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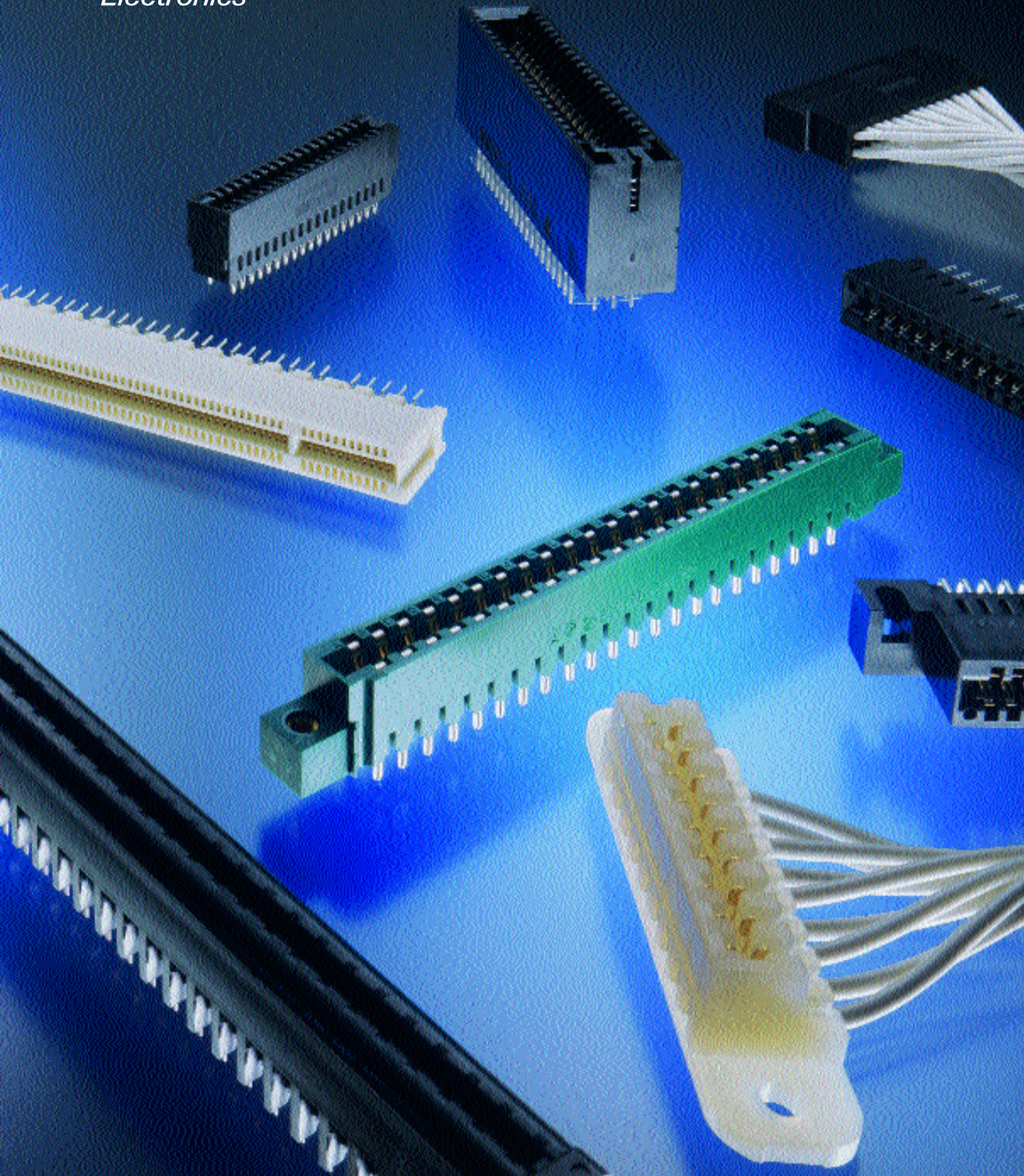


**tyco**

*Electronics*

**Card Edge Connectors**  
Catalog 1654080 Issued 7-03

**AMP**





**Introduction**

This catalog contains product descriptions of AMP Card Edge Connectors. These connectors are presented in three groups: Solder Type Board-to-Board, Press-fit Board-to-Board, and Wire-to-Board connectors.

To assist you in the selection of the appropriate connector for your application, a selection guide is provided at the beginning of each section. See the Table of Contents on the following page for the exact location.

A comprehensive description and features of a partic-

ular printed circuit board connector family are provided at the beginning of that section. Various technical documents are referenced in the connector family sections and are listed and described at the rear of this catalog.

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- Technical Documents
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**Dimensioning:**

Dimensions are in inches and millimeters unless specified otherwise. Values in brackets are metric equivalents.

Metric symbols used are:

- m (meter)
- mm (millimeter)
- mm<sup>2</sup> (square millimeter)
- kg (kilogram)
- C (Celsius)
- N (newton)

**Note:** Dimensions in this catalog are for reference purposes only. Customer drawings are available upon request.

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**Selection Guide, Board-to-Board Connectors**

Selection Guide

**Introduction**

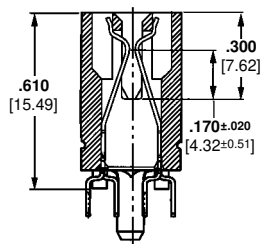
Board-to-board (mother/daughter board) connectors are ideally suited to back-plane wiring or any other application requiring the circuit connection of one printed circuit board to another. Designed to shorten manufacturing time and reduce applied costs, these one-step, pre-assembled connectors are ready for mounting and mass insertion.

Many of the connectors are available with the proven and reliable ACTION PIN contact. This unique contact has superior electrical and physical characteristics that are top of the line in the industry.

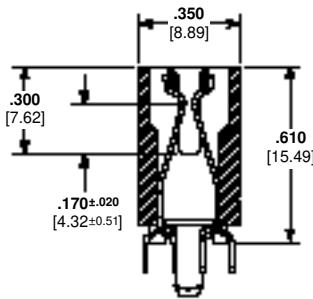
Board-to-board connectors come in a range of contact centerline spacings of .050 [1.27] to .156 [3.96]. A wide range of dual position sizes and post styles are available. One family of connectors features zero insertion force of the daughter board, along with a choice of actuating devices. A variety of housing and contact materials further expands the choice of connectors available to meet many application requirements.

To help in choosing a connector for your application, a Selection Guide is provided on pages 4 through 6.

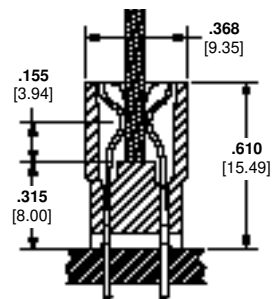
**Standard Edge .050 Series PCI Connectors (Pages 7-10)**



**Standard Edge .050 Series Connectors (Pages 11-14)**



**Standard Edge II Connectors (.100 and .125 Centerline) (Pages 15-27)**



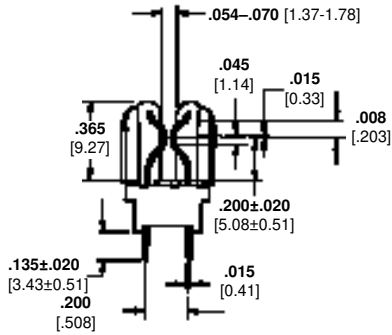
**Centerlines**

.050 [1.27]	X	X	
.100 [2.54]			X
.125 [3.18]			X
.150 [3.81]			
.156 [3.96]			

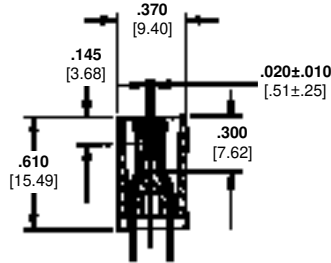
**Tail Styles**

Solder	X	X	X
Right-Angle Solder			X
Wrap-Type			X
Card Extender			X
Solder Eyelet			
Press-Fit			
Surface-Mount			

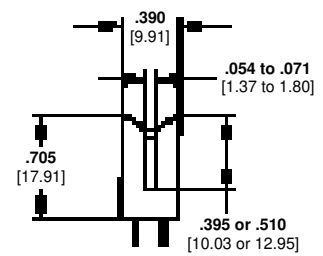
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**Cantilever Beam Connectors Scoop Housing**  
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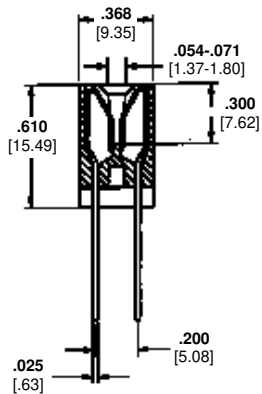
**Centerlines**

			.050 [1.27]
			.0625 [1.588]
	X	X	.100 [2.54]
	X	X	.125 [3.18]
X			.150 [3.81]
	X	X	.156 [3.96]

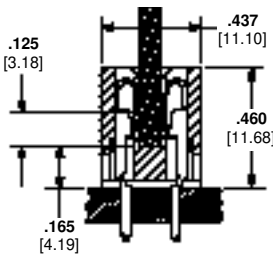
**Tail Styles**

		X	Solder
			Right-Angle Solder
			Wrap-Type
			Card Extender
			Solder Eyelet
	X	X	Press-Fit
			Surface-Mount

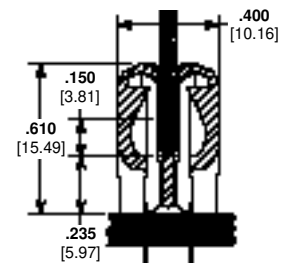
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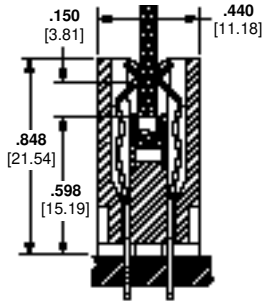
**Centerlines**

			.050 [1.27]
	X	X	.100 [2.54]
	X	X	.125 [3.18]
		X	.150 [3.81]
X		X	.156 [3.96]

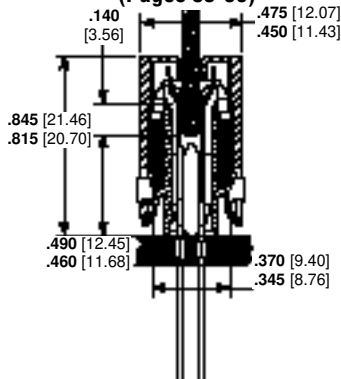
**Tail Styles**

		X	Solder
			Right-Angle Solder
			Wrap-Type
			Card Extender
			Solder Eyelet
	X		Press-Fit
			Surface-Mount

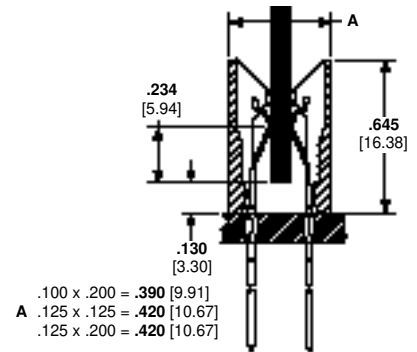
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**Linear ZIF Connectors  
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**AMP PACE Connectors,  
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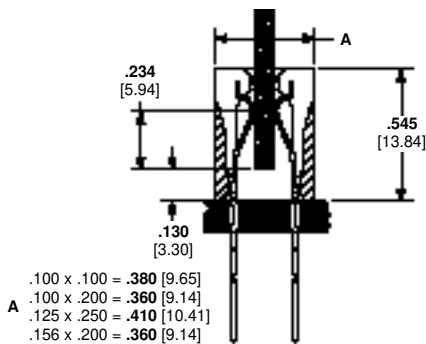
**Centerlines**

.050 [1.27]			
.0625 [1.588]			
.100 [2.54]	X		X
.125 [3.18]	X	X	X
.150 [3.81]			
.156 [3.96]	X		

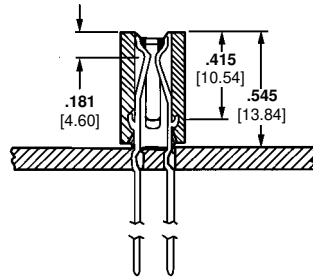
**Tail Styles**

Solder	X	X	
Right-Angle Solder	X		
Wrap-Type	X	X	X
Card Extender			
Solder Eyelet			
Press-Fit		X	X
Surface-Mount			

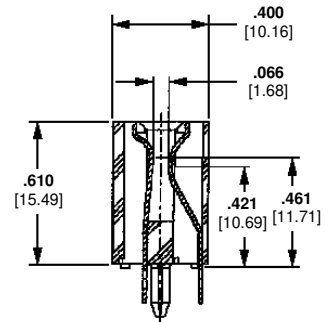
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**High Density Press Fit  
Connector  
For .093 Cards  
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**Centerlines**

.050 [1.27]			
.0625 [1.588]			
.100 [2.54]	X	X	
.125 [3.18]	X		
.150 [3.81]			
.156 [3.96]	X	X	

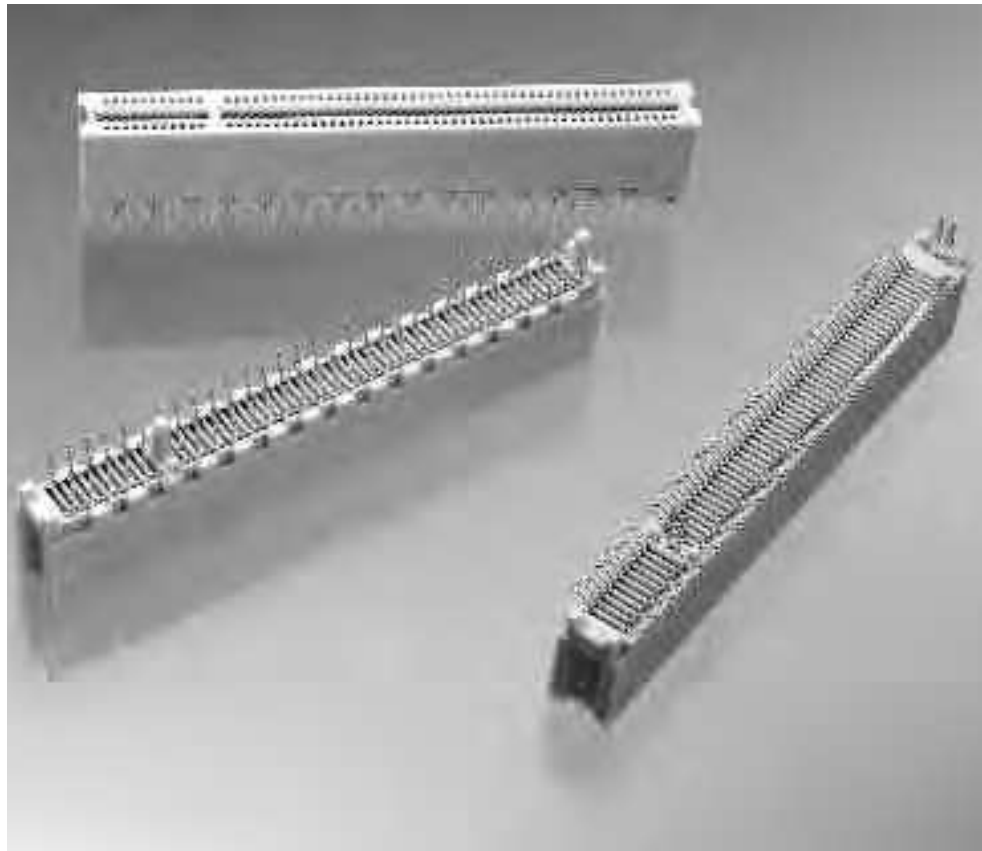
**Tail Styles**

Solder			
Right-Angle Solder			
Wrap-Type	X		
Card Extender			
Solder Eyelet			
Press-Fit	X	X	X
Surface-Mount			

**Standard Edge .050 Series PCI Card Edge Connectors**

**Product Facts**

- High density .050 [1.27] centerline contact spacing
- Easy mating of high circuit count daughter boards
- Polarizing web for positive board-to-connector registration
- Choice of plastic pylons or metal holddowns



Connectors that support PCI expansion cards are derived from those on the MicroChannel Architecture (MCA) bus. The MCA connectors are well defined and have proven value and reliability.

There are four connectors that can be used depending upon the PCI implementation. The differences between these connectors are 32 bit and 64 bit, and the 5 volt and 3.3 volt signaling environments. PCI-X is a version of PCI at 133 MHz which is under development and employs standard PCI connectors. PCI-X is limited to 1 slot versus 4 slots of PCI.

A key differentiates the signaling environment voltages. The same physical connector is used for the 32 bit signaling environments. In one orientation, the key accepts 5 volt boards. When rotated 180°, the connector accepts 3.3 volt signaling boards. The pin numbering of the connector changes for the different signaling environments to maintain the same relative position of signals on the connector.

**Performance Specifications:**

- Durability**—Tested to 100 mating cycles
- Mating Force**—8 oz [2.22 N] max. per contact pair
- Unmating Force**—.5 oz [0.14 N] min. per contact pair
- Contact Resistance**—20 milliohms max. (initial) 30 milliohms max. (final)
- Insulation Resistance**—1000 megohms min.
- Dielectric Withstanding Voltage**—500 VAC (at sea level)
- Capacitance**—2 picofarads max.
- Current Rating**—1 ampere max.
- Voltage Rating**—203 VAC
- Thermal Shock**—-55°C to +85°C for 5 cycles
- Mixed Flowing Gas**—Class II with mated board for 20 days

**Technical Documents:**

- Product Specification**  
108-14034
- Application Specification**  
114-26012
- Qualification Test Report**  
501-203



**Standard Edge .050 Series PCI Card Edge Connectors**

**64 Bit, 5 Volt Signaling**

**92 Dual Positions with 3 Plastic Pylons or 3 Metal Holddowns**

**Material and Finish:**

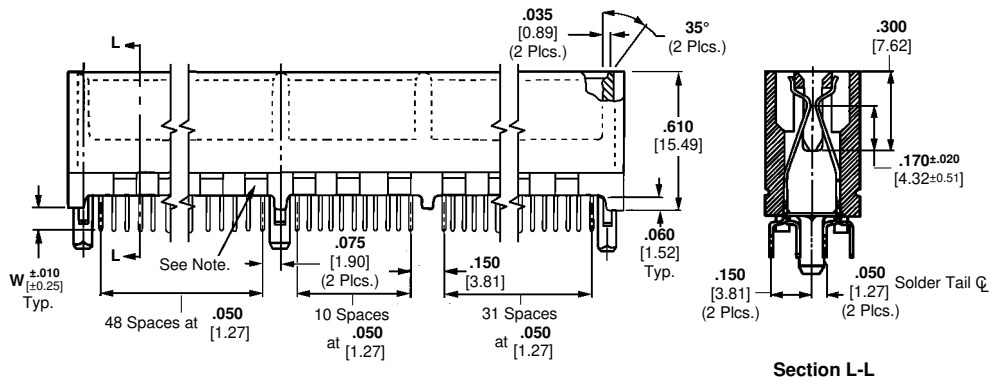
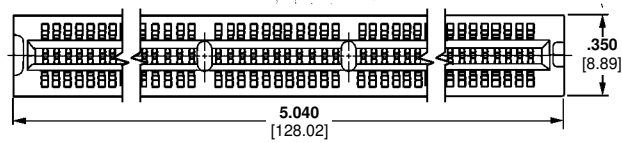
**Housing**—High temperature thermo-plastic 94V-0 rated, white

**Contacts**—Phosphor bronze, plated as follows:

**Plating B**—Duplex plated .000015 [0.00038] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

**Plating C**—Duplex plated .000030 [0.00076] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

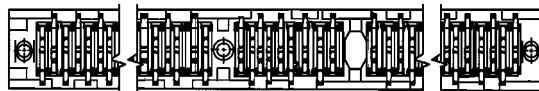
**Plastic Pylons**



Section L-L

**Related Product Data:**

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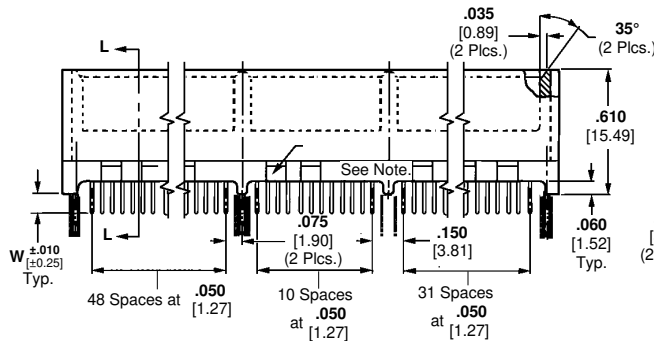


**Technical Documents:**

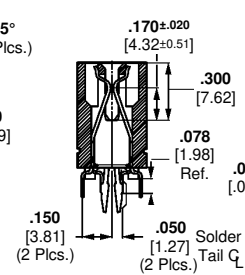
**Product Specification**  
108-14034

**Application Specification**  
114-26012

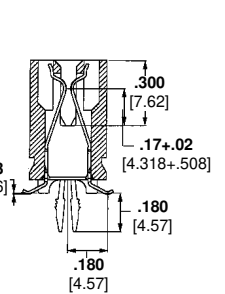
**Metal Holddowns**



**Through Hole**



**Surface Mount**



Section L-L

W (Post Length)	Contact Finish	Part Numbers	
		3 Plastic Pylons	3 Metal Holddowns
.100 2.54	Plating B	145166-2	—
	Plating C	145166-4	145169-4
.125 3.18	Plating C	145166-8	145169-8
Surface Mount	Plating C	—	145113-1

**Notes:** 1. Connectors are supplied with either cored (shown above) or solid side walls.  
2. Other connector sizes can be made available, consult Tyco Electronics.

**Standard Edge .050 Series PCI Card Edge Connectors**

**32 Bit, 3.3 and 5 Volt Signaling**

**60 Dual Positions with 2 Plastic Pylons or 2 Metal Holddowns**

**Material and Finish:**

**Housing Y**—High temperature thermo-plastic 94V-0 rated, white

**Housing Z**—Nylon 6/6, white

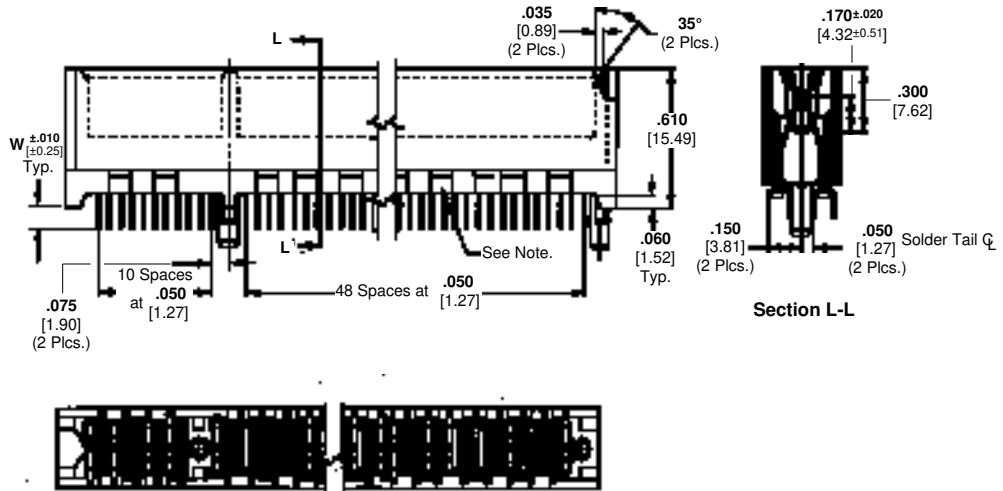
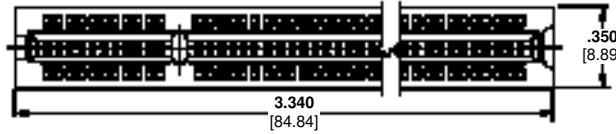
**Contacts**—Phosphor bronze, plated as follows:

**Plating A**—Duplex plated gold flash in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

**Plating B**—Duplex plated .000015 [0.00038] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

**Plating C**—Duplex plated .000030 [0.00076] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

**Plastic Pylons**



**Related Product Data:**

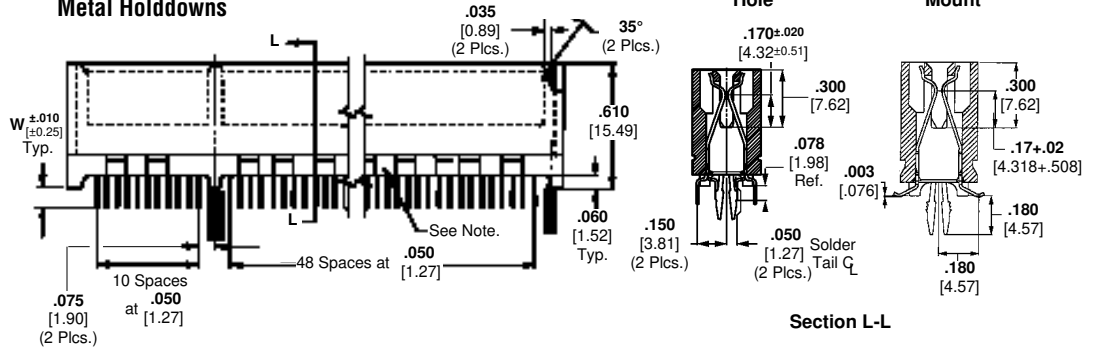
**Performance Specifications**—page 7

**Technical Documents:**

**Product Specification**  
108-14034

**Application Specification**  
114-26012

**Metal Holddowns**



W (Post Length)	Housing Material	Contact Finish	Part Numbers	
			2 Plastic Pylons	2 Metal Holddowns
.100 2.54	Y	Plating A	145154-1	145167-1
		Plating B	145154-2	—
		Plating C	145154-4	145167-4
.118 3.00	Z	Plating A	11299-1	—
		Plating B	11299-6	—
.125 3.18	Y	Plating C	145154-8	—
Surface Mount	Y	Plating C	—	145098-1

**Notes:** 1. Connectors are supplied with either cored (shown above) or solid side walls.  
2. Other connector sizes can be made available, consult Tyco Electronics.

**Standard Edge .050 Series PCI Card Edge Connectors**

64 Bit, 3.3 Volt Signaling

92 Dual Positions  
with 3 Plastic Pylons or  
3 Metal Holddowns

**Material and Finish:**

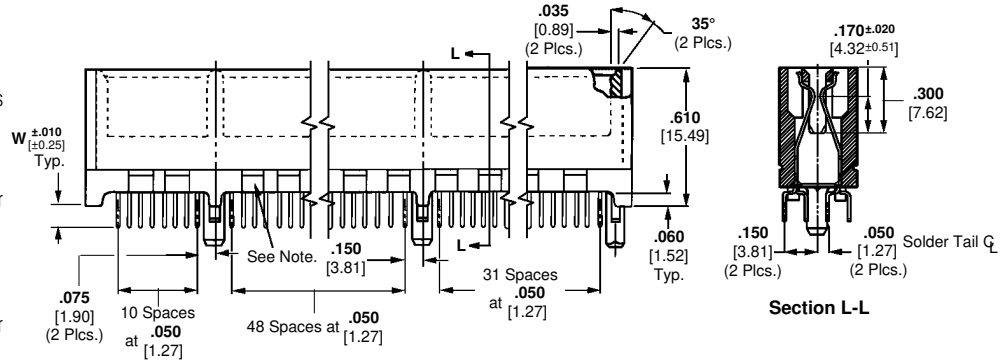
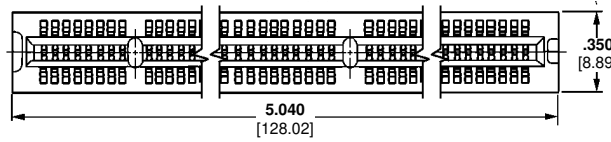
**Housing**—High temperature thermo-plastic 94V-0 rated, white

**Contacts**—Phosphor bronze, plated as follows:

**Plating B**—Duplex plated .000015 [0.00038] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

**Plating C**—Duplex plated .000030 [0.00076] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

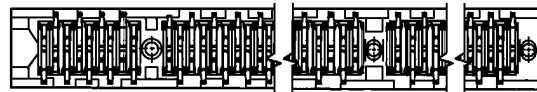
**Plastic Pylons**



Section L-L

**Related Product Data:**

**Performance Specifications**—  
page 7

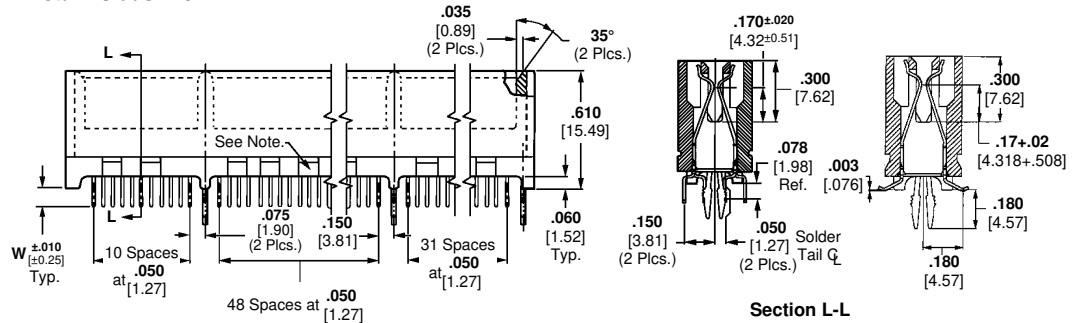


**Technical Documents:**

**Product Specification**  
108-14034

**Application Specification**  
114-26012

**Metal Holddowns**



Section L-L

W (Post Length)	Contact Finish	Part Numbers	
		3 Plastic Pylons	3 Metal Holddowns
.100 2.54	Plating B	—	145168-2
	Plating C	145165-4	145168-4
.125 3.18	Plating C	145165-8	—
Surface Mount	Plating C	—	145246-1



**Notes:** 1. Connectors are supplied with either cored (shown above) or solid side walls.  
2. Other connector sizes can be made available, consult Tyco Electronics.

Solder Type Board-to-Board  
Connectors



**Standard Edge .050 Series Connectors**

**Product Facts**

- High density .050 [1.27] centerline spacing of contacts
- Easy mating of high-circuit count daughter boards
- Compatible with infrared reflow (IR) soldering techniques
- Polarizing web for positive board-to-connector registration
- Choice of plastic pylons or metal holddowns
- Recognized under the Component Program of Underwriter Laboratories Inc.  File No. E28476
- Certified by Canadian Standards Association,  File No. LR 7189

**Performance Specifications:**

**Contact Current Rating\*** — 1 ampere

**Termination Resistance** —  
20 milliohms max. (initial)  
30 milliohms max. (final)

**Dielectric Withstanding Voltage** —  
500 VAC min.

**Insulation Resistance** — 1000 megohms min.

**Mating Force** — .5 oz. [0.14 N] per contact pair

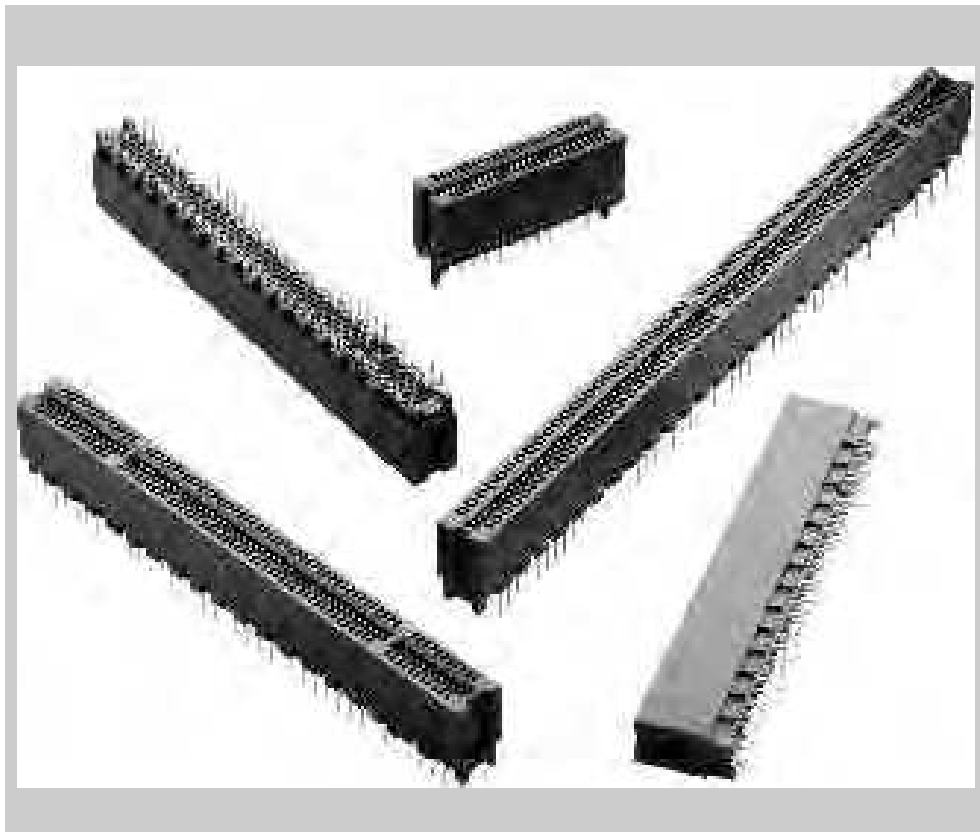
**Unmating Force** — 1 oz. [0.3 N] per contact pair

**Durability (Tested to)** — 100 mating cycles

**Application Temperature** —  
+215°C for 120 seconds max.

**Temperature Range** —  
-55°C to +85°C

\*Consult Tyco Electronics engineering when paralleling contacts for power applications.

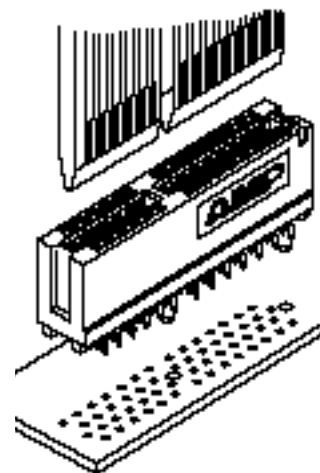


The need to conserve space and pack more function into a given area has demanded that .050 [1.27] centerline spacing become a reality. AMP Standard Edge .050 Series connectors are the ideal vehicle for mother/daughter board applications requiring this real estate.

These rugged connectors have two rows of contacts on .050 [1.27] centerlines. Polarizing webs provide positive board-to-connector registration, while insertion force allows even high circuit-count daughter boards to mate easily. The connectors accept .054 to .070 [1.37 to 1.78] thick daughter boards and feature an overstress protected contact design.

AMP Standard Edge .050 Series connectors are ideal for fast automated robotic assembly with registration features and dimensional tolerancing for more accurate pickup and placement, and are packaged in robotics-compatible trays.

Plastic guide posts or metal holddowns align the connector with the mother board and retain it for soldering. To make circuit routing easy, connector solder posts are arranged in a four-row .100 [2.54] staggered grid. High-temperature tolerant materials promote that these connectors withstand infrared reflow (IR) soldering, while standoffs ease flux cleaning.



**High Density for DataBus Applications**

**Standard Edge .050 Series Connectors**

**Configuration;  
1 Key—2 Plastic Pylons**

**Material and Finish:**

**Housing**—High temperature thermo-plastic, brown

**Contacts**—Phosphor bronze, duplex plated .000030 [0.00076] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

**Related Product Data:**

**Performance Specifications**—page 11

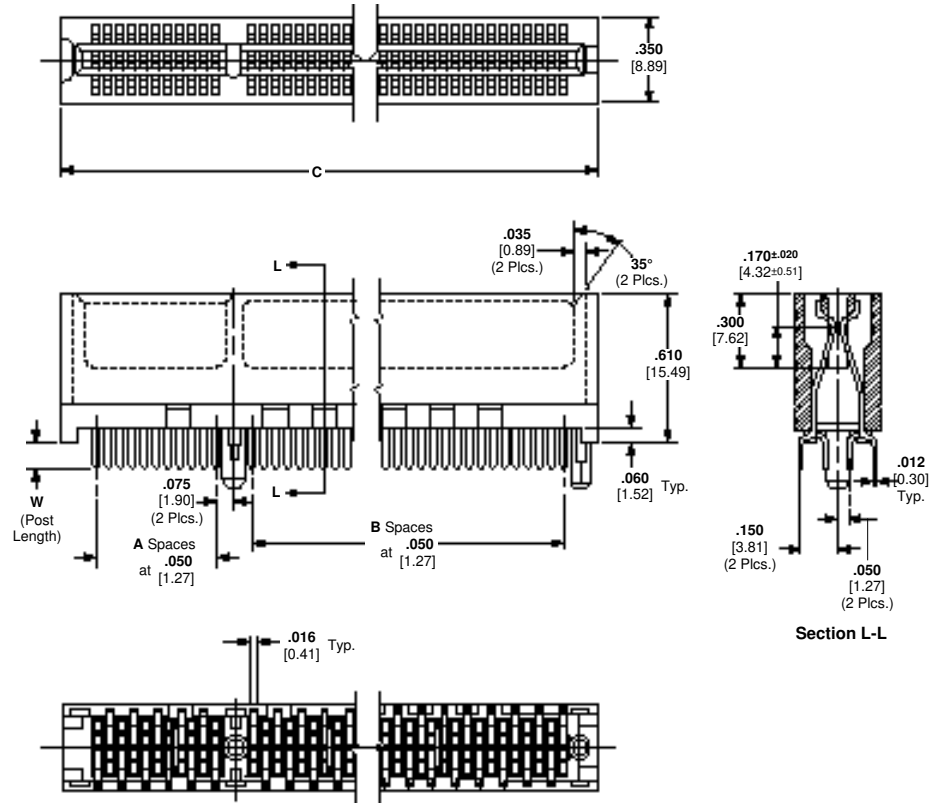
**Technical Documents:**

**Product Specification**

108-14034

**Application Specification**

114-26012



No. of Dual Positions	Dimensions			W (Post Length)	PC Board Hole Layout	Connector Part Numbers
	A	B	C			
23	10	11	1.490 37.85	.100 2.54	A	650090-7
30	10	18	1.840 46.74	.100 2.54	B	650090-6
40	10	28	2.340 59.44	.100 2.54	B	650090-3
				.140 3.56	B	650181-2
45	10	33	2.590 65.79	.100 2.54	A	650090-2
56	10	44	3.140 79.76	.100 2.54	B	650090-11
				.140 3.56	B	650181-1
80	37	41	4.340 110.24	.100 2.54	C	650090-9
91	41	48	4.890 124.21	.100 2.54	A	650092-1 <sup>2</sup>
				.140 3.56	A	650092-2

<sup>1</sup> Connector used for VLocal Bus and MCA Bus applications.

<sup>2</sup> Connector used for MCA Bus applications.

- Notes:** 1. Other connector sizes can be made available, consult Tyco Electronics.  
2. .125 [3.18] post length is available, consult Tyco Electronics.

**Standard Edge .050 Series Connectors**

Solder Type Board-to-Board Connectors

**Configuration;  
1 Key—2 Plastic Pylons**

**Material and Finish:**

**Housing**—High temperature thermo-plastic, brown

**Contacts**—Phosphor bronze, duplex plated .000030 [0.00076] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel

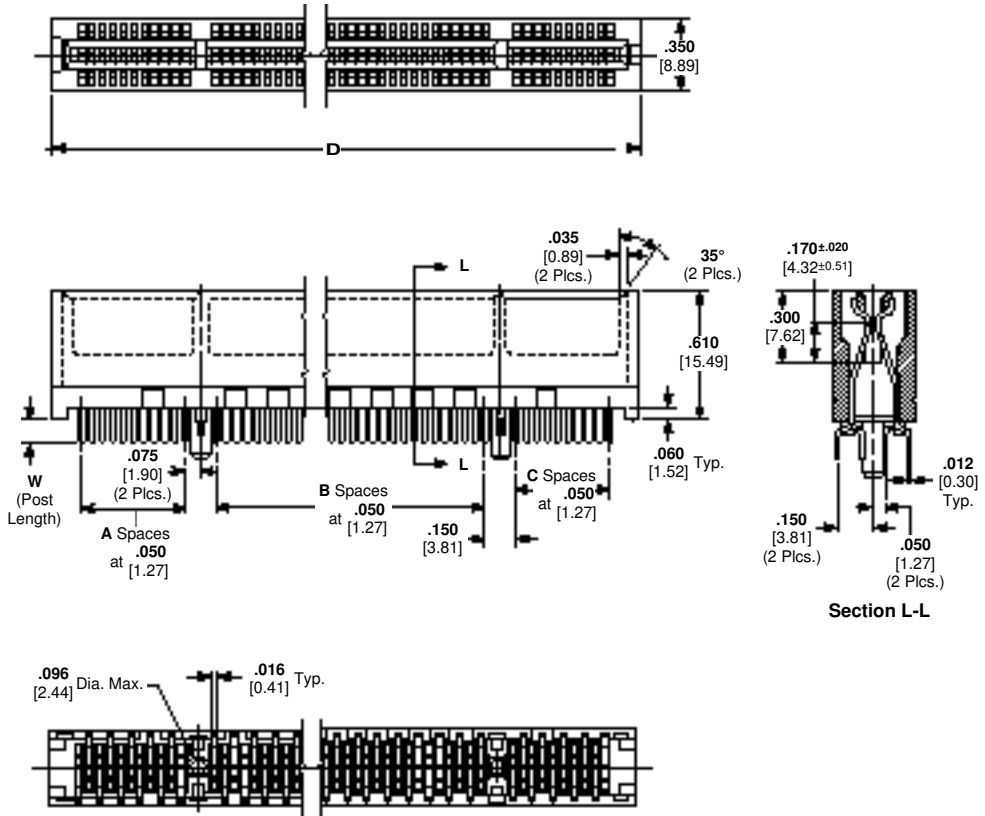
**Related Product Data:**

**Performance Specifications**—page 11

**Technical Documents:**

**Product Specification**  
108-14034

**Application Specification**  
114-26012



No. of Dual Positions	Dimensions				W (Post Length)	PC Board Hole Layout	Connector Part Numbers
	A	B	C	D			
66	10	44	9	3.740	.100	A	650091-1*
				95.00	.140		
					3.56	A	650091-2

\*Connectors used for MCA Bus applications.

- Notes:** 1. Other connector sizes can be made available, consult Tyco Electronics.  
2. .125 [3.18] post length is available, consult Tyco Electronics.



**Standard Edge .050 Series Connectors**

**Configuration;  
1 Key/1 Web —3 Metal  
Holddowns**

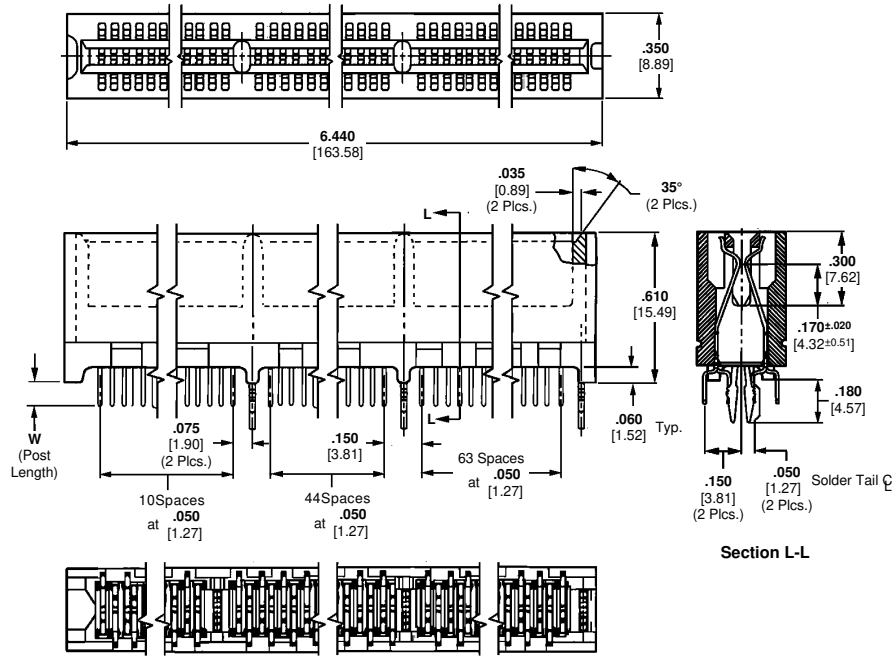
**120 Dual Positions**

**Material and Finish:**

**Housing**—High temperature thermo-plastic, brown

**Holddowns**—Brass, plated .000150 [0.00381] min. tin-lead over .000050 [0.00127] min. nickel

**Contacts**—Phosphor bronze, duplex plated .000030 [0.00076] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel



**Related Product Data:**

**Performance Specifications**— page 11

**Technical Documents:**

**Product Specification**  
104-14034

**Application Specification**  
114-26012

No. of Dual Positions	W (Post Length)	Connector Part Numbers
120	.140 3.56	145031-3

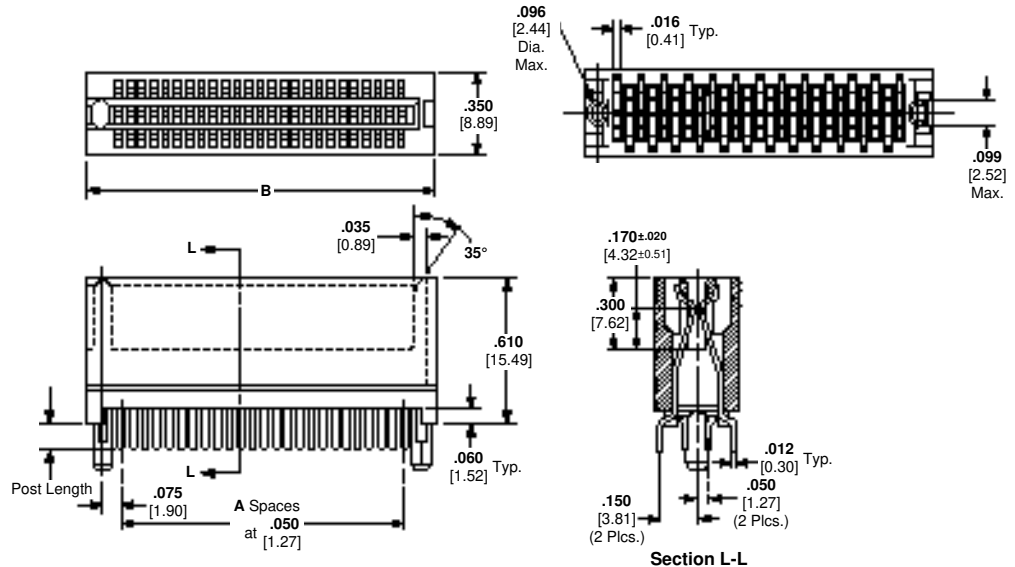
**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Configuration; End Key**

**Material and Finish:**

**Housing**—High temperature thermo-plastic, brown

**Contacts**—Phosphor bronze, duplex plated .000030 [0.00076] min. gold in contact area, .000100 [0.00254] min. tin-lead on solder tails, with entire contact underplated .000050 [0.00127] min. nickel



**Related Product Data:**

**Performance Specifications**— page 11

**Technical Documents:**

**Product Specification**  
108-14034



**Application Specification**  
114-26012

No. of Dual Positions	Dimensions				Post Length	Connector Part Numbers
	A	B	C	D		
25	24	1.480 37.59	1.350 34.29	1.310 33.27	.100 2.54	650719-1

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Standard Edge II Connectors**

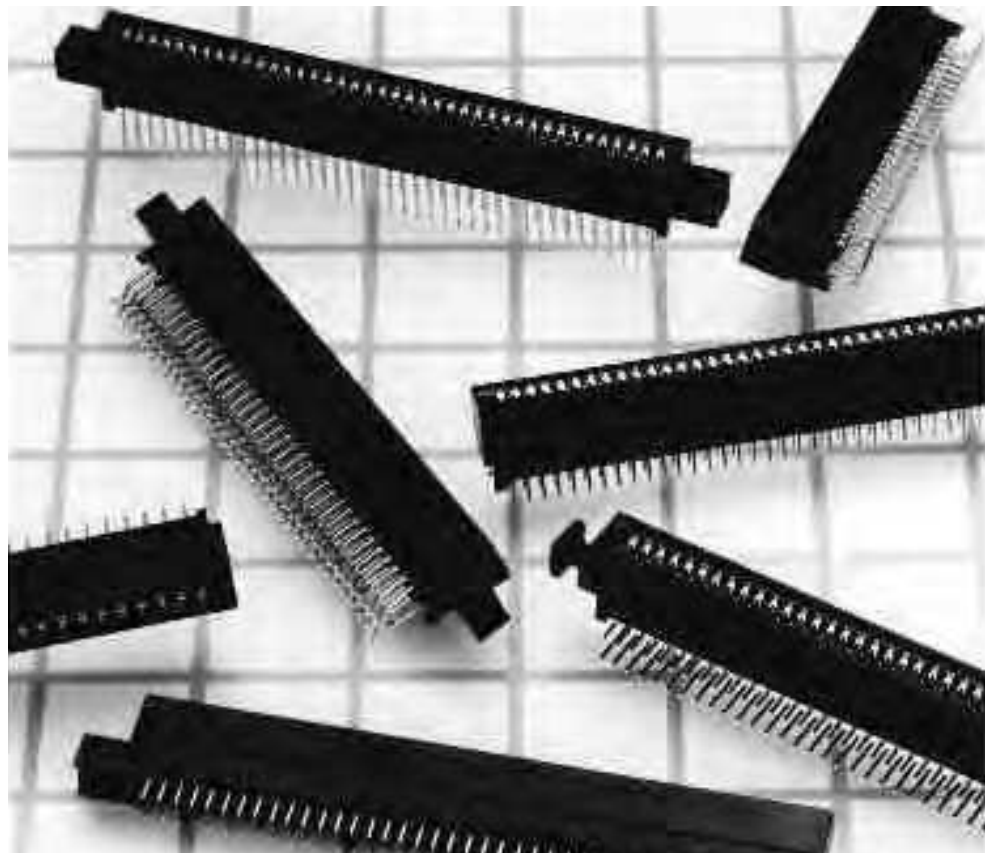
**Product Facts**

- Maximum number of dual positions  
.100 [2.54] Centerlines-70,  
.125 [3.18] Centerlines-50,  
.150 [3.81] Centerlines-31
- Selective gold plating of contacts for high performance at low cost
- .025 [0.64] square solid posts meet standard wrap-type specifications
- For flow solder applications
- Glass-filled polyester housing is 94V-0 rated
- Accepts double sided PC boards, .054-.070 [1.27-1.78] thick
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476 
- Certified by Canadian Standards Association, File No. LR 7189 

**Performance Specifications**

- Contact Rating\*:** 3 amperes continuous (UL and CSA)
- Contact Resistance:** 10 milliohms max.
- Operating Temperature:** -55°C to +85°C
- Voltage Rating (Sea Level):**  
.100 [2.54] centerline—1000 VAC (test)  
.125 [3.18] centerline—1500 VAC (test)  
.150 [3.81] centerline—1500 VAC (test)
- Insulation Resistance:** 5000 megohms min., after exposure to humidity
- Vibration Tolerance:** 10 to 500 hertz
- Contact Engagement Force:** 12 oz [3.3 N] average per pair with .062 [1.57] PC board
- Contact Separation Force:** 2 oz [0.6 N] average per pair with .062 [1.57] PC board
- Humidity Tolerance:** 90%-95% for 96 hours

\*Consult Tyco Electronics engineering when paralleling contacts for power applications.



AMP Standard Edge II Connectors provide high reliability and economy in packages compatible with industry standards for double sided printed circuit boards.

Tyco Electronics offers Standard Edge II Connectors with or without mounting ears, for rack mounting and soldering. Contacts are arranged on .100 [2.54] centers, .125 [3.18] centers, .150 [3.81] centers, .200 [5.08] row-to-row; and .250 [6.35] row-to-row.

Right-angle connectors are also available with contacts arranged on .100 [2.54] centers, .150 [3.81] row-to-row or .200 [5.08] row-to-row.

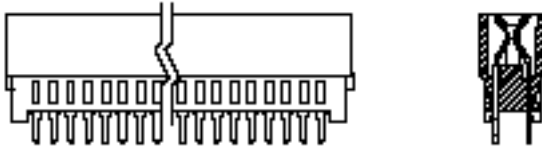
Card extenders with contacts on .100 [2.54] and .125 [3.18] centers also are available.

Precision formed phosphor bronze contacts are selectively gold plated. Phosphor bronze has excellent strength characteristics which help the connector absorb load deflection movement of a PC board while maintaining sufficient contact force for good electrical connection. Bifurcated cantilever beam contacts provide redundant contact.

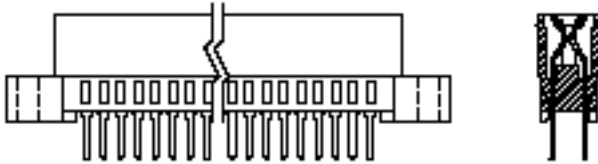
Solder Type Board-to-Board Connectors

Solder Type Board-to-Board Connectors

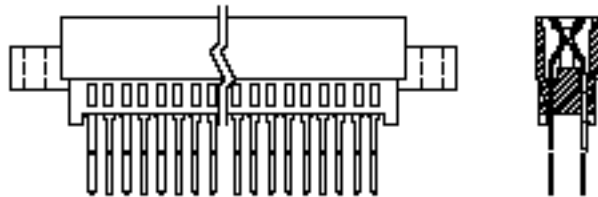
**.100 [2.54] and .125 [3.18] Centerline Solder Posts without Mounting Ears**  
Pages 17 and 18



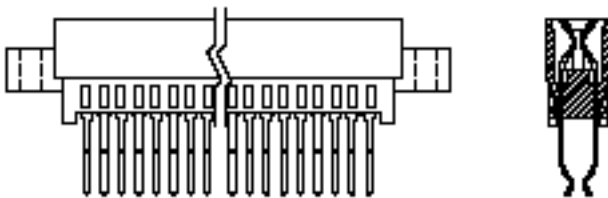
**.100 [2.54] and .125 [3.18] Centerline Solder Posts with Low and Mid-High Mounting Ears**  
Page 20



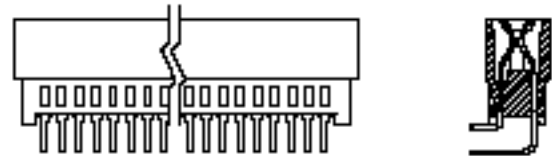
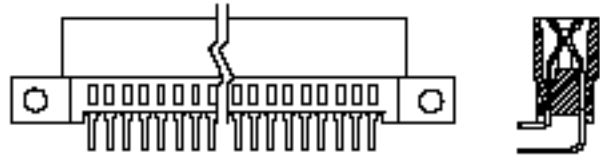
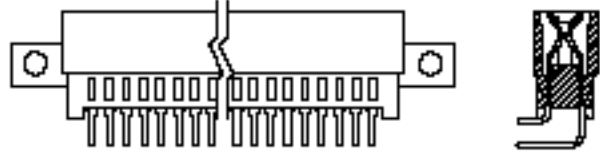
**.100 [2.54] and .125 [3.18] Centerline Wrap-Type Posts with Mid-High Mounting Ears**  
Page 21



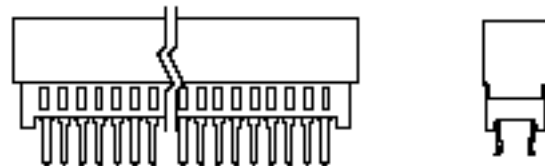
**.100 [2.54] and .125 [3.18] Centerline Card Extenders**  
Page 22



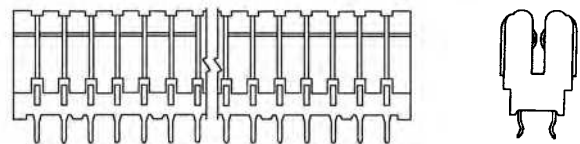
**.100 [2.54] Centerline Right-Angle Posts with Low and No Mounting Ears**  
Page 23



**.100 [2.54] Centerline Solder Posts with Board Retention Feature, without Mounting Ears**  
Page 24



**.150 [3.81] Centerline Solder Posts (with Board Retention Feature), without Mounting Ears**  
Page 19





**Standard Edge II Card Edge Connectors**

**.100 [2.54] Centerline, Vertical Solder Posts, Without Mounting Ears**

**Material and Finish:**

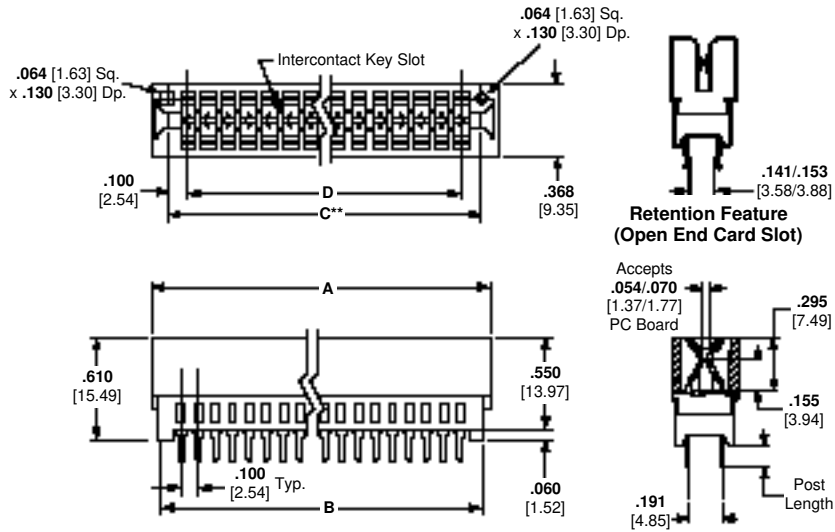
**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, duplex plated as follows:

**Plating A**—.000030 [0.00076] gold in contact area, tin on posts, with entire contact nickel underplated

**Plating B**—.000015 [0.00038] gold in contact area, tin on posts, with entire contact nickel underplated

**Plating C**—Gold flash in contact area, tin on posts, with entire contact nickel underplated



**Technical Documents:**

**Product Specification**

108-9039

**Intercontact Keying Plug**

**Material:**

Natural color polyester



**Part Number 650025-2**  
(.100 [2.54] Centerline)

No. of Dual Positions	Dimensions				Post Length*	Part Numbers		
	A	B	C**	D		Plating A	Plating B	Plating C
3	.560 14.22	.450 11.43	Open End	.200 5.08	.125	650263-11	—	—
6	.860 21.84	.750 19.05	.700 17.78	.500 12.70	.125 .187	7-530843-5 7-530843-6	—	—
10	1.260 32.00	1.150 29.21	1.100 27.94	.900 22.86	.125 .187	5-530843-0 4-530843-9	—	—
12	1.460 37.08	1.350 34.29	1.300 33.02	1.100 27.94	.125	530843-1	—	—
15	1.760 44.70	1.650 41.91	1.600 40.64	1.400 35.56	.125	530843-2	—	—
17	1.960 49.78	1.850 46.99	1.800 45.72	1.600 40.64	.125	5-530843-3	—	—
18	2.060 52.32	1.950 49.53	1.900 48.26	1.700 43.18	.125	530843-3	2-530843-7	176137-11
20	2.260 57.40	2.150 54.61	2.100 53.34	1.900 48.26	.125	5-530843-4	—	—
22	2.460 62.48	2.350 59.69	2.300 58.42	2.100 53.34	.125	530843-4	—	—
25	2.760 70.10	2.650 67.31	2.600 66.04	2.400 60.96	.125	530843-5	—	—
28	3.060 77.72	2.950 74.93	2.900 73.66	2.700 68.58	.125	530843-6	—	—
30	3.260 82.80	3.150 80.01	3.100 78.74	2.900 73.66	.125 .187	530843-7 1-530843-8	—	—
31	3.360 85.34	3.250 82.55	3.200 81.28	3.000 76.20	.125	6-530843-5	7-530843-0	—
36	3.860 98.04	3.750 95.25	3.700 93.98	3.500 88.90	.125	530843-8	—	—
40	4.260 108.20	4.150 105.41	4.100 104.14	3.900 99.06	.187	2-530843-0	—	—
50	5.260 133.60	5.150 130.81	5.100 129.54	4.900 124.46	.125	1-530843-1	—	—

\*Metric equivalent for post lengths are .125 = 3.18; .187 = 4.75.

\*\*C dimension is card slot length.

† Connectors with Retention Feature.

**Notes:** 1. Other connector sizes can be made available, consult Tyco Electronics.

2. High temperature IR reflow compatible connectors can be made available, consult Tyco Electronics.

**.125 [3.18] Centerline, Vertical Solder Posts, Without Mounting Ears**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated with .000030 [0.00076] gold in contact area, tin on posts, with entire contact nickel underplated

**Related Product Data:**

**Performance Specifications**—page 15

**PC Board Hole Layout**—page 26

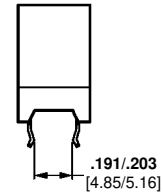
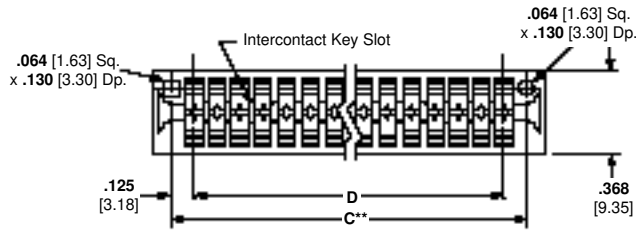
**PC Board Edge Pattern**—page 27

**Special Application**—page 96

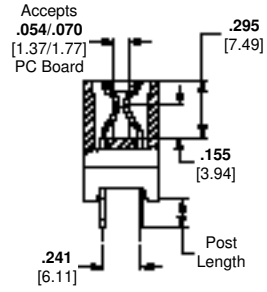
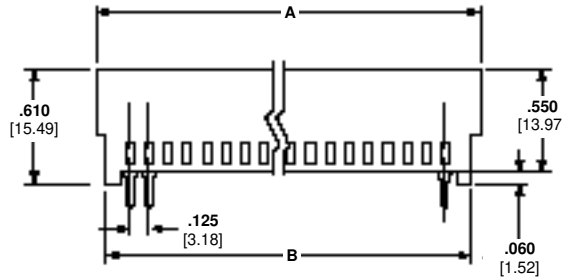
**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9039



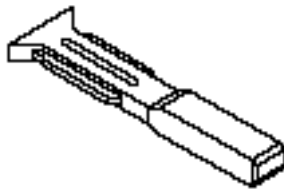
Retention Feature



**Intercontact Keying Plug**

**Material:**

Natural color polyester



**Part No. 650025-1**  
(.125 [3.18] Centerline)

No. of Dual Positions	Dimensions				Post Length*	Part Numbers
	A	B	C**	D		
6	1.035 26.29	.875 22.22	.875 22.22	.625 15.88	.125	650207-11
14	2.035 51.69	1.875 47.62	1.875 47.62	1.625 41.28	.187	5-530844-8
18	2.535 64.39	2.375 60.33	2.375 60.33	2.125 53.98	.187	1-530844-5
22	3.035 77.09	2.875 73.03	2.875 73.03	2.625 66.68	.187	1-530844-6
28	3.785 96.14	3.625 92.08	3.625 92.08	3.375 85.73	.187	1-530844-7
30	4.035 102.49	3.875 98.42	3.875 98.42	3.625 92.08	.187	1-530844-8
36	4.785 121.54	4.625 117.48	4.625 117.48	4.375 111.13	.187	1-530844-9
40	5.285 134.24	5.125 130.18	5.125 130.18	4.875 123.82	.187	2-530844-0
43	5.660 143.76	5.500 139.70	5.500 139.70	5.250 133.35	.125	1-530844-0
50	6.535 165.99	6.375 161.93	6.375 161.93	6.125 155.58	.125 .187	1-530844-1 2-530844-2

\*Metric equivalent for post lengths are .125 = [3.18]; .187 = [4.75]

\*\*C dimension is card slot length.

†Connector with Retention Feature.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Standard Edge II Connectors** (Continued)

**.150 [3.81] Centerline, Vertical Solder Posts, Retention Feature, Without Mounting Ears**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated with .000030 [0.00076] gold in contact area, tin on posts, with entire contact nickel underplated

**Related Product Data:**

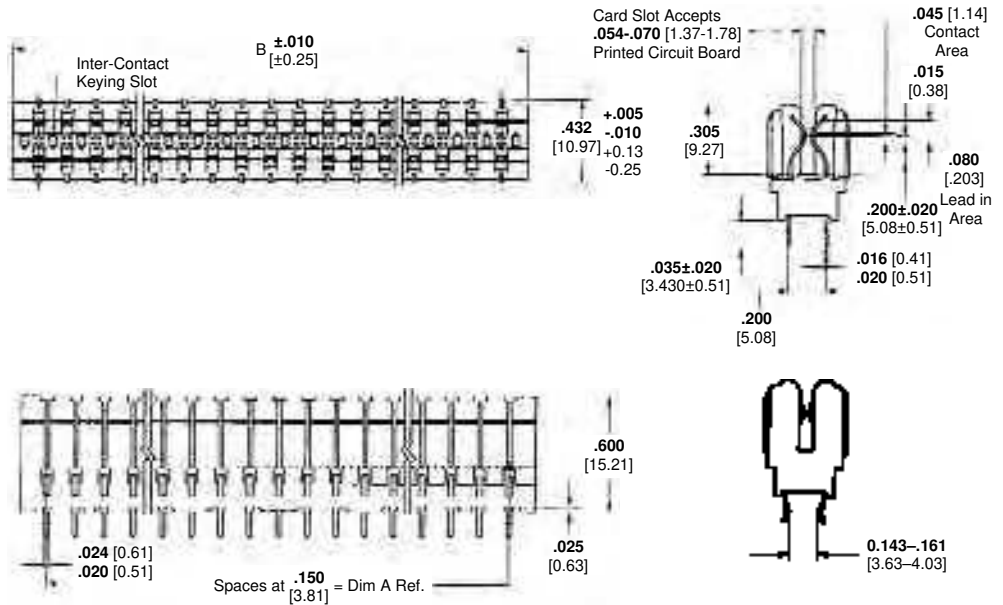
**Performance Specifications**—

page 15

**PC Board Hole Layout**—page 26

**PC Board Edge Pattern**—page 27

**Special Application**—page 96



Solder Type Board-to-Board Connectors

No. of Dual Positions	Dimensions		Retention Location	Post Length*	Part Numbers
	A	B			
12	1.650 41.91	1.920 48.77	7-10, 15-18	.135	1-650728-2
19	2.700 68.58	2.970 75.44	7-10, 29-32	.135	1-650728-9
28	4.050 102.87	4.320 109.73	7-10, 25-32,47-50	.135	2-650728-9
31	4.500 114.30	4.770 121.16	7-10, 27-34,53-56	.135	3-650728-1

\*Metric equivalent for post length is .135 = [3.43]

\*\*C dimension is card slot length.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**.100 [2.54] and .125 [3.18] Centerline, Vertical Solder Posts, Low and Mid-High Mounting Ears**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated with .000030 [0.00076] gold in contact area, tin on posts, with entire contact nickel underplated

**Related Product Data:**

**Performance Specifications**—page 15

**PC Board Hole Layout**—page 26

**PC Board Edge Pattern**—page 27

**Special Application**—page 96

**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9039

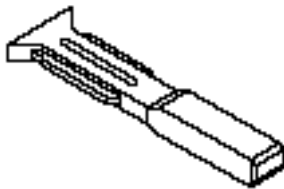
**Intercontact Keying Plugs**

**Material:**

Natural color polyester

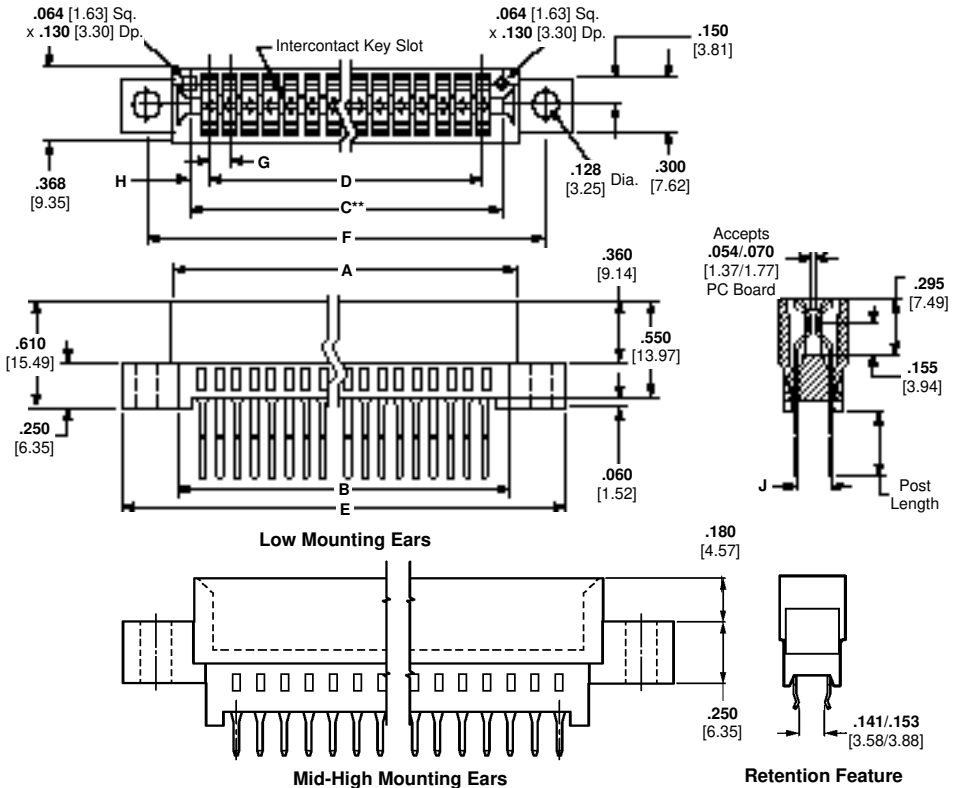


**Part No. 650025-2**  
(.100 [2.54] Centerline)



**Part No. 650025-1**  
(.125 [3.18] Centerline)

**Standard Edge II Connectors (Continued)**



**.100 [2.54] Centerline**

No. of Dual Positions	Dimensions									Post Length*	Part Numbers
	A	B	C**	D	E	F	G	H	J		
15	1.760 44.70	1.650 41.91	1.600 40.64	1.400 35.56	2.385 67.18	2.075 52.71	.100 2.54	.100 2.54	.191 4.85	.125	530841-2
18	2.060 52.32	1.950 49.53	1.900 48.26	1.700 43.18	2.645 67.18	2.375 60.32	.100 2.54	.100 2.54	.191 4.85	.125	530841-3
25	2.760 70.10	2.650 67.31	2.600 66.04	2.400 60.96	3.345 84.96	3.075 78.11	.100 2.54	.100 2.54	.191 4.85	.125 .187	530841-5 1-530841-6
30	3.260 82.80	3.160 80.01	3.100 78.74	2.900 73.66	3.845 97.66	3.575 90.81	.100 2.54	.100 2.54	.191 4.85	.187	1-530841-8
36	3.860 98.04	3.750 95.25	3.700 93.98	3.500 88.90	4.445 112.90	4.175 106.21	.100 2.54	.100 2.54	.191 4.85	.125	530841-8
50	5.260 133.60	5.150 130.81	5.100 129.54	4.900 124.46	5.845 148.46	5.575 141.60	.100 2.54	.100 2.54	.191 4.85	.125 .187	1-530841-1 2-530841-2
									.141-.153 3.58-3.88	.125	650718-11 <sup>2</sup>

\*Metric equivalent for post lengths are .125 = [3.18]; .187 = [4.75]

\*\*C dimension is card slot length.

<sup>1</sup>Connector with Retention Feature.

<sup>2</sup>Connector with Mid-High Mounting Ears.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**.125 [3.18] Centerline**

No. of Dual Positions	Dimensions									Post Length*	Part Numbers
	A	B	C**	D	E	F	G	H	J		
6	1.035 26.29	.875 22.22	.875 22.22	.625 15.88	1.555 39.50	1.295 32.89	.125 3.18	.125 3.18	.241 6.11	.125	1-531341-3
28	3.785 96.14	3.505 89.03	3.625 92.08	3.375 85.73	4.305 109.35	4.045 102.74	.125 3.18	.125 3.18	.241 6.11	.187	1-530842-7
50	6.535 165.99	6.255 158.88	6.375 161.93	6.125 155.58	7.055 179.20	6.795 172.59	.125 3.18	.125 3.18	.241 6.11	.125	3-531341-0 <sup>2</sup> 1-530842-1

\*Metric equivalent for post lengths are .125 = [3.18]; .187 = [4.75]

\*\*C dimension is card slot length.

<sup>1</sup>Connector with Retention Feature.

<sup>2</sup>Connector with Mid-High Mounting Ears.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Standard Edge II Connectors** (Continued)

**.100 [2.54] and .125 [3.18] Centerline, Vertical Wrap-Type Posts, Mid-High Mounting Ears**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated with .000030 [0.00076] gold in contact area, tin on posts, with entire contact nickel underplated

**Related Product Data:**

**Performance Specifications**—page 15

**PC Board Hole Layout**—page 26

**PC Board Edge Pattern**—page 27

**Special Application**—page 96

**Technical Documents:**

(pages 186, 187):

Product Specification  
108-9039

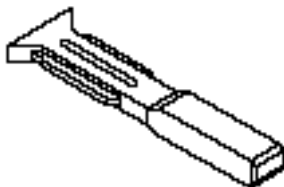
**Intercontact Keying Plugs**

**Material:**

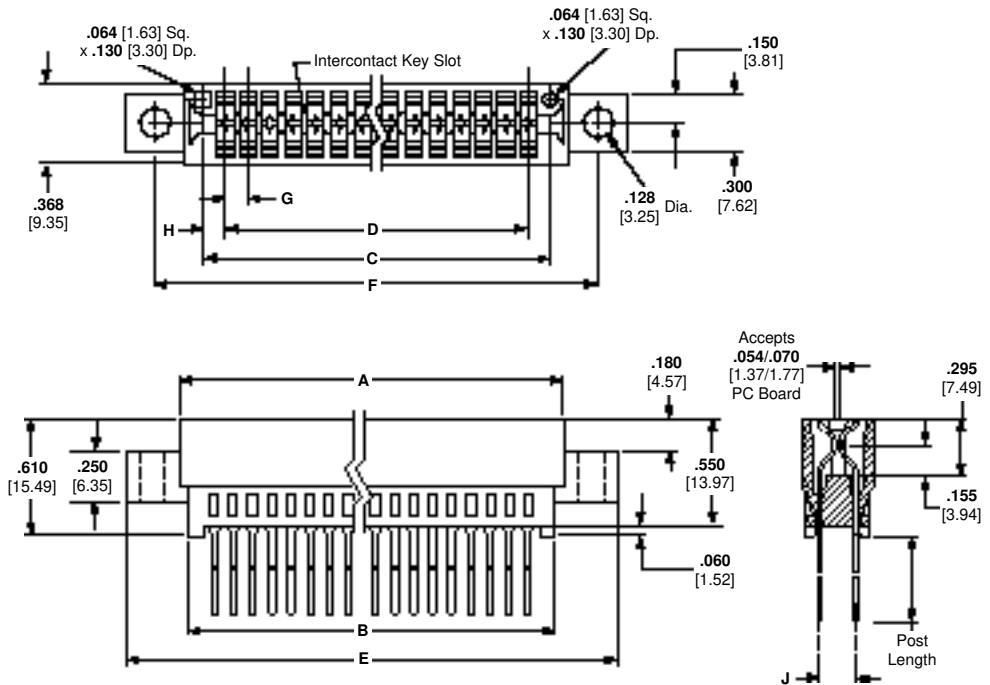
Natural color polyester



**Part No. 650025-2**  
(.100 [2.54] Centerline)



**Part No. 650025-1**  
(.125 [3.18] Centerline)



**.100 [2.54] Centerline**

No. of Dual Positions	Dimensions									Post Length*	Part Numbers
	A	B	C**	D	E	F	G	H	J		
30	3.260	3.150	3.100	2.900	3.845	3.575	.100	.100	.200	.570	3-530396-3
	82.80	80.01	78.74	73.66	97.41	90.80	2.54	2.54	5.08		
36	3.860	3.750	3.700	3.500	4.435	4.175	.100	.100	.200	.570	3-530396-4
	98.04	95.25	93.98	88.90	112.65	106.04	2.54	2.54	5.08		
40	4.260	4.150	4.100	3.900	4.845	4.575	.100	.100	.200	.570	3-530396-4
	108.20	105.41	104.14	99.06	123.06	116.21	2.54	2.54	5.08		

\*Metric equivalent for post length is .570 = [14.48].

\*\*C dimension is card slot length.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**.125 [3.18] Centerline**

No. of Dual Positions	Dimensions									Post Length*	Part Numbers
	A	B	C**	D	E	F	G	H	J		
22	3.035	2.755	2.875	2.625	3.555	3.295	.125	.125	.250	.570	4-530825-5
	77.09	69.98	73.02	66.67	90.30	83.69	3.18	3.18	6.35		

\*Metric equivalent for post length is .570 = [14.48].

\*\*C dimension is card slot length.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.



### .100 [2.54] and .125 [3.18] Centerlines, Card Extender Contacts

#### Material and Finish:

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, plated with .000030 [0.00076] gold in contact area, tin on posts, with entire contact nickel underplated

#### Related Product Data:

**Performance Specifications**—page 15

**PC Board Hole Layout**—page 26

**PC Board Edge Pattern**—page 27

#### Technical Documents:

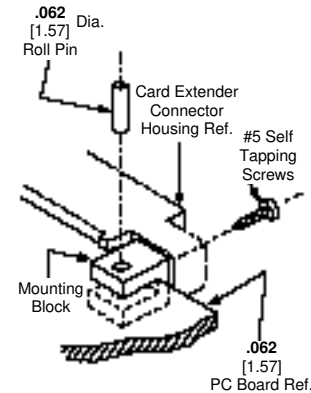
(pages 186, 187):

Product Specification 108-9039

#### Mounting Block

##### Material:

Natural color nylon



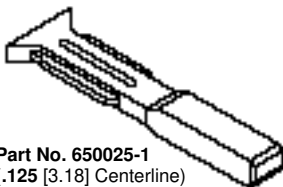
#### Kit Part No. 531250-4

Each kit includes 2 mounting blocks, 2 self tapping screws, #5 x .437 [11.10] and 2 roll pins, .075 x .250 [1.57 x 6.35]

#### Intercontact Keying Plugs

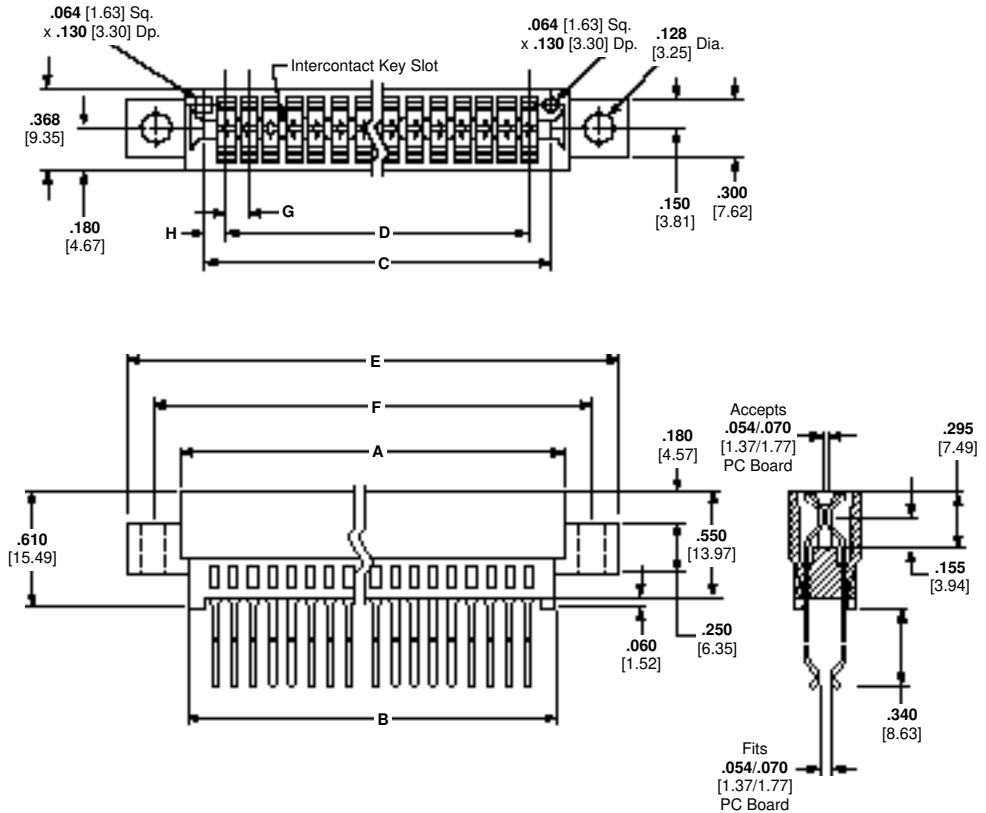
##### Material:

Natural color polyester



Part Number 650025-2  
(.100 [2.54] Centerline)

### Standard Edge II Connectors (Continued)



#### .100 [2.54] Centerline

No. of Dual Positions	Dimensions								Part Numbers
	A	B	C**	D	E	F	G	H	
50	5.260 133.60	5.160 130.81	5.100 129.54	4.900 124.46	5.845 148.46	5.575 141.60	.100 2.54	.100 2.54	530826-3

\*C dimension is card slot length.

†No mounting ears.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

#### .125 [3.18] Centerline

No. of Dual Positions	Dimensions								Part Numbers
	A	B	C**	D	E	F	G	H	
36	4.785 121.54	4.505 114.43	4.625 117.48	4.375 111.13	5.035 134.75	5.045 128.14	.125 3.18	.125 3.18	530384-2

\*C dimension is card slot length.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**Standard Edge II Card Edge Connectors**

**.100 [2.54] Right-Angle Solder Posts, with Low and No Mounting Ears**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, duplex plated as follows:

**Plating A**—.000030 [0.00076] gold in contact area, tin on posts, with entire contact nickel underplated

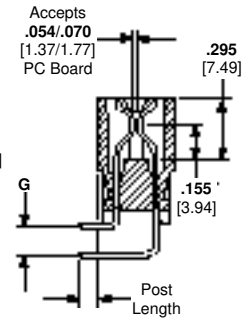
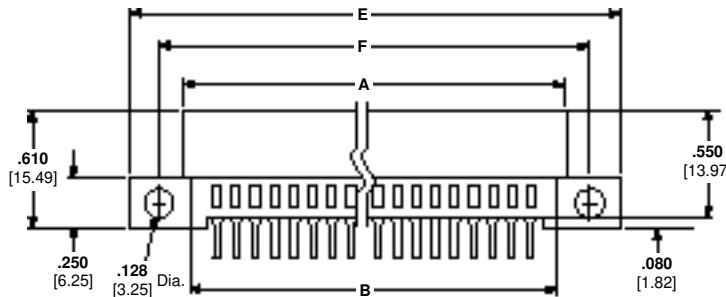
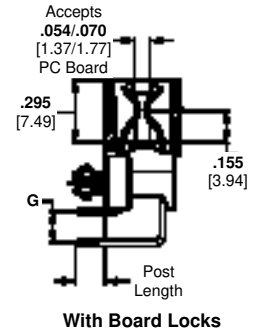
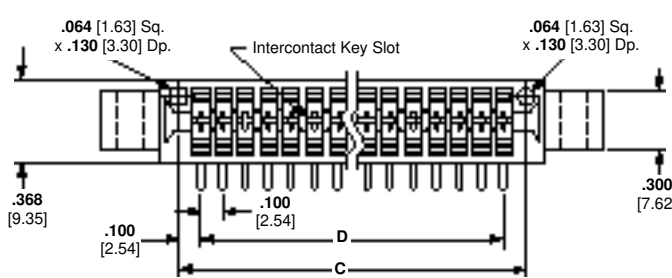
**Plating B**—.000015 [0.00038] gold in contact area, tin on posts, with entire contact nickel underplated

**Related Product Data:**

**Performance Specifications**—page 15

**Technical Documents:**

**Product Specification**  
108-9039



Low Mounting Ears

**Intercontact Keying Plug**

**Material:**

Natural color polyester



**Part Number 650025-2**  
(.100 [2.54] Centerline)

**Low Mounting Ears**

No. of Dual Positions	Dimensions							Post Length <sup>2</sup>	Part Numbers (Plating A)
	A	B	C*	D	E	F	G <sup>1</sup>		
12	1.460	1.350	1.300	1.100	2.045	1.775	.100x	.090	145089-1 <sup>3</sup>
	37.08	34.29	33.02	27.94	51.94	45.08	.150		
18	2.060	1.950	1.900	1.700	2.645	2.375	.100x	.090	645384-1
	52.32	49.53	48.26	43.18	67.18	60.32	.150		
20	2.260	2.150	2.100	1.900	2.845	2.575	.100x	.090	645384-3
	57.40	54.61	53.34	48.26	72.30	65.40	.150		

\*C dimension is card slot length.

<sup>1</sup> Metric equivalent for .100 x .150 and .100 x .200 are [2.54 x 3.81] and [2.54 x 5.08].

<sup>2</sup> Metric equivalent for post length is .090 = [2.27].

<sup>3</sup> Connector with Board Locks.

**Note:** Other connector sizes can be made available, consult Tyco Electronics.

**No Mounting Ears**

No. of Dual Positions	Dimensions					Post Length <sup>2</sup>	Part Numbers	
	A	B	C*	D	G <sup>1</sup>		Plating A	Plating B
15	1.760	1.650	1.600	1.400	.100x	.090	650118-1	—
	44.70	41.91	40.64	35.56	.150			
17	1.960	1.850	1.800	1.600	.100x	.090	650187-1	—
	49.78	46.99	45.72	40.64	.200			
25	2.760	2.350	2.600	2.400	.100x	.090	—	532600-2
	70.10	67.61	66.04	60.96	.150			
31	3.360	3.250	3.200	3.000	.100x	.090	—	532600-4
	85.34	82.55	81.28	76.20	.150			
32	3.460	3.350	3.300	3.100	.100x	.090	—	532600-5
	87.88	85.09	83.82	78.74	.150			
19	2.160	2.750	2.700	1.800	.100x	.090	—	532600-6
	54.86	69.85	68.58	45.72	.150			

\*C dimension is card slot length.

<sup>1</sup> Metric equivalent for .100 x .150 and .100 x .200 are [2.54 x 3.81] and [2.54 x 5.08].

<sup>2</sup> Metric equivalent for post length is .090 = [2.27].

**Notes:** 1. Other connector sizes can be made available, consult Tyco Electronics.

2. High temperature IR reflow compatible connectors can be made available, consult Tyco Electronics.

**Standard Edge II Card Edge Connectors**

**.100 [2.54] Centerline Vertical Solder Posts, Retention Feature, Without Mounting Ears**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated

**Contacts**—Phosphor bronze, duplex plated as follows:

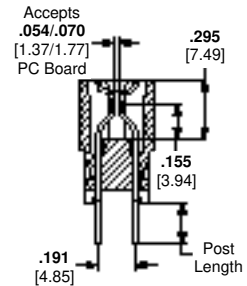
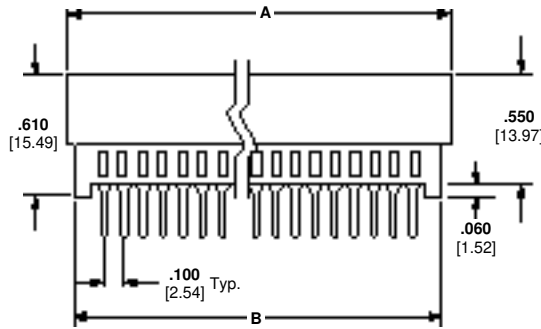
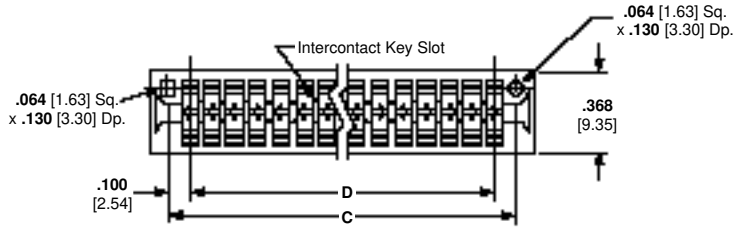
**Plating A**—.000030 [0.00076] gold in contact area, tin on posts, with entire contact nickel underplated

**Plating B**—.000015 [0.00038] gold in contact area, tin on posts, with entire contact nickel underplated

**Plating C**—Gold flash in contact area, tin on posts, with entire contact nickel underplated

**Technical Documents:**

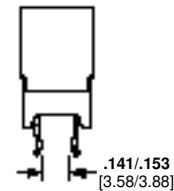
**Product Specification**  
108-9039



**Intercontact Keying Plug**

**Material:**

Natural color polyester



Retention Feature

**Part Number 650025-2**  
(.100 [2.54] Centerline)

No. of Dual Positions	Dimensions				Post Length*	Retention Feature	PartNumbers Plating A
	A	B	C**	D			
18	2.060	1.950	1.900	1.700	.125	3-6, 31-34	645235-4
	52.32	49.53	48.26	43.18			
31	3.360	3.250	3.200	3.000	.125	3-6, 29-32 or 31-34, 57-60	645235-1
	85.34	82.55	81.28	76.20			
50	5.260	5.150	5.100	4.900	.125	3-6, 49-52, 95-98	645235-3
	133.60	130.81	129.54	124.46			
60	6.260	6.150	6.100	5.900	.125	3-6, 55-58, 63-66, 115-118	645235-8
	159.00	156.21	154.94	149.86			

\*Metric equivalent for post length is .125 = [3.18].

\*\*C dimension is card slot length.

- Notes:** 1. Other connector sizes can be made available, consult Tyco Electronics.  
2. High temperature IR reflow compatible connectors can be made available, consult Tyco Electronics.

**Standard Edge II Card Edge Connectors**

Solder Type Board-to-Board Connectors

**.100 [2.54] Centerline, Special 18/31 Dual Combination Connector, Vertical Solder Posts, Without Mounting Ears**

**Material and Finish:**

**Housing**—Black glass-filled polyester, 94V-0 rated, except where noted

**Contacts**—Phosphor bronze, plated with .000030 [0.00076] gold in contact area (except where noted), tin on posts, with entire contact nickel underplated

**Technical Documents:**

**Product Specification**  
108-9039

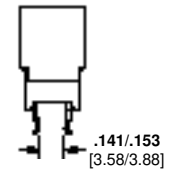
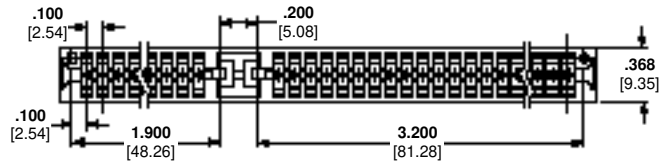
**Intercontact Keying Plug**

**Material:**

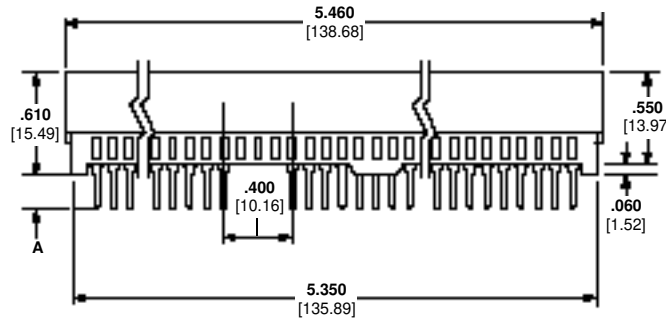
Natural color polyester



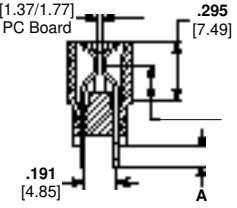
**Part Number 650025-2**  
(.100 [2.54] Centerline)



**Retention Feature**



Accepts  
.054/.070  
[1.37/1.77]  
PC Board



**Solder Posts**

No. of Dual Positions	Post Type	Dimension A	Retention Feature	Part Numbers
52	Solder Posts	.125 3.18	3-6, 41, 42, 51, 52, 93-96	645169-2 536128-1 <sup>1</sup>
52	Solder Posts	.125 3.18	None	645169-3
52	Solder Posts	.125 3.18	3-14, 41, 42, 51, 52, 85-96	645169-4
52	Solder Posts	.125 3.18	5, 6, 31, 32, 41, 42, 93, 94	176139-1 <sup>2</sup>
52	Solder Posts	.187 4.75	None	650616-1

<sup>1</sup> Housing material is high temperature glass-filled polyester, gray.  
<sup>2</sup> Contact area is gold flash.

- Notes:**
1. Card slot length is 5.300 [134.62].
  2. Other connector sizes can be made available, consult Tyco Electronics.
  3. High temperature IR reflow compatible connectors can be made available, consult Tyco Electronics.