**Mini-SAS HD**

Next generation SAS storage interface

**DESCRIPTION**

The Mini-SAS HD product is the next generation SAS storage interface addressing channel bandwidth requirements of 6 Gb/s to 12 Gb/s meeting or exceeding the respective SAS 2.1 and proposed SAS 3.0 specifications. The Mini-SAS HD product provides greater port density (11mm port-to-port) versus the existing Mini-SAS 2.0 product (19.01mm port-to-port). FCI’s Mini-SAS HD product is fully compliant to the SFF-8643 and SFF-8644 industry specifications. Internal and external connector configurations of the Mini-SAS HD product include 1X1 (4x), 1X2 (8x), and 1X4(16x) and enables 4x and 8x internal & external cable assembly solutions which include EEPROM communication. The Mini-SAS HD profile design is PCI Express compatible and can be utilized in PCI Express architecture applications.

**FEATURES & BENEFITS**

- IMLA based board connector insures compliance to the SAS 2.1 & proposed 3.0 electrical performance criteria
- Internal and external board connector and cable assemblies provide end-to-end application solutions
- 1X1, 1X2 and 1X4 connector/cage assemblies offer product family design flexibility
- All board connectors and configurations are fully 6G and 12G compliant allowing for use of same part numbers when system speeds increase from 6G to 12G
- Metal cages on the external connector and cables provide 360° EMI shielding and replaces problematic EMC elastomeric gaskets
- Cable assemblies offered in 4x and 8x configurations
- Eye-of-the-needle connector and cage single step termination yields consistent application to the PCB
- The external cable strain relief results in an axial pull force in excess of 20 lbs
- Cable latch design reduces cable insertion force and un-mating issues
- Pull tabs are available in multiple lengths in Pantone 279 color to meet many application needs.
- Positive stop feature on the casting prevents external cable assembly mating over-travel.
- Hybrid external cables (mini-SAS HD to mini-SAS) allow for backwards compatible cabling with legacy system hardware

**TARGET MARKETS / APPLICATIONS**

**DATA**
- Servers
- RAID systems
- Storage racks

**EXTERNAL STORAGE SYSTEMS**
- SAS/SATA HBA interfaces
- Direct-attached storage (DAS)

**COMMUNICATIONS**
- Switches
Mini-SAS HD Connectors and Cable Assemblies
Next generation SAS storage interface

**TECHNICAL INFORMATION**

**MATERIALS**
- Board Receptacle Contact: Copper alloy
- Board Receptacle Housing: Thermoplastic high temperature UL94V-0
- Board Receptacle Plating: Gold over Nickel
- Plug Paddle Card: Copper/FR4 – Gold over Nickel plating.

**ELECTRICAL PERFORMANCE**
- Impedance: 100 +/- 15 Ω
- Voltage Rating: 30 Volts AC (RMS)/DC Max
- Current Rating: 0.5 Amps Max

**PACKAGING**
- Board Receptacle: Tray
- Plug/Cable Assembly: Bag

**ENVIRONMENTAL**
- Thermal Shock (temperature cycling): conforms to EIA-364-32
- Temperature life (heat aging): conforms to EIA-361-17, 105°C for 500 hours
- Operating temperature range: -40°C to 80°C

**MECHANICAL PERFORMANCE**
- Durability: 250 cycles

**APPROVALS AND CERTIFICATIONS**
- RoHS conforms to EU directive 2002/95/EC
- UL Approval

**SPECIFICATIONS**
- Product Spec: GS-12-651
- Application Specification: GS-20-0327

Internal Mini-SAS HD Cables
External Mini-SAS HD Cables
External Mini-SAS HD Connectors
Internal Mini-SAS HD Connectors
**Mini-SAS HD Connectors and Cable Assemblies**

**Next generation SAS storage interface**

**PART NUMBERS External and Internal Board Connectors**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Product Description</th>
<th>Signal Pairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>10112626-101LF</td>
<td>Mini-SAS HD 1 X 1 External Assembly (6 &amp; 12 Gb/s per channel)</td>
<td>8 Pairs</td>
</tr>
<tr>
<td>10112627-101LF</td>
<td>Mini-SAS HD 1 X 2 External Assembly (6 &amp; 12 Gb/s per channel)</td>
<td>16 Pairs</td>
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<tr>
<td>10112628-101LF</td>
<td>Mini-SAS HD 1 X 4 External Assembly (6 &amp; 12 Gb/s per channel)</td>
<td>32 Pairs</td>
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<tr>
<td>10112632-101LF</td>
<td>Mini-SAS HD 1 X 1 Internal Assembly (6 &amp; 12 Gb/s per channel)</td>
<td>8 Pairs</td>
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<tr>
<td>10112633-101LF</td>
<td>Mini-SAS HD 1 X 2 Internal Assembly (6 &amp; 12 Gb/s per channel)</td>
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<tr>
<td>10112634-101LF</td>
<td>Mini-SAS HD 1 X 4 Internal Assembly (6 &amp; 12 Gb/s per channel)</td>
<td>32 Pairs</td>
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</table>

**PART NUMBERS External and Internal Cable Assemblies**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Product Description</th>
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</thead>
<tbody>
<tr>
<td>10112041</td>
<td>Mini-SAS HD to mini-SAS HD passive external cable assembly - 4x configuration – SAS 2.1 (6Gb/s) compatible</td>
<td>8 pairs</td>
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<tr>
<td>10117771</td>
<td>Mini-SAS HD to mini-SAS passive external cable assembly - SAS 2.1 (6Gb/s) compatible - 4x configuration on mini-SAS HD end and universal keying on mini-SAS end</td>
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<td>10112359</td>
<td>Mini-SAS HD to mini-SAS HD passive external cable assembly - 8x configuration – SAS 2.1 (6Gb/s) compatible</td>
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<td>10117947</td>
<td>Mini-SAS HD to mini-SAS HD passive external cable assembly - SAS 2.1 (6Gb/s) compatible - 8x configuration on mini-SAS HD end and universal keying on mini-SAS end</td>
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<tr>
<td>10117949</td>
<td>Mini-SAS HD to mini-SAS HD passive external cable assembly - 4x configuration – proposed SAS 3.0 (12Gb/s) compatible</td>
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</table>

For more information please visit: www.fciconnect.com/hsio or contact: minisashd@fciconnect.com

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