YAMAICHI ELECTRONICS

ENGINEERED TO CONNECT

HIGH-SPEED DATA NETWORKING SOLUTIONS

AVAILABLE CATALOGUES

CIRCULAR PUSH-PULL CONNECTORS Y-CIRC® P

CIRCULAR METRIC CONNECTORS Y-CIRC® M

INDUSTRIAL CONNECTORS Y-CON®

INPUT / OUTPUT CONNECTORS

INTERNAL CONNECTORS

CARD CONNECTORS

AUTOMOTIVE SOLUTIONS

HIGH SPEED DATA NETWORKING SOLUTIONS

FULL PRODUCT LINE TS SOLUTIONS

DATA NETWORKING

CFP FAMILY

QSFP28

SERIES CN120, CA012 (TEST FIXTURE: PAGE 27)

SFP28

SERIES CN109, CA012 (TEST FIXTURE)

DAC (DIRECT ATTACHED COPPER) ACTIVE AND PASSIVE CABLE

SERIES CA013, CAU120

YFLEX CABLE

SERIES YFA, YFB

ADVANCEDTCA AND MICROTCA

SERIES CN074, CN080, CN084

YAMAICHI ELECTRONICS FACTS & FIGURES

Foundation:	Headquarters, Tokyo: 1956
	European Headquarters, Aschheim near Munich: 1986
Turnover:	€215m p.a. worldwide (€59m p.a. in Europe)
Employees:	2100+ (240 in Europe)*
Certification:	DIN EN ISO 9001:2008
	Production in Frankfurt/Oder, since 2006:
	DIN EN ISO 9001 and ISO 14001:2004
Locations:	Worldwide: 7 production sites, 6 design centers,
	13 sales locations

*as of April 2016

YAMAICHI ELECTRONICS ZAHLEN & FAKTEN

Firmengründung:	Konzernsitz, Tokyo: 1956
	Europäische Zentrale, Aschheim bei München:1986
Umsatz:	weltweit 215 Mio €*p.a., Europa 59 Mio €*p.a.
Mitarbeiter:	über 2100 weltweit, 240 in Europa*
Zertifizierung:	DIN EN ISO 9001:2008
	Produktion in Frankfurt/Oder, seit 2006:
	DIN EN ISO 9001 und ISO 14001:2004
Standorte:	weltweit 7 Produktionsstandorte, 6 Design-Zentren,
	13 Vertriebszentren

*Stand: April 2016

PRODUCT RANGE

Yamaichi Electronics designs, manufactures and markets high performance interconnection devices for use in the most demanding electronic systems applications: high temperature environments, protected interconnections for harsh environments and high-speed interconnections for data networking applications. The portfolio covers high-precision fine pitch IC sockets, connectors, cable assemblies and flexible printed circuits.

YAMAICHI EUROPE

Yamaichi Electronics Deutschland GmbH, located in Aschheim near Munich, is your European partner for connectivity solutions for industrial, automotive, measurement and testing, data networking, medical and embedded and semiconductor applications.

Two Divisions

Connector Solutions Portfolio Connectors for industrial use, for example circular connectors Y-Circ® M (M12) and Y-Circ® P (Push-Pull), Y-Con® Series (RJ45 and USB). Automotive connectors FAKRA/HSD, Quadlock (Y-QUAD) and others, card connectors, high-speed connector systems and the latest input /output connectors. Internal connectors for high-end applications (Yamaichi Y-Lock® series). Data networking connectors, cables and cable assemblies and production sockets.

Test Solutions: Portfolio: IC semiconductor, test and burn-In sockets, modular test contactors, test adapter systems for computer-on-modules, receptacles, spring probe pins, PCB design.

We offer customer-specific solutions in all product areas.

ENGINEERING

Our two design centers in Munich (Germany) and Sousse (Tunisia) react quickly to market challenges and work with the most modern technologies to meet customer needs from product ideas to qualified mass production. Two fully equipped inhouse test laboratories allow internal product qualification and guarantee impressive product quality.

PRODUCTION FOR THE EUROPEAN MARKET

Since 2006, our production facility in Frankfurt (Oder) has been manufacturing connectors and complex cable assemblies for industrial and medical applications, and more. For test solutions we produce high-end test contactors, module test adapters and receptacles. We offer expertise in overmolding, welding, resistance welding and machining technologies. To ensure the highest quality and short delivery times, we have a high grade of vertical range of manufacturing and a reliable and established European supplier network.

LEISTUNGSSPEKTRUM

Yamaichi Electronics entwickelt, produziert und vermarktet hoch leistungsfähige elektromechanische Komponenten, auch für anspruchsvollste Anwendungen in elektronischen Systemen: für den Hochtemperaturbereich, geschützt für den Einsatz unter rauen Umgebungsbedingungen und High-Speed-Verbindungstechnik für Data-Networking-Anwendungen. Das Portfolio umfasst hochpräzise Fine pitch IC Sockel, Steckverbinder, Kabelassemblierungen und flexible Leiterplatten.

YAMAICHI EUROPA

Yamaichi Electronics Deutschland GmbH mit Sitz in Aschheim bei München ist Ihr europäischer Ansprechpartner für Verbindungstechniklösungen für Applikationen in: Automatisierung, Automotive, Meß- und Prüftechnik, Data Networking, Medizintechnik und Halbleiterindustrie.

Zwei Bereiche

Connector Solutions: Portfolio: Industriesteckverbinder, z.B. Rundsteckverbinder Y-Circ® M (M12) und Y-Circ® P (Push-Pull), Y-Con® (RJ45 and USB). Automotive Steckverbinder, z.B. FAKRA/HSD, Quadlock (Y-QUAD) und andere spezielle Automotive-Lösungen. Kartensteckverbinder, High-Speed-Steckverbindersysteme, interne und Input/Output-Steckverbinder, Data-Networking-Steckverbinder, Kabel und Kabelassemblierungen, Produktionssockel.

Test Solutions: Portfolio: IC Halbleiter Test & Burn-In Sockel, modulare Test Contactors, Test Adapter Systeme für Computer-on-Modules, Receptacles, Feder-Kontaktstifte, PCB Design.

In allen Produktbereichen bieten wir kundenspezifische Lösungen an.

ENGINEERING

Mit zwei Design-Zentren in München und Sousse (Tunesien) ist die schnelle Reaktion auf Marktanforderungen und Kundenwünsche sichergestellt. Unser Entwicklungsteam arbeitet mit den modernsten Technologien zur Realisierung von Kundenanforderungen. Umfangreich ausgestattete hauseigene Testlabore ermöglichen die interne Qualifizierung von Produkten und gewährleisten überzeugende Produktqualität.

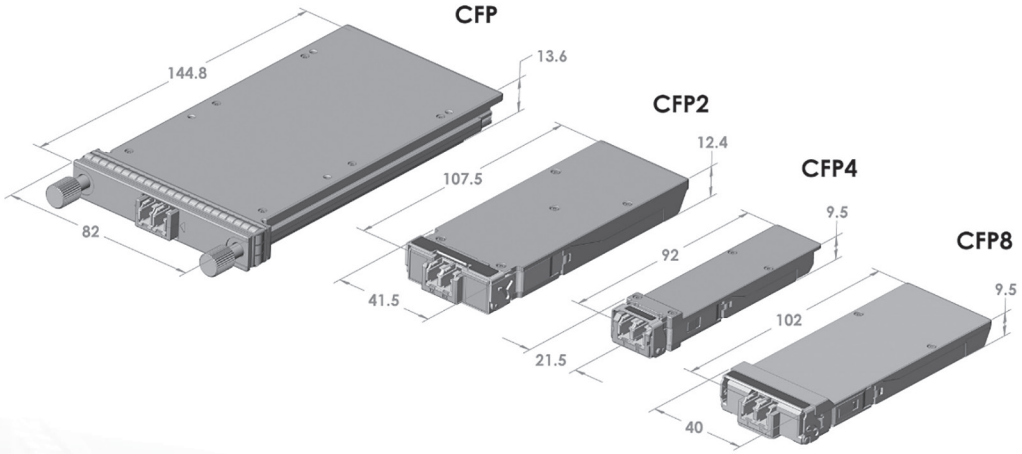
PRODUKTION FÜR DIE EUROPÄISCHEN MARKT

An unserem Fertigungsstandort in Frankfurt (Oder) werden seit 2006 Steckverbinder und komplexe Kabelassemblierungen für z.B. Industrie- oder Medizinanwendungen hergestellt. Im Bereich Test Solutions werden High End Test Contactors, Modultestadapter und Receptacles gefertigt. Wir bieten Spezial-Knowhow in den Fertigungstechnologien Spritzguss, Schweißen, Widerstandsschweißen und Zerspanungstechnik.
Die hohe Fertigungstiefe sowie in Europa ansässige zuverlässige Zulieferfirmen garantieren hochwertige Produkte und kurze Lieferzeiten.

Yamaichi Electronics is an official supplier reviewer company within the CFP Multi-Source Agreement (MSA), and the leading company for high-speed connector products. We are the first company to bring these connectors to the global market. Complete solutions from connector to mechanical components are provided for CFP8, CFP4, CFP2, and CFP.

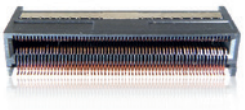
CFP

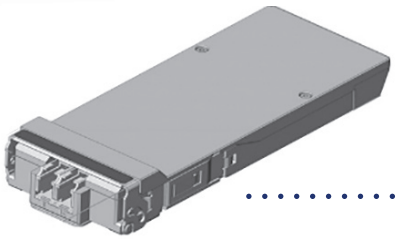
CFP Seven defines pluggable optical transceiver form factor for 40G, 100G, and now 400Gbps application. The association is made up of seven module companies. Over 60 companies act as reviewers for the MSA.



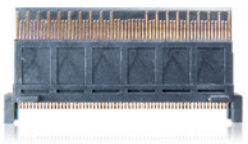
Source - http://http://www.cfp-msa.org

HOST CONNECTOR





PLUG CONNECTOR



APPLICATIONS

- Telecom Networking
- Data Center Networking
- Router
- Server Provider Transport
- WDM (Wavelenght Division Multiplexing)
- DOM (Digital Optical Monitoring)
- Enterprise Core Aggregation

SPECIFICATIONS

Voltage Rating:	31.5V AC
Operating Temp. Range:	-55°C to +85°C
Contact Resistance:	10 m ohm max raised at max.100mA and max. 20 mV.
Mating Cycles:	200 times max.
Test Standard:	EIA-364

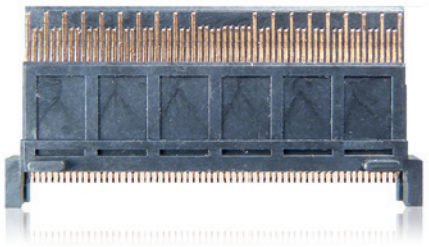
PART NUMBER PLUG

CN168 P - 124 - 000*

- CN168 — Series
- P = Plug (Straddle Mount Type)
- 124 — No. of Contacts
- 000* — PCB thickness

MATERIALS AND FINISH

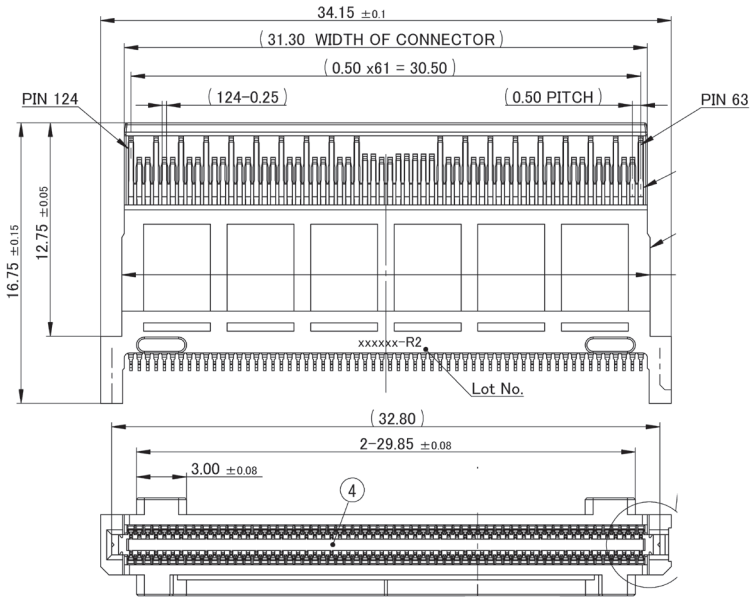
Insulator:	LCP
Contacts:	Copper Alloy, Ni-Au

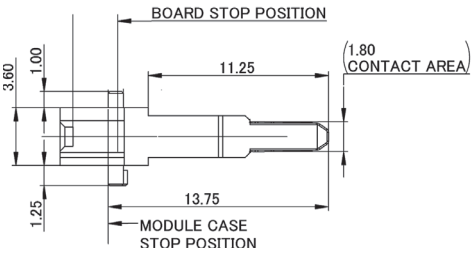


FEATURES

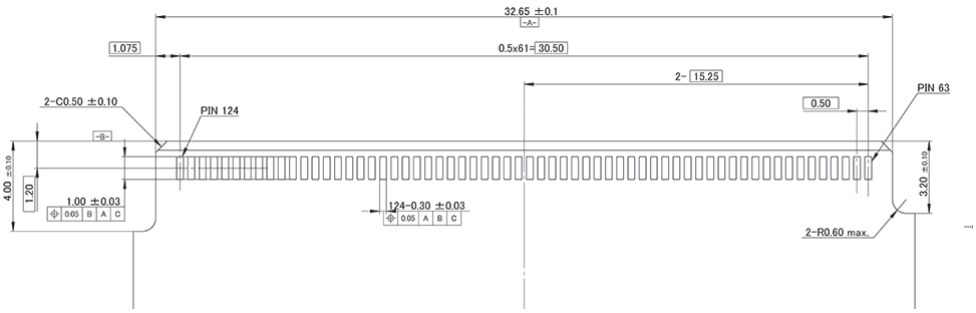
- High-speed transmission: 400G 28 Gbps/ch x 16 ch
- Pitch: 0.5 mm
- PCB thickness:1.0 mm, and other
- Pin count:124 pins
- Same size with CFP2, but 4x higher performance
- First connector in the world for 400 Gbps Ethernet
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

OUTLINE DIMENSIONS - CN168P-124-0001 PLUG





RECOMMENDED PCB LAYOUT



SPECIFICATIONS

Voltage Rating:	31.5 V AC
Operating Temp. Range:	-55°C to +85°C
Contact Resistance:	10 m ohm max raised at max.100 mA and max.20 mV.
Mating Cycles:	200 times max.
Test Standard:	EIA-364

PART NUMBER HOST CONNECTOR

CN168 S - 124 - 0001

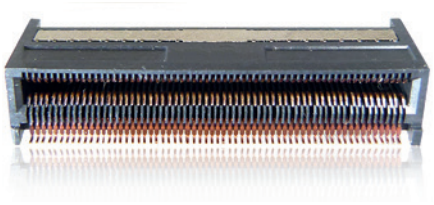
- CN168 — Series
- S = Host (Surface Mount Type)
- 124 — No. of Contacts

MATERIALS AND FINISH

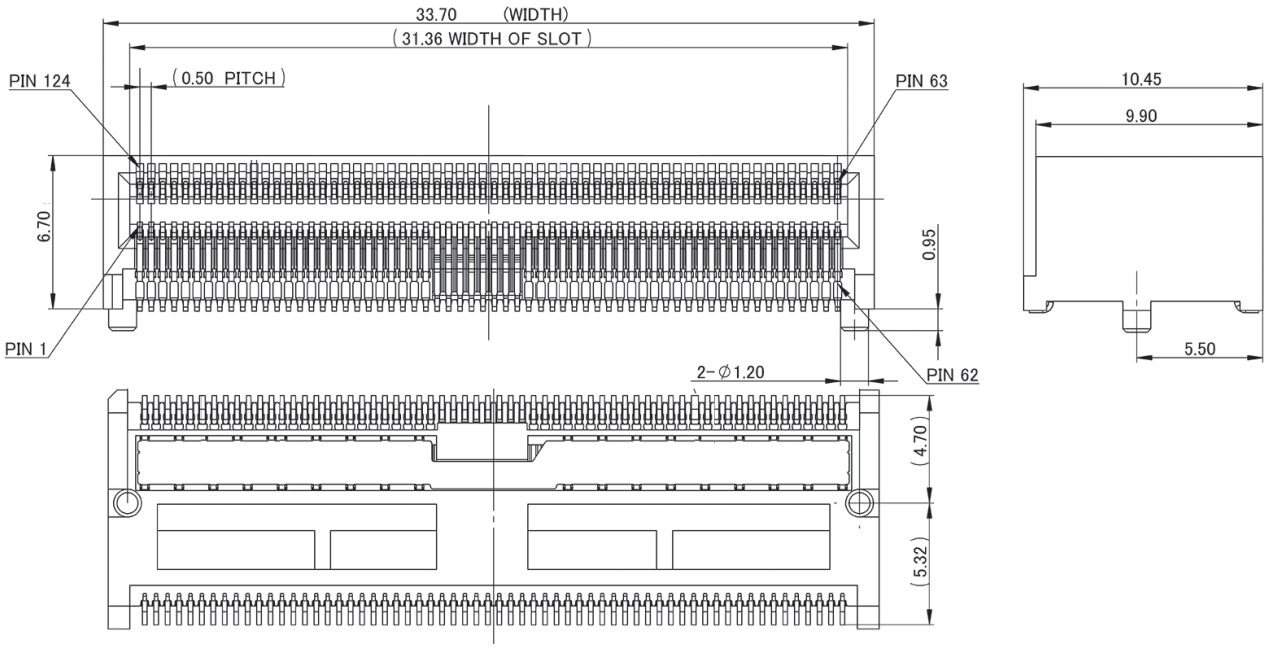
Insulator:	LCP
Contacts:	Copper Alloy, Ni-Au

FEATURES

- High speed transmission: 400 G 28 Gbps/ch x 16 ch
- Pitch: 0.5 mm
- Pin count:124 pins
- Same size with CFP2, but 4x higher performance
- First connector in the world for 400 Gbps Ethernet
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006



OUTLINE DIMENSIONS - CN168S-124-0001 HOST CONNECTOR



SPECIFICATIONS

Operating Temp. Range:	- 55° to 85°C
Plug-in Force:	80 N max.
Pull-out Force:	80 N max.
Test Standard:	EIA-364

MATERIALS AND FINISH

Cage:	Stainless Steel, Degreasing
Connector Cover:	Zinc Alloy, Cu-Ni
Gasket:	Urethane, Silicone
Screw:	Stainless Steel
Heatsink:	Aluminium

FEATURES

- Dual slot: MSA standard
- Complete kit for dual slot requires 1 x dual cage, 1 x dual cover, 2 x heatsink
- Complete kit for single slot requires 1x single cage, 1 x single cover, 1 x heatsink
- Clipless design to fold heatsink
- Optional sealing on bottom of cage for insulation via kapton tape
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

PART NUMBER MECHANICAL COMPONENTS

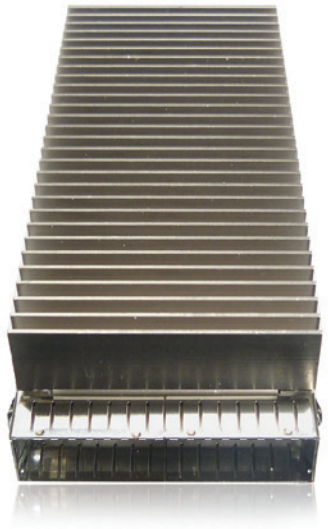
CN168 - * - 124 - 000 *

- Series
- G = Connector Cover
  C = Cage (with EMI Finger)
- No. of Contacts
- 1 = Dual Slot (MSA Standard) 2 = Single Slot

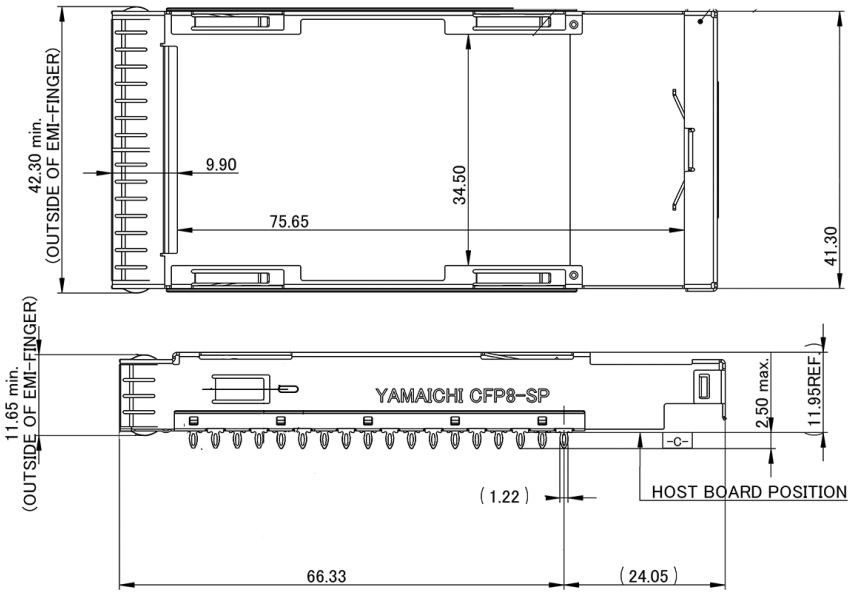
PART NUMBER HEATSINK

CN168 - F - 124 - 0001

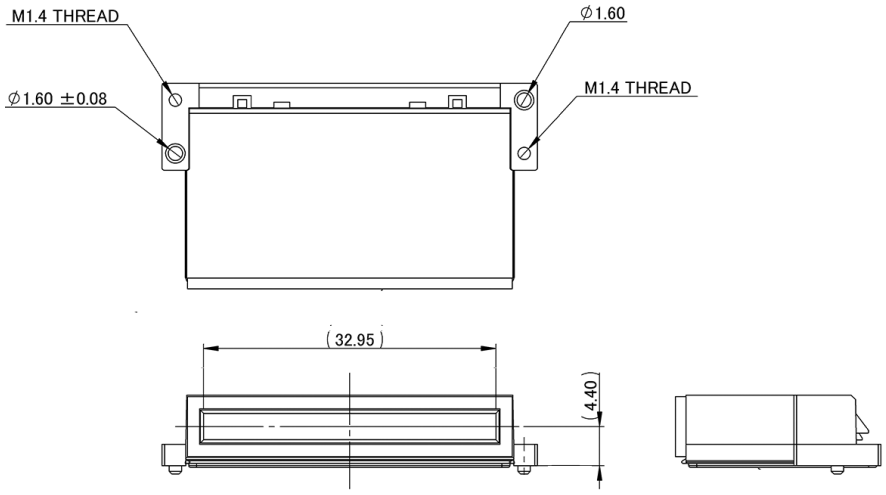
- Series
- F = Heatsink
- No. of Contacts
- Side-to-Side



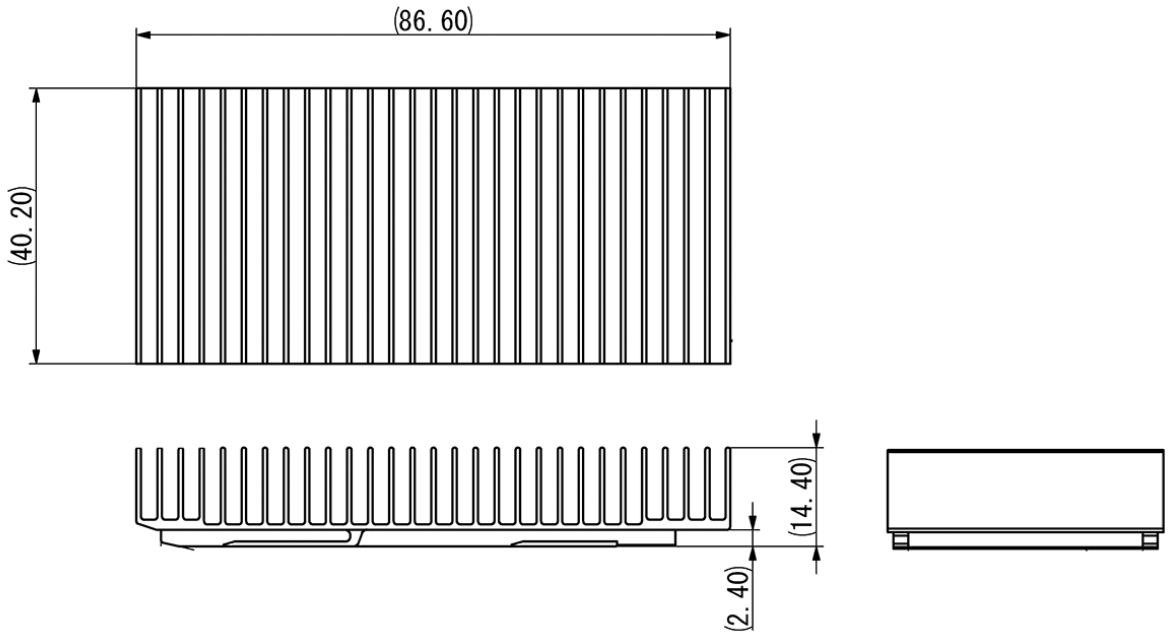
OUTLINE DIMENSIONS - CN168C-124-0002 CAGE



OUTLINE DIMENSIONS - CN168G-124-0002 COVER



OUTLINE DIMENSIONS - CN168F-124-0001 HEATSINK



SPECIFICATIONS

Voltage Rating:	31.5 VAC
Contact Resistance:	10 m ohm max raised at max.
	100 mA and max.20 mV.
Operating Temp. Range:	-55°C to +85°C
Soldering Profile:	Peak temp. 255 degree, 10 sec.
	217 - 255 degree 90 sec. max.
Mating Cycles:	200 times max.
Test Standard:	EIA-364

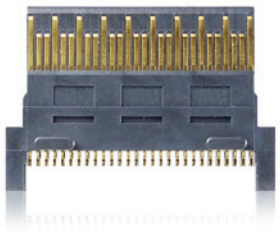
PART NUMBER PLUG CONNECTOR

CN121P - 056 - 0004

- Series
- Plug (Straddle Mount Type)
- No. of Contacts

MATERIALS AND FINISH

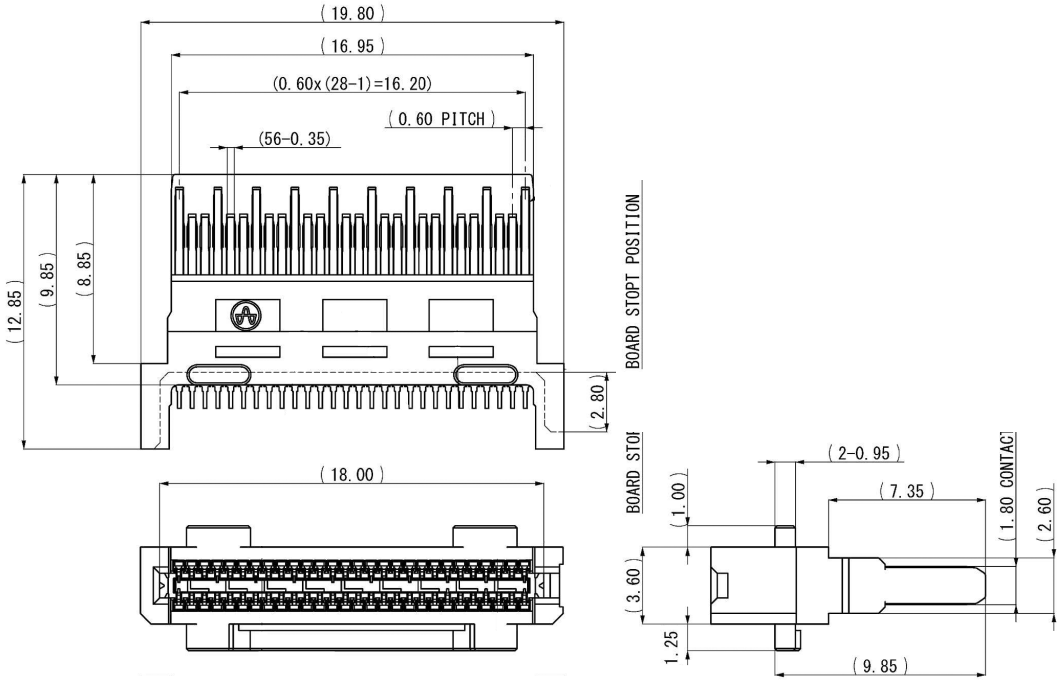
Insulator:	LCP
Contacts:	Copper Alloy, Ni-Au



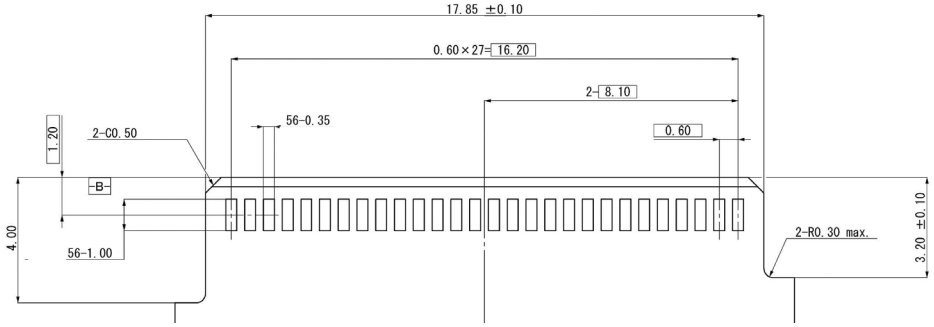
FEATURES

- High-speed transmission: 100 G 28 Gbps/ch x 4 ch
- Pitch: 0.6 mm
- PCB thickness: 1.0 mm, and other
- Pin count: 56 pins
- Dust cap available for EMI protection
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

OUTLINE DIMENSIONS - CN121P-056-0004



RECOMMENDED PCB LAYOUT



SPECIFICATIONS

Voltage Rating:	31.5 VAC
Contact Resistance:	10 m ohm max raised at max. 100 mA and max.20 mV.
Operating Temp. Range:	-55°C to +85°C
Soldering Profile:	Peak temp. 255 degree, 10 sec. 217 - 255 degree 90 sec. max.
Mating Cycles:	200 times max.
Test Standard:	EIA-364

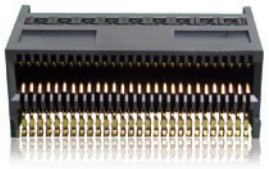
PART NUMBER HOST CONNECTOR

CN121S - 056 - 0001

- Series
- Plug (Straddle Mount Type)
- No. of Contacts

MATERIALS AND FINISH

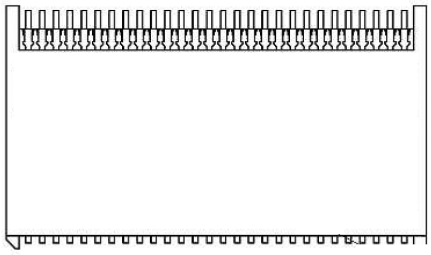
Insulator:	LCP
Contacts:	Copper Alloy, Ni-Au

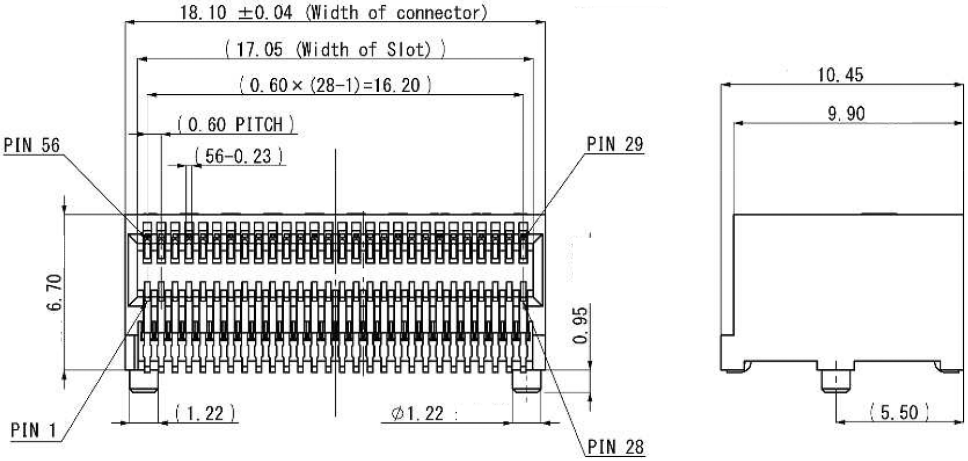


FEATURES

- High speed transmission: 100 G 28 Gbps/ch x 4 ch
- Pitch: 0.6 mm
- Pin count: 56 pins
- Dust cap available for EMI protection
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006
- Plan to launch connector for CFP4ACO (Analog Coherent) module

OUTLINE DIMENSIONS - CN121S-056-0001





SPECIFICATIONS

Operating Temp. Range:	-55°C to +85°C
Plug-in force:	50 N max.
Pull-out force:	30 N max.
Test Standard:	EIA-364

MATERIALS AND FINISH

Cage:	Stainless Steel, Degreasing
Connector Cover:	Zinc Ni-Cu
Gasket:	Silicone
Screw:	Stainless Steel, Degreasing
Heatsink:	Aluminium, Anodizing Treatment

FEATURES

- Quad slot: MSA standard
- Complete kit for quad slot requires 1 x quad cage, 1 x quad cover, 4 x heatsink
- Complete kit for single slot requires 1x single cage, 1 x single cover, 1 x heatsink
- Clipless design to fold heatsink
- Press fit tool available for cage
- Dust cap available for EMI protection
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

PART NUMBER MECHANICAL COMPONENTS

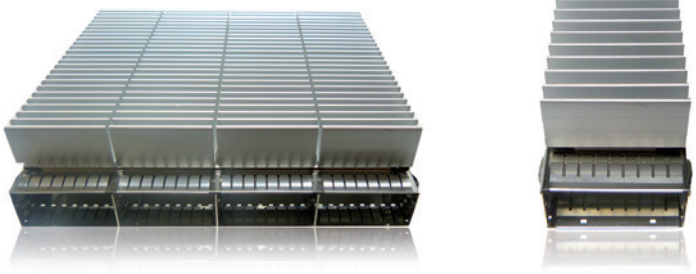
CN121 - * - 056 - 000 *

- Series
- G = Connector Cover
  C = Cage
- No. of Contacts
- 1 = Quad Slot (MSA Standard) 2 = Single Slot

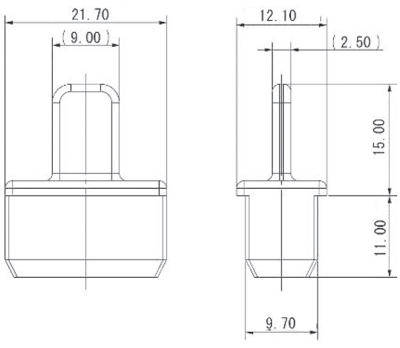
PART NUMBER HEATSINK

CN121 - F - 056 - 000 *

- Series
- F = Heatsink
- No. of Contacts
- 1 = Side-to-Side 2 = Front-to-Back



OUTLINE DIMENSIONS - CN121D-056-0003

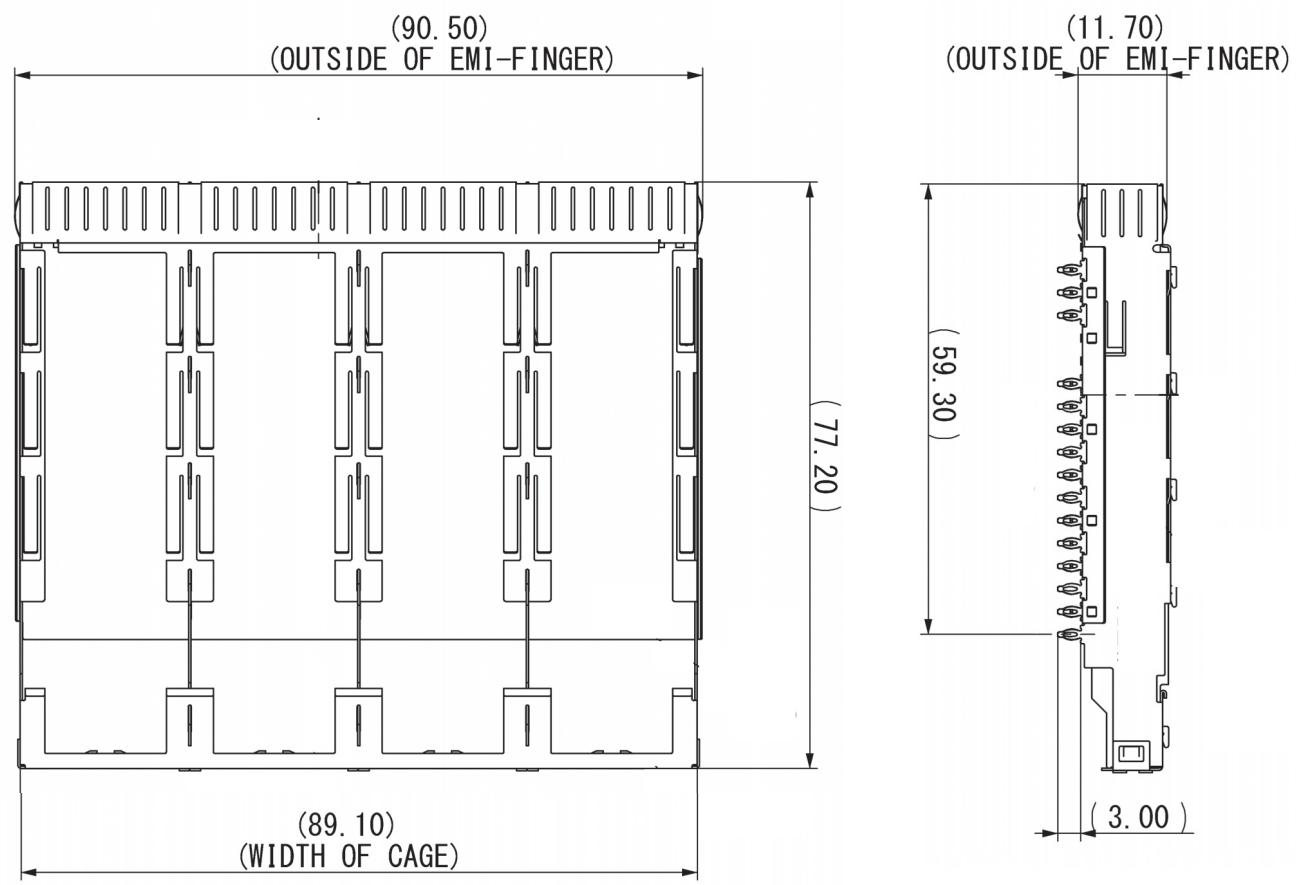


PART NUMBER DUST CAP

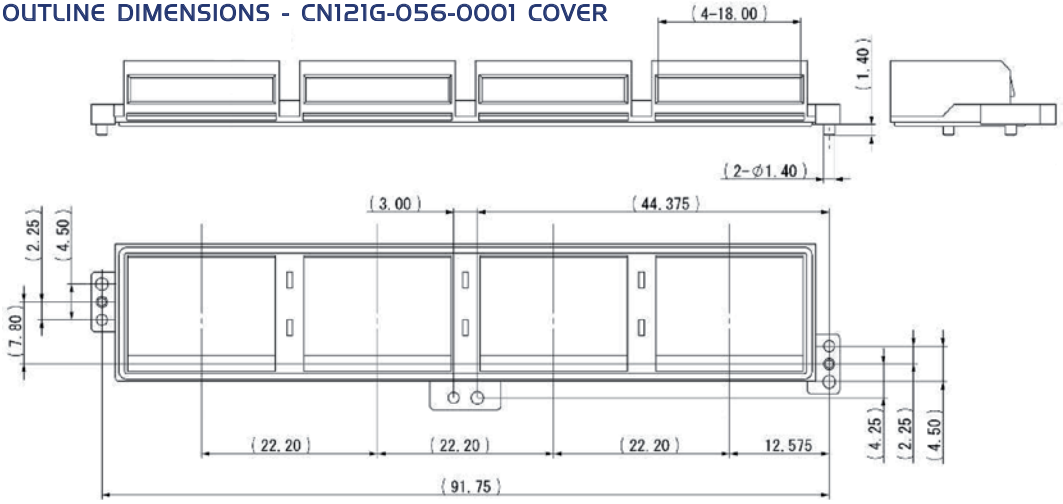
CN121D - 056 - 000 3

- Series
- Design No.
- 3 = Dust Cap

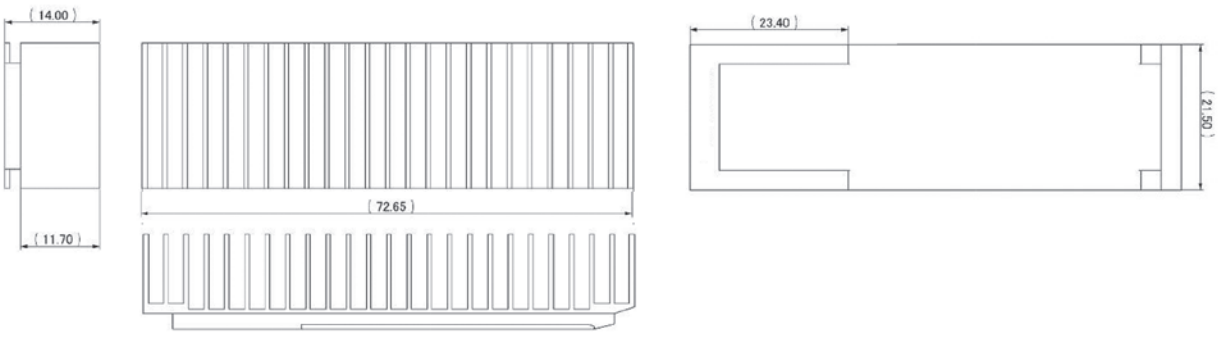
OUTLINE DIMENSIONS - CN121C-056-0001 CAGE



OUTLINE DIMENSIONS - CN121G-056-0001 COVER



OUTLINE DIMENSIONS - CN121F-056-0001 HEATSINK



SPECIFICATIONS

Voltage Rating:	31.5 VAC
Contact Resistance:	10 m ohm max raised at max.
	100 mA and max.20 mV.
Operating Temp. Range:	-55°C to +85°C
Soldering Profile:	Peak temp. 255 degree, 10 sec.
	217 - 255 degree 90 sec. max.
Mating Cycles:	200 times max.
Test Standard:	EIA-364

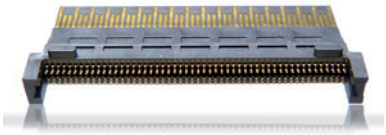
PART NUMBER PLUG

CN121 P - 104 - *00*

- CN121 — Series
- P = Plug (Straddle Mount Type)
- 104 — No. of Contacts
- *00* — Plug (Straddle Mount Type)
  - 0003 = 28 Gbps
  - 1003 = CFP2ACO

MATERIALS AND FINISH

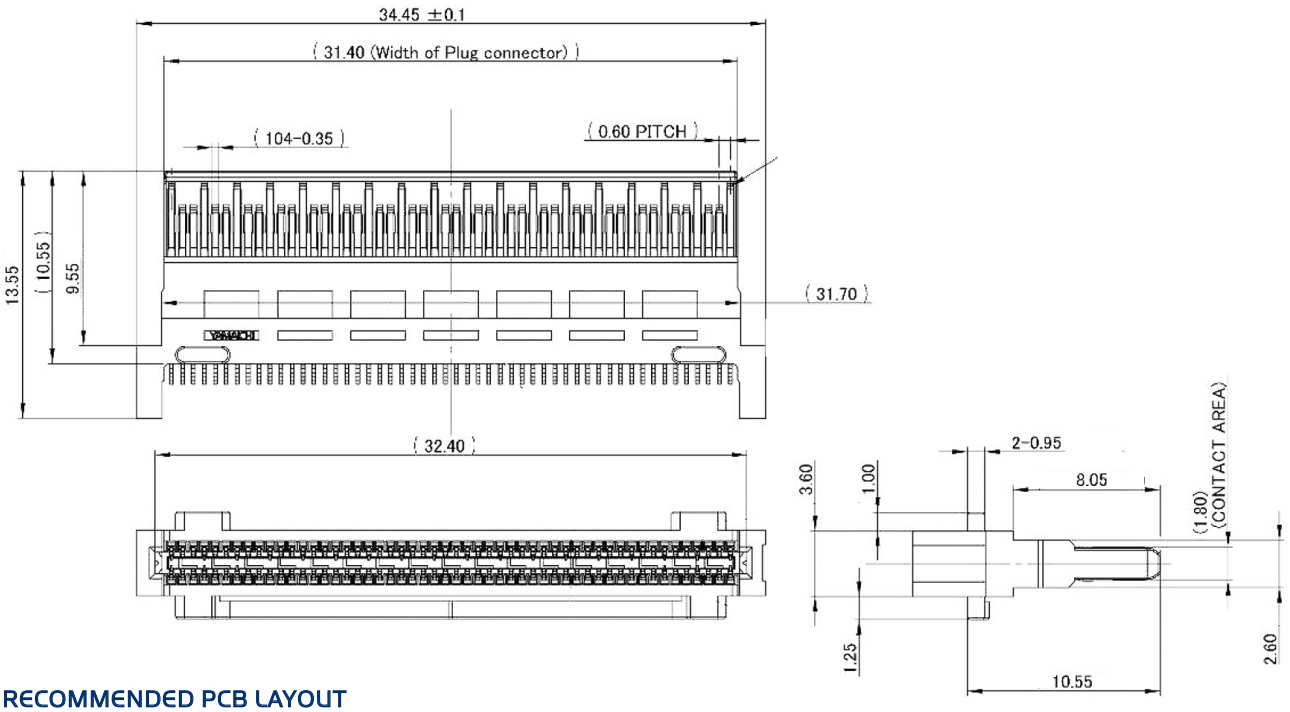
Insulator:	LCP
Contacts:	Copper Alloy, Ni-Au



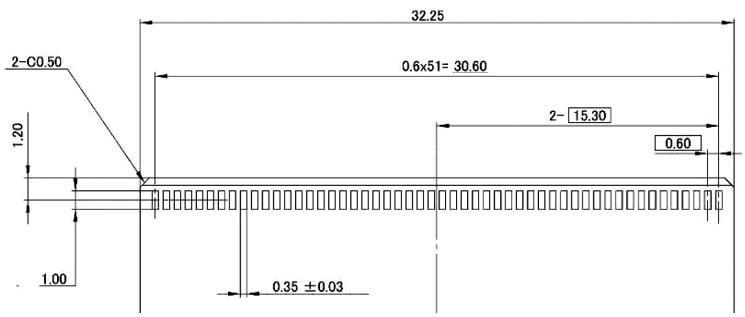
FEATURES

- 2 variations to transmit high speed:
  - 100 G 28 Gbps/ch x 4 ch
  - 56 -64 Gpbs per channel is also available for ACO
- Pitch: 0.6 mm
- PCB thickness:1.0 mm, and other
- Pin count: 104 pins
- Dust cap and dummy module available for EMI protection
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

OUTLINE DIMENSIONS - CN121P-104-*00*



RECOMMENDED PCB LAYOUT



SPECIFICATIONS

Voltage Rating:	31.5 VAC
Contact Resistance:	10 m ohm max raised at max. 100 mA and max.20 mV.
Operating Temp. Range:	-55°C to +85°C
Soldering Profile:	Peak temp. 255 degree, 10 sec. 217 - 255 degree 90 sec. max.
Mating Cycles:	200 times max.
Test Standard:	EIA-364

PART NUMBER HOST CONNECTOR

CN121 S - 104 - *00*

- CN121 = Series
- S = Host (Surface Mount Type)
- 104 = No. of Contacts
- *00*:
  - 0001 = 28 Gbps
  - 0002 = 28 Gbps, 400 pcs. in Reel
  - 1001 = CFP2ACO

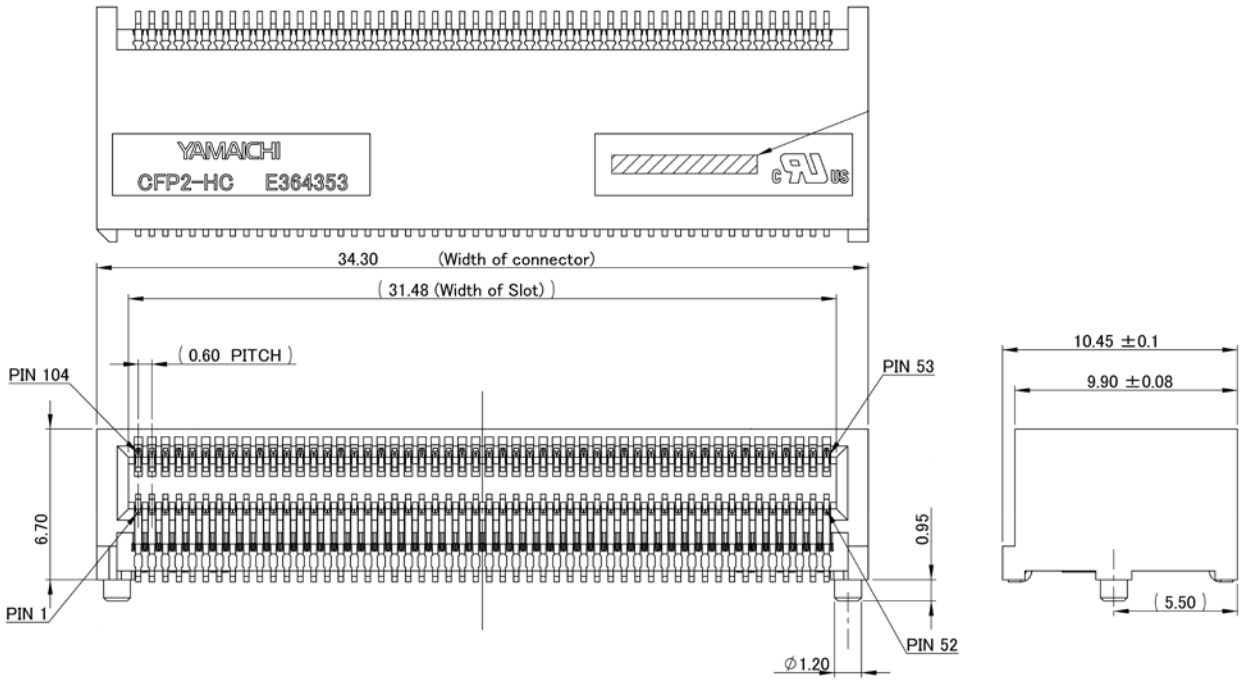
MATERIALS AND FINISH

Insulator:	LCP
Contacts:	Copper Alloy, Ni-Au

FEATURES

- 2 variations to transmit high speed:
  - 100 G 28 Gbps/ch x 4 ch
  - 56 -64 Gpbs per channel also available for ACO
- Pitch: 0.6 mm
- Pin count: 104 pins
- Dust cap and dummy module available for EMI protection
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

OUTLINE DIMENSIONS - CN121S-104-*00*



SPECIFICATIONS

Operating Temp. Range:	-55°C to +85°C
Plug-in Force:	55 N max.
Pull-out Force:	15 N min.
Test Standard:	EIA-364

MATERIALS AND FINISH

Cage:	Stainless Steel, Degreasing Nickel Silver
Connector Cover:	Zinc, Ni-Cu
Gasket:	Silicone
Screw:	Stainless Steel, Degreasing
Heatsink:	Aluminium, Anodizing Treatment
Clip:	Stainless Steel, Degreasing
Accessories:	LCP (conductive material)

FEATURES

- Dual slot: MSA standard
- Complete kit for dual slot requires 1 x dual cage, 1 x dual cover, 2 x heatsink and 2 x clip
- Complete kit for single slot requires 1x single cage, 1 x single cover, 1 x heatsink and 1 x clip
- Optional sealing on bottom of cage for insulation via kapton tape

PART NUMBER MECHANICAL COMPONENTS

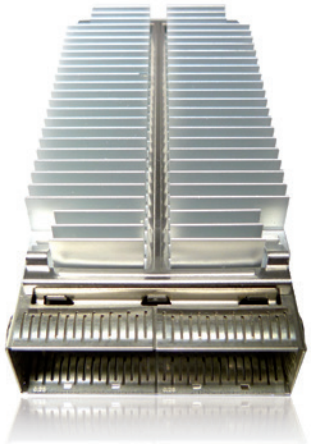
CN121 - * - 104 - 000 *

- Series
- G = Connector Cover, C = Cage
- No. of Contacts
- 1 = Dual Slot (MSA Standard) 2 = Single Slot

PART NUMBER FOR HEATSINK AND CLIP

CN121 - * - 104 - 000 *

- Series
- F = Heatsink M = Clip
- No. of Contacts
- For Heatsink 1 = Side-to-Side 2 = Front-to-Back
  For Clip = 8

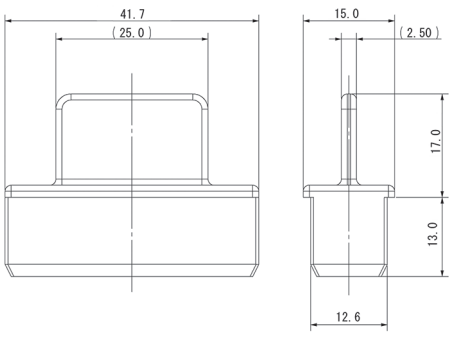


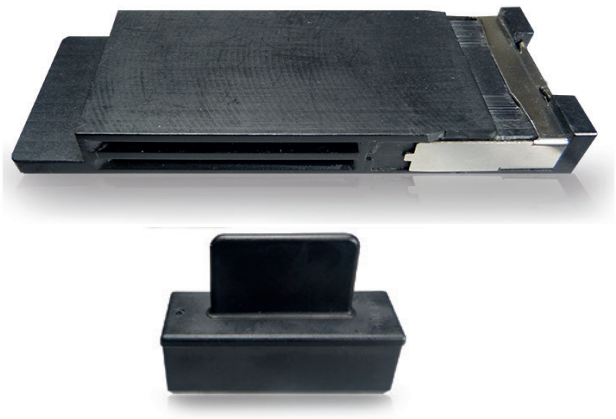
PART NUMBER DUMMY MODULE & DUST CAP

CN121D - 104 - 000 *

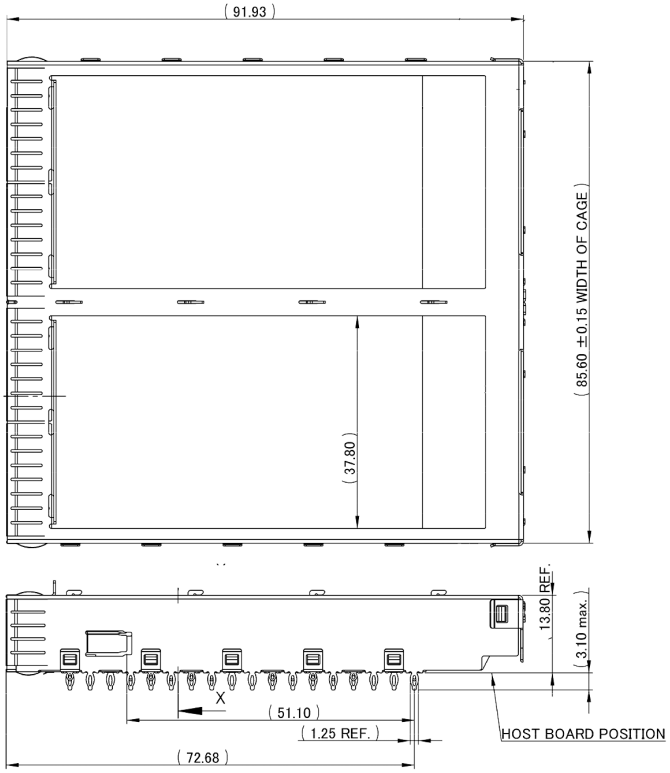
- Series
- Design No.
- 1 = Dummy Module 2 = Dust Cap

OUTLINE DIMENSIONS - CN121D-104-0001

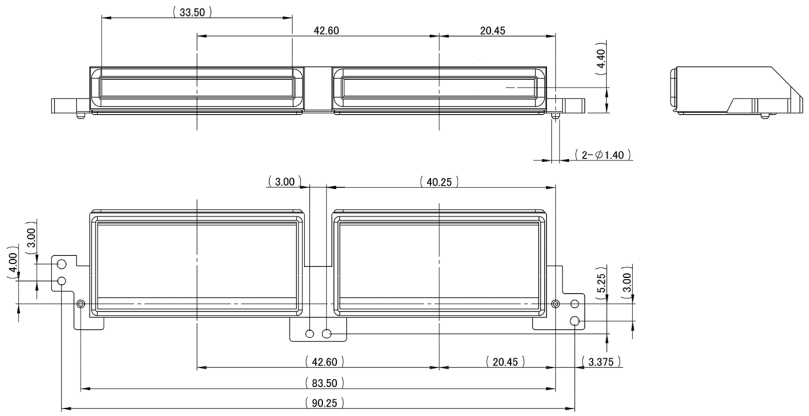




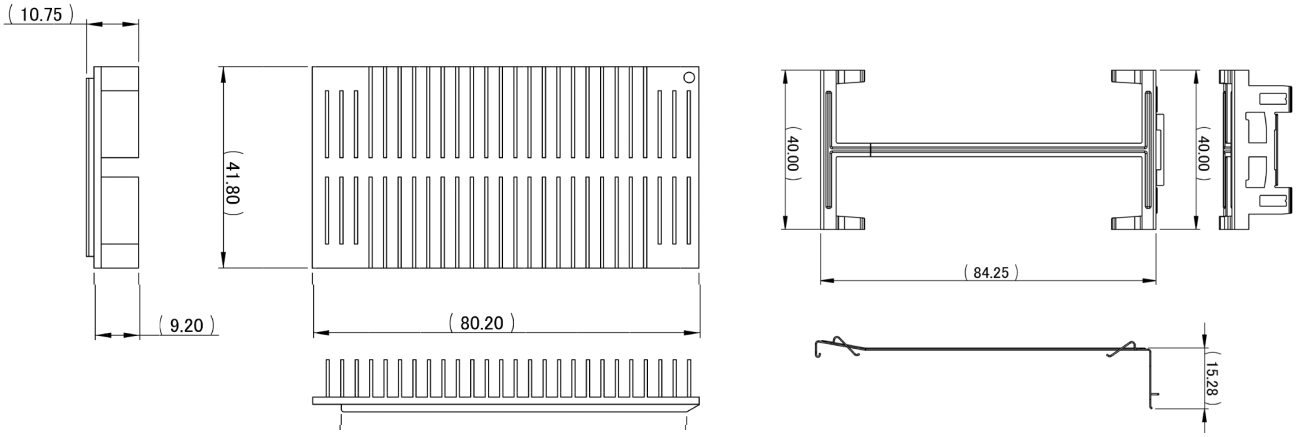
OUTLINE DIMENSIONS - CN121G-104-0001 CAGE



OUTLINE DIMENSIONS - CN121C-104-0001 COVER



OUTLINE DIMENSIONS - CN121F-104-0001 HEATSINK AND CN121M-104-0008 CLIP



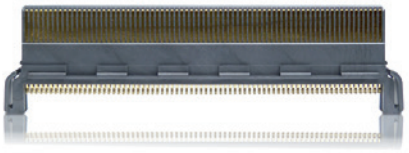
SPECIFICATIONS

Voltage Rating:	120 V
Contact Resistance:	10 m ohm max raised at max.100 mA and max.20 mV.
Operating Temp. Range:	-55°C to +85°C
Soldering Profile:	Peak temp. 255 degree, 10 sec. 217 - 255 degree 90 sec. max.
Mating Cycles:	200 times max.
Test Standard:	EIA-364

PART NUMBER PLUG

CA009 - P003 - 001

- Series
- Plug (Straddle Mount Type)



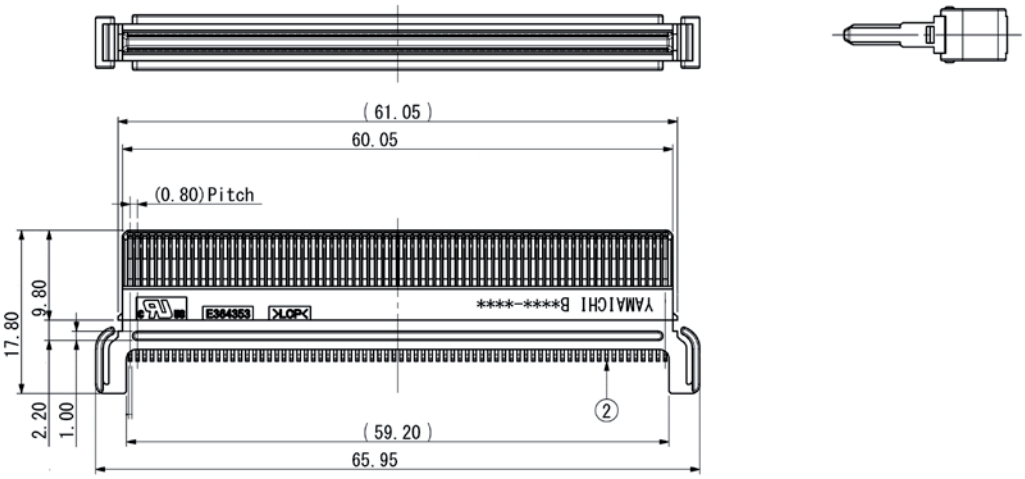
MATERIALS AND FINISH

Insulator:	LCP
Contacts:	Copper Alloy, Ni-Au
Metal Parts:	Copper Alloy

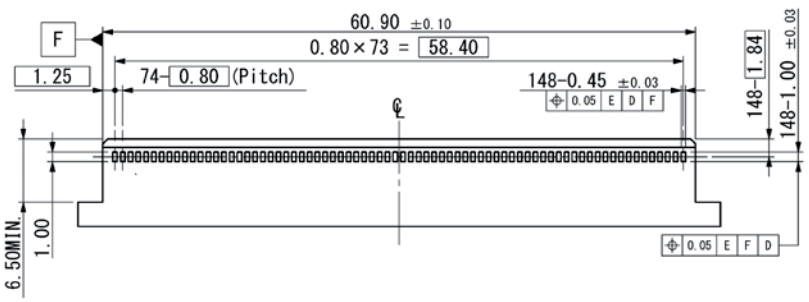
FEATURES

- High-speed transmission: 10 Gbps/ch, (for 40 Gbps/100 Gbps)
- Pitch: 0.8 mm
- Pin count:148 pins
- Heatsink with thermal interposer available for efficient thermal dissipation
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

OUTLINE DIMENSIONS - CA009-P003-001



RECOMMENDED PCB LAYOUT



SPECIFICATIONS

Voltage Rating:	120 V
Contact Resistance:	10 m ohm max raised at max.100 mA and max.20 mV.
Operating Temp. Range:	-55°C to +85°C
Soldering Profile:	Peak temp. 255 degree, 10 sec.
	217 - 255 degree 90 sec. max.
Mating Cycles:	200 times max.
Test Standard:	EIA-364

PART NUMBER HOST CONNECTOR

CA009 - S001 - 001

- Series
- Plug (Straddle Mount Type)

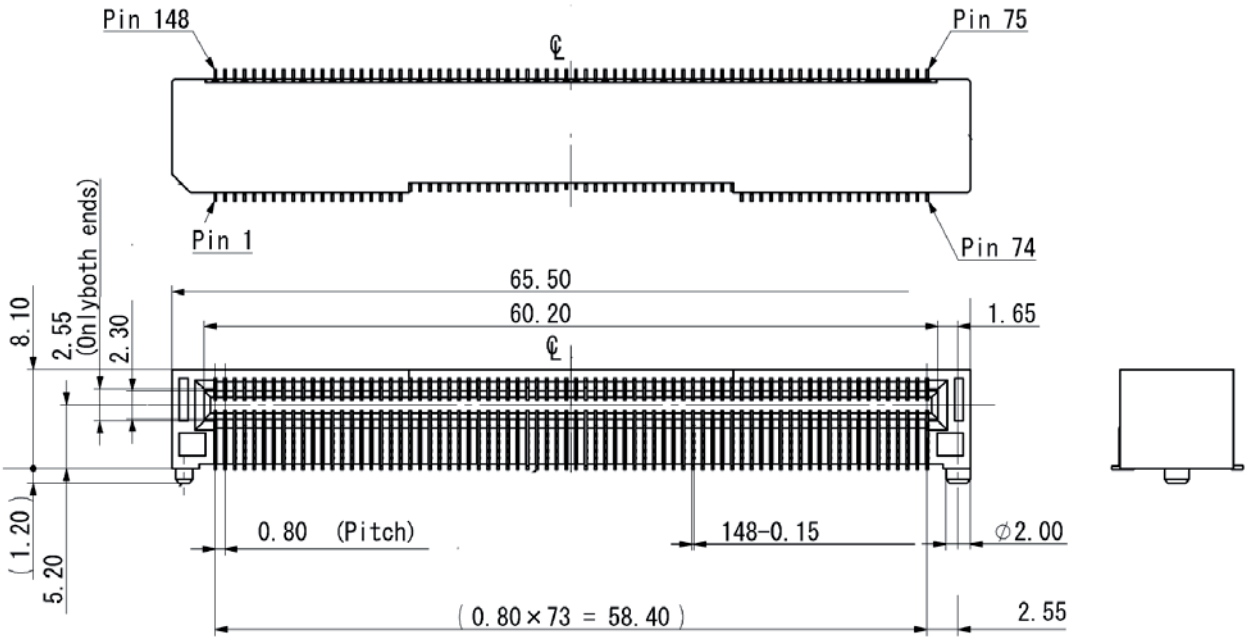
MATERIALS AND FINISH

Insulator:	LCP
Contacts:	Copper Alloy
Metal Parts:	CA009-S01-001

FEATURES

- High speed transmission: 10 Gbps/ch, (for 40 Gbps/100 Gbps)
- Pitch: 0.8 mm
- Pin count:148 pins
- Heatsink with thermal interposer available for efficient thermal dissipation
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

OUTLINE DIMENSIONS - CA009-S001-001



SPECIFICATIONS

Operating Temp. Range:	-55°C to +85°C
Plug-in Force:	80 N max.
Pull-out Force:	80 N max.
Test Standard:	EIA-364

MATERIALS AND FINISH

Cage:	Stainless Steel
Guide Rail:	Zinc Alloy Ni
Connector Cover:	Zinc Alloy Cu-Ni
Screw:	Stainless
Backend Plate:	Zinc Alloy Ni
External Bracket:	Zinc Alloy Ni
Heatsink:	Aluminium Ni

FEATURES

- Complete kit requires , 2 x guide rail, 1 x cover, 1 x backend plate, 1 x external bracket and 1 x heatsink
- Customer must prepare 2 pcs. x 3M screw each guide rail and cover (total 6 pcs./kit)
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

PART NUMBER MECHANICAL COMPONENTS

CA009 - **** - 001

- Series
- 1201 = Guide Rail
  1203 = External Bracket
  1204 = Backend Plate
  1400 = Host Connector Cover
- Design No.

PART NUMBER HEATSINK

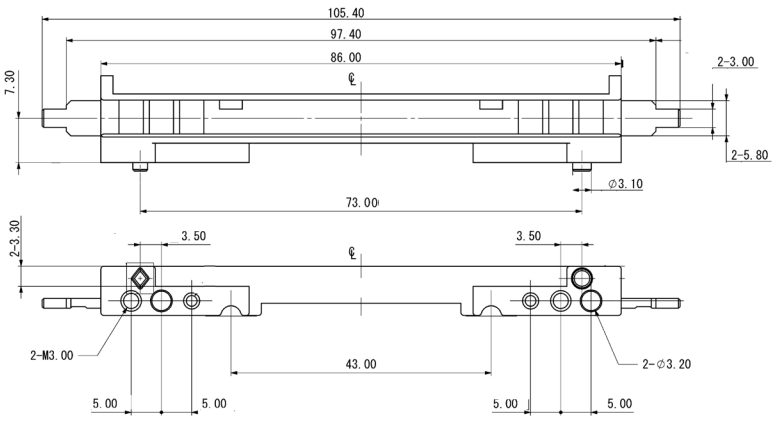
CA009 - 1310 - 001

- Series
- Heatsink (MSA Standard)

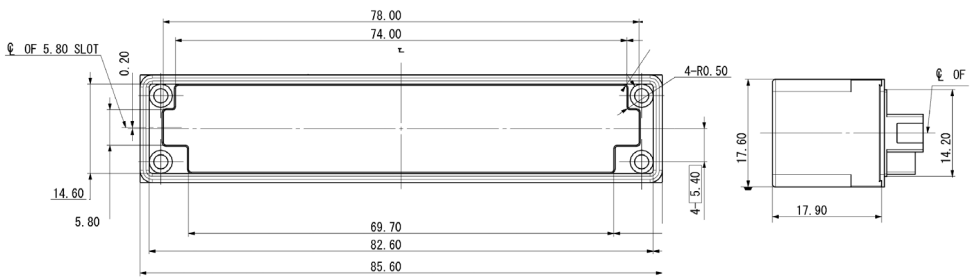
CA009 - 1300 - 002

- Series
- Long Heatsink w. Thermal Interposer

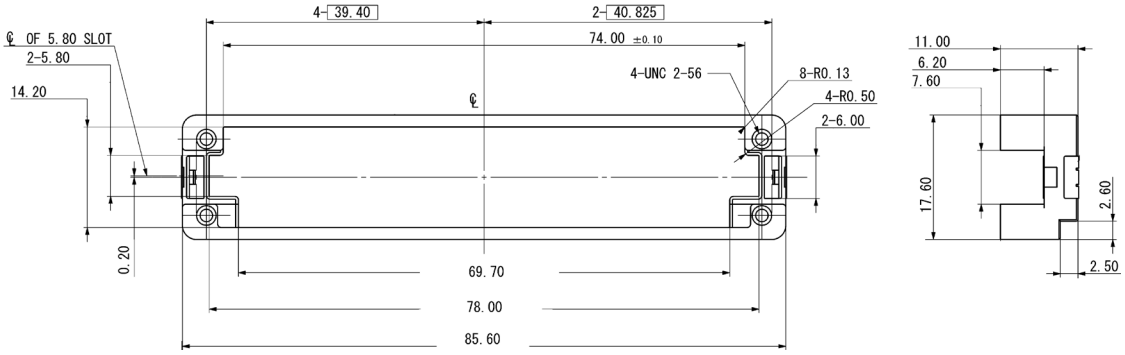
OUTLINE DIMENSIONS - CA009-001-1201 GUIDE RAIL



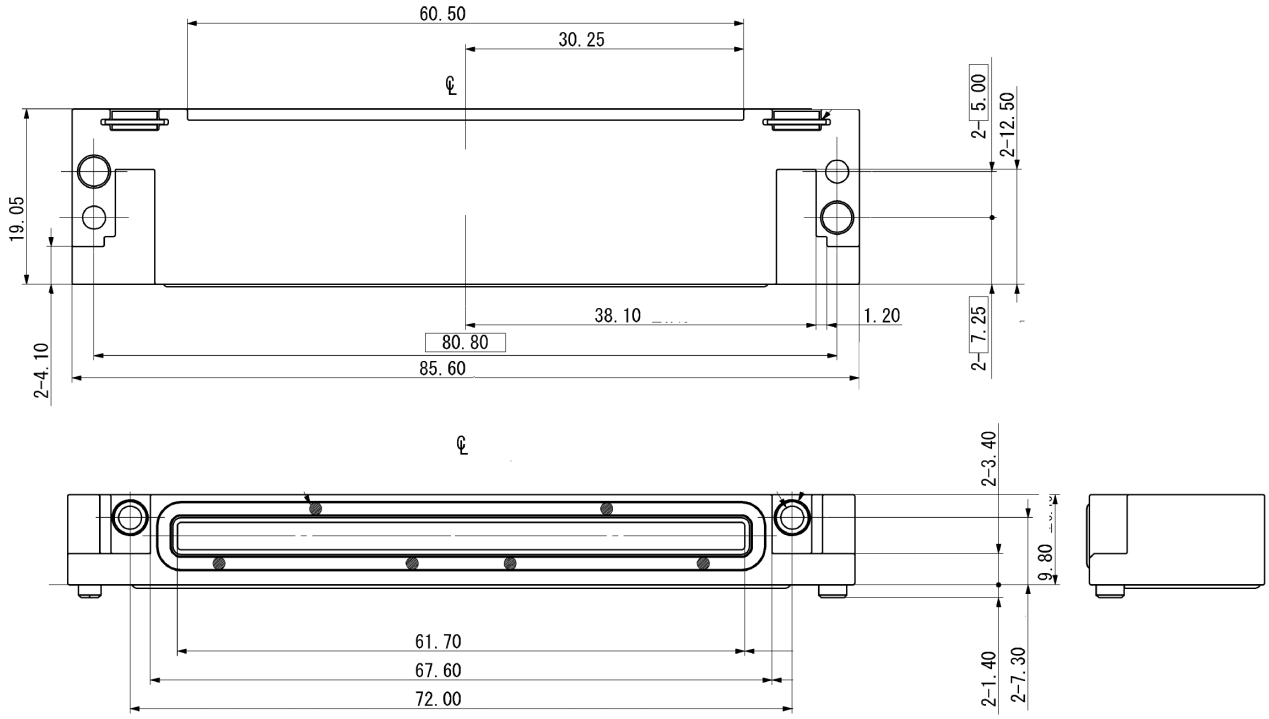
OUTLINE DIMENSIONS - CA009-1203-001 EXTERNAL BRACKET



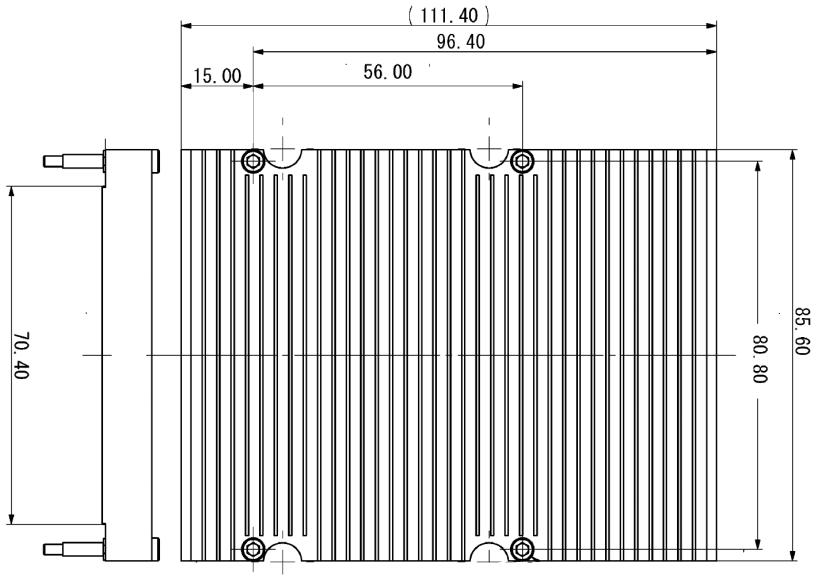
OUTLINE DIMENSIONS - CA009-1204-001 BACKEND PLATE



OUTLINE DIMENSIONS - CA009-1400-001 COVER



OUTLINE DIMENSIONS - CA009-1310-001 HEATSINK



OVERVIEW

- Test and development of CFP series host board
- Plug connector pre-assembled
- Assembled GPPO RF connector as I/O for high-speed signal
- No latching mechanism

FEATURES CA012-0*-03 MODULE A

- HCB (Host Compliant Board)
- Test for high-speed signal compliant and development of CFP series host board
- CEI 28GVSR HCB compliant
- Matching to all high speed trace length
- High-speed lane support only

FEATURES CA012-0*-04 MODULE B

- Channel evaluation and development of CFP series host board
- Full lane signal breakout
- All lane signals inlcuding control and monitoring
- Support for MCLK (Master Clock) and Ref CLK (Reference Clock) port

PART NUMBER MODULE A

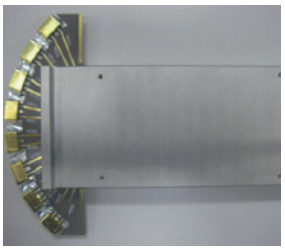
CA012 - 0* - 03

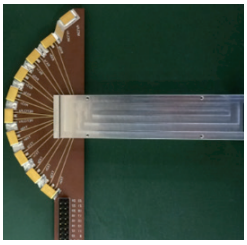
- Series
- 02 = CFP4 03 = CFP2
- 03 = Passive Breakout Module A

PART NUMBER MODULE B

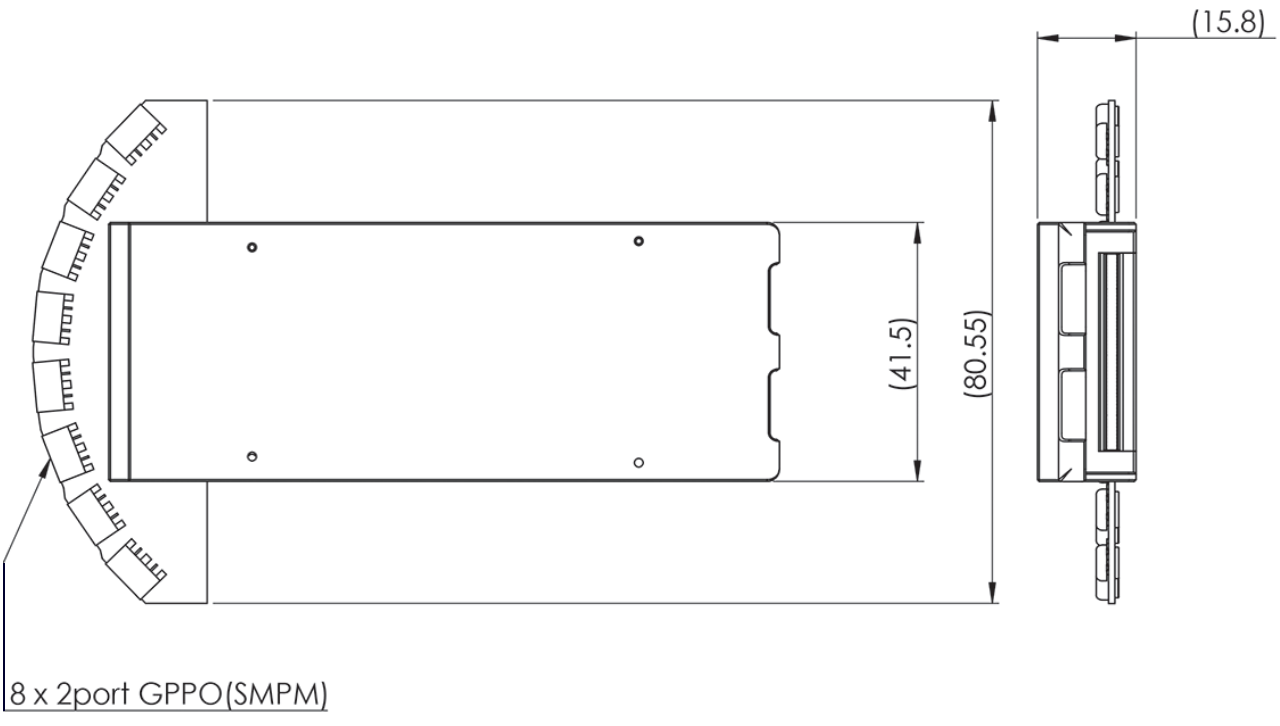
CA012 - 0* - 04

- Series
- 02 = CFP4 03 = CFP2
- 04 = Passive Breakout Module B





OUTLINE DIMENSIONS - CA012-03-03 HOST BOARD FOR CFP4



OVERVIEW

- MCB (Module Compliant Board)
- Test and development of CFP series module
- Matches all high-speed trace lengths
- Assembled GPPO RF connector as I/O for high-speed signal
- Can connect to MDIO interface for Ethernet protocol
- Can monitor low signal speed and module current
- Supports control signal for monitoring
- MSA input control

FEATURES 25GX4CH

- Test and development of CFP2 4x25 Gbps module
- CEI 28GVSR MCB compliant

FEATURES 10GX10CH

- Test and development of CFP2 10x10 Gbps module
- IEEE 802.3 ba MCB compliant

PART NUMBER 25GX4CH

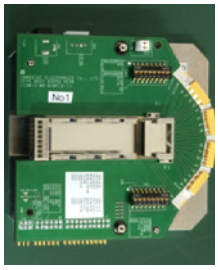
CA012 - 0* - 0*

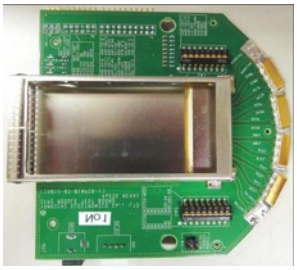
- Series
- 02 = CFP4
03 = CFP2
- 02 = CFP4 Design No.
01 = CFP2 Design No.

PART NUMBER 10GX10CH

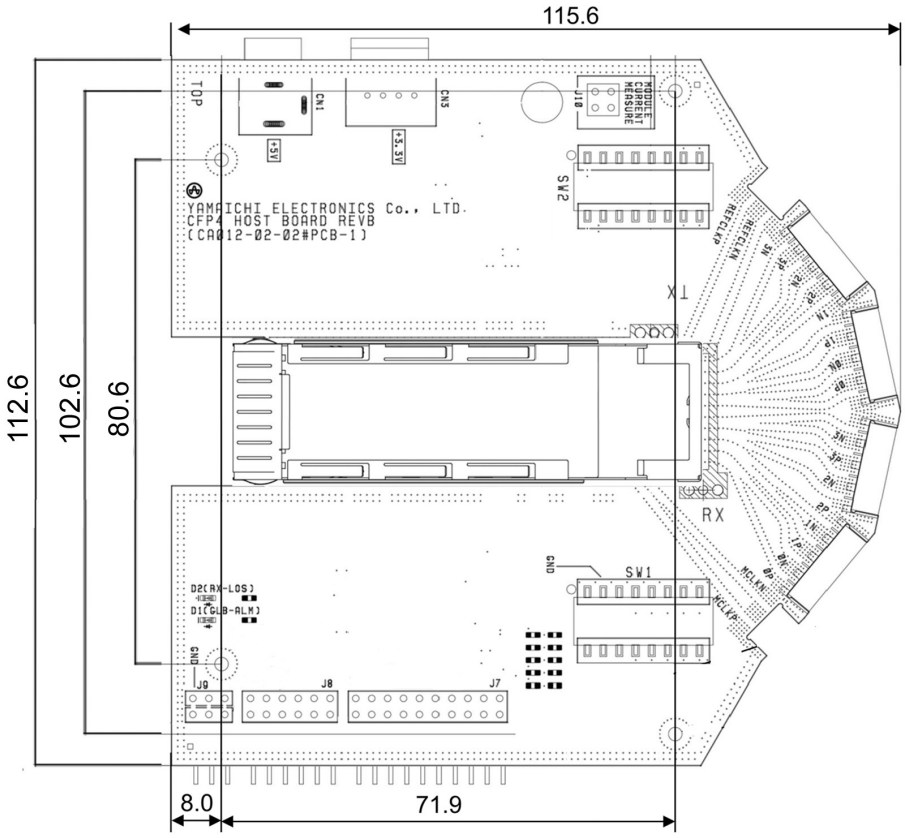
CA012 - 03 - 02

- Series
- 03 = CFP2
- 02 = Design No.





OUTLINE DIMENSIONS - CA012-02-02 HOST BOARD FOR CFP4



The enhanced QSFP+ connector and mechanical kit is supports data rates up to 28Gbps per channel. All products are designed in accordance with the Multi-Source Agreement (MSA).

SPECIFICATIONS

Operating Temp. Range:	- 20° to 85° C
Durability:	100 cycles
Plug in Force:	55 N max. with Heatsink
Pull-out Force:	45 N max. with Heatsink
Press fit insertion force:	140 N min.
Test Standard:	EIA-364

MATERIALS AND FINISH

Contact:	Copper Alloy
Contact area:	Ni-Au
Soldering area:	Sn
Insulator:	LCP

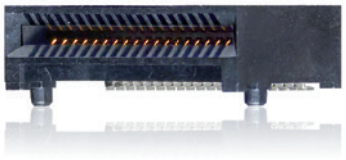
FEATURES

- High-speed 28 Gbps
- Pitch: 0.8 mm
- Pin Count: 38 Pins
- Compatible with existing QSFP (Infiniband: QDR / FDR / EDR) module
- Fully compatible foot pattern with existing QSFP connector
- QSFP56 under development
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

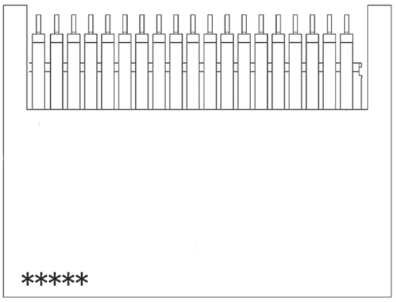
PART NUMBER

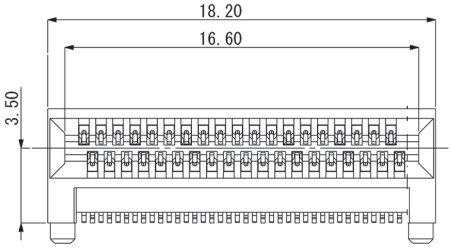
CN120 - 038 - * 00 *

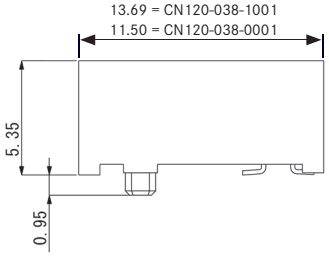
- Series
- No. of Contacts
- 0 = Style B 1 = Style A
- Contact Plating 1 = 0.76 µm Au, 2 = 0.40 µm Au



OUTLINE DIMENSIONS - CN120-038-XXXX HOST CONNECTOR

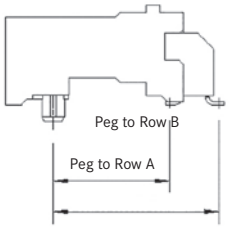






STYLE DEFINITION

Style	SFF Spec.	Peg to Row A	Peg to Row B
A	SFF 8662	7.37	9.88
B	SFF 8672	5.18	7.69



SPECIFICATIONS

Operating Temp. Range:	- 20° to 85° C
Durability:	100 cycles
Plug in Force:	55 N max. with Heatsink
Pull-out Force:	45 N max. with Heatsink
Press fit insertion force:	140 N min.
Test Standard:	EIA-364

MATERIALS AND FINISH

Cage:	Stainless, Degreasing
Heatsink:	Aluminium, Anodizing Treatment
Clip:	Stainless, Degreasing
Light Pipe:	Polycarbonate

FEATURES

- Complies with W7SFF-8683
- Optional single or double light pipes
- Heatsink with 3 different heights (4.2, 6.5 and 13.5 mm)
- Mechanical kit (Style A: Planing, Style B available)
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

PART NUMBER MECHANICAL KIT

CN120A - ** 0 * - * *

Series

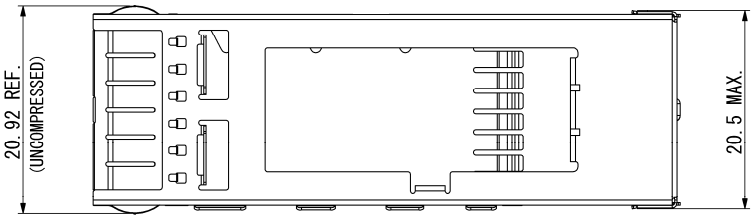
Cage Assembly Type:
11 = 1 x 1 Assembly
14 = 1 x 4 Assembly

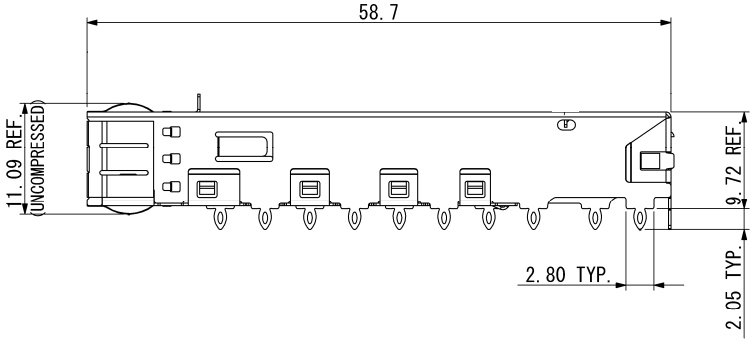
Product Type:
1 = EMI Elastomer Gasket
2 = Through Bezel (Spring Finger)

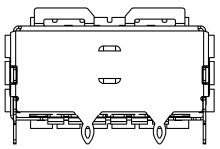
Heatsink:
0 = No Heatsink
1 = With Heatsink (Height = 13.5 mm)
2 = With Heatsink (Height = 6.5 mm)
3 = With Heatsink (Height = 4.2 mm)

Light Pipe:
0 = No Light Pipe
1 = Single Light Pipe (Cut-out Ø2.11)
2 = Dual Light Pipe (Cut-out Ø2.11)
3 = Single Light Pipe (Cut-out Ø2.54)
4 = Dual Light Pipe (Cut-out Ø2.54)
5 = Single Light Pipe (Cut-out Ø2.67)
6 = Dual Light Pipe (Cut-out Ø2.67)

OUTLINE DIMENSIONS - CN120A-1102-**MECHANICAL KIT







The enhanced small form-factor pluggable (SFP+) connector supports data rates at 28Gbps. The design is in accordance with the Multi-Source Agreement (MSA).

SPECIFICATIONS

Voltage Rating:	120 V AC maximum per contact
Operating Temp. Range:	–55°C to +85°C
Contact resistance:	35 m ohm max raised at max.100 mA and max. 20 m V.
Mating cycle (Insertion/extraction):	100 times
Soldering Profile:	Peak temp. 255 degree, 10 sec. 217 - 255 degree 90 sec. max.
Test Standard:	EIA-364

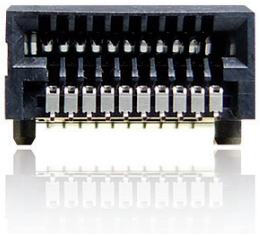
PART NUMBER

CN109S - 020 - 0 * 01

- Series
- No. of Contacts
- Packing: No. Mark = 750 pcs. / Reel; 1 = 100 pcs. / Reel
- Contact Plating 01 = 0.76 µm Au

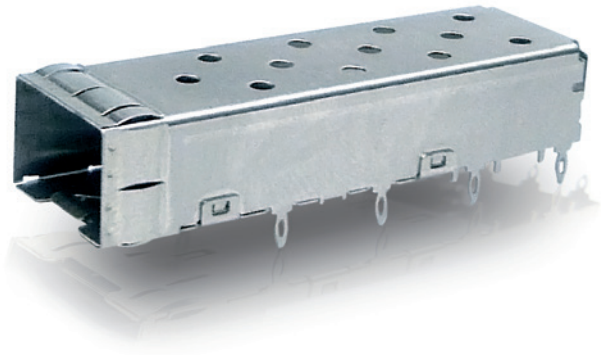
MATERIALS AND FINISH

Insulator:	LCP
Contacts:	Copper Alloy
Contact Area:	Ni-Au

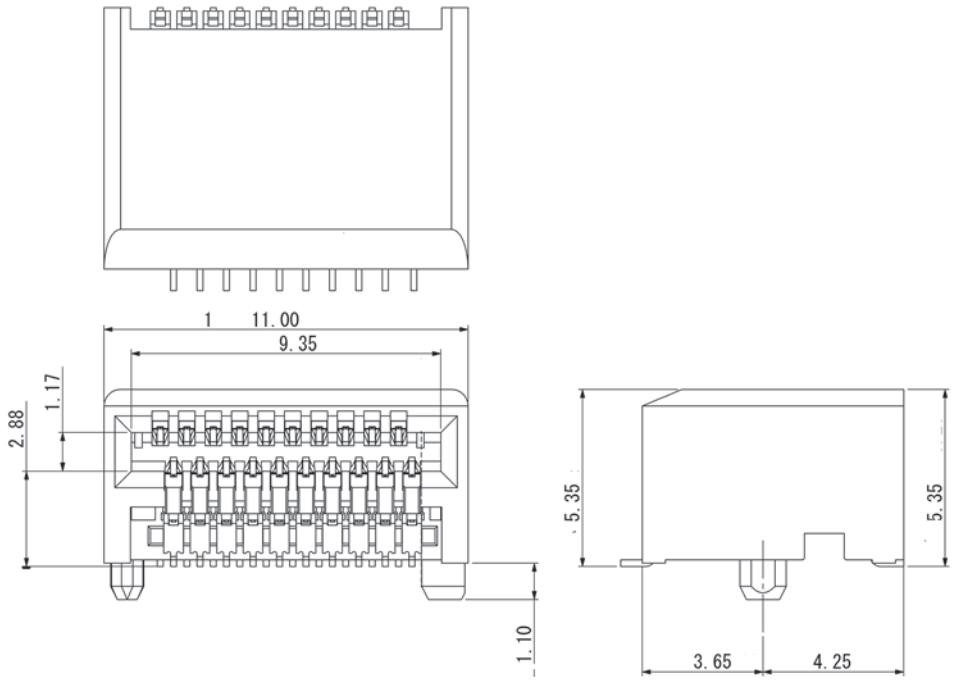


FEATURES

- High-speed 28 Gbps
- Pitch: 0.8 mm
- Pin count: 20 pins
- Compatible with existing SPF+ module
- Fully compatible foot pattern with existing SFP connectors
- Mechanical kit planned
- SFP56 under development
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006



OUTLINE DIMENSIONS - CN109S-020-0001-*



OVERVIEW

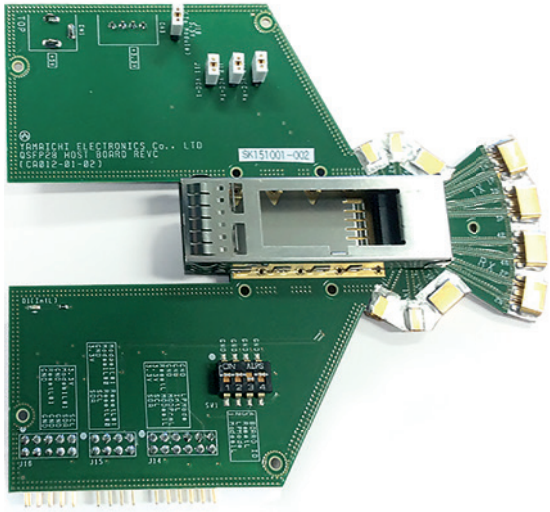
- MCB (Module Compliant Board)
- Test and development of QSFP and SFP series module
- Matches all high-speed trace lengths
- Assembled GPPO RF connector as I/O for high-speed signal
- Supports monitoring and control signal
- Can connect to I2C (Inter-Integrated Circuit) interface

PART NUMBER HOST BOARD

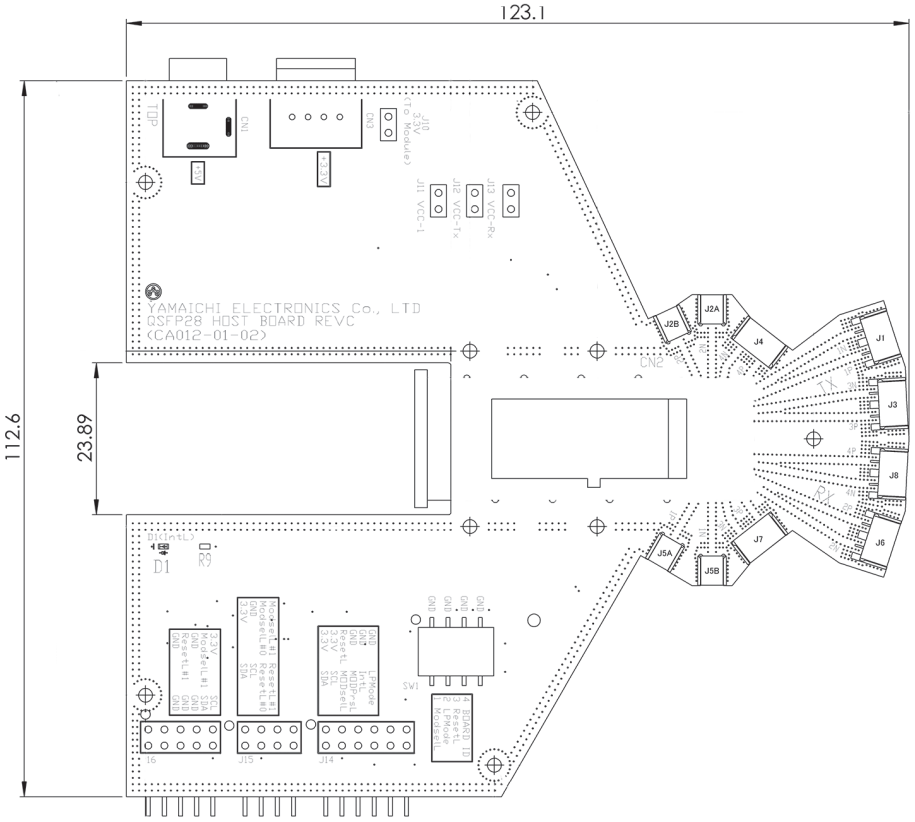
CA012 - **-**

Series

01-02 = QSFP28
04-01 = SFP28



OUTLINE DIMENSIONS - CA012-01-02 HOST BOARD



SPECIFICATIONS

Voltage Rating:	3.3 V
Power Consuption	2.9 W
Module temparature:	70 °C
Mating cycle (Insetion/extraction):	50 times
Plug in Force:	80 N max.
Pull-out Force:	80 N max.
Differential impedance:	100 ohm
Data rate:	28 Gbps

PART NUMBER ACTIVE CABLE

CA013 - XXXX - XX BO - XX

- Series
- 0202 = CFP4
0303 = CFP2
0102 = CFP4-QSFP28
- 26 = 26 AWG
- Cable Length: 50 = 50 m, 60 = 6.0 m, 70 = 7.0 m,

MATERIALS AND FINISH

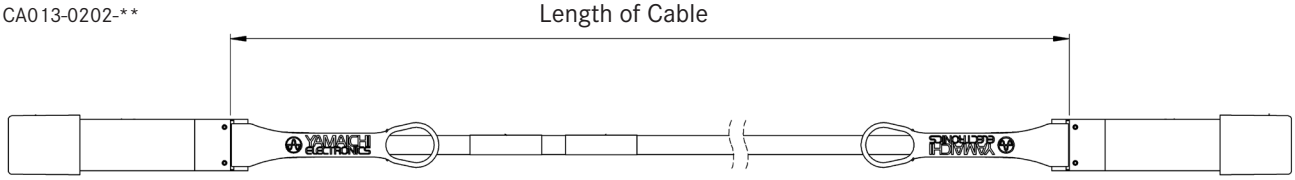
Cover:	Zinc Alloy
Latch:	Stainless
Pull Tab:	PA
Dust Cover:	PE
Label:	PET

FEATURES

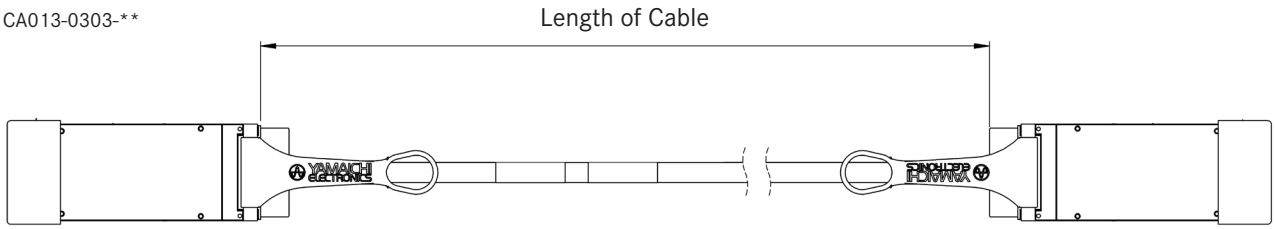
- Direct Attached Copper (DAC) Active Cable
- Supports 25-28 Gbps x 4ch for 100 Gbps interconnection
- Internal retimer Chip with CDR-IC
- Suitable for CEI28G-VSR compliance channel
- Compatible with plug-in CFP Multi Source Agreement (MSA) connector
- Supplied as complete cable assembly
- AWG26 support for lengths up to 7 m
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

OUTLINE DIMENSIONS - CA013-...BO

CA013-0202-**



CA013-0303-**



SPECIFICATIONS

Voltage Rating:	3.3 V
Module temparature:	70 °C
Mating cycle (Insetion/extraction):	50 times
Plug in Force:	80 N max.
Pull-out Force:	80 N max.
Differential impedance:	100 ohm
Data rate:	25 Gbps

MATERIALS AND FINISH

Cover:	Zinc Alloy
Latch:	Stainless
Pull Tab:	PA
Dust Cover:	PE
Label:	PET

PART NUMBER PASSIVE CABLE

CA013 - XXXX - XX PO - XX

- Series
- 0202 = CFP4
0303 = CFP2
0102 = CFP4-QSFP28
- 26 = 26 AWG 28 = 28 AWG
- Cable Length: 05 = 0.5 m, 10 = 1.0 m, 20 = 2.0 m, 30 = 3.0 m, 40 = 4.0 m

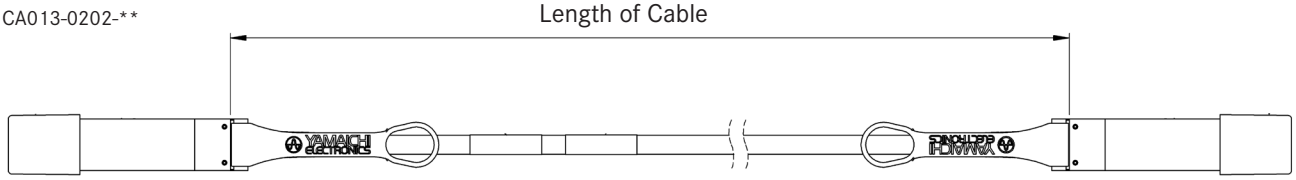
*INFO
CFP2, AWG 28 not availabe

FEATURES

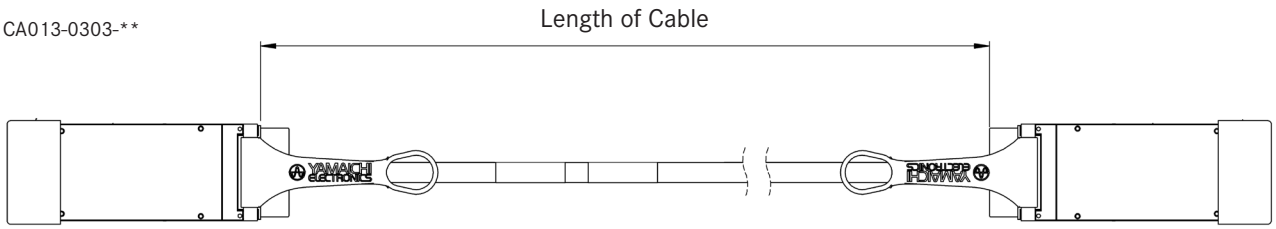
- Direct Attached Copper (DAC) Passive Cable
- Supports 25-28 Gbps x 4 ch for 100 Gbps interconnection
- Supports 100 GBASE-CR4, 25 GBASE-CR, and EDR requirement
- Compatible with plug-in in CFP Multi Source Agreement (MSA) connector
- Supplied as complete cable assembly
- 0.5 m only available with AWG 28
- AWG28 recommend up to 2 m, AWG26 recommended for further length
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

OUTLINE DIMENSIONS - CA013-...PO

CA013-0202-**



CA013-0303-**



SPECIFICATIONS

Module temparature:	70 °C
Mating cycle (Insetion/extraction):	50 times
Plug in Force:	40 N max.
Pull-out Force:	30 N max.
Data rate:	28 Gbps

MATERIALS AND FINISH

Backshell:	Zinc Alloy
Latch:	Stainless
Pull Tab:	Plastic

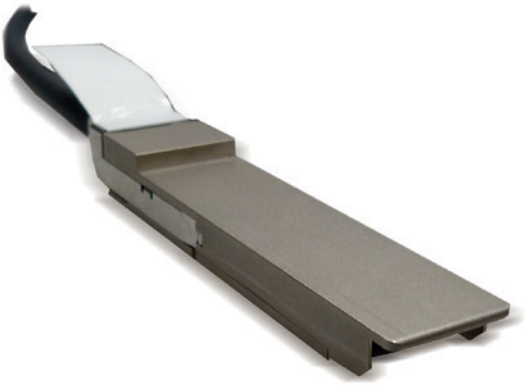
FEATURES

- Direct Attached Copper (DAC) Passive Cable
- Supports high speed transmission from 25 up to 28 Gbps per lane
- Passive copper cable for 100 GBASE-CR4 and EDR
- Compatible with plug-in QSFP standardised connector
- Supplied as complete cable assembly
- Maximum cable length: 5 m with AWG 26
- Minimum cable length: 0.5 m with AWG 30
- SFF-8436 compliant
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

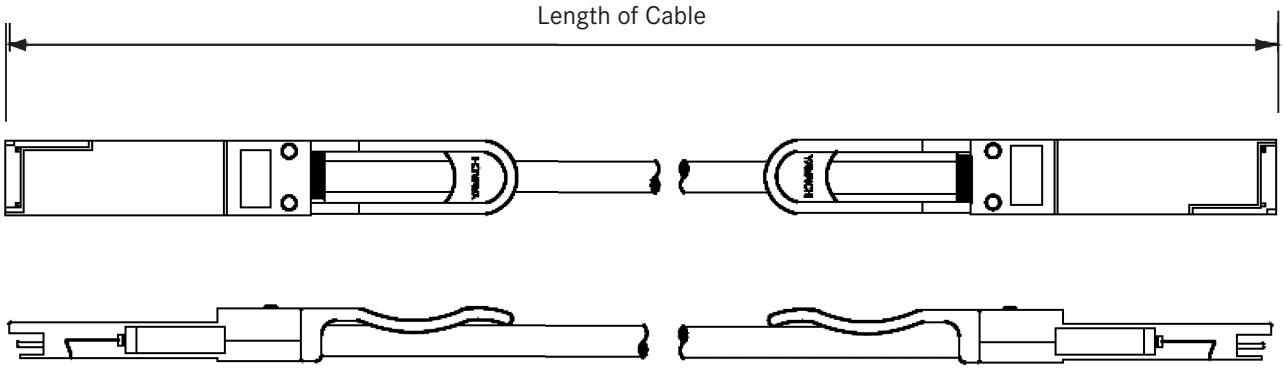
PART NUMBER PASSIVE CABLE

CAU120 - 038 - * - ***

- Series
- Pin Counts
- B = 26 AWG, D = 28 AWG
- Length of Cable
  B300 = 3 m, B400 =4 m, B500 = 5 m
  D050 = 0.5 m, D100 = 1 m, D200 = 2 m, D300 = 3 m



OUTLINE DIMENSIONS - CAU120-038-*-***

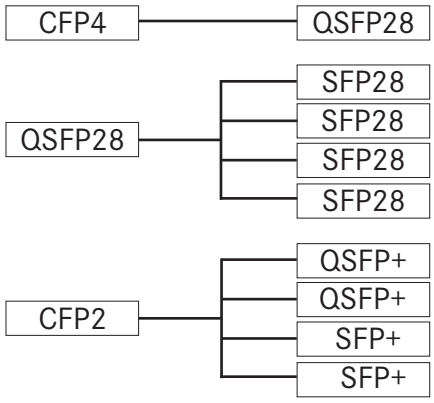


COMING SOON

BREAK OUT PASSIVE COPPER CABLE

FEATURES

- Passive copper cable for 100 GBASE-CR4 and EDR
- SFF-8436 compliant
- Supports high-speed transmission:
  - CFP4 - QSFP+: from 25 up to 28 Gbps / lane
  - CFP2 - QSFP+/SFP+ break out copper cable: 10 Gbps/lane x 10 lane
  - QSFP+ - SFP+ break out copper cable: from 25 up to 28 Gbps / lane



YFLEX is a fully customized flexible circuit cable. Yamaichi consulted with and designed the layout to meet customer-specific requests such as transmission loss, data rate and dimensions. This cable can support the high-speed transmission requirements of the data networking market.

MATERIALS

Insulator:	LCP
Conductive:	Copper foil
Bump to connected layers:	AG paste
Cover Layer:	Polymide
Adhesive:	Epoxy

PART NUMBER

YF * - A*****

Series
A = Single Layer
B = Dual Layer

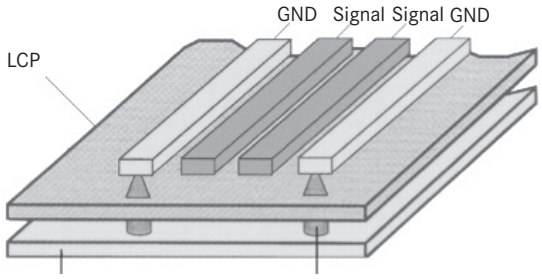
Design Number (internal only)

FEATURES

- Available to transmit high-speed in Gbps with low loss
- Effective in the harshest temperature, humidity and EMI conditions
- Customized depending on layout and requirements
- Can match differential impedance
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

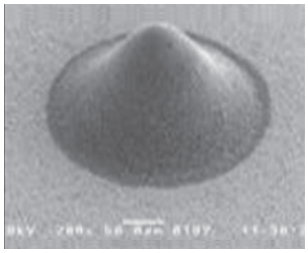
HIGH-SPEED TRANSMISSION STRUCTURE

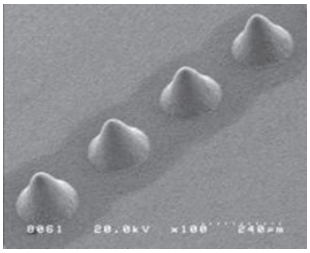
- LCP achieves transmission with low dielectric loss
- GND and copper film ground are connected with silver bumps which also protect from EMI



Copper Film Ground Bump

CLOSEUP IMAGE OF THE BUMP:





CN074, CN080 and CN084 series support 12.5 Gbps high speed transmission and compliant to AdvancedMC, MicroTCA, and AdvancedTCA standarised by PICMG. This is achieved through the combination of CMT, Yamaichi ‘s unique connector mounting technology, and YFLEX, Yamaichi patented FPC cable.

PICMG (PCI Industrial Computers Manufactures Group)
PICMG is a leading standards organization in the embedded computer market consisting of more than 250 companies and has developed specifications including AdvancedMC, MicroTCA and AdvanedTCA for datacom, telecom, industrial, mil/aerospace use, etc.

ADVANCEDTCA (Advanced Telecom Computing Architecture)
AdvancedTCA is a series of specifications to support the latest requirements of high-end communications equipment. AdvancedTCA systems provide core applications with high reliability, availability and serviceability. The AdvancedTCA shelf accepts up to 14 AdvancedTCA carrier boards (blades).

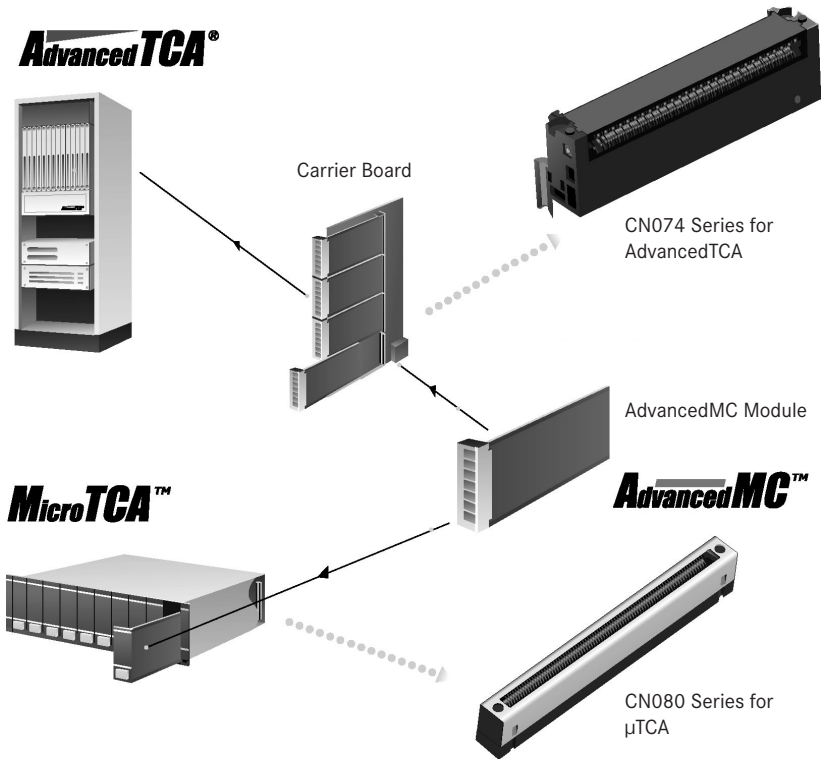
MICROTCA (Micro Telecom Computing Architecture)
MicroTCA is a series of specifications to incorporate the key elements of AdvancedTCA or physically smaller edge applications where AdvancedTCA may not apply. The MicroTCA system provides increased functionality which can meet the requirements of next-generation equipment for industrial, medical and military/aerospace applications. MicroTCA systems are managed using a a MicroTCA Carrier Hub (MCH).

ADVANCEDMC (Advanced Mezzanine Card)
AdvancedMCs are the primary component of AdvancedTCA and MicroTCA systems. Standardised AdvancedMCs provide the system with functional elements such as connectivity, processors and mass storage.

- Each AdvancedTCA carrier board accepts up to 8 AdvancedMCs.
- A typical MicroTCA system consists of up to 12 AdvancedMCs.

APPLICATION

- Next generation telecom equipment
- Enterprise network
- Storage
- Instrumentation
- Test equipment
- Military
- Industrial control
- Medical equipment

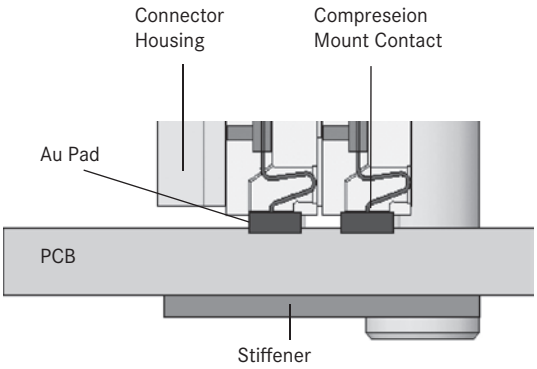


YAMAICHI TECHNOLOGY TO SUPPORT 12.5 GBPS TRANSMISSION = "CMT" + "YFLEX"

CMT = COMPRESSION MOUNT TECHNOLOGY

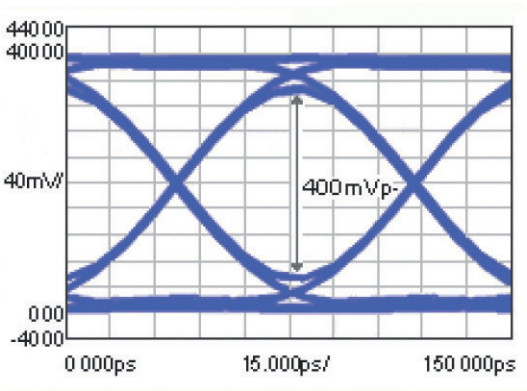
AdvancedCMT is the quality trademark of Yamaichi Electronics for connectors used in AdvancedTCA and MicroTCA®

- CMT is a contact technology between an electro-mechanical component (e.g., connector or test adapter for semi-conductors) and a printed circuit board
- Electrical contact is established through the compression of the two contact faces by screwing the component to the PCB
- A stiffener is screwed from the rear to avoid stress on the PCB
- Easy field repair and component replacement
- Apply wider contact to ensure reliability under vibration and temperature

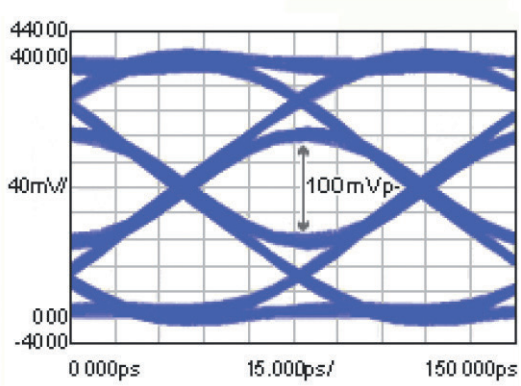


CN080 comparison of transmission wave forms @12 Gbps

Compression Mount



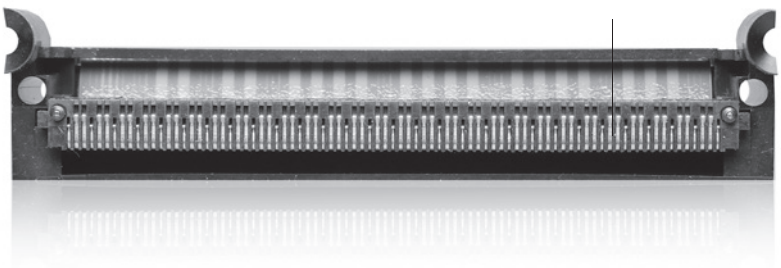
Press-Fit



YFLEX

- YFLEX is a Yamaichi Electronics LCP-based flexible circuit board is in the connectors. YFLEX is used as a cable that ensures high-speed data transmission with minimal signal loss.

YFLEX
LCP-based flexible circuit board



SPECIFICATIONS

Insulation Resistance:	100 MΩ min. at 80 V DC	
Withstanding Voltage:	80 Vrms	
Differential Impedance:	100 Ω ±10 Ω	
Line Resistance:	Differential pair conductors	= 375 mΩ
	General purpose conductors	= 90 mΩ
	Power conductors	= 90 mΩ
	Ground conductors	= 60 mΩ
Attenuation:	<1 dB at 8 GHz and <2 dB at 12 GHz	
Return Loss:	<20 dB at 5 GHz and <13 dB at 8 GHz	
Cross Talk Ratio:	NE and FE <2 %	
Operating Temp. Range:	–55°C to +105°C	
Mating Cycles:	200 times	

PART NUMBER

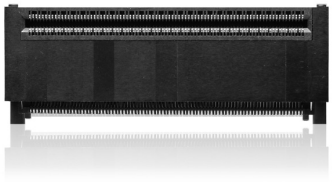
CN074 - *** - 000*

*Series No.

Type
B = 085 - 0003
B+ = 170 - 0005

3 = Type B (basic), 5 = Type B+ (extended)

*INFO: including screws and stiffener



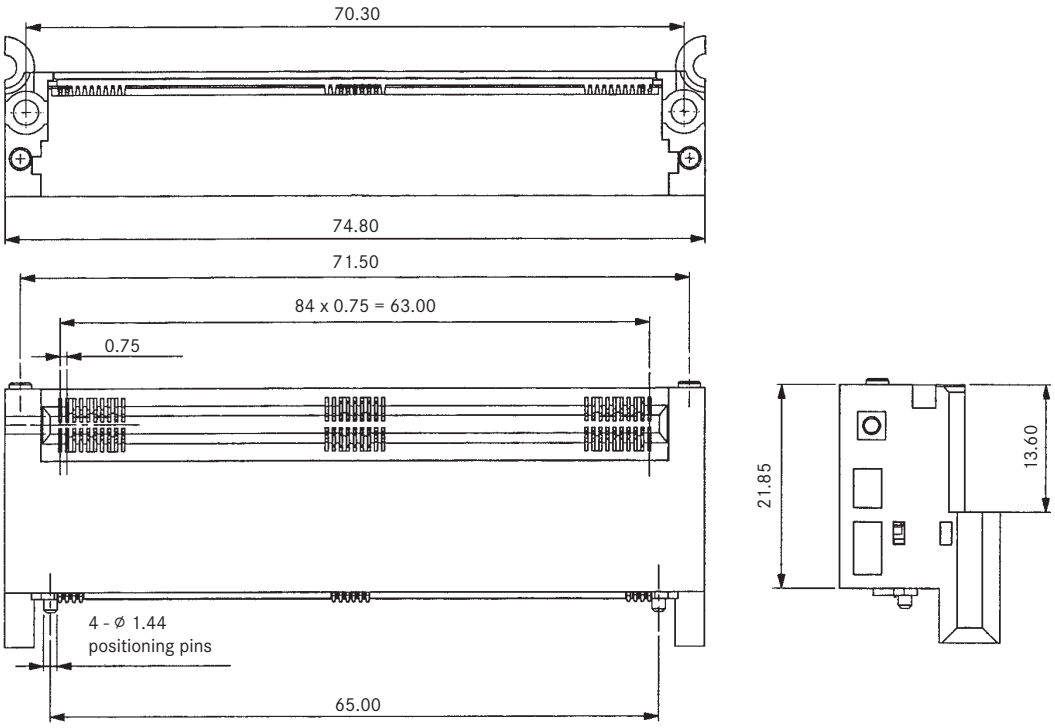
MATERIALS

Case:	PA9T (UL94V-0), black
Housing:	LCP (UL94V-0), black
Contact:	Copper Alloy, Gold Plating over Nickel
YFLEX:	LCP/Copper, Gold Plating over Nickel
Screw:	Stainless
Stiffener:	Stainless, PA9T (UL94V-0), black

FEATURES

- Compliant to PICMG AMC.0
- Connector to connect AdvancedMC to AdvancedTCA
- Max. transmission 12.5 Gbps
- CMT + YFLEX Technology
- Carrier Board: Conventional
- Module Slot: 1
- Type B: 85 pins basic
- Type B+ 170 pins extended
- RoHS2011/65/EU (Using lead in exeption list)
- REACH conform according to EU Regulation 1907/2006

OUTLINE CONNECTOR DIMENSIONS CN074-***-000*



SPECIFICATIONS

Insulation Resistance:	100 MΩ min. at 80 V DC	
Withstanding Voltage:	80 Vrms	
Differential Impedance:	100 Ω ±10 Ω	
Line Resistance:	Differential pair conductors	= 375 mΩ
	General purpose conductors	= 90 mΩ
	Power conductors	= 90 mΩ
	Ground conductors	= 60 mΩ
Attenuation:	<1 dB at 8 GHz and <2 dB at 12 GHz	
Return Loss:	<20 dB at 5 GHz and <13 dB at 8 GHz	
Cross Talk Ratio:	NE and FE <2 %	
Operating Temp. Range:	–55°C to +105°C	
Mating Cycles:	200 times	

MATERIALS

Case:	PA9T (UL94V-0), black
Housing:	LCP (UL94V-0), black
Contact:	Copper Alloy, Gold Plating over Nickel
YFLEX:	LCP/Copper, Gold Plating over Nickel
Screw:	Stainless
Stiffener:	Stainless, PA9T (UL94V-0), black

FEATURES

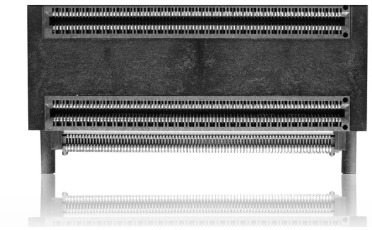
- Compliant to PICMG AMC.0
- Connector to connect AdvancedMC to AdvancedTCA system.
- Carrier Board: Cutaway
- Available to transmit max. 12.5 Gbps
- CMT + YFLEX technology
- Module Slot: 2
- Type AB:170 pins basic
- Type A+B+: 340 pins extended and mid size
- Type A+B+ Mid size suitable for 1U blade size
- RoHS2011/65/EU (Using lead in exeption list)
- REACH conform according to EU Regulation 1907/2006

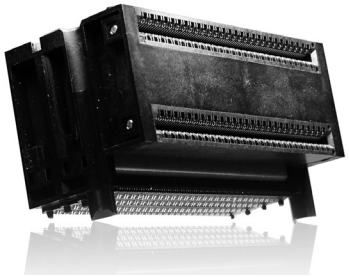
PART NUMBER

CN074 - *** - 000*

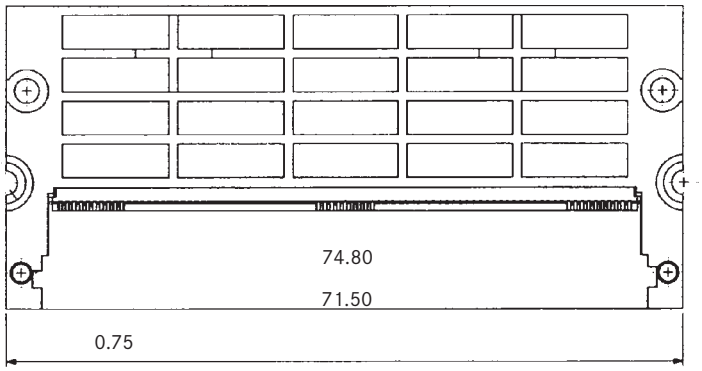
Series No.

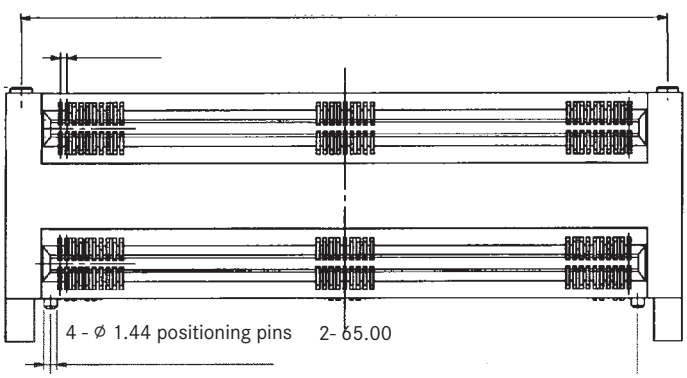
Type
AB = 170 - 0006
A+B+ = 340 - 0001
A+B+ MID size = 340 - 0003

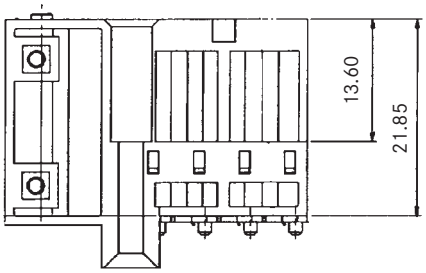




OUTLINE CONNECTOR DIMENSIONS CN074-340-0001 (TYPE A+B+)







SPECIFICATIONS

Insulation Resistance:	100 MΩ min. at 80 V DC
Withstanding Voltage:	80 Vrms
Differential Impedance:	100 Ω ±10 Ω
Line Resistance:	25 mΩ
Attenuation:	<1 dB at 8 GHz and <2 dB at 12 GHz
Return Loss:	<20 dB at 5 GHz and <13 dB at 8 GHz
Cross Talk Ratio:	NE and FE <3 %
Operating Temp. Range:	–55°C to +105°C
Mating Cycles:	200 times

PART NUMBER

CN080 - 170 - ** * *

Series No.

No. of Contacts

01 = Standard stiffener
11 = with long screws for 5 mm PCB thickness
21 = with long screws for 7 mm PCB thickness

02 = with special stiffener for component mounting
12 = with long screws for 5 mm PCB thickness
22 = with long screws for 7 mm PCB thickness

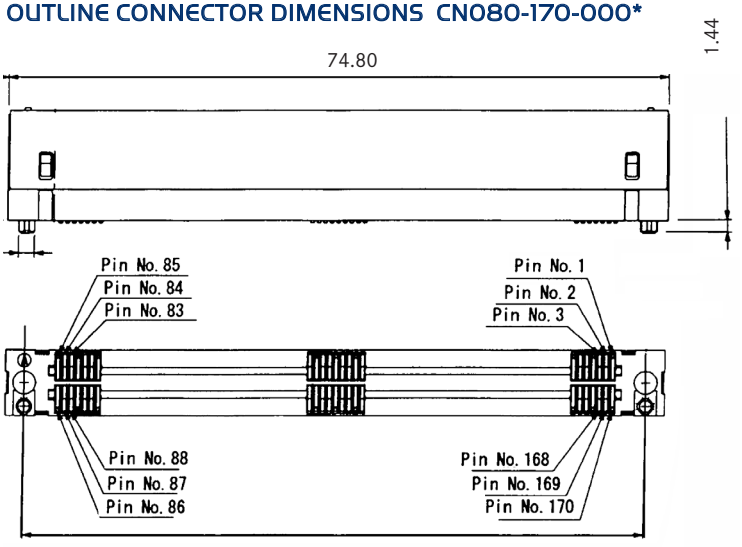
MATERIALS

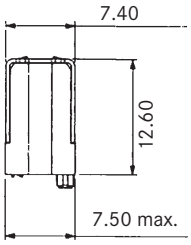
Housing:	LCP (UL94V-0), black
Shell:	Stainless
Contact:	Copper Alloy, Gold Plating over Nickel
Screw:	Stainless
Stiffener:	Stainless,
Insulator:	PA9T, black

FEATURES

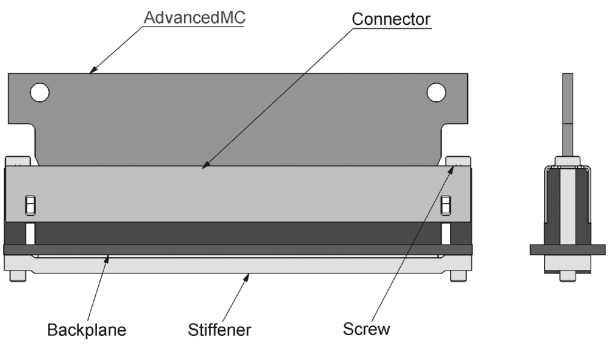
- Backplane connector to connectAdvanceMC to MicroTCA system
- Connected with MCH module called CN084
- Compliant to GR-1217-CORE
- Max. transmission 12.5 Gbps
- CMT technology
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

OUTLINE CONNECTOR DIMENSIONS CN080-170-000*

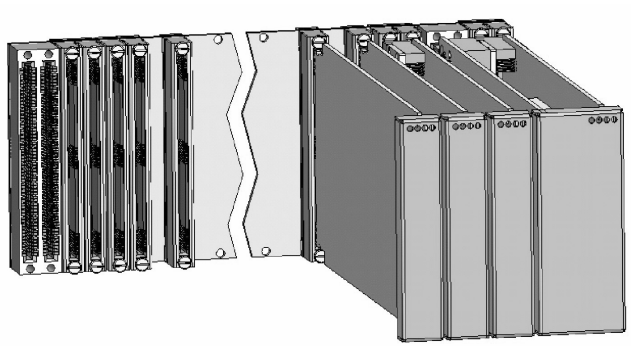




CN080 ASSEMBLED

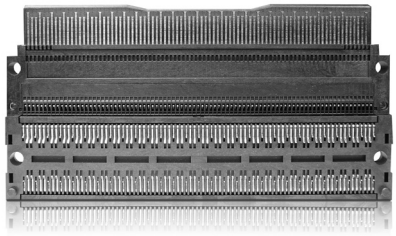


CN080 BACKPLANE



FEATURES

- Module to control signals and performance of AdvancedMC
- Plugs into CN080 MicroTCA connector
- Transmit over 200 differential pairs with 680 maximum contact pins
- Module thickness: 1.6 mm, 2.0 mm
- RoHS2011/65/EU
- REACH conform according to EU Regulation 1907/2006

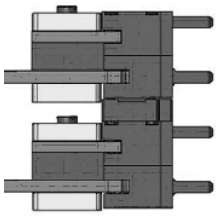
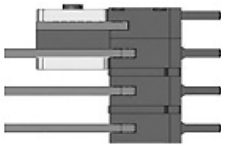
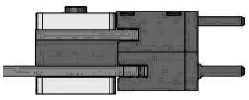
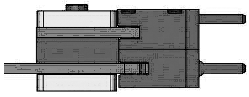
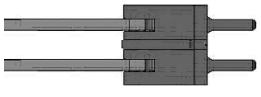
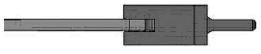
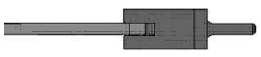


PART NUMBER

CN084 - 680 - 1232 - 1010 - 0

- Series No.
- No. of Contacts
- Type and Position of MCH Tongues: 1 = MCH-1, 2 = MCH-2, 3 = MCH-3 (see tables below)
- 0 = Pre-assembled PCB; 1 = Card Slot for MCH Card (1.6 mm thickness)
- Design No.

OVERVIEW OF STANDARD VARIATIONS

CN084-680-1232-1010-0	Pin count	680 MCH-1 MCH-2 MCH-3 MCH-2	
CN084-680-1332-1110-0	Pin count	680 MCH-1 MCH-3 MCH-3 MCH-2	
CN084-340-0032-0010-0	Pin count	340 MCH-3 MCH-2	
CN084-340-1200-1000-0	Pin count	340 MCH-1 MCH-2	
CN084-340-1300-1100-0	Pin count	340 MCH-1 MCH-3	
CN084-170-1000-1000-0	Pin count	170 MCH-1	
CN084-170-0030-0010-0	Pin count	170 MCH-3	

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