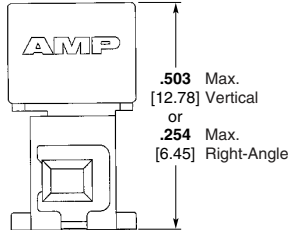


Electronics

Product Facts

- 2-28 contact positions
- Connectors terminate 26, 28 and 30 AWG discrete wire or .050 [1.27] centerline ribbon cable
- Color-coded housings
- Maximum cable insulation diameter of .039 [0.99] with PVC insulation only
- IDC contacts pre-loaded in receptacle housing
- 30 V, 1 A contact rating
- Contact design allows for gold-to-gold or tin-to-tin interface
- Contacts are lubricated to prevent fretting corrosion
- Wire feed-thru capability for daisy-chain wiring or closed end for point-to-point wiring
- Connectors are polarized for proper mating
- Manual and semiautomatic application tooling
- Mating heights shown below:



- Component Recognized by Underwriters Laboratories Inc. to US and Canadian Standards, File No. E28476 C **UL** US (Connectors and Headers) File No. E53793 (Ribbon Cable)

These matrixes have been prepared to assist you in defining the correct mating halves for the MTA-50 header and connector kit combination. Where a "Y" is indicated the combination is a valid mating pair.

Note: Tyco Electronics does NOT recommend intermating connectors and headers with different contact platings.

MTA-50 IDC Connectors and Headers



The MTA-50 IDC Connector System is a wire-to-printed circuit board system with contacts in a staggered, single row on .050 [1.27] centerline. The design features wire feed-through capability for daisy-chain applications. Insulation displacement contacts are used to terminate a wide range of conductor sizes. Ribbon cable can also be terminated when the appropriate receptacle assembly and strain relief cover are used.

Header assemblies for board mount applications include right-angle (horizontal) and vertical mount products. These are available in

through-hole and surface mount configurations.

Typical uses of the MTA-50 IDC connectors would be in the Appliance, Commercial and Home Equipment and Security products industries.

See the following pages for related products:

- Ribbon Cable (reels), .050 [1.27] centerline (p. 71)
- Application Tooling (p. 76)
- Cable Assemblies (p. 74)

Performance Data

- Voltage Rating** — 30 VAC
- Current Rating** — 1 amp max.
- Low-Level Resistance** — 30 milliohms

Dielectric Withstanding Voltage — 500 VAC

Insulation Resistance — 1,000 megohms

Operating Temperature — -55°C to +105°C for connector only; cable rating may be lower

Technical Documents

Application Specification — 114-13072 MTA-50 Connectors

Product Specifications — 108-2113 MTA-50 Connectors

100-4703 MADISON CABLE Cable Specification (28 AWG, 7/36 Tinned copper, PVC insulation)

100-6257 MADISON CABLE Cable Specification (28 AWG, 7/36 Tinned copper, TPO insulation)

MTA-50 IDC Connector Kit / Header Mateability Guide

Connector Kits	Headers			
	1445120	1445121	1445169	1445172
1445341	Y	Y	Y	Y
1445344	Y	Y	Y	Y
1445347	Y	Y	Y	Y
1445350	Y	Y	Y	Y
1445353	Y	Y	Y	Y
1445356	Y	Y	Y	Y
1445359	Y	Y	Y	Y
1445362	Y	Y	Y	Y
1445365	Y	Y	Y	Y
1445368	Y	Y	Y	Y
1445371	Y	Y	Y	Y
1445374	Y	Y	Y	Y

Matrix for Tin Plated Part Numbers

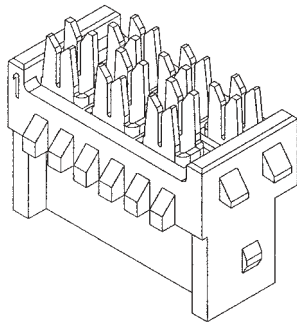
Connector Kits	Headers			
	1445125	1445126	1445171	1445174
1445343	Y	Y	Y	Y
1445346	Y	Y	Y	Y
1445349	Y	Y	Y	Y
1445352	Y	Y	Y	Y
1445355	Y	Y	Y	Y
1445358	Y	Y	Y	Y
1445361	Y	Y	Y	Y
1445364	Y	Y	Y	Y
1445367	Y	Y	Y	Y
1445370	Y	Y	Y	Y
1445373	Y	Y	Y	Y
1445376	Y	Y	Y	Y

Matrix for .00030 [0.00076] Gold Plated Part Numbers

Connector Kits	Headers			
	1445123	1445124	1445170	1445173
1445342	Y	Y	Y	Y
1445345	Y	Y	Y	Y
1445348	Y	Y	Y	Y
1445351	Y	Y	Y	Y
1445354	Y	Y	Y	Y
1445357	Y	Y	Y	Y
1445360	Y	Y	Y	Y
1445363	Y	Y	Y	Y
1445366	Y	Y	Y	Y
1445369	Y	Y	Y	Y
1445372	Y	Y	Y	Y
1445375	Y	Y	Y	Y

Matrix for .00015 [0.00038] Gold Plated Part Numbers

Feed-Thru and Closed End Connectors



Material and Finish

Housing — UL 94V-2 rated, thermo-plastic

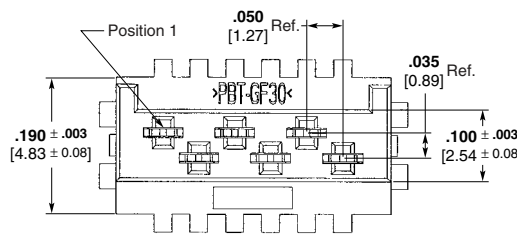
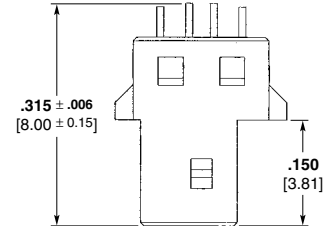
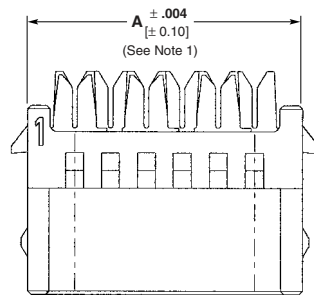
Contacts — Phosphor bronze; .000100 [0.00254] min. tin in wire termination area, over .000050 [0.00127] min. nickel; choice on mating end: .000100 [0.00254] min. tin or .000030 [0.00076] gold or .000015 [0.00038] gold, over .000050 [0.00127] min. nickel

Color Coding by Wire Size for UL94V-0 Connectors

- 26 AWG** — Blue
- 28 AWG** — Green
- 30 AWG** — Brown

For Strain Relief Covers see page 6.
For mating Headers see pages 9 and 10.
For Mateability Guide, see matrixes on page 4.

Receptacle Assemblies — Ribbon Cable



Notes:

1. To determine connector overall length (dim. A), multiply .050 x the number of circuits and add .082. Example: .050 x 10 circuits equals 0.50 + .082 = .582 [14.78].
2. Strain relief covers shown on page 6 are required and sold as part of the Connector Kit.
3. Stranded UL Style 1061 or equivalent wire is recommended.
4. Unless otherwise stated all tolerances (except plating) to be ±.005 [±0.13].
5. Consult Product Drawing for RoHS Compliant information.

Connector Kits — Ribbon Cable

Connector Kit Ordering Information

Connector Kit consists of Receptacle Assembly and Strain Relief Cover.

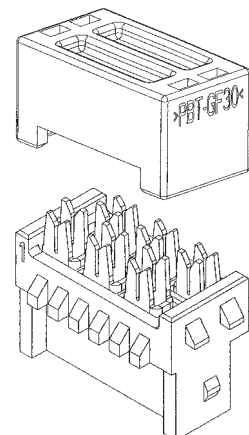
Base part number prefixes and suffixes indicate the number of circuit positions, for example: Base part number 1445359

- 2 position = 0-1445359-2 and
- 28 position = 2-1445359-8

Note: Tin-plated connectors and headers in even position sizes from 2–12 and 18 are stocked parts; all other position sizes and products with gold-plated contacts are Make To Order.

Base Part Numbers

Connector Type & Wire Size	Feed-Thru		Closed End	
	Connector Kit Part Nos.	No. of Circuits	Connector Kit Part Nos.	No. of Circuits
Tin Plated				
26 AWG 0.12–0.15 mm ²	1445359	2–28	1445368	2–28
28 AWG 0.08–0.09 mm ²	1445362	2–28	1445371	2–28
30 AWG 0.05–0.06 mm ²	1445365	2–28	1445374	2–28
.000030 [0.00076] Gold Plated				
26 AWG 0.12–0.15 mm ²	1445361	2–28	1445370	2–28
28 AWG 0.08–0.09 mm ²	1445364	2–28	1445373	2–28
30 AWG 0.05–0.06 mm ²	1445367	2–28	1445376	2–28
.000015 [0.00038] Gold Plated				
26 AWG 0.12–0.15 mm ²	1445360	2–28	1445369	2–28
28 AWG 0.08–0.09 mm ²	1445363	2–28	1445372	2–28
30 AWG 0.05–0.06 mm ²	1445366	2–28	1445375	2–28



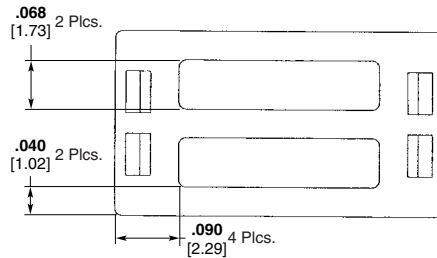
MTA-50
.050 [1.27]

Connector Kits — Ribbon Cable (Continued)

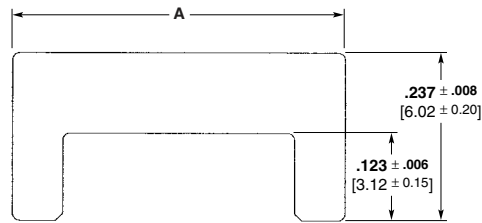
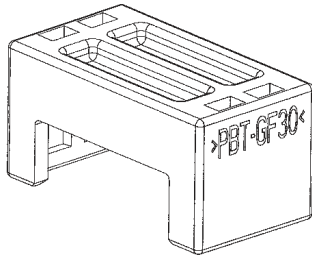
Strain Relief Covers

Material and Finish
Strain Relief Cover — UL 94V-0 rated, thermoplastic, black

MTA-50 IDC Connectors and Headers (Continued)

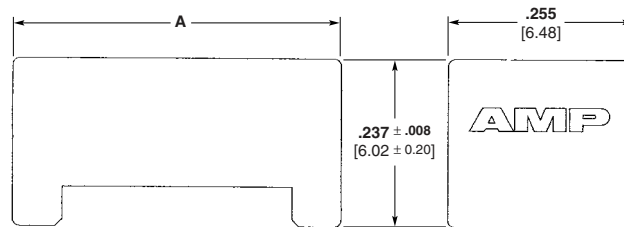
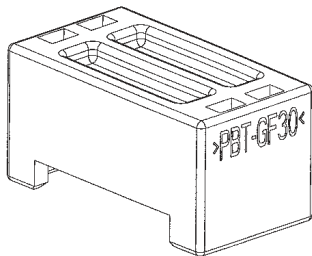


Feed-Thru



Feed-Thru

Closed End



Closed End

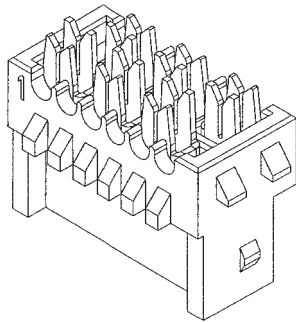
Feed-Thru and Closed End

No. of Circuits	Dim. A	No. of Circuits	Dim. A
2	.260 6.60	16	.960 24.38
3	.310 7.87	17	1.010 25.65
4	.360 9.14	18	1.060 26.92
5	.410 10.41	19	1.110 28.19
6	.460 11.68	20	1.160 29.46
7	.510 12.95	21	1.210 30.73
8	.560 14.22	22	1.260 32.00
9	.610 15.49	23	1.310 33.27
10	.660 16.76	24	1.360 34.54
11	.710 18.03	25	1.410 35.81
12	.760 19.30	26	1.460 37.08
13	.810 20.57	27	1.510 38.35
14	.860 21.84	28	1.560 39.62
15	.910 23.11		

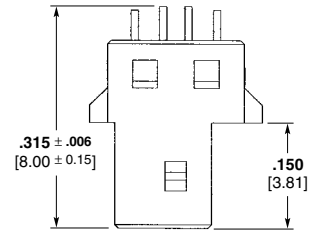
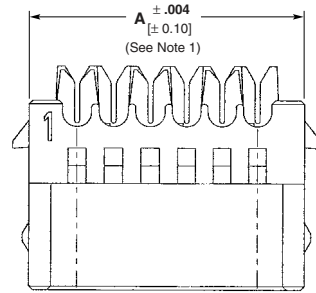
MTA-50 IDC Connectors and Headers (Continued)

MTA-50
.050 [1.27]

Feed-Thru and Closed End Connectors



Receptacle Assemblies — Discrete Wire



Material and Finish

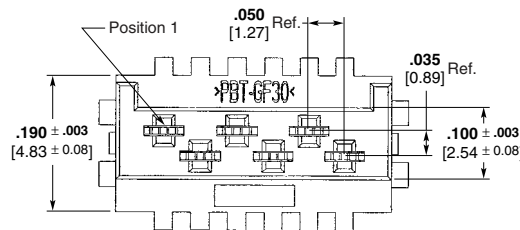
Housing — UL 94V-2 rated, thermo-plastic

Contacts — Phosphor bronze; .000100 [0.00254] min. tin in wire termination area, over .000050 [0.00127] min. nickel; choice on mating end: .000100 [0.00254] min. tin or .000030 [0.00076] gold or .000015 [0.00038] gold, over .000050 [0.00127] min. nickel

Color Coding by Wire Size for UL94V-0 Connectors

- 26 AWG** — Blue
- 28 AWG** — Green
- 30 AWG** — Brown

For Strain Relief Covers see page 8.
For mating Headers see pages 9 and 10.
For Mateability Guide, see matrixes on page 4.



Notes:

1. To determine connector overall length (dim. A), multiply .050 x the number of circuits and add .082. Example: .050 x 10 circuits equals 0.50 + .082 = .582 [14.78].
2. Strain relief covers shown on page 8 are required and sold as part of the Connector Kit.
3. Stranded UL Style 1061 or equivalent wire is recommended.
4. Unless otherwise stated all tolerances (except plating) to be ±.005 [±0.13].
5. Consult Product Drawing for RoHS Compliant information.

Connector Kits — Discrete Wire

Connector Kit Ordering Information

Connector Kit consists of Receptacle Assembly and Strain Relief Cover.

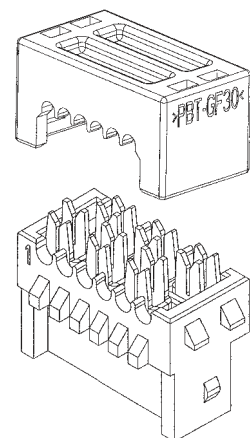
Base part number prefixes and suffixes indicate the number of circuit positions, for example: Base part number 1445341

- 2 position = 0-1445341-2 and
- 28 position = 2-1445341-8

Note: Tin-plated connectors and headers in even position sizes from 2–12 and 18 are stocked parts; all other position sizes and products with gold-plated contacts are Make To Order.

Base Part Numbers

Connector Type & Wire Size	Feed-Thru		Closed End	
	Connector Kit Part Nos.	No. of Circuits	Connector Kit Part Nos.	No. of Circuits
Tin Plated				
26 AWG 0.12–0.15 mm ²	1445341	2–28	1445350	2–28
28 AWG 0.08–0.09 mm ²	1445344	2–28	1445353	2–28
30 AWG 0.05–0.06 mm ²	1445347	2–28	1445356	2–28
.000030 [0.00076] Gold Plated				
26 AWG 0.12–0.15 mm ²	1445343	2–28	1445352	2–28
28 AWG 0.08–0.09 mm ²	1445346	2–28	1445355	2–28
30 AWG 0.05–0.06 mm ²	1445349	2–28	1445358	2–28
.000015 [0.00038] Gold Plated				
26 AWG 0.12–0.15 mm ²	1445342	2–28	1445351	2–28
28 AWG 0.08–0.09 mm ²	1445345	2–28	1445354	2–28
30 AWG 0.05–0.06 mm ²	1445348	2–28	1445357	2–28

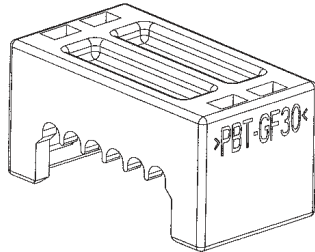


**Connector Kits —
Discrete Wire** (Continued)

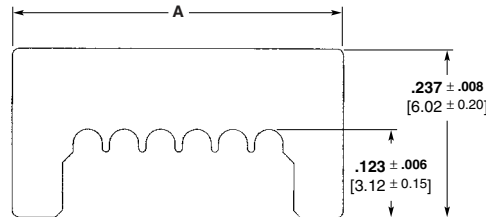
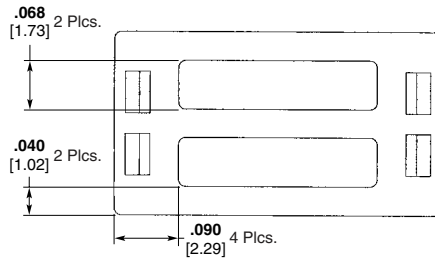
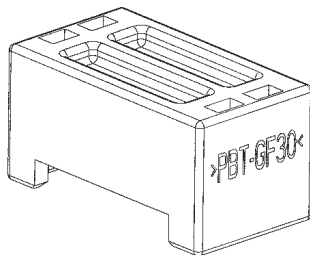
Strain Relief Covers

Material and Finish
Strain Relief Cover — UL 94V-0
rated, thermoplastic, black

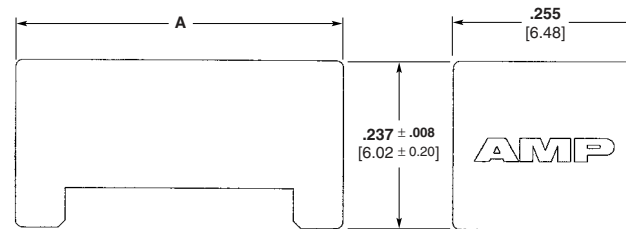
Feed-Thru



Closed End



Feed-Thru



Closed End

Feed-Thru and Closed End

No. of Circuits	Dim. A	No. of Circuits	Dim. A
2	.260 6.60	16	.960 24.38
3	.310 7.87	17	1.010 25.65
4	.360 9.14	18	1.060 26.92
5	.410 10.41	19	1.110 28.19
6	.460 11.68	20	1.160 29.46
7	.510 12.95	21	1.210 30.73
8	.560 14.22	22	1.260 32.00
9	.610 15.49	23	1.310 33.27
10	.660 16.76	24	1.360 34.54
11	.710 18.03	25	1.410 35.81
12	.760 19.30	26	1.460 37.08
13	.810 20.57	27	1.510 38.35
14	.860 21.84	28	1.560 39.62
15	.910 23.11		

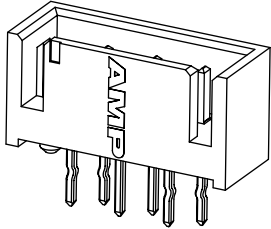
MTA-50
.050 [1.27]

MTA-50 IDC Connectors and Headers (Continued)

MTA-50
.050 [1.27]

Through-Hole Header Assemblies

Vertical

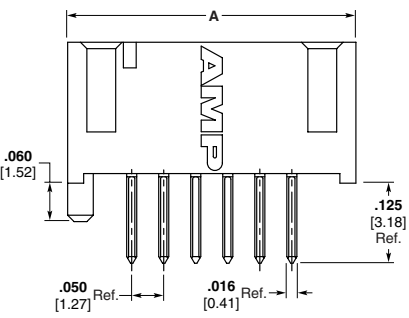
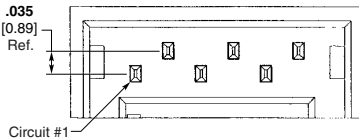


Material and Finish

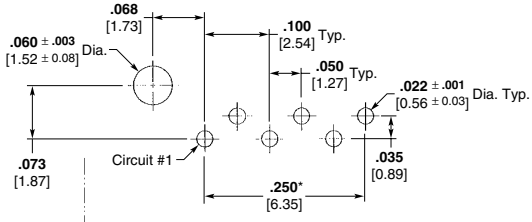
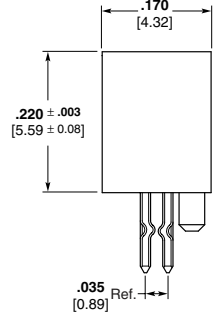
Housing — UL 94V-0 rated, thermo-plastic, black

Contacts — Brass, .000100 [0.00254] min. tin over .000050 [0.00127] min. nickel on solder legs; choice on mating end:

- .000100 [0.00254] min. tin or .000030 [0.00076] gold or .000015 [0.00038] gold, over .000050 [0.00127] min. nickel



Note: To determine header overall length (dim. A), multiply .050 x the number of circuits and add .150. Example: .050 x 6 circuits equals .300 + .150 = .450 [11.43].



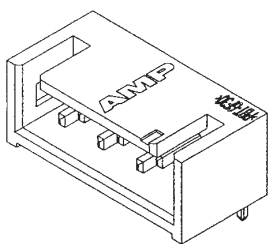
Recommended Mounting Hole Size and Pattern for .062 [1.57] Thick PC Board

* 6-circuit Dim. shown, refer to Product Drawing for actual PCB Dimensions and RoHS Compliant information.

Base Part Numbers

Through-Hole	
Header Part Nos.	No. of Posts
Standard UL 94V-0, Tin Plated	
1445120	2-28
Standard UL 94V-0 .000030 [0.00076] Gold Plated	
1445125	2-28
Standard UL 94V-0 .000015 [0.00038] Gold Plated	
1445123	2-28

Right-Angle



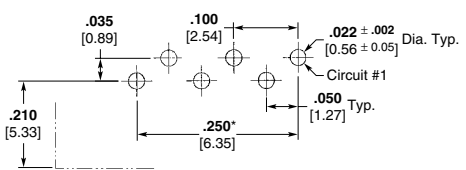
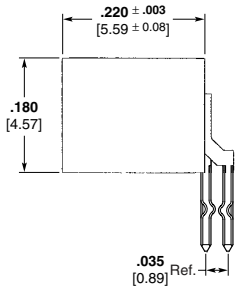
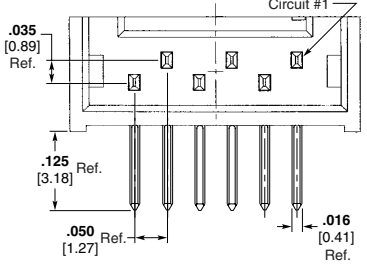
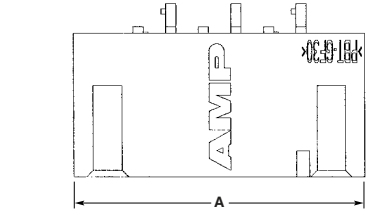
For mating Connector Kits see pages 5 through 8.
For mateability options, see matrixes on page 4.

Header Ordering Information

Base part number prefixes and suffixes indicate the number of circuit positions, for example: Base part number 1445120

- 2 position = 0-1445120-2
- and
- 28 position = 2-1445120-8

Note: Tin-plated connectors and headers in even position sizes from 2-12 and 18 are stocked parts; all other position sizes and products with gold-plated contacts are Make To Order.



Recommended Mounting Hole Size and Pattern for .062 [1.57] Thick PC Board

* 6-circuit Dim. shown, refer to Product Drawing for actual PCB Dimensions and RoHS Compliant information.

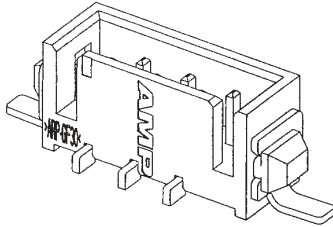
Base Part Numbers

Through-Hole	
Header Part Nos.	No. of Posts
Standard UL 94V-0, Tin Plated	
1445169	2-28
Standard UL 94V-0 .000030 [0.00076] Gold Plated	
1445171	2-28
Standard UL 94V-0 .000015 [0.00038] Gold Plated	
1445170	2-28

MTA-50 IDC Connectors and Headers (Continued)

Surface Mount Header Assemblies

Vertical



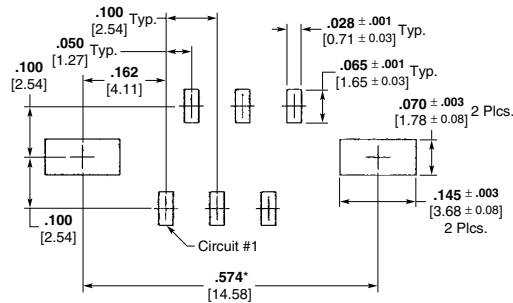
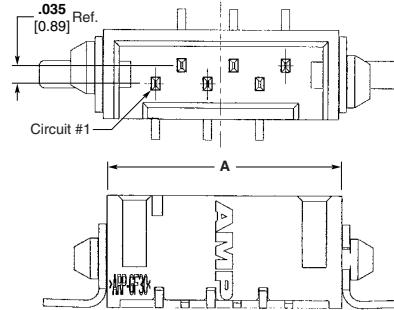
Material and Finish

Housing — UL 94V-0 rated, thermo-plastic, black

Contacts — Brass, .000100 [0.00254] min. tin over .000050 [0.00127] min. nickel on solder pads; choice on mating end:

.000100 [0.00254] min. tin or
.000030 [0.00076] gold or
.000015 [0.00038] gold, over
.000050 [0.00127] min. nickel

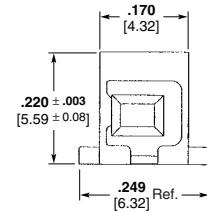
Boardlock — Phosphor bronze, tin plated .000100 [0.000254] min. over .000050 [0.00127] min. nickel



Recommended PC Board Layout
for use with .010 [0.25] Thick Stencil

* 6-circuit Dim. shown, refer to Product Drawing for actual PCB Dimensions and RoHS Compliant information.

Note: To determine header overall length (dim. A), multiply .050 x the number of circuits and add .150. Example: .050 x 6 circuits equals .300 + .150 = .450 [11.43].

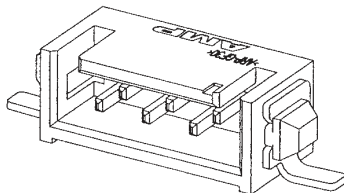


Base Part Numbers

Surface Mount	
Header Part Nos.	No. of Posts
Standard UL 94V-0, Tin Plated	
1445121	2-28
Standard UL 94V-0 .000030 [0.00076] Gold Plated	
1445126	2-28
Standard UL 94V-0 .000015 [0.00038] Gold Plated	
1445124	2-28

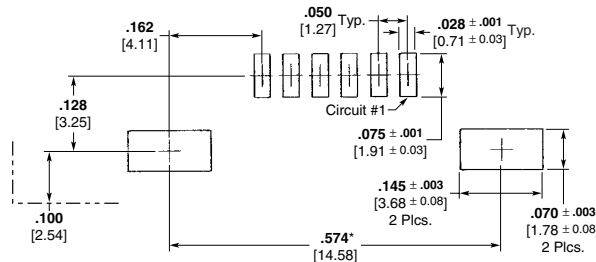
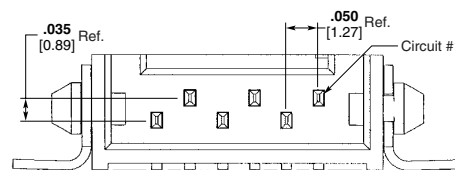
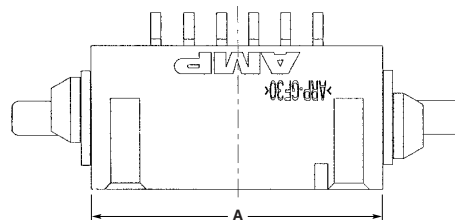
Note: All SMT product is pre-packaged in standard tape and reel format.

Right-Angle



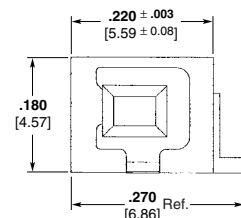
For mating Connector Kits see pages 5 through 8.

For mateability options, see matrixes on page 4.



Recommended PC Board Layout
for use with .010 [0.25] Thick Stencil

* 6-circuit Dim. shown, refer to Product Drawing for actual PCB Dimensions and RoHS Compliant information.



Base Part Numbers

Surface Mount	
Header Part Nos.	No. of Posts
Standard UL 94V-0, Tin Plated	
1445172	2-28
Standard UL 94V-0 .000030 [0.00076] Gold Plated	
1445174	2-28
Standard UL 94V-0 .000015 [0.00038] Gold Plated	
1445173	2-28

Header Ordering Information

Base part number prefixes and suffixes indicate the number of circuit positions, for example: Base part number 1445121

2 position = 0-1445121-2
and
28 position = 2-1445121-8

Note: Tin-plated connectors and headers in even position sizes from 2-12 and 18 are stocked parts; all other position sizes and products with gold-plated contacts are Make To Order.