



Fine Pitch SMT Stacking Connectors
(Parallel Board-to-Board)



Stacking Height Guide for Parallel Board-to-Board Applications



Fine Pitch SMT Stacking Connectors
(Parallel Board-to-Board)



Stacking Height Guide for Parallel Board-to-Board Applications (Continued)

Stacking Height mm inch	Connector Description	Pitch	Connector Sizes (No. of Positions)																Connector Sizes (No. of Positions) <i>Continued</i>																							
			10	12	14	16	20	22	24	30	34	38	40	46	50	54	56	60	64	70	76	80	84	100	114	120	140	152	160	180	190	200	220	228	240	268	280	320	440			
1.00 0.039	4mm Fine Stack	4mm																																								
1.50 0.059	4mm Fine Stack	4mm																																								
1.50 0.059	4mm Fine Stack	4mm																																								
3.00 0.118	8mm Fine Stack	8mm																																								
3.00 0.118	8mm Fine Stack	8mm																																								
4.00 0.157	8mm Fine Stack	8mm																																								
4.00 0.157	8mm Fine Height	6mm																																								
4.00 0.157	8mm Fine Male	8mm																																								
4.20 0.165	8mm Fine Stack	8mm																																								
4.50 0.177	5mm Fine Male	5mm																																								
4.50 0.177	8mm Fine Male	8mm																																								
4.20 0.165	8mm Fine Stack	8mm																																								
5.00 0.197	5mm Fine Height	5mm																																								
5.00 0.197	8mm Fine Stack	8mm																																								
5.00 0.197	8mm Fine Height	8mm																																								
5.50 0.217	5mm Fine Male	5mm																																								
5.50 0.217	8mm Fine Stack	8mm																																								
5.00 0.232	8mm Fine Stack	8mm																																								
6.00 0.236	5mm Fine Male	5mm																																								
6.00 0.236	5mm Fine Height	5mm																																								
6.00 0.236	8mm Fine Height	8mm																																								
6.00 0.236	8mm Fine Stack	8mm																																								
6.35 0.250	AMPMODU 50/50	050°																																								
6.80 0.260	MICTOR	025°																																								
7.00 0.270	5mm Fine Height	5mm																																								
7.00 0.276	8mm Fine Height	8mm																																								
7.00 0.276	8mm Fine Stack	8mm																																								
8.00 0.315	5mm Fine Height	5mm																																								
8.00 0.315	8mm Fine Height	8mm																																								
8.00 0.315	8mm Fine Stack	8mm																																								
8.00 0.315	1mm Fine Height	1mm																																								
8.13 0.320	AMPMODU 50/50	050°																																								
9.00 0.354	5mm Fine Height	5mm																																								
9.00 0.354	8mm Fine Stack	8mm																																								
9.00 0.354	8mm Fine Height	8mm																																								
9.00 0.354	1mm Fine Height	1mm																																								
9.00 0.354	MICTOR	025°																																								
9.91 0.390	AMPMODU 50/50	050°																																								
9.91 0.394	8mm Fine Height	8mm																																								
10.00 0.394	8mm Fine Height	8mm																																								
10.00 0.394	1mm Fine Height	1mm																																								
10.92 0.430	MICTOR	025°																																								
11.00 0.433	5mm Fine Height	5mm																																								
11.00 0.433	8mm Fine Height	8mm																																								
11.00 0.433	8mm Fine Stack	8mm																																								
11.00 0.433	1mm Fine Height	1mm																																								
12.00 0.472	5mm Fine Height	5mm																																								
12.00 0.472	8mm Fine Height	8mm																																								
12.00 0.472	8mm Fine Stack	8mm																																								
12.00 0.472	1mm Fine Height	1mm																																								
12.57 0.485	MICTOR	025°																																								
13.00 0.512	8mm Fine Height	8mm																																								
13.00 0.512	1mm Fine Height	1mm																																								
13.00 0.512	1mm Fine Stack	1mm																																								
13.98 0.515	AMPMODU System 50	050°																																								
14.00 0.551	8mm Fine Height	8mm																																								
14.00 0.551	8mm Fine Stack	8mm																																								
14.00 0.551	1mm Fine Height	1mm																																								
15.00 0.591	5mm Fine Height	5mm																																								
15.00 0.591	8mm Fine Height	8mm																																								
15.00 0.591	8mm Fine Stack	8mm																																								

1.0mm Free Height (FH) (IEEE 1386) Connectors

Product Facts

- For board stacking applications
- High density packaging on 1.0 [.039] centerline spacing
- Available in standard 64-position and optional 84-position sizes
- "Tape-and-reel" packaged per EIA standards
- Board stacking heights available from 8 [.315] to 15 [.591] (see page 84)
- Increased plastic clearance eliminates stress to solder joints during mating (see page 84)
- Improved locating posts ensure accurate hand or robotic placement (see page 84)
- Meets EIA-700 AAAB specifications for IEEE 1386 applications
- All 1.0mm Free Height products within this section are RoHS Compliant

Technical Documents (page 113)
Product Specification
108-2246



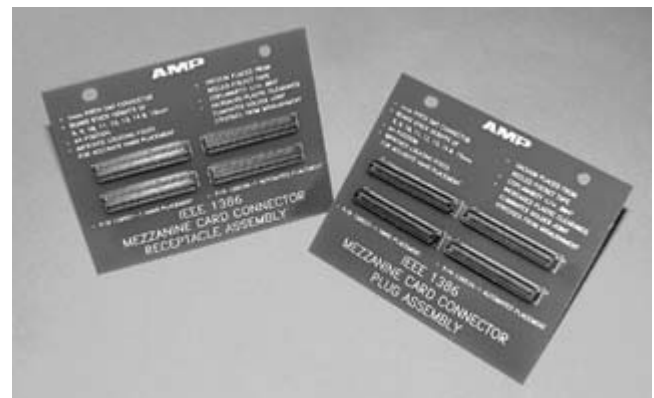
As a standard for adding local PCI or Sbus performance to Futurebus+ and VMEbus applications, IEEE 1386 offers new levels of performance and packaging convenience through the mezzanine architecture. Tyco Electronics makes it easier and more productive to add an IEEE 1386 mezzanine connector to your system. The surface-mount parallel stacking connector features contacts on a 1.0 [.039] pitch and is available in eight stacking heights

from 8 [.315] to 15 [.591]. Sizes include the IEEE 1386 standard 64-position version and an optional 84-position version. Not only is the connector compatible with EIA-700 AAAB — the connector standard for IEEE 1386 mezzanine connectors — it offers several enhancements that make it easier to use and more reliable. Increased plastic clearance between mating connectors makes it easier to align multiple connectors for mating,

thus eliminating stress to the solder joints during engagement. Improved locating posts allow fast, highly accurate hand placement of connectors. The connectors are available with vacuum covers for automated placement.

Performance Characteristics
Current Rating — 1.0 ampere per contact
Contact Resistance — 30 milliohms max. (initial)
Durability — tested to 100 mating cycles min.

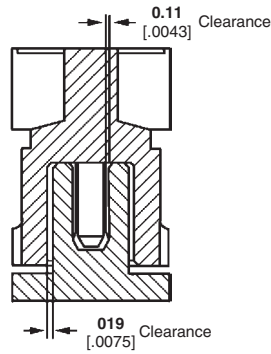
1.0mm FH (IEEE 1386) Connectors



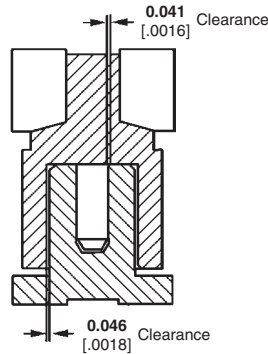
1.0mm Free Height (FH) (IEEE 1386) Connectors (Continued)

Additional clearance during mating increases reliability by allowing registration misalignment and eliminating stresses on the solder joints.

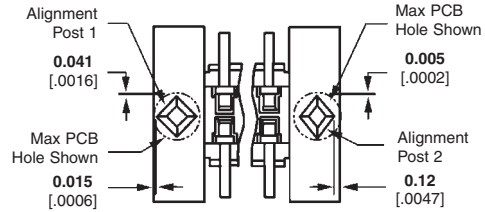
Improved locating posts allow fast, accurate hand placement on the board by ensuring proper location at both the minimum and maximum dimensions of connector material tolerances and PC board hole tolerances.



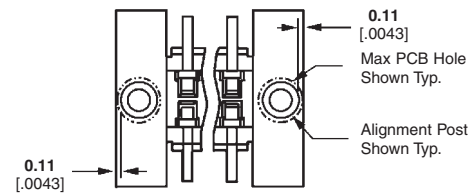
Tyco Electronics Product



Competitive Product



Tyco Electronics Product



Competitive Product

1.0mm Free Height (FH) (IEEE 1386) Connector Assemblies

No. of Positions	Plating	Stack Height	With Locating Posts Without Pickup Cap		Without Locating Posts With Pickup Cap		With Locating Posts With Pickup Cap	
			Receptacle	Plug	Receptacle	Plug	Receptacle	Plug
64	30µ" Au	8.00 [.315]	5120521-1	5120525-1	5120528-1	5120532-1	5146893-1	5146897-1
		9.00 [.354]	5120521-1	5120526-1	5120528-1	5120533-1	5146893-1	5146898-1
		10.00 [.394]	5120521-1	5120527-1	5120528-1	5120534-1	5146893-1	5146888-1
		11.00 [.433]	5120603-1	5120526-1	5120529-1	5120533-1	5146894-1	5146898-1
		12.00 [.472]	5120603-1	5120527-1	5120529-1	5120534-1	5146894-1	5146888-1
		13.00 [.512]	5120523-1	5120527-1	5120530-1	5120534-1	5146895-1	5146888-1
		14.00 [.551]	5120524-1	5120526-1	5120531-1	5120533-1	5146896-1	5146898-1
	15.00 [.591]	5120524-1	5120527-1	5120531-1	5120534-1	5146896-1	5146888-1	
	50µ" Au	8.00 [.315]	1-5120521-1	1-5120525-1	1-5120528-1	1-5120532-1	1-5146893-1	1-5146897-1
		9.00 [.354]	1-5120521-1	1-5120526-1	1-5120528-1	1-5120533-1	1-5146893-1	1-5146898-1
		10.00 [.394]	1-5120521-1	1-5120527-1	1-5120528-1	1-5120534-1	1-5146893-1	1-5146888-1
		11.00 [.433]	1-5120603-1	1-5120526-1	1-5120529-1	1-5120533-1	1-5146894-1	1-5146898-1
		12.00 [.472]	1-5120603-1	1-5120527-1	1-5120529-1	1-5120534-1	1-5146894-1	1-5146888-1
		13.00 [.512]	1-5120523-1	1-5120527-1	1-5120530-1	1-5120534-1	1-5146895-1	1-5146888-1
		14.00 [.551]	1-5120524-1	1-5120526-1	1-5120531-1	1-5120533-1	1-5146896-1	1-5146898-1
15.00 [.591]		1-5120524-1	1-5120527-1	1-5120531-1	1-5120534-1	1-5146896-1	1-5146888-1	
84	30µ" Au	8.00 [.315]	5120521-2	5120525-2	5120528-2	5120532-2	5146893-2	5146897-2
		9.00 [.354]	5120521-2	5120526-2	5120528-2	5120533-2	5146893-2	5146898-2
		10.00 [.394]	5120521-2	5120527-2	5120528-2	5120534-2	5146893-2	5146888-2
		11.00 [.433]	5120603-2	5120526-2	5120529-2	5120533-2	5146894-2	5146898-2
		12.00 [.472]	5120603-2	5120527-2	5120529-2	5120534-2	5146894-2	5146888-2
		13.00 [.512]	5120523-2	5120527-2	5120530-2	5120534-2	5146895-2	5146888-2
		14.00 [.551]	5120524-2	5120526-2	5120531-2	5120533-2	5146896-2	5146898-2
	15.00 [.591]	5120524-2	5120527-2	5120531-2	5120534-2	5146896-2	5146888-2	
	50µ" Au	8.00 [.315]	1-5120521-2	1-5120525-2	1-5120528-2	1-5120532-2	1-5146893-2	1-5146897-2
		9.00 [.354]	1-5120521-2	1-5120526-2	1-5120528-2	1-5120533-2	1-5146893-2	1-5146898-2
		10.00 [.394]	1-5120521-2	1-5120527-2	1-5120528-2	1-5120534-2	1-5146893-2	1-5146888-2
		11.00 [.433]	1-5120603-2	1-5120526-2	1-5120529-2	1-5120533-2	1-5146894-2	1-5146898-2
		12.00 [.472]	1-5120603-2	1-5120527-2	1-5120529-2	1-5120534-2	1-5146894-2	1-5146888-2
		13.00 [.512]	1-5120523-2	1-5120527-2	1-5120530-2	1-5120534-2	1-5146895-2	1-5146888-2
		14.00 [.551]	1-5120524-2	1-5120526-2	1-5120531-2	1-5120533-2	1-5146896-2	1-5146898-2
15.00 [.591]		1-5120524-2	1-5120527-2	1-5120531-2	1-5120534-2	1-5146896-2	1-5146888-2	

Notes: Receptacle specifications are shown on pages 85 and 86; plug specifications are shown on pages 87 and 88. Part Numbers are RoHS compliant.

1.0mm FH (IEEE 1386) Connectors

1.0mm FH (IEEE 1386) Receptacles with Locating Posts, 1.0 [.039] Pitch

**8 [.315] thru 15 [.591]
Stacking Heights**

Material and Finish

Housing — Liquid crystal polymer, black

Contacts — Phosphor bronze; duplex plated 0.00076 [.000030] or .00127 [.00050] min. gold on contact area, 0.00381 [.000150] min. tin on solder area, with entire contact underplated 0.00127 [.000050] min. nickel

Related Product Data

Performance Characteristics — page 83

Stacking Height Combinations — page 84

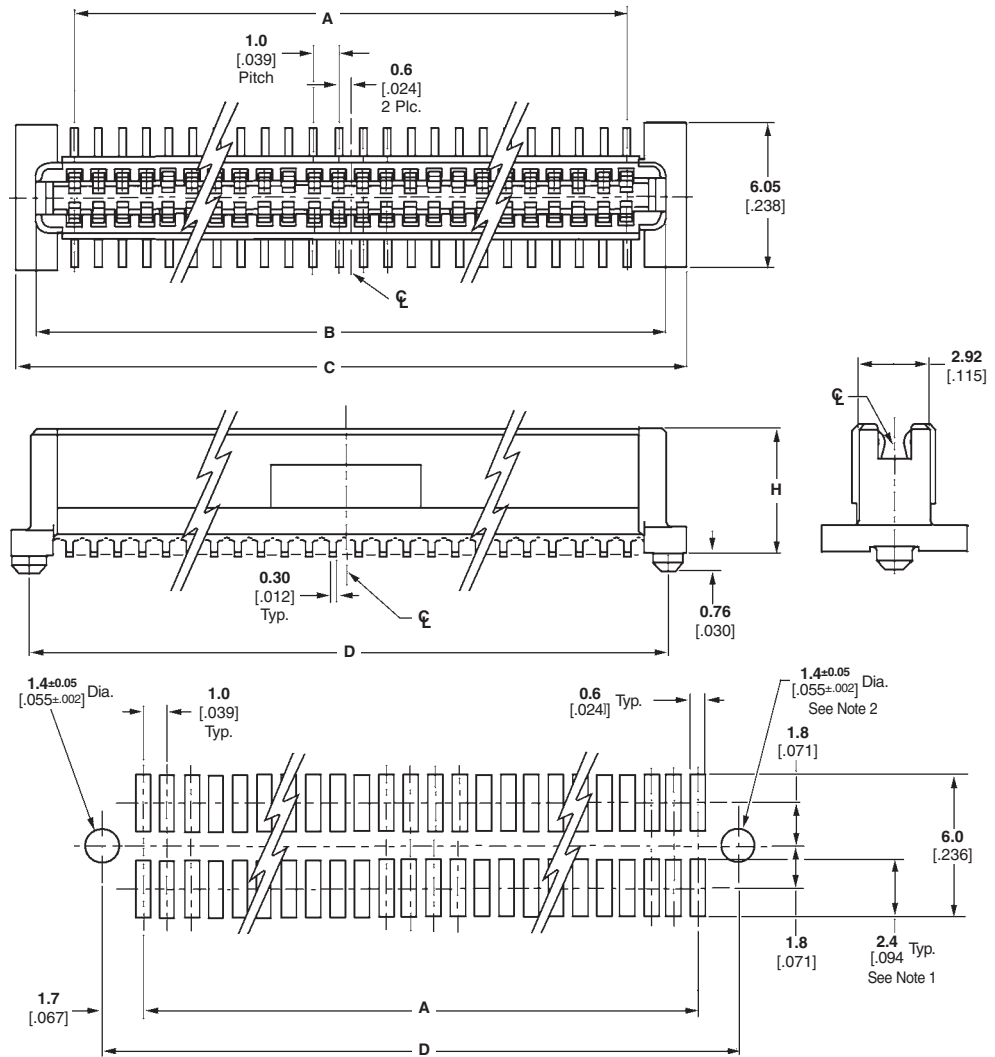
Mating Plugs — pages 87 & 88

Technical Documents

EIA-700 AAAB Specification

Application Specification

114-25045



Recommended PC Board Layout

No. of Positions	Dimensions					Receptacle Part Number			
	A	B	C	D	H	30µ" Au Plating		50µ" Au Plating	
						w/o pickup cap	w/ pickup cap	w/o pickup cap	w/ pickup cap
64	31.0 1.220	34.22 1.347	35.9 1.413	34.4 1.354	5.37 .211	5120521-1	5146893-1	1-5120521-1	1-5146893-1
					7.37 .290	5120603-1	5146894-1	1-5120603-1	1-5146894-1
					8.37 .330	5120523-1	5146895-1	1-5120523-1	1-5146895-1
					10.37 .408	5120524-1	5146896-1	1-5120524-1	1-5146896-1
84	41.0 1.614	44.22 1.741	45.9 1.807	44.4 1.748	5.37 .211	5120521-2	5146893-2	1-5120521-2	1-5146893-2
					7.37 .290	5120603-2	5146894-2	1-5120603-2	1-5146894-2
					8.37 .330	5120523-2	5146895-2	1-5120523-2	1-5146895-2
					10.37 .408	5120524-2	5146896-2	1-5120524-2	1-5146896-2

- Notes:** 1. Shorter solder lands may be used per EIA-700 AAAB. However, the 2.4 [.094] length assures optimum solder fillet regardless of connector manufacturer.
 2. 1.5 ±0.05 [.059 ±.002] diameter hole should be used if placed on PC board with vacuum placement equipment.
 3. Part Numbers are RoHS compliant.

1.0mm FH (IEEE 1386) Receptacles without Locating Posts, 1.0 [.039] Pitch

**8 [.315] thru 15 [.591]
Stacking Heights**

Material and Finish

Housing — Liquid crystal polymer, black

Contacts — Phosphor bronze; duplex plated 0.00076 [.000030] or .00127 [.00050] min. gold on contact area, 0.00381 [.000150] min. tin on solder area, with entire contact underplated 0.00127 [.000050] min. nickel

Vacuum Cover — Aluminum Alloy

Related Product Data

Performance Characteristics — page 83

Stacking Height Combinations — page 84

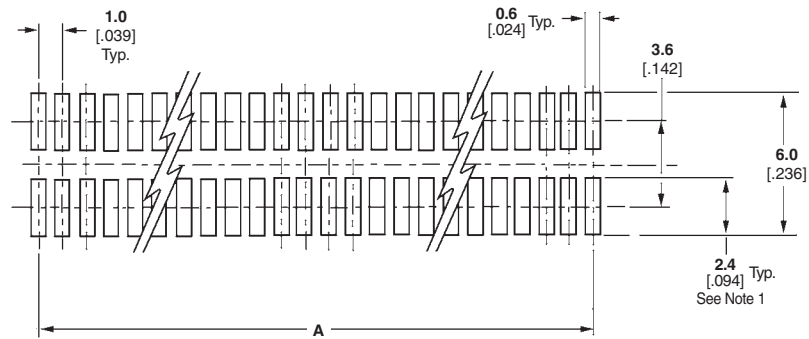
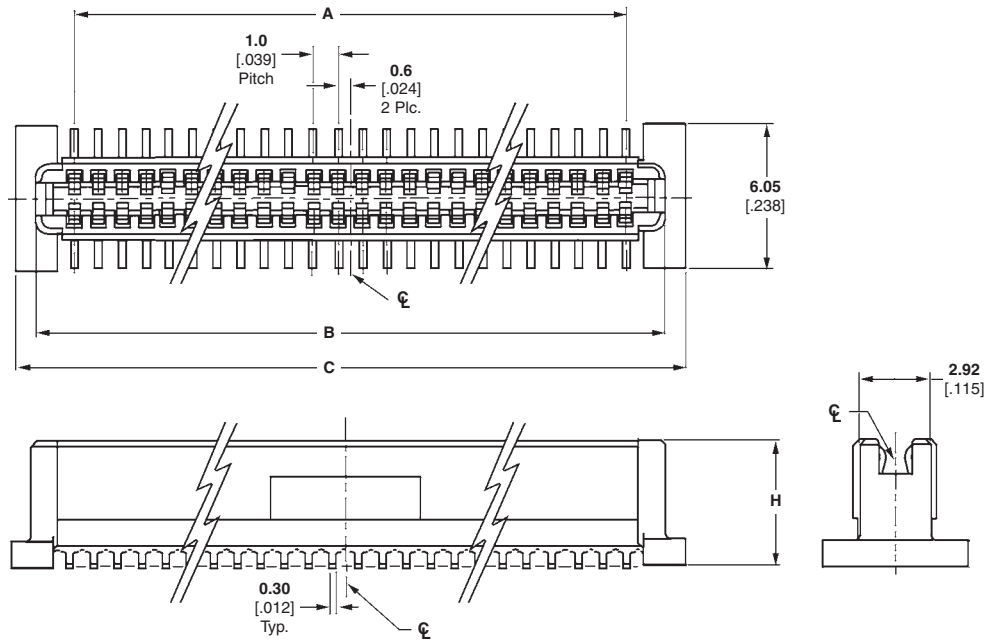
Mating Plugs — pages 87 & 88

Technical Documents

EIA-700 AAAB Specification

Application Specification

114-25045



Recommended PC Board Layout

No. of Positions	Dimensions				Receptacle Part Number	
	A	B	C	H	30µ" Au Plating w/ pickup cap	50µ" Au Plating w/ pickup cap
64	31.0 1.220	34.22 1.347	35.9 1.413	5.37 .211	5120528-1	1-5120528-1
				7.37 .290	5120529-1	1-5120529-1
				8.37 .330	5120530-1	1-5120530-1
				10.37 .408	5120531-1	1-5120531-1
84	41.0 1.614	44.22 1.741	45.9 1.807	5.37 .211	5120528-2	1-5120528-2
				7.37 .290	5120529-2	1-5120529-2
				8.37 .330	5120530-2	1-5120530-2
				10.37 .408	5120531-2	1-5120531-2

- Notes:** 1. Shorter solder lands may be used per EIA-700 AAAB. However, the 2.4 [.094] length assures optimum solder fillet regardless of connector manufacturer.
2. Vacuum cover omitted from illustrations above for dimensional clarity.
3. Part Numbers are RoHS compliant.

1.0mm FH (IEEE 1386) Connectors

1.0mm FH (IEEE 1386) Plugs with Locating Posts, 1.0 [.039] Pitch

8 [.315] thru 15 [.591]
Stacking Heights

Material and Finish

Housing — Liquid crystal polymer, black

Contacts — Phosphor bronze; duplex plated 0.00076 [.000030] or .00127 [.00050] min. gold on contact area, 0.00381 [.000150] min. tin on solder area, with entire contact underplated 0.00127 [.000050] min. nickel

Related Product Data

Performance Characteristics — page 83

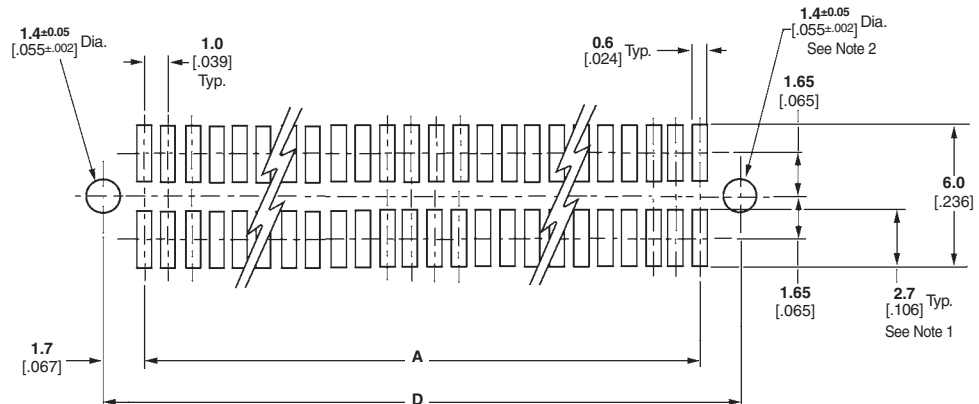
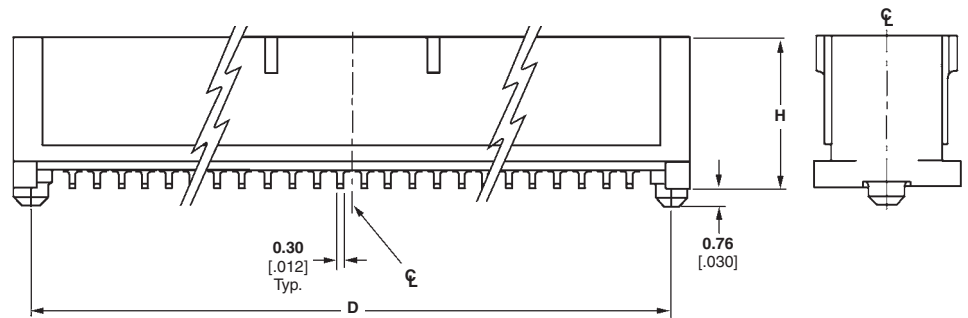
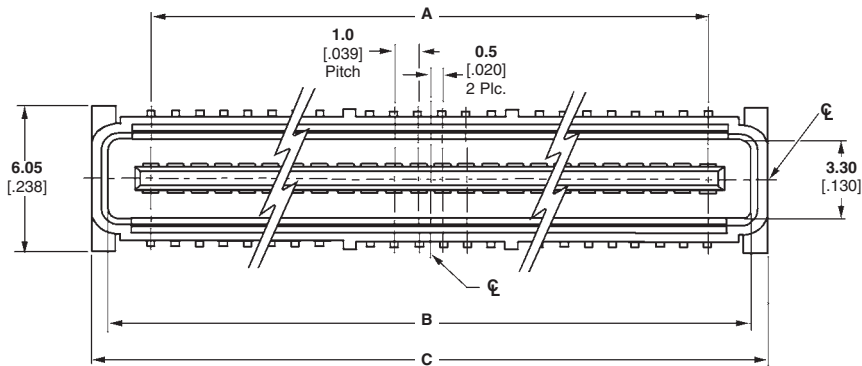
Stacking Height Combinations — page 84

Mating Receptacles — pages 85 & 86

Technical Documents

EIA-700 AAAB Specification

Application Specification
114-25045



Recommended PC Board Layout

No. of Positions	Dimensions					Plug Part Number			
	A	B	C	D	H	30µ" Au Plating		50µ" Au Plating	
						w/o pickup cap	w/ pickup cap	w/o pickup cap	w/ pickup cap
64	31.0 1.220	34.58 1.361	35.9 1.413	34.4 1.354	6.35 .250	5120525-1	5146897-1	1-5120525-1	1-5146897-1
					7.35 .289	5120526-1	5146898-1	1-5120526-1	1-5146898-1
					8.35 .329	5120527-1	5146888-1	1-5120527-1	1-5146888-1
84	41.0 1.614	44.58 1.755	45.9 1.807	44.4 1.748	6.35 .250	5120525-2	5146897-2	1-5120525-2	1-5146897-2
					7.35 .289	5120526-2	5146898-2	1-5120526-2	1-5146898-2
					8.35 .329	5120527-2	5146888-2	1-5120527-2	1-5146888-2

- Notes:** 1. Shorter solder lands may be used per EIA-700 AAAB. However, the 2.7 [.106] length assures optimum solder fillet regardless of connector manufacturer.
2. 1.5 ±0.05 [.059 ±.002] diameter hole should be used if placed on PC board with vacuum placement equipment.
3. Part Numbers are RoHS compliant.

1.0mm FH (IEEE 1386) Plugs without Locating Posts, 1.0 [.039] Pitch

8 [.315] thru 15 [.591] Stacking Heights

Material and Finish

Housing — Liquid crystal polymer, black

Contacts — Phosphor bronze; duplex plated 0.00076 [.000030] or .00127 [.00050] min. gold on contact area, 0.00381 [.000150] min. tin on solder area, with entire contact underplated 0.00127 [.000050] min. nickel

Vacuum Cover — Aluminum Alloy

Related Product Data

Performance Characteristics — page 83

Stacking Height Combinations — page 84

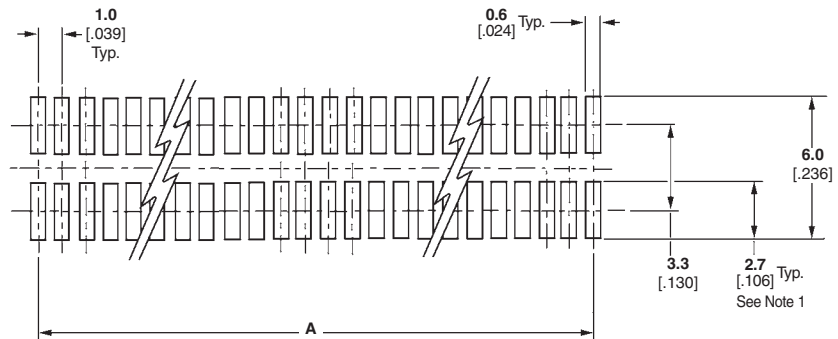
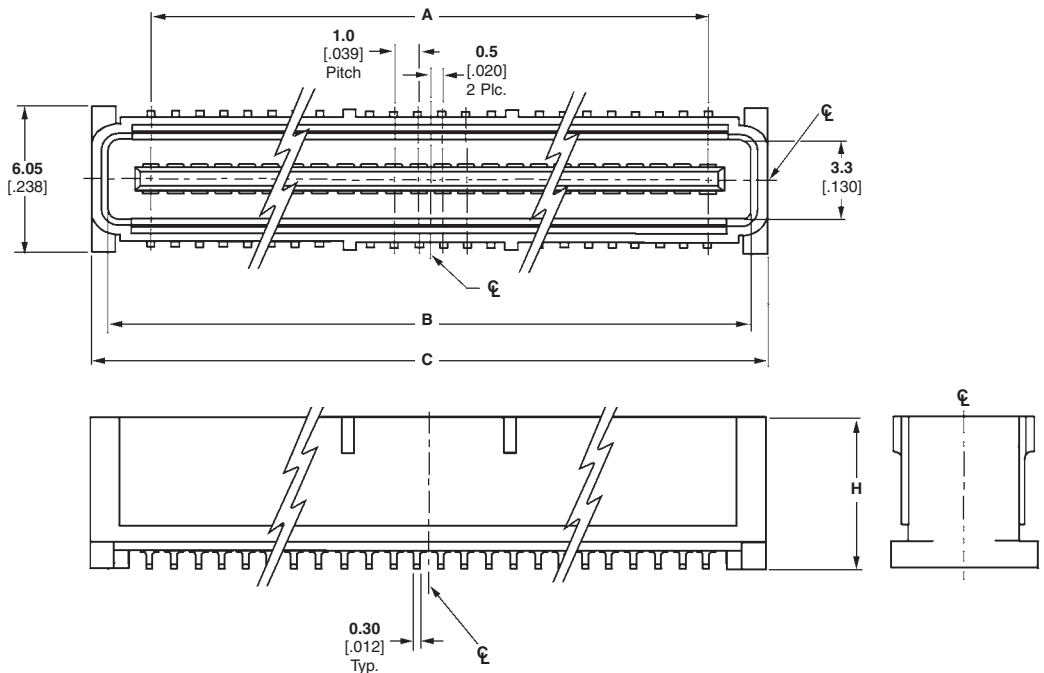
Mating Receptacles — pages 85 & 86

Technical Documents

EIA-700 AAAB Specification

Application Specification

114-25045



Recommended PC Board Layout

No. of Positions	Dimensions				Plug Part Number	
	A	B	C	H	30µ" Au Plating w/ pickup cap	50µ" Au Plating w/ pickup cap
64	31.0 1.220	34.58 1.361	35.9 1.413	6.35 .250	5120532-1	1-5120532-1
				7.35 .289	5120533-1	1-5120533-1
				8.35 .329	5120534-1	1-5120534-1
84	41.0 1.614	44.58 1.755	45.9 1.807	6.35 .250	5120532-2	1-5120532-2
				7.35 .289	5120533-2	1-5120533-2
				8.35 .329	5120534-2	1-5120534-2

Notes: 1. Shorter solder lands may be used per EIA-700 AAAB. However, the 2.7 [.106] length assures optimum solder fillet regardless of connector manufacturer.
2. Vacuum cover omitted from illustrations above for dimensional clarity.
3. Part Numbers are RoHS compliant.

1.0mm FH (IEEE 1386) Connectors