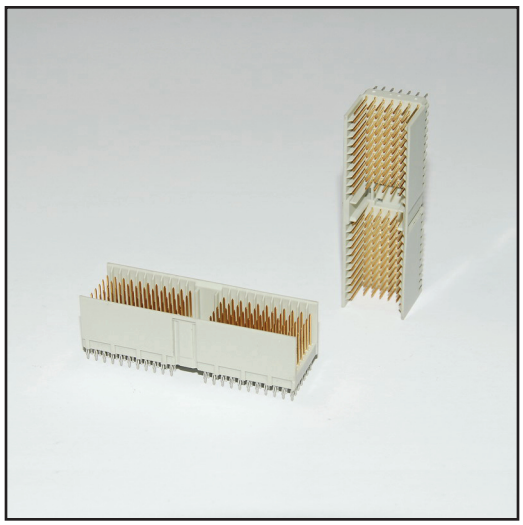
3M™ CP2 Press-Fit Header

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™ MetPak™ HSHM, HM, and CP2 sockets
- End to end stackable with 5 row 3M™ MetPak™ HSHM, HM, and CP2 headers
- See Regulatory Information Appendix (RIA) for chemical compliance information

Date Modified: November 6, 2008

Physical

Insulation:	
Material:	Glass Filled Polyester (PBT)
Flammability:	UL94V-0
Contact:	
Material:	Copper Alloy
Plating:	See Ordering Information

Mechanical

Mating Force:	≤ 0.75N/PIN
Withdrawl Force:	≥ 0.15N/PIN
Mating and Un-mating Operations:	50

Electrical

Contact Resistance:	≤ 20 m
Insulation Resistance:	≥ 10,000 M
Test Voltage:	750 VAC_{RMS}

Environmental

Temperature Ratings:	-40°C to +85°C

PCB Data

Recommended PCB Plated Through Hole:	Φ 0.6±0.05 mm
Drill Hole Diameter:	Φ 0.7±0.02 mm
Hole platings:	Cu 25~50 µm, Sn or SnPb<10 µm
PCB thickness:	2.4-5.6 mm
Press-In Force:	≤ 204N/pin on nominal hole diameter
Retention Force:	≥ 13.5N/pin on nominal hole diameter

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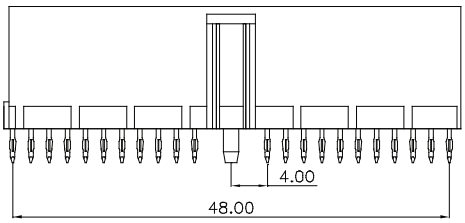
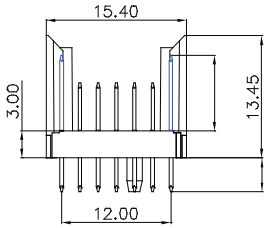
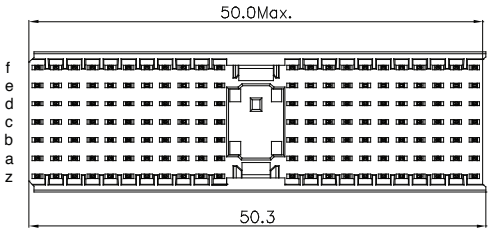
3M™ CP2 Press-Fit Header

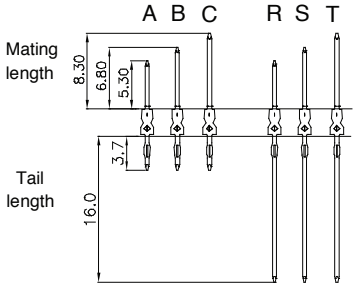
2 mm Type A 110 Signal Contacts

CP2 Series





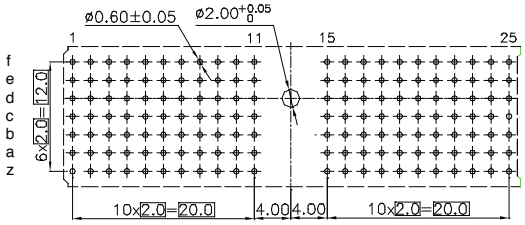




mm
[Inch]

Tolerance Unless Noted			
	0.	.0	.00
mm	1	0.3	0.13

[ ] Dimensions for Reference only



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
4= 16.0 mm

Plating Options

TG30= 30~40 µ" Gold Contact Area
100~200 µ" Bright Tin-Lead
50~80 µ" Nickel Underplate
(RIA E2 & C2 apply)

FJ= 10~20 µ" Gold Contact Area
200~300 µ" Matte Tin
50~80 µ" Nickel Underplate
(RIA E1 & C1 apply)

KR= 30~40 µ" Gold Contact Area
200~300 µ" Matte Tin
50~80 µ" Nickel Underplate
(RIA E1 & C1 apply)

GG30 = 30~40 u" Two Gold Contact Areas
100~200 u" Bright Tin-Lead
50~80 u" Nickel Underplate
(RIA E2 & C2 apply)

• 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 PROGUCT CONFIGURATIONS.

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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**

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

CP2-HA110-GE1-TG30 — **Connector Type A22**

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

CP2-HA110-A1-TG30 — **Connector Type A22**

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

CP2-HA110-GA1-TG30 — **Connector Type A22**

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

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3M™ CP2 Press-Fit Header

2 mm Type A 110 Signal Contacts — CP2 Series

CP2-HA110-D1-TG30 — **Connector Type A22**

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

CP2-HA110-GB1-TG30 — **Connector Type A22**

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

CP2-HA110-GC1-TG30 — **Connector Type A22**

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

CP2-HA110-GA4-GG30 — **Connector Type A22**

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

Signal Contact Configuration Worksheet — **Connector Type A22**

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

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3M™ CP2 Press-Fit Header

2 mm Type A 110 Signal Contacts — CP2 Series

CP2-HA110-F1-KR — **Connector Type A22**

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

CP2-HA110-GF1-KR — **Connector Type A22**

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

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Regulatory Information Appendix

3M Electronic Solutions Division/Interconnect

EUROPE

Appendix E1: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment, as amended by EU Commission Decision 2005/618/EC.

This product is RoHS Compliant 2005/95/EC.

"RoHS Compliant 2005/95/EC" means that the product or part ("Product") does not contain any of the substances in excess of the maximum concentration values in EU Directive 2002/95/EC, as amended by Commission Decision 2005/618/EC, unless the substance is in an application that is exempt under EU RoHS. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

Appendix E2: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment, as amended by EU Commission Decision 2005/618/EC.

This product contains lead in the compliant pin area in excess of the maximum concentration value allowed but is compliant by exemption under EU Commission Decision 2005/747/EC.

"RoHS Compliant 2005/95/EC" means that the product or part ("Product") does not contain any of the substances in excess of the maximum concentration values in EU Directive 2002/95/EC, as amended by Commission Decision 2005/618/EC, unless the substance is in an application that is exempt under EU RoHS. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

Appendix E3: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment as amended by Commission Decision 2005/618/EC.

This product contains lead in the solder tail area in excess of the maximum concentration value allowed.

Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

Appendix E4: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical & Electronic Equipment, as amended by EU Commission Decision 2005/618/EC, as amended by EU Commission Decision 2005/717/EC, as amended by EU Court of Justice Decision 2008/C 116/04

This product contains decaBDE in the insulating material in excess of the maximum concentration allowed for finished products subject to EU RoHS that are placed on the EU market after June 30, 2008.

Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

Appendix E5: European Union RoHS

Directive 2002/95/EC, Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, as amended by EU Commission Decision 2005/618/EC.

This product contains lead in excess of the maximum concentration value allowed but is compliant by exemption under Item 6 of the Annex to the Directive.

"RoHS Compliant 2005/95/EC" means that the product or part ("Product") does not contain any of the substances in excess of the maximum concentration values in EU Directive 2002/95/EC, as amended by Commission Decision 2005/618/EC, unless the substance is in an application that is exempt under EU RoHS. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

CHINA

Appendix C1: China RoHS

Electronic Industry Standard of the People's Republic of China, SJ/T11363-2006, Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products.
This symbol, per Marking for the Control of Pollution Caused by Electronic Information Products, SJ/T11364-2006, means that the product or part **does not** contain any of the following substances in excess of the following maximum concentration values in any homogeneous material: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers (excluding decaBDE); or (b) 0.01% (by weight) for cadmium. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the Warranty stated below.

Appendix C2: China RoHS

Electronic Industry Standard of the People's Republic of China, SJ/T11363-2006, Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products.
This symbol, per Marking for the Control of Pollution Caused by Electronic Information Products, SJ/T11364-2006, means that the product or part **does** contain a substance, as detailed in the chart below, in excess of the following maximum concentration values in any homogeneous material: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers (excluding decaBDE); or (b) 0.01% (by weight) for cadmium. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

The numerical reference in the symbol above should not be construed as a representation regarding the product's life or an extension of a product warranty. The product warranty is stated below. In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the product Warranty stated below.

产品中有毒有害物质或元素的名称及含量 Name and Content of Hazardous Substances or Elements

部件名称 (Part or Component Name)	有毒有害物质或元素 (Hazardous Substances or Elements)					
	铅(Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
端子镀层(contact plating)	×	○	○	○	○	○

○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 标准规定的限量要求以下。(Indicates that this hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.)
×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求。(Indicates that this hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.)

Appendix C3: China RoHS

Electronic Industry Standard of the People's Republic of China, SJ/T11363-2006, Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products.

This symbol, per Marking for the Control of Pollution Caused by Electronic Information Products, SJ/T11364-2006, means that the product or part **does** contain a substance, as detailed in the chart below, in excess of the following maximum concentration values in any homogeneous material: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers (excluding decaBDE); or (b) 0.01% (by weight) for cadmium. Unless otherwise stated by 3M in writing, this information represents 3M's best knowledge and belief based upon information provided by third party suppliers to 3M.

The numerical reference in the symbol above should not be construed as a representation regarding the product's life or an extension of a product warranty. The product warranty is stated below. In the event any product is proven not to conform with 3M's Regulatory Information Appendix, then 3M's entire liability and Buyer's exclusive remedy will be in accordance with the product Warranty stated below.

产品中有毒有害物质或元素的名称及含量 Name and Content of Hazardous Substances or Elements

部件名称 (Part or Component Name)	有毒有害物质或元素 (Hazardous Substances or Elements)					
	铅(Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
合金(Metal alloy)	×	○	○	○	○	○

○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 标准规定的限量要求以下。(Indicates that this hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.)
×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求。(Indicates that this hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.)

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