

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

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 +/- 15Ω
- Voltage Rating: 30 Volts AC (RMS)/DC Max
- Current Rating: 0.5 Amps Max

■ APPROVALS AND CERTIFICATIONS

- RoHS conforms to EU directive 2002/95/EC
- UL Approval

■ 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

■ 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**

PART NUMBERS External and Internal Board Connectors

Part Number	Product Description	Signal Pairs
10112626-101LF	Mini-SAS HD 1 X 1 External Assembly (6 & 12 Gb/s per channel)	8 Pairs
10112627-101LF	Mini-SAS HD 1 X 2 External Assembly (6 & 12 Gb/s per channel)	16 Pairs
10112628-101LF	Mini-SAS HD 1 X 4 External Assembly (6 & 12 Gb/s per channel)	32 Pairs
10112632-101LF	Mini-SAS HD 1 X 1 Internal Assembly (6 & 12 Gb/s per channel)	8 Pairs
10112633-101LF	Mini-SAS HD 1 X 2 Internal Assembly (6 & 12 Gb/s per channel)	16 Pairs
10112634-101LF	Mini-SAS HD 1 X 4 Internal Assembly (6 & 12 Gb/s per channel)	32 Pairs

PART NUMBERS External and Internal Cable Assemblies

Part Number	Product Description	Signal Pairs
10112041	Mini-SAS HD to mini-SAS HD passive external cable assembly - 4x configuration – SAS 2.1 (6Gb/s) compatible	8 pairs
10117771	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	8 pairs
10112359	Mini-SAS HD to mini-SAS HD passive external cable assembly - 8x configuration – SAS 2.1 (6Gb/s) compatible	16 pairs
10117947	Mini-SAS HD to mini-SAS passive external cable assembly - SAS 2.1 (6Gb/s) compatible - 8x configuration on mini-SAS HD end and universal keying on mini-SAS end	16 pairs
10117949	Mini-SAS HD to mini-SAS HD passive external cable assembly - 4x configuration – proposed SAS 3.0 (12Gb/s) compatible	8 pairs
10117950	Mini-SAS HD to mini-SAS HD passive external cable assembly - 8x configuration-proposed SAS 3.0 (12Gb/s) compatible	16 pairs
10119217	Mini-SAS HD to mini-SAS HD passive internal cable assembly - 4x configuration – SAS 2.1 (6Gb/s) compatible	8 pairs
10119312	Mini-SAS HD to mini-SAS HD passive internal cable assembly - 4x configuration – SAS 3.0 (12Gb/s) compatible	8 pairs
10119577	Mini-SAS HD to mini-SAS HD passive internal cable assembly - 8x configuration – SAS 2.1 (6Gb/s) compatible	16 pairs
10119576	Mini-SAS HD to mini-SAS HD passive internal cable assembly - 8x configuration – SAS 3.0 (12Gb/s) compatible	16 pairs