

# 3M™ CP2 Press-Fit Header

2 mm Type A 110 Signal Contacts

CP2 Series



- 25 mm basic system unit
- 50 mm module
- 2 mm grid spacing allows for high signal density at low cost
- “Eye of the Needle” compliant pin press-fit design reduces manufacturing time and cost
- Three contact mating levels for Early Mate Late Break or “Hot Swap” applications reduces manufacturing time and cost
- Feed through termination available for midplane applications
- Additional grounding rows available for improved ground bounce and EMI immunity
- Mates with 5 row 3M™ HSHM, UHM and CP2 Sockets
- End to end stackable with 5 row 3M™ HSHM, HM, and CP2 Headers
- See the Regulatory Information Appendix (RIA) in the “RoHS compliance” section of [www.3Mconnectors.com](http://www.3Mconnectors.com) for compliance information (RIA E1 & C1 apply)

Date Modified: August 5, 2015

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## Physical

### Insulation:

Material: Glass Filled Polyester (PBT)

Flammability: UL94V-0

### Contact:

Material: Copper Alloy

Plating: See Ordering Information

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## Mechanical

Mating Force:  $\leq 0.75\text{N/PIN}$

Withdrawl Force:  $\geq 0.15\text{N/PIN}$

Mating and Un-mating Operations: 200 for KR plating

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## Electrical

Current Rating: 1.0 Amperes at 70°C with all contacts powered

Contact Resistance:  $\leq 20\text{ m}\Omega$

Insulation Resistance:  $\geq 10,000\text{ M}\Omega$

Test Voltage: 750 VAC<sub>RMS</sub>

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## Environmental

Temperature Ratings: -55°C to +125°C

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## PCB Data

Recommended PCB Plated Through Hole:  $\text{Ø } 0.6 \pm 0.05\text{ mm}$

Drill Hole Diameter:  $\text{Ø } 0.7 \pm 0.02\text{ mm}$

Hole platings: Cu 25~50  $\mu\text{m}$ , Sn < 10  $\mu\text{m}$

PCB thickness: 2.4 - 5.6 mm for 3.7 mm tails, 1.4 - 5.6 mm for 2.3 mm tails

Press-In Force:  $\leq 204\text{N/pin}$  on nominal hole diameter

Retention Force:  $\geq 13.5\text{N/pin}$  on nominal hole diameter

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Electronics Materials Solutions Division

Interconnect Solutions

<http://www.3Mconnectors.com>

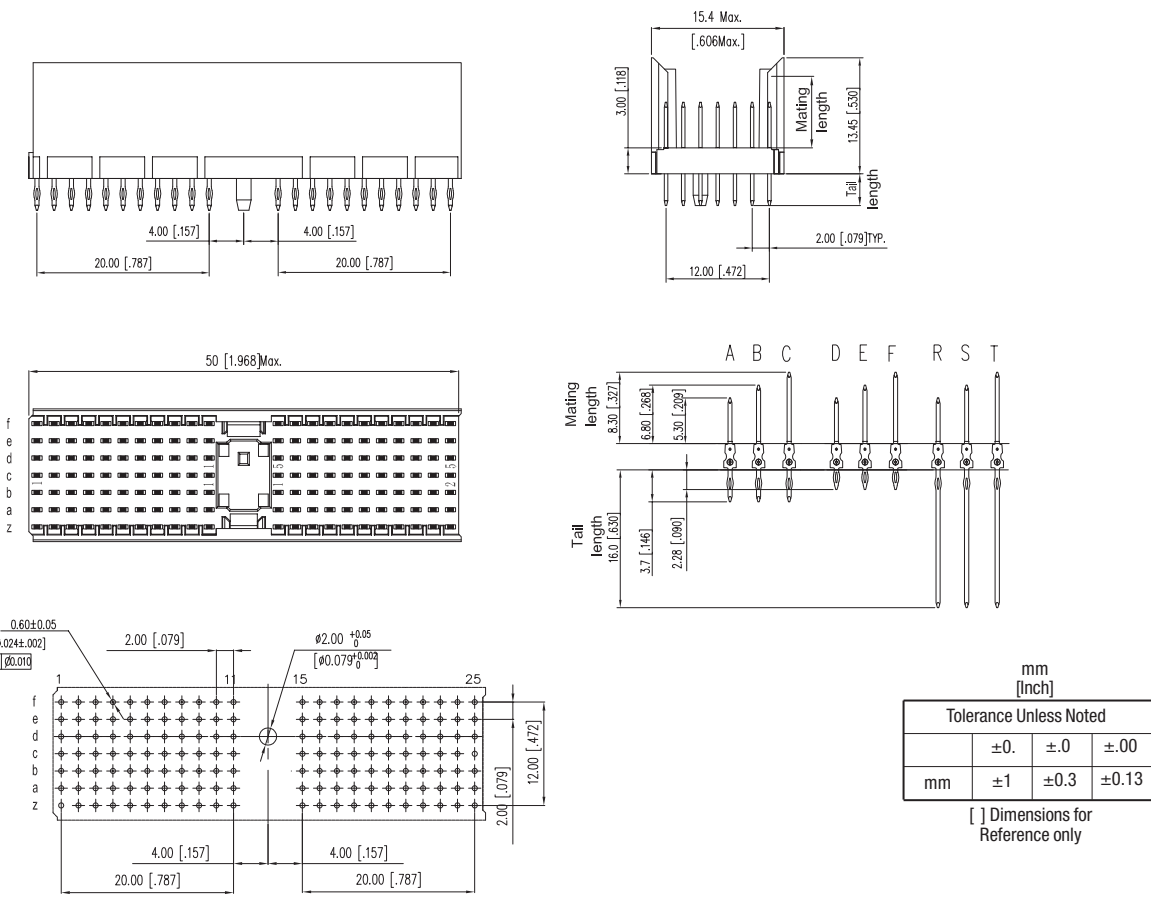
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Recommended PCB Layout

## Ordering Information

### CP2-HA110-XXX-XXXX

#### Loading Configurations

(See diagrams on following pages)

#### Grounding Options:

- G= with ground pins
- Blank= without ground pins
- EMLB Patterns

#### Primary Tail Length

- 1= 3.7 mm
- 2= 2.3 mm
- 4= 15.8 mm

#### Plating Options

- FJ= 10~20 μ" Gold Contact Area  
100~200 μ" Matte Tin  
50~80 μ" Nickel Underplate  
(RIA E1 & C1 apply)
- KR= 30~40 μ" Gold Contact Area  
100~200 μ" Matte Tin  
50~80 μ" Nickel Underplate  
(RIA E1 & C1 apply)
- KV= 30~40 μ" Mate End Gold Contact area  
Gold Flash Tail Contact area  
50~80 μ" Nickel Underplate  
(RIA E1 & C1 apply)  
For Primary Tail Length Option 4 only

- This diagram serves only for Part Number descriptive definitions.
- For standard product configuration please see following pages.

PLEASE CONTACT YOUR LOCAL SALES REPRESENTATIVE FOR CUSTOMER SPECIFIC PRODUCT CONFIGURATIONS.

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Sheet 2 of 5



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# 3M™ CP2 Press-Fit Header

2 mm Type A 110 Signal Contacts

CP2 Series

CP2-HA110-E1-TG30											Connector Type A22																	
F																												
E	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A	A	A
D	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A	A	A
C	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A	A	A
B	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A	A	A
A	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A	A	A
Z																												
	1	2	3	4	5	6	7	8	9	10	11					15	16	17	18	19	20	21	22	23	24	25		

CP2-HA110-GE1-TG30											Connector Type A22																	
F	C	C	C	C	C	C	C	C	C	C	C					C	C	C	C	C	C	C	C	C	C	C	C	C
E	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A	A	A
D	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A	A	A
C	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A	A	A
B	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A	A	A
A	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A	A	A
Z	C	C	C	C	C	C	C	C	C	C	C					C	C	C	C	C	C	C	C	C	C	C	C	C
	1	2	3	4	5	6	7	8	9	10	11					15	16	17	18	19	20	21	22	23	24	25		

CP2-HA110-A1-TG30											Connector Type A22																	
F																												
E	B	B	B	B	B	B	B	B	B	B	B					B	B	B	B	B	B	B	B	B	B	B	B	B
D	B	B	B	B	B	B	B	B	B	B	B					B	B	B	B	B	B	B	B	B	B	B	B	B
C	B	B	B	B	B	B	B	B	B	B	B					B	B	B	B	B	B	B	B	B	B	B	B	B
B	B	B	B	B	B	B	B	B	B	B	B					B	B	B	B	B	B	B	B	B	B	B	B	B
A	B	B	B	B	B	B	B	B	B	B	B					B	B	B	B	B	B	B	B	B	B	B	B	B
Z																												
	1	2	3	4	5	6	7	8	9	10	11					15	16	17	18	19	20	21	22	23	24	25		

CP2-HA110-GA1-TG30											Connector Type A22																	
F	C	C	C	C	C	C	C	C	C	C	C					C	C	C	C	C	C	C	C	C	C	C	C	C
E	B	B	B	B	B	B	B	B	B	B	B					B	B	B	B	B	B	B	B	B	B	B	B	B
D	B	B	B	B	B	B	B	B	B	B	B					B	B	B	B	B	B	B	B	B	B	B	B	B
C	B	B	B	B	B	B	B	B	B	B	B					B	B	B	B	B	B	B	B	B	B	B	B	B
B	B	B	B	B	B	B	B	B	B	B	B					B	B	B	B	B	B	B	B	B	B	B	B	B
A	B	B	B	B	B	B	B	B	B	B	B					B	B	B	B	B	B	B	B	B	B	B	B	B
Z	C	C	C	C	C	C	C	C	C	C	C					C	C	C	C	C	C	C	C	C	C	C	C	C
	1	2	3	4	5	6	7	8	9	10	11					15	16	17	18	19	20	21	22	23	24	25		

# 3M™ CP2 Press-Fit Header

2 mm Type A 110 Signal Contacts

CP2 Series

CP2-HA110-D1-TG30											Connector Type A22																				
F																															
E	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
D	B	B	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A	A	B	B			
C	C	C	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A	A	C	C			
B	B	B	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A	A	B	B			
A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Z																															
	1	2	3	4	5	6	7	8	9	10	11				15	16	17	18	19	20	21	22	23	24	25						

CP2-HA110-GB1-TG30											Connector Type A22																			
F	C	C	C	C	C	C	C	C	C	C					C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
E	B	B	B	B	B	B	B	B	B	B					B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
D	B	B	B	B	B	B	B	B	B	B	A				B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
C	B	B	B	B	B	B	B	B	B	C	B				B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
B	B	B	B	B	B	B	B	B	B	B	B				B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
A	B	B	B	B	B	B	B	B	B	B	B				B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Z	C	C	C	C	C	C	C	C	C	C	C				C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	1	2	3	4	5	6	7	8	9	10	11				15	16	17	18	19	20	21	22	23	24	25					

CP2-HA110-GC1-TG30											Connector Type A22																			
F	C	C	C	C	C	C	C	C	C	C					C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
E	B	B	B	B	B	B	B	B	B	B	B				B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
D	B	B	C	B	B	B	C	B	C	B	A				C	B	C	B	C	B	C	B	C	B	C	B	B	B	B	B
C	B	C	B	C	B	B	B	B	B	B	B				B	B	B	B	B	C	B	C	B	C	B	B	B	B	B	B
B	B	B	B	B	B	B	B	B	B	B	B				B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B
A	B	B	B	B	B	B	B	B	B	B	B				B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Z	C	C	C	C	C	C	C	C	C	C	C				C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	1	2	3	4	5	6	7	8	9	10	11				15	16	17	18	19	20	21	22	23	24	25					

CP2-HA110-GA4-GG30											Connector Type A22																			
F	T	T	T	T	T	T	T	T	T	T					T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
E	R	R	R	R	R	R	R	R	R	R	R				R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
D	R	R	R	R	R	R	R	R	R	R	R				R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
C	R	R	R	R	R	R	R	R	R	R	R				R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
B	R	R	R	R	R	R	R	R	R	R	R				R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
A	R	R	R	R	R	R	R	R	R	R	R				R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Z	T	T	T	T	T	T	T	T	T	T	T				T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	1	2	3	4	5	6	7	8	9	10	11				15	16	17	18	19	20	21	22	23	24	25					

Signal Contact Configuration Worksheet											Connector Type A22																			
F																														
E																														
D																														
C																														
B																														
A																														
Z																														
	1	2	3	4	5	6	7	8	9	10	11				15	16	17	18	19	20	21	22	23	24	25					

# 3M™ CP2 Press-Fit Header

2 mm Type A 110 Signal Contacts

CP2 Series

CP2-HA110-F1-KR

Connector Type A22

F																										
E	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A		
D	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A		
C	B	B	B	B	B	B	B	B	B	B	B					B	B	B	B	B	B	B	B	B		
B	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A		
A	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A		
Z																										
	1	2	3	4	5	6	7	8	9	10	11					15	16	17	18	19	20	21	22	23	24	25

CP2-HA110-GF1-KR

Connector Type A22

F	C	C	C	C	C	C	C	C	C	C	C					C	C	C	C	C	C	C	C	C	C	
E	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	
D	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	
C	B	B	B	B	B	B	B	B	B	B	B					B	B	B	B	B	B	B	B	B	B	
B	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	
A	A	A	A	A	A	A	A	A	A	A	A					A	A	A	A	A	A	A	A	A	A	
Z	C	C	C	C	C	C	C	C	C	C	C					C	C	C	C	C	C	C	C	C	C	
	1	2	3	4	5	6	7	8	9	10	11					15	16	17	18	19	20	21	22	23	24	25

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