

| PRODUCT NUMBER   | DESCRIPTION      | NOTES      |
|------------------|------------------|------------|
| 10117771-XXXXLF  | NON-HF           | SEE SHT. 3 |
| 10117771-XXXXHLF | HALOGEN FREE (H) | SEE SHT. 3 |



CABLE  
SEE TABLE 2 & 3  
NOTE 9 & 15

END P2  
MINI SAS  
CABLE CONNECTOR

END P1  
MINI SAS HD 4X  
CABLE CONNECTOR

HEAT SHRINK  
TUBE (2X)



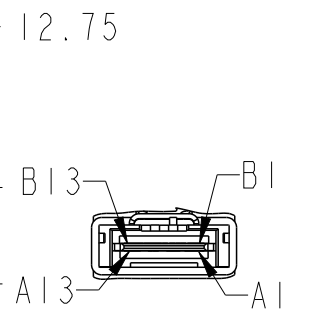
60mm ± 15mm

HEAT SHRINK  
TUBE

P1 LABEL  
SEE NOTE 5

P2 LABEL  
SEE NOTE 5

CABLE TIE COLOR: BLACK  
SEE NOTE 10



SECTION A-A  
SCALE 2:1  
CABLE ORIENTATION ONLY  
MSAS END P2

|             |                |  |                |                    |                        |               |              |     |
|-------------|----------------|--|----------------|--------------------|------------------------|---------------|--------------|-----|
| dr          | Deborah Ingram | 2011/03/17   | projection     | MM                 | size                   | A3            | scale        | 1:1 |
| eng         | Tom Feng       | 2015/08/12   |                |                    | ecn no                 | ELX-N-21649-1 |              |     |
| chr         | -              | -  |                |                    | rel level              | Released      |              |     |
| appr        | Frank Mao      | 2015/08/12   | product family | C&A                |                        |               |              |     |
|             |                | title Mini SAS HD 4X TO Mini SAS 2.1<br>TRAINED UNIVERSAL FINAL ASSEMBLY (6Gb/s) |                | dwg no<br>10117771 | rev<br>C               |               |              |     |
| www.fci.com |                | cat. no.   | -              |                    | Product - Customer Drw |               | sheet 1 of 5 |     |

| PRODUCT NUMBER   | DESCRIPTION      | NOTES      |
|------------------|------------------|------------|
| 10117771-XXXXLF  | NON-HF           | SEE SHT. 3 |
| 10117771-XXXXHLF | HALOGEN FREE (H) | SEE SHT. 3 |



END P1  
Mini SAS HD 4X  
ISOMETRIC VIEW



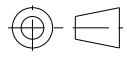

END P2  
Mini SAS  
ISOMETRIC VIEW

|             |                |            |                |     |                        |                                |              |        |          |
|-------------|----------------|------------|----------------|-----|------------------------|--------------------------------|--------------|--------|----------|
| dr          | Deborah Ingram | 2011/03/17 | projection     | MM  | size                   | A3                             | scale        | 1:1    |          |
| eng         | Tom Feng       | 2015/08/12 |                |     | ecn no                 | ELX-N-21649-1                  |              |        |          |
| chr         | -              | -          | product family | C&A | rel level              | Released                       |              |        |          |
| appr        | Frank Mao      | 2015/08/12 |                |     | title                  | Mini SAS HD 4X TO Mini SAS 2.1 |              | dwg no | 10117771 |
| www.fci.com |                | cat. no.   | -              |     | Product - Customer Drw |                                | sheet 2 of 5 |        |          |

| PRODUCT NUMBER   | DESCRIPTION      | NOTES      |
|------------------|------------------|------------|
| 10117771-XXXXLF  | NON-HF           | SEE SHT. 3 |
| 10117771-XXXXHLF | HALOGEN FREE (H) | SEE SHT. 3 |

| PRODUCT NUMBER<br>(HALOGEN FREE)<br>SEE NOTE 9 & 15 | AWG    | "DIM L"<br>LENGTH<br>(Meters) | "DIM M"<br>HIEGHT<br>(mm) |
|---|--------|-------------------------------|---------------------------|
| 10117771-5030HLF                                    | 24 AWG | 3 M                           | (20.1)                    |
| 10117771-5040HLF                                    | 24 AWG | 4 M                           | (20.1)                    |
| 10117771-5050HLF                                    | 24 AWG | 5 M                           | (20.1)                    |
| 10117771-5060HLF                                    | 24 AWG | 6 M                           | (20.1)                    |
| 10117771-5070HLF                                    | 24 AWG | 7 M                           | (20.1)                    |
| 10117771-5080HLF                                    | 24 AWG | 8 M                           | (20.1)                    |
| 10117771-5090HLF                                    | 24 AWG | 9 M                           | (20.1)                    |
| 10117771-5100HLF                                    | 24 AWG | 10 M                          | (20.1)                    |
| 10117771-4020HLF                                    | 26 AWG | 2 M                           | (20.1)                    |
| 10117771-4030HLF                                    | 26 AWG | 3 M                           | (20.1)                    |
| 10117771-4040HLF                                    | 26 AWG | 4 M                           | (20.1)                    |
| 10117771-4050HLF                                    | 26 AWG | 5 M                           | (20.1)                    |
| 10117771-4060HLF                                    | 26 AWG | 6 M                           | (20.1)                    |
| 10117771-4070HLF                                    | 26 AWG | 7 M                           | (20.1)                    |
| 10117771-4080HLF                                    | 26 AWG | 8 M                           | (20.1)                    |
| 10117771-3010HLF                                    | 28 AWG | 1 M                           | (17.3)                    |
| 10117771-3020HLF                                    | 28 AWG | 2 M                           | (17.3)                    |
| 10117771-3030HLF                                    | 28 AWG | 3 M                           | (17.3)                    |
| 10117771-3040HLF                                    | 28 AWG | 4 M                           | (17.3)                    |
| 10117771-3050HLF                                    | 28 AWG | 5 M                           | (17.3)                    |
| 10117771-3060HLF                                    | 28 AWG | 6 M                           | (17.3)                    |
| 10117771-2005HLF                                    | 30 AWG | 0.5 M                         | (17.3)                    |
| 10117771-2010HLF                                    | 30 AWG | 1 M                           | (17.3)                    |
| 10117771-2020HLF                                    | 30 AWG | 2 M                           | (17.3)                    |
| 10117771-2030HLF                                    | 30 AWG | 3 M                           | (17.3)                    |
| 10117771-2040HLF                                    | 30 AWG | 4 M                           | (17.3)                    |

| PRODUCT NUMBER<br>(NON-HALOGEN FREE)<br>SEE NOTE 15 | AWG    | "DIM L"<br>LENGTH<br>(Meters) | "DIM M"<br>HIEGHT<br>(mm) |
|---|--------|-------------------------------|---------------------------|
| 10117771-5030LF                                     | 24 AWG | 3 M                           | (20.1)                    |
| 10117771-5040LF                                     | 24 AWG | 4 M                           | (20.1)                    |
| 10117771-5050LF                                     | 24 AWG | 5 M                           | (20.1)                    |
| 10117771-5060LF                                     | 24 AWG | 6 M                           | (20.1)                    |
| 10117771-5070LF                                     | 24 AWG | 7 M                           | (20.1)                    |
| 10117771-5080LF                                     | 24 AWG | 8 M                           | (20.1)                    |
| 10117771-5090LF                                     | 24 AWG | 9 M                           | (20.1)                    |
| 10117771-5100LF                                     | 24 AWG | 10 M                          | (20.1)                    |
| 10117771-4020LF                                     | 26 AWG | 2 M                           | (20.1)                    |
| 10117771-4030LF                                     | 26 AWG | 3 M                           | (20.1)                    |
| 10117771-4040LF                                     | 26 AWG | 4 M                           | (20.1)                    |
| 10117771-4050LF                                     | 26 AWG | 5 M                           | (20.1)                    |
| 10117771-4060LF                                     | 26 AWG | 6 M                           | (20.1)                    |
| 10117771-4070LF                                     | 26 AWG | 7 M                           | (20.1)                    |
| 10117771-4080LF                                     | 26 AWG | 8 M                           | (20.1)                    |
| 10117771-3010LF                                     | 28 AWG | 1 M                           | (17.3)                    |
| 10117771-3020LF                                     | 28 AWG | 2 M                           | (17.3)                    |
| 10117771-3030LF                                     | 28 AWG | 3 M                           | (17.3)                    |
| 10117771-3040LF                                     | 28 AWG | 4 M                           | (17.3)                    |
| 10117771-3050LF                                     | 28 AWG | 5 M                           | (17.3)                    |
| 10117771-3060LF                                     | 28 AWG | 6 M                           | (17.3)                    |
| 10117771-2005LF                                     | 30 AWG | 0.5 M                         | (17.3)                    |
| 10117771-2010LF                                     | 30 AWG | 1 M                           | (17.3)                    |
| 10117771-2020LF                                     | 30 AWG | 2 M                           | (17.3)                    |
| 10117771-2030LF                                     | 30 AWG | 3 M                           | (17.3)                    |
| 10117771-2040LF                                     | 30 AWG | 4 M                           | (17.3)                    |

|   |                |   |   |                           |                 |
|---|----------------|---|---|---------------------------|-----------------|
| dr  | Deborah Ingram | 2011/03/17  | projection<br> | size<br>A3                | scale<br>1:1    |
| eng   | Tom Feng       | 2015/08/12  |   |                           |                 |
| chr   | -              | -   |   |                           |                 |
| appr  | Frank Mao      | 2015/08/12  |   |                           |                 |
| product family  |                |   | C&A   | rel level <b>Released</b> |                 |
|  |                | title<br>Mini SAS HD 4X TO Mini SAS 2.1<br>TRAINED UNIVERSAL FINAL ASSEMBLY (6Gb/s) |   | dwg no<br>10117771        | rev<br><b>C</b> |
| www.fci.com   |                | cat. no.  | -   | Product - Customer Drw    |                 |
|   |                |   |   | sheet 3 of 5              |                 |



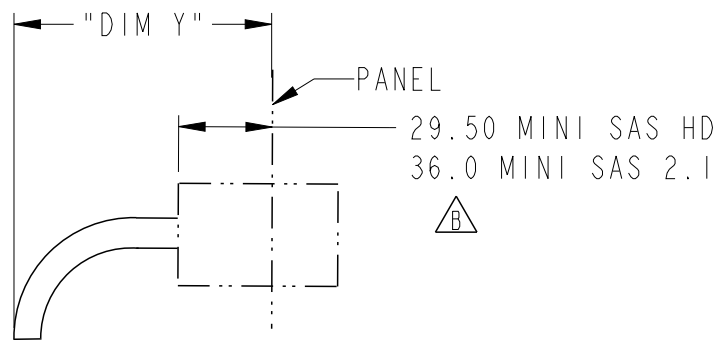
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| PRODUCT NUMBER   | DESCRIPTION      | NOTES      |
|------------------|------------------|------------|
| 10117771-XXXXLF  | NON-HF           | SEE SHT. 3 |
| 10117771-XXXXHLF | HALOGEN FREE (H) | SEE SHT. 3 |



KEY 3 & KEY SLOT 2, 4 & 6  
 ○ ◇ UNIVERSAL PORT

**END P2  
MINI SAS**



**PEND RADIUS  
TOP VIEW OF CONNECTOR**

| MINI SAS HD<br>MINIMUM BEND TABLE |                 |                     |
|-----------------------------------|-----------------|---------------------|
| CABLE                             | "DIM Y"<br>(HF) | "DIM Y"<br>(NON-HF) |
| 24 AWG                            | 92.8            | 90.5                |
| 26 AWG                            | 87.5            | 85.1                |
| 28 AWG                            | 81.5            | 79.1                |
| 30 AWG                            | 77.9            | 74.3                |

| MINI SAS 2.1<br>MINIMUM BEND TABLE |                 |                     |
|------------------------------------|-----------------|---------------------|
| CABLE                              | "DIM Y"<br>(HF) | "DIM Y"<br>(NON-HF) |
| 24 AWG                             | 90.6            | 88.3                |
| 26 AWG                             | 85.3            | 82.9                |
| 28 AWG                             | 79.3            | 76.9                |
| 30 AWG                             | 75.7            | 72.1                |

| WIRING LIST (SEE NOTE 6) |      |                    |                  |        |
|--------------------------|------|--------------------|------------------|--------|
| P1<br>(MINI SAS HD)      |      | CONDUCTOR #        | P2<br>(MINI SAS) |        |
| SIGNAL                   | PIN# |                    | PIN#             | SIGNAL |
| GND                      | A9   |                    | B7               | GND    |
| Rx 1-                    | A5   | PAIR 2             | B6               | Tx 1-  |
| Rx 1+                    | A4   |                    | B5               | Tx 1+  |
| GND                      | A3   |                    | B4               | GND    |
| Rx 3-                    | A8   | PAIR 4             | B12              | Tx 3-  |
| Rx 3+                    | A7   |                    | B11              | Tx 3+  |
| GND                      | A6   |                    | B13              | GND    |
| N/C                      | A1   | NO THRU CONNECTION |                  |        |
| Interrupt                | A2   |                    |                  |        |
| GND                      | B9   |                    |                  | GND    |
| RX 0-                    | B5   | PAIR 1             | B3               | TX 0-  |
| RX 0+                    | B4   |                    | B2               | TX 0+  |
| GND                      | B3   |                    | B1               | GND    |
| RX 2-                    | B8   | PAIR 3             | B9               | TX 2-  |
| RX 2+                    | B7   |                    | B8               | TX 2+  |
| GND                      | B6   |                    | B10              | GND    |
| N/C                      | B1   | NO THRU CONNECTION |                  |        |
| Mod_PRS_L (GND)          | B2   |                    |                  |        |
| GND                      | C9   |                    | A7               | GND    |
| TX 1-                    | C5   | PAIR 2             | A6               | RX 1-  |
| TX 1+                    | C4   |                    | A5               | RX 1+  |
| GND                      | C3   |                    | A4               | GND    |
| TX 3-                    | C8   | PAIR 4             | A12              | RX 3-  |
| TX 3+                    | C7   |                    | A11              | RX 3+  |
| GND                      | C6   |                    | A13              | GND    |
| SCL                      | C1   | NO THRU CONNECTION |                  |        |
| SDA                      | C2   |                    |                  |        |
| GND                      | D9   |                    |                  | GND    |
| TX 0-                    | D5   | PAIR 1             | A3               | RX 0-  |
| TX 0+                    | D4   |                    | A2               | RX 0+  |
| GND                      | D3   |                    | A1               | GND    |
| TX 2-                    | D8   | PAIR 3             | A9               | RX 2-  |
| TX 2+                    | D7   |                    | A8               | RX 2+  |
| GND                      | D6   |                    | A10              | GND    |
| N/C                      | D1   | NO THRU CONNECTION |                  |        |
| V+3.3 for EEPROM         | D2   |                    |                  |        |
| SHELL                    |      | BRAID              |                  | SHELL  |

|             |                |                                |                |                        |                |               |       |     |
|-------------|----------------|--------------------------------|----------------|------------------------|----------------|---------------|-------|-----|
| dr          | Deborah Ingram | 2011/03/17                     | projection<br> | MM<br>                 | size           | A3            | scale | 1:1 |
| eng         | Tom Feng       | 2015/08/12                     |                |                        | ecn no         | ELX-N-21649-1 |       |     |
| chr         | -              | -                              |                |                        | rel level      | Released      |       |     |
| appr        | Frank Mao      | 2015/08/12                     |                |                        | product family | C&A           |       |     |
|             |                | Mini SAS HD 4X TO Mini SAS 2.1 |                | dwg no                 | 10117771       | rev           | C     |     |
| www.fci.com |                | cat. no.                       | -              | Product - Customer Drw |                | sheet 4 of 5  |       |     |

| PRODUCT NUMBER   | DESCRIPTION      | NOTES      |
|------------------|------------------|------------|
| 10117771-XXXXLF  | NON-HF           | SEE SHT. 3 |
| 10117771-XXXXHLF | HALOGEN FREE (H) | SEE SHT. 3 |

NOTES:

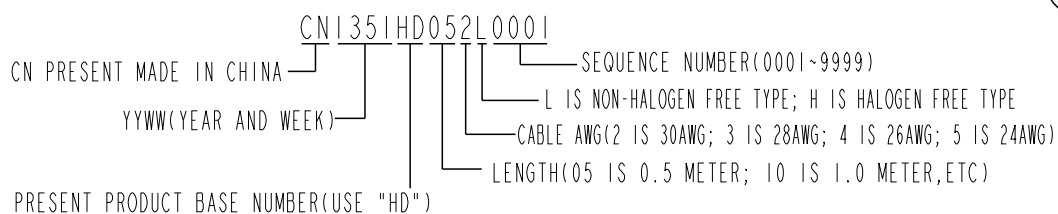
1 - MATERIALS MINI SAS HD (END P1)  
 BACK SHELLS: ZINC DIE CAST/ COPPER UNDER PLATE/NICKEL OVER PLATE  
 PULL TAB: THERMOPLASTIC POLYMER  
 LATCH: STAINLESS STEEL  
 FERRULE: BRASS  
 EMI GASKETS: STAINLESS STEEL  
 LOCTITE  
 HEAT SHRINK: HIGH POLYMER  
 PADDLE CARD: PRINTED CIRCUIT SUBSTRATE

MATERIALS MINI SAS (END P2)  
 BACK SHELLS: ZINC DIE CAST  
 PULL TAB: THERMOPLASTIC POLYMER  
 LATCH: STAINLESS STEEL  
 JET MELT: POLYAMIDE POLYMER  
 HEAT SHRINK: POLYOLEFIN  
 PADDLE CARD: PRINTED CIRCUIT SUBSTRATE

△ CABLE LABEL EXAMPLE:



FCI SERIAL NUMBER IS ONLY USED FOR TRACKING PRODUCT ,  
 SERIAL NUMBER IS DEFINED AS BELOW:



CE MARK VERTICAL DIMENSION MAY NOT BE LESS THAN 5mm,

2 - ELECTRICAL PERFORMANCE PER CURRENT REVISION: T10/SAS-2.1

△ 3 - THIS PRODUCT MEETS THE RESTRICTION OF HAZARDOUS SUBSTANCES IN ELECTRICAL AND ELECTRONIC EQUIPMENT (ROHS) DIRECTIVE (2011/65/EU)

△ 4 - UNLESS OTHERWISE SPECIFIED ASSEMBLED LENGTH TOLERANCE IS TO BE:  
 "DIM L" < 1 METERS = ±25mm  
 "DIM L" = 1 METER TO 10 METER = 2% OF "DIM L"

5- LABEL DETAILS:

|                               |                |
|-------------------------------|----------------|
| MANUFACTURER CODE OR NAME     | COUNTRY ORIGIN |
| FCI P/N                       | <b>CE MARK</b> |
| FCI CUSTOMER DRAWING REVISION |                |
| FCI SERIAL NUMBER             |                |
| BAR CODE OF SERIAL NUMBER     |                |

FONT SHALL BE CLEARLY VISIBLE AND BLACK IN COLOR.  
 CE MARK VERTICAL DIMENSION MAY NOT BE LESS THAN 5mm.

6- ALL CABLE ASSEMBLIES SHALL BE 100% TESTED FOR CONTINUITY AS DEFINED IN WIRING LIST.

7 -PACKAGING OF LEAD FREE PRODUCTS MEETS LABELING AND PACKAGING PER SPECIFICATION GS-14-920.

△ PACKAGE CABLE ASSEMBLIES PER GS-14-1272. DUST COVER IS TO BE APPLIED TO MINI SAS HD CONNECTOR PRIOR TO SHIPPING. CE MARK SHOULD BE ADDED ON FCI STANDARD PACKAGE LABEL(G1 LABEL),CE MARK VERTICAL DIM. MAY NOT BE LESS THAN 5mm.

8- THIS DIMENSION IS A FINISHED PRODUCT LENGTH.

9. "H" IN THE PART NUMBER DENOTES USE OF HALOGEN FREE CABLE.

10. PLACE A CABLE TIE EVERY 0.5 METERS, IN THE CASE OF A 0.5 METER CABLE LENGTH, PLACE THE CABLE TIE MIDWAY BETWEEN CONNECTORS.

11. A "△" SYMBOL WILL BE NEXT TO ANY DIMENSION, VIEW, OR NOTE WHICH HAS BEEN MODIFIED WITH THE CURRENT DRAWING REVISION. THE CURRENT REVISION WILL BE SHOWN IN THE SYMBOL.

12. MATES TO SERIES: MINI SAS HD - 10112626 or 10112627 or 10112628  
 MINI SAS 2.1 - BOARD CONNECTOR 10098870 AND CAGE 10098871

13. OTHER TESTING PERFORMED AS REQUIRED BY PRODUCT SPECIFICATION: MINISAS HD GS-12-651, MINI SAS 2.1 GS-12-548

△ 14. EEPROM INFORMATION OF MSHD SIDE REFER TO FCI PRODUCT SPEC. GS-12-651.

△ 15. CABLE IS OPTIONAL, WHICH HAD BEEN QUALIFIED BY FCI AND MEET FCI PRODUCT SPEC. GS-12-651/548.

|      |                |  |                        |                |               |           |                        |              |
|------|----------------|--|------------------------|----------------|---------------|-----------|------------------------|--------------|
| dr   | Deborah Ingram | 2011/03/17   | projection<br>MM<br>←→ | size           | A3            | scale     | 1:1                    |              |
| eng  | Tom Feng       | 2015/08/12   |                        | ecn no         | ELX-N-21649-1 |           |                        |              |
| chr  | -              | -  |                        | product family | C&A           | rel level | Released               |              |
| appr | Frank Mao      | 2015/08/12   |                        | www.fci.com    | cat. no.      | -         | Product - Customer Drw | sheet 5 of 5 |
| FCI  |                | Mini SAS HD 4X TO Mini SAS 2.1<br>TRAINED UNIVERSAL FINAL ASSEMBLY (6Gb/s) |                        | dwg no         | 10117771      |           | rev                    | C            |



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.