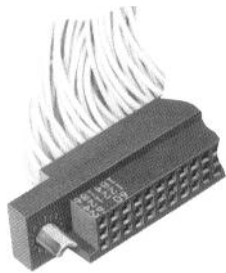
Wire Range	Insulation Range	Loose Piece		Strip		Hand Tool	Applicator for AMP-O-ELECTRIC Machine	Applicator for Stripper Crimper Machine
		.000030 [0.00076] Gold	.000050 [0.00127] Gold	.000030 [0.00076] Gold	.000050 [0.00127] Gold			
26-22 AWG 0.15-0.3mm ²	.036-.054 0.91-1.37	531216-2	531216-4	531216-1	531216-3	91540-1	466819-2 ²	466943-1

²Use Applicator 466819-1 for the AMPOMATOR Machine.

Note: Instruction sheet for Hand Tool 90301-2 is 408-7909.

Extraction Tool Part Number 91156-2

3-Row Receptacle Housings for Crimp Contacts

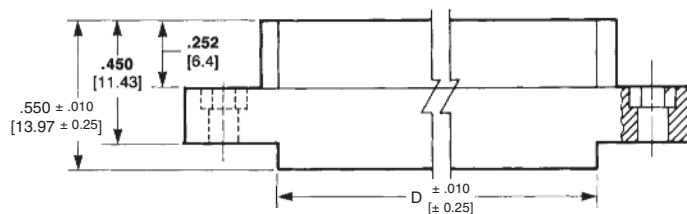
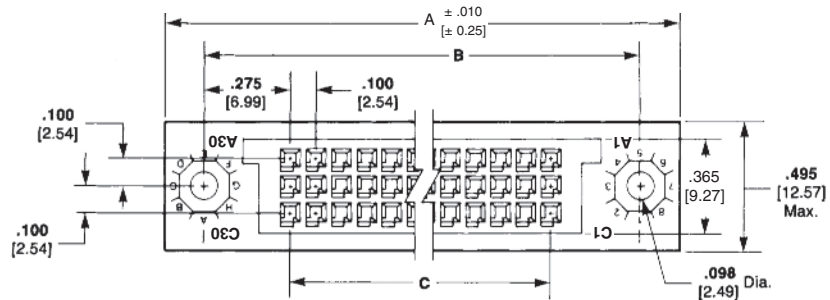


Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 type GLCP-30F

Related Product Data

Mates with — Pin Headers, page 1-66

External Keying — page 1-80



No. of Pos.	Dimensions				Part No.
	A	B	C	D	
165	6.250 158.75	5.950 151.13	5.400 137.16	5.550 140.97	1-531984-4
150	5.750 146.05	5.450 138.43	4.900 124.46	5.050 128.27	1-531984-3
135	5.250 133.35	4.950 125.73	4.400 111.76	4.550 115.57	1-531984-1
126	4.950 125.73	4.650 118.11	4.100 104.14	4.250 107.95	531984-8
120	4.750 120.65	4.450 113.03	3.900 99.06	4.050 102.87	531984-6
105	4.250 107.95	3.950 100.33	3.400 86.36	3.550 90.17	531984-4
90	3.750 95.25	3.450 87.63	2.900 73.66	3.050 77.47	531984-1

Crimp Type Receptacle Contact

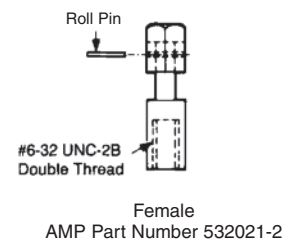
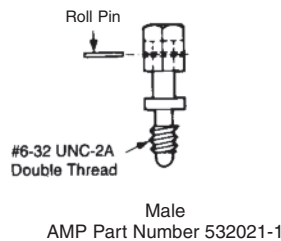
(Refer to page 1-62 for specifications and part numbers)



Turnable Jackscrews

Material — Passivated stainless steel

Note: For use with receptacle housings shown above when mating with Right-Angle pin headers having fixed jackscrews (531985-1 and 531985-2) shown on page 1-61.



3-Row Receptacle Assemblies — MIL-C-55302 Qualified



Commercial Receptacle Assemblies

Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 type GLCP-30F

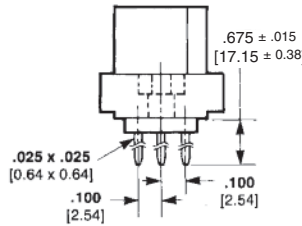
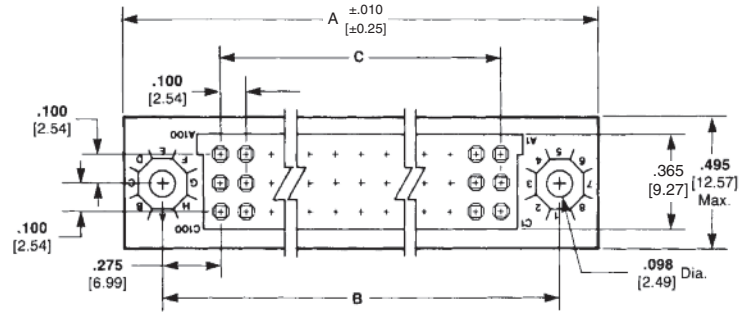
1 Contact Material and Finish — Beryllium copper or copper nickel silicon per ASTM B422 and ASTM B888 Channel Contact and Wrap-Type Posted Contact — Plated .000030 [0.00076] gold in the contact area, .000100 [0.00254] tin-lead on the tails over .000030 [0.00076] nickel on the entire contact; Solder Eyelet — Plated .000030 [0.00076] gold in the contact area, in accordance with MIL-C-55302 tin-lead on the tails over .000030 [0.00076] nickel on the entire contact

2 Contact Material and Finish — Same as above except for tin on the tails

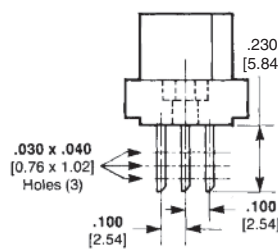
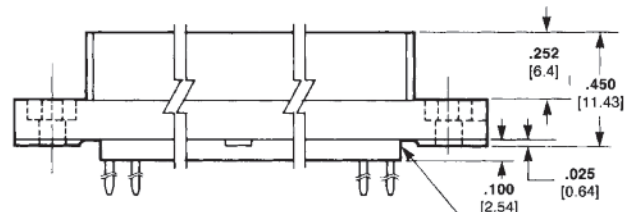
Military Receptacle Assemblies

Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 type GLCP-30F

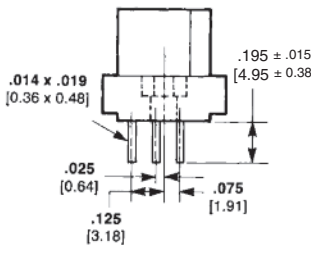
Contact Material and Finish — Beryllium copper or copper nickel silicon per ASTM B422 and ASTM B888 Channel Contact — Plated .000050 [0.00127] gold in the contact area, .000100 [0.00254] tin-lead on the tails over .000030 [0.00076] nickel on the entire contact; Wrap-Type Posted Contact — Plated .000050 [0.00127] gold over .000030 [0.00076] nickel on the entire contact; Solder Eyelet — Plated .000050 [0.00127] gold in the contact area, in accordance with MIL-C-55302 .000100 [0.00254] tin-lead on the tails over .000050 [0.00127] nickel on the entire contact



Wrap-Type Posted Contact



Solder Eyelet Contact



Flow Solder
.014 x .019 [0.36 x 0.48]
Channel Contact—Unsealed
.010 x .020 [0.25 x 0.50]
Posted Contact—Sealed

Post Stabilizer on Wrap-Type Only
Material: In accordance with MIL-C-55302 or MIL-M-24519 type GLCP-30F

Related Product Data

- Mates with — Pin Headers, page 1-68
- External Keying — page 1-80
- Recommended PC Board Layout — page 1-76

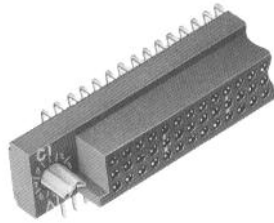
No. of Pos.	Dimensions			Flow Solder Contacts						Solder Eyelet			Wrap-Type Posted Contact		
	A	B	C	Commercial Part No.		Military M55302/130	AMP Part No.		Commercial Part No.	Military M55302/130	AMP Part No.	Commercial Part No.	Military M55302/130	AMP Part No.	
	Sealed	Unsealed	Sealed	Unsealed	Sealed	Unsealed	Sealed	Unsealed	Sealed	Unsealed	Sealed	Unsealed	Sealed	Unsealed	
300 ³	10.750	10.450	9.900	—	—	—	—	—	—	—	—	—	—	—	
	273.05	265.43	251.46	—	—	—	—	—	—	—	—	—	—	—	
270 ³	9.750	9.450	8.900	—	—	—	—	—	—	—	—	—	—	—	
	247.65	240.03	226.06	—	—	—	—	—	—	—	—	—	—	—	
240	8.750	8.450	7.900	—	531138-8 ¹	-44	446853-8	531134-8	—	-46	447192-8	—	-45	447193-8	
	222.25	214.63	200.66	—	—	—	—	—	—	—	—	—	—	—	
210	7.750	7.450	6.900	—	531138-7 ¹	-41	446853-7	531134-7	—	-43	447192-7	—	-42	447193-7	
	196.85	189.23	175.26	—	—	—	—	—	—	—	—	—	—	—	
195	7.250	6.950	6.400	—	1-531138-3 ¹	-38	1-446853-0	1-531134-3	1-531140-3 ¹	-40	1-447192-0	—	-39	1-447193-0	
	184.15	176.53	162.56	—	—	—	—	—	—	—	—	—	—	—	
180	6.750	6.450	5.900	—	531138-6 ¹	-35	446853-6	531134-6	—	-37	447192-6	531139-6 ¹	-36	447193-6	
	171.45	163.83	149.86	—	—	—	—	—	—	—	—	—	—	—	
165	6.250	5.950	5.400	—	531138-5 ¹	-32	446853-5	531134-5	—	-34	447192-5	—	-33	447193-5	
	158.75	151.13	137.16	—	—	—	—	—	—	—	—	—	—	—	
150	5.750	5.450	4.900	—	531138-4 ¹	—	446853-4	531134-4	—	-31	447192-4	—	-30	447193-4	
	146.05	138.43	124.46	—	5-531138-4 ²	-29	—	—	—	—	—	—	—	—	
135	5.250	4.950	4.400	—	1-531138-2 ¹	-26	446853-9	1-531134-2	—	-28	447192-9	1-531139-2 ¹	-27	447193-9	
	133.35	125.73	111.76	—	—	—	—	—	—	—	—	—	—	—	
126 ³	4.950	4.650	4.100	—	—	—	—	—	—	—	—	—	—	—	
	125.73	118.11	104.14	—	—	—	—	—	—	—	—	—	—	—	
120	4.750	4.450	3.900	—	531138-3 ¹	-23	446853-3	531134-3	—	-25	447192-3	—	-24	447193-3	
	120.65	113.03	99.06	—	—	—	—	—	—	—	—	—	—	—	
105	4.250	3.950	3.400	—	531138-2 ¹	—	446853-2	531134-2	—	-22	447192-2	—	-21	447193-2	
	107.95	100.33	86.36	—	5-531138-2 ²	-20	—	—	—	—	—	—	—	—	
90	3.750	3.450	2.900	—	531138-1 ¹	-17	446853-1	531134-1	—	-19	447192-1	531139-1 ¹	-18	447193-1	
	95.25	87.63	73.66	—	5-531138-1 ²	—	—	—	—	—	—	—	—	—	

¹See Material and Finish above.

²See Material and Finish for RoHS Part Numbers above.

³Part Numbers available upon request.

3-Row Right-Angle Receptacle Assemblies with Posted Contacts (Wrap-Type)



Housing Material — In accordance with MIL-C-55302

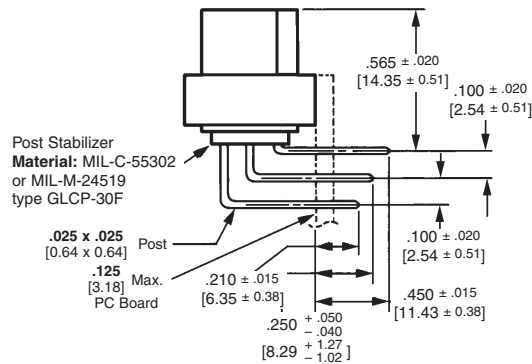
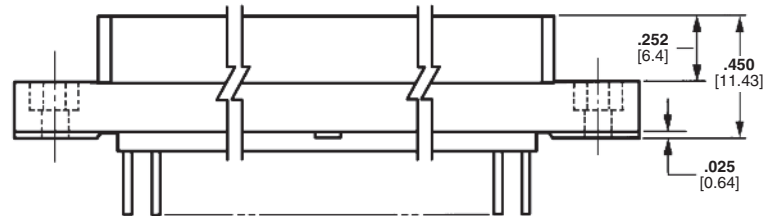
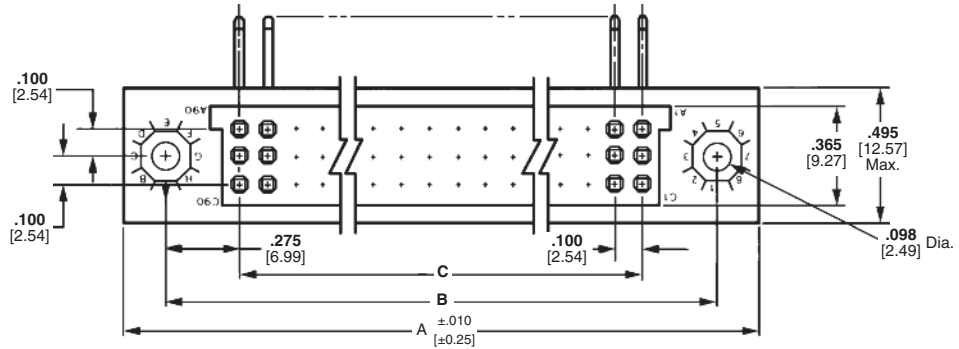
Contact Material and Finish — Beryllium copper or copper nickel silicon per ASTM B422 and ASTM B888 plated .000050 [0.00127] gold over .000030 [0.00076] nickel on the entire contact

Related Product Data

Mates with — Pin Headers, page 1-66

External Keying — page 1-80

Recommended PC Board Layout — page 1-76



Right-Angle Wrap-Type Posts

No. of Pos.	Dimensions			Part No.
	A	B	C	
270 ¹	9.750 247.65	9.450 240.03	8.900 226.06	—
240 ¹	8.750 222.25	8.450 214.63	7.900 200.66	—
210	7.750 196.85	7.450 189.23	6.900 175.26	447255-2
195	7.250 184.15	6.950 176.53	6.400 162.58	447255-3
180	6.750 171.45	6.450 163.83	5.900 149.86	447255-4
165 ¹	6.250 158.75	5.950 151.13	5.400 137.16	—
150	5.750 146.05	5.450 138.43	4.900 124.46	447255-6
135 ¹	5.250 133.35	4.950 125.73	4.400 111.76	—
126 ¹	4.950 125.73	4.650 118.11	4.100 104.14	—
123 ¹	4.850 123.19	4.550 115.57	4.000 101.6	—
120	4.750 120.65	4.450 113.03	3.900 86.36	447255-8
105	4.250 107.95	3.950 100.33	3.400 86.36	447255-9
90	3.750 95.25	3.450 87.63	2.900 73.66	1-447255-0

¹Part numbers available upon request.

3-Row Right-Angle Pin Header Assemblies — MIL-C-55302 Qualified



Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 type GLCP-30F

1 Contact Material and Finish — Commercial Flow Solder Contact — Brass per QQ-B-626 plated .000030 [0.00076] gold in the contact area, .000100 [0.00254] tin-lead on the tails over .000050 [0.00127] nickel on the entire contact; Military Flow Solder Contact — Brass per QQ-B-626 plated .000050 [0.00127] gold in the contact area, .000100 [0.00254] tin-lead on the tails over .000050 [0.00127] nickel on the entire contact; Wrap-Type Contact — Phosphor bronze plate .000050 [0.00127] gold over .000030 [0.00076] nickel on the entire contact

2 Contact Material and Finish — Same as above except for tin on the tails

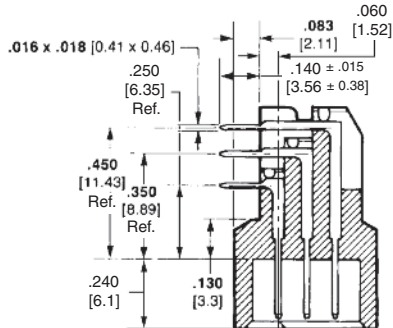
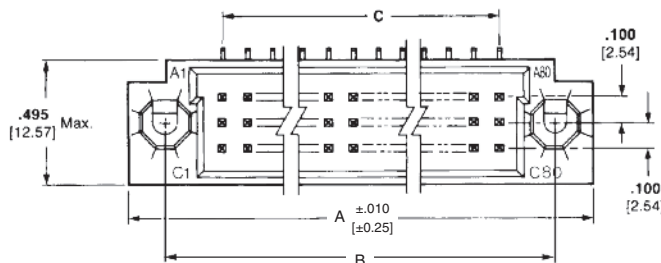
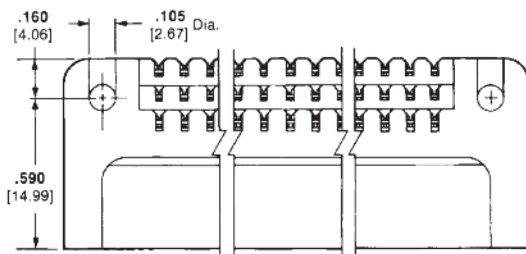
Related Product Data

Mates with — 3-Row Receptacles, pages 1-63 to 1-65

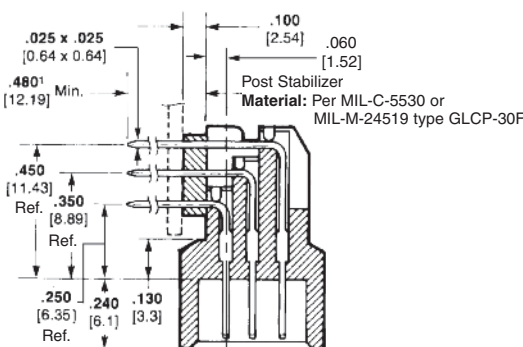
External Keying — page 1-80

Recommended PC Board Layout — page 1-76

Fixed Jackscrew — page 1-61



Flow Solder Contacts
(for use with .096 [2.44] Max. thick PC board)



Wrap-Type Posted Contacts

¹The three rows of posts will not be of equal length.

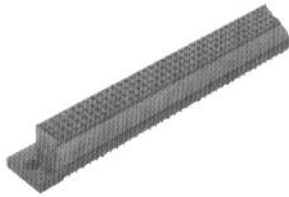
No. of Pos.	Dimensions			Flow Solder Contacts				Wrap-Type Posted Contacts (2 High)		
	A	B	C	Commercial Part No.		MIL-Part No. M55302/129	AMP Part No.		AMP Part No.	
				Sealed	Unsealed		Sealed	Unsealed	Without Stabilizer	With Stabilizer
300 ³	10.750 273.05	10.450 265.43	9.900 251.46	1-447373-11	—	—	—	—	—	—
270 ³	9.750 247.65	9.450 240.03	8.900 226.06	—	—	—	—	—	—	—
240	8.750 222.25	8.450 214.63	7.900 200.66	—	531137-8 ¹	-18	446852-8 ¹	531133-8 ¹	—	—
210	7.750 196.85	7.450 189.23	6.900 175.26	—	531137-7 ¹	-17	446852-7 ¹	531133-7 ¹	—	—
195	7.250 184.15	6.950 176.53	6.400 162.56	—	1-531137-3 ¹	-16	1-446852-0 ¹	1-531133-3 ¹	—	—
180	6.750 171.45	6.450 163.83	5.900 149.86	—	—	-15	446852-6 ¹	531133-6 ¹	—	—
165	6.250 158.75	5.950 151.13	5.400 137.16	—	531137-5 ¹	-14	446852-5 ¹	531133-5 ¹	532775-3 ¹	—
150	5.750 146.05	5.450 138.43	4.900 124.46	—	531137-4 ¹ 5-531137-4 ²	-13	446852-4 ¹	531133-4 ¹	1-532775-2 ¹	—
135	5.250 133.35	4.950 125.73	4.400 111.76	—	—	-12	446852-9 ¹	1-531133-2 ¹	—	—
126	4.950 125.73	4.650 118.11	4.100 104.14	—	—	—	—	1-531133-0 ¹	1-532775-0 ¹	—
120	4.750 120.65	4.450 113.03	3.900 99.06	—	531137-3 ¹	-11	446852-3 ¹	531133-3 ¹	532775-8 ¹	447380-7 ¹
105	4.250 107.95	3.950 100.33	3.400 86.36	—	531137-2 ¹ 5-531137-2 ²	-10	446852-2 ¹	531133-2 ¹	—	—
90	3.750 95.25	3.450 87.63	2.900 73.66	—	531137-1 ¹ 5-531137-1 ²	-09	446852-1 ¹	531133-1 ¹	—	447380-5 ¹

¹See Material and Finish above.

²See Material and Finish for RoHS Part Numbers.

³Part Numbers available upon request.

4-Row Receptacle Assemblies



Housing Material — Polyphenylene sulfide per MIL-M-24519 or type GLCP-30F

1 Contact Material and Finish — Beryllium copper or copper nickel silicon per ASTM B422 and ASTM B888 plated gold .000050 [0.00127] thick per MIL-G-45204 in contact area, tails plated tin-lead all over nickel per QQ-N-290

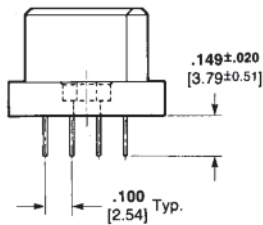
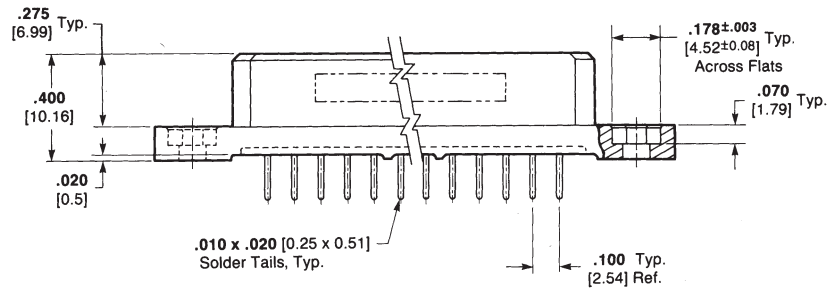
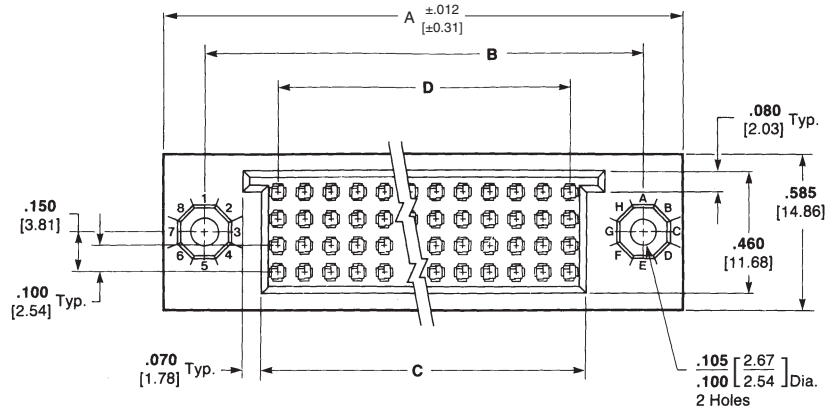
2 Contact Material and Finish — Same as above except for tin on tails

Related Product Data

Mates with — Pin Header assembly, page 1-68

External Keying — page 1-80

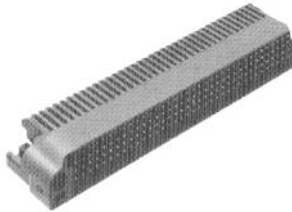
Recommended PC Board Layout — page 1-77



No. of Pos.	Dimensions				Part No. ¹	RoHS Part No. ²
	A	B	C	D		
300	8.250 209.60	7.950 201.93	7.524 191.11	7.400 187.96	—*	—
292	8.050 204.47	7.750 196.85	7.324 186.03	7.200 182.88	—*	—
280	7.750 196.85	7.450 189.23	7.024 178.41	6.900 175.26	—*	—
268	7.450 189.23	7.150 181.61	6.724 170.79	6.600 167.64	—*	—
260	7.250 184.15	6.950 176.53	6.524 165.71	6.400 162.56	—*	—
240	6.750 171.45	6.450 163.83	6.024 153.01	5.900 149.86	—*	—
232	6.550 166.37	6.250 158.75	5.824 147.93	5.700 144.78	—*	—
220	6.250 158.75	5.950 151.13	5.524 140.31	5.400 137.16	446081-8	—
216	6.150 156.21	5.850 148.59	5.424 137.77	5.300 134.62	—*	—
200	5.750 146.05	5.450 138.43	5.024 127.61	4.900 124.46	1-446081-0	6-446081-0
192	5.550 140.97	5.250 133.35	4.824 122.53	4.700 119.38	—*	—
180	5.250 133.35	4.950 125.73	4.524 114.91	4.400 111.76	—*	—
168	4.950 125.73	4.650 118.11	4.224 107.29	4.100 104.14	—*	—
160	4.750 120.65	4.450 113.03	4.024 102.21	3.900 99.06	—*	—
152	4.550 115.57	4.250 107.95	3.824 97.13	3.700 93.98	—*	—
140	4.250 107.95	3.950 100.33	3.524 89.51	3.400 86.36	—*	—
128	3.950 100.33	3.650 92.71	3.224 81.89	3.100 78.74	1-446081-7	6-446081-7
120	3.750 95.25	3.450 87.63	3.024 76.81	2.900 73.66	—*	—
100	3.250 82.55	2.950 74.93	2.524 64.11	2.400 60.96	1-446081-9	—
68	2.450 62.23	2.150 54.60	1.727 43.87	1.600 40.64	—*	—
40	1.750 44.45	1.450 36.83	1.024 26.01	.900 22.86	—*	—

* Part Numbers available upon request, contact TE Connectivity.

4-Row Right-Angle Pin Header Assemblies



Housing Material — Polyphenylene sulfide per MIL-M-24519 or type GLCP-30F

1 Contact Material and Finish — Phosphor bronze per QQ-B-750, plated gold .000050 [0.00127] thick per MIL-G-45204 on mating end for a length of .120 [3.05] min., tails plated tin-lead over nickel per QQ-N-290

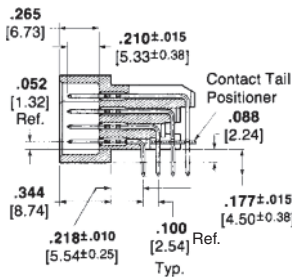
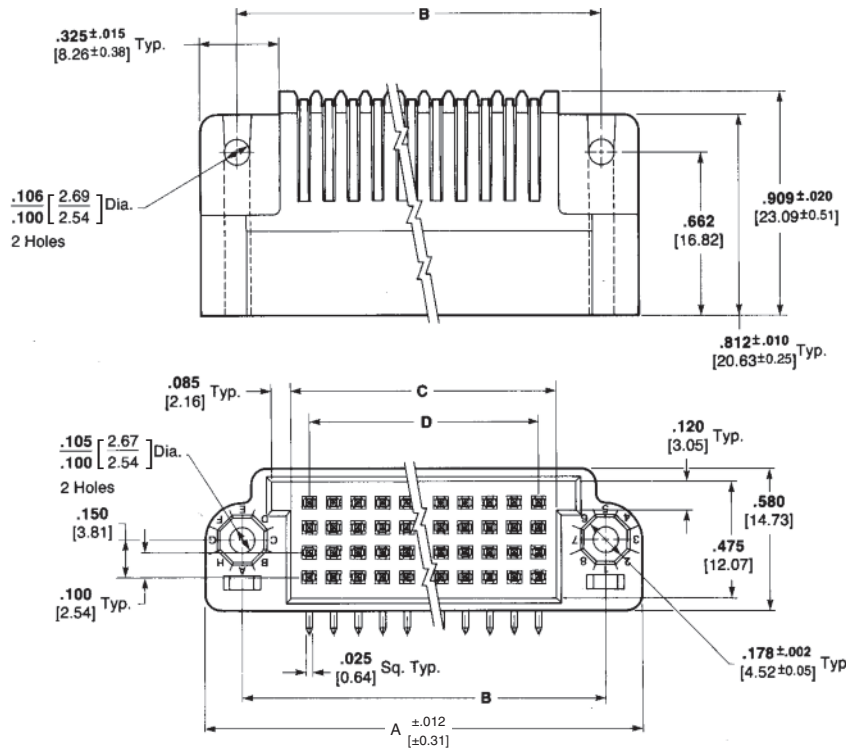
2 Contact Material and Finish — Same as above except for tin on tails

Related Product Data

Mates with — Receptacle assembly, page 1-67

External Keying — page 1-80

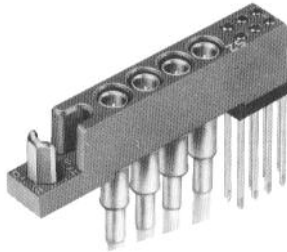
Recommended PC Board Layout — page 1-77



No. of Pos.	Dimensions				Part No. ¹	RoHS Part No. ²
	A	B	C	D		
300	8.250 209.60	7.950 201.93	7.550 191.77	7.400 187.96	—*	—
292	8.050 204.47	7.750 196.85	7.350 186.69	7.200 182.88	—*	—
280	7.750 196.85	7.450 189.23	7.050 179.07	6.900 175.26	—*	—
268	7.450 189.23	7.150 181.61	6.750 171.45	6.600 167.64	—*	—
260	7.250 184.15	6.950 176.53	6.550 166.37	6.400 162.56	—*	—
240	6.750 171.45	6.450 163.83	6.050 153.67	5.900 149.86	—*	—
232	6.550 166.37	6.250 158.75	5.850 148.59	5.700 144.78	—*	—
220	6.250 158.75	5.950 151.13	5.550 140.97	5.400 137.16	—*	—
216	6.150 156.21	5.850 148.59	5.450 138.43	5.300 134.62	—*	—
200	5.750 146.05	5.450 138.43	5.050 128.27	4.900 124.46	1-446080-0	6-446080-0
192	5.550 140.97	5.250 133.35	4.850 123.19	4.700 119.38	—*	—
180	5.250 133.35	4.950 125.73	4.550 115.57	4.400 111.76	1-446080-2	—
168	4.950 125.73	4.650 118.11	4.250 107.95	4.100 104.14	—*	—
160	4.750 120.65	4.450 113.03	4.050 102.87	3.900 99.06	—*	—
152	4.550 115.57	4.250 107.95	3.850 97.79	3.700 93.98	—*	—
140	4.250 107.95	3.950 100.33	3.550 90.17	3.400 86.36	—*	—
128	3.950 100.33	3.650 92.71	3.250 82.55	3.100 78.74	1-446080-7	6-446080-7
120	3.750 95.25	3.450 87.63	3.050 77.47	2.900 73.66	—*	—
100	3.250 82.55	2.950 74.93	2.550 64.77	2.400 60.96	—*	—
68	2.450 62.23	2.150 54.60	1.750 44.45	1.600 40.64	—*	—
40	1.750 44.45	1.450 36.83	1.050 26.67	.900 22.86	—*	—

* Part Numbers available upon request, contact TE Connectivity.

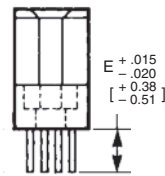
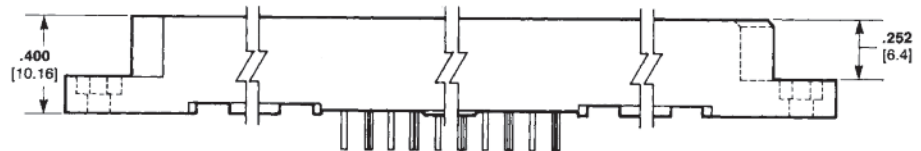
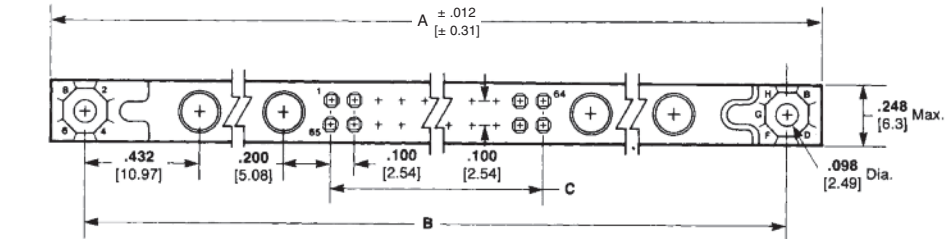
Receptacle Assemblies with Hybrid Cavities



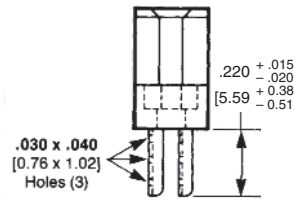
8 Hybrid Cavity Shown

Housing Material — In accordance with MIL-C-55302 or MIL-M-24519 type GLCP-30F

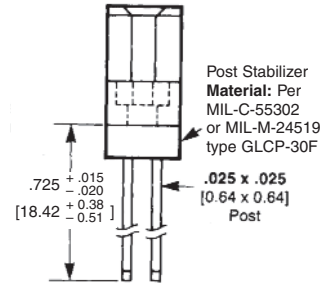
Contact Material and Finish — Beryllium copper per QQ-C-533 or copper nickel silicon per ASTM B422 and ASTM B888 Channel Contact and Posted Contact — Plated .000050 [0.00127] gold in contact area, .000100 [0.00254] tin-lead on the tails over .00030 [0.0076] nickel on the entire contact; Solder Eyelet Contact — Plated .000050 [0.00127] gold in the contact area, in accordance with MIL-C-55302 .000100 [0.00254] tin-lead on the tails over .000050 [0.00127] nickel on the entire contact



.014 x .019 [0.36 x 0.48] Channel Contact



Solder Eyelet Contact (Max. Wire Size, #26 AWG [0.15 mm])



Wrap-Type Posted Contact (3 terminations per post)

E = .235 [5.97] - 2 Hybrid cavity connector
.154 [3.91] - 4 and 6 Hybrid cavity connector

Related Product Data

Mates with — Right-Angle Pin Headers, pages 1-71 and 1-72

External Keying — page 1-80

Recommended PC Board Layout — page 1-78

2 Hybrid Cavity Connectors¹

No. of Box Contact Pos.	Dimensions			.014 x .019 [0.36 x 0.48] Channel Contacts Part No.
	A	B	C	
128	7.885 199.52	7.565 192.15	6.300 160.02	—*
122	7.555 191.90	7.265 184.53	6.000 152.4	—*
118	7.355 186.82	7.065 179.45	5.800 147.32	—*
108	6.855 174.12	6.565 166.75	5.300 134.62	—*
98	6.335 161.42	6.065 154.05	4.800 121.92	—*
88	5.855 148.72	5.565 141.35	4.300 109.22	—*
78	5.355 136.02	5.065 128.65	3.800 96.52	533606-7
68	4.855 123.32	4.565 115.95	3.300 83.82	—*
58	4.355 110.62	4.065 103.25	2.800 71.12	533606-5
48	3.855 97.92	3.565 90.55	2.300 58.42	—*
38	3.355 85.22	3.065 77.85	1.800 45.72	—*
28	2.855 72.52	2.565 65.15	1.300 33.02	533606-2
18	2.355 58.82	2.065 52.45	.800 20.32	533606-1

¹These receptacle assemblies accept coaxial contacts—Vertical Cable Socket 227605-1, Right-Angle Cable Socket 227606-1 and Vertical Printed Circuit Board Mount Socket 227603-1.

* Part Numbers available upon request, contact TE Connectivity.

Receptacle Assemblies with Hybrid Cavities (Continued)

4 Hybrid Cavity Connectors¹

No. of Box Contact Pos.	Dimensions				.014 x .019 [0.36 x 0.48] Channel Contacts Part No.	Solder Eyelet Contacts Part No.	Wrap-Type Posted Contacts Part No.
	A	B	C	D			
120	7.855 199.52	7.565 192.15	5.900 149.86	.200 5.08	—*	—*	—*
110	7.355 186.82	7.065 179.45	5.400 137.16	.200 5.08	—*	—*	—*
100	6.855 174.12	6.565 166.75	4.900 124.46	.200 5.08	533189-8	—*	533181-3
90	6.355 161.42	6.065 154.05	4.400 111.76	.200 5.08	—*	—*	—*
80	5.855 148.72	5.565 141.35	3.900 99.06	.200 5.08	—*	—*	—*
70	5.355 136.02	5.065 128.65	3.400 86.36	.200 5.08	—*	—*	—*
60	4.855 123.32	4.565 115.95	2.900 73.66	.200 5.08	—*	—*	—*
50	4.355 110.62	4.065 103.25	2.400 60.96	.200 5.08	—*	—*	—*
40	3.855 97.92	3.565 90.55	1.900 48.26	.200 5.08	533189-3	—*	—*
30	3.355 85.22	3.065 77.85	1.400 35.56	.200 5.08	533189-2	—*	—*

6 Hybrid Cavity Connectors¹

No. of Box Contact Pos.	Dimensions				.014 x .019 [0.36 x 0.48] Channel Contacts Part No.
	A	B	C	D	
112	7.855 199.52	7.565 192.15	5.500 139.7	.400 10.16	—*
102	7.355 186.82	7.065 179.45	5.000 127.0	.400 10.16	—*
92	6.855 174.12	6.565 166.75	4.500 114.3	.400 10.16	—*
82	6.355 161.42	6.065 154.05	4.000 101.6	.400 10.16	—*
72	5.855 148.72	5.565 141.35	3.500 88.9	.400 10.16	—*
62	5.355 136.02	5.065 128.65	3.000 76.2	.400 10.16	533639-5
52	4.855 123.32	4.565 115.95	2.500 63.5	.400 10.16	—*
42	4.355 110.62	4.065 103.25	2.000 50.8	.400 10.16	—*
32	3.855 97.92	3.565 90.55	1.500 38.1	.400 10.16	—*
22	3.355 85.22	3.065 77.85	1.000 25.4	.400 10.16	533639-1

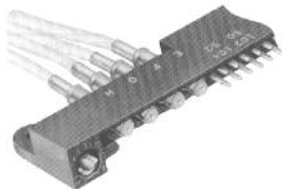
8 Hybrid Cavity Connectors¹

No. of Box Contact Positions	Dimensions				Wrap-Type Contacts Part No.
	A	B	C	D	
104	7.855 199.52	7.565 192.15	5.100 129.54	.600 15.24	—*
94	7.355 186.82	7.065 179.45	4.600 116.84	.600 15.24	—*
84	6.855 174.12	6.565 166.75	4.100 104.14	.600 15.24	—*
74	6.355 161.42	6.065 154.05	3.600 91.44	.600 15.24	—*
64	5.855 148.72	5.565 141.35	3.100 78.74	.600 15.24	—*
54	5.355 136.02	5.065 128.65	2.600 66.04	.600 15.24	—*
44	4.855 123.32	4.565 115.95	2.100 53.34	.600 15.24	—*
34	4.355 110.62	4.065 103.25	1.600 40.64	.600 15.24	533170-8
24	3.855 97.92	3.565 90.55	1.100 27.94	.600 15.24	—*
14	3.355 85.22	3.065 77.85	.600 15.24	.600 15.24	1-533170-0

¹These receptacle assemblies accept coaxial contacts — Vertical Cable Sockets 227605-1, Right-Angle Cable Socket 227606-1 and Vertical PC Board Mount Socket 227603-1.

* Part Numbers available upon request, contact TE Connectivity.

Right-Angle Pin Header Assemblies with Hybrid Contact Cavities



8 Hybrid Cavity Shown

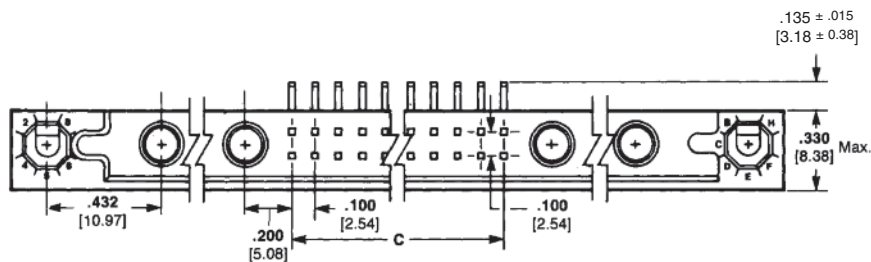
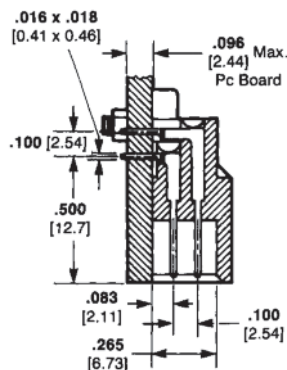
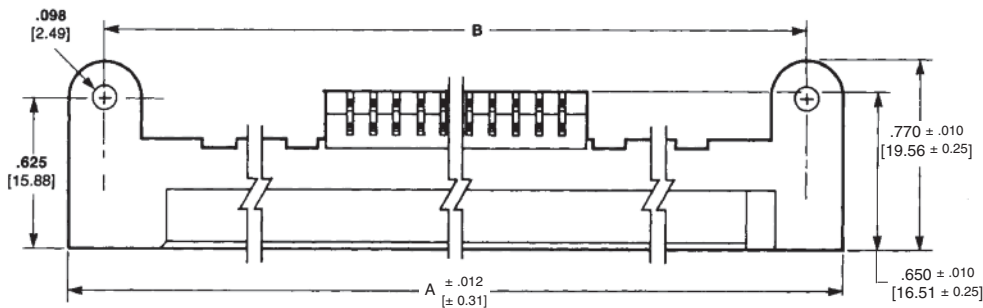
Related Product Data

Mates with — Receptacles, pages 1-69 and 1-70

External Keying — page 1-80

Recommended PC Board Layout — page 1-79

Fixed Jackscrews — page 1-61



2 Hybrid Cavity Connectors¹

No. of Box Contact Pos.	Dimensions			Part No. ²	RoHS Part No. ³
	A	B	C		
128	7.885 199.52	7.565 192.15	6.300 160.02	—*	—
122	7.555 191.90	7.265 184.53	6.000 152.4	—*	—
118	7.355 186.82	7.065 179.45	5.800 147.32	—*	—
108	6.855 174.12	6.565 166.75	5.300 134.62	—*	—
98	6.335 161.42	6.065 154.05	4.800 121.92	—*	—
88	5.855 148.72	5.565 141.35	4.300 109.22	—*	—
78	5.355 136.02	5.065 128.65	3.800 96.52	—*	—
68	4.855 123.32	4.565 115.95	3.300 83.82	—*	—
58	4.355 110.62	4.065 103.25	2.800 71.12	—*	—
48	3.855 97.92	3.565 90.55	2.300 58.42	—*	—
38	3.355 85.22	3.065 77.85	1.800 45.72	—*	—
28	2.855 72.52	2.565 65.15	1.300 33.02	533607-3	—
18	2.355 59.82	2.065 52.45	.800 20.32	533607-1	5-533607-1

¹These pin header assemblies accept coaxial contacts—Vertical Cable Pin 227604-1 and Right-Angle Printed Circuit Board Mount Pin 227602-1.

* Part Numbers available upon request, contact TE Connectivity.

Right-Angle Pin Header Assemblies with Hybrid Contact Cavities (Continued)

4 Hybrid Cavity Connectors¹

No. of Box Contact Pos.	Dimensions				Part No. ²	RoHS Part No. ³
	A	B	C	D		
120	7.855 199.52	7.565 192.15	5.900 149.86	.200 5.08	1-533182-0	—
80	5.855 148.72	5.565 141.35	3.900 99.06	.200 5.08	—*	—
70	5.355 136.02	5.065 128.65	3.400 86.36	.200 5.08	—*	—
40	3.855 97.92	3.565 90.55	1.900 48.26	.200 5.08	533182-3	5-533182-3
30	3.355 85.22	3.065 77.85	1.400 35.56	.200 5.08	—*	—

6 Hybrid Cavity Connectors¹

No. of Box Contact Pos.	Dimensions				Part No.
	A	B	C	D	
112	7.855 199.52	7.565 192.15	5.500 139.7	.400 10.16	—*
102	7.355 186.82	7.065 179.45	5.000 127.0	.400 10.16	—*
92	6.855 174.12	6.565 166.75	4.500 114.3	.400 10.16	—*
82	6.355 161.42	6.065 154.05	4.000 101.6	.400 10.16	—*
72	5.855 148.72	5.565 141.35	3.500 88.9	.400 10.16	—*
62	5.355 136.02	5.065 128.65	3.000 76.2	.400 10.16	533637-5
52	4.855 123.32	4.565 115.95	2.500 63.5	.400 10.16	—*
42	4.355 110.62	4.065 103.25	2.000 50.8	.400 10.16	—*
32	3.855 97.92	3.565 90.55	1.500 38.1	.400 10.16	—*
22	3.355 85.22	3.065 77.85	1.000 25.4	.400 10.16	—*

8 Hybrid Cavity Connectors¹

No. of Box Contact Pos.	Dimensions				Part No.
	A	B	C	D	
104	7.855 199.52	7.565 192.15	5.100 129.54	.600 15.24	—*
94	7.355 186.82	7.065 179.45	4.600 116.84	.600 15.24	533171-2
84	6.855 174.12	6.565 166.75	4.100 104.14	.600 15.24	—*
74	6.355 161.42	6.065 154.05	3.600 91.44	.600 15.24	—*
64	5.855 148.72	5.565 141.35	3.100 78.74	.600 15.24	533171-5
54	5.355 136.02	5.065 128.65	2.600 66.04	.600 15.24	—*
44	4.855 123.32	4.565 115.95	2.100 53.34	.600 15.24	—*
34	4.355 110.62	4.065 103.25	1.600 40.64	.600 15.24	533171-8
24	3.855 97.92	3.565 90.55	1.100 27.94	.600 15.24	—*
14	3.355 85.22	3.065 77.85	.600 15.24	.600 15.24	1-533171-0

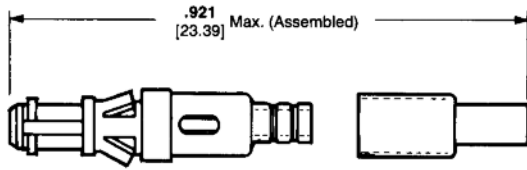
¹These pin header assemblies accept coaxial contacts—Vertical Cable Pin 227604-1 and Right-Angle Printed Circuit Board Mount Pin 227602-1.

²See Material and Finish on previous page.

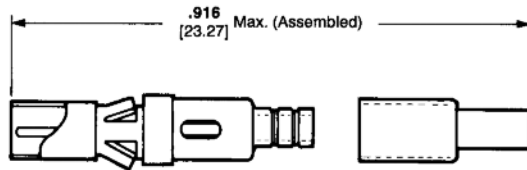
³See Material and Finish for RoHS Part Numbers on previous page.

* Part Numbers available upon request, contact TE Connectivity.

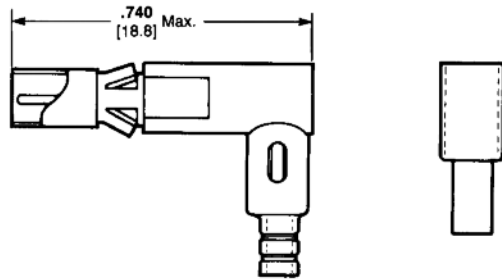
Microminiature COAXICON Contacts for Hybrid Cavities



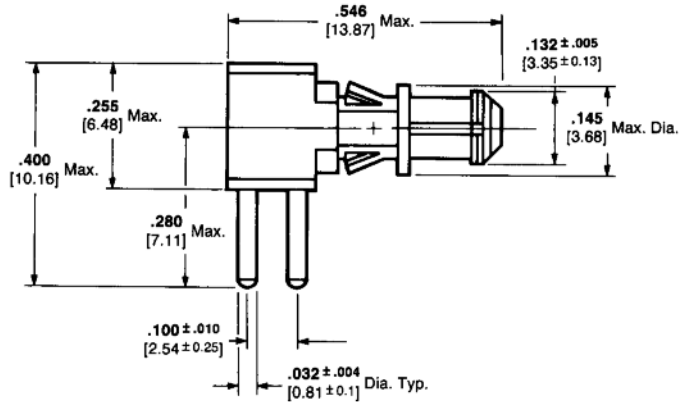
Cable Pin



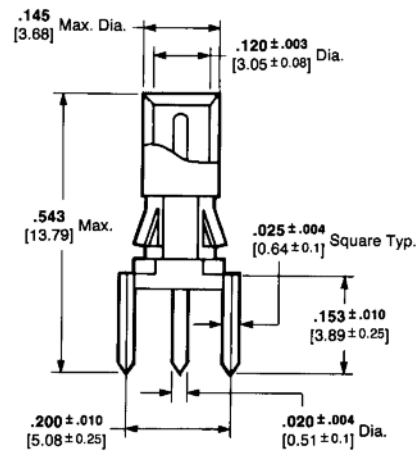
Cable Socket



Right-Angle Cable Socket



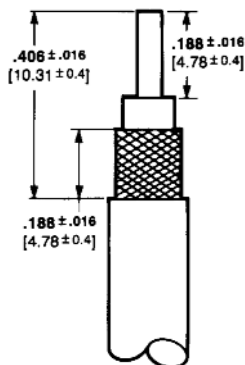
Right-Angle Pin
for PC Board Application
Part Number 227602-1
Plated .000030 [0.00076] gold



Vertical Socket
for PC Board Application
Part Number 227603-1

Cable Size	Contact Style	Part No.	Application Tool Part No.
	Cable Pin	227604-1	
RG 178/U Double Braid	Cable Socket	227605-1	220215-1
RG 196/U	Right-Angle Cable Socket	227606-1	

Extraction Tool Part Number 220216-1



Recommended Strip Length

Notes:

- Center contacts are plated with .000030 [0.00076] gold.
- For .125 [3.18] maximum thick PC boards.

Electrical Characteristics

- Nominal Impedance** — 50 ohms
- Frequency Range** — 0-2 GHz
- Maximum Operating Voltage (Sea Level)** — 150 VAC RMS

Mechanical Characteristics

- Operating Temperature Range** — -55°C to +125°C
- Cable Retention** — 15 lb. [66.7N] min. (RG 178 type double braid)

Contact Materials

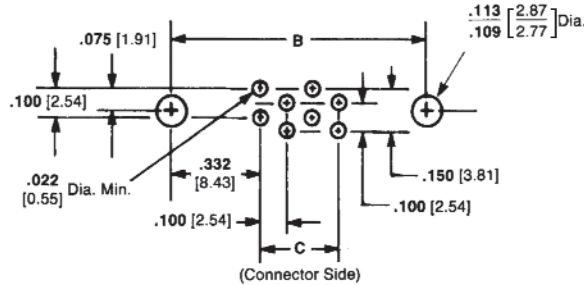
- Stainless Steel** — QQ-S-766
- Gold Plate** — MIL-G-45204
- Nickel Plate** — QQ-N-290
- Beryllium Copper** — QQ-C-530
- TEFLON TFE** — MIL-P-19468A
- Brass** — QQ-B-626

Ferrule Material

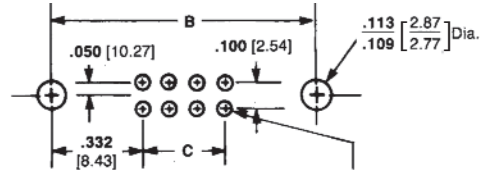
- Brass** — MIL-C-50, tin plate per MIL-T-10727
- TEFLON** — Trademark of E. I. DuPont de Nemours and Company

Recommended Printed Circuit Board Layouts

Receptacle Assemblies

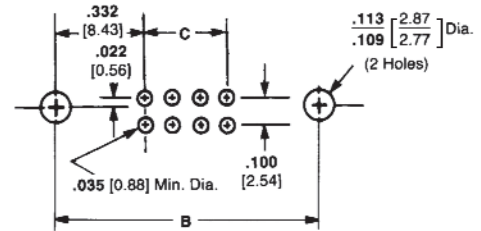


.014 x .019 [0.36 x 0.48] Channel Contacts

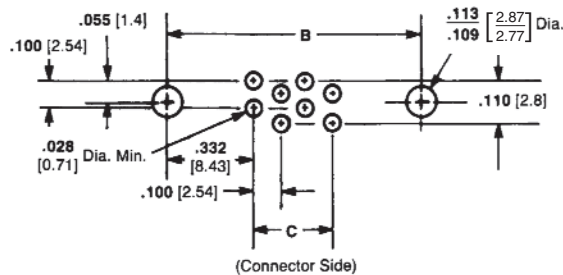


.035 [0.88] Dia. (Min) - Posted Contact

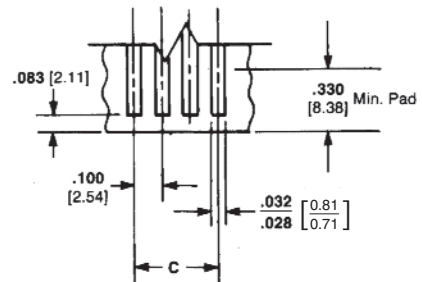
.025 x .025 [0.64 x 0.64] Posted Contacts



Right-Angle .025 x .025 [0.64 x 0.64] Posted Contacts



.010 x .020 [0.25 x 0.51] Posted Contacts

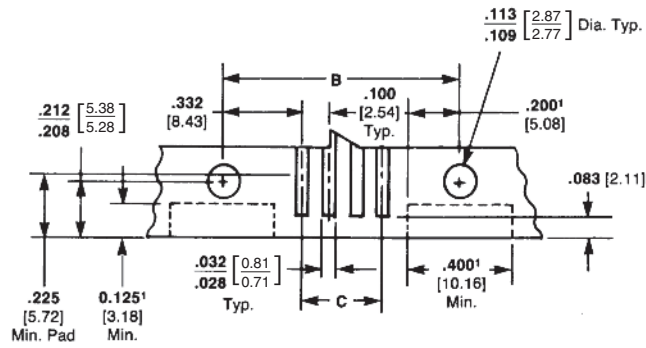


Card Extender Contacts

No. of Pos.	Dimensions	
	B	C
140	7.565 192.15	6.900 175.26
134	7.265 184.53	6.600 167.64
130	7.065 179.45	6.400 162.56
120	6.565 166.75	5.906 149.86
110	6.065 154.05	5.400 137.16
100	5.565 141.35	4.900 124.46
90	5.065 128.65	4.400 111.76
80	4.565 115.95	3.900 99.06
70	4.065 103.25	3.400 86.36
60	3.565 90.55	2.900 73.66
50	3.065 77.85	2.400 60.96
40	2.565 65.15	1.900 48.26
30	2.065 52.45	1.400 35.56

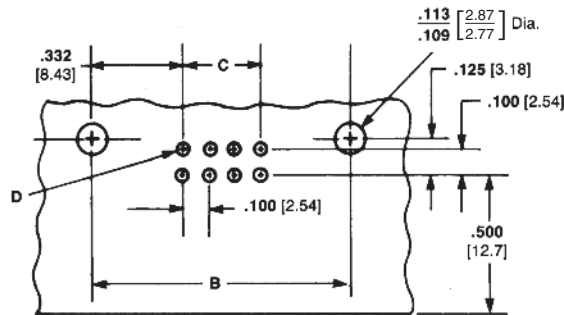
Recommended Printed Circuit Board Layouts (Continued)

Pin Header Assemblies



¹Optional cut-out for keying after connector is mounted.

Straddle Mount Assembly



D = Right-Angle Flow Solder - .035 [0.88] Dia. (Min.)
Wrap-Type Posts - .045 [1.14] Dia. (Min.)

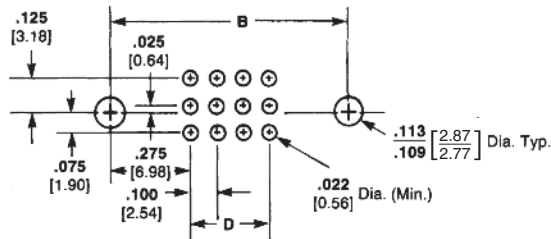
Right-Angle Flow Solder and Wrap-Type Posted Contacts

Note: These drawings are for reference only. Consult TE Connectivity for board layout details.

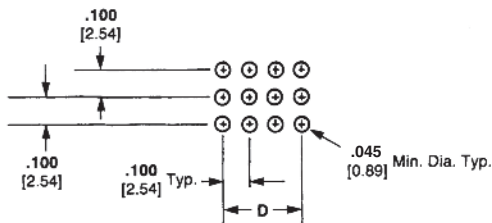
No. of Pos.	Dimensions	
	B	C
140	7.565 192.15	6.900 175.26
134	7.265 184.53	6.600 167.64
130	7.065 179.45	6.400 162.56
120	6.565 166.75	5.906 149.86
110	6.065 154.05	5.400 137.16
100	5.565 141.35	4.900 124.46
90	5.065 128.65	4.400 111.76
80	4.565 115.95	3.900 99.06
70	4.065 103.25	3.400 86.36
60	3.565 90.55	2.900 73.66
50	3.065 77.85	2.400 60.96
40	2.565 65.15	1.900 48.26
30	2.065 52.45	1.400 35.56

3-Row Assembly Recommended Printed Circuit Board Layouts

Receptacle Assemblies

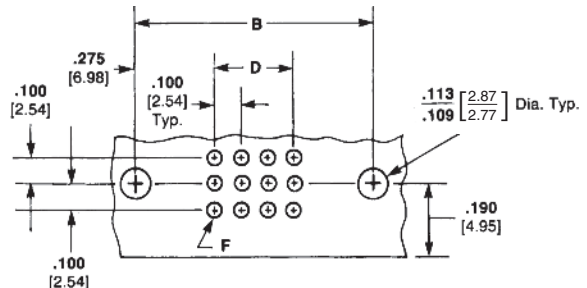


.014 x .019 [0.36 x 0.48] Channel Contacts



Right-Angle Wrap-Type Posted Contacts

Pin Header Assemblies



F = Right-Angle Flow Solder — .035 [0.88] Dia. Min.
Wrap-Type Posts — .045 [1.14] Dia. Min.

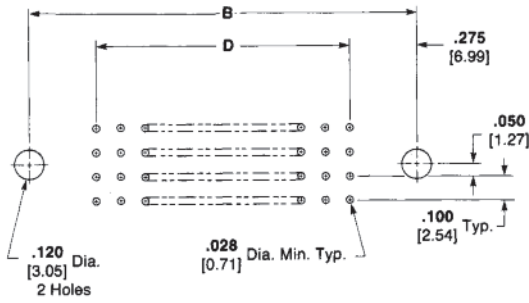
Right-Angle Flow Solder and Wrap-Type Posted Contacts

Note: These drawings are for reference only. Consult TE Connectivity for board layout details.

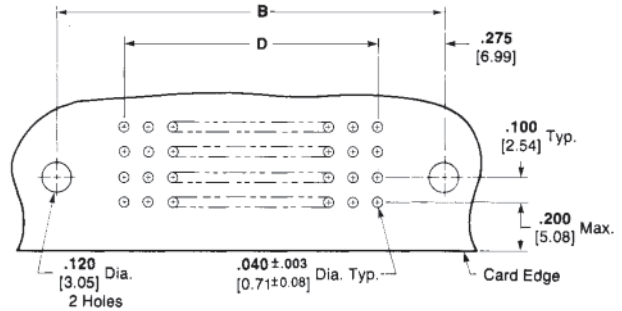
No. of Pos.	Dimensions	
	B	D
300	10.450	9.900
	265.43	251.46
270	9.450	8.900
	240.03	226.06
240	8.450	7.900
	214.63	200.66
210	7.450	6.900
	189.23	175.26
180	6.450	5.900
	163.83	149.86
165	5.950	5.400
	151.13	137.16
150	5.450	4.900
	138.43	124.46
126	4.650	4.100
	118.11	104.14
123	4.550	4.000
	115.57	101.6
120	4.450	3.900
	113.03	99.06
105	3.950	3.400
	100.33	86.36
90	3.450	2.900
	87.63	73.66

4-Row Assembly Recommended Printed Circuit Board Layouts

Receptacle Assemblies



Pin Header Assemblies

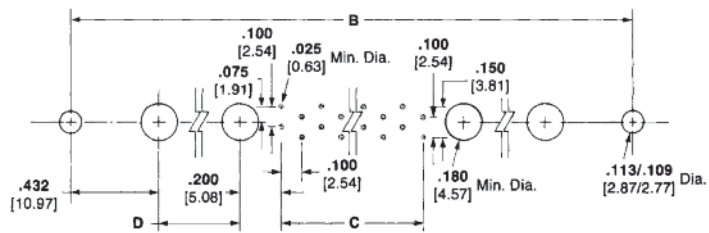


No. of Pos.	Dimensions	
	B	D
300	7.950 201.93	7.400 187.96
292	7.750 196.85	7.200 182.88
280	7.450 189.23	6.900 175.26
268	7.150 181.61	6.600 167.64
260	6.950 176.53	6.400 162.56
240	6.450 163.83	5.900 149.86
232	6.250 158.75	5.700 144.78
220	5.950 151.13	5.400 137.16
216	5.850 148.59	5.300 134.62
200	5.450 138.43	4.900 124.46
192	5.250 133.35	4.700 119.38
180	4.950 125.73	4.400 111.76
168	4.650 118.11	4.100 104.14
160	4.450 113.03	3.900 99.06
152	4.250 107.95	3.700 93.98
140	3.950 100.33	3.400 86.36
128	3.650 92.71	3.100 78.74
120	3.450 87.63	2.900 73.66
100	2.950 74.93	2.400 60.96
68	2.150 54.60	1.600 40.64
40	1.450 36.83	.900 22.86

Hybrid Contacts Recommended Printed Circuit Board Layouts

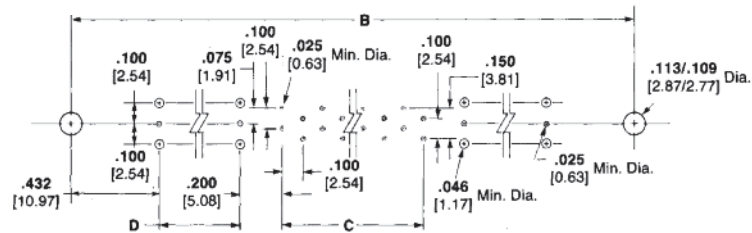
Receptacle Assemblies with Hybrid Contacts

With Cable



.014 x .019 [0.36 x 0.48] Channel Contacts with Hybrid Printed Circuit Board Mount Sockets

With Solder Terminations



.014 x .019 [0.36 x 0.48] Channel Contacts with Vertical Coaxial Printed Circuit Board Mount Sockets

2 Hybrid Contact Connectors

No. of Box Contact Pos.	Dimensions	
	B	C
128	7.565 192.15	6.300 160.02
122	7.265 184.53	6.000 152.4
118	7.065 179.45	5.800 147.32
108	6.565 166.75	5.300 134.62
98	6.065 154.05	4.800 121.92
88	5.565 141.35	4.300 109.22
78	5.065 128.65	3.800 96.52
68	4.565 115.95	3.300 83.82
58	4.065 103.25	2.800 71.12
48	3.565 90.55	2.300 58.42
38	3.065 77.85	1.800 45.72
28	2.565 65.15	1.300 33.02
18	2.065 52.45	.800 20.32

4 Hybrid Contact Connectors

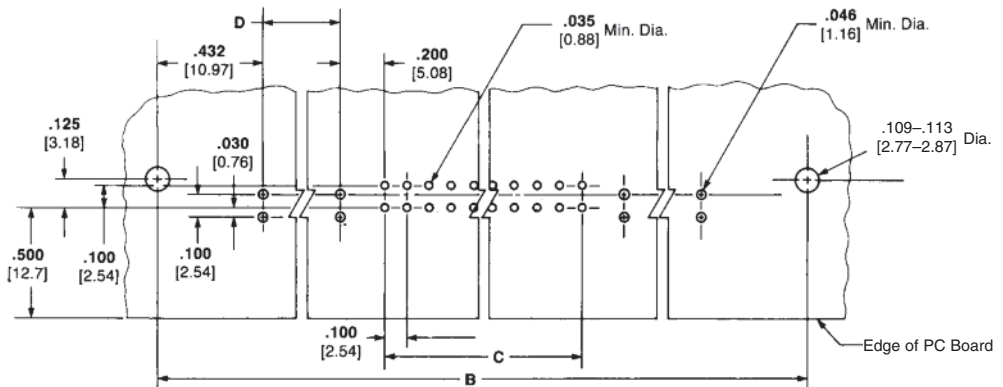
No. of Box Contact Pos.	Dimensions		
	B	C	D
120	7.565 192.15	5.900 149.86	.200 5.08
110	7.065 179.45	5.400 137.16	.200 5.08
100	6.565 166.75	4.900 124.46	.200 5.08
90	6.065 154.05	4.400 111.76	.200 5.08
80	5.565 141.35	3.900 99.06	.200 5.08
70	5.065 128.65	3.400 86.36	.200 5.08
60	4.565 115.95	2.900 73.66	.200 5.08
50	4.065 103.25	2.400 60.96	.200 5.08
40	3.565 90.55	1.900 48.26	.200 5.08
30	3.065 77.85	1.400 35.56	.200 5.08

6 Hybrid Contact Connectors

No. of Box Contact Pos.	Dimensions		
	B	C	D
112	7.565 192.15	5.500 139.7	.400 10.16
102	7.065 179.45	5.000 127.0	.400 10.16
92	6.565 166.75	4.500 114.3	.400 10.16
82	6.065 154.05	4.000 101.6	.400 10.16
72	5.565 141.35	3.500 88.9	.400 10.16
62	5.065 128.65	3.000 76.2	.400 10.16
52	4.565 115.95	2.500 63.5	.400 10.16
42	4.065 103.25	2.000 50.8	.400 10.16
32	3.565 90.55	1.500 38.1	.400 10.16
22	3.065 77.85	1.000 25.4	.400 10.16

Hybrid Contacts Recommended Printed Circuit Board Layouts (Continued)

Pin Header Assemblies with Hybrid Cavities



2 Hybrid Contact Connectors

No. of Box Contact Pos.	Dimensions	
	B	C
128	7.565 192.15	6.300 160.02
122	7.265 184.53	6.000 152.4
118	7.065 179.45	5.800 147.32
108	6.565 166.75	5.300 134.62
98	6.065 154.05	4.800 121.92
88	5.565 141.35	4.300 109.22
78	5.065 128.65	3.800 96.52
68	4.565 115.95	3.300 83.82
58	4.065 103.25	2.800 71.12
48	3.565 90.55	2.300 58.42
38	3.065 77.85	1.800 45.72
28	2.565 65.15	1.300 33.02
18	2.065 52.45	.800 20.32

4 Hybrid Contact Connectors

No. of Box Contact Positions	Dimensions		
	B	C	D
120	7.565 192.15	5.900 149.86	.200 5.08
80	5.565 141.35	3.900 99.06	.200 5.08
70	5.065 128.65	3.400 86.36	.200 5.08
40	3.565 90.55	1.900 48.26	.200 5.08
30	3.065 77.85	1.400 35.56	.200 5.08

6 Hybrid Contact Connectors

No. of Box Contact Positions	Dimensions		
	B	C	D
112	7.565 192.15	5.500 139.7	.400 10.16
102	7.065 179.45	5.000 127.0	.400 10.16
92	6.565 166.75	4.500 114.3	.400 10.16
82	6.065 154.05	4.000 101.6	.400 10.16
72	5.565 141.35	3.500 88.9	.400 10.16
62	5.065 128.65	3.000 76.2	.400 10.16
52	4.565 115.95	2.500 63.5	.400 10.16
42	4.065 103.25	2.000 50.8	.400 10.16
32	3.565 90.55	1.500 38.1	.400 10.16
22	3.065 77.85	1.000 25.4	.400 10.16

8 Hybrid Contact Connectors

No. of Box Contact Positions	Dimensions		
	B	C	D
104	7.565 192.15	5.100 129.54	.600 15.24
94	7.065 179.45	4.600 116.84	.600 15.24
84	6.565 166.75	4.100 104.14	.600 15.24
74	6.065 154.05	3.600 91.44	.600 15.24
64	5.565 141.35	3.100 78.74	.600 15.24
54	5.065 128.65	2.600 66.04	.600 15.24
44	4.565 115.95	2.100 53.34	.600 15.24
34	4.065 103.25	1.600 40.64	.600 15.24
24	3.565 90.55	1.100 27.94	.600 15.24
14	3.065 77.85	.600 15.24	.600 15.24

Keying Hardware — MIL-C-55302 Qualified

External Keys

Receptacle Key

For use with Receptacles

Kit Part Number 530341-3

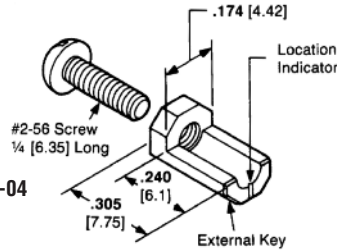
Kit includes 2 each of the following:

Keys, passivated stainless steel

Part Number 530341-1

Military Part Number M55302/31-04

Screws, #2-56 .250 [6.35] long



Pin Header Key

For use with 2-row Straddle Mount Pin Headers

Kit Part Number 530341-4¹

Kit includes 2 each of the following:

Keys, passivated stainless steel

Part Number 530341-1

Military Part Number M55302/31-04

Rivets, nickel plated brass

Part Number 530347-1

Military Part Number M55302/31-05

Pin Header Key

For use with 2-, 3-, and 4-row Pin Headers

Kit Part Number 530341-5¹

Kit includes 2 each of the following:

Keys, passivated stainless steel

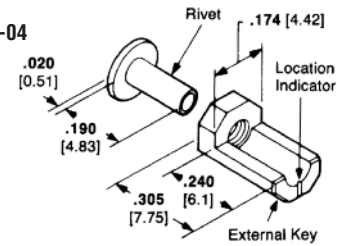
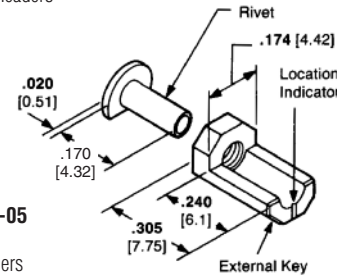
Part Number 530341-1

Military Part Number M55302/31-04

Rivets, nickel plated brass

Part Number 530347-3

Military Part Number M55302/31-10



¹Rivet Clinching Tools:

2-Row Pin Headers—Tool Part Number 91117-1

(See instruction sheet 408-7803)

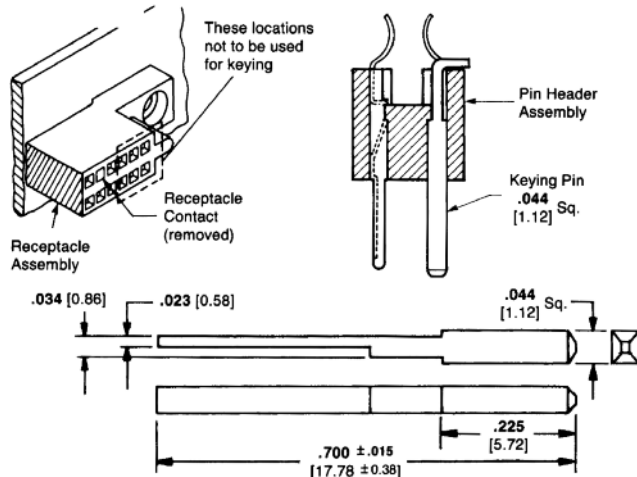
3-Row Pin Headers—Tool Part Number 91117-3

(See instruction sheet 408-6626)

4-Row Pin Headers—Tool Part Number 92-0800-003

Solid Keying Pin

Solid keying pins are for use on connectors when external keying is not used or on external keyed assemblies when more than 64 keying positions are required. Solid keying pins are not to be installed in the three dual positions at each end of the connector.



Material: Nickel plated brass
Part Number 530328-2
Military Part Number M55302/31-03

Assembly Instructions:

1. Remove pin and receptacle from desired keying locations.
2. Insert keying pin in pin header, secure by bending rear of pin over outside edge of housing, and trim excess material.

Guide Keys

Guide Keying Pin and Insert

For use with 2-row Receptacles and 2-row Straddle Mount Pin Headers

Kit Part Number 531715-1¹

Kit includes 2 each of the following:

Guide keying pin, passivated stainless steel

Part Number 531713-1

Nut, #2-56

Part Number 23174-1

Guide keying insert, passivated stainless steel

Part Number 531714-1

Rivet, nickel plated brass

Part Number 530347-9

Guide Keying Pin and Insert

For use with 2- and 3-row Receptacles and Right-Angle Pin Headers

Kit Part Number 531715-2¹

Kit includes 2 each of the following:

Guide keying pin, passivated stainless steel

Part Number 531713-1

Nut, #2-56

Part Number 23174-1

Guide keying insert, passivated stainless steel

Part Number 531714-1

Rivet, nickel plated brass

Part Number 530347-8

¹Rivet Clinching Tools:

2-Row Pin Headers—Tool Part Number 91117-1

(See instruction sheet 408-7803)

3-Row Pin Headers—Tool Part Number 91117-4

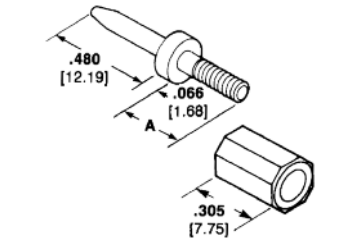
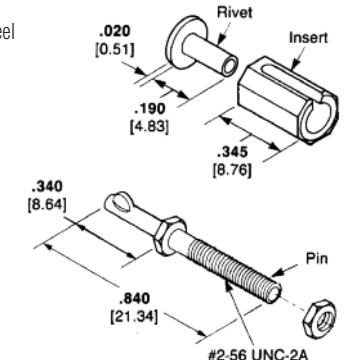
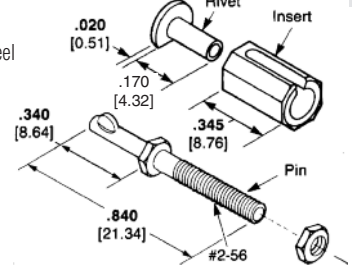
(See instruction sheet 408-6627)

Guide Pin/Insert

Guide Pin

Passivated stainless steel

A	Part No.
.400	530345-1
10.16	—
.680	—
17.27	—
.750	530345-3
19.05	—



Guide Insert

Passivated stainless steel

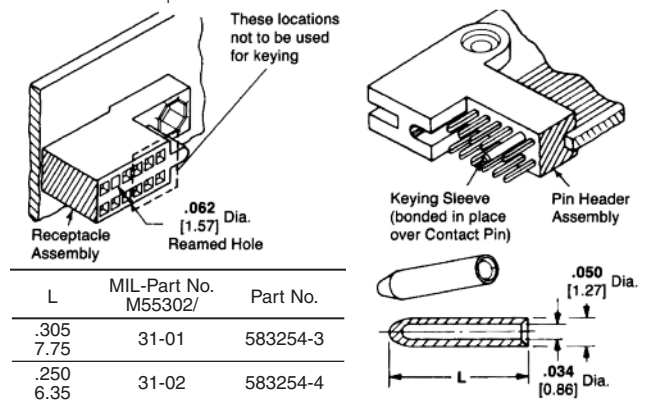
Part Number 530346-1

(Consult TE Connectivity for mounting recommendations)

Keying Sleeve

Keying sleeves, like solid keying pins, are used as an alternative to external keys or when additional keying is required. When the keying sleeve is used on the pin header, the contact must be removed from the receptacle assembly and the cavity reamed to .062 [1.57] diameter.

Material — Nickel plated brass



L	MIL-Part No. M55302/	Part No.
.305	31-01	583254-3
7.75	—	—
.250	31-02	583254-4
6.35	—	—

Replacement Contacts — MIL-C-55302 Qualified

Plating Code

Contacts are plated in various thicknesses. These thicknesses are coded in the charts as follows:

1. — .000030 [0.00076] gold in the contact area, .000100 [0.00254] tin-lead on the tail over .000050 [0.00127] nickel on the entire contact.
2. — .000050 [0.00127] gold in the contact area, .000100 [0.00254] tin-lead on the tail over .000050 [0.00127] nickel on the entire contact.
3. — .000030 [0.00076] gold in the contact area, .000100 [0.00254] tin-lead on the tail over .000030 [0.00076] nickel on the entire contact.
4. — .000050 [0.00127] gold over .000030 [0.00076] nickel.
5. — .000050 [0.00127] gold in the contact area, .000100 [0.00254] tin-lead on the tail over .000030 [0.00076] nickel on the entire contact.
6. — .000030 [0.00076] gold in the contact area, in accordance with MIL-C-55302, .000100 [0.00254] tin-lead on the tails over .000030 [0.00076] nickel on the entire contact.
7. — .000050 [0.00127] gold in the contact area, in accordance with MIL-C-55302 .000100 [0.00254] tin-lead on tails over .000050 [0.00127] nickel on the entire contact.

Contact Extraction

Pin Contacts

Extraction Tool

Part Number 91156-1

Receptacle Contacts

Extraction Tool

Part Number 91035-1

Military Part Number

M81969/9-01



Posted Receptacle Contacts

Contact for Rack Mounting

Extraction Tool

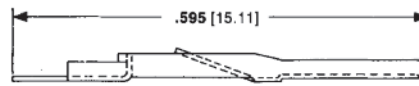
Part Number 1-265871-7

(Extraction Tool Instruction sheet 408-2636)

Contact for PC Board

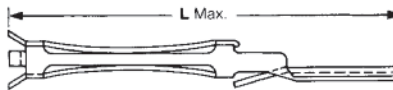
No tool needed — After de-soldering, extract by pressing on post end of contact.

Pin Contacts

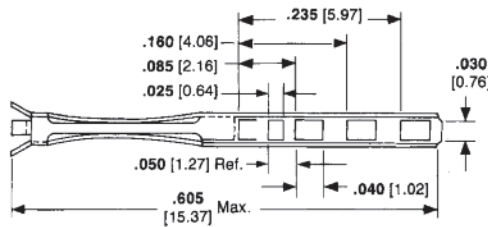


For Straddle Mount Pin Headers

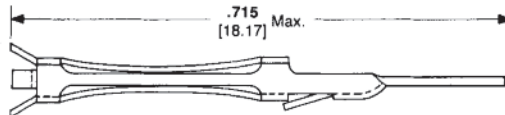
Receptacle Contacts



.014 x .019 [0.36 x 0.48] Channel Contact



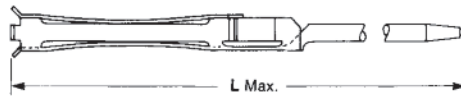
Solder Eyelet Contact (Max. Wire Size, 26 AWG [0.15mm])



.010 x .020 [0.25 x 0.51] Posted Contact¹

¹.010 x .020 [0.25 x 0.51] posted contacts are used as replacement contacts in card extender assemblies.

Posted Receptacle Contacts



Wrap-Type Contact for Rack Mounting Double Latch .025 x .025 [0.64 x 0.64] Post



Wrap-Type Contact for PC Mounting Single Latch .022 x .027 [0.56 x 0.69] Post

Plating Code	AMP Part No.
1	202947-2
2	202947-3

Plating Code	AMP Part No.
3	202946-1
4	202946-7

Plating Code	AMP Part No.	
	2-Row Connectors	3-Row Connectors
5	202946-7	202946-5
6	202946-1	202946-2

L Length Equals .540 Max. for 2-Row .619 Max for 3-Row

Plating Code	MIL-Part No.	AMP Part No.
5	—	—
6	—	—
7	M55302/32-01	583218-3

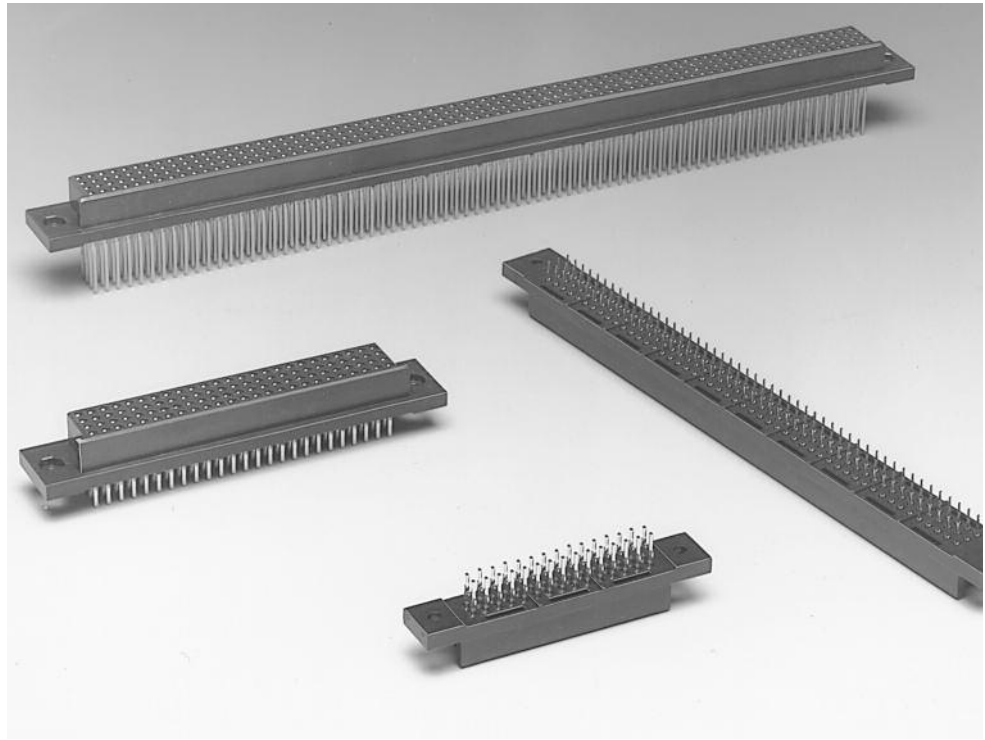
For 2-Row Only

Plating Code	AMP Part No.
3	583452-4
5	1-583452-9

Vertical Receptacles with ACTION PIN Posts and Solder Post Contacts

Product Facts

- Horizontal motherboard stacking capability
- Mateable with AMP-HDI pin assemblies
- 4-beam box-type receptacle contact design provides four areas of contact per connection
- Available with ACTION PIN contacts or solder posts
- Inserts into standard .100 [2.54] grid
- Keying system provides 64 combinations without loss of contact count
- High temperature material permits vapor phase reflow soldering
- Low mating forces
- Highly economical for quality and density
- Product Specification 108-9003



TE Connectivity vertical receptacle assemblies, when mated with AMP-HDI pin assemblies, permit horizontal stacking of motherboards. They are available with two, three or four rows of contacts on a .100 [2.54] grid and with a choice of either ACTION PIN posts or solder posts.

The required PC board hole sizes and patterns of these receptacle assemblies allow space-efficient circuitry layout. The box-type, quad redundant receptacle contacts with selective gold plating in the contact area deliver high reliability while maintaining low mating force.

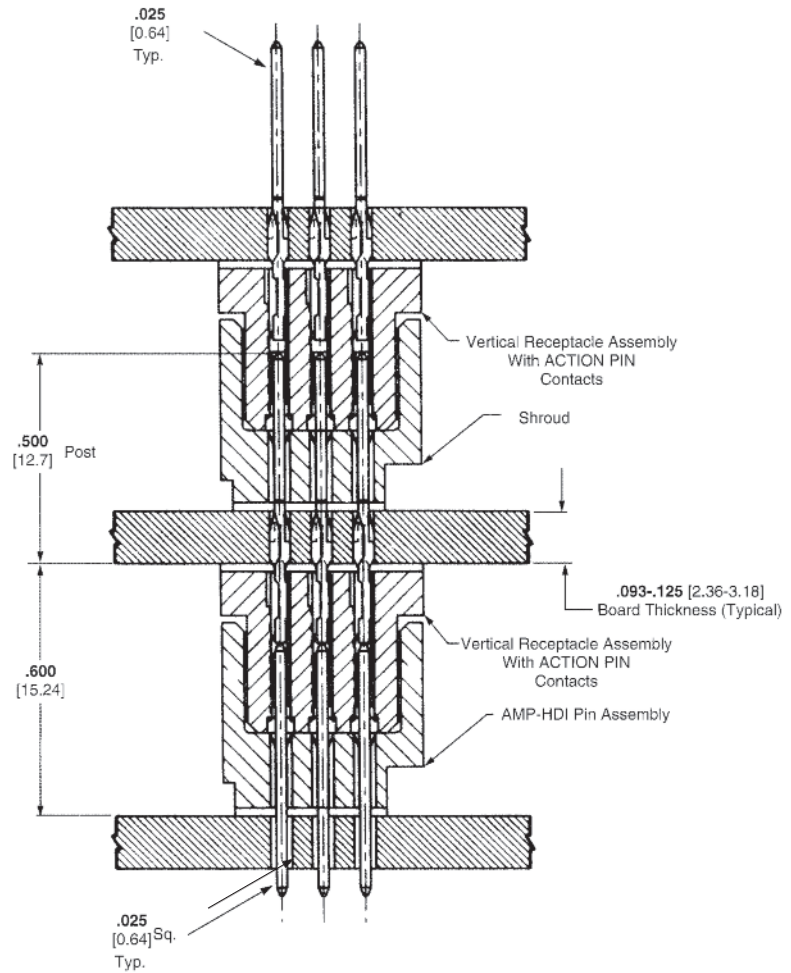
In addition, contact and housing configurations prevent pin damage if a long connector is “peeled” apart from one end.

Features such as 64-combination keying and high temperature housing materials add to the appeal of TE vertical receptacle assemblies.

These connectors are highly specialized products for applications demanding their unusual characteristics.

**Horizontal Motherboard Stacking
(Not Recommended for MFBL Applications)**

Multiple stacking of motherboards on backplanes is readily achieved using TE Connectivity vertical receptacle assemblies and AMP-HDI pin assemblies. This unique board-to-board interconnection concept eliminates exposed contacts inherent with open pin fields. Vertical receptacle assemblies with either ACTION PIN posts or solder posts provide the same low .600 [15.24] stack height between boards.



Note: The .600 [15.24] board-to-board stacking height is also achieved using vertical receptacle assemblies with solder posts.

Four-Row Vertical Receptacle Assemblies Without Guide Holes

ACTION PIN Posts and Solder Posts

Material and Finish

Housing — Brown glass-filled polyphenylene sulfide
Contacts — ACTION PIN (phosphor bronze), solder (beryllium copper), plated as follows:

A .000030 [0.00076] gold in contact area, tin-lead on posts, with entire contact underplated .000050-.000100 [0.00127-0.00254] nickel

B Gold flash over .000050-.000100 [0.00127-0.00254] nickel on entire contact, with .000030 [0.00076] gold on contact area and for .200 [5.08] from tip of ACTION PIN post

C .000050 [0.00127-0.00254] gold in contact area, tin-lead on posts, with entire contact underplated .000050-.000100 [0.00127-0.00254] nickel

D RoHS Part Numbers same as A plating except for tin on posts

Related Product Data

Mateable Connectors —

Vertical Pin Headers —

Base numbers 533435, 533254, 533270, 532448, 532436

90° Pin Headers —

Base numbers 533444, 533286

Consult TE Connectivity for part number details.

Accessories —

Keys — page 1-92

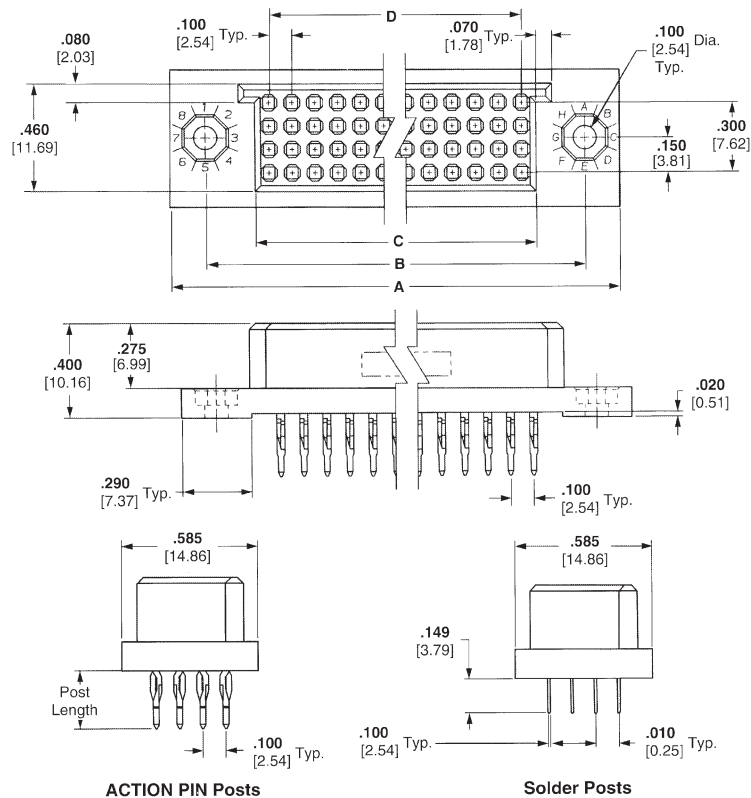
Jackscrews — page 1-93

PCB Hole Layouts — page 1-88

Application Tooling — page 1-91

Technical Documents —

Product Specifications
 108-9069, 108-26003
 Application Specification
 114-9010
 Instruction Sheets 408-6927,
 408-6979, 408-6989, 408-9185



No. of Pos.	Dimensions				Contact Finish	Part Numbers*			
	A	B	C	D		ACTION PIN Posts		Solder Posts	
						.500 [12.7] Length	.250 [6.35] Length	.149 [3.78] Length	.180 [4.57] Length
300	8.250 209.55	7.950 201.93	7.524 191.11	7.400 187.95	A	—	1-533427-2	1-533285-2	—
					B	1-533656-2	—	—	
					D	—	—	6-533285-2	—
280	7.750 196.85	7.450 189.23	7.024 178.41	6.900 175.26	A	—	—	1-533285-1	—
					D	—	—	6-533285-0	—
					D	—	—	6-533285-0	—
260	7.250 184.15	6.950 176.53	6.524 165.71	6.400 162.56	A	—	1-533427-0	1-533285-0	—
					D	—	—	6-533285-0	—
					D	—	—	6-533285-0	—
240	6.750 171.45	6.450 163.83	6.024 153.01	5.900 149.86	A	—	533427-9	533285-9	—
					B	533656-9	—	—	
					D	—	—	5-533285-9	—
232	6.550 166.37	6.250 158.75	5.824 147.93	5.700 144.78	A	—	—	—	533499-2
					D	—	—	—	5-533499-2
					D	—	—	—	5-533499-2
216	6.150 156.21	5.850 148.59	5.424 137.77	5.300 134.62	A	—	—	—	533499-1
					D	—	—	—	5-533499-1
					D	—	—	—	5-533499-1
200	5.750 146.05	5.450 138.43	5.024 127.61	4.900 124.46	A	—	—	533285-7	—
					B	533656-7	—	—	
					D	—	—	5-533285-7	—
180	5.250 133.35	4.950 125.73	4.524 114.91	4.400 111.76	B	533656-6	—	533285-6	—
					D	—	—	5-533285-6	—
					D	—	—	5-533285-6	—
160	4.750 120.65	4.450 113.03	4.024 102.21	3.900 99.06	A	—	533427-5	533285-5	533492-1
					C	—	—	650844-1	—
					D	—	—	5-533285-5	—
140	4.250 107.95	3.950 100.33	3.524 89.51	3.400 86.36	A	—	—	533285-4	—
					D	—	—	—	—
					D	—	—	—	—
128	3.950 100.33	3.650 92.71	3.224 81.89	3.100 78.74	A	—	533427-3	533285-3	—
					D	—	—	5-533285-3	—
					D	—	—	5-533285-3	—
100	3.250 82.55	2.950 74.93	2.524 64.11	2.400 60.96	A	533694-1	533427-1	533285-1	—
					B	533656-1	—	—	—
					D	—	—	5-533285-1	—

*Other connector sizes and solder post lengths can be made available. Consult TE Connectivity.

Four-Row Vertical Receptacle Assemblies Without Guide Holes (Continued)

Material and Finish

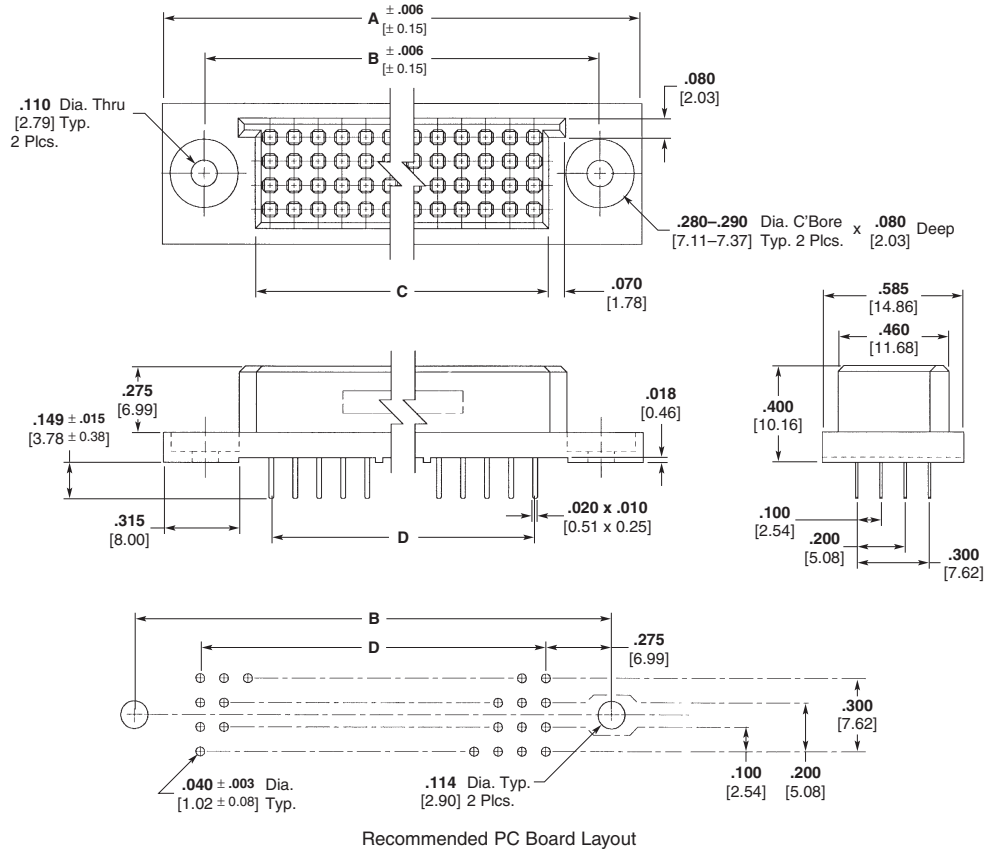
Housing — Natural (brown)
polyphenylene sulfide

Contacts — Beryllium copper,
.000050–.000100 [0.00127–0.00254]
nickel underplate over .000030
[0.00076] gold in contact area, tin-lead
plated solder tails

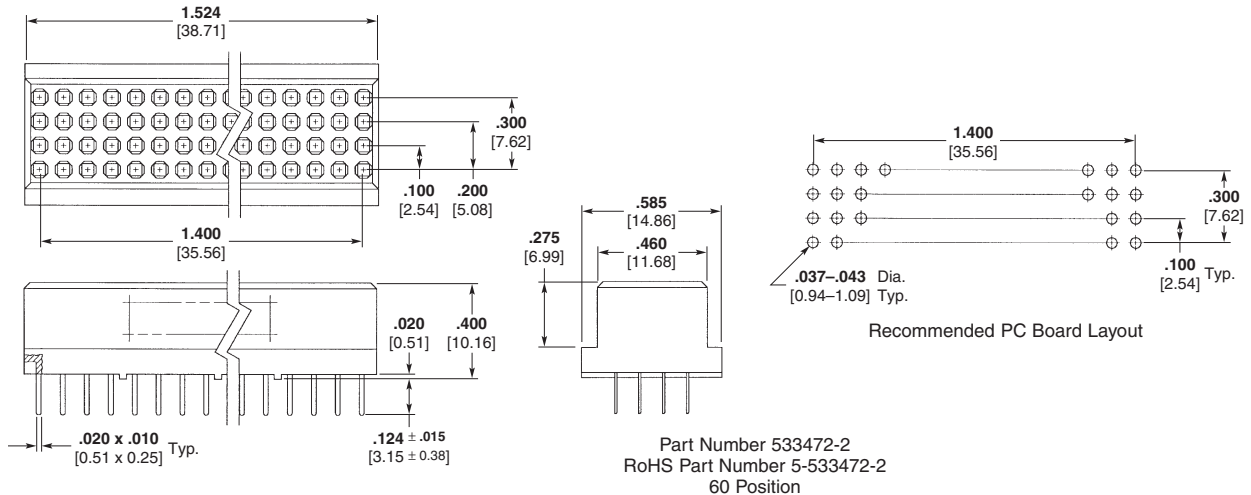
Solder Posts .149 [3.78] Length
Mounting Ears Have .285 [7.24] C'Bore x .080 [2.03] Deep

No. of Pos.	Dimensions				Contact Finish	Part No.
	A	B	C	D		
192	5.600 142.24	5.450 133.35	4.824 122.53	4.700 119.38	A	533484-1
68	2.500 63.50	2.150 54.61	1.724 43.79	1.600 40.64	A	533484-2

With Special Mounting Ears



Without Mounting Ears



Three-Row Vertical Receptacle Assemblies Without Guide Holes

**ACTION PIN Posts
and Solder Posts**

Material and Finish

Housing — Brown glass-filled polyphenylene sulfide

Contacts — ACTION PIN (phosphor bronze), solder (beryllium copper), plated as follows:

A .000030 [0.00076] gold in contact area; tin-lead on posts, with entire contact underplated .000050-.000100 [0.00127-0.00254] nickel

B Gold flash over .000050-.000100 [0.00127-0.00254] nickel on entire contact, with .000030 [0.00076] gold on contact area and for .200 [5.08] from tip of ACTION PIN post

C RoHS Part Numbers same as A plating except for tin on posts

Related Product Data

Mateable Connectors —

Vertical Pin Headers —

Base numbers 532432, 533061, 533093, 532447, 532433

90° Pin Headers —

Base numbers 533420, 533288

Consult TE Connectivity for part number details.

Accessories —

Keys — page 1-92

Jackscrews — page 1-93

PCB Hole Layouts — page 1-89

Application Tooling — page 1-91

Technical Documents —

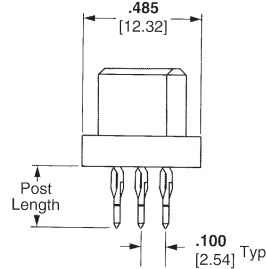
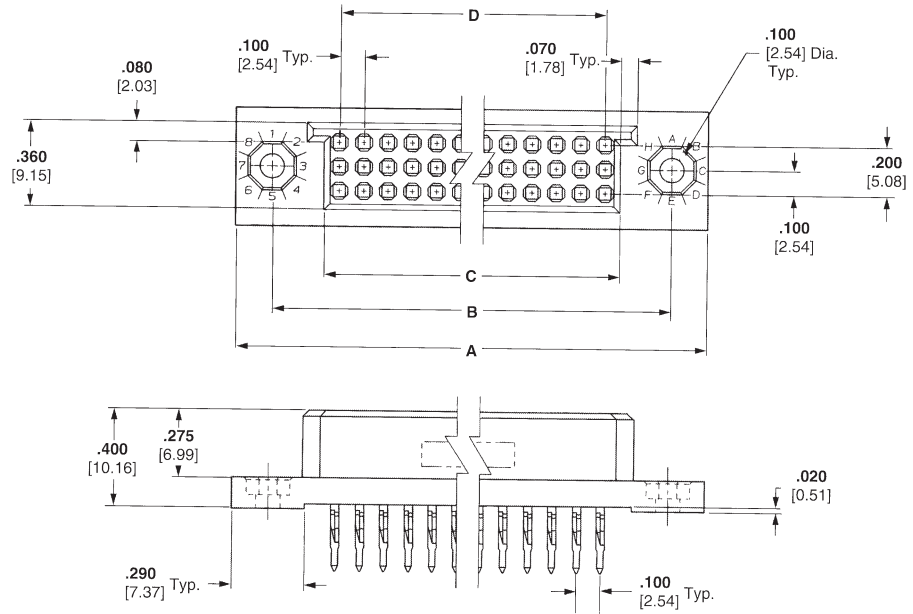
Product Specifications

108-9069, 108-26003

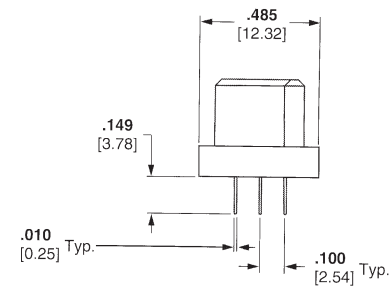
Application Specification 114-9010

Instruction Sheets 408-6927,

408-6981, 408-6989, 408-9185



ACTION PIN Posts



Solder Posts

No. of Pos.	Dimensions				Contact Finish	Part Numbers*		
	A	B	C	D		ACTION PIN Posts		Solder Posts
						.250 [6.35] Length	.149 [3.78] Length	.180 [4.57] Length
174	6.550	6.250	5.824	5.700	A	—	—	533495-3
	166.37	158.75	147.93	144.78	C	—	—	5-533495-3
150	5.750	5.450	5.024	4.900	A	533657-7	533287-7	—
	146.05	138.43	127.61	124.46	B	—	—	533495-2
					C	—	5-533287-7	5-533495-2
120	4.750	4.450	4.024	3.900	A	533657-5	533287-5	—
105	4.250	3.950	3.524	3.400	A	—	533287-4	—
	101.95	100.33	89.51	86.36	C	—	5-533287-4	—
96	3.950	3.650	3.224	3.100	A	—	533287-3	—
	100.33	92.71	81.89	78.74	C	—	5-533287-3	—

*Other connector sizes and solder post lengths can be made available, consult TE Connectivity.

Two-Row Vertical Receptacle Assemblies Without Guide Holes

ACTION PIN Posts and Solder Posts

Material and Finish

Housing — Brown glass-filled polyphenylene sulfide

Contacts — ACTION PIN (phosphor bronze), solder (beryllium copper), plated as follows:

A .000030 [0.00076] gold in contact area, tin-lead on posts, with entire contact underplated .000050-.000100 [0.00127-0.00254] nickel

B Gold flash over .000050-.000100 [0.00127-0.00254] nickel on entire contact, with .000030 [0.00076] gold on contact area and for .200 [5.08] from tip of ACTION PIN post

C RoHS Part Numbers same as A plating except for tin on posts

Related Product Data

Mateable Connectors —

Vertical Pin Headers —

Base numbers 533060, 532446, 532430, 532091, 532430

90° Pin Headers —

Base numbers 533515, 533295

Consult TE Connectivity for part number details.

Accessories —

Keys — page 1-92

Jackscrews — page 1-93

PCB Hole Layouts — page 1-89

Application Tooling — page 1-91

Technical Documents —

Product Specifications

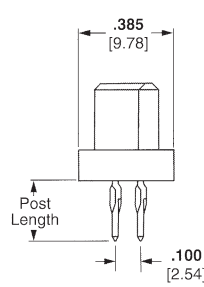
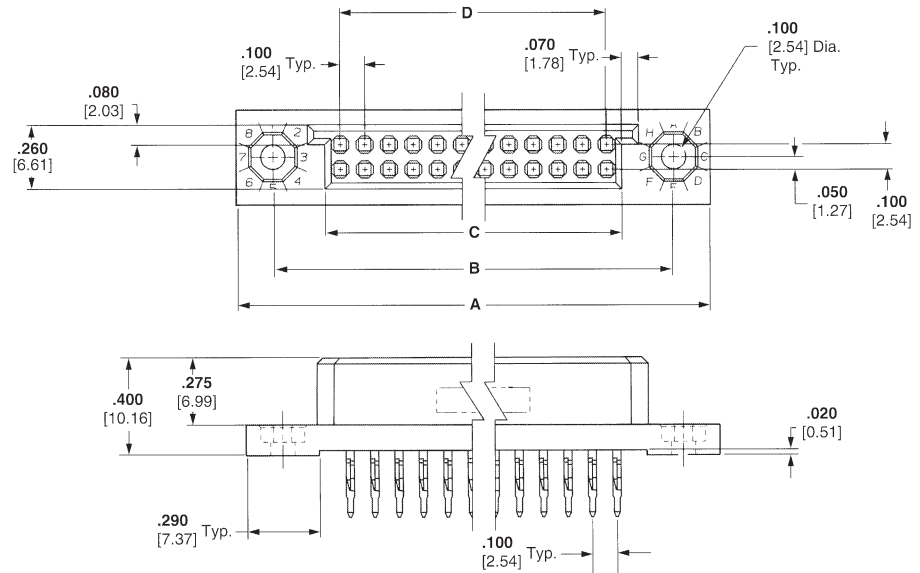
108-9069, 108-26003

Application Specification

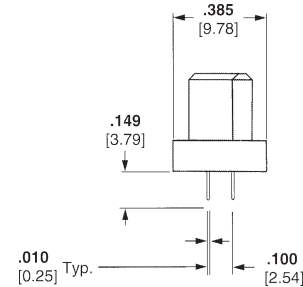
114-9010

Instruction Sheets 408-6927,

408-6980, 408-6989, 408-9185



ACTION PIN Posts



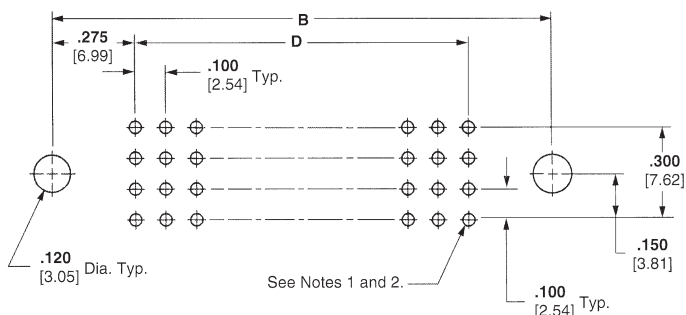
Solder Posts

No. of Pos.	Dimensions				Contact Finish	Part Numbers*		
	A	B	C	D		ACTION PIN Posts		Solder Posts
						.500 [12.7] Length	.250 [6.35] Length	
200	10.750 273.05	10.450 265.43	10.024 254.61	9.900 251.46	A	—	1-533650-9	—
80	4.750 120.65	4.450 113.03	4.024 102.21	3.900 99.06	B	533693-7	—	—
60	3.750 95.25	3.450 87.63	3.024 76.81	2.900 73.66	A	—	—	533289-5
					C	—	—	5-533289-5
40	2.750 69.85	2.450 62.23	2.024 51.41	1.900 48.26	A	533693-3	—	533289-3
20	1.750 44.45	1.450 36.83	1.024 26.10	.900 22.86	A	—	—	533289-1

*Other connector sizes and solder post lengths can be made available, consult TE Connectivity.

Recommended Printed Circuit Board Hole Layouts

**Four-Row
Receptacle Assemblies
Without Guide Holes**



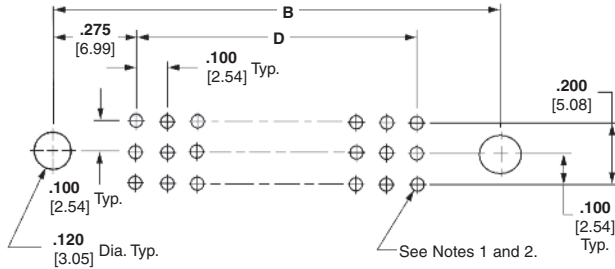
**Vertical Receptacle Assemblies
with ACTION PIN Contacts and Solder Posts**

- Notes:** 1. ACTION PIN posts require .093 [2.36] min. thick PC board. For ACTION PIN post plated-through hole specifications, see page 1-90.
2. Plated-through hole diameter for solder posts is .037-.043 [0.94-1.09]; recommended pad diameter is hole diameter plus .020 [0.51].

No. of Pos.	Dimensions	
	B	D
300	7.950 201.93	7.400 187.96
280	7.450 189.23	6.900 175.26
260	6.950 176.53	6.400 162.56
240	6.450 163.83	5.900 149.86
232	6.250 166.37	5.700 144.78
216	5.850 148.59	5.300 134.62
200	5.450 138.43	4.900 124.46
180	4.950 125.73	4.400 111.76
160	4.450 113.03	3.900 99.06
140	3.950 100.33	3.400 86.36
128	3.650 92.71	3.100 78.74
120	3.450 87.63	2.900 73.66
100	2.950 74.93	2.400 60.96
40	1.450 36.83	.900 22.86

Recommended Printed Circuit Board Hole Layouts (Continued)

**Three-Row Receptacle Assemblies
Without Guide Holes**

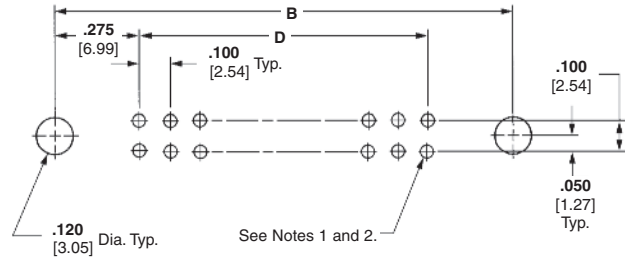


**Vertical Receptacle Assemblies
with ACTION PIN Contacts and Solder Posts**

- Notes:** 1. ACTION PIN posts require .093 [2.36] min. thick PC board.
For ACTION PIN post plated-through hole specifications, see page 1-90.
2. Plated-through hole diameter for solder posts is .037-.043 [0.94-1.09];
recommended pad diameter is hole diameter plus .020 [0.51].

No. of Pos.	Dimensions	
	B	D
174	6.250 158.75	5.700 144.78
150	5.450 138.43	4.900 124.46
120	4.450 113.03	3.900 99.06
105	3.950 100.33	3.400 86.36
96	3.650 92.71	3.100 78.74

**Two-Row Receptacle Assemblies
Without Guide Holes**



**Vertical Receptacle Assemblies
with ACTION PIN Contacts and Solder Posts**

- Notes:** 1. ACTION PIN posts require .093 [2.36] min. thick PC board.
For ACTION PIN post plated-through hole specifications, see page 1-90.
2. Plated-through hole diameter for solder posts is .037-.043 [0.94-1.09];
recommended pad diameter is hole diameter plus .020 [0.51].

No. of Pos.	Dimensions	
	B	D
200	10.450 265.43	9.900 251.46
80	4.450 113.03	3.900 99.06
60	3.450 87.63	2.900 73.66
40	2.450 62.23	1.900 48.26
30	1.950 49.53	1.400 35.56
20	1.450 36.83	.900 22.86

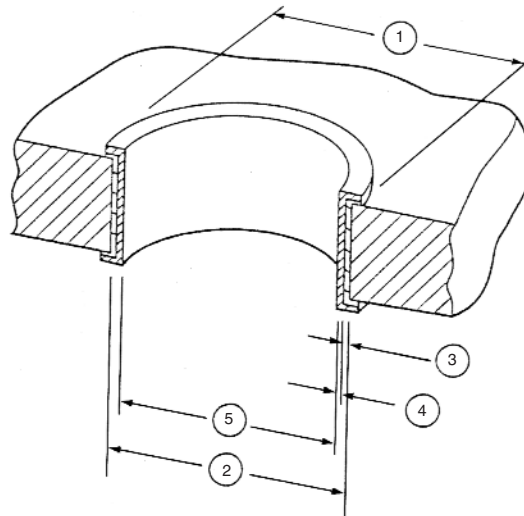
ACTION PIN Press-Fit Contacts



ACTION PIN contacts provide a reliable press-fit connection. Localized pressure in the interface area promotes oxide breakthrough and prevents corrosion in harsh environments to provide a reliable connection. Also, radial and axial distortion are controlled to meet today's standards for multilayer board applications.

PC Board Thickness

ACTION PIN contacts are designed for use in a variety of PC board thicknesses. However, certain ACTION PIN contacts are to be used in specific ranges of board thicknesses. For optimum performance, the recommended board thicknesses provided with the connector being used must be followed.



- ① Annular Ring (See Note)
- ② Drilled Hole
- ③ Copper Thickness
- ④ Tin-Lead Thickness
- ⑤ Plated-Through Hole

ACTION PIN Contact/PC Board Applications

Connector Type	ACTION PIN		Plating Thicknesses		Plated-Through Hole Diameter	Radial Hole Distortion	
	Contact Material Thickness	Drilled Hole Diameter	Copper *	Tin-Lead		Average	Maximum
Vertical Receptacle Assemblies	.025 0.64	.0453±.001 1.151±0.03	.001-.003 0.03-0.08	.0003 Min. 0.008	.037-.043 0.94-1.09	Not Specified	Not Specified

*Maximum hardness of copper layer is 150 Knoop
Note: Recommended annular ring diameter is hole diameter plus .020 [0.51]

Application Tooling

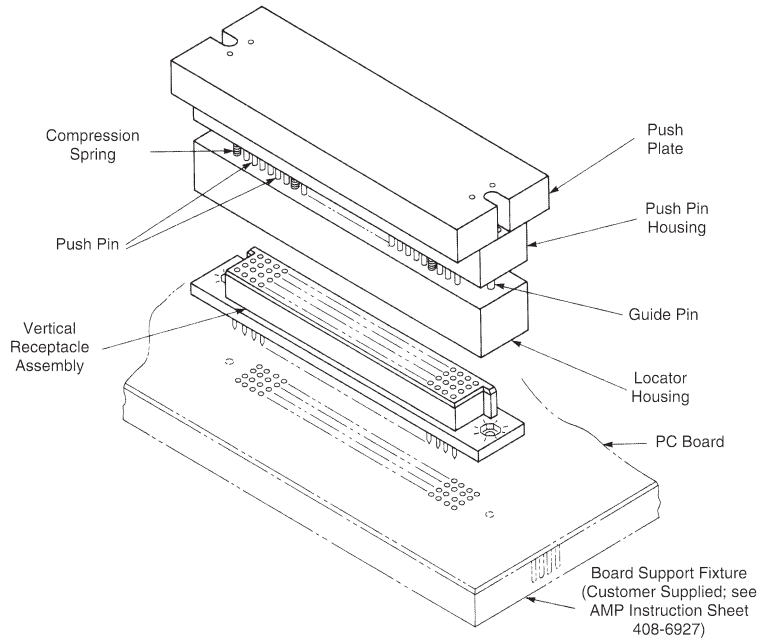
Receptacle assemblies with ACTION PIN contacts allow high speed, solderless backplane construction through reliable press-fit application. Press fitting connectors to printed circuit boards requires special seating tools which transfer application force directly to the contacts.

Each spring-loaded seating tool features a push plate, push pin housing, and locator housing. The push plate provides the bearing surface for the application tooling which forces the ACTION PIN posts into the PC board. The push pin housing holds the same number of push pins as the connector size (no. of contact positions). The locator housing fits over the connector body to align the components for proper seating. Compression springs (approximately one for every seven contacts) and guide pins (one at each end) provide tool alignment and stability.

Board support fixtures are used to support PC boards or backplanes while connectors are being assembled to the boards or backplanes. TE Connectivity Instruction Sheet 408-6927 provides recommendations for manufacturing board support fixtures.

Force applied to the tool to seat the connectors can be provided by the TE seating machines shown below, or by commercially available hand-operated arbor presses such as Greenerd 3A or 3B. Refer to Instruction Sheet 408-9027 for use of TE adapter kits with these presses.

For tooling information, contact Technical Support.



Receptacle Assembly Configuration			Seating Tool Numbers
No. of Rows	No. of Pins/Row	Total No. of Pins	
Four (without Guide Holes)	25	100	58279-2
	30	120	58279-4
	32	128	58279-8
	35	140	58279-9
	45	180	58279-5
	60	240	58279-3
	65	260	58279-7
Three (without Guide Holes)	67	268	58279-1
	75	300	58279-6
	32	96	58277-2
	33	99	58277-3
Two (without Guide Holes)	50	150	58277-4
	67	201	58277-1
	15	30	58280-4
	28	56	58280-1
	35	70	58280-6
	60	120	58280-5
	67	134	58280-2
	70	140	58280-3



MANTA Servo Electric Press

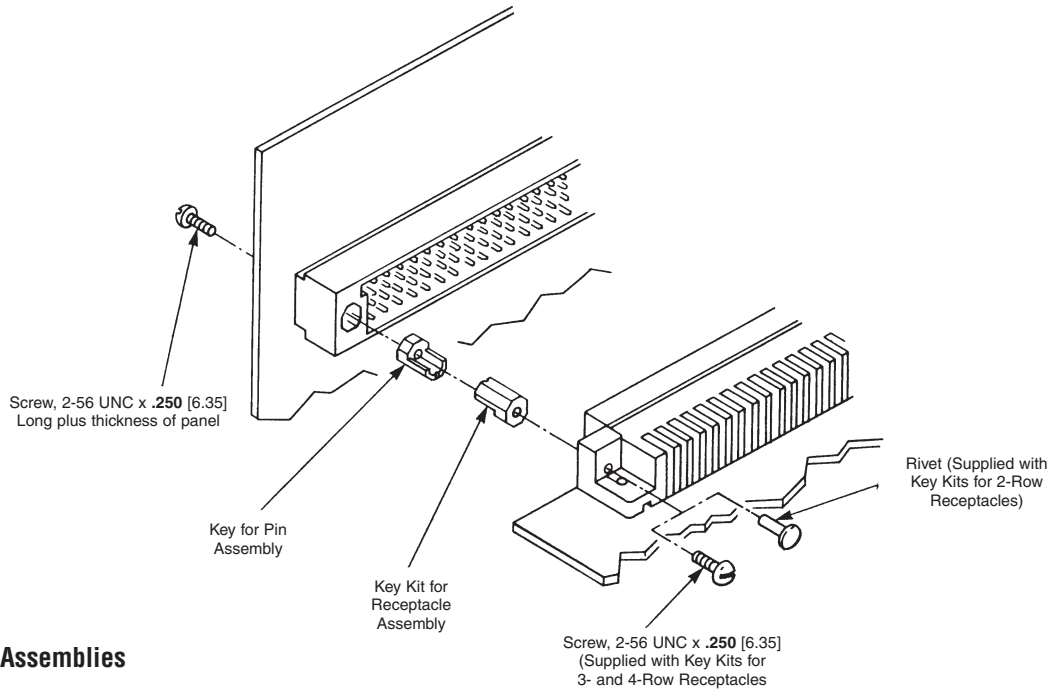
Electric Servo Press created to satisfy the increasing need for a "Low Cost" method of controlled connector pressing into today's complex circuit boards. The MANTA can precisely control force and speed of each pressing cycle. Quality feedback is accessible in the form of SPC analysis, display, and reports. The "C-Frame" design, with a 12-inch throat depth, accommodates a wide range of smaller printed circuit boards.



BMEP-3T/5T Bench Top Electric Servo Press (3 or 5 ton)

PC-controlled, cost effective bench mounted machine for semi-automatic pressing of ACTION PIN (Compliant Pin, Pressfit) connectors into printed circuit boards. The pressing force is delivered by an all-electric servomotor, providing precise control of force, speed, and seating height. A touch screen monitor provides a user-friendly interface and a bar code scanner provides PCB serial number input for product tracking.

Keying Hardware and Applications



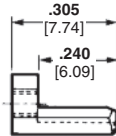
Keys for Pin Assemblies

Material and Finish

Passivated Stainless Steel

Key Part Number 530341-1

Key Part Number 530341-6
(contains 2 per package)



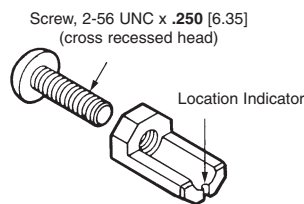
Note: Customer must supply screws; .250 [6.35] min. long, plus thickness of panel.

Key Kits for Three- and Four-Row Receptacles

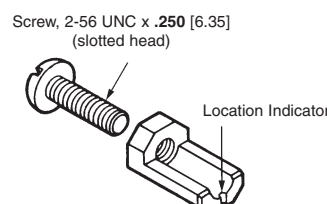
Material and Finish

Key — Passivated Stainless Steel

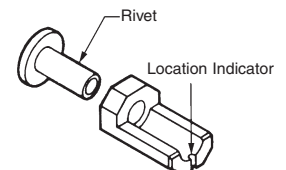
Screw — Passivated Stainless Steel



Kit Number 530341-7
(includes 2 keys and 2 screws)



Kit Number 530341-3
(includes 2 keys and 2 screws)



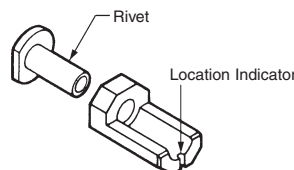
Kit Number 530341-5
(includes 2 keys and 2 rivets)
Note: Use Clinching Tool Number 91117-3
(See Instruction Sheet 408-6626.)

Key Kit for Two-Row Receptacles

Material and Finish

Key — Passivated Stainless Steel

Rivet — Nickel plated brass

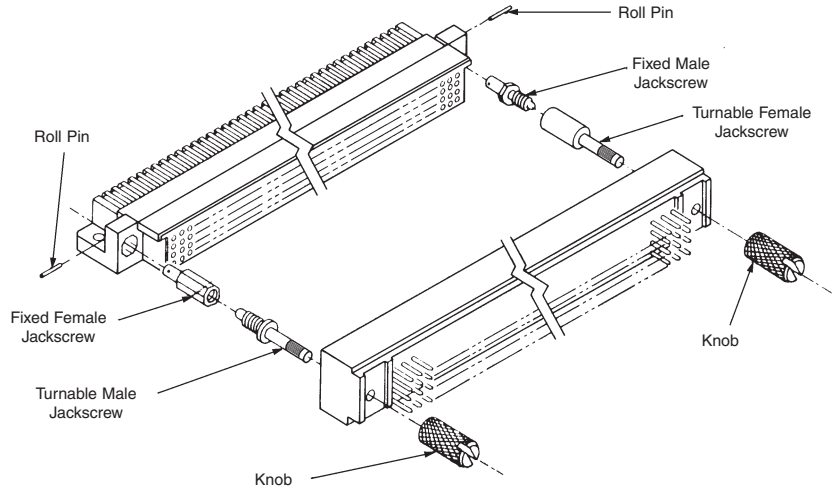


Kit Number 530341-4
(includes 2 keys and 2 rivets)
Note: Use Clinching Tool Number 91117-5
(See Instruction Sheet 408-9178.)

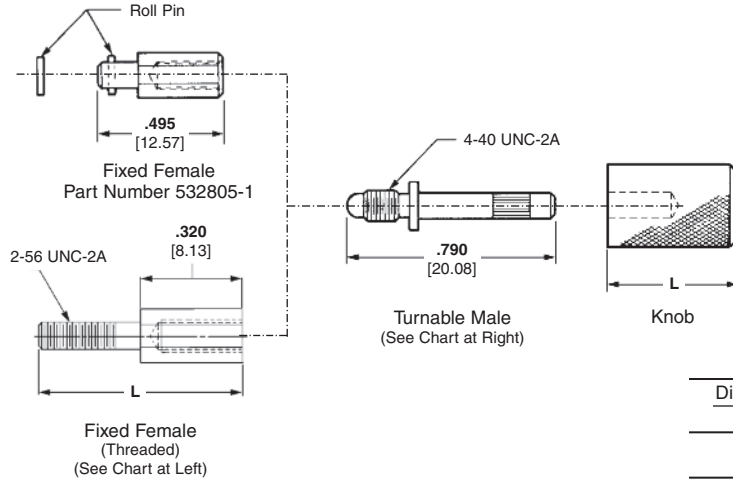
Mating Hardware and Applications

**Jackscrews for
Three- and Four-Row
Connectors Only**

See Instruction Sheet 408-6909.



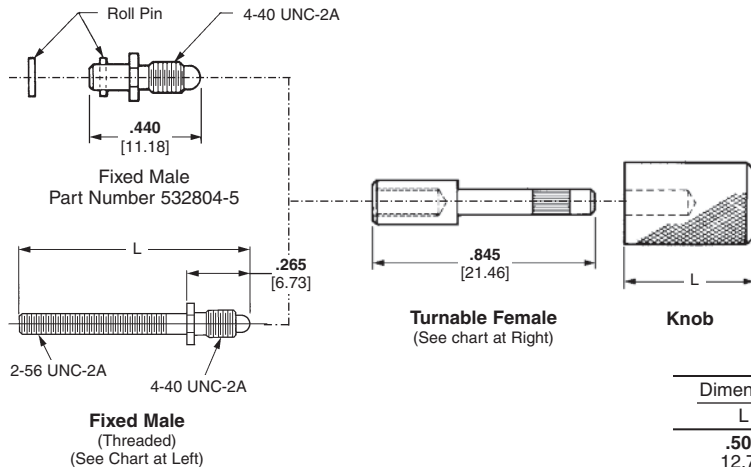
Dimension L	Material and Finish	Fixed Female (Threaded) Part Numbers
.750 19.05	Plain Stainless Steel	533424-1
	Passivated Stainless Steel	533424-2
.625 15.88	Plain Stainless Steel	533424-3
	Passivated Stainless Steel	533424-4
.525 14.61	Plain Stainless Steel	533424-5
	Passivated Stainless Steel	533424-6



Dimension L	Turnable Male Part Numbers
.500 12.70	532805-3*

*Knob with screwdriver slot

Dimension L	Material and Finish	Fixed Male (Threaded) Part Numbers
.695 17.65	Plain Stainless Steel	533423-1
	Passivated Stainless Steel	533423-2
.960 24.38	Plain Stainless Steel	533423-3



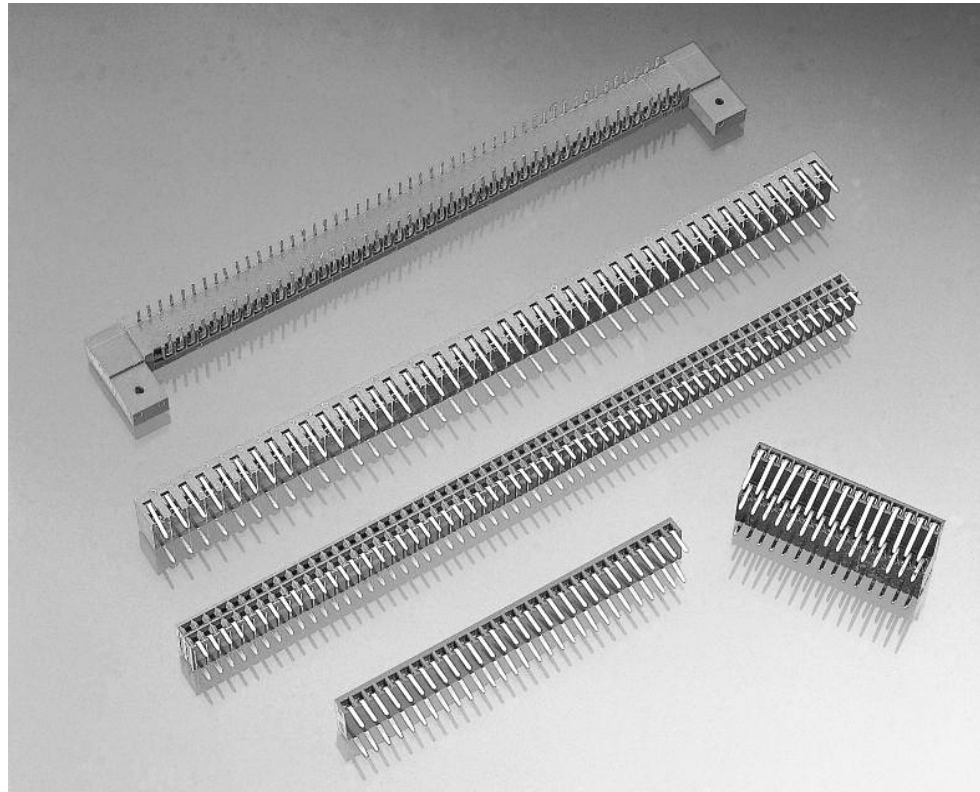
Dimension L	Turnable Male Part Numbers
.500 12.70	532804-3*

*Knob with screwdriver slot

Introduction

Product Facts

- Qualified to MIL-C-55302/127 and /128
- Mates with .025 x .025 [0.64 x 0.64] posts
- Dual cantilever spring contact design and built-in anti-overstress
- Wide misalignment tolerances
- One-piece phosphor bronze contacts, plated gold over nickel per MIL-C-55302
- .100 [2.54] centerline spacing
- Choice of single or double row assemblies
- Assemblies available for .062 [1.57] or .093 [2.36] thick PC boards
- Special right-angle receptacle configurations available



AMPMODU Receptacle Assemblies per MIL-C-55302 are specifically designed to meet today's need for a reliable, modular inter-connection system for advanced electronic packaging.

These right-angle assemblies mate with the electronic industry's popular, .025 x .025 [0.64 x 0.64] posts. This means that the AMPMODU Connector system may be used with a host of applications ... from individual PC board mount posts to complex post headers and connectors.

Housings are made of blue diallyl phthalate, 94V-0 rated thermoplastic, and are pre-loaded with phosphor bronze contacts, plated .000050 [0.00127] gold over .000050 [0.00127] nickel per MIL-C-55302. A special AMPMODU Receptacle Assembly is available for high temperature requirements. This double row, right-angle assembly has a housing made of polyphenylene sulfide (PPS) GST-40F, per MIL-M-24519 with a choice of contact platings.

Keying plugs are available for all assembly configurations.

Technical Features

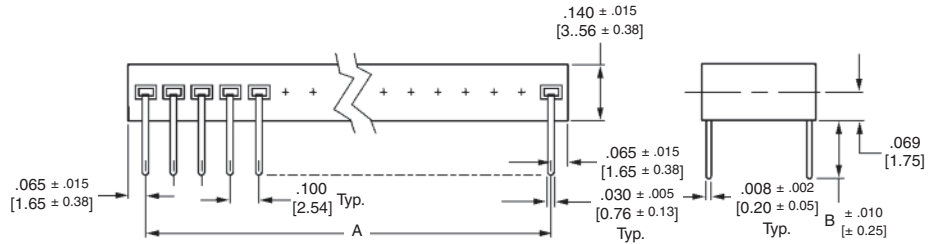
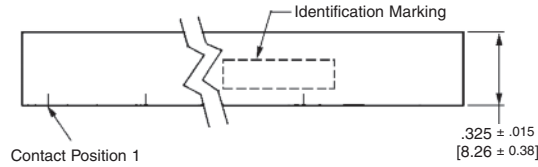
- Center Spacing** — 0.100 [2.54]
- Housing Materials** — Polyphenylene sulfide or diallyl phthalate
- Flammability Rating** — 94 V-0
- Contact Material** — Phosphor bronze
- Contact Finish** — .000050 [0.00127] Gold or gold flash
- Temperature Range** — -85° to 257°F [-65° to 125°C]
- Current Rating** — 3 amp max.
- Termination Resistance (max)** — 12 milliohms max.
- Performance Characteristics**
- Dielectric Withstand Voltage** — 750 Vac at sea level
- Insulation Resistance** — 5000 megohms minimum
- Contact Insertion Force** — 6 oz. [1.67 N] max. per contact
- Durability** — 500 cycles
- Vibration** — MIL-STD-1344 method 2005 Cond III (15G)
- Physical Shock** — MIL-STD-1344 method 2004 Cond G (100G)
- Thermal Shock** — MIL-STD-1344 method 1003 Cond A
- Temperature Humidity** — MIL-STD-1344 method 1002 Type II
- Technical Documents**
- Application spec. 114-25018

Receptacle Assemblies, Single Row

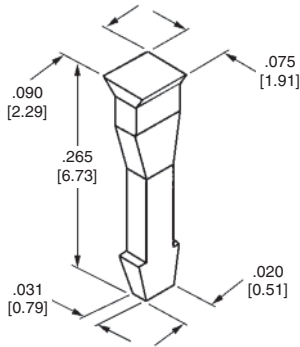
Material and Finish

Housing — In accordance with MIL-C-55302 or MIL-M-24519 type GST-40F

Contacts — In accordance with MIL-C-55302



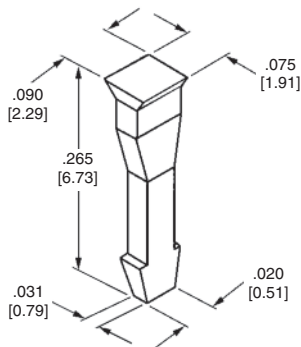
No. of Pos.	Dimensions		Board Thickness	Military Part No M55302/127-	AMP Part No.
	A	B			
2	.100	.175	.125	023B	102275-1
	2.54	4.45	3.18		
3	.200	.175	.125	033B	102275-2
	5.08	4.45	3.18		
4	.300	.175	.125	043B	102275-3
	7.62	4.45	3.18		
5	.400	.175	.125	053B	102275-4
	10.16	4.45	3.18		
6	.500	.115	.062	061B	87968-5
	12.70	2.92	1.57		
7	.600	.175	.125	073B	102275-6
	15.24	4.45	3.18		
8	.700	.175	.125	083B	102275-7
	17.78	4.45	3.18		
9	.800	.175	.125	093B	102275-8
	20.32	4.45	3.18		
10	.900	.175	.125	103B	102275-9
	22.86	4.45	3.18		
11	1.000	.175	.125	113B	1-102275-0
	25.40	4.45	3.18		



Keying Plug —
Military Part Number
M55302/127-00KY
Part Number 102188-1

Receptacle Assemblies, Single Row (Continued)

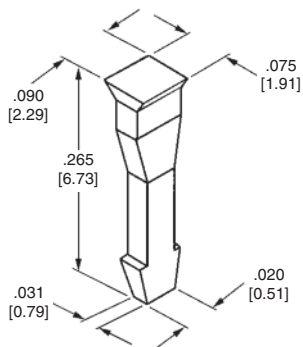
No. of Pos.	Dimensions		Board Thickness	Military Part No M55302/127-	AMP Part No.
	A	B			
12	1.100	.175	.125 3.18	123B	1-102275-1
	27.94	4.45			
13	1.200	.175	.125 3.18	133B	1-102275-2
	30.48	4.45			
15	1.400	.175	.125 3.18	153B	1-102275-4
	35.56	4.45			
16	1.500	.175	.125 3.18	163B	1-102275-5
	38.10	4.45			
17	1.600	.175	.125 3.18	173B	1-102275-6
	40.64	4.45			
18	1.700	.175	.125 3.18	183B	1-102275-7
	43.18	4.45			
19	1.800	.175	.125 3.18	193B	1-102275-8
	45.72	4.45			
20	1.900	.175	.125 3.18	203B	1-102275-9
	48.26	4.45			
21	2.000	.145 3.68	.093 2.36	212B	2-87971-0
	50.80	.175 4.45			
22	2.100	.175	.125 3.18	223B	2-102275-1
	5.34	4.45			
23	2.200	.175	.125 3.18	233B	2-102275-2
	55.88	4.45			
24	2.300	.175	.125 3.18	243B	2-102275-3
	58.42	4.45			
25	2.400	.175	.125 3.18	253B	2-102275-4
	60.96	4.45			
26	2.500	.175	.125 3.18	263B	2-102275-5
		4.45			
27	2.600	.145 3.68	.093 2.36	272B	2-87971-6
	66.04	.175 4.45			
28	2.700	.175	.125 3.18	283B	2-102275-7
	68.58	4.45			
29	2.800	.175	.125 3.18	293B	2-102275-8
	71.12	4.45			
30	2.900	.175	.125 3.18	303B	2-102275-9
	73.66	4.45			
31	3.000	.175	.125 3.18	313B	3-102275-0
	76.20	4.45			
32	3.100	.175	.125 3.18	323B	3-102275-1
	78.74	4.45			
33	3.200	.175	.125 3.18	333B	3-102275-2
	81.28	4.45			
34	3.300	.175	.125 3.18	343B	3-102275-3
	83.82	4.45			
35	3.400	.175	.125 3.18	353B	3-102275-4
	86.36	4.45			
36	3.500	.175	.125 3.18	363B	3-102275-5
	88.90	4.45			
37	3.600	.175	.125 4.45	373B	3-102275-6
	91.44	4.45			
38	3.700	.175	.125 3.18	383B	3-102275-7
	93.98	4.45			
39	3.800	.175	.125 3.18	393B	3-102275-8
	96.52	4.45			



Keying Plug —
Military Part Number
M55302/127-00KY
Part Number 102188-1

Receptacle Assemblies, Single Row (Continued)

No. of Pos.	Dimensions		Board Thickness	Military Part No M55302/127-	AMP Part No.
	A	B			
40	3.900	.145	.093	402B	3-87971-9
	99.06	3.68	2.36	403B	3-102275-9
41	4.000	.175	.125	413B	4-102275-0
	101.60	4.45	3.18	423B	4-102275-1
42	4.100	.175	.125	423B	4-102275-1
	104.14	4.45	3.18	433B	4-102275-2
43	4.200	.175	.125	433B	4-102275-2
	106.68	4.45	3.18	443B	4-102275-3
44	4.300	.175	.125	443B	4-102275-3
	109.22	4.45	3.18	453B	4-102275-4
45	4.400	.175	.125	453B	4-102275-4
	111.76	4.45	3.18	463B	4-102275-5
46	4.500	.175	.125	463B	4-102275-5
	114.30	4.45	3.18	473B	4-102275-6
47	4.600	.175	.125	473B	4-102275-6
	116.84	4.45	3.18	483B	4-102275-7
48	4.100	.175	.125	483B	4-102275-7
	119.38	4.45	3.18	493B	4-102275-8
49	4.800	.175	.125	493B	4-102275-8
	121.92	4.45	3.18	503B	4-102275-9
50	4.900	.175	.125	503B	4-102275-9
	124.46	4.45	3.18	513B	5-102275-0
51	5.000	.175	.125	513B	5-102275-0
	127.00	4.45	3.18	533B	5-102275-2
53	5.200	.175	.125	533B	5-102275-2
	132.08	4.45	3.18	543B	5-102275-3
54	5.300	.175	.125	543B	5-102275-3
	134.62	4.45	3.18	553B	5-102275-4
55	5.400	.175	.125	553B	5-102275-4
	137.16	4.45	3.18	563B	5-102275-5
56	5.500	.175	.125	563B	5-102275-5
	139.70	4.45	3.18	573B	5-102275-6
57	5.600	.175	.125	573B	5-102275-6
	142.24	4.45	3.18	583B	5-102275-7
58	5.700	.175	.125	583B	5-102275-7
	144.78	4.45	3.18	593B	5-102275-8
59	5.800	.175	.125	593B	5-102275-8
	147.32	4.45	3.18	603B	5-102275-9
60	5.900	.175	.125	603B	5-102275-9
	149.86	4.45	3.18	613B	6-102275-0
61	6.000	.175	.125	613B	6-102275-0
	152.40	4.45	3.18	623B	6-102275-1
62	6.100	.175	.125	623B	6-102275-1
	154.94	4.45	3.18	633B	6-102275-2
63	6.200	.175	.125	633B	6-102275-2
	157.48	4.45	3.18	643B	6-102275-3
64	6.300	.175	.125	643B	6-102275-3
	160.02	4.45	3.18	653B	6-102275-4
65	6.400	.175	.125	653B	6-102275-4
	162.56	4.45	3.18		



Keying Plug —
Military Part Number
M55302/127-00KY
Part Number 102188-1

Receptacle Assemblies, Double Row

Material and Finish

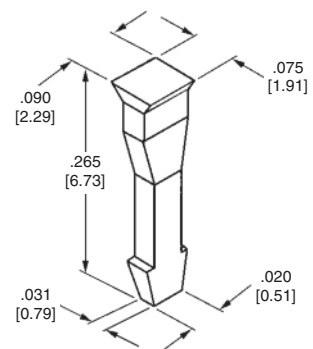
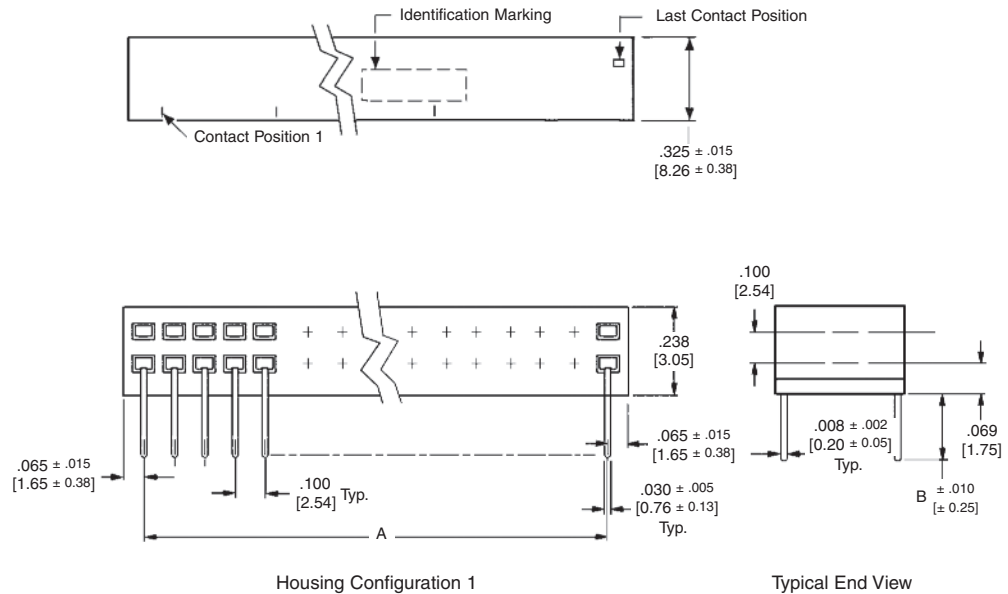
Housing — In accordance with MIL-C-55302 or MIL-M-24519 type GST-40F

Contacts — In accordance with MIL-C-55302

Plating Codes:

A — Gold flash over .000050 [0.00127] min. nickel on entire contact, .000050 [0.00127] min. gold on contact area

B — .000050 [0.00127] min. gold over .000050 [0.00127] min. nickel on the entire contact

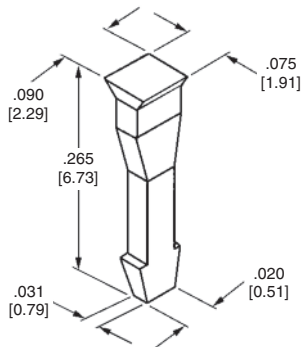


Keying Plug —
Military Part Number
M55302/127-00KY
Part Number 102188-1

No. of Pos.	Dimensions		Board Thickness	Plating Code A		Plating Code B	
	A	B		Military Part No M55302/128-	Part No.	Military Part No. M55302/128-	Part No.
4	.100 2.54	.115 2.92	.062 1.57	AA1A	87961-1	—	—
8	.300 7.62	.145 3.68	.093 2.36	AC1C	87964-3	—	—
10	.400 10.16	.115 2.92	.062 1.57	AD1A	87961-4	AD1B	87962-4
12	.500 12.70	.115 2.92	.062 1.57	AE1A	87961-5	—	—
				AE1C	87964-5	—	—
14	.600 15.24	.115 2.92	.062 1.57	AF1A	87961-6	AF1B	87962-6
16	.700 17.78	.115 2.92	.062 1.57	AG1A	87961-7	AG1B	87962-7
18	.800 20.32	.115 2.92	.062 1.57	—	—	AH1B	87962-8
				AH1C	87964-8	—	—
20	.900 22.86	.115 2.92	.062 1.57	AJ1A	87961-9	AJ1B	87962-9
				—	—	AJ1D	87965-9
22	1.000 25.40	.115 2.92	.062 1.57	AK1A	1-87961-0	AK1B	1-87962-0
				AK1E	1-102277-0	—	—
24	1.100 27.94	.115 2.92	.062 1.57	AL1A	1-87961-1	AL1B	1-87962-1
26	1.200 30.48	.115 2.92	.062 1.57	AM1A	1-87961-2	AM1B	1-87962-2
				AM1C	1-87964-2	—	—

Receptacle Assemblies, Double Row (Continued)

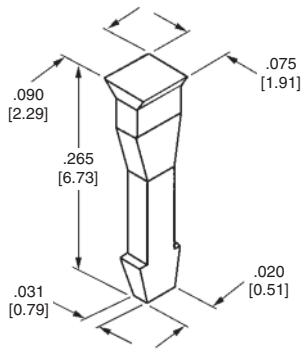
No. of Pos.	Dimensions		Board Thickness	Plating Code A		Plating Code B	
	A	B		Military Part No M55302/128-	Part No.	Military Part No. M55302/128-	Part No.
28	1.300 33.02	.115 2.92	.062 1.57	AN1A	1-87961-3	AN1B	1-87962-3
30	1.400 35.56	.115 2.92	.062 1.57	AP1A	1-87961-4	AP1B	1-87962-4
		.145 3.68	.093 2.36	AP1C	1-87964-4	—	—
32	1.500 38.10	.115 2.92	.062 1.57	AQ1A	1-87961-5	AQ1B	1-87962-5
34	1.600 40.64	.115 2.92	.062 1.57	—	—	AR1B	1-87962-6
		.145 3.68	.093 2.36	AR1C	1-87964-6	—	—
		.175 4.45	.125 3.18	AR1E	1-102277-6	—	—
36	1.700 43.18	.115 2.92	.062 1.57	BA1A	1-87961-7	BA1B	1-87962-7
		.145 3.68	.093 2.36	BA1C	1-87964-7	BA1D	1-87965-7
		.175 4.45	.125 3.18	BA1E	1-102277-7	—	—
38	1.800 45.72	.115 2.92	.062 1.57	BB1A	1-87961-8	BB1B	1-87962-8
		.175 4.45	.125 3.18	—	—	—	—
40	1.900 48.26	.115 2.92	.062 1.57	BC1A	1-87961-9	BC1B	1-87962-9
		.145 3.68	.093 2.36	BC1C	1-87964-9	—	—
42	2.000 50.80	.115 2.92	.062 1.57	BD1A	2-87961-0	BD1B	2-87962-0
		.145 3.68	.093 2.36	BD1C	2-87964-0	—	—
44	2.100 53.34	.115 2.92	.062 1.57	—	—	BE1B	2-87962-1
		.175 4.45	.125 3.18	—	—	BE1F	2-102278-1
46	2.200 55.88	.115 2.92	.062 1.57	BF1A	2-87961-2	BF1B	2-87962-2
		.145 3.68	.093 2.36	BF1C	2-87964-2	—	—
48	2.300 58.42	.115 2.92	.062 1.57	BG1A	2-87961-3	—	—
		.145 3.68	.093 2.36	BG1C	2-87964-3	—	—
50	2.400 60.96	.115 2.92	.062 1.57	BH1A	2-87961-4	BH1B	2-87962-4
		.145 3.68	.093 2.36	BH1C	2-87964-4	—	—
		.175 4.45	.125 3.18	BH1E	2-102277-4	—	—
52	2.500 63.50	.115 2.92	.062 1.57	BJ1A	2-87961-5	BJ1B	2-87962-5
		.145 3.68	.093 2.36	BJ1C	2-87964-5	—	—
54	2.600 66.04	.115 2.92	.062 1.57	—	—	BK1B	2-87962-6
56	2.700 68.58	.115 2.92	.062 1.57	BL1A	2-87961-7	BL1B	2-87962-7
58	2.800 71.12	.115 2.92	.062 1.57	BM1A	2-87961-8	BM1B	2-87962-8
60	2.900 73.66	.115 2.92	.062 1.57	BN1A	2-87961-9	BN1B	2-87962-9
		.175 4.45	.125 3.18	BN1E	2-102277-9	BN1F	2-102278-9



Keying Plug —
Military Part Number
M55302/127-00KY
Part Number 102188-1

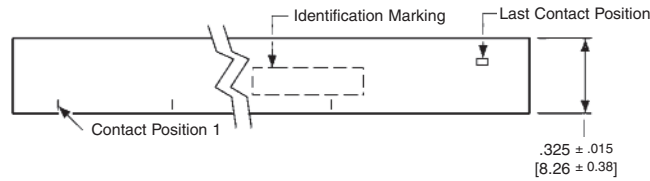
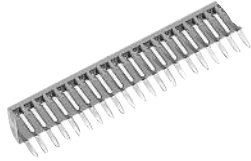
Receptacle Assemblies, Double Row (Continued)

No. of Pos.	Dimensions		Board Thickness	Plating Code A		Plating Code B	
	A	B		Military Part No M55302/128-	Part No.	Military Part No. M55302/128-	Part No.
62	3.000 76.20	.115 2.92	.062 1.57	—	—	BP1B	3-87962-0
		.145 3.68	.093 2.36	—	—	BP1D	3-87965-0
64	3.100 78.74	.115 2.92	.062 1.57	—	—	BQ1B	3-87962-1
		.115 2.92	.062 1.57	BR1A	3-87961-2	BR1B	3-87962-2
66	3.200 81.28	.115 2.92	.062 1.57	BR1E	3-102277-2	—	—
		.175 4.45	.125 3.18	—	—	—	—
68	3.300 83.82	.115 2.92	.062 1.57	CA1A	3-87961-3	CA1B	3-87962-3
		.145 3.68	.093 2.36	CA1C	3-87964-3	—	—
70	3.400 86.36	.115 2.92	.062 1.57	CB1A	3-87961-4	CB1B	3-87962-4
		.145 3.68	.093 2.36	CB1C	3-87964-4	—	—
72	3.500 88.90	.115 2.92	.062 1.57	CC1A	3-87961-5	—	—
74	3.600 91.44	.115 2.92	.062 1.57	CD1A	3-87961-6	CD1B	3-87962-6
76	3.700 93.98	.115 2.92	.062 1.57	CE1A	3-87961-7	—	—
78	3.800 96.52	.115 2.92	.062 1.57	—	—	CF1B	3-87962-8
		.145 3.68	.093 2.36	CF1C	3-87964-8	—	—
80	3.900 99.06	.115 2.92	.062 1.57	CG1A	3-87961-9	CG1B	3-87962-9
		.145 3.68	.093 2.36	CG1C	3-87964-9	—	—
86	4.200 106.68	.115 2.92	.062 1.57	—	—	CK1B	4-87962-2
88	4.300 109.22	.115 2.92	.062 1.57	CL1A	4-87961-3	—	—
		.145 3.68	.093 2.36	—	—	CL1D	4-87965-3
90	4.400 111.76	.115 2.92	.062 1.57	CM1A	4-87961-4	—	—
		.175 4.45	.125 3.18	—	—	CM1F	4-102278-4
96	4.700 119.38	.115 2.92	.062 1.57	—	—	CQ1B	4-87962-7
98	4.800 121.92	.115 2.92	.062 1.57	CR1A	4-87961-8	—	—
		.145 3.68	.093 2.36	CR1C	4-87964-8	—	—
100	4.900 124.46	.115 2.92	.062 1.57	DA1A	4-87961-9	DA1B	4-87962-9
106	5.200 132.08	.115 2.92	.062 1.57	DD1A	5-87961-2	—	—
108	5.300 134.62	.115 2.92	.062 1.57	DE1A	5-87961-3	—	—
110	5.400 137.16	.115 2.92	.062 1.57	DF1A	5-87961-4	—	—
116	5.700 144.78	.115 2.92	.062 1.57	DJ1A	5-87961-7	DJ1B	5-87962-7
		.145 3.68	.093 2.36	DJ1C	5-87964-7	DJ1D	5-87965-7
120	5.900 149.86	.115 2.92	.062 1.57	—	—	DL1B	5-87962-9
122	6.000 152.40	.115 2.92	.062 1.57	DM1A	6-87961-0	DM1B	6-87962-0
124	6.100 154.94	.115 2.92	.062 1.57	DN1A	6-87961-1	—	—
130	6.400 162.66	.115 2.92	.062 1.57	DR1A	6-87961-4	DR1B	6-87962-4



**Keying Plug —
Military Part Number
M55302/127-00KY
Part Number 102188-1**

Special Double Row Receptacle Assemblies



Material and Finish

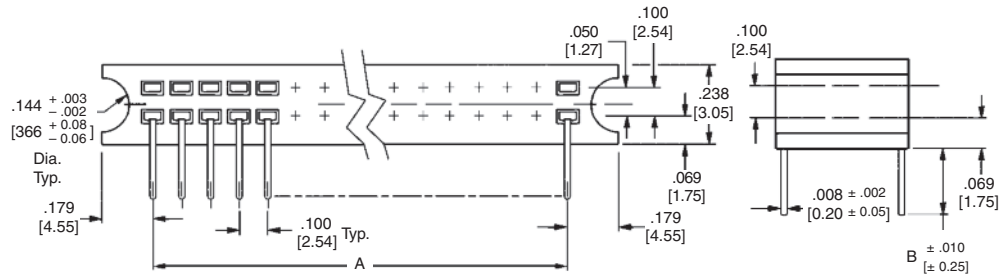
Housing — In accordance with MIL-C-55302 or MIL-M-24519 type GST-40F

Contacts — Per MIL-C-55302

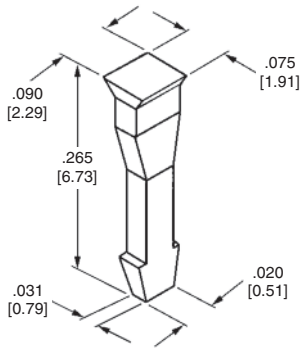
Plating Codes:

A — Gold flash over .000050 [0.00127] min. nickel on entire contact, .000050 [0.00127] min. gold on contact area

B — .000050 [0.00127] min. gold over .000050 [0.00127] min. nickel on the entire contact



No. of Pos.	Dimensions		Board Thickness	Plating Code A		Plating Code B	
	A	B		Military Part No M55302/128-	Part No.	Military Part No. M55302/128-	Part No.
22	1.000 25.40	.115 2.92	.062 1.57	AK2A	102192-5	—	—
26	1.200 30.48	.175 4.45	.125 3.18	AM2E	102281-6	—	—
50	2.400 60.96	.115 2.92	.062 1.57	BH2A	102192-8	—	—
		.145 3.68	.093 2.36	—	—	BH2D	102196-8
54	2.600 66.04	.115 2.92	.062 1.57	—	—	BK2B	102193-3
58	2.800 71.12	.115 2.92	.062 1.57	BM2A	102192-2	BM2B	102193-2
60	2.900 73.66	.115 2.92	.062 1.57	BN2A	102192-4	—	—
80	3.900 99.06	.115 2.92	.062 1.57	CG2A	102192-9	—	—
84	4.100 104.14	.115 2.92	.062 1.57	—	—	CJ2B	102193-1
100	4.900 124.46	.115 2.92	.062 1.57	DA2A	1-102192-0	DA2B	1-102193-0
102	5.000 127.00	.115 2.92	.062 1.57	—	—	DB2B	102193-7



Keying Plug —
Military Part Number
M55302/127-00KY
Part Number 102188-1

Introduction

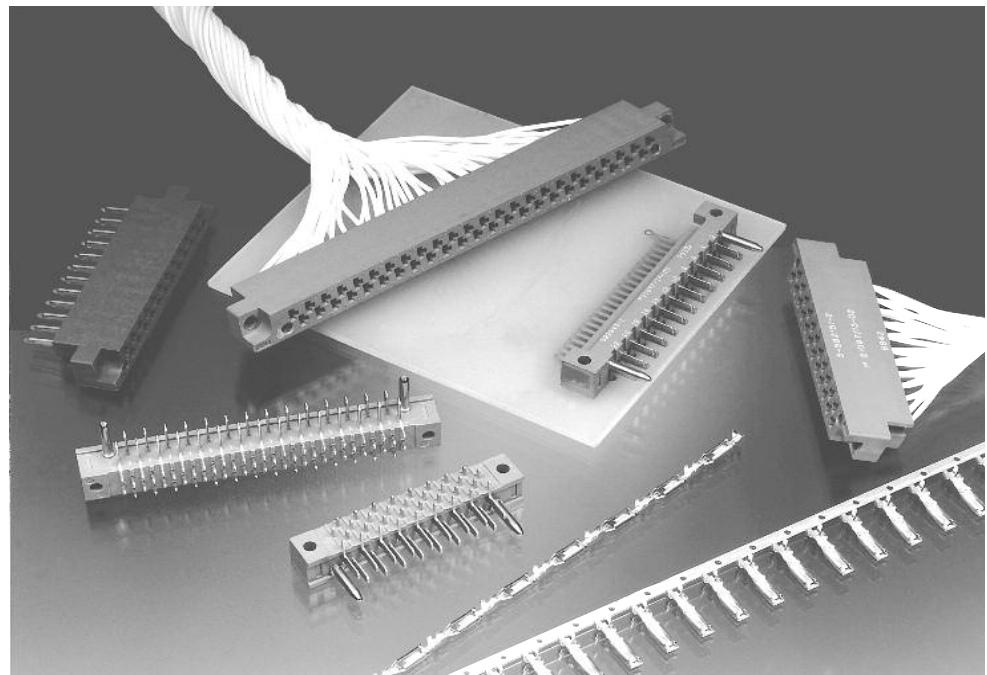
Product Facts

AMP-BLADE II Connectors

- Selective gold plating for economy with high performance
- Glass-filled polyester housing

AMP-BLADE and Military Connectors

- Full gold plating
- Diallyl phthalate housing rated from -85°F to 257°F [-65°C to 125°C]
- 5 amps per contact
- Recognized under the Component Program of Underwriters Laboratories Inc. File No. E28476



Various technical documents are available for your use:

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

- 108-9004 Diallyl Phthalate
- 108-9009 Phenolic
- 108-9201 Contact Crimp

Instruction Sheets provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.

Instructional material covering operation, setup, maintenance, repair, etc. is included with each machine, tool or die set. If this material is required prior to receiving your tooling, contact Technical Support for the applicable document.

Electrical Characteristics

- Contact Rating** — 5 amps
- Operating Temperature** — -85° to 257°F [-65° to 125°C] (Military)

For applications requiring the highest level of conductivity and reliability, AMP-BLADE Two-Piece Printed Circuit Edge Connectors meet all applicable performance requirements of MIL-C-21097.

The blade and receptacle design provides multiple areas of contact for maximum conductivity. Gold-over-nickel plating in mating areas of the contacts prevents metal migration and oxide build-up for additional reliability. Controlled insertion and extraction forces permit easy mating and unmating of connector assemblies.

A guide system helps prevent contact damage and provides positive alignment for reliable mating of connector halves.

The receptacle half of this two-piece connector accepts a variety of contact designs, but requires only that number of contacts which fulfills circuitry needs.

Crimp snap-in contacts are available in loose-piece or, to further reduce installed costs, in strip form for application by high-speed, automatic compression-crimping equipment.

Post-type contacts are specifically designed for wiring TE Connectivity TERMI-POINT clips and tools. The connectors with post-type contacts also adapt to wrap-type terminations.

The split eyelet contact simplifies bus wiring by permitting wire to be easily snapped into the contact notch for soldering. Each contact accepts up to two 18 AWG [0.8 to 0.9 mm²] stranded or 16 AWG [1.25 to 1.4 mm²] solid wires.

High reliability, versatility and speed of assembly are features which recommend the AMP-BLADE Two-Piece Printed Circuit Edge Connectors for dense wiring in applications where rugged serviceability is a prime consideration.

Construction

- Contact Material** — Phosphor bronze per QQ-B-750
- Contact Plating** — **Gold plate** — MIL-G-45204; **Nickel plate** — QQ-N-290 (thickness as specified); Tin-lead per MIL-T-10727, Type 1, on solder tails
- Contact Identification** — Cavities identified on both faces of receptacle block

Performance

This connector meets performance requirements of MIL-C-21097

Altitude	Test Voltage (AC RMS)
Sea level	1,800 VAC
50,000 feet [15,240 m]	700 VAC
70,000 feet [21,336 m]	500 VAC

Individual-Contact Engaging and Separating Forces —

2 ounces to 16 ounces [0.6 N to 4.5 N]

Contact Resistance —

25 millivolts maximum at 5 amps

Vibration Tolerance —

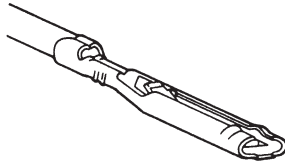
10 to 2,000 hz. @ 15Gs per method 204B of MIL STD 202

Durability —

Gold Thickness	Cycles
.000015 0.00038	100
.000030 0.00076	250
.000050 0.00127	500

AMP-BLADE Connector for Snap-In Receptacle Contacts

Crimp, Snap-In Receptacle Contacts



Materials

Contact — Phosphor bronze

1 Finish — Selective gold plating in contact mating area over .000030 [0.00076] nickel, see table for gold thicknesses; tin-lead in wire barrel

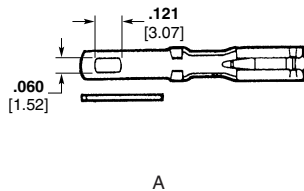
2 Finish — RoHS Part Numbers are same as above except for tin in wire barrel

Wire (Insulation) Ranges	Gold Plate Thickness	Side Feed Contact Part Number	
		Strip Form	Loose Piece*
24-20 AWG 0.2-0.5 mm ² (.040-.080) (1.02-2.03)	.000030 0.00076	531586-31	531586-61
		5-531586-32	5-531586-62
28-24 AWG 0.09-0.2 mm ² (.030-.060) (0.76-1.52)	.000050 0.00127	531586-4	—
		531587-3	531587-6
1: 18 AWG 0.8-0.9 mm ² or 2: 20 or 22 AWG 0.3-0.6 mm ² (.067-.090) (1.70-2.28)	.000015 0.00038	—	—
		531589-31 5-531589-32	531589-6

*See page 1-109 for crimping tool.

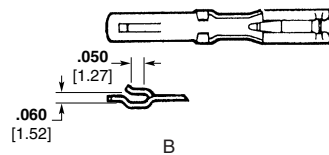
Wire Range		Insulation Range	Commercial Type		Military Type		
			End Feed Strip Part No.	Loose Piece Part No.	Military Part No.	End Feed Strip Part No.	Loose Piece Part No.
24-20	0.2-0.6	.040-.080 1.02-2.03	66005-2	66010-2	21097/16-03	66005-3	66010-3
28-24	0.08-0.2	.030-.060 0.76-1.52	—	66011-2	21097/16-01	66009-3	66011-3
(2)20 or (2)22	0.183 or 0.643	(2).045 to (2)1.14 (2).072 to (2)1.83	66021-2	66026-2	21097/16-04	66021-3	66026-3
18	0.8	.067-.090 1.70-2.29	66021-2	66026-2	21097/16-04	66021-3	66026-3
28-24	0.08-0.2	.078 1.98	66027-2	—	21097/16-02	66027-3	—

Solder—Tab Receptacle Contacts



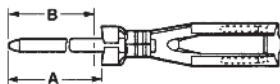
Materials

Contact — Phosphor bronze



Type	Maximum Extension Beyond Back Face of Block	Part Numbers—Loose Piece	
		Commercial Type	Gold Plate Thickness .000030 [0.00076] over .000030 [0.00076] Nickel
A	.390 9.91	66086-2	
B	.375 9.52	66086-4	

Post-Type Receptacle Contacts



Materials

Contact — Phosphor bronze

1 Finish — Selective gold plating in contact mating area over .000030 [0.00076] nickel (see table for gold thicknesses); posts, tin plated

2 Finish — RoHS Part Numbers have same finish as above except for tin on posts

Dimensions		Gold Plate Thickness	Part Numbers - Loose Piece	
A	B*		.045 x .045 [1.14 x 1.14] Posts	
.410 10.41	.370 9.40	.000030 0.00076	1-582364-11 6-582364-12	
.640 16.26	.600 15.24	.000030 0.00076	1-582364-21	
.810 20.57	.770 19.56	.000030 0.00076	1-582364-31	
1.040 26.42	1.000 25.4	.000030 0.00076	1-582364-41	

*Post length after inserted into housing.

Board Half Housing Pre-loaded with Blade Type Contacts

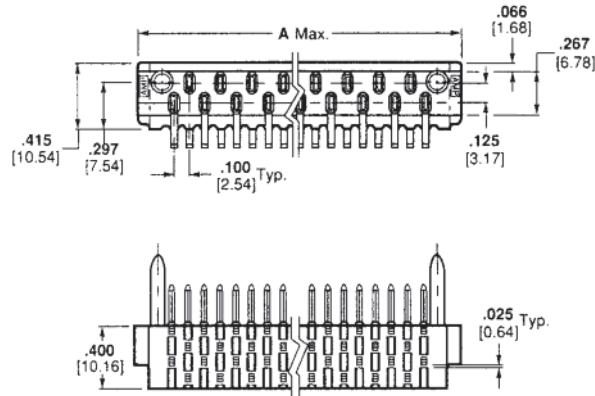
Housing without Mounting Holes

Materials

Housing — Diallyl phthalate

Blade Contact — Gilding material

Finish — Selective gold plating in contact mating area over .000030 [0.00076] min. nickel. See table for gold thicknesses



No. of Positions	A (Max.)	Printed Circuit Board Thickness	Military Type CS	
			Military Part No. Gold Plating Thickness .000050 [0.00127]	Diallyl Phthalate Housing Part No.
17	2.070 52.58	.125 3.18	21097/15-03	—
		.063 1.59	21097/15-04	582843-9
23	2.670 67.80	.094 2.38	21097/15-05	2-582843-0
		.125 3.18	21097/15-06	3-582843-2
		.063 1.59	21097/15-10	1-582843-1
35	3.870 98.30	.094 2.38	21097/15-11	2-582843-2
		.063 1.59	21097/15-13	1-582843-2
41	4.470 113.54	.094 2.38	21097/15-14	2-582843-3
		.063 1.59	21097/15-16	1-582843-3
47	5.070 128.80	.125 3.18	21097/15-18	3-582843-6

Notes:

- AMP-BLADE contacts (gold plated) are molded into housing in predetermined positions to mate with receptacle housing.
- Connectors can be furnished with the two middle rows of lines removed to fit existing board hole patterns.

1
Printed Circuit Board Connectors

Board Half Housing Pre-loaded with Blade Type Contacts (Continued)

Housing with Mounting Holes

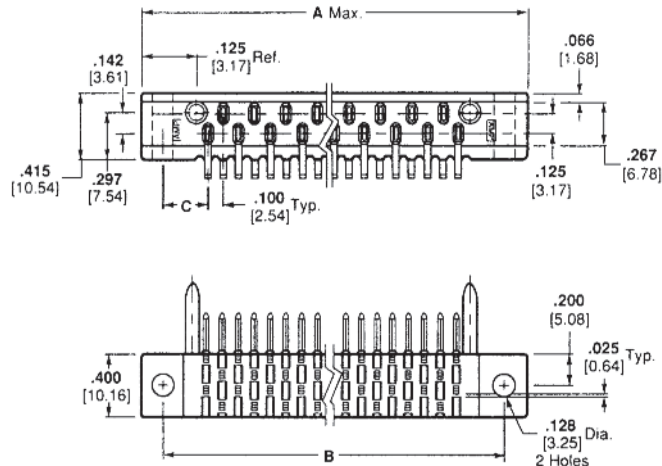
Materials

Housing — Diallyl phthalate

Blade Contact — Gilding metal

3 Finish — Selective gold plating in contact mating area over .000030 [0.00076] min. nickel. See table for gold thicknesses. Gold flash on tails (2 rows) and tin-lead on remaining tails.

4 Finish — RoHS Part Numbers are same as above except for tin on remaining tails



No. of Positions	A (Max.)	B	C	Printed Circuit Board Thickness	Commercial Type		Military Type CS	
					Diallyl Phthalate Housing		Diallyl Phthalate Housing	
					Gold Plate Thickness .000015 [0.00030]	Gold Plate Thickness .000030 [0.00076]	Military Part No. Gold Plating Thickness .000050 [0.00127]	Part No.
17	2.390 60.70	2.130 54.10	.265 6.73	.063 1.59	1-582390-1 ³	3-582152-1 ³ 3-5582152-1 ⁴	21097/14-01	582843-2
				.094 2.38	—	—	21097/14-02	1-582843-4
				.125 3.18	—	—	21097/14-03	2-582843-5
23	2.990 54.10	2.730 69.34	.265 6.73	.063 1.59	—	3-582152-2 ³ 3-5582152-2 ⁴	21097/14-04	582843-3
				.094 2.38	—	—	21097/14-05	582843-1
				.125 3.18	—	—	21097/14-06	2-582843-6
29	3.590 91.19	3.330 84.58	.265 6.73	.063 1.59	1-582390-3 ³ 1-5582390-3 ⁴	3-582152-3 ³ 3-5582152-3 ⁴	21097/14-07	582843-4
				.094 2.38	2-582390-3 ³ 2-5582390-3 ⁴	—	21097/14-08	1-582843-5
				.125 3.18	—	—	21097/14-12	2-582843-8
35	4.190 106.43	3.930 99.82	.265 6.73	.063 1.59	1-582390-4 ³ 1-5582390-4 ⁴	3-582152-4 ³ 3-5582152-4 ⁴	21097/14-10	582843-5
				.094 2.38	2-582390-4 ³ 2-5582390-4 ⁴	6-582152-4 ³ 6-5582152-4 ⁴	21097/14-11	1-582843-6
				.125 3.18	—	—	21097/14-12	2-582843-8
41	4.790 121.67	4.530 115.06	.265 6.73	.063 1.59	1-582390-5 ³	3-582152-5 ³ 3-5582152-5 ⁴	21097/14-13	582843-6
				.094 2.38	—	6-582152-5 ³ 6-5582152-5 ⁴	21097/14-14	1-582843-7
				.125 3.18	3-582390-5 ³ 3-5582390-5 ⁴	9-582152-5 ³	—	—
47	5.623 142.82	5.363 136.22	.381 9.68	.063 1.59	—	3-582308-1 ³ 3-5582308-1 ⁴	21097/14-16	582843-7
				.094 2.38	2-582390-6 ³ 2-5582390-6 ⁴	6-582308-1 ³	21097/14-17	1-582843-8
				.125 4.65	3-582390-6 ³	—	21097/14-18	3-582843-0

Notes:

- AMP-BLADE contacts (gold plated) are molded into housing in predetermined positions to mate with receptacle housing.
- Connectors can be furnished with the two middle rows of lines removed to fit existing board hole patterns.

Wire-Half Assemblies and Housings

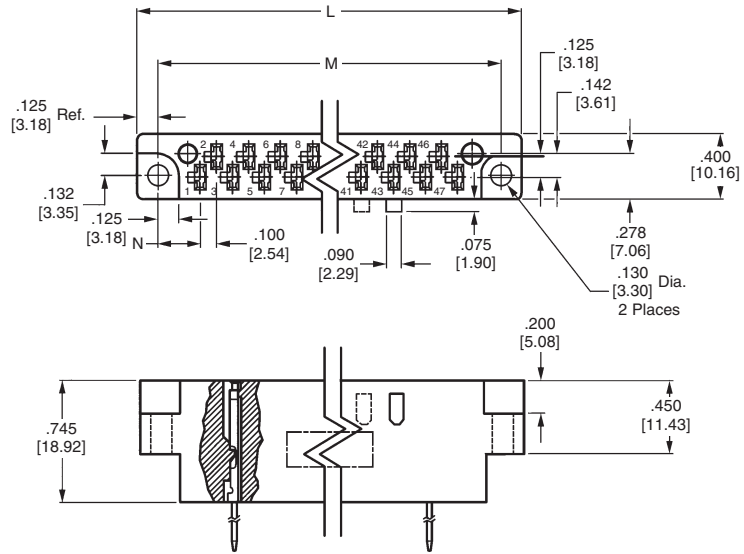
Pre-loaded Assemblies for Crimp Contacts, TERMI-POINT Clip or Wrap-Type Post Contacts, Solder/Weld Contacts

Materials

Housing — Diallyl phthalate glass-filled polyester, green

Contact — Phosphor bronze

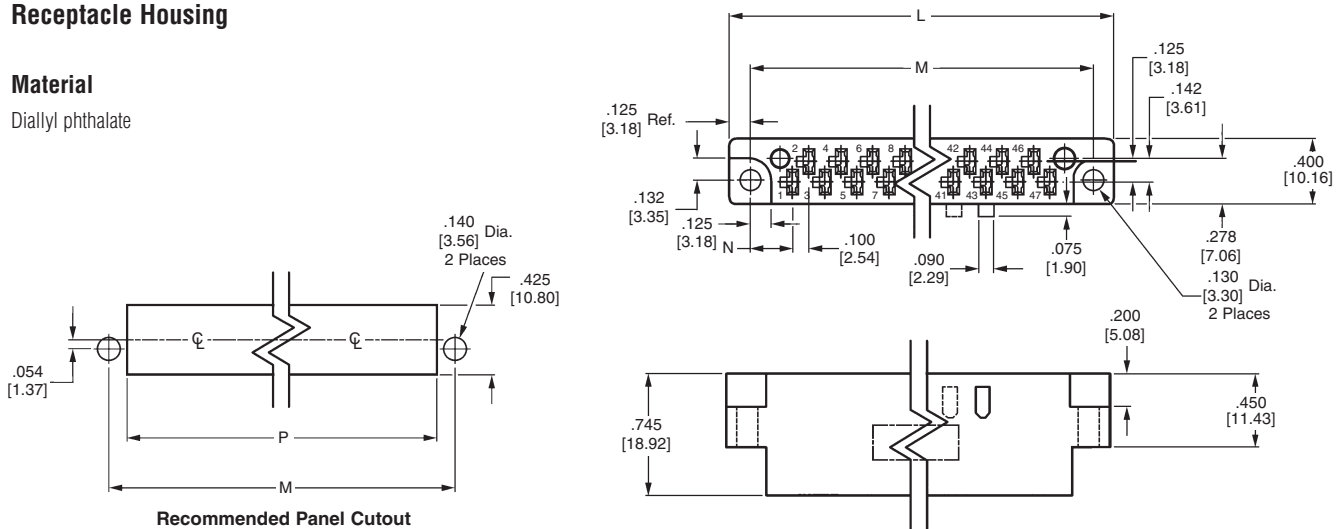
Posts — Brass, tin plated



Receptacle Housing

Material

Diallyl phthalate



No. of Pos.	Post Length	in.	mm	No. of Clip or Wrap Type Terminations	Dimensions			Cutout Dim. for Mounting P	Diallyl Phthalate		
					L	M	N		Preloaded Housing Part No.		
									.031 x .062 [0.79 x 1.57] Post Gold Plate Thickness .00030 [0.00076]		
								Housings for Crimp or Eyelet Type Contact			
								Commercial Type Part No.	Military Type CR-Receptacle Part No.	Part No.	
17	.370	9.40		1	2.390 60.71	2.130 54.10	.265 6.73	1.910 48.51	582828-4	3-582151-1	21097/13-01 5-582151-1
23	.770	19.65		3	2.990 75.95	2.730 69.34	.265 6.73	2.510 63.75	—	3-582151-2	21097/13-02 5-582151-2
29	1.000	25.40		4	3.590 91.19	3.330 84.58	.265 6.73	3.110 78.99	582830-1	3-582151-3	21097/13-03 5-582151-3
	.770	19.65		3					582830-2		
	.370	9.40		1					—		
35	1.000	25.40		4	4.190 106.43	3.930 99.82	.265 6.73	3.710 94.23	582831-1	3-582151-4	21097/13-04 5-582151-4
	.770	19.65		3					—		
	.600	15.24		2					—		
	.370	9.40		1					582831-4		
41	.770	19.65		3	4.790 121.67	4.530 115.06	.265 6.73	4.310 109.47	—	3-582151-5	21097/13-05 5-582151-5
	.600	15.24		2					—		
	.370	9.40		1					582832-4		
47	1.000	25.40		4	5.623 142.82	5.363 136.22	.381 9.68	5.143 130.63	582819-1	3-582307-1	21097/13-06 5-582307-1
	.770	19.65		3					582819-2		
	.600	15.24		2					—		
	.370	9.40		1					—		

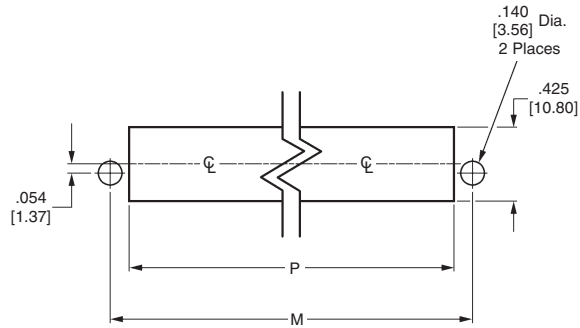
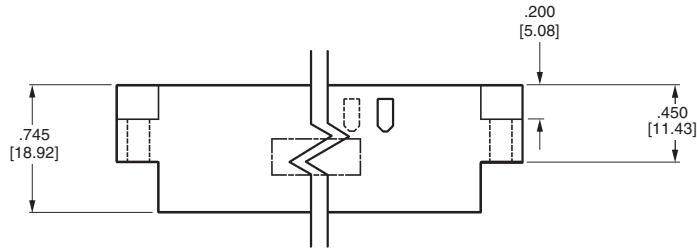
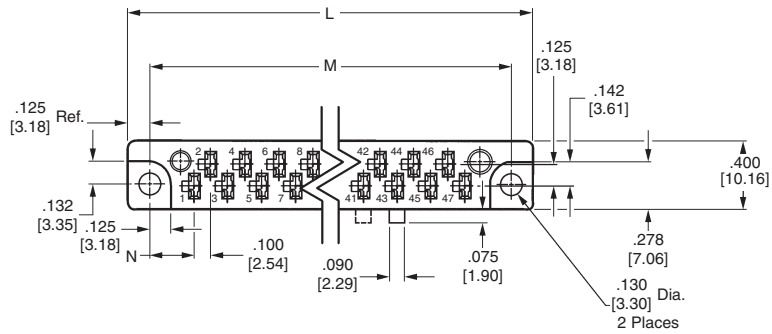
Receptacle Housings for Crimp Snap-in Contacts

Material

Glass-filled polyester, green

Related Product Data

Contact Part Numbers —
page 1-103

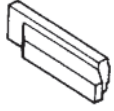


Recommended Panel Cutout

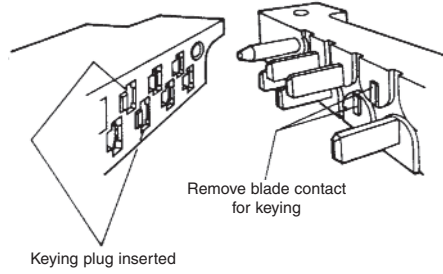
No. of Pos.	Dimensions				AMP Part Number
	L	M	N	P	
17	2.390 60.71	2.130 54.10	.265 6.73	1.910 48.51	531590-1
23	2.990 75.95	2.730 69.34	.265 6.73	2.510 63.75	531590-2
29	3.590 91.19	3.330 84.58	.265 6.73	3.110 78.99	531590-3
35	4.190 106.43	3.930 99.82	.265 6.73	3.710 94.23	531590-4
41	4.790 121.67	4.530 115.06	.265 6.73	4.310 109.47	531590-5
47	5.623 142.82	5.363 136.22	.381 9.68	5.143 130.63	531590-6

AMP-BLADE Connector Keying

Keying Plugs



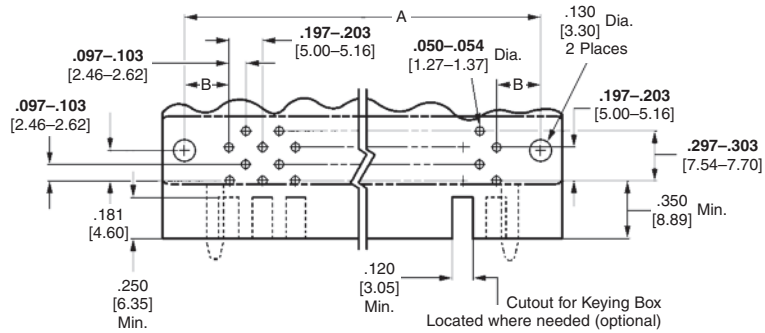
Keying Plug — Nylon
Part Number 1-582156-9
Military Part Number 21097/11-07



Keying of the connector can be achieved by plugging receptacle cavities. Insert keying plug into mating side of receptacle housing cavity. Remove corresponding blade contact from blade housing using tool number 811145.

Printed Circuit Board Layout

No. of Pos.	Dimensions	
	A	B
17	2.130 54.10	.265 6.73
23	2.730 69.34	.265 6.73
29	3.330 84.58	.265 6.73
35	3.930 99.82	.265 6.73
41	4.530 115.06	.265 6.73
47	5.363 136.22	.381 9.68

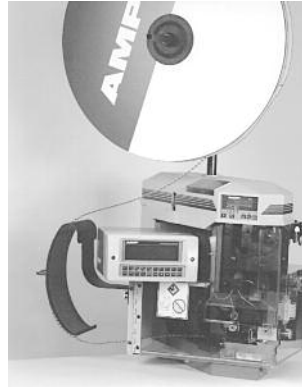


Note: If existing printed circuit board layout does not include the two middle rows of holes, TE Connectivity can supply the connector with the middle rows of tines removed.

Application Tooling

AMP-O-LECTRIC Machine

Substantial savings and the benefits of mass production are obtained with the AMP-BLADE Printed Circuit Connector through the use of AMP automatic machines. The AMP-BLADE receptacle contacts are available in strip form for this use (see table on AMP-BLADE receptacle contacts) and can be terminated to wire leads at rates up to 1500 per hour, depending on operator skill. Contact TE Connectivity for complete specifications and part numbers.

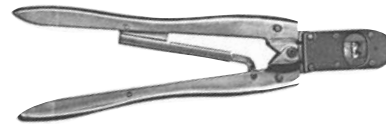


Extraction Tool



**Receptacle Contact
Extraction Tool**
Part Number 465199-1
Military Part Number M21097/18-01

Hand Crimping Tools



Hand Tool Part Number	Loose-Piece Receptacle Contact Part Number	Wire Combinations
91555-1	66010	One 24, one 22 or one 20
	531586	Two 24 or two 22
59524-1	66010	One 22 or one 20
	66011	One 26 or one 24
	531587	One 28, one 26 or one 24
59525-1	66026	Two 22 or two 20
	531589	
90005-1	66026	Two 20, one 18 or one 20
	531589	Two 22 or three 22